

# Worldradio

Year 21, Issue 7

January 1992 • \$1.25

## FEATURES

- Alameda, CA — Oakland fires
- Bellflower, IL — Amateur Radio ethics
- Chicago, IL — Basics of QSLing
- Contra Costa, CA — Hams' mutual aid works
- Lancaster, CA — Freestanding antenna farm
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- Sebastopol, CA — Operating ragchew nets



## COLUMNS

- Aerials •Amateur Hi •Amsat-Oscar schedule •Construction •Contests
- County Hunter •Digital Bus •DX Prediction •DX World •FCC Highlights
- Hamfests •Mobile •New Products •Off the Air •Old Time Radio
- Product review •Propagation •Publisher's Microphone •QCWA •QRP
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# Worldradio

Year 21, Issue 7

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## October, two years later — the Oakland Fires

LARRY KAYE, W6CPO

Sunday, October 20, began with a strange warm wind and ended as the day of the worst rural fire in US history. For many weeks there had been little wind in the eastern part of the San Francisco Bay region. But when I awoke that day, it was to the sound of strong, warm winds from the east. In southern California these winds are called Santa Ana; now in the Bay Area they are called Diablo. The winds somehow rekindled a fire which was still smoldering from the day before, and in moments it became a raging fire storm.

Driving out to do some errands shortly before noon, I noticed the large plume of black smoke to the west, over the Oakland Hills, and I immediately tuned to 147.735, our local ARES/RACES repeater. About this time my pager went off with a message to come up on 7735. Amateurs in Orinda, just east of the fire area, were already preparing to mobilize in case the fire moved their way.

As each of our Emergency Coordinators checked in to the now established net, we requested that a list be developed in each of the four areas of our county in case Amateur Radio was needed. As expected, within minutes we had requests for operators at our county fire dispatch center and for additional operators in Orinda where falling power lines (due to the wind) had ignited additional fires. Another major grass fire was burning in Franklin Canyon, fortunately sparsely populated.

As the day progressed it became apparent that a major disaster was developing in Oakland; continuing high winds and temperatures were making control of the fire nearly impossible and many homes were already destroyed. The Orinda and Franklin Canyon fires, in our own county, were fortunately contained

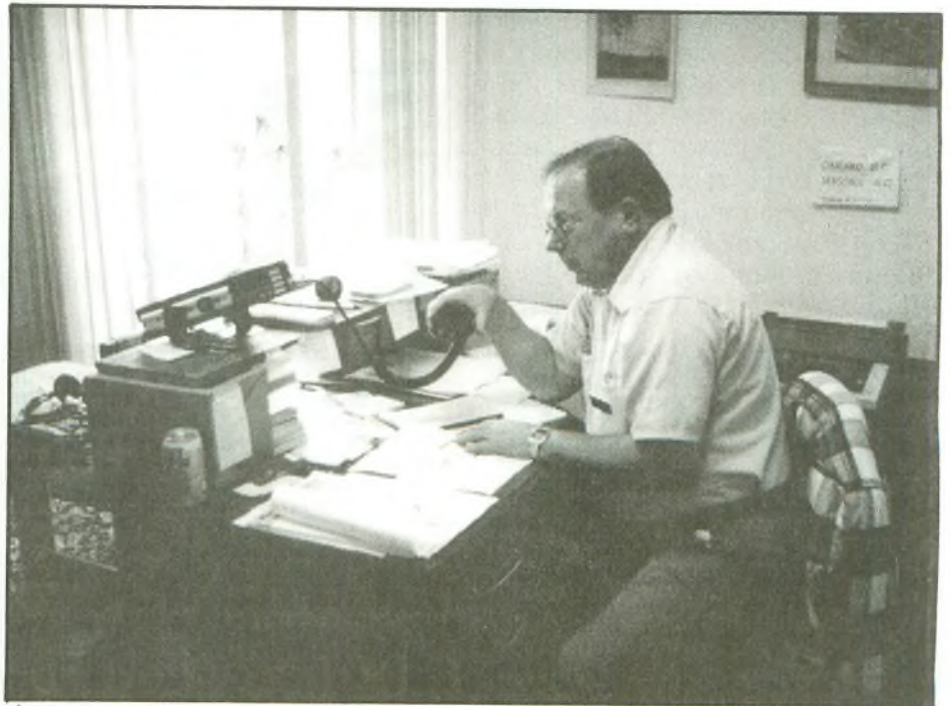
with little damage. We soon activated the amateur station at the State Office of Emergency Services, Region II, as that agency began its own operations. Meanwhile amateurs in the Oakland and Berkeley areas were responding to their city EOCs and other preplanned disaster assignments.

As in any disaster of this magnitude, one of the principal players is the American Red Cross. The ARC has a long standing memorandum of understanding with the ARRL providing for Amateur Radio communications when needed. We were certainly going to be needed. Shelters for the displaced residents were rapidly being set up and Amateur Radio operators were assigned to them to provide communications. Since the ARC has a

very limited number of radio frequencies (one or two), our communications resources are an essential part of their operation.

Based on our experiences two years ago with the Loma Prieta Earthquake, it was decided to operate our resource net under the auspices of OES Region II. This method makes sense for a number of reasons. The Amateur Service (at least here in the Bay Area) uses the mutual aid assistance system when resources are depleted in an impacted area. Mutual aid assistance is one of the primary missions of the OES Regional offices, and it was logical to extend this function to the amateur resources. In addition, the regional office has a complete amateur station with HF, VHF, UHF and packet capability where we could efficiently operate three shifts a day.

At 0500 on Monday, the operator on duty at OES Region II called me to *(please turn to page 11)*



Amateurs from all over provided aid from the Red Cross operations at Masonic Hall in Oakland.

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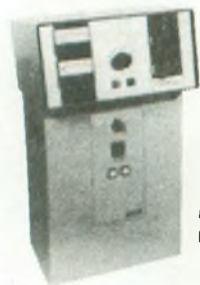
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# Amateurs' mutual aid works

**RUSSELL E. BANKSON,  
N6GWL**

The worst fire storm in the history of the San Francisco East Bay communities happened October 20, 1991. More than 3,000 homes were burned to the ground, more than 150 people were injured, 25 people killed, and 2,000 acres burned.

The smoke was so thick that it hid the sky for 30 miles and held the fire heat so close to the ground that the evening temperature was 85 degrees; it normally would be about 50 to 60 degrees.

Two thousand fire fighters with the support of air tankers and helicopters fought the fire. Five thousand people were routed from their homes and about 3,000 had to go to activated shelters. The loss is reported to be over a billion dollars.

The fire raged in hilly thick brush and tree covered steep ravines rising to 1,500 feet, consuming neighborhoods in Oakland, Berkeley, Piedmont, Montclair, Grizzly Peak, Skyline, Sheppard Canyon, Snake Road Canyon, Broadway Terrace, Temescal, and places in between.

Homeowners tried to save their homes with water hoses until the heat melted the hoses while they were using them. Many of the homes were very posh, costing over a million dollars each. The area now looks like a graveyard with only the chimneys standing like tombstones.

Amateurs again came out of the woodwork to provide round-the-clock emergency and tactical communications between the agencies involved, supporting the fire fighters and the fire victims. Their constant training and planning for emergencies is what makes Amateur Radio operators a valuable asset to public agencies during disasters. They also come with their own equipment (sometimes costing \$1,000 or more), which makes them very flexible to changing assignments. They are able to function when phones, power lines and other facilities have failed or have overloaded. Many amateurs keep a bag packed with necessary accessories just for emergencies so they can respond quicker.

The East Bay area hams' mutual aid plan for the cities of Newark, Union

City, Fremont, Hayward, San Lorenzo, San Leandro, Castro Valley, Alameda, Oakland, and Richmond is very effective. They respond immediately without waiting to be called into action.

They have also created a pocket-size "instant trainer" manual which has adequate information one needs to know to function as a communications volunteer. These manuals are issued by the amateur emergency coordinators during disasters to amateurs volunteering in an emergency who are not ARES (Amateur Radio Emergency Service) members and are not familiar with the ARES plans and working system.

The East Bay amateurs have established Amateur Radio stations in most of the East Bay hospitals, some fire departments, some Red Cross headquarters and disaster support agencies to be used by any amateur operator in disasters.

The Alameda ARES group responded to a request by the Alameda Hospital to provide communications. The fire was headed for the Alta Bates Hospital and there was concern that the patients may have to be transported to the Alameda Hospital. (please turn to page 12)



Happy  
New  
Year!

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and support the efforts of those who bring  
the flame of vitality to this avocation.

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ance of active radio amateurs concerned  
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tions tool to develop the skill, quality and  
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One reader said that comparisons of  
a nation's private pilots, doctors,

CPAs, etc. and the number of amateurs  
made no sense. It may not. But, we  
need some reference.

Over the years we've been receiving  
yimmer and yammer and constant yip-  
ping that "We need more amateurs."  
Never does anyone say how *many*  
more. Never do we hear an exact  
number expressed.

What is the goal? What is the short-  
fall? The next time you hear any editor,  
government employee, League official,  
etc. say, "We need more hams!" Ask  
them, "Relative to what?"

If people can just throw around "We  
don't have enough," who knows?  
Maybe they'll decide, "We have too  
many."

There are about 90,000,000 house-  
holds in the US. There are about  
500,000 amateurs. Or, one out of every  
180 households has an amateur in it.  
(What percentage are actually active  
and on the air is another story.)

What percentage of the households  
in Canada or (former) West Germany  
have amateurs? How about Australia

or New Zealand or Switzerland? Den-  
mark or England? Relative to what?  
Other advanced, industrial nations?  
Some ratio of the number of driver's  
licenses? Relative to the number of peo-  
ple who can name both senators from  
their state?

Should a standard reference be that a  
nation have licensed Amateur Radio  
operators in the number of one-half  
that of the number of instructors in  
higher education? One licensee to  
every one thousand broadcast receivers?  
One amateur for every 300  
automobiles?

Silly sounding? Well, without some-  
thing to hook onto, how could one ever  
say, "We don't have enough"?

To digress. In the US there are 1.5  
people for every car. In Canada it is 1.9,  
Germany 2.0, Australia, 2.2. Denmark:  
three people to each car, Bangladesh,  
3,000.

What are the Amateur Radio ratios?

Every few years it's panic time.  
Radio Zamboanga (we are told) wants  
the entire 7 MHz band for their short-  
wave stations. "The sky is falling, the  
sky is falling, we need more amateurs!  
Tell Ruritania if they vote for us we'll  
give them three handbooks and a  
Zenith Transoceanic."

Somehow the apocalypse never oc-  
curs. Maybe we have enough ama-  
teurs. Or, maybe it's not the *numbers*.

Speaking of Bangladesh, they are  
now on the air. A democratic govern-  
ment was elected and thus the change.  
This won't be easy in a country with an  
annual per capita income of \$160. They  
will be trying to set up emergency com-  
munications systems after 125,000  
died earlier this year from flooding.

We're going to try to get the proper  
address of the group there and see if we  
can't get some books, parts, rigs, and  
the like sent to where it will really do  
the most good. —Armond, N6WR

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# Obscenity, the League, and the FCC

DAVID BOYD, K9MX

Every October for the last 10 years, he had invited the local Boy Scout troop into his shack so he could show the boys the wonders of Amateur Radio. It was always a special weekend for him, because he loved to see the excitement in the boys' eyes as he tuned across the bands looking for stations calling "CQ Boy Scout Jamboree." Last year he'd even stumbled onto a station in Israel and every boy had been able to talk to an Israeli Boy Scout. Maybe again this year, he thought, as he tuned slowly across the band. Suddenly, he heard a young voice say he was 16 years old and decided this was an ideal QSO for the boys to hear. He turned up the volume as the boy turned it over to the adult he was talking to.

What he heard made him reach quickly for the VFO. (We are deleting the transcripts here, but they are obscene and indecent by *anybody's* standards! If you have a strong stomach, and the kids have gone to bed, listen in around 14.290 to 14.330 almost any time or between 3.390 and 3.910 evenings.) Graphic language worse than anything you're likely to see even in the sex magazines is likely to be heard every day on 75M, parts of 20M phone, and on some repeaters.

There are more than 5,000 children

under the age of 15 who currently hold amateur licenses and untold thousands more who listen, as many of us did when we were young. How many parents, hearing this sort of thing, are likely to allow their children—the future of our hobby—to pursue a license? More to the point, how will we answer when a commercial interest argues that he can make better use of the spectrum than we can and offers tapes of this kind of conduct to bolster his argument?

We used to point proudly to the absence of rudeness and obscenity as a key difference between Amateur Radio and the Citizens Band. But no longer. Increasingly, small groups of foul-mouthed hams are making major parts of our spectrum unusable by decent amateurs, especially our younger licensees. As recently as three or four years ago, genuinely foul language was rare on the ham bands. Most of us were still reluctant to use words as innocuous as "hell" or "damn." But, increasingly, the crudest obscenities and meanest racial slurs are found almost continuously on the bands.

We've heard all kinds of explanations for this sudden decline in civility on the ham bands. Some blame it on declining standards in the hobby, while others say it's just a reflection of what has been happening in the larger society. Still others have tried to rationalize it away, arguing that only a few hams are actively engaged in this conduct. But most point to the lack of enforcement action by the FCC.

George Wilson, W4OYI, Vice President of the ARRL, recently blamed the FCC General Counsel's office for failing to act. *Westlink Report*, just two weeks earlier, printed a story to the effect that an FCC official in California had said the FCC was unlikely to act in obscenity cases. Clinching the point was a recent decision by the FCC General Counsel's office to abandon prosecution of a case which had resulted in the collection—at the direction of the FCC—of hundreds of hours of tapes and transcripts by the FCC Auxiliary to the Field Operations

Bureau (which is established by law). The General Counsel had expressed a concern that the "safe harbor" rule, which allows crude language on broadcast stations after certain hours, would cause the courts to overturn any convictions, despite the fact that no court had ever suggested the rule applied to Amateur Radio. (As an interesting aside, and contrary to the conventional wisdom, the courts did not rule that obscenity could not be enforced against commercial stations after 8 p.m., the time the FCC seems to have adopted as the "safe harbor" time when children would not be watching or listening, and then challenged the FCC to produce evidence showing how many children were watching and when. The FCC has as yet failed to accept that challenge.) But if FCC inaction is the problem, we have to ask where the ARRL has been for the last few years and why it is only recently that a single ARRL officer publicly pointed a finger at the FCC? What has the League been doing to help spur the FCC to action?

The League has long argued, most recently in a *QST* editorial, that individual hams should not write the FCC, but should trust the League to take care of amateur interests at the Commission. They've argued that working quietly behind the scenes can accomplish what we're after without unnecessarily antagonizing the Commission. The League may, in fact, have been working quietly on most of these problems, but that work has been so quiet that many amateurs have come to believe the League is doing nothing. Some have even begun to view the League as a lobby not for amateur interests, but for the FCC. As a consequence, an increasing number of amateurs, lacking confidence in the ARRL, are going directly to the Commission, often over the most minor of issues. Yet most amateurs would prefer to rely on the League, if only they had confidence the League would actually lead.

Some amateurs have become so disillusioned by the lack of leadership from the ARRL that they have formed or joined alternative organizations, thus weakening our most potent voice and dividing the energies and efforts of the amateur community. It is unlikely any emerging organization will be able in the foreseeable future to build a following that will allow it to rival, even remotely, the financial power, reputation or political potential of the ARRL. But instead of trying to organize new organizations, we should be pressing the League to take a more aggressive approach to the FCC in defense of amateur interests. We should be demanding that the League take a

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close look at those organizations which have been particularly successful in the legislative and regulatory arenas. The National Rifle Association, for example, has been spectacularly successful in mobilizing its membership to defend its interests, and you don't need to support its goals to admire its skill. The ARRL, with far less controversial issues, should adopt some of the NRA's most successful tactics, one of which is to organize extensive letter writing campaigns to influence legislation. With 150,000 members, the League can force the Commission to pay attention when "quiet" negotiations don't work.

Unfortunately, the threat to our bands from this disgusting conduct is too great to rely just on convincing the

ARRL that it should press the FCC. It is long past time for us to demand action on our own by writing the Commission (which has to answer each letter) and our representatives in Congress. If nothing else, our letters will demonstrate that obscenity is *not* an accepted part of the hobby and that the responsibility for this degradation of our bands rests not with most hams, but with the FCC. Our letters need to emphasize that children are a big part of this hobby, and that artificial "safe harbor" times cannot apply in a medium with worldwide propagation. We also need to attack the notion, expressed by some in the Commission, that they can't enforce the law when they are uncertain how the courts will view the enforcement. We have to re-

mind the Commission that our representatives make the laws and that the Commission's obligation is to administer and enforce them, not to second-guess the courts. We hire judges to make those decisions, not FCC attorneys.

When you write those letters, send a copy to your ARRL director and to League Headquarters and ask when they plan to start leading. And tell them the argument that the League's tax exempt status might be threatened by such activity just won't wash. The NRA solved that problem; so can the League.

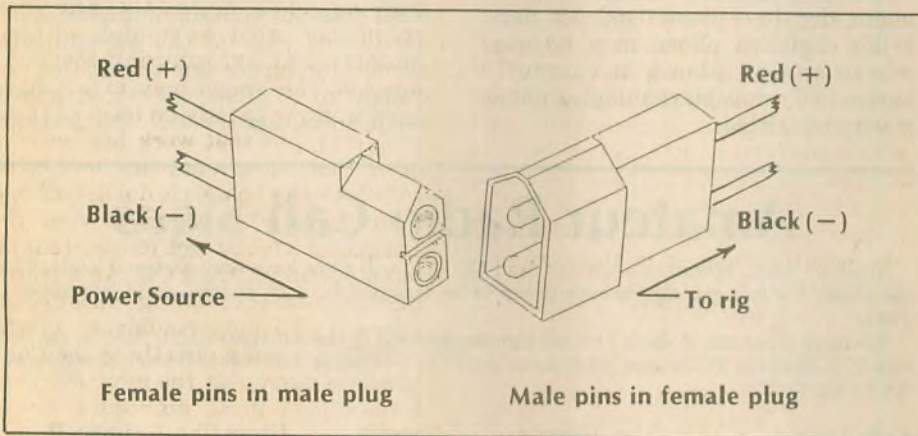
*The above is a guest editorial and the opinions expressed within are those of the author; they do not necessarily reflect the views of Worldradio, Inc.* □

## 12V connector recommendation

As a result of a study commissioned by the League's volunteer resources committee last year, the field services department is recommending the MOLEX Series 1545 connector for use in promoting compatibility and interchangeability among personal VHF/UHF radio equipment at disaster and public event sites. Polarity should always be verified prior to connecting

W6TET, of San Diego, California, says:

"I agree completely. I have been using this connector for many years since the ICOM IC230 came out with this connector installed. All the 12V equipment in our San Diego Mountain Rescue Team is fitted with this connector. We buy this connector in bulk quantities from a local parts store.



radios and power supplies.

The 1545 connector is rated at 25V, 8A. Wire size requirement is #18 AWG or greater. An in-line fuse between the power source and first connector is recommended. The connector is available at Radio Shack stores, part #274-222. —The ARRL Field Forum

*Readers have requested that we be more explicit in the proper recommended wiring for this connector. Here we've included the diagram which thoroughly explains the proper wiring.*

*As an added note, Ivan Simpson,*

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"After many years of rough use, it may be necessary to bend the connector sleeve slightly to close the gap and provide a tight fit. It is important for the recommendation to standardize the connector polarity. We make the pointed side positive as was done in the IC230. There is a tool available to push the pins and sleeves out of the shell. This allows reusing connectors or changing polarity." □

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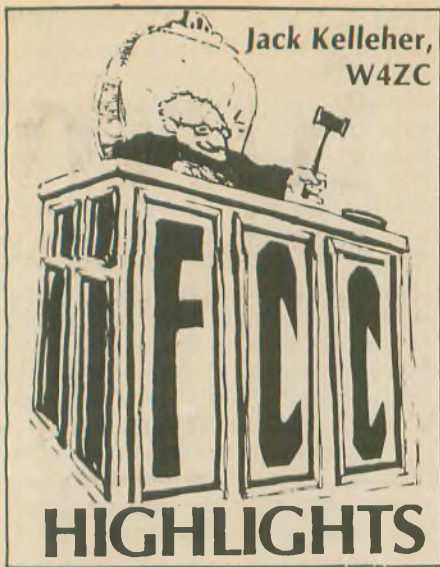
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### Rule changes for voice

Steven R. Sampson, N5OWK, of Moore, Oklahoma, petitioned the FCC on September 5 to permit time-division multiple access technology (TDMA) in Amateur Radio. He based his petition on the concept known as Motorola Integrated Radio System (MIRS), which that company announced a week earlier as an advanced, spectrum-efficient approach to two-way mobile radio.

TDMA is one of three principal methods now favored for obtaining more capacity in mobile radio communications. TDMA divides the available bandwidth into segments of time rather than frequency. Each communication is assigned a time slot. In the Motorola MIRS system, up to 6 subscribers (6 slots) can share a single channel. MIRS uses a multi-level modulation scheme called M-16QAM to convey 64 kbps of digital information over a 25 kHz channel.

The switching of time slots happens so rapidly that the voice communication is not disturbed. (Ed. note: The basic principle involved is called the

sampling theorem, which in a restricted form states, "If a message that is a magnitude-time function is sampled instantaneously at regular intervals and at a rate at least twice the highest significant message frequency, then the samples contain all of the information of the original message." See Black, H.S., *Modulation Theory* (Princeton: D. Van Nostrand Company, 1953), p. 37.)

TDMA has been selected as the standard for next-generation cellular telephone service in the US and other countries.

Sampson told the FCC: "Congestion and availability require that new methods be devised to allow a greater number of users to occupy the current spectrum. One modulation method that has the potential for providing future capability is Time Division Multiplex (TDM) using digitized voice.

"For example, using two 25 kHz channels, six operators can have full duplex communications. With the advance of technology, the number of multiplexed channels per frequency would be expected to increase due to new compression schemes, computer through-put advances, etc.

"The (present FCC) rules make the distinction that phone and data are two separate emission types. It appears that while phone may be digitized, it remains digitized phone, and not data. While digitized phone may be used where analog phone is currently authorized, multiplexed digital phone is very restricted.

"The current rules, 97.307(f)(12), only allow for phone TDM using analog methods from the 33cm band and up, and Independent Sideband (ISB) phone modulation, 97.3(c)(5), on many bands from 160M and shorter wavelengths, with some exceptions. Neither of these modulation methods can offer the compression or reutilization of spectrum that Frequency Modulated Digitized voice using TDM can (i.e., F7E, F8E, F9E).

"Allowing F7E, F8E and F9E emissions on the 6M and higher bands will produce the greatest benefit. The 33cm and higher bands would benefit from this modulation technique through the use of trunking multiple conversations without user interaction, while the use of the 6M through 70cm bands would allow the user to select both a frequency and multiplex channel to communicate with other operators. My intent is to allow TDM digital phone emissions on the same band segments where TDM data is not authorized i.e., 97.307(f)(8).

"The digital channel access codes and compression schemes could be agreed upon by the American Radio Relay League (ARRL), and TDM phone and data modulation be limited to this agreed protocol. This would guarantee that the emissions could be monitored. Currently, the AX.25 protocol does not contain multiplex standards but can be the appropriate avenue for future implementation. A change to 97.109(e) as stated above would encourage research and develop-

## 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 November 1, 1991.

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	AA0GH	KF0VG	N0PWO	KB0JQE
1	WY1G	KD1FB	N1KLP	KA1ZJN
2	AA2HB	KF2EW	N2OMC	KB2NSX
3	WS3V	KD3ZO	N3KVK	KA3ZLZ
4	AC4LF	KO4MF		KD4GPP
5	AB5CM	KI5VD	N5XFT	KB5QNP
6	AB6GU	KM6LK		KD6CPS
7	AA7LE	KG7VS	N7URX	KB7OFL
8	AA8FH	KF8QI	N8QWM	KB8NDI
9	AA9CG	KF9GO	N9NCH	KB9HHH
North Mariana Is.	AH0K	AH0AI	KH0AN	WH0AAQ
Guam	KH2V	AH2CN	KH2FM	WH2AMU
Johnston Is.	AH3D	AH3AD	KH3AG	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6LM	WH6DD	WH6COS
Kure Is.			KH7AA	
American Samoa	AH8D	AH8AE	KH8AI	WH8ABA
Wake Wilkes Peale	AH9A	AH9AD	KH9AE	WH9AAH
Alaska		AL7NS	NL7ZY	WL7CDD
Virgin Is.	NP2T	KP2BZ	NP2ER	WP2AHL
Puerto Rico		KP4SX		WP4KQX

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ment of proposed phone and data communications protocols." (Note: We have not included Mr. Sampson's detailed proposals for rule changes, e.g., 97,109(e), for the sake of brevity.)

"Without the above submitted rule change authorization, the Amateur Service will be restricted from researching new modulation methods which can have the greatest impact on solving spectrum congestion problems that are projected for the future. I feel these changes will be beneficial to the Amateur Service, the public, and the United States of America."

The initial reaction from FCC Personal Radio Branch Chief John Johnston, W3BE, was favorable. "Digital voice communication is something that hams ought to be working on, and we're planning to give this petition a rulemaking number." He also noted that key to the success of the N5OWK concept is the development of technical standards for digital voice by the amateur community.

The Private Radio Bureau has furnished its preliminary review of the Sampson petition and the assignment of the rulemaking number and acceptance of public comments are now in the hands of the FCC Secretary." (W5YI Report, 10/15/91)

The search for more efficient use of the spectrum allocated for the Amateur Service goes back at least 30

years: The December 1959 issue of the Proceedings of the IRE contained an article by J.P. Costas entitled "Poisson, Shannon and the Radio Amateur." Costas concluded from his analysis that broadband techniques will result in far more efficient spectrum utilization in many applications than any practical narrow-band, frequency-channelized approach.

#### Call signs

H.R. 1674, the Federal Communications Commission Authorization Act of 1991, contains a proviso, recommended in different forms by the ARRL and W5YI, that: "The Commission, for purposes of providing specialized, radio club, and military-recreation call signs, may utilize the voluntary and uncompensated services of Amateur Radio organizations as determined by the Federal Communications Commission." The House passed the bill on September 24. The Senate has not yet acted. (The Senate bill is S1132.) (W5YI Report, 10/15/91)

#### More third party countries

Our November FCC Highlights provided the most recent (7/12/91) list of countries which have made the necessary arrangements with the US to permit an amateur station regulated by the FCC to exchange messages for a third party with amateur stations in those countries. Unfortunately, our list left a few countries out. Below is the corrected list, with the previously overlooked countries in bold.

Antigua and Barbuda, Argentina, Australia, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Federal Islamic Republic of Comoros, Costa Rica, Cuba, **Dominica, Dominican Republic, Ecuador, El Salvador, The Gambia, Ghana, Grenada, Guatemala, Guyana, Haiti, Honduras, Israel, Jamaica, Jordan, Liberia, Mexico, Federated States of Micronesia, Nicaragua, Panama, Paraguay, Peru, Philippines, St. Christopher and Nevis, St. Lucia, St. Vincent and the Grenadines, Sierra Leone, Swaziland, Trinidad and Tobago, United Kingdom** (special event stations with call sign prefix GB followed by a number other than 3), Uruguay, and Venezuela. The United Nations also has arrangements with the United States to permit an amateur station regulated by the FCC to exchange messages for a third party with amateur stations 4U1ITU in Geneva, Switzerland, and 4U1VIC in Vienna, Austria. (Note that the inclusion of the Philippines changes the 1991 *Callbook* Supplement.)

No amateur station regulated by the FCC shall transmit messages for a third party to any amateur station located within the jurisdiction of any foreign government not listed above. This prohibition does not apply to a message for any third party who is

eligible to be the control operator of the station.

Further questions should be directed to the FCC, Personal Radio Branch, Room 5322, 202/632-4964. (Tnx W1HWG) □

## Accept the invitation

ETHEL SMITH, K4LMB

Ralph Haller's speech about relaxing the amateur rules to permit "non-amateur" communications in the amateur bands has stirred up a storm of controversy. It seems that things are getting blown a little out of proportion. *Nothing has been officially proposed as yet. The whole thing is just in a discussion stage and we have been invited to participate.*

For years hams have been besieging the FCC with inquiries about, and requests for, relaxation of the rules concerning the type of communications that should be permitted on the Amateur Radio bands. We certainly have promoted the impression that we wanted the rules changed. But when Mr. Haller addressed the problem at the ARRL national convention and suggested the amateur community come up with some wording for proposed rulemaking, he opened a hornet's nest.

It is impossible to define each and every communication that should be permitted or banned and it is going to take some careful wording to find a good compromise between opening the gates completely or tightly closing them. One possibility Mr. Haller suggested was permitting business type communications on a "secondary basis." On first glance this may sound great, but it certainly opens the doors to exploitation of the amateur bands by business interests. Who is going to decide when the "ordinary" amateur activities cease having priority? And if a long winded personal business communication is in progress, what rights would an "ordinary" operation have to claim "priority" to the frequency?

Unfortunately, W5YI has been chided for his handling of the first news of Mr. Haller's speech. In fact he was simply reporting on a release (directly from the Private Radio Bureau at the FCC) of a *draft* prepared for that speech. The speech—before and/or after modifications—reflects the thinking at the FCC and should be of concern to amateurs. Do give some serious consideration to the questions raised and let your ARRL officials and other amateur community leaders know how you feel. *What do we want?* Mr. Haller has invited us to make an input. We should accept that invitation.—*The above is an editorial reprinted from K4LMB's December Auto-Call.* □

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## Oakland Fires

(continued from page 1)

relay a request by the Alameda County (Oakland area) operators for mutual aid for the 0800 to 1600 shift in support of the Red Cross. By 0700, working with our Emergency Coordinators, sufficient operators were made available. It was now apparent that many more operators would be needed for a number of days to assist the ARC. In Contra Costa County, we are fortunate to have an excellent system of linked repeaters on high-level sites which are owned and maintained by the Contra Costa Repeater Association. For the next week the 2M portion of this system became the hub for our resource operation. With coverage of the entire Bay Area and extended coverage to Sacramento and the areas to our east and north, we were able to directly contact amateurs who were willing to help.

The procedure we used was relatively simple; it basically just evolved over the first day of operation. Contact was made with Emergency Coordinators within our coverage range (and beyond with some additional linking). Each of these area leaders developed lists of available operators



Rows and rows of charred foundations define a once densely populated rural area.

and periodically transmitted these lists to the station at Region II. The operator at the Oakland Red Cross would get the required number of operators for the upcoming shifts and transmit this information to Region II. Once Region II had the slots filled,

the names would be sent to Oakland. In this way we avoided having duplicate recruiting and the resultant excess of operators. No, we did not use packet to send the lists. I guess we could have, but it was actually just as easy to read them! Again, we kept it

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simple. The amount of traffic on our *dedicated* resource net was low enough to allow this.

During the peak of the operation, Monday through Saturday, we were supplying over 50 operators a day to assist the Red Cross. This did not include those who were assisting the Department of Forestry and the various municipalities. Our Red Cross operators performed a variety of duties. Some worked at the Red Cross headquarters as net controls and other radio functions. Some manned the shelters. Others were shadows for Red Cross officials. Yet another group assisted the Damage Assessment teams as they covered the burned out area, developing the data needed for federal disaster declarations and other aid functions. In most cases the work is not glamorous. Sometimes it gets downright boring, and we amateurs are rarely mentioned in the press. Nonetheless, the Red Cross would find it far more difficult to do its job without us.

The operation went very smoothly for the most part. There was no intentional jamming (though we did have one problem which turned out to be a "dirty" packet station). One rather humorous incident occurred toward the end of the operation when an operator at the Red Cross decided to learn a bit about packet during a slack time. He carefully changed the "mycall" and set up a beacon every 10 minutes to ask for volunteers. Unfortunately no one told him to reset everything when he left! That night someone else switched the radio to the resource net voice frequency, not realizing that the packet was connected to it, and then locked the radio up and went home. It took us a day to figure out what was going on and get someone to unlock the cabinet and turn off the rig.

There were more than 250 amateurs participating in this operation. They came from all around the Bay Area—Sonoma, Marin, San Mateo, Alameda, Contra Costa, Santa Clara, San Joaquin, Sacramento, Napa, and other areas. Many worked three, four or more shifts. It was particularly encouraging to see the large number of KC calls represented in the list of volunteers. This group of relatively

new licensees made up about 25 percent of the total. With a group this large it would be impossible to list everyone here. I would like to add my thanks to all those who helped with recruiting, operations and administration; to those who gave up the use of their repeaters while they were being used to support the various Red Cross activities; and to the many repeater owners who made the equipment available.

It is difficult enough to describe with pictures, and even more so with

just words, the total devastation caused by this fire storm. I have worked fires in the past, wildland fires where meadows and forests were laid barren. This was just not the same. Row after row of charred foundations, dozens of incinerated cars, and pools of melted metal were all that remained. Amateur Radio played a part in helping to mitigate the effects of this disaster. We can be proud that so many amateurs donated their time and responded to the need of their community and neighbors. □

## Mutual aid

(continued from page 3)

The fire, which was also threatening the Claremont Hotel, was blocked by the San Francisco Fire Department mutual aid team who came with portable fire hydrants. Their success made it unnecessary to move the hospital patients.

Amateurs in critical support worked 10 days providing round-the-clock communications for the safety, welfare and care of victims of the fire. They volunteered in sufficient numbers to staff positions necessary to adequately support the fire storm requirements. Amateurs were needed

to provide data communications necessary to feed 2,000 fire fighters, 5,000 victims, and many volunteers scattered all over. Just keeping track of the whereabouts of all these people was a tremendous task.

Try to imagine the devastation you'd feel if in one hour from reading this your home and nearly all the homes as far as you could see were gone, with nothing left but two or three feet deep of rubble, and you were left with no possessions but the clothes on your back—still having to pay off the mortgage and taxes on your house that is now a memory.

There were many unique problems in fighting this 2000 degree fire. Fire fighters were constantly running out of water and having to contend with non-standard fire hose connections. A forest fire in an urban area was overtaxing local fire equipment. Calls did not come soon enough for air support and mutual aid. City planners had not earlier mandated fire resistant roofs, and there were very high winds which changed directions and kept the fire moving up to 60 mph at times. Houses were built on the sides of canyons among fast burning trees with poor ground growth clearance around them; buildings were too close together and access roads were too narrow. Fire departments' radio communications were overloaded, which is believed to have contributed to the death of a fire fighter. The 911 telephone system was overloaded, and people were too slow in responding to the evacuation order. In addition to these insurmountable obstacles, our persistent radio communications jammer (located close to the Oakland/Berkeley border) interfered with Amateur Radio emergency communications. He finally quit when he heard that homeowners close to his area were ready to be evacuated. Apparently it became a different ball game when the danger affected him.

Russell E. Bankson, N6GWL, is an Amateur Emergency Coordinator in Alameda City, California. □

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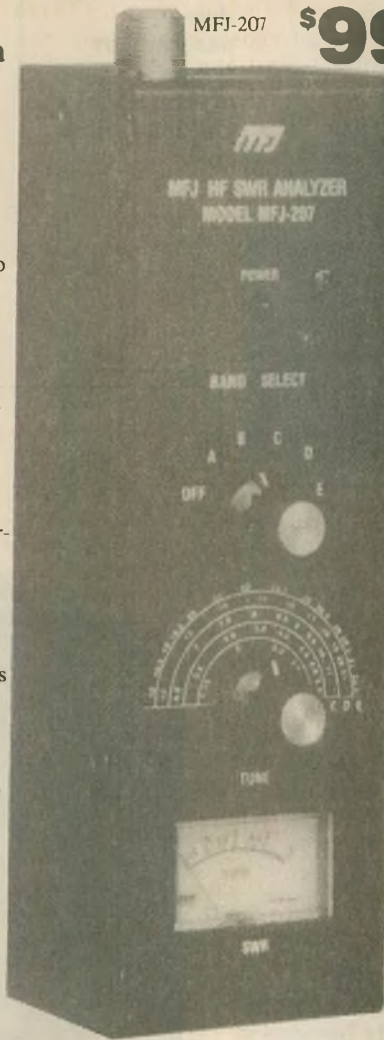
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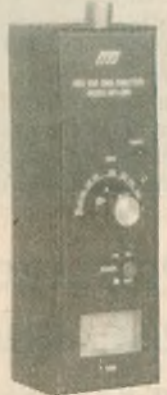
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Jim Rich, N6SZQ, assists damage assessment teams in the aftermath of the Oakland hills fire.

pleting its morning survey of an affluent Oakland hills neighborhood which had suffered only minor damage. The team leader, Danny, was glad to see me. His CB walkie-talkie was virtually useless, and he needed to call in his DA report so that residents could return to the neighborhood. I passed the traffic over the Red Cross 2M simplex net.

We stopped at a supermarket, then grabbed some sandwiches at a Red Cross food truck, and drove off in our CC van to survey a different Oakland hills neighborhood. On our way we passed the ash-covered skeletons of scores of burned-out homes. Police

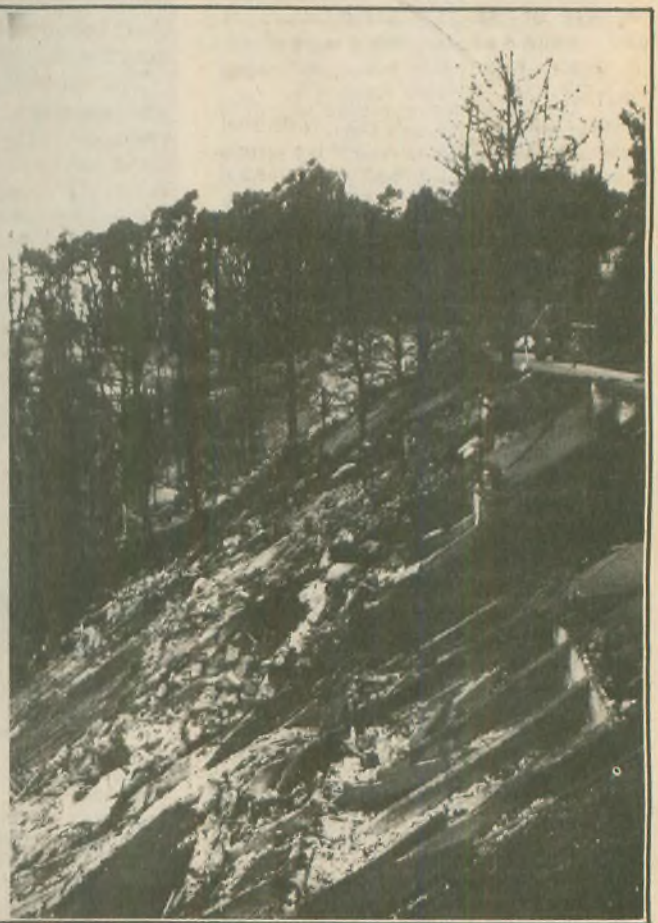
## Damage assessment duty

JIM RICH, N6SZQ

On Tuesday, October 22, I was one of six Sacramento RACES members sent to Oakland to provide emergency radio communications for the Red Cross. We were to support their disaster relief and damage assessment efforts in the wake of the fire storm that devastated the Berkeley and Oakland hills. The fire was almost completely out, so I expected uneventful duty at a Red Cross shelter. Instead, I found myself walking and riding through what looked like a burnt-out war zone. And before the day ended I would be part of a medical emergency that sent two Conservation Corps members to the hospital.

For the first two hours of my shift I was a net controller at Oakland Red Cross headquarters along with two other Sacramento RACES members, Gary Bryant, KB6KZZ, and Beverly Gronlund, KK6UV. We had relieved exhausted Bay Area amateurs and were soon facing the same problems that had plagued them: intermodulation distortion, lost volunteers, missing food, inadvertant interference from other hams, and a repeater that went down periodically. Despite these problems, we maintained the radio nets and passed the traffic.

At 1000 UTC we learned that a Red Cross Damage Assessment (DA) team needed a radio shadow. I had served as a shadow before, so I was dispatched. I grabbed my handie-talkie, a spare battery pack, my magmount antenna and a water bottle, and caught a ride in a Conservation Corps (CC) vehicle that took me to a nine-man DA team. The team was com-



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were carrying a body bag from one home while anxious residents stood in line behind police barricades, waiting to return to their homes, or what was left of them. Low clouds added to the gloomy atmosphere.

I served as both navigator and radio operator as we drove the narrow, winding, steep roads to let off and pick up two-man DA crews. In mid-afternoon I heard a message to all DA teams: Two cases of suspected food poisoning had just been reported involving bologna, cheese and mayonnaise sandwiches from a Red Cross food truck. All DA teams were to report their status.



I told the team members of this. Four had eaten the suspect sandwiches, and two were feeling sick. I informed Red Cross headquarters of this, gave our location, then added that I too had eaten one of those sandwiches and wasn't feeling too well myself.

For the next 45 minutes my HT would be a busy link between our van, the net controller at Red Cross HQ, and medical personnel. As I passed on medical instructions from the Red Cross nurse, I began to feel better. However, two more CC members complained of feeling sick, and the original two started vomiting. I was told an ambulance was on its way but, because of our isolated location, it would take awhile. Danny walked off to look for two missing team members.

Fortunately, an Army National Guard medical team was nearby which included an amateur, SSG Davis. She overheard my traffic and arrived in a crash/rescue vehicle accompanied by Spec 4 Holman. They started to treat the sick team members and used my HT to communicate with a doctor at a hospital. An ambulance finally arrived and took two of the young victims to the hospital to have their stomachs pumped. Then Danny returned with his missing men, I called in the final DA report, and the CC van left for San Francisco. I caught a ride back to Oakland Red Cross HQ.

The afternoon's events demonstrated the value of Amateur Radio in dealing with a medical emergency in an isolated area, without telephone service, where CB radio was ineffective. It also showed the importance of adequate staffing. If an extra amateur operator had not been in the radio room to relieve me, no amateur would have been available to provide effective communications for Danny's crew in the Oakland hills. □



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### CHUCK CLARK, K4ZN

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That may be true in other cases, but what good is an amateur's skill as a CW operator today? Fifty years ago you could tune a receiver almost anywhere in the HF commercial bands and hear press, ship, aircraft and weather transmissions at speeds from 15 to 50 wpm and higher, so that many aspiring operators in those days found suitable signals for code practice whenever they wished, and anyone who could handle traffic competently on CW could find a job. Now you will find very little Morse

outside the amateur CW bands. Is there any market for radiotelegraph operators today?

Yes, there is—in the Maritime Mobile Service. While it is true that merchant ships have many other modes of communication these days, they are still required to carry radiotelegraph stations and licensed operators for two reasons. First, radiotelegraph has for almost a century proved to be a lifesaver in many emergencies at sea. While SSB, satellites, teleprinters, computers, and other high-tech modes have their advantages, the fact remains that the very simplicity of radiotelegraph equipment gives it unsurpassed reliability. You can get through on CW.

But there is another reason. Modern vessels use electronics for purposes other than communication. In the modern wheelhouse you will find loran and radar equipment, navigation com-

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puters, radio compasses, gyro compasses, and intercom systems, all of which are important for safe and economical operation of the ship, and all of which are vulnerable to breakdowns. Then there are lifeboat radios, VHF radios, bridge-to-bridge radios, on-board radios and emergency locator beacons, all needing maintenance. And when you are thousands of miles from the nearest repair facility you are glad that there is someone aboard who can repair them.

At least that has been the reasoning until now. But there is currently a proposal before the FCC to eliminate the requirement of carrying radiotelegraph equipment, replacing it with a "Future Global Maritime Distress and Safety System" (FGMDSS) which would make use of satellites instead of MF and HF radio to provide emergency communications at sea.

Those directly involved, the men and women who live aboard our ships and whose interest in safety is more than merely financial, are asking questions. Is the proposed system as reliable as radiotelegraphy? Shouldn't it be tested before it replaces a system that has worked for so many decades? Life at sea is unique, and landlubbers often only show their ignorance when they try to lecture seafarers about things maritime.

Yet one must face the facts of political life. Ship owners have more clout than the ROU and ship owners pay the bills and are in business for profit, and so the ROU foresees that radio operators are in danger of being out of a job if they are not capable of providing another needed service, maintenance of shipboard electronic equipment. It has developed a program to train operators to service such equipment at sea as competently as it could be done in port. A ship costs money in port but earns money at sea, and so there's hope that owners will see the point.

The US Merchant Marine had for many years been growing smaller, with vessels being retired from service faster than new ones were built. But that trend is now reversed and there is a growing need for more operators, and the Radio Operators Union (ROU) has developed a training program. Jim DeLong, the ROU secretary and treasurer, says amateurs interested in putting their radiotelegraph and other electronic skills to work at a job as Radio Electronics Officer (REO) that pays \$4,000 or more per month are welcome to apply.

To qualify, a candidate must hold a first or second class radiotelegraph license from the FCC, must be in good health, must be a US citizen, and must never have been convicted of a felony. The union's board of trustees will determine the number to be admitted on the basis of anticipated need, and apprentices will be selected on the basis of their experience and previous training, and on their performance on a job-related examination. Special credit is given to those with two years or more experience at sea. There is no discrimination on account of race, creed, age, sex, color, or national origin.

The examination is conducted at the union's training school at Panama City Beach, Florida. Candidates who live more than 100 miles from that location may be examined at a community col-

lege in their area if approved by the union school's director.

The training program includes three steps. First, apprentices follow a course at the Panama City Beach school to become familiarized with the communication and navigation equipment used aboard ships. The length of the course depends on the apprentice's experience in electronics. They serve for six months aboard US ships as assistant radio officers under the supervision of a fully qualified radio-electronics officer until they fulfill the requirements of the Communications Act and of the FCC for the six-month endorsement on their licenses. Finally, they serve for one year aboard ship as sole radio officer, and only then may they claim the title Radio-Electronics Officer.

Candidates will be required to pay their own transportation to and from the Panama City Beach school and will receive only room, board and tuition while in attendance there.

During the six months they serve as assistant radio officers aboard ship, standing watch for eight hours per day, they receive in addition to room and board \$600 per month (no overtime or penalty time pay, and no participation in fringe benefits). During their final year of apprenticeship, they are paid \$1,860 per month plus all the fringe benefits paid to fully qualified radio-electronics officers.

The ROU and the ship owners underwrite the cost of this training program and expect to recover the cost from union dues and from apprentices serving as operators at a salary below that of a fully qualified REO, and so they expect those who begin the course to complete it and then to serve aboard ship.

Anyone interested in applying should send a resume to William Eney, Director, ROU Maritime Electronics Training School, 1415 Moylan Rd., Panama City Beach, FL 32407.

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## Radio Officers

ticket, contact any FCC office to make an appointment for an examination. It is perhaps a bit more difficult than the one for amateur Extra Class: a code test at 20 wpm plain language and 16 wpm "alphabet soup" (random groups of five letters or three letters plus a number or punctuation mark), and a four-element multiple-choice written examination (you must pass all four

elements) on basic law, radiotelephone and radiotelegraph procedures, and electronics theory. If you can pass one additional element and obtain a ship radar endorsement on your license, it might improve your chances of being accepted into the training program.

Life at sea is not for everyone. It's hard on family life, for example, and some people find walking on a rolling deck upsetting to their digestion. But for those who can take it, radio officers say, "It's the best job in the world." □

## Amateur Radio ethics

**JOHN E. GERCKEN, KA9EPO**

*The following is the last of a series of articles examining common operating habits. See if there's room for improvement in your operating procedure. Work to become a more efficient and professional Amateur Radio operator.*

I was looking through the ARRL *Tune in the World* book when I found a section called "The Amateur's Code." I looked at the six headings briefly and wondered if somehow a few of us amateurs have lost sight of our code of ethics. Several things came to mind while reading the six points. I would like to comment on these points.

*The amateur is considerate ... He*

*never knowingly uses the air in such a way as to lessen the pleasure of others.*

All you have to do is listen to any pileup to find out how rude and inconsiderate we Americans are. Do you hear people overseas acting this rude? I haven't so far in my 11 years of Amateur Radio operation. It seems like the American amateurs are the only ones who are prone to such rude and uncouth behaviour as cussing each other out over the air, telling each other to shut up, QSY, QRT, or whatever. Is this what we want future hams to hear?

Recently I listened to a pileup on 20M where a station from South Yemen was operating. I had to check my frequency to make sure I was not on 11M CB. It was the most awful mess I ever heard! We can help remedy the situation by not letting ourselves get caught up in that sort of behavior. See that we keep our procedures clean, and maybe others will hear our example and learn from it.

*The amateur is loyal ... He offers his loyalty, encouragement and support to his fellow radio amateurs, his local club and to the American Radio Relay League, through which Amateur Radio is represented.*

Loyalty is essential to any organized group. If there is no loyalty, the group falls apart. The ARRL is one of the most well organized, powerful groups

of people in Amateur Radio and has done an excellent job of standing up for the rights of amateurs everywhere. Loyalty also plays a big part in the success of our local clubs. Being a member is not enough. We must all pull our share of the weight and get involved whenever the need arises. Do some legwork! Volunteer for some committee work! Share your ideas! The club members do not know what is on your mind unless you tell them. Don't be part of the silent majority who let a handful of people do all the work.

*The amateur is progressive ... He keeps his station abreast of science. It is well built and efficient. His operating practice is above reproach.*

Keeping your station abreast of science, well built, and efficient is somewhat relative to your income, as you well know. We do what we can with what we have. That is why we are amateurs in the first place; we enjoy the challenges we face in doing things with what we have or what we can acquire inexpensively. We enjoy messing around with antennas, switching, and simple projects. One word of caution, however, do not try to be too "cheap." You can end up *spending* more money in order to save money if you are not careful. Sometimes it is cheaper (and less headache) to go out and buy a good gadget than build it yourself.

Now what about keeping one's operating practice above reproach? What can we do to keep our operating practices clean? Plenty! Here are some points to ponder.

1. Do not cause any kind of interference to other amateurs, or to those who live with or around you at any time. If it can be remedied, do so immediately, and if you don't know how, find someone who can.

2. Even though it is no longer required, keep as accurate a log as possible, entering dates and times of test procedures as well as QSOs. Do this in case someone accuses you of interference. You can show them your log as proof of either being on the air at that time or not.

3. Never get angry over the air! If you feel yourself getting irritated and your blood pressure is rising, go QRT and get out of the shack for a while! Punch a pillow or something, but *never* burst out with those choice expletives on the air! You never know who might be listening! Someone might have a potential ham in his shack to demonstrate Amateur Radio to him. Would you like them to hear you chewing out some inconsiderate operator over the air? If you really feel the need to chew someone out, listen for his call sign and look him up in the *Callbook*. Write him a letter of *constructive criticism*. In

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your letter, do not insult his intelligence; maybe he learned from a lid and doesn't know any better.

*The amateur is friendly . . . Slow and patient sending when requested, friendly advice and counsel to the beginner, kindly assistance, cooperation and consideration for the interest of others; these are the marks of the amateur spirit.*

To the best of my knowledge, I have never met a grumpy amateur. Most of the people I meet are friendly, outgoing people who thoroughly enjoy meeting and making new friends both on and off the air. Amateurs have a reputation for being ready and willing to help in time of need.

Slow and patient sending when requested is a must, especially when working a Novice. What was the first Q-signal you used? Why, QRS, of course! How many operators were considerate enough to slow down for you and stay slowed down throughout the QSO? Many of the operators that I worked as a Novice slowly crept upward in speed until they were at their original speed. I finally got wise and said "Pse QRS to this speed for gud cpy."

Consideration for the interests of others encompasses foreign hams as well. What about all those DX stations

that you doggedly call to in hopes of getting them to respond to your call? Think of the tremendous pressure they are under from rude and boisterous American amateurs demanding a response. Let's give them a chance to enjoy their hobby and not make it into a drudgery!

Before you jump in and join the rest of the horde, listen for a while and gather as much information about the DX station as you can, such as his QTH, QSL route, whether he is working split or not, his listening frequency, his name, etc. Then jump in so that when you make your call, you can get the signal report and keep the QSO as short as possible. This will put less burden on the DX operator and free up more time for the rest of the people waiting in the wings. God gave us two ears and only one mouth, so we should listen twice as much as we talk!

What about friendly advice and counsel to the beginner and cooperation? As I have said in previous articles, most Novices don't get any "service after the sale." Yes, we give them instruction and help them get their tickets, and congratulate them on doing a fine job when it is all done, but that is all. From then on, we leave them to "go it alone." Some of them go on to become lids because they lack addi-

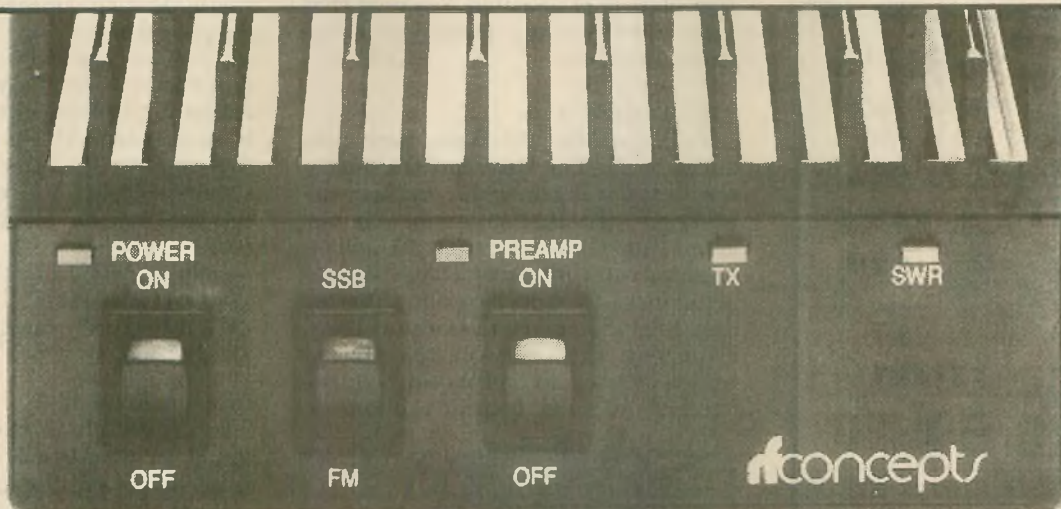
tional counsel on good operating.

*The amateur is balanced . . . Radio is his hobby. He never allows it to interfere with any of the duties he owes to his home, his job, his school, or his community.*

Maintaining proper balance between one's hobby and one's obligations can be tough, but it is possible. Ham radio is a hobby, and we must all treat it as such. Unfortunately, there are some folks that have become ham radio junkies who eat, drink, and sleep ham radio and have sacrificed their marriages, friends, and families. But, on the brighter side, many of us have been blessed with loving spouses who both encourage us and share our joy when we make those rare DX contacts.

*The amateur is patriotic . . . His knowledge and his station are always ready for the service of his country and his community.*

Countless hours of devotion and assistance have been given by amateurs worldwide in the aftermath of catastrophic events that nature has dealt us. Many times we have been the first on the scene to restore communications and render assistance where it is needed. This is our reason for being amateurs . . . to help by using our communication skills in the spirit of the Amateur Service. □



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# Able, Boston . . . Yellow, Zulu

The following is reprinted from Radio Communication, August 1989.

We have all heard the amazing array of phonetics used on the bands . . . but where did they originate?

Over the years we've often wondered how the present-day phonetic alphabet was derived, and indeed an old friend of ours looked into it many years ago with a view to writing something for publication. Unfortunately it never got finished, so imagine our pleasure when the following article fell onto the editorial doormat. R.W. Cornford, G4NGK, explains:

"The name is Jim—John India Mexico—and the location is Dayton—David America Yankee Thomas Oboe Norway." An imaginary contact, but one which is quite typical insofar as it demonstrates the use of phonetics which are still being used years after the introduction of a standard international alphabet. Why do they persist, and where do they originate?

It seems that old alphabets, like old soldiers, never die but only fade away;

they fade so slowly because it appears to be impossible to "unlearn" the first alphabet with which one first becomes reasonably familiar. You will frequently hear youthful-sounding stations carefully using current phonetics and then for some reason getting slightly flustered; they then immediately lapse into phonetics which were last used forty-odd years ago when the operator in question was probably wearing a tin hat!

As far as origins are concerned, it is clear that the problem of ensuring accuracy in verbal communications existed long before the advent of radio and the old joke about the message which started out as "Send reinforcements, we are going to advance" and ended up as "Send three and four-pence—we are going to a dance." That particular one was not only pre-decimalisation but also in all probability pre-1900. However, all joking stopped in 1914 when precision in such things became, quite literally, a matter of life or death, and soon all officers and NCOs of front-line units were familiar with what was sometimes called "signalese." By this was meant phonetics covering eight commonly transposed letters. It has often been stated that this part-alphabet evolved informally but it was, in fact, prepared (except for "Don," added in 1914) as early as 1904 by the professional signallers of the British Army, at that time the Telegraph Battalion of the Royal Engineers.

## Full alphabets

Full phonetic alphabets were produced by the US Army in 1916 and by the Royal Navy in 1917. Rather surprisingly, the British Army did not adopt a full alphabet until 1927, and indeed for some purposes Royal Signals personnel were still using phonetics for only 14 of the 26 letters as late as 1938. Following the entry of the United States into the Second World War, the production of a common phonetic

alphabet for use by all Allied forces was obviously essential. One was duly produced early in 1942 and taken into use in June 1943. However, in March 1956 all NATO forces adopted the alphabet currently in use whose original is discussed later.

Digressing for a moment, one might speculate that it was in the 1914-18 period that troops with little to do devised the comic alphabets of the form "Ay for 'orses, B for mutton," etc., which became quite well-known during the 1920s and 30s; they were extensively featured in theatre and cabaret by Clapham and Dwyer, who were highly popular contemporary entertainers.

In the field of Amateur Radio, it has unfortunately not been possible to establish the date at which guidance in the use of phonetics was first given. However, by the mid-1930s the ARRL was suggesting the use of either the US Army alphabet of 1916 with some variations or that used by Western Union. At some point after World War II the ARRL produced the first, and probably the only, phonetic alphabet intended specifically for use by amateurs; this was still being quoted in books produced for the Amateur Radio market during the 1970s and indeed is still occasionally heard in survivals such as "QR Mary" and "QR Nancy." Enquiries suggest that in the inter-war years, British amateurs used either phonetics picked up during contacts with fellow enthusiasts in the US or those used by the Post Office on international telephone circuits. It has not been possible to date these, although the composition of the B Code strongly suggests 1920-30. Code A may have set the fashion for using names of cities, states and countries as phonetics, and it is interesting to note that a few of these ("Baltimore" and "Washington" especially) are still widely used.

## International use

It seems clear that some early alphabets were constructed on a very unscientific and indeed casual basis; there are a few obviously humorous examples and some words such as "Charlie" are clearly unsuitable. However, when it became necessary in the aftermath of World War II to formulate a phonetic alphabet for international use in the rapidly expanding field of civil aviation, the International Civil Aviation Organization (ICAO) had before it the results of studies made in the USA and considered during a series of meetings in the late 1940s. Even so, the version eventually approved and taken into use in April 1952 was continually scrutinized in operational use, and changes were

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made in respect of six letters. The amended alphabet, which included our old friend "Charlie," came into use in the form in which we know it today in March 1956. It was adopted by all forces in NATO later in the same year and—after twenty years of both civil and military use—was approved for all

branches of radio communications by the big daddy of all the regulatory bodies, the International Telecommunications Union, in Appendix 16 of the 1976 Radio Regulations. The table here shows the various alphabets mentioned in the text; no doubt there are others. □

# Basics of QSLing

TIMOTHY M. GARRITY,  
WD9DZV

Now that you've worked all that great DX what's next? It's a little thing called a QSL card!

First, let's start with the QSL card itself. The recommended QSL card size is 3½ × 5½ inches (90 × 140 mm). Almost all QSL card printers use this size card for their stock, but custom sizes can be printed as well. I wouldn't vary too far if at all from this size or you may run into trouble. (See "When ordering QSLs.") The design of the QSL card is entirely up to you. Make it as plain or fancy as you wish. There are many QSL printers that offer semi-custom QSLs in price ranges from reasonable to ridiculous. Remember, quality does not always go hand in hand with price.

Most hams (especially DX) prefer all the data, such as the call, QSO information, and remarks on one side of the QSL. This makes it easier to fill out the return QSL card because the call and QSO information is on one side; it simply helps to eliminate mistakes. In addition, cards with all the data on one side are usually cheaper to print.

Now that you have your QSL cards printed, let's get down to business. There is a lot of ground to cover! Make sure that you have the log data entered on the QSL correctly, especially the date and time. Remember, *never* use anything except UTC. Listen to WWV for UTC time if you need to set your 24 hour clock, and don't forget that at 0000 UTC the date changes. (If you really want to kill your chances of getting a QSL from that DX station, use local time.) Use only ink pens and stay away from markers unless they are of the permanent type. There is nothing like a little moisture to make a QSL filled in with marker unreadable. Let's face it, anything can happen on the way to the QSL's destination.

We have the QSL cards and all the necessary information filled in on the card: Now what? Well that depends on which route you plan to send the DX QSL. There are three basic and most popular methods to send your DX QSL cards. They are: 1) The ARRL outgoing QSL bureau; 2) The QSL manager; 3) Direct mailing to the DX station. I'll take you through each route and then it will be up to you to find the one that suits your particular DX QSL situation best. I am sure that you will use all three of these methods at one time or another.

	1904	1916	1917	1927		1943			1956	
	British Army	US Army	Royal Navy	British Army	Western Union	Allied Services	ARRL	British A	Telecom B	ICAO
A	ACK	ABLE	APPLES	ACK	ADAMS	ABLE	ADAM	AMSTERDAM	ALFRED	ALFA
B	BEER	BOY	BUTTER	BEER	BOSTON	BAKER	BAKER	BALTIMORE	BENJAMIN	BRAVO
C		CAST	CHARLIE	CHARLIE	CHICAGO	CHARLIE	CHARLIE	CASABLANCA	CHARLES	CHARLIE
D	DON(1914)	DOCK	DUFF	DON	DENVER	DOG	DAVID	DENMARK	DAVID	DELTA
E		EASY	EDWARD	EDWARD	EDWARD	EASY	EDWARD	EDISON	EDWARD	ECHO
F		FOX	FREDDY	FREDDY	FRANK	FOX	FRANK	FLORIDA	FREDERICK	FOXTROT
G		GEORGE	GEORGE	GEORGE	GEORGE	GEORGE	GEORGE	GALLIOLI	GEORGE	GOLF
H		HAVE	HARRY	HARRY	HENRY	HOW	HENRY	HAVANA	HARRY	HOTEL
I		ITEM	INK	INK	IDA	ITEM	IDA	ITALIA	ISAAC	INDIA
J		JIG	JOHNNIE	JOHNNIE	JOHN	JIG	JOHN	JERUSALEM	JACK	JULIETT
K		KING	KING	KING	KING	KING	KING	KILOGRAMME	KING	KILO
L		LOVE	LONDON	LONDON	LINCOLN	LOVE	LEWIS	LIVERPOOL	LONDON	LIMA
M	EMMA	MIKE	MONKEY	MONKEY	MARY	MIKE	MARY	MADAGASCAR	MARY	MIKE
N		NAN	NUTS	NUTS	NEW YORK	NAN	NANCY	NEW YORK	NELLIE	NOVEMBER
O		OPAL	ORANGE	ORANGE	OCEAN	OBOE	OTTO	OSLO	OLIVER	OSCAR
P		PUP	PUDDING	PIP	PETER	PETER	PETER	PARIS	PETER	PAPA
Q		QUACK	QUEENIE	QUEEN	QUEEN	QUEEN	QUEEN	QUEBEC	QUEEN	QUEBEC
R		RUSH	ROBERT	ROBERT	ROBERT	ROGER	ROBERT	ROMA	ROBERT	ROMEO
S	ESSES	SAIL	SUGAR	SUGAR	SUGAR	SUGAR	SUSAN	SANTIAGO	SAMUEL	SIERRA
T	TOC	TARE	TOMMY	TOC	THOMAS	TARE	THOMAS	TRIPOLI	TOMMY	TANGO
U		UNIT	UNCLE	UNCLE	UNION	UNCLE	UNION	UPPSALA	UNCLE	UNIFORM
V		VIC	VINEGAR	VIC	VICTOR	VICTOR	VICTOR	VALENCIA	VICTOR	VICTOR
W		WATCH	WILLIE	WILLIAM	WILLIAM	WILLIAM	WILLIAM	WASHINGTON	WILLIAM	WHISKEY
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## QSLing the right way

Every one of us is familiar, in one way or another, with QSL cards. To get most of the awards offered, you need to submit a required number of QSLs. But, say a mistake is on one of the cards. What then? Well, depending on where the mistake is (e.g. call sign), it may or may not be counted. If it is in the call sign, it will not be acceptable, since they wouldn't know who actually changed it.

How can this be avoided? Easy—if you make a mistake while filling out a card, throw the card away and make a new one. By doing so, you increase the chance of the card making a difference between getting DXCC, WAS, etc. or getting absolutely nothing. Be nice to that person who asked for your card. If you don't, you may get a bad reputation for QSLing, and they, in turn, may not send you the card you need!—Von, N4SMB, SPARKGAP □

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## The ARRL QSL Bureau

Sending your DX QSL card via the bureau is without a doubt the least expensive way to go. When I cover the direct mailing method you will see why. We have the QSL cards all filled out, so the next thing that has to be done is to presort the cards alphabetically by call sign prefix (A2, AP, BV, BY, UA, 8P, etc.). I would suggest that you get the ARRL DX Countries List, which is available from the ARRL (\$1). It has all the DX Countries listed in alphabetical order. Invaluable information such as whether the DX country is served by the bureau or not, ITU and CQ zone numbers, and continent location are included. To help defray the costs of running the outgoing QSL bureau, the ARRL charges a fee of \$2 per pound of QSL cards (one pound is about 150 cards). No, you don't have to wait until you have a pound of QSL cards. A package of 10 cards or less will only cost you \$1.

You also must include your mailing label. Take your QSL cards and place your check or money order and the mailing label on top of the QSL cards. Secure everything with either a string or rubber bands and enclose in a sturdy envelope. Address the package to the ARRL Outgoing QSL Service, 225 Main St., Newington, CT 06111. You can either mail the package at the post office or you can send it via UPS.

The ARRL also allows affiliated club members to "pool" QSL cards from those who are also ARRL members. These cards have to be sorted en masse of course, by prefix as described above and a QSL mailing label enclosed for each ARRL member sending cards. What a great way to go if you have just a few QSLs to send. So get together at one of your club meetings and bring down those cards for the bureau! (Please remember that the outgoing QSL bureau receives thousands upon thousands of QSL cards every month. The people who run the bureaus in all countries are volunteers. The cards are shipped to each country by overseas mail where upon arrival at their bureau they are sorted. Sometimes it takes six months or more to get a DX QSL via the bureau.)

## The QSL manager

Just what is a QSL manager? Well, if anyone should know I should—I just happen to be one! A QSL manager is an Amateur Radio operator who volunteers his services on behalf of one of the rarer DX stations to handle that station's QSL cards. Stateside QSL managers make it fast, simple, and most of all very inexpensive for other US hams to get

that wanted DX QSL card. When you work a DX station and he tells you to "QSL via WD9XYZ," here is what you do. Complete all the necessary data on the QSL card. Enclose your card with an SASE (self-addressed stamped envelope) with the appropriate postage. Or use IRCs (explained later) if the QSL manager happens to be in a foreign country. On the rear flap of the mailing envelope put the DX call, date and time. This will help the QSL manager sort the incoming cards until he receives the DX station's logs. Be patient; on occasion the manager may only receive logs from the DX station once a month. If after a month or two you do not receive your card from the manager, fill out another card with a note explaining that you have not received the DX QSL yet.

## Direct-mailing a QSL

Direct-mailing a QSL card to a DX station is by far the most expensive route to go. The procedure is similar to sending your card to a QSL manager, but there are a few very important differences. Some DX stations will tell you to "QSL direct" or "via the *Callbook* address." This implies that trying to send a QSL to this DX station via the bureau will most likely not net you his card. As I said before, there are countries that are not serviced by a QSL bureau. Some DX stations do not want to be swamped with QSLs from the bureau when only a handful need the card for a new country. For ease of explanation we'll discuss the envelope itself, what goes

on the outside and what goes inside.

The mailing envelope should be a good quality air mail envelope that has the cross hatching marks inside which help to hide the contents. What you put on the outside is almost as important as what goes inside. Remember that in other countries, Amateur Radio does not enjoy the status it has here. In some countries radio amateurs are just barely tolerated by their governments. There have been DXpeditions to some of these countries that have ended with soldiers breaking down doors, radio gear being confiscated and operators being arrested even though the proper permits and licenses were acquired.

In other words, don't put the DX station's call on the outside of the envelope unless it is absolutely necessary. First, you will not cause any unnecessary attention to the DX station and, second, you will help to discourage theft of your return postage. Your return address should be printed on the rear of the mailing envelope. Again, do not include your call in the return address.

The return envelope should be an airmail type and include your name, address, and if you wish you can put the DX station's address as a return address on the rear flap. Unfortunately, some DX QSLs don't conform to the recommended size for cards. Often QSLs from DX stations are metric in size and are larger than the US standard format. You might sometimes find your DX QSL folded to fit the standard airmail envelope. I find this to be about 25 to 35 percent of the



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time based on my own personal experience. The only way to get around this problem is to make an arrangement with a DX station to send you a packet of metric sized airmail envelopes.

There is somewhat of an unwritten law for QSLing direct which states that "If you want a QSL from a DX station, you pay for the return postage." There are three methods usually used to accomplish this. They are the IRC, the "green stamp" (US dollar), and foreign stamps.

IRCs (International Reply Coupons) are obtainable at your local post office for 95¢ each. Another source of IRCs is a QSL manager. He often has extra IRCs that he sells at a discount price and, let's face it, when it comes to spending money, hams are known for thriftiness! Most often two IRCs will be required for return via airmail. The easiest way to determine how many IRCs are required for a particular country is to check the *Callbook*. This information is listed in both the North American and International issues.

"Green stamps," or US one-dollar bills, are also used as return postage. At 95¢ each for IRCs, the green stamp is a less expensive way to go. At most exchange rates, one green stamp is almost always enough to pay for

return airmail postage. Beware, however; in some countries possession of foreign currencies is illegal, so if you have any doubts don't send a green stamp!

Foreign stamps are the least popular method because they are difficult to obtain. At times, a QSL manager will receive foreign stamps because IRCs may not be obtainable for the DX station needing a QSL. DX publications and amateur magazines may also have advertisements from individuals selling foreign postage stamps.

To prepare for mailing take your QSL card and insert it into the return envelope. Next, take the IRCs or green stamp and insert them into the return envelope along with the QSL. Take the flap of the return envelope

and tuck it inside the envelope being sure to cover the return postage and QSL. This will help to obscure the contents of the mailing envelope. Another good idea is to purchase some dark colored tissue paper (black or dark blue are the best) and cut it to fit inside the mailing envelope. This helps to minimize theft of return postage. Most of the postal systems in foreign countries are quite honest, but in some countries the mail is searched for anything of value.

Just a few final tips. Ask the DX station how to QSL him, and don't be afraid to ask if he prefers IRCs or a green stamp. If you're working a DX station in a pileup, listen for a while and the operator will usually give out the QSL information. Good luck and good DX QSLing! □

## When ordering QSLs

### ROBERT SHRADER, W6BNB

There are some things that you should think about when you order your QSL cards. In the old days of Amateur Radio it was popular to solidly plaster the operating room walls with QSL cards. This is still done to some extent, but by far the greater number of cards are filed in a drawer either by area number or by country of origin. This means that to put a new card in its proper place you must finger through the cards that are already stacked in the file area. If the call letters are not printed across the top, when the card is horizontal, it is difficult to determine between what two other cards the new one should be inserted. If your card varies very much from the generally used size of 3½ by 5½ inches it will not be easy to file. I have trimmed down and lost information from many cards, or even dumped them, because they were either too large or too small to fit into my files. I find that odd sizes don't work well in a wall collage either.

What are some other things that a QSL card should have? Of course your name and mailing address must be complete so that foreign amateurs know how to address their cards to you. Since many amateurs are interested in confirming counties worked,

include your county's name. If you are proud of something in which the other amateur might be interested, such as licenses held, type of work you do, radio related national organizations you belong to, or books written, add these on the card somewhere.

What are other things that may be of interest to the other operator? *True RST* reports (not always a 599 for a signal that is actually a 339), band used, type of emission, RF power output at the time, type of antenna used, homebrew or make of transmitter and receiver, and of course date and time. I really enjoy a specific outlining of any homebrew systems. Local time helps the other person to easily evaluate the communication as to whether it was morning, afternoon, evening or night at the other end, but be sure to include the time in UTC as well.

Leave space for at least one line of remarks, although the left half of the reverse side of the card can also be used for this information. The "Pse/Tks QSL" part is important if you are interested in getting a card in return, and it lets the other operator know if he has sent you a card previously.

Always sign your name as you would like to be known on the air at the bottom of your cards. You may be talking to this operator again. I like to start information printing on my card with, "To \_\_\_ of stn \_\_\_ , writing in his or her name and then the station call letters to try to make the QSL a little more friendly and personal. I hope my QSL card will be interesting for the other operator to receive and read before it is filed, perhaps never again to see the light of day.

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April 24, 25, 26, 1992

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• Asst. General Chairman, Dave Grubb, KC8CF

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License Exams: March 23

Appointments will be mailed by April 13

Advance Registration and Banquet:

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## Books donated in Ohio

Lenny Sechust, WS80, and Ken Blasor, WT8F, donation organizers, with Bruce Knox, N8LXS, Lake County ARA president, presented one of the largest ever donations of ARRL books to each of the Lake County public and high school libraries. LCARA is a non-profit organization of over 175 amateurs throughout Lake County. Funds for the donation were raised by their annual electronic flea market and computer fair. (photo courtesy of Vance Roth, KA8YYZ)



## More books donated in Nevada

In commemoration of Amateur Radio Awareness Day, September 7, 1991, Jim Frye, president of the Frontier Amateur Radio Society in Las Vegas, Nevada, donated to the Flamingo branch of the Clark County Library a complete set of ARRL books. Joe Lambert, vice director of the Pacific Division of the ARRL was on hand for the presentation. The books were accepted by Ann Langevin, library administrator. Also attending was Harry Rubinson, a librarian and Amateur Radio operator.

# Lesson in Liberia

THURMAN LAUBHAN, KB6UW

In November of 1990 Gabor Leidenfrost was attracted to my QTH by my antenna farm. He was looking for someone to give him the Novice test. I referred him to Ray Fay, W6YTT, who subsequently administered the test with myself observing. Gabor easily passed the Novice and is now KB7LYL. He was compelled into Amateur Radio when he realized the importance of shortwave communications from his experiences in Africa.

Gabor was born in Liberia in 1962 and came to the US in 1980 to attend college. He returned to Liberia in 1989 with a wife and two children. He was assigned there to help set up a flight program that would service missionaries working in the country.

Liberia at that time was headed toward what was to become a bloody civil war. In December of 1989 a group of rebels calling themselves the National Patriotic Front of Liberia, headed by Charles Taylor, entered Liberia and began a long trek toward the capitol city.

On June 19, 1990, Gabor was making a flight from Maryland county to the

capitol of Monrovia. The flight was never completed. Fuel problems caused him and his companions to put down at River Cess—which was the last town with an airstrip before crossing the rebel-held area on the way to Monrovia. The reports of the rebels' activities and the battles the government fought with them were often incorrect. By June the rebels had made progress toward Monrovia but had not yet taken it. With that in mind Gabor put down at River Cess. The landing went without incident but as he got out of the plane to check the fuel supply he was surrounded by rebels carrying automatic rifles and other weapons. Gabor and his companions were taken into custody and after a series of events were released to a neighboring country eight days later. He said it was a miracle of God that he landed when and where he did. Had he continued on to Monrovia he would have encountered anti-aircraft fire!

While Gabor was in custody of the rebels he was able to use an ICOM transceiver to send word of his safety back to his parents in the States and to his wife. Also, he was taken to Mr. Taylor's headquarters, where he met the leader and was permitted to use his HF rig. It was an HF transceiver built into an aluminum suitcase, and it had



Ray Fay, W6YTT (left), administered the Novice exam to Gabor Leidenfrost, KB7LYL.

an FCC tag on it which read "Fly Away HF Transceiver"! It had a tuner built into the unit and he was using a longwire antenna. With the rig he contacted the Department of State network and spoke to one of their operators in Togo, W. Africa, who

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relayed a message for Gabor to the embassy in Monrovia.

Gabor relates the rest of the story: "Well, needless to say after we got back to the states on October 7, 1990, I began to study for my Novice license. My wife's folks live in Galt, California, and after our return from Africa we stayed with them for a few days. Driv-

ing down the road one day I noticed a beam antenna at a house near where my father-in-law lived. I was almost ready to take the test and decided to drive up to the house and ask whoever lived there where I could take the Novice test. That's how I met KB6UW, Thurman Laubhan, and W6YTT, Ray Fay, and got started in

the exciting hobby of Amateur Radio!"

Since then Gabor has earned his Advance Class call, KG7QP. He serves with the New Tribes Mission in charge of the flight arm mission, the Tribal Air Communication. His next assignment will be in New Guinea as a pilot for 20 to 25 outposts in an area where there are no roads.

## Mayday in the Sea of Cortez

### TOM BARNUM, AA6TP

I have always enjoyed the excitement of listening to shortwave radio. The geography, the topics and the unexpected have combined to peak my interest. When I finally decided to move up from SWL to Amateur Radio, I had a secret desire to be part of that excitement.

Dave Wallace, XE2/WR6H, was a fellow relay on the Chubasco Net, a mobile marine net, which meets on 7.294 each morning. He had been sailing his sloop, *Our Spirit*, in the Sea of Cortez for almost a year. On December 14, 1990, he decided to sail over from San Carlos, Sonora, Mexico to Santa Rosalia, Baja, Mexico, about a 100 mile sail across the Sea of Cortez.

That Friday started out a little cloudy, but other than that, all seemed okay. By the time *Our Spirit* saw the lights of Santa Rosalia, it was dark, raining, and the wind was up to 24 knots.

The little town of Santa Rosalia, like so many towns south of the border, has a somewhat sporadic electrical supply. Wind and rain are a rare mixture in Santa Rosalia and it was too much for the power system. The lights went out, all the lights, including hazard lights, just as *Our Spirit* was setting her course for the small harbor entrance. Dave and his one man crew did their best, but the darkened coastline and a rare early winter storm spelled disaster.

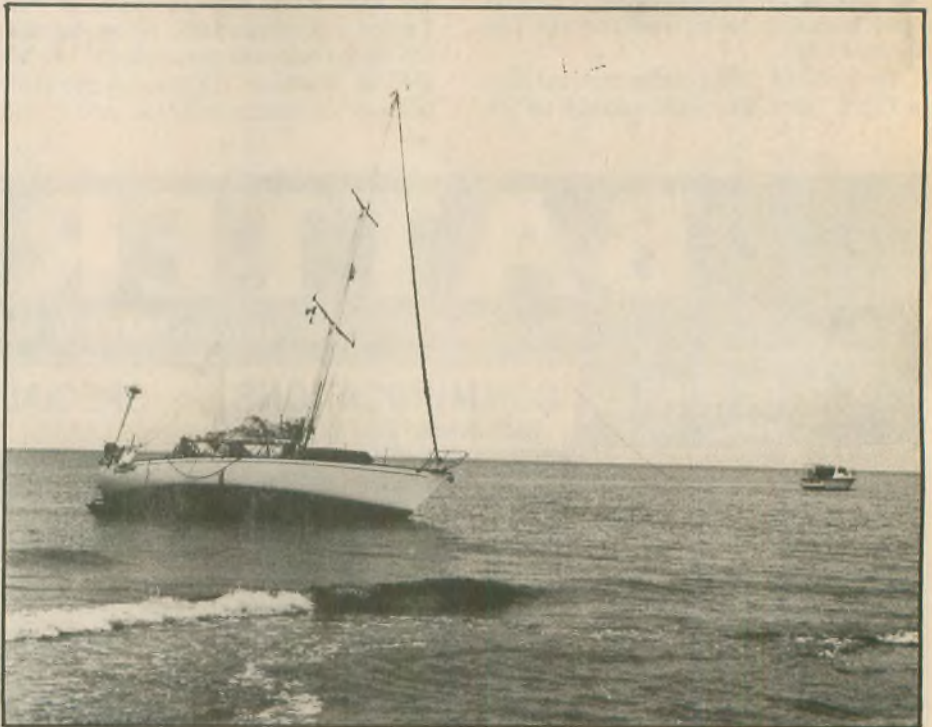
That same evening I sat down to an early dinner, planning an early night. My alarm was set for 3 a.m., when I was going to begin my drive back to Orange County, California from Los Barriles, Mexico, about 1,000 miles. I flicked on my TS-440S, set on 7.294, for a little company; XE2/NS5T, Helen, from El Coyote, Mexico was just ending her QSO. Far back in the noise I could hear a weak call, then I thought I heard "Mayday, Mayday."

It's strange how your mind plays games with the unexpected. My first thought was, "Who's the idiot faking

a Mayday?" Then I heard Helen ask for the Mayday station to come again. This time I recognized Dave's voice and heard him ID with XE2/WR6H. Helen came back and said her copy was weak, she asked if there was anyone on frequency who could copy the Mayday station.

I waited, kind of hoping someone else would come up, then I returned with "XE2/WR6H Dave, this is XE2/AA6TP, how copy?"

Dave returned, "Tom, I copy you fine, Mayday, Mayday, my location is one and a half miles south of Santa



The *SR2A*'s first attempt to tip the *Our Spirit* enough to clear the rocks was unsuccessful.

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The person who succeeds is not the one who holds back, fearing failure, nor the one who never fails . . . but rather the one who moves on in spite of failure.

—The Pitcairn Miscellany



Rosalia, wind 24 knots, I've lost contact with the Santa Rosalia Port Captain."

I came back, "Dave, what is your emergency?"

He replied, "I'm on the beach."

It's incredible how emotions are manifested. I froze, then I raced through the things I should do. My appetite vanished, I couldn't talk without stuttering, I said "over" when I meant "stand by." But I finally told Dave to stand by with Helen, XE2/NS5T, and that I would go to 14.300, the Seafarers Net, and get help. The first voice I heard on 20M was another Chubasco Net friend, Tim Foy, AA6GP. I relayed the situation to Tim and he volunteered to make a phone call to Guaymas, Mexico to get Brent Braganski, XE2/N6OAH, net controller for the Chubasco Net, up on 7.294. Brent was soon assisting.

The Sandia Net was about to start on 7.294 with Cybil Keirns, KA6RXX, as net control. She has a big signal and came aboard to be an important relay for Dave, the US Coast Guard, Long Beach, and other stations that were coming up. The Coast Guard supported with tide tables, and Brent contacted the Mexican Navy and assisted in contacting the Santa Rosalia Port Captain. All through the early evening, Dave was kept company by the many amateurs on 40M.

As the evening wore on, *Our Spirit* began to take on water. Dave and his crew were kept busy trying to keep up with the water and readying anchors and tackle for their attempts to float her free at the next high tide.

At about midnight Don Wiltz, XE2IOU, stateside KA6HFG, picked up the traffic as he was mobile just 30 minutes from the grounded vessel. Don drove to the location, found the *Our Spirit* and kept Dave company on 2M and 7.294 for the rest of the night. I arrived about 5 a.m.

At 6 a.m. the Santa Rosalia Port Captain arrived. He and his crew



Finally the crews of the *SR24* and the *Pireta* combined efforts and successfully pulled the *Our Spirit* free.

aboard *SR24* were tireless in their efforts to assist. Mexican Navy personnel arrived at the sight via 4-wheel drive vehicles. They later used my hand-held, a modified ICOM-2GAT, to contact the fishing boat *Pireta*, 15 km south.

The *Pireta* arrived at 9:30 a.m. Dave had lashed the mast of *Our Spirit* to the *SR24* in the hopes of tipping her off the rocks. With the *SR24* pulling the *Our Spirit* over to port while the *Pireta* pulled her off in the other direction, they were finally successful in freeing the *Our Spirit*.

Was Amateur Radio responsible for

saving the *Our Spirit*? Not entirely. The Santa Rosalia Port Captain, his crew and the crew of the *Pireta* saved the *Our Spirit*. But Amateur Radio certainly played a big part. By the time *Our Spirit* was towed into Santa Rosalia Harbor, over 20 hams had assisted in some way. Some assured Dave that things would work out okay. Others passed along ideas for strategies, how best to deal with the Mexican authorities, and tidal information. And, finally, just knowing that he wasn't alone and that help was at hand—these were the contributions of Amateur Radio. □



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# Operating ragchew nets

BOB SHRADER, W6BNB

Here are a few suggestions on operating non-traffic Amateur Radio CW, SSB or RTTY nets. There are no strict requirements for social nets. They are used to keep members abreast of news about other members or dissemination of, or discussion about, technical information to interested persons. Most nets are formed by members of a club or a group of amateurs with a common interest. There can be several basic types of nets—we might call one of them a "formal" net, the second an "informal" net, and a third type might be called an "unorganized" net.

**Formal nets:** These may operate from a membership list that does not change (usually the first call on the list is the station that has been on the net the longest and the last call is the latest member to have joined). All members keep a copy of the check-in list by calls and names to refer to during each net or to be used if they are assigned as the net control station (NCS). Perhaps five to 15 minutes before net time the NCS starts transmitting information about the upcoming net on the net frequency to assure that it stays clear. At the appointed net time the NCS calls the roll and each member notes those who check in. At the end of the roll call the NCS asks for any late arrivals or new members. If none, the NCS signs the net over to the first listed member who checked in. After transmitting any news or information that should be of interest to the other members, the first member then signs the net over to the second member present, and so on. The NCS is usually the last person on the list to take a turn and either signs over to the first member again, if a second round is desired, or if no answers are received after a call for final comments, the NCS then closes the net.

**Informal nets:** Stations who are going to participate in a net will usually tune up on the frequency a few minutes early, provided it is not in use. Any two stations of the net that happen to work each other at this time can determine who will be the first and second stations on the list, provided one is not a previously assigned NCS. When the assigned NCS does show up, he or she is given the list of members in the order in which they checked into the net. From then on the NCS picks up arriving stations and assigns them each a serial number for that day. Any informal discussions between mem-

bers before the net is called to order often turn out to be the most interesting part of the net! If the desired net frequency is already in use by two or more non-net amateurs, the NCS or another net member should explain to those in communication that a regular net has been using that particular frequency at a specified time. If these stations do not wish to move they should be asked for permission to make an announcement a minute or so prior to net time to notify net members what frequency to use for the day. It's helpful if everyone understands that if the net frequency is busy the closest lower or higher frequency that will cause no interference to on-going QSOs will be used and to look for the net there.

**Unorganized nets:** Usually one member will act as NCS and may or may not assign numbers to each station checking in on the net frequency at or before the specified net time. After checking in with the NCS, anyone wishing to ask a question or offer some information will ask the NCS for permission to transmit. Everyone else listens. Anyone who wishes to respond asks the NCS for permission to transmit and so on. If dead air occurs, anyone can bring up a new subject. This is a particularly useful type of net

for technical subjects. The net closes when all have had their chance to say whatever they wanted to say and have their technical questions answered.

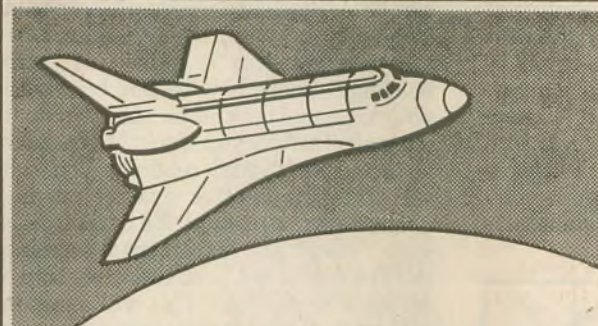
## Tuning up

It's okay to tune up ahead of time on a net frequency if it is not in use, but be sure to sign your call to let others know who is present (unidentified emissions are an FCC no-no!). For an SSB net, you can tune up your transmitter on the net frequency (if you are set to the CW mode) because it will be on zero beat for others on the net frequency and will not interfere with them. But for CW and RTTY always move off a busy frequency a few kilohertz to do your tuning. Tune up with minimum power—then after adjusting to the desired power output, move back the few kHz to the desired frequency. No readjustment of your antenna should be necessary.

## Breaking in

If arriving late for a net, wait until the station that is transmitting starts signing over to the next station and then send one "BK," or say "Break" once. The NCS will hear the interfering signal, as will the next station expected to transmit (he should delay answering to let the NCS handle the

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Tom (W6ORG)  
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breaker). The NCS says "BK K," or "Breaker go ahead." The breaker answers with his call. The NCS assigns the breaker his number, if an informal net, and receives confirmation from the breaker; then he tells the standing-by member to transmit. If a member station wants to ask a sending station a question, a break can be tried. If the sending station hears the break he will stop transmitting to allow the breaker to ask a question or make a comment; it is then turned back to the sending station. The NCS would not be involved here. Always leave a couple of seconds dead air before you start any transmission to allow other stations to break in. Dead airtime is the only time a station can break in on RTTY. Remember, don't be in too much of a hurry to start up when it is turned over to you. All breakers should identify so everyone knows who is breaking.

### Checking out

If a station must suddenly check out of a net, one way is to break the sending station if it has QSK or VOX. The sending station hearing the break says "BK K" or "Breaker go ahead." When the breaker ends his announcement the NCS acknowledges the breaker, advising the breaker that he or she has been removed from the operating list for the day (or will not be called until he or she checks in again) and then tells the transmitting station to continue. If there is no break-in ability at the sending station, probably the best thing for the breaker to do is to try to transmit over the sending station saying "W6XYZ (or whoever) QRT," hoping that other members will hear and pass the word along later. If the check-out station does not require immediate action, the station sending its

"BK" or "break" at the change-over from one station to the other, and the NCS answers the breaker. Again, be sure you leave a second or two between sign-over and start-up of operations, or important breaks will not be heard!

### Identifying

The FCC requires that you identify, or ID, your transmissions 1) at least once every 10 minutes while you are on the air, and 2) at the end of your communication, at which time you must also indicate with whom you have been in communication. It is surprising that there is no requirement to ID the other stations with which you are in communication except at sign-off. However, in net operations, to prevent possible confusion, you must ID the station you are turning it over to and then sign your call. For the good of the net, you ID each time you start transmitting. Although logs of net activities may not be required, it is considered good practice for at least the NCS to keep such a log of stations worked on a net.

### Zero beating

Any time you operate, on nets or in QSOs, you must do your best to stay on the frequency of the other station(s) not only for best copying, but to prevent taking up too much space on the band. There is always some way that any variable-frequency transmitter can be adjusted to a zero-difference in frequency between it and a signal being received; this is known as "zero beating." Learn how to zero beat with your transmitter and be sure you do it with all stations you work. If you have an accurate digital read-out you can set your transmitter exactly on any desired net frequency. Be careful that your receiver incremental tuning (RIT) knob is not inadvertently tuned off its zero position. This will result in incorrect digital indications while you are in the receive mode. In the "good old days" when transmitters drifted a lot, the rule was always to stay zero-beat with the NCS. That way everyone was on one frequency for best reception by the net as a whole. Today it may be better to stay zero-beat with one of the net stations that is known to be able to hold the correct

net frequency. On an RTTY net all stations should try to keep their space frequency within a few Hz of that of the NCS's to make retuning of the RIT for each station unnecessary when in the receiving mode. If another station strays from the proper net frequency, do not follow him with your dial—follow him with your RIT knob. If you follow him with the main dial then you will be off frequency also! (On simple two-person QSOs it may be better to follow a drifting station with your main dial if the other operator does not check his zero beat. That way the two of you at least will be on the same frequency and take up less band space as you drift up or down the band.)

Good nets can be a lot of fun. You can pick up a lot of very interesting information on them. They also help to keep the bands less congested by holding as many as 10 to 50 stations all to a single frequency for the duration of the net. The NCS may always be the same station, or NCS duties may rotate among interested members to provide training for them. NCS operations should be handled only by a station who can hear all of the other member stations, not by someone who always has a high noise level, has a poor receiver, is hard of hearing, has too low a powered transmitter, or has a poor antenna. It is important that the NCS for CW and SSB nets use break in operation (QSK or VOX) so they can hear stations trying to break in. Failure to follow these requirements can create a lot of unnecessary confusion during net operations.

Be sure you let the NCS direct all of the traffic and operations of the net. If you or other stations butt in when the NCS is supposed to be answering, there will be double transmissions as well as loss of time, tempers, and maybe even some members. Keep your transmissions as short as possible and try to put out information that you feel will be interesting to the other members. That's what makes any net worthwhile! □

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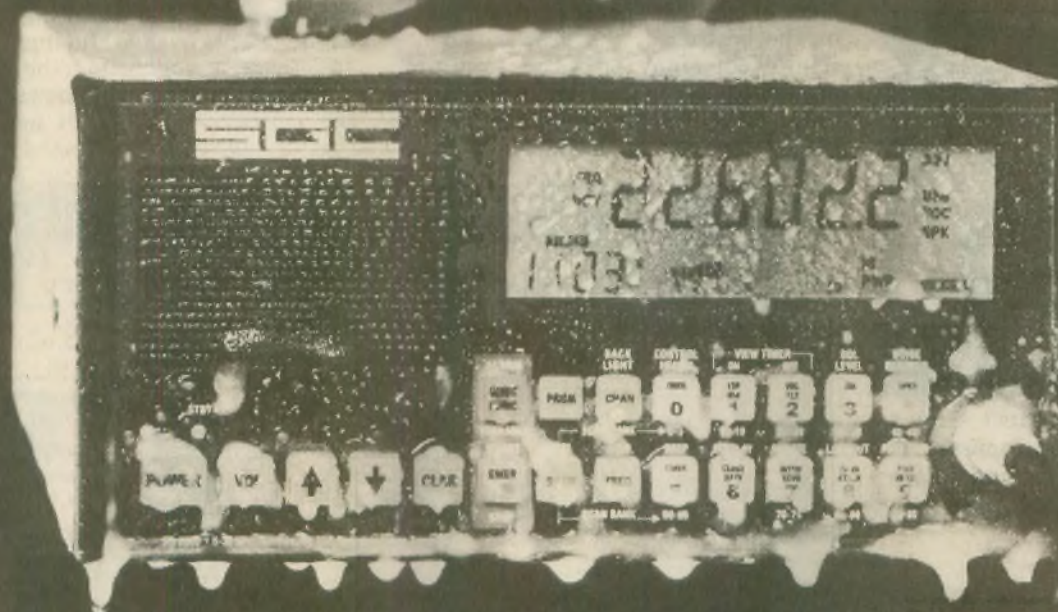
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# Hidden ham hobby

RALPH SHAW, K5CAV

Many articles have appeared in various Amateur Radio publications about concealed antennas. Sometimes, however, there is equal need to have an amateur station that does not intrude on the decor or primary function of a room. Seeing advertisements for entertainment centers prompted me to think how furniture could be employed to conceal Amateur Radio equipment until time for operating takes place. While this type of setup may not be suitable for the very active ham or one with multiple rigs, it should serve as food for thought for those hams who must contend with less than dream-sized ham shacks.

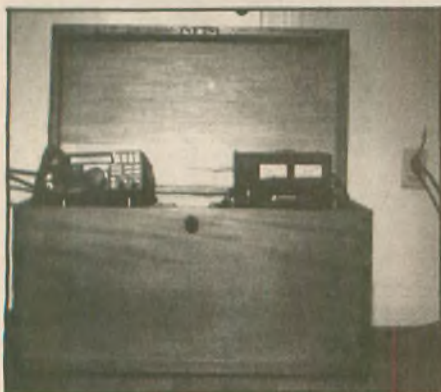
I am interested in antiques and collectibles and have been a ham for over 35 years. The use of various pieces of antique furniture for radio enclosures is shown in the accompanying photographs. Today's compact lightweight rigs can easily fit into small compartments. The heavier



Two meter rig located in compartment of European roll top desk (c. 1850)

weight power supplies can be put into separate drawers, placed near the sides of the drawers for extra support, or the bottom of the drawer can be reinforced. Many pieces of furniture are raised off the floor and power supplies may be slid underneath and placed toward the back where they

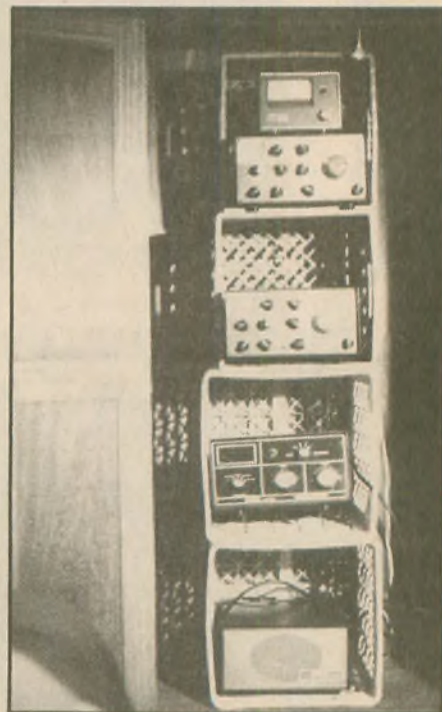
would not be visible. The backs of the drawers will usually have spaces for the routing of connecting cables. Right angle coaxial fittings are of assistance in connecting the antenna to the rig housed in the drawers. With the anticipated influx of new hams that are expected due to the codeless



19th century blanket chest serves as an enclosure; equipment is stored in plastic crates which are in turn used as stands for the equipment.



Late 19th century armoire . . .



. . . opened to reveal the ham station

license, many VHF/UHF rigs will be on the air. These can unobtrusively be tucked away inside all sorts of furniture compartments. □

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If you're late to work and your Los Angeles freeway suddenly pretends to be a parking lot, David Rizzo, WB6WV, is able to come to your rescue. It's his job as "Dr. Roadmap" from 5 to 9 a.m. on KABC-AM's popular morning show, "Ken and Barkley Company."

Dave possesses a remarkable gift: the ability to have memorized practically all surface streets in the vicinity of freeways in the counties of Los Angeles, Orange, San Bernardino, Riverside and Ventura, where more than thirteen million people live! Having driven at least 3,000 miles each month for many years, he's not only travelled over and over these 500 square miles, he's memorized them.

Thus, when the station's Captain Jorge reports from his helicopter a jam-up at a specific spot, he may call Dr. Roadmap for an alternate route from the next off-ramp. Dave can immediately describe to listeners a substitute surface route—which way to turn, how far to go on each street, plus other details leading to a return to the freeway further on, if desired.

"Yes, I know our freeway system like the back of my hands—sometimes my veins look to me like the routes," he laughs. "But I admit I prefer surface streets, seeing different ways of reaching a destination."

That accounts for his having decided to make house calls in his professional work as a podiatrist, choosing to treat only senior citizens who often find it difficult to get around. His patients may live from "Barstow to Palos Verdes, San Fernando to Dana Point," a very wide area of Southern California, perfect for a man who "hates to work within walls and thoroughly loves to drive."

However, rather than talking to the station from his car, he gives on-the-air advice from his home telephone. "Because I must concentrate so quickly to solve the problem, it isn't prac-

tical to be driving at the same time." Once the program is off the air, he jumps in his car and heads for his first patient, checking out conditions and evaluating new routes on surface streets.

Years ago, as his unique knowledge of streets first became known among acquaintances, Dave was so often asked for route advice that he realized there was a true need. He started with a small mail-order business, preparing custom-made routes to specific locations. This led to newspaper articles about him, then invitations to appear on talk shows, answering inquiries from callers.

So he wrote a book, *Freeway Alternates: A Guide to commuting in Los Angeles and Orange Counties*. It has 101 separate maps of various areas with 400 different surface routes clearly spelled out.

Then came the offer from KABC. "Dr. Roadmap" was welcomed by frustrated drivers dodging the increasing number of cars clogging the freeways and streets.

Amateur Radio attracted him since childhood, especially the thought of reaching out to the wide world. His Dad had many tools which he could play with, and he most enjoyed taking radios apart to see what was inside.

"In high school, my electronics teacher was Bill Bedford, WB6OLZ, who became my mentor, fascinating me with the wonders of radio. I earned my Novice in 1967 and upgraded to General and Advanced as rapidly as I could. Forty CW is my favorite. Earlier, I was the typical night owl, scanning the bands for DX, loving the sounds—QRM and all. But this morning assignment has changed my operating hours."

Even though he'd earned his D.P.M. degree at medical school, he'd also



"Dr. Roadmap" David Rizzo, WB6WV

studied TV, doing so well they asked him to teach. Always liking change, he took time to work as a TV cameraman at an Orange County station and even obtained a Real Estate broker's license.

But now he's very satisfied making his far-flung podiatry house calls, although he does manage to work "within walls" one full day each week at a clinic near his new home in Long Beach.

"My goal in life is not to accumulate wealth but to do interesting things." Ballroom dancing is Dave's favorite exercise for his feet (and opera singing for his throat).

How about some advice on the feet for the rest of us? "Two pearls of wisdom, my own opinions of course: Avoid foot surgery unless absolutely necessary, and wear sensible shoes.

"And advice for your driving, no matter where you live: Plan ahead, decide on your route, allow ample time so you can actually enjoy it!" Dr. Rizzo likes freeways but at times, he concedes, "It's a jungle out there!"

He feels surface streets in many cities can be efficient, especially if their traffic signals are timed. "You should be able to establish a cruising speed that allows you to make one green light after another." Cities need all the help they can get. "It's estimated that in our area the average speed of traffic during rush hour is 35 mph and will drop to 17 mph by the year 2000!"

Dave Rizzo is helping, especially after a Sigalert is called warning of a long delay, a system developed years ago by Loyd Sigmon, W6LQ. Now, "Dr. Roadmap" and his "alternate routes" are assisting many anxious drivers to more easily get from here to there. □

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# Product Review

RICHARD ARLAND, K7YHA

Advances in technology never cease to amaze me. Compared to the gear that we, as amateur radio operators had at our disposal only 15 years ago, today's crop of transceivers, scanners and digital radio systems is nothing short of amazing. AOR Communications is one of the most progressive companies currently marketing receiving equipment. While other scanner manufacturers are sitting on their thumbs, AOR is constantly upgrading its product line with the most innovative wideband receivers in the world. This Japanese company imports their products through ACE Communications Monitor Division, 10707 E. 106th St., Fishers, IN 46038; 800/445-7717.

I have reviewed two other AOR scanners over the last two years. Each model has been on the cutting edge of technology for its time. This review will center on the most advanced hand-held scanner on the market today, the AR-1000. This wideband receiver (it's really unfair to call it a "scanner" due to its extremely wide frequency coverage) is an extremely flexible radio that is the answer to any emergency communicator's prayer.

Big deal, you say, another scanner review—so what? Well, for one thing, the AR-1000 is not just another scanner. Frequency coverage starts at 8 MHz (that's right, 8 MHz!) and goes right on up to 600 MHz continuous coverage. Coverage picks up again at 805 MHz and tops out at 1300 MHz. The gap (600 to 805 MHz) is the UHF TV frequencies which, for this receiver's intended purpose, is just as well deleted. For all intents and purposes, the AR-1000 is an ideal, go-anywhere receiver that will find a place in many a briefcase. Its compact size (6-7/8 × 1-3/4 × 2-1/2) and extremely light weight make it ideal for the ham on the go. The extremely wide band frequency coverage makes this receiver very popular with the emergency communications personnel.

The receiver is triple conversion with excellent sensitivity (.35uV NFM, 1uV WFM and 1uV AM), enabling the use of a short "rubber duckie" type antenna on all but the HF portion of the coverage. For HF use, I find that a 10 to 15 ft. piece of wire with an alligator clip to attach to the top of a short collapsible whip antenna (with BNC connector for mating to the AR-1000) is all that is needed to listen for WWV, CHU, and

SW action on the international SW bands. Scan speed is a quick 20 CPS on scan and a blinding 40 CPS in the search mode. The AR-1000 also features a 10dB attenuator switch on the top which is handy if you happen to be in an RF-rich environment.

Frequencies can be entered via the keypad (programming on all AOR scanners is a bit unusual, so be sure to read the instructions carefully to program the memory channels) and a manual tuning knob. The back-lighted LCD display is a pleasant green and is very visible in the dark. The light stays on for about 10 seconds and then extinguishes automatically. Power is provided by four rechargeable batteries (provided). However, John McColman, a good friend and fellow scanner buff, turned me on to using four alkaline AA batteries in place of the rechargeable. Since I was only getting about four hours use from the rechargeable batteries it was a pleasant surprise to find that the AA alkaline batteries gave me up to 20 hours of use without degraded performance. A cigarette lighter charger and AC adapter are also provided with the scanner as are a belt clip, case and earphone. There are selectable search and scan increments and a host of other bells and whistles that make the AR-1000 the hand-held scanner to own.

Add to all this the fact that the AR-1000 has 1,000 memory channels (that's right, I didn't stutter) bank-switched in groups of 100 channels, and you get a feel for the tremendous power available in this receiver. Compared head-to-head with the Bearcat BC200XLT (a 200 channel offering with restricted coverage from Uniden), the AR-1000 wins, hands down. Frequency coverage, memory channels, speed and flexibility notwithstanding, the one area in which the AR-1000 outperforms all other hand-held scanners is dynamic range and adjacent channel rejection. The AR-1000 is exceptionally immune to intermodulation products and performs extremely well in RF rich environments. The 10dB attenuator also helps to restore receiver performance in severe RF intermod situations.

As with any extremely wide band receiver, there always exists a problem with "birdies," or self-generated oscillations coming from within the receiver which can mask some desirable frequencies and stop the scanning sequence. Unfortunately, the Wilkes-Barre, PA frequency of 154-845 MHz happens to be right on top of one of these birdies. My solution to the problem is to program around it by putting the W-B PA frequency in as 154.840 MHz, which gets

around the situation. I have found very few birdies in the ranges that I frequent so, for me, the birdie problem is somewhere between "minor" and "non-existent."

One other anomaly exists with the AR-1000, and that centers on the squelch circuitry. Squelch settings (to maintain a quieted receiver) will vary with frequency range and mode. If you have a mix of frequencies in the memory channels (i.e., public service NFM, Aero AM, SW AM, etc.) the weakest signals may not stop the scanning sequence. The obvious solution here is to make use of the bank-switching option and plug all of your most used public service NFM frequencies into one or two banks, aero AM into another bank, and SW AM into still another. This will then let you choose the frequency range and mode depending upon what type of listening you want to do. Just select that bank(s) and enjoy your receiver.

There has been some information circulating regarding the accuracy of the frequency readout on the AR-1000. Recently a well known hobby publication flatly stated that "all AR1000s read 5 kHz off." I have not found this to be true of my AR-1000. When I plug in a frequency and it comes up on the display, to the best of my determination, it is smack on the button. Maybe some early models had a display anomaly but it does not show up in my review radio.

Well, the AR-1000 sounds like a great little hand-held receiver, but will it stand up to the rigors sustained in an emergency situation? I am here to tell you that my AR-1000 is one rugged little radio. Here's how I found out: I stupidly had the AR-1000 sitting on a ledge overlooking the pool. Someone (I personally think that it was Edsel Murphy) bumped the receiver sending it end-over-end to the ground below. The radio hit the edge of the pool and promptly fell into the shallow end. Racing down the back steps to the pool, I retrieved it from the water, dried it out with my wife's hair dryer (a large industrial strength unit) and put new batteries into the battery well. Upon firing up, no smoke was detected and the unit played perfectly and still does.

Am I satisfied with my AR-1000? You better believe it! The coverage, power, flexibility and ruggedness of this little receiver really makes it a great radio. Priced at \$499 from ACE Communications, it is the hand-held wideband receiver for the serious communicator. Call ACE Communications, for more information on the entire AOR line of receivers, and tell Steve Crum that you read about it in *Worldradio*. □

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## 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 silicone 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.

## 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.

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

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## 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.

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

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quire use of a standardized list even by all of their own members, much less between departments. As any dedicated scanner fan knows, the police continue to have communication problems, partly as a result of nonstandard phonetics.

JOHN STEWART, KF0PQ  
Denver, CO

See "Able, Boston . . . yellow, Zulu" page 20 this issue.

## Planning 6M

I am writing in opposition to the new 6M band plan. I take exception to the idea that geographically small but powerful SCRBBBA should dictate major changes in a band plan to the rest of the country, particularly when their need for change is the result of their unwillingness to abide by the earlier standard band plan.

The earlier band plan had 47 repeater pairs and three recognized simplex channels in 2 MHz of spectrum. With a single, very slight modification (changing 52.525), we could have six simplex channels on 52.49, .51, .53 and their 53 MHz counterparts, displacing *no* repeaters that are in accordance with the former band plan. There could even be a local option, where necessary, to move these simplex channels to the FM sub-band in 51 MHz and allocate the above as three more repeater pairs. If even one locality would (or could) fill up all 50 repeater pairs, then 6M as a band would likely never be in jeopardy again.

The SCRBBBA plan uses an entire MHz to provide only 11 more repeater pairs than the above suggestion. While their plan provides for more simplex channels, I fear that these would go unused. The Minneapolis/Saint Paul metropolitan area is small in comparison to Los Angeles or New York City but is far from a "one horse town." Yet only 52.525 gets *any* regular use, and even this frequency is vacant for days at a time. The other two simplex channels get virtually no use at all. Additional simplex channels would generally go to waste. Also, having additional room available in 51 MHz for simplex is why I feel that six simplex channels in the upper 2 MHz is enough.

SCRBBBA's success in getting the FCC to make the additional repeater subband *available* should not require this upheaval. While I am not certain if FCC is requiring that 51 MHz be used for FM or repeaters exclusively, I do not believe this to be the case.

While the WWARA proposal is technically better than that of SCRBBBA's, even their plan requires costly changes to existing repeaters. We've got to face the fact that 6M use is faltering and that to saddle repeater owners with high modification costs could be a disaster to the national repeater population.

Finally, the contention that 6M repeater splits can be easily changed to be compatible with a new band plan is blatantly false. From a repeater standpoint, the SCRBBBA 500 kHz split cannot be accomplished in an on-site system except with a *very* costly duplexer. Even my \$1,000 Wacom 609 would be on the very edge of acceptable isolation. From the user standpoint, not all radios are capable of being changed from the standard 1 MHz split. One such unit is the Azden PCS-4500. Changing the split would make these radios useless except for simplex operation.

In summary, because the new band plan serves only one geographically small area of our country, and because such changes would have a far reaching negative impact on both user and repeater population of 6M FM, I strongly urge that the decision be reversed regarding the alteration of the repeater subband.

DOUGLES P. NOYES, N0BID  
Minnetonka, MN

## Know what to send

John Gercken has a fine article, "Are you a lid—on CW?" in the November issue. A quick scan across the bands will reveal how much his article is needed. In mid-article he suggests, rightly so, that a list of phrases can help to know what to send. I'd like to comment on his examples.

The first example is "UR RST IS." I suggest that UR and IS be omitted. Sending RST 599 (or whatever numbers) tells the whole story and will be fully understood. Similarly, in the second example, "MY ANT IS A DIPOLE," MY can be omitted. Context indicates it's my antenna.

In the third example, the Q-signal QTH is misused. QTH means "my location is," not just "location." therefore the example "MY QTH IS \_\_\_\_" really says "My my location is \_\_\_\_."

My comments on the first two examples aren't meant to say that the examples are wrong. Some hams might prefer to use longer sentences

## "Standard" phonetics

I wholeheartedly agree with KA9EPO's article in the December issue about using standard phonetics in ham communications. (See my sidebar on page 46 of the October 1991 issue of *QST*.) I must, however, respond to one base canard that certain nonstandard phonetics are "military."

While I believe it is true that the US military was the original source of the "Dog Easy" phonetics set, they abandoned it a *long* time ago. I was taught the International Telecommunication Union (ITU) list, which is the current standard, by the Air Force when I was in the Civil Air Patrol in 1962. In the intervening 29 years (including 23 years on active duty with the US Army), I have never used anything else. The US armed forces teach their operators the ITU list and that's what's used—nothing else is ever heard on official military nets. The military doesn't have everything figured out, but those who might receive a load of napalm in their laps in the event of a misunderstanding rather than losing a rare DX contact have long accepted the value of standard communications procedures. So, please don't call them "military" phonetics.

By the way, as late as 1959 the ARRL was publishing a recommended phonetics list based primarily on American first names (the "Henry Ida" list). While I suspect the US armed forces were already using the ITU list by that time, the Henry Ida list lives on in this country, albeit in a modified form, in its continued use by police departments. Unfortunately, most police departments do not re-

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as if they were conversing orally. I suggest instead that brevity in the routine, early part of a QSO leaves more time for other topics and to get better acquainted.

I look forward to the rest of the articles in John's series and hope they help to reduce the number of lids on the air. (I also hope he comments on the frequently heard redundancy, "Best of 73s.")

**PETE PETERSEN, WY7Z**  
Bellevue, WA

## Refugee

Since the civil war started in 1989, there is still much activity and turmoil in the country of Liberia. The war is tribalistic in all respects, but Amateur Radio operators have been dragged into it by suspicion and ignorance.

Hams like myself are accused by the government of passing strategic information to the visiting fighting force. At the same time, hams are accused by the visiting fighting force of passing information and messages to the government regarding their position, strength and strategy.

There was a period during this time in which I was caught away from home, and when I was able to return I found my family gone. Our home had been looted—everything we'd worked for and owned in the last 35 years destroyed—including my radio shack which may have been worth \$20,000. I would not see Martha or my seven-year-old daughter, Crystal-Willietta (nicknamed CW) for some time.

Nearly a year later my family and I reunited in Freetown, Sierra Leone, through the help of a friend, 9L1FC, who graciously let me use his gear to contact my cousin in England. Since then we have managed to come to the US on visiting visas, but in all honesty we are refugees. My purpose here is to appeal for help: My main interest is to get back on the air and meet with my old friends once more. If anyone can spare an extra rig, I will gladly accept it with a big THANK YOU.

Born in 1956, I am a civil engineer and have been an amateur since July of 1985. I am licensed with the calls EL2BG and 9LIHR. I am a life member of the Liberia Radio Amateur Association and a member of the Sierra Leone Amateur Radio Society. I recently gained membership into the Contra Costa Communications Club of El Sobrante, California, and the East Bay Amateur Radio Club of El Cerrito, California. I have also been a member of the YL SSBer system. I have had tens of thousands of contacts all over the world and currently have over 200 countries confirmed. Amateur Radio has been a real blessing for me and for my family, and I have not found anything that will

deter my interest in amateur activities worldwide. Please contact me at 1846 8th Ave., Apt. 29, Oakland, CA 94606; 510/763-6840.

**RICHMOND HARDING, EL2BG**  
Oakland, CA

## Warning! This may be controversial

Some amateurs believe controversial topics should be taboo in newsletters, club meetings, and on the air. For that matter, some people think controversy should be banned from the public media. Just who decides what is controversial? Is it only the viewpoints with which we don't happen to agree? Few issues are pure black and white—the future of Amateur Radio certainly is not. I believe that the better informed we are, the greater our chances for limiting unwanted future changes to our hobby.

Amateur Radio lost the 220-222 MHz band on August 24. Locally, the most noticeable impact has been the relocation of packet BBS links. In metropolitan areas, like Los Angeles, the effect is more apparent to some—220 MHz repeaters have been shut down. Even so, the average ham has probably observed absolutely *no change*. What's done is done—why discuss it further? Simply because, we can be certain this is not the last conflict over spectrum space, HR-73 notwithstanding.

We can't afford to continue ignoring the bigger picture. Viewing events simply as *us* versus *them*, is a naive response in this era of technological and political sophistication. We need to be informed.

On May 24, the FCC announced it would accept no more applications for land mobile radio service licenses in the 220-222 MHz band. Over 50,000 applications were received prior to the cutoff. The FCC says this represents at least a half year of additional workload for the entire licensing division. This is dramatic proof of the ever growing demands of business and industrial organizations for new radio resources. With the bywords of the nineties being

competiveness and productivity, those needs cannot be dismissed. In the land mobile services, a license normally covers at least one base station and multiple mobile units. If each of the new applications represents just a single base and three mobiles (the proposed UPS system is much larger) we are talking about 200,000 transceivers. If these units sell for a mere \$500 each, this represents an immediate \$100 million market. That doesn't include antennas, accessories, towers, and related service costs. In the first year this tiny sliver of spectrum is worth more than \$50 million per MHz, just in terms of new radio equipment. There are other measureable criteria for defining the value of this space. Radio communications will make these companies more efficient, more productive, and more profitable. They are tax-paying enterprises which provide jobs. It is doubtful that the entire US Amateur Radio equipment market has ever approached \$100 million in a single year. Let's place this recent reallocation in perspective; what we are really talking about is the inconvenience of displacement for an elite group of hobbyists.

Just how defensible is the principal argument for preserving Amateur Radio spectrum? We are a hobby which makes no profit from the space we occupy. What, then, are the measurable benefits of our presence? It certainly isn't ragchewing, DXing, brasspounding, repeaters, roundtables, packeteering or QSO parties, although these are some of the reasons we are hams. Every privilege carries with it implicit obligations. Certainly, our position (please turn to page 52)

### ESTABLISH A HAM TESTING CENTER IN YOUR AREA

As of 1984, all ham radio license testing is handled by the amateur radio community itself. Teams of three Extra Class volunteer examiners (VE's) can now conduct all ham license upgrade examinations.

W5YI-VEC, the initial national VE Coordinator approved by the FCC, oversees the largest alternative (to the ARRL) testing program in the U.S. You can be a part of it by following the simple testing instructions provided.

Administering Technician through Extra Class examinations is no harder than administering Novice examinations — which VE's have done for decades. We offer... fastest VE accreditation, complete instructions, immediate testing... with testing fees (expense reimbursement) shared with the VE team.

Send an SASE today for a VE application if you are an Extra Class amateur and serious about conducting periodic amateur radio examination sessions in your area so that others may upgrade.



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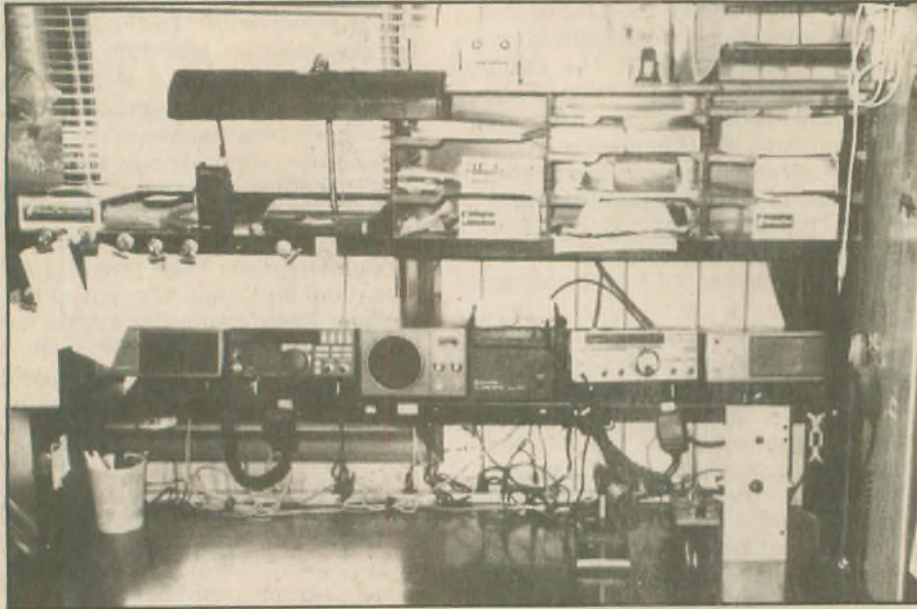


# STATION APPEARANCE

## Mike Arnold, W3YDF

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 month's winner is Mike Arnold, W3YDF, of Cheswick, PA. His equipment includes a Yaesu 747 for 160, 80 and 40M; a Yaesu 757 for 10, 15 and 20M; and a Kenwood for 2M. Note how the equipment wires are neatly tucked into individual rolls.

## An Amateur Radio Tower

Why do people get upset when one puts up a radio tower?

A few things in its favor are . . .

- It doesn't
- Squeal its brakes
- Screech its tires
- Blow its horn
- Slam doors in the middle of the night
- Shine headlights in your bedroom window
- Nor does it backfire . . .

Drop leaves that you have to clean up

Grow branches over your house  
Drop fruit or nuts which can clog your downspouts

Block your view like a tree or building

Grow roots that damage your walk or driveway

Nor do its roots plug your drains . . .

Bite you, bark or meow

Leave deposits on your property

Dig up your garden

Scratch on your doors

Widdle on your trees

Nor does it dig up and scatter your garbage . . .

Have boisterous parties

Or play loud music

Or have loud swimming parties through the night

It doesn't ring your phone accidentally

Nor does it ride bikes across your lawn.

It does

Just stand quietly and has nothing to say.

—de VE7BJ via K9EEH, Sterling Rock Falls ARC

## 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!

W.J. McClellan, KA0ULY, of Alexandria, MN, is this month's winner.

While attending one of my company's sales meetings, I found out how small a world we amateurs live in.

A fellow salesman tossed a QSL card that he had received from me on the table. Not unusual, except that the postage was one cent and it was postmarked December 12, 1940. □

—de VE7BJ via K9EEH, Sterling Rock Falls ARC □

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# SPECIAL EVENTS

## Festival of Lights

The Kimberling ARC will operate station NQ0G on January 11 and 12, in conjunction with the Festival of Lights of the Ozarks.

Operation will be on phone in the General portions of 15, 20 and 40M bands (+.30), 28.330 MHz, and CW on 15, 20 and 40M (+.30) plus Novice portions of 15 and 40M. Hours of operation will be from 1400 to 2000Z.

For a certificate send an SASE to The Mayor, Kimberling City, MO 65686. □

## Fire Department Anniversary

The Binghamton ARA will operate W20W on January 26 through February 1 to celebrate the 100th anniversary of the Johnson City Fire Department.

Operation will be in the lower 50 kHz of the

General 80 to 15M subbands and Novice portion of 10M. RTTY/AMTOR operation will be on 40, 20, 15 and 10M digital.

For a QSL, send QSL and #10 SASE to Capt. Bob Blakeslee, N2IHQ, 1½ Macomber Ave., Binghamton, NY 13901. □

## Space Shuttle Commemoration

Challenger Junior High School's Technology Club will operate station KI6YG on January 28 to commemorate the sixth anniversary of the Challenger Space Shuttle tragedy.

Operation will be in the Novice phone portion of the 10M subband between 1500 and 2400Z.

For a special commemorative QSL card, send QSL and SASE to Challenger JHS, 10810 Parkdale Ave., San Diego, CA 92126. □

==Happy New Year!==

## AWARDS

### The Bald Eagle Award

The Bald Eagle Award was established by Martin Walton, KD0AE, on August 1, 1990, as a fun award for working KD0AE from his mobile, home or portable station from 20 states. Washington, DC counts as a state for this award. Any contacts from 1978 will be credited.

A certificate will be issued upon receipt of log abstract of at least 20 states in addition to one "green stamp" to cover the cost of certificate and postage. Due to availability of certificates, there will be a total of 80 awards issued. A Golden Eagle sticker will be available to those operating KD0AE in all states and Washington, DC.

So far, Sam Riddle, Jr., WD4FZO, and Mary Mathency, KB6CLL, have both worked KD0AE in 49 states and Washington, DC, thus qualifying as #001 and #002 Golden Eagles of the Bald Eagle Award. In addition, Dieter Rauch, VK2DOC, was the first DX qualifier for 20 states. A total of 18 awards have been issued.

When traveling, KD0AE monitors 14.332 MHz at 1300Z for an hour or so

and 14.215 MHz after 1500Z until 2200Z when he shifts to 14.222. All contacts will be SSB. □

### Anguilla Award

The Anguilla DX Association has announced the availability of a new DX award for contacts with the island of Anguilla (VP2E) in the British West Indies. There are no date restrictions on contacts for the award unless otherwise specified in the rules. Applicants must work six VP2E stations or achieve 30 points as follows: EME, 15 points; 6M, 15 points; OSCAR, 10 points; QSO with VP2EA since Jan. 1, 1990 (previous QSOs count one point), 10 points; QSO with VP2EQ, 10 points; QSO with any VP2E station, three points.

Certificates may be endorsed for 6M, DATA, OSCAR and EME, all SSB, all CW, all RTTY or a combination of the above. SWL okay. *Note: Contacts with revoked license VP2EZ do not count toward this award. QSOs with previous holders of that call issued from 1969 through 1984 remain valid for points.*

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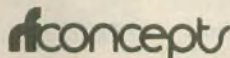
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# DX WORLD

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## Activities Calendar

Refer to your favorite contest section in *QST* or *CQ* for details on upcoming DX contest activities.

## W100N

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

- 413) James Nye, K6GCF; Oct. 17, 1991.
- 414) William Fortuner, WR2R; Oct. 17, 1991.
- 415) Barry Stroeh, VE3ZD; Oct. 17, 1991.

With the recent changes in the Soviet Union we are now going to accept Estonia, Latvia and Lithuania as separate nations. As the United States never officially recognized the annexation in 1940 we will accept them from the beginning. They will also be accepted for the DXathon.

Many DXers remember Don Wallace, W6AM, in his younger years. Here he is at his Minneapolis operating position way back in 1923.

This man was the biggest gun of all times. The late Don Wallace, W6AM, was better known for his rhombic farm at Rolling Hills, California. As described in Jan Perkin's book, *Don C. Wallace, W6AM—Amateur Radio's Pioneer*, he had not one rhombic, but many strung between 60 telephone poles from 80 to 100 feet high. One of these gigantic antennas was 1,550 feet long. On his 120-acre ranch (formerly the Press Wireless receiving station) the antennas covered 32 possible directions. The combined total of the antennas consisted of 45 miles of #8 AWG copperweld. The photo shown here is included in the book we have discussed in the past two issues.

## San Felix (CE0X)

John, XQ0X, is active from San



Don Wallace, W6AM, was the biggest gun of all.

Felix and has been reported on RTTY near 14.082 MHz around 0230 UTC. According to *The Long Island DX Bulletin* he will be there through March 1992.

## Clipperton Island (FO)

*Inside DX* reports that there is a possible DXpedition to Clipperton Island this March with a possible call sign of FO0CI. Several years have passed since the last DXpedition there. The island ranks 27th on *The DX Bulletin* Most Wanted list.

## Navassa Island (KP1)

There will be a DXpedition to

Navassa Island January 17 through 23. *QRZ DX* reports that the DXpedition team will include Randy, N0TG; Murray, WA4DAN; Bob, KW2P; and Larry, K5MK. Activity will be on all bands 10 through 160M, including the WARC bands. In addition to the normal CW and SSB modes, RTTY is being considered.

A beam heading to Navassa Island from your location (both short and longpaths), will be prepared for a donation of \$5. The donation will help pay for the expensive boat transportation costs. Send your requests to Randy Rowe, N0TG, 2120 Reverchon Drive, Arlington, TX 76017.

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### “Where Do We Go Next?”



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Following a one-year stint in the United States, Martti Laine is introducing his first work in the field of DX literature. Tentatively entitled “Where Do We Go Next?”, this new publication comes in response to public demand for a presentation in book form of the author's spectacular DXploits over the past quarter-century.

Running to almost 300 pages, the book is richly illustrated with pictures from the author's personal archives and it tells you the story of what it is like to be a super-DXer, why anyone should want to become one and how a globetrotting DXer finds life in moments of triumph and everyday toil. Everything told the way only OH2BH can relate it to the amateur fraternity.

Read all about how these DX countries were born and embark on an armchair trip for an all-

time first or major DXpedition to exclusive places such as *Annobon Island, Western Sahara, Market Reef, Southern Sudan, Revillagigedo* and *M-V Island* — the island that brought East and West together for their first-ever joint DX operation.

Sense the heat and excitement of being at the production end of that pileup that you once worked for a new one. Go to *Jarvis Island* and *Conway Reef* with today's prominent DXers and examine the profile of “a complete DXpeditioner” as Martti depicts the people with whom he was traveling to all those rare spots.

Maybe the author is also able to pinpoint the real causes of malicious interference always experienced on the DXpedition frequencies as was the case with the 3Y5X operation, and much more. “Where Do We Go Next?” is a must on the bookshelf of every deserving DXer and anyone who would like to become one.

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## Bangladesh (S2)

The *DX Bulletin* reports that two complete stations for Saif, SA1A, and Nizam, S21B, have been shipped to Bangladesh, courtesy of the INDEXA, NCDXF, and Eric Biock, WZ6C. Eric will help set up the stations and help them through the pileups. They should be on the air about the time you read this. The *DX Bulletin* also claims that the calls S21ZA and S21ZB were never issued to anyone. These were the calls that were issued to Jim and Kirsti Smith, VK9NS and VK9NL, according to earlier reports in the DX newsletters.

## SEYCHELLES (S79)

Very active from the Seychelles recently was Kurt, S79MX, who was reported on many different bands. Unfortunately, he will have left by the time you read this.

Other activity reported from the Seychelles included the following on 15M CW, SSB and RTTY:

S79CW	21.024 MHz	2000 UTC
S79KMB	21.313 MHz	1815 UTC
S79PDL	21.085 MHz	1900 UTC

S79CW and S79KMB were also reported on 20M, 14.006 MHz at 1800 UTC, and 14.190 MHz at 0400 UTC, respectively.

## Western Sahara (S01)

From Western Sahara S0RASD shows occasionally on 10M. Try looking for this one between 28.490 and 28.500 MHz from 1600 UTC.

S01A has also been reported and has been found near 14.187 MHz around 2200 UTC, 21.087 MHz on RTTY around 2345 UTC and 28.513 MHz after 1100 UTC. Special prefixes, S02UN and S03UN, were also reported, but we are unfamiliar with the significance.

## Las Aves Islands (YV5)

During the early part of November there was a station signing YX5LA that claimed to be operating from Las Aves Islands. We are sure this may have confused many DXers and we even had one local DXer call us on the telephone to inquire about it. The sad news is that Las Aves Islands is not the Aves Island (YV0) on the DXCC Countries List. Las Aves Islands lie off the coast of Venezuela and is part of South America, while Aves Island is in North America. For DXCC purposes YX5LA counts as Venezuela. However, the good news is that it counts for IOTA and a brand new one for the island chasers.

## UK Bases on Cyprus (ZC4)

The *DX Bulletin* reports that ZC4DG can be found on 3.795 MHz or 3.505 MHz daily between 1300 and 1400 looking for West Coast stations

via longpath. This station was also reported on 28.595 MHz at 1500 UTC in mid-October, plus the WARC bands near 24.891 MHz at 1600 UTC. Two other calls were reported: ZC4AB on RTTY near 21.084 MHz at 2300 UTC, and ZC4KS on 14.243 MHz at 1645 UTC.

## Cyprus (5B)

Other than the UK bases on Cyprus, the following calls were reported:

5B4AAL	14.216 MHz	0330 UTC
5B4ADA	3.793 MHz	2345 UTC
5B4DA	14.004 MHz	0100 UTC
5B4JE	18.154 MHz	2015 UTC
5B4MF	3.799 MHz	0100 UTC
5B4/DL4DCF	14.030 MHz	2245 UTC
5B4/YU3PR	21.007 MHz	1500 UTC

## Kuwait (9K2)

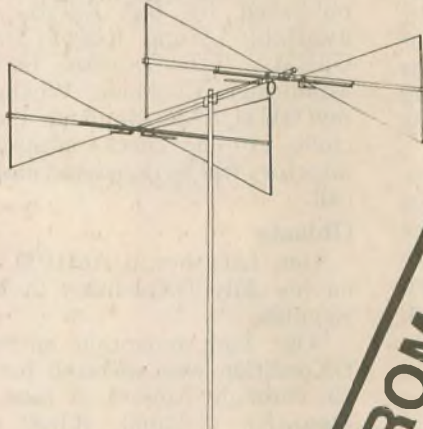
*Inside DX* reports that Bob, 9K2ZZ, is active on most bands using CW, SSB and RTTY. He hopes to have antennas installed very shortly for 80 and 160M as well as activity through Oscar 13. He should be in Kuwait for the next three to four years. He is the same operator who signed A2CCY/A22CY about 20 years ago.

Bob has been reported several times on 10M after 1400 UTC, and on or near 28.003, 28.490 and 28.500 MHz. For RTTY try 21.086 MHz around 1500 UTC.

There have been several other calls reported from Kuwait. The following have been reported on 20M:

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 9K2LX 14.176 MHz 2315 UTC  
 9K2MU 14.006 MHz 0000 UTC  
 9K2TC 14.187 MHz 0330 UTC

**Other calls reported include:**

9K2FC 18.134 MHz 2030 UTC  
 9K2JG 28.427 MHz 1130 UTC  
 9K2MX 28.494 MHz 1400 UTC  
 9K2SH 21.296 MHz 2300 UTC

On 40 and 80M 9K2LX has also been reported working the Europeans, but not at a time favorable for North America. Perhaps this winter.

**IOTA**

IOTA chasers were treated to many new islands during October and November. IK1EDC came over and activated no less than seven different Mexican island groups, which included Isla San Martin (NA-162) the weekend of October 19 and 20; Isla Smith (NA-163) for a brief period on October 21; Isla Natividad (NA-164); Isla San Marcos (NA-165); Isla San Pedro Nolasco (NA-166), and Isla Patos (NA-167). All of the islands were in the Sea of Cortez, except for Isla San Martin and Isla Natividad off the coast of Baja California. Unfortunately, there is a separate QSL route for each of the islands (the last two are the same route) and will be very confusing if you didn't know what island he was operating from.

This brings up an interesting question. How is it that a European comes all the way over here to activate those Mexican islands when there are several stateside DXers who go down across the border to operate in the contests—but not from islands?

The following is a selection of what has been on the bands during October and November.

AS-065 Kolyuchin Island 4K4POL  
 21.014 MHz 0230 UTC  
 AS-070 Gusmp Island UA0QBO/A  
 14.007 MHz 0400 UTC  
 AS-083 Kara Sea Coast East 4K4/UA6WCG  
 28.028 MHz 0745 UTC  
 NA-034 Anna Maria Island KM4RX  
 21.260 MHz 1715 UTC  
 NA-041 Wrangell Island AL7NI  
 14.260 MHz 0445 UTC  
 NA-061 Kaien Island VE7GKH  
 14.260 MHz 0115 UTC  
 NA-138 Florida East group KZ4C  
 21.261 MHz 1630 UTC  
 NA-141 Hutchinson Island KZ4C  
 21.260 MHz 1730 UTC

NA-143 Galveston Island K5EWJ  
 21.262 MHz 1600 UTC  
 NA-161 Pleasant Island KS7G/KL7  
 14.260 MHz 1730 UTC  
 OC-121 Mamanuca group 3D2CC  
 21.260 MHz 1845 UTC  
 SA-038 Atol das Rocas ZY0RW  
 14.015 MHz 0600 UTC  
 SA-051 Isla Las Aves YX5LA  
 14.025 MHz 2330 UTC

Ralph Hirsch, K1RH, has made plans to operate from Dauphin Island, Alabama (NA-082), around December 6. He will be signing with his call appended with 1D3.

Recently, we came across Sigma, WB4SRH, who was mobile on Bogue Bank Island, North Carolina (NA-112). Sigma's home QTH is Ocracoke Island (NA-067). Here is one who can help you with the two North Carolina island groups.

We have had some inquiries regarding the IOTA program and checklists. The object is to work as many different island groups as possible around the world. All information regarding the IOTA program and the list of islands, including the reference numbers, is in *Islands on the Air*, published by the RSGB, and is available from Roger Balister, G3KMA, IOTA Director, La Quinta, Mimbridge, Chobham, Woking, Surrey GU24 8AR, England. Please include \$10 (no checks please). Your directory will be registered under your call.

**Oblasts**

Alan Latyshev, UA6HPR, reports on his July DXpedition to Tadzhiik Republic.

"Our high mountain autonomous DXpedition was operated from July 29 through August 1 near Mirali Mountain (3,920m), RJ8S/ (Oblast 041); from August 2 through August 11 near Khamtarga Mountain (3,200m); and from August 13 to August 16 at the same place (4,100m), RJ8R/ (Oblast 042). We lived and operated in the tent on mountain

glade. Our station was operated on 160 through 10M, making 13,079 QSOs with 161."

Alan was accompanied by Andy Zhukov, UA6BGB, and Oleg Zhukov, UZ6AZF.

**DXCC**

The DX Advisory Committee voted to reject the recommendation of Jarvis Island being added to the DXCC Country List.

The petition was filed with the DX-AC by Pete Grillo, AH3C, Martti Laine, OH2BH, and Wayne Mills, N7NG. The petitioners cited Point 3(b) of the Countries List Criteria, separation by another DXCC country. The petition claimed separation based on economic zones. The DXAC ruled that this was not in accordance with the current DXCC rules. The vote was unanimous. Therefore, contacts made with Jarvis Island will count the same as Palmyra Island.

The DXCC Desk has resumed accepting DJ6SI/SY QSL cards from Baldur's May 1991 operation from Mount Athos. Those who had DJ6SI/SY cards rejected for DXCC may resubmit them with their next application. DXCC members need not resubmit DJ6SI/SY cards if they have received country credit, as the credit had not been removed from their DXCC record.

**1991 Most Wanted Survey**

It's that time again—for *The DX Bulletin* Annual Most Wanted Countries Survey. Each year subscribers to the newsletter are polled to what countries they still need from a list of 100 selected DXCC countries. The results have been published in the companion magazine, *The DX Magazine*. We will not list the entire 100 countries but limit it to just the top 25.

Rank	DXCC Country	Prefix	Percent Need
1	Albania	ZA	87
2	Burma	XZ	84
3	South Sandwich Islands	VP8	66
4	Bangladesh	S2	65
5	Afghanistan	YA	62
6	Bhutan	A5	59
7	Peter I Island	3Y	58
8	St. Brandon Island	3B6	57
9	Clorioso	FR/G	55
10	Tromelin	FR/T	54
11	Andaman Islands	VU4	53
12	Laccadive Islands	VU7	50
13	Libya	5A	50
14	Heard Island	VK0	48
15	Iran	EP	47
16	Abu Gil	A15	44
17	South Georgia Islands	VP8	44
18	Tunisia	3V	44
19	Spratly Island	1S	43
20	Annobon Island	3C0	43
21	Uganda	5X	43
22	Mount Athos	SV/A	42
23	Madagascar	5R	42
24	Baker and Howland Islands	KH1	40
25	Kermadec Islands	ZL8	40

You may be surprised that Albania is at the top of the list. But keep in

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 Home of the Bounty mutineers,  
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3 .. .. . NO-TRAP DIPOLE - 160, 80, 40M	113 ft. long	57 ..
2 .. .. . .. 80, 40M	85 ft. ..	62 ..

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## TWO NEW MODELS ULTRA HIGH SENSITIVITY

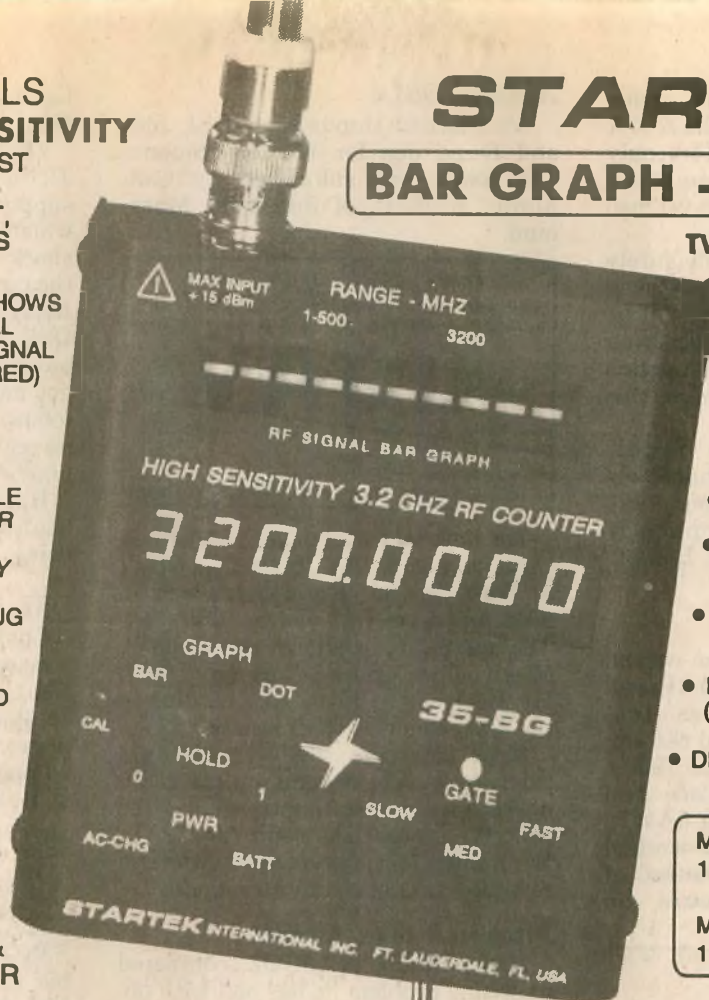
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## BAR GRAPH - COUNTERS

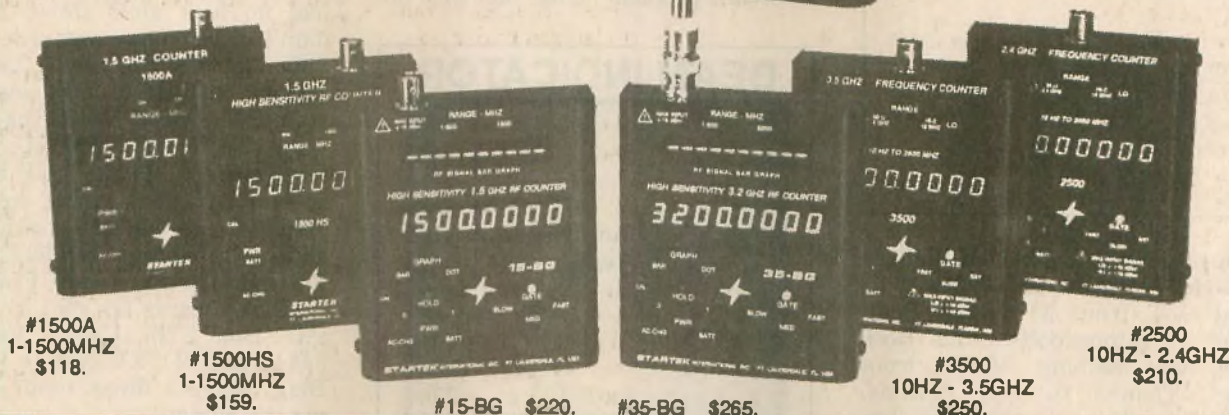


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mind that this survey was made several months ago prior to the ZA1A DXpedition. Also, most DXers only count confirmed contacts; one that's been worked, but no QSL card yet still counts as a needed country.

The standings in 1992 will surely change, with Albania probably way down on the list. Burma, too, will be gone. With the expected upcoming DXpeditions to South Sandwich Islands, Bangladesh and others, this will change.

If you are interested in further results of this survey you should obtain a copy of the November 1991 issue of the magazine. Subscription information is available at P.O. Box 50, Fulton, CA 95439.

### Miscellaneous

Remember last month when we ran that 00 Notice that Bob Baird, W9NN, submitted? He was that "smart-ass" kid who received the embarrassing report back in the 1920s. We wondered if Don Wallace had heard this young kid signing 8AWR. Well, he evidently did as Bob worked Don during that period at the end of the designated quiet hours on December 30, 1923.



Most of us only know Don Wallace as W6AM. However, in 1923 he was signing 9ZT from 54 North Penn Avenue in Minneapolis. And Bob, W9NN, was signing 8AWT from Dayton. Thanks to Jan Perkins, N6AW, for sending us this card. Jan reports that the W6AM archives include 5,000 9ZT QSLs, 25,000 6AM/W6AM pre-war cards, and 70,000 post-war cards.\*

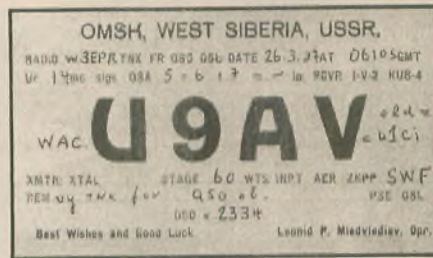
Jack Hermann, W8TSF, writes that OH2KI is interested in getting in touch with the former DL4QQ. All he knows is that he had a W6 call. These DL4 calls were assigned to amateurs who were members of the US Occupational Forces in Germany following World War II.

The Western Washington DX Club is making preparations for the annual Northwest DX Convention for next July. Tentatively, it will be the last weekend of the month at the Sheraton in Renton.

\*Incidentally, notice the incorrect "Best 73's" on this old card. And, that was 1923!

### Antique QSLs

We checked through our QSL files and found one for Western Siberia. This oldie was submitted by Cam Marie, W3EPR, of Pikesville, Maryland.



The date was March 26, 1937, when Cam worked U9AV located at Omsk in West Siberia. The contact was on 20M and Cam received an RST 569. The operator was shown as Leonid P. Miedviediev, who was formerly U1CI. He was running 60W and according to the QSL this was QSO number 2334.

Most amateurs who were licensed prior to WWII wound up as radio operators for their country during the war. We assume the same for U9AV. We wonder if he survived the war and resumed amateur activities again.

### Pitcairn Island Award

Henry Knoll, WA0GOZ, contacted us with a problem he has had with ob-

taining the Pitcairn Island Award. Henry writes as follows:

"In May 1990 I worked VR200PI/JR on Pitcairn Island. For \$5 you were supposed to get a large certificate which would be nice to hang in the shack. I am having a problem getting the certificate from the QSL manager, KB6ISL, Gary O'Toole. He sent a QSL card acknowledging the contact, but after cashing my \$5 check, I can't get any more out of him. I sent two followup letters with SASE and still no reply. Do you know anything about him? Am I out \$5?"

Has anyone else had the same problem? We wonder what is causing the delay.

### QSL services

Lonnie Tennant, KK7K, offers his services as a QSL manager. In addition, Lonnie will also retype log pages at \$1 per page for logbooks over 50 pages, and \$1.50 per page for less than 50 pages. If interested contact Lonnie at Box 4846, APO NY 09742.

### QSL help

Jim Eldridge, K6TL, needs help on the following calls: 5U7NU (1991); 3D2AM (1990); 3D2XV (1990); and S2NQ (1991). Jim says 5U7NU gave his manager as F6FNU, but he has had no luck after three tries. You didn't mention how you sent the card, Jim. Antoine requests two green stamps instead of the single green stamp. We have found that method very satisfactory. F6FNU does not receive cards via the REF bureau as several of the stations he handles cards for are not REF members. His address is Antoine Baldeck, B.P. 14, F-91291 Arpajon Cedex, France.

3D2AM cards are sent to YASME, P.O. Box 2025, Castro Valley, CA 94546, and 3D2XV goes to VK2BCH. Bing requests direct cards only, not via the bureau.

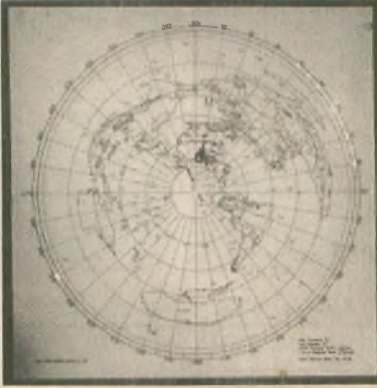
The manager for S2NQ is W4FRU, who handles cards for several other DX stations.

All of the above calls were listed in *The W6GO/K6HHD QSL Manager List*, published monthly at P.O. Box 700, Rio Linda, CA 95673-0700. And one final note; be sure to include an SASE with your QSL requests.

We are looking for some help in getting a QSL from C18CW who we worked back in 1988. The QSL manager is given as VE1DH and several requests with green stamps were sent to him. Nothing! We know that VE1DH sends QSL cards, as we have received cards for his personal call requesting my cards. We even sent a request to VE8CW to see if that would help. Nothing!

And this brings up another point to

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# DX Prediction — January 1992

Maximum Useable Frequency from West Coast, Central U.S. and East Coast (courtesy of Engineering Systems Incorporated, Box 939, Vienna, VA 22180).

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.

## CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	(17)	12	(18)	*11	*17
10	(17)	11	*17	(11)	*17
12	(16)	11	*17	(11)	25
14	33	*15	*31	21	*35
16	38	(14)	26	19	*38
18	*38	(14)	(21)	(14)	*41
20	31	(13)	(26)	(13)	*41
22	26	23	32	(12)	*38
24	*21	(19)	33	11	*27
2	*20	(14)	23	11	*22
4	*19	(13)	20	11	*20
6	(18)	(12)	(19)	11	*18

## WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	(14)	*15	*18	(11)	*17
12	(13)	*14	*17	(11)	17
14	(13)	*14	*17	(11)	33
16	(26)	*14	*26	(17)	*38
18	29	14	(21)	(13)	*40
20	30	(15)	(26)	(12)	*41
22	26	28	32	(12)	*40
24	22	*30	36	(11)	*34
2	*18	25	34	11	*23
4	*16	18	23	11	*20
6	(15)	16	20	11	*19
8	(14)	*15	19	*12	*18

## EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	17	12	(18)	11	*18
9	17	11	*17	*11	*17
11	30	11	17	19	25
13	37	*12	*32	*23	*35
15	*39	(12)	29	*22	*39
17	*40	(11)	24	19	*41
19	*35	(11)	(23)	14	*42
21	*29	(19)	(30)	*13	*38
23	*22	(19)	33	*12	*29
1	*20	(14)	22	12	*23
3	*18	(13)	(20)	11	*20
5	*18	(12)	(19)	11	*19

QSL managers. If you receive follow up requests please show the courtesy of acknowledging the request. If there is a problem, let the poor guy know. If you are no longer interested or involved, explain the situation and maybe we can get you deleted from the QSL manager lists. The majority of QSL managers are doing a fine job. Please don't insult their integrity by giving them a bad name. (This is based on the assumption that an SASE is provided every time a request is made.)

## QSL Routes

A35MK	-JA3OIN	JW9XG	-LA9XG
A35XJ	-KE6XJ	JX3EX	-LA5NM
A45ZR	-G4MWF	KG4QQ	-W9QQ
A71AF	-N6FLF	KH2S	-JH4RHF
AT4W	-N2MM	KH0AM	-JE1CKA
AY4AA	-LU9AAS	L2Q	-LU2QC
AZ1DSR	-LU7DWL	LS3F	-LU1FAZ
C53GB	-F1MXH	OH0BH	-OH2BH
C56N	-N27E	OX3EW	-KB5LRO
C56/G40DV	-G4ODV	P40T	-K4PI
	(see note 1)	P40V	-A16V
C6AFQ	-K1TN	P40W	-N2MM
C6AFT	-AA5NT	PI4COM	-PA3CAL
CK7C	-VE7SZ	PP1ZKA	-SP9JLD
D73DX	-HL1IE	PP0F	-PP1CZ
EABEA	-OH2MM	PX5JP	-PP5OW
ES9SM	-SMOKAK	PY0F/PP1CZ	-PP1CZ
F1B	-F6CQU	PY0F/PP1ZKA	-PP1CZ
FG0P	-AA5ET	RB5LTK/JT	-UB4LWA
GB50ATC	-G4PSH	RA1N/UB4LWA	-UB4LWA
H44QM	-ON4QM	RB3MO/U19B	-UB4LWA
HR3/HR2BDC	-AA5ET	RB5LTK/JT	-UB4LWA
HR3/K5MK	-K5MK	RB5LUK	-UB4LWA
J37A	-N6CW	RI3B	-UB6HS
J37H	-KJ4VH	RM3Q/UA6LAT	-UA9MAA
J39CM	-WB2LCH	RM5Q/UA9MAA	-UA9MAA
J6DX	-N9AG	RW2F/UB4LWA	-UB4LWA
J7/OH3VV	-OH3VV	RY0B	-UB5BAX
J80D	-W8KFF	RY0Z/UB5BAX	-UB5BAX
J82A	-K31PK	S02UN	-EA2JG
JT1/JE7RJZ	-JA7FWR	S03UN	-EA2JG
JW8XM	-LA8XM	S21ZA	-VK9NS

S21ZB	-VK9NS	ZA1ZSW	-I0JBL
S79CW	-DK7PE	ZA0RS	-HA0DU
S79IVJ	-Iv3JVJ	ZB2X	-OH2KI
S79MX	-HB9MX	ZC4BS	-G4KIV
T20WF	-NW3W	ZD8OK	-GW0FJT
TV6FE	-F6AUS	ZD8Z	-W6CF
TV0LER	-3A2LF	ZF2J1	-KG6AR
U100CC	-RT4UF	ZF2ME/ZF8	-WA2ICE
UA0S/JE7RJZ	-JA7FWR	ZF8AA	-W5ASP
UB0L	-UB4LWA	ZK1XC	-K6PBT
UL0A	-UL7ACI	ZP0Y	-ZP5JCY
U00Z	-I8YGZ	ZV5A	-PY5EG
V2/OH3VV	-OH3VV	ZW5B	-PY5EG
V21GC	-I0WDX	ZX5A	-PY5TT
V29W	-KD6WW	ZY9A	-PY5EG
V31DX	-KA6V	ZY5EG	-PY5EG
V31X	-KF6TC	ZY0RW	-PT7AA
V31ZR	-W7ZR	ZZ5A	-PY5EG
V47KP	-K2D0X	ZZ5SZ	-I00OEG
V47NS	-W9NSZ	1Z9A	-JA8IXM
V47JT	-OH3TJ	3D2CC	-VE6AKV
V47VV	-OH3VV	3D2HA	-JE1NJC
V63DX	-JA7HMZ	3D2RW	-ZL1AMO
VE3YYR/VO2	-VE1CBK	3D2Y1	-J11NJC
	(see note 2)	4J7GWH	-NA30
VF7FEI	-KC8PG	4K1ADQ	-UA1ADQ
VK8SD	-K1SE	4K4POL	-UA0KCL
VP2MLD	-KC4DWI	4L1NV	-RA1NA
VP5P	-WN5A		(see note 4)
VP5VEJ	-K8BBQ	4U46UN	-W8CZN
VP5X	-WD8LLD	5B4BCC	-DL4MDO
VP9AD	-W3HNK	5H3RA	-JA3PAU
VS6WO	-AG9A	5J6I	-HK6Hfy
VU2PWW	-JE3NWQ	5V7AK	-OZ1LLC
WJ2O/C6A	-WJ2O	5Z4BI	-W4FRU
WN4KKN/ZP5	-AA5BT	612A	-XE2KB
XE2XA	-KD5GY	6W6DV	-G40DV
XE2/1K1EDC			(see note 1)
	(see note 3)	6W7S	-YU5AD
XN50A	-VE3XN	6Y5X	-KN5X
YB6GR	-YC6GR	7Q7TA	-JH10GC
YB0ARN	-KC9XN	7Z1AB	-WJ2W
YJ0AJU	-WA6ZEF	8P9CL	-W3WKP
YX5LA	-YV5ARV	8P9Z	-K4BA1
ZA1DX	-HA5YPP	9J2HN	-JH8BKL
ZA1HA	-HA6KNB	9K2LX	-ON7LX
ZA1ZDB	-I8UDB	9K2ZZ	-W8CNL
ZA1ZGB	-JR6GV	9L1SL	-DJ6QT
ZA1ZLZ	-J11DLZ		
A25JP	-P.O. Box 1022, Gaborone, Botswana		
BV2BT	-P.O. Box 81-803, Taipei 105, Taiwan		

(please turn to page 80)

## R-X NOISE BRIDGE



### Learn the truth about your antenna.

The Palomar R-X Noise Bridge tells you if your antenna is resonant or not and, if it is not, whether it is too long or too short. It gives resistance and reactance readings on dipoles, inverted Vees, quads, beams, multiband trap dipoles and verticals from 1 to 100 MHz.

Why work in the dark? Get the instrument that really works, the Palomar R-X Noise Bridge. Model RX-100 \$79.95 + \$4 shipping/handling in U.S. and Canada. California residents add sales tax.

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- Tune your tuner without transmitting!
- Save that rig!

Do you use an antenna tuner? Then you need the new Palomar Tuner-Tuner to tune it to your operating frequency without transmitting. Just listen to the Tuner-Tuner's noise with your receiver. Adjust your tuner for a null and presto! You have 1:1 SWR. It's as simple as that.

Easy to install. Works with all rigs. Eliminates tuneup damage. Your rig will love it!

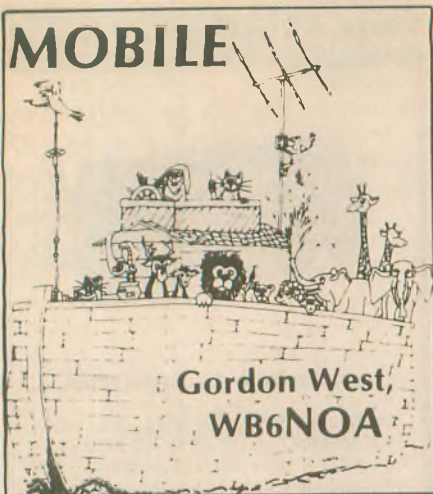
Model PT-340 \$99.95 + \$4 shipping/handling in U.S. & Canada. California residents add sales tax.



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### Motorhome and van HF autotune longwire

Down on the low bands from 160M to 10M, the more wire you can get out there, the better the signal.

For the car, hang a resonant whip over your metal counterpoise, and you are on the air with a decent signal. The bigger the whip, the better the signal. The higher up the whip is mounted on your vehicle, the better the signal.

Big mobile homes, campers, and some mini-vans have some unique opportunities for the automatically tuned horizontal longwire. It's a system worth considering if you're looking for increased performance over the hard-working mobile whip.

Here are your ingredients:

- Mobile HF transceiver
- Remote active automatic tuner
- 15 feet of ground strap
- 20 to 40 feet of plastic-coated "GTO-15" high voltage wire

The HF mobile transceiver you know about. It's a Kenwood, ICOM, Yaesu, Ten Tec, Heath, NCG, Ranger, or Radio Shack rig; 10W to 150W will work nicely.

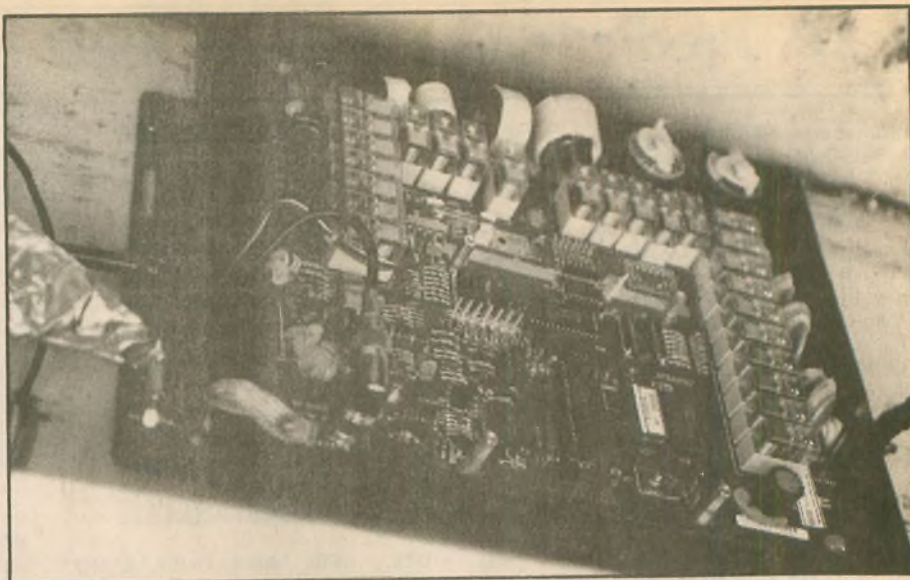
The automatic remote-mounted active tuner could be the SGC Model 230 "SmartTuner," the ICOM AH-2 or AH-3, or the Kenwood and Yaesu remote-mounted active automatic tuners. In strong signal areas where typical 40M or 80M signals pound in 60 over 9, the solid-state Maxon device offers indestructible opportunities when you have plenty of signal to work with.

Here's the way the system works:

#### QQL™ - Quick QSL's The Ultimate QSL Label Program!

With most ham radio software, the QSL label is created as an afterthought. With QQL, labels are the only thought! This in-depth attention to your QSL label has produced the finest QSL label program for the IBM PC (or clones) today. \$24.95 anywhere in the world, includes lifetime license (minimal media/shipping/handling charge for upgrade). More information upon request.

Bill Mullin - AA4M/6, Dept. W,  
3042 Larkin Place, San Diego, CA 92123-3026



The auto tuner, opened for coax connection (note ground foil far left).

Your HF transceiver is connected directly to the remote-mounted automatic tuner via coaxial cable. The supplied coaxial cable may also contain a three-conductor or four-conductor set of wires for feeding voltage up to the tuner, as well as start and stop tuning commands. On the SGC Model 230, the tuner is absolutely fully automatic and doesn't require any special connections to the transceiver other than the coax and 12V.

The tuner resonates the antenna system by clicking in various amounts of L and C for proper loading of the radio and matching of the longwire and counterpoise system. Remember, the output of the automatic tuner is a low impedance longwire, identified by the porcelain insulator and the single-


wire connection point. These automatic tuners are *not* 50 ohm coaxial cable output. This is why the autotuner must go up near the roof line of your mobile home, mini-van or camper.

The ground side of the system is your vehicle chassis. This must be interconnected via braid, strap, or copper foil. It cannot be accomplished with a round wire because the wire will then act as an antenna. We want a ground conductor with minimal reactance, and this means nothing round that resembles a coil at radio frequencies. Bond the ground strap to the frame or the metal skin of your vehicle, and you're all set with this connection.

Now, on to the longwire. If your roof is metal, the longwire must be spaced a minimum of 18 inches away throughout its parallel run along the edge of the roof. If your motorhome or mini-van uses a fiberglass roof, you are in great shape to run that longwire all the way around the roof line only six inches off the top.

You will need to improvise your own spacer mounting technique. I have seen wood, I have seen plexiglass, and I have seen bakelite rods used as elevators for the single-wire radiator. Whatever it takes, build it, and don't let the wire sag down on the metal roof or near any metal roof support structures.

First try an almost-loop configuration; run the wire along each side of the roof and terminate it into thin air approximately a foot or so away from where the tuner is permanently mounted. Or, if you don't have a great ground counterpoise below, try terminating the longwire back to the tuner ground lug as a closed-loop system. You might think that this



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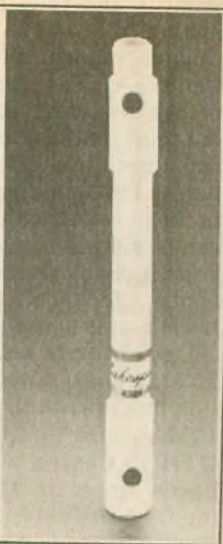
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If monitoring the net, please come in and join us. You will be cordially received.

For further information, write:

**Sr. Noreen Perelli, KE2LT**  
Fletcher Street  
Goshen, NY 10924

Fiberglass standoffs required for metal roofs (photo courtesy Shakespeare Antennas).



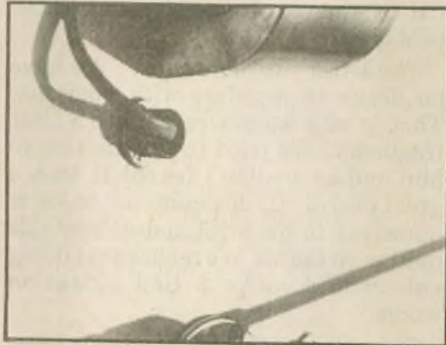
several ham manufacturers offered the automatic tuner with a stainless steel whip, but they soon found out that on-the-air results were incredibly poor compared to a regular resonant HF whip. Don't even try it—it won't work!

The type of wire that runs around the top of your roof can be anything from speaker wire to stranded Radio Shack wire. I like to go with something more substantial—it's called "GTO-15," and is high-voltage (15,000V) stranded wire. It's available from neon sign companies. You can also buy it at marine electronic dealerships in white for about 50 cents a foot. The neon sign companies will probably give you a hunk and just want a can of beer for it!

would short the whole thing out, but the tuner will automatically self-adjust and figure out the best way to impress RF power onto the terminated ground-wire end.

Another way to go is to arrive at your destination and throw some of the wire over a nearby tree. The more wire that you can get up and out there in the air, the better. Just be sure to use covered wire so you don't light the tree on fire.

I know what you're thinking—why not simply run the wire to a little CB-type whip, and run the whip straight up and down. While the tuner will probably tune this up, results will be miserable. The tuner *must* have at least 25 feet or more of single-conductor wire to outperform your present loaded mobile whip system. There was a period of time when



Feed the single-wire GTO-15 into fiberglass roof with a weather-proof fitting.

The best part of the automatic tuner being up and away from your rig is less RF in your face, less RF in your rig to muddy modulation, and more wire out there to better pull in distant signals. But a longwire is also sen-

sitive to any noisemakers near it, so keep your fluorescent lights turned off when using the rig on 40 and 80M.

Because of the immense surface area of your roof, you can try all sorts of schemes—zigzag, double and triple loops, grids, whatever—just be sure to keep the radiator at least 18 inches above a metal roof, and a few inches off a fiberglass roof.

The automatic tuners are indeed expensive—about \$550. But they do allow for a potent signal, and they also give you 1,001 fun projects to try with some brainstorming and some simple wire on your motorhome roof. □

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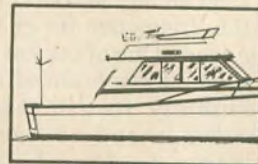


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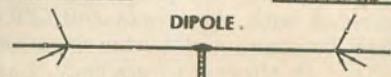
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# 10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ  
10-10 19636

## Frequencies are *not* exclusive

Most of the letters I receive are a pleasure to read. Most have good things to say about other 10-10 members. Some even relate other 10-10 members that are a pleasure to read and write about. A good example is the column last month in which Jim Reynolds, N6WQU, of San Diego, California, made us aware of a nine-year old young lady, Alice Coppock, KC6VYI. Reading and writing about such people as Alice and others makes this volunteer's job a pleasure.

And then there are the other type of letters (which, I am very happy to report, come only on rare occasions) which have something not too pleasant to say about 10-10 or one of our members. (Being a ham for about 45 years, I get very upset when I hear discourteous and abusive language on the air. I even get upset when a "tuner-upper" lands on a frequency on which I am having a QSO without even asking if the frequency is in use.) I received one of these letters a couple weeks ago. It contained a very serious complaint about one of our members:

"Our Amateur Radio club conducts a net every Tuesday evening at 0100 UTC on 28.333 MHz. The net has met on this frequency for at least the last four years. One of the net's purposes is to allow newly licensed amateurs the opportunity to gain experience and confidence and to develop proper operating procedures. In addition it provides a medium for all interested hams to exchange information and visit with each other via Amateur Radio." So far, this is very close to the goals and ambitions of most of the 10-10 chapters. The letter goes on:

"We realize that even though 10M is usually closed by the time the net meets that from time to time the band will be open and the possibility of interference with other nets and QSOs exists. To accommodate this situation, we have an alternate frequency. Last night at 0100 UTC the band was open. We realized it immediately and moved to an alternate frequency. Apparently there is a 10-10 net which meets at the same time and frequency as ours. Even though we moved our net, a participant

in yours continually badgered and insulted us and ordered us off the frequency. This happened to several of our check-ins and thus the purpose of this letter is to strongly protest these actions and ask that your organization take appropriate steps to see that this does not recur."

This letter accuses one 10-10 member who was the culprit in this action. The letter goes on to state, "Discourteous, abusive language is never acceptable on the ham bands and especially on the Novice segments where many new hams operate." I could not agree more with this writer's statement. Many of the new amateurs have been exposed to the language problem and other poor operating practices on the CB bands and many have moved from CB to Amateur Radio to escape those problems.

The letter further states, "We have no desire to interfere with your net. That is why we moved ours to a clear frequency. We tried to explain this to him and he wouldn't listen! It took a great deal of self-discipline not to lower ourselves to his level and debate this matter on the air. We realize that doing this would make a bad situation worse."

The writer of this letter goes on to request that 10-10 take the necessary action to police our ranks. "The reputation and image of 10-10 International has been harmed. Certainly there is more than enough radio spectrum available for everyone to enjoy Amateur Radio." There is no excuse for this kind of action on the part of any amateur, 10-10 member or not. It is hoped that the culprit in this action, and if he reads this he will know who he is, will think long and hard before engaging in such activities again. Amateur Radio is a hobby and is supposed to be fun for everyone.

I hope by sharing this letter with you that every 10-10 member will consider his actions and remember that his actions are a reflection on the entire 10-10 organization.

## Meet Dave Bendt, TL8IM, 10-10 #24392

Dave has been a ham since 1974 and has most likely given out more DX countries for 10-10 than any other 10-10 member. He was originally licensed as WD9EWZ, and since 1974 has held the calls KH2LD (Guam); KC6GZ (Western Carolines); KH2AD/O (Saipan); HZ1AB (Saudi Arabia); KC9IM and now TL8IM (Central African Republic). Dave works for the US Embassy in Bangui as a communications officer and will be in Bangui for about another 16 months. His assignments usually last only 24

months and then it is time to move again.

Dave reports that hamming from Central Africa is unique. If it's not one of the frequent "brown-outs" power outages, fantastic lightning storms, or some such event, it's lizards crawling across the amplifier to sun themselves in the glow of the finals. Dave says, "It can be kind of startling to look up from your logbook to see a forked tongue about a foot from your nose. They're harmless, it's just that initial shock."

Dave is quite active, spending from 20 to 30 hours a week on the air, and he now has 140 countries for DXCC. With 10M opening up to the states from his QTH in Central Africa, he will be a prime target for 10-10 members looking for a 10-10 Africa contact (I for one need Africa for my 10-10 Worked All Continents Award). Dave says he enjoys working the pileups and it makes his day when somebody tells him, "Thanks for the new one" and means it. Dave is married, has five children and six grandchildren.

If you are one of the lucky ones to work Dave, here is his QSL address: Dave Bendt, KC9IM/TL8IM, American Embassy Bangui, Department of State, Washington, DC 20521-2060.

## Finally

If you are not a member of 10-10 and are interested in finding out more about 10-10 and how you can become a member, send \$1 and two first class stamps (*no* SASE) to me at 18130 Bromley Street, Tarzana, CA 91304-1701. This will get you a complete information package, consisting of the new Information Manual and a copy of the latest issue of the *10-10 International News*. Please also include an address label so I can send your package right back to you. 73, es cu next month. □

## Off The Air

(continued from page 39)

would be infinitely stronger if it were true that *most* of us regularly use our license privileges to promote education, support charitable organizations, participate in public service events and, oh yes, all turn out whenever there's an emergency. There are many groups which can readily prove the tangible public benefits of their receiving additional radio spectrum.

What I have written here is intended to be provocative, not merely controversial. If I have upset you, I am disappointed. If I have made you think in broader terms, I am indeed glad! The future of Amateur Radio is really in your hands.

WAYNE THALLS, KB6KN  
Santa Cruz, CA □

## 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.** Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. Net: WOLKI info Net every Thurs., 7 p.m., WA7KYT/R 146.16/146.76 rpt.

**Scottsdale Amateur Radio Club.** Meets 1st Wed./monthly, 7:30 p.m., 7375 E. 2nd St. in Scottsdale, AZ. Net is Mon., 9 p.m., 147.18 rpt.

**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).  
**Western Arizona Radio Club.** Meets 2nd & 4th Mon./monthly, 7:30 p.m., Bullhead City Lib. on Handcock Rd., Bullhead City, AZ. Local Net operates Tues. evenings on 147.12 @ 1900 hours. For info contact W6DRM (602) 758-5171.

### ARKANSAS

**Central Arkansas Radio Emergency Net, (CAREN).** Meets 1st Thurs./monthly, 7 p.m., 1111 West Capitol Ave., Little Rock, AR. Thurs. night net, 8 p.m., 146.940, swap net afterward. Severe WX net anytime 146.940. Code 8 theory classes continuously. Info, KB51DB, Bob Hancock, (501) 771-2617.

### CALIFORNIA

**Amador County Amateur Radio Club.** P.O. Box 1094, Pine Grove, CA 95665. Senior Citizens Center, Jackson, CA. Meets: first Thur./monthly, 7:30 p.m. WA6WY Rptr., 146.835, 146.235. Net Tues. 7:30 p.m.  
**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.

**Butte Amateur Radio Club.** Meets 1st Fri./monthly, 8 p.m. at the Cozy Diner, 1695 Mangrove, Chico, CA 95926.

**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.

**Contra Costa Communications Club, Inc. WD6EZC/Rptr.** P.O. Box 20661, El Sobrante, CA 94820-0661. Meets 2nd Sun./monthly at 9 a.m. Hickory Post Restaurant/Lucky Lanes. Nets: 07:10—08:30 M-F; 7:30 Thur. eve. all 145.110. 224.300 & 444.275 w/possible PL 82.5. Info call Ed, KA6OFR, (707) 996-0962.

**Downey Amateur Radio Club.** Meets 1st Thurs./monthly, 1930 in the Cafeteria of South Middle School, 12500 S. Birchdale Ave., Downey, CA.

**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.

**Escondido Amateur Radio Society (E.A.R.S.).** Meets 4th Mon./monthly, 7:30 p.m., North County Blind Activities Center, 157 E. Valley Pkwy., Ste. 1B, Escondido, CA 92025. Info Net Sundays, 8 p.m. 146.88(-) or 743-4212.

**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, Phil Gray, KJ6UV (714) 524-5223.

**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.

**Kern River Valley Amateur Radio Club.** P.O. Box 2611, Lake Isabella, CA 93240. Meets 4th Sat./monthly at 4 p.m. (Pot Luck). Veteran's Hall, Lake Isabella WB6ODZ Rptr. 224.50 down 1.6 low-level, 144.50 simplex.  
**Livermore Amateur Radio Club, (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, KC6RUK, c/o LARK, P.O. Box 3190, Livermore, CA 94551-3190. (510) 447-3815.

**Marin Amateur Radio Club (MARC) W6SG.** Box 1231, San Rafael, CA 94901. 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.

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

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

**Orange County Amateur Radio Club.** Meets 3rd Fri./monthly, 7:30 p.m. at Republic Fed. Savings Bldg.—corner of Seventeenth St. and I-55 Freeway in Tustin. Call in on 146.55 simplex. Contact Ken Kochechy W6HHC at (714) 541-6249.

**River City A.R.C.S. Meets:** 1st Tue./monthly, 7 p.m. SMUD Bldg., Room B & C, Elkhorn & Don Julio, Sacramento, CA. For info: (916) 483-3293.

**Sacramento Amateur Radio Club.** Contact: Gary Bryant, KB6KZZ, (916) 646-1171. Meets Sacramento Blood Bank, 32nd St. & Stockton Blvd., Sacramento, CA, 2nd Wednesday/monthly, 7 p.m. Info net every noon on Rptr. W6AK/R 146.910.

**Sacramento "Old Timers" Amateur Radio Society and Sacramento Valley Chapter #169 OCWA (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(-).

**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 Parkway Ave., Redding, CA. Net 146.64, Wed., 8 p.m. Sierra Amateur Radio Club. Meets 3 Mon./monthly, 7 p.m., Hamilton Branch Fire Dept., Big Springs Rd., Lake Almanor, CA 96137.

**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 Smpx call freq. 50.300.

**Southern Humboldt Amateur Radio Club.** P.O. Box 701, Redway, CA 95560-0701. Meets 4th Wed./monthly, 7 p.m., SHARC Clubhouse, Garberville, CA. Rptr. 146.19/79. Info: (707) 923-2373.

**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.

**Tahama County ARC.** Meets 1st Fri./monthly, 7 p.m., Sept.-June, CA Div. Forestry Training Rm., Antelope Blvd., Red Bluff, CA. For info: 145.850/145.50 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: WX6F 147.475 (-1 Meg) PL 107.2. Ph: (707) 447-0163.

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

**West Coast Amateur Radio Club.** Serving the Greater LA/Org. Co. area and beyond on 145.44-4zpl. Meets 3rd Thurs./monthly, nets ea. Mon. at 01715 ps/dst & on 144.33S.

**West Valley Amateur Radio Assoc. P.O. Box 6544, San Jose, CA 95150-6544.** Meets: 3rd Wed./monthly, 7:30 p.m. at Am. Red Cross Bldg., 18011 Saratoga-Los Gatos Rd., Los Gatos, CA. W6PIY/R. Net Tue., 8:30 p.m. 147.39 +, 223.96.

**Yucaipa Valley Amateur Radio Club.** Meets 3rd Mon./monthly, 7:30 p.m. at Far West Savings, 1195 Calimesa Blvd., Calimesa, CA.

### 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) 347-8754. Rptr. 147.090 +.

**Tri-City Amateur Radio Club.** P.O. Box 686, Groton, CT 06340. Meets 2nd Tue./monthly, 7:30 p.m. Alternating, Groton Public Library at Rt. 117 & St. Lukes Lutheran Church at Rt. 12. Novice classes. Info, contact Bob, KA1BB, (203) 739-8016.

### DELAWARE/PENNSYLVANIA

**Penn-Del Amateur Radio Club.** P.O. Box 1964, Boothwyn, PA 19061. Sponsor of KA3TWG/Rptr. on 224.220 covering Delaware & Tri-state area. Info/net Thurs/wkly, 20:00 hrs. or call Hal Frantz, (302) 798-7270.

### 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.** P.O. Box 1004, Melbourne, FL 32902. Meets 2nd Mon./monthly, 7:30 p.m., Brevard Co. Red Cross Hqtrs. Bldg., 1150 Hickory St., Melbourne, FL. Talk-in on 146.25/85 or 146.01/61.

**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.

### GEORGIA

**Dalton Amateur Radio Club (DARC).** P.O. Box 143, Dalton, GA 30722-0143. Meets 4 Mon./monthly, 7:30 p.m., Dalton College Voc. Tech. Bldg., Dalton, GA. Info net: Sun. 9:30 p.m., 145.230 MHz; Wed. 9 p.m., 147.135 MHz.

### 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(-) 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 Sat./monthly, 7:30 p.m. For info call (312) 594-1628. KD9FA Repeater/Chicago.

**DuPage Amateur Radio Club, (DARC).** Meets 4th Mon./monthly, 7:30 p.m., Holy Trinity Catholic Church, 111 S. Cass Ave., Westmont, IL. Club rpters are 145.25, CTCSS 107.2; 224.68- and 442.55+ CTCSS 114.8.

**Elgin Amateur Radio Society.** P.O. Box 1351, Elgin, IL 60120. Meets in EOC Rm. of Elgin Municipal Bldg. 2nd Fri./monthly, 8:00 p.m.

**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.

**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.

**Six Meter Club of Chicago K9ONA.** Bank of Lyons, Lower Level, 8601 West Ogden Ave., Lyons, IL. 2nd Fri./monthly, 7:30 p.m. Club Rptrs: 146.37/97, 448.30/443.30.

**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: WB0ZKG, (515) 484-4837.

## LOUISIANA

**Southwest LA Amateur Rptr. Club, Inc. (SWLARC).** Meets 4th Tues./monthly, 7 p.m. in the EOC Rm. Net ea. MWF, 7:30 p.m. Rptr. 146.730 minus 600.

## MARYLAND

**Peninsula Radio Operators Society, Inc. (P.R.O.S.)** Salisbury, MD. Quarterly dinner mtgs. & VE Test sessions. Spring & fall classes. Rptr. K3SVA 146.325/146.925; KC3UV 449.05/444.05. Info: (301) 749-7444.

## MASSACHUSETTS

**Mohawk Amateur Radio Club.** P.O. Box 532, Athol, MA 01331. Meets: 4th Wed./monthly, 7:30 p.m., at the Athol American Legion Hall, Exchange Street, Athol, MA.

## 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 9 1/2 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 25167, Minneapolis, MN 55458. Meets 3rd Fri. (exc. June, July, Aug.), Mpls. Red Cross, 11 Dell Place, Mpls, 7:30 p.m. Making waves since 1916.

## MISSOURI

**Joplin Amateur Radio Club.** Meets 2nd and 4th Tue./monthly, 7:30 p.m. at Joplin Municipal Bldg., (basement), 303 E. 3rd, Joplin, MO.

**PHD Amateur Radio Assn. Inc.** P.O. Box 11, Liberty, MO 64068. Meets last Tue./monthly, 7 p.m. Red Cross 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.

## 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

**Bayonne Emergency Mgt. ARC (BEMARC).** 16th St. & Ave. A Firehouse, Bayonne, NJ 07002. Meets 2nd Tue./monthly, 7:30 p.m. Tri-Band linked repeaters: 145-430/224.280/445.575 MHz.

**South Jersey Radio Assoc. (SJRA).** Pennsauken Sr. Hi Sch. at Hylton Rd. & Remington 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+ W2RXC.

**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.

**Lockport Amateur Radio Assoc. (LARA)** Meets last Sat./monthly, 7:30 p.m., Mt. Olive Church, Chestnut Ridge Rd., Lockport, NY. Info net Sun. 9 p.m. on W2RUI/R (146.82-). Contact Jim, KB2CUX, (716) 433-8564.

**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, 8 p.m. Bohemia Rec. Ctr., Ruzicka Wy. W2DQ/R 144.610/145.210, 223.080/224.680 rptr. Info call Jim Heacock (516) 473-7529.

**Westchester Amateur Radio Assoc. (WARA).** Scarsdale Village Hall, Scarsdale, New York. Meets: 1st Wed./monthly, 8:00 p.m. For info call Dan Grabel, N2FLR, Pres. (914) 723-8625.

**Yonkers Amateur Radio Club, (YARC).** Meets 2nd Sun./monthly, 10 a.m., 1st Pct., Yonkers Police Station, E. Grassy Sprain Rd., Yonkers, NY. Info: P.O. Box 378, Centuck Sta., Yonkers, NY 10710. (914) 963-8995. 146.265/865, 445.150/440.150.

## 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.

**Stany County Amateur Radio Club.** P.O. Box 188, Stanfield, N.C. 28163. Meets 4th Thur./monthly, 7 p.m. at Stany 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. K8YKT rptr., 147.075.

**Ashtabula County ARC.** Ken Stenback, A18S (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. 144.75/145.35. 444.60 (+5 MHz). Net Sun. 9 p.m.

**Dayton Amateur Radio Assoc.** P.O. Box 44, Dayton, OH 45401. Meets 1st & 3rd Fri./monthly (Sept. thru June) 8 p.m., Career Academy on River Corridor Dr. Info on W8BI 146.34/94 & 222.34/223.94.

**Firelands Area Repeater Assoc. Inc.** Meets 3rd Sat./monthly at First Federal Savings of Toledo, 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., City Hall, Basement Club Rm., Broad & Main. 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., Gargas Hall, Rt. 254, Lorain, OH. Info: Rptr. K8KRG 146.70, DX Alert Rptr. 145.15. "Ohio's Largest General Interest Club"

**Silvercreek Amateur Radio Assn. (SARA)** Meets 3rd Thur./monthly, 7:30 p.m., Doylestown Village Hall, Doylestown OH. WDBPNF/R 147.99/39 rptr. For info call (216) 745-2573.

**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 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+ W7UJM. Info: Tom Hamilton, WD6EAW, (503) 883-2736.

**Umpqua Valley Amateur Radio Club.** Meets 3rd Thur./monthly 7:30 p.m., Douglas County Courthouse, Rm. 311, Douglas St., Roseburg, OR. Info W5PII/R 146.90/30.

## PENNSYLVANIA

**Butler County Amateur Radio Assn. P.O.** Box 1787, Butler, PA 16003-1787. Meets 1st Tue./monthly, 7:30 p.m., Red Cross Bldg., 312 Mercer St., Butler, PA. Call-in W3UDX 147.96/36. Net 10:10 p.m. nightly.

**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) 443-5428. 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.

## TEXAS

**Arlington Amateur Radio Club, (AARC).** Meets 3rd Fri./monthly, 7:30 p.m., Arlington Human Resources Bldg., 401 Sanford, Arlington, TX. Talk-in—444.2, 224.8 and 147.14.

**Beaumont Amateur Radio Club.** Meets last Tues. of each month at the GSU Aud., South and Oxford Streets, Beaumont, TX, 7:30 p.m. Talk-in on 146.16/76 or 146.10/70. Join the fun!

**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 bks 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 (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.** Robert D. Morris, WA8CTO, Sec.-Treas. 308 Edgewood Circle, Ripley, WV 25271. Meets 1st Thur./monthly, 7:30 p.m., United National Bank of Ripley. Net Mon. 9 p.m. on 146.67/07 WD8JUN/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 KB8EHJ (304) 824-5958.





**Paul A. Scipione, AA2AV**  
**MARS call AAA9PR**

"It sure isn't easy without a budget!" was Bob Sutton's answer to me. Bob (MARS call AAA9A) is director of Army MARS and is headquartered at Fort Huachuca, Arizona. "But even in this year of recession and cuts in government spending, we think we can make a strong case that Army MARS should have its own budget for the very first time."

A strong case indeed! During the past year, expenditures for Army MARS totalled only \$1.5 million, although estimates by several members of the MARS special staff show that Americans (GIs and their family members, in particular) benefited from services that, if offered by the private sector, would have come to more than \$40 million! That means that MARS offers leverage of better than 26 to one. To put that in perspective, if all the other agencies of the federal government achieved cost-benefit ratios of better than 26 to one, there would not have to be any income taxes and the astronomical national debt could be eliminated in only a few years.

Given the significant cost effectiveness of Army MARS (Bob Lowe and Ray Collins, the respective directors of Navy/Marine and Air Force MARS, also have impressive cost/benefit figures for their systems), you'd think that the Department of Defense would reward such service by giving Army MARS its own budget line within the annual DOD budget. That way MARS could manage its own affairs without having to depend on the whims of various military divisions, facilities and staffs. But that is not the case. Army MARS is nearly 70 years old but has never had its own budget.

When Bob Sutton or a regional or state director of Army MARS needs funds for equipment, programs or services, a request has to be made to the applicable local military unit or facility commander. In Bob Sutton's case, the request is made to the US Army Information Systems Command, which in turn may or may not refer the request on to a larger Army command at the Pentagon. When Operations Desert Shield and Desert Storm put immediate demands upon all three MARS systems, the three MARS directors made requests for immediate funds for additional HF and packet equipment. Most of their requests were met within a matter of weeks. During Christmas 1990, the three MARS directors traveled to Saudi Arabia and personally delivered HF equipment to active duty MARS operators who faced growing lines of service men and women who had no other timely way to communicate home. A dozen Ten-Tec stations (Paragons, auto tuners, Titan linears) as well as ICOM and Kenwood HF rigs and linears were shipped on an expedited basis. But Bob Sutton had to ask for supplementary funds from various accounts; he had no funds of his own to allocate. It would have been a lot easier and faster to accomplish

this if the Army had given him a formal MARS annual budget, including some contingency funds for meeting just such sudden national defense emergencies. Bob Lowe at Navy/Marine MARS and Ray Collins at Air Force MARS are luckier—their systems have established annual (although modest) budgets.

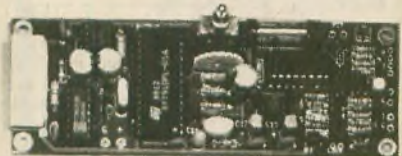
Bob Sutton has decided to submit a request for a first-ever annual budget for Army MARS. His requests are modest, because he knows that times are tough and every dollar has to be justified. But if he gets his budget for MARS, he will be able to do some important things for the very first time. Some funds will be devoted to brochures, flyers and other literature specifically aimed at communicating how MARS services our servicepersons, their families and the country at large, and recruiting new MARS ops from among the more than half million licensed amateur operators in the US. Other funds will be used to encourage retention of current MARS operators, including providing awards and certificates to outstanding MARS ops. The latter idea should be particularly effective because all of us like and appreciate recognition of our volunteer efforts.

"It sure would be a lot easier if we had a regular budget," Bob Sutton declared near the end of our conversation. Given all the good things that MARS does and the fact that 99 percent of MARS activities are accomplished via volunteer, unpaid ham operators (there are now about 5,000 Army MARS operators), it seems to me that the Army should "just say yes" to an annual budget that represents less than 1/2,200th of one percent of the national defense budget of the United States. That's a return on investment that even the tightest Scrooge could appreciate!

*Dr. Scipione is National Coordinator of Public Relations for Army MARS. He encourages anyone with an interesting story or information about the Military Affiliate Radio Systems and its operators to write him at 5 Burr Drive, Metuchen, NJ 08840, or call evenings at 908/548-8096.* □

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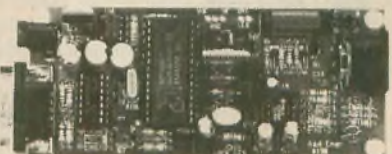
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**Ethel Smith, K4LMB**  
"The Owl" who gives a hoot

### QCWA headquarters moved

QCWA starts off the new year with a new general manager and a new headquarters. Jim Walsh, W7LVN, is the new general manager, replacing Ted Heithecker, W5EJ, who served 15 years on the job. The headquarters is now located in Eugene, Oregon. Send all headquarters correspondence to 159 East 16th Street, Eugene, OR 97401; 503/683-0987. Mail will be forwarded from Texas, but it will speed things up if correspondence goes directly to Oregon.

### Canton convention

People are still talking about the good time they had at the QCWA convention in Canton, Ohio, and we now have pictures to show some of the highlights.

Leo Meyerson, W0GFQ, was named QCWA Member of the Year, certainly an honor richly deserved. Leo was on the board of directors for a number of years and served as chairman of the scholarship program. This year he succeeded in bringing the long dreamed QCWA Museum to fruition. No convention has been complete without



**Harry Dannals, W2HD, awarding the QCWA Member of the Year Award to Leo Meyerson, W0GFQ. In the center is Leo's grandson, Dr. Lance Meyerson (Photo by W7LVN)**

Leo tickling the ivories for his popular sing-alongs. He certainly has been an outstanding member.

The Hall of Fame Award was bestowed upon Richard Baldwin, W1RU. This is only the eighth Hall of Fame Award ever presented by QCWA. Dick is best known as the ARRL general manager from 1975 to 1982. He then served for four years as vice president for International Affairs. In 1976 he also became secretary of the International Amateur Radio Union (IARU) and in 1982 was elected as IARU president. He still holds that position. Through his IARU activities, Dick has had a great influence on promoting Amateur Radio throughout the world and in obtaining support-

ive legislation. He has been deeply involved in frequency allocation matters and was instrumental in obtaining the new WARC bands. This year he will head an IARU "observation team" of six people who will attend the upcoming WARC conference in Spain. A ham since 1934 (W1IKE) and an avid DXer, he has contributed an enormous amount to the development and recognition of Amateur Radio throughout his career. It is most appropriate that Dick should be elected to the QCWA Hall of Fame.

QCWA offers a number of recognition awards and Awards Chairman Robert Rickey, NF6P, is always looking for recommendations. There are many people who have made signifi-



**The Hall of Fame Award was presented to Richard Baldwin, W1RU, by QCWA President Harry Dannals, W2HD (Photo by W7LVN)**

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cant contributions to QCWA and they should be honored for their efforts. Send your nominations to Robert at any time throughout the year. The 1992 selections will be made at the spring meeting of the board.

### QSO parties

It's getting close to QSO party time and the new rules are out. Things will be a little easier to calculate this year. Multipliers are given for every new chapter worked. Work 10 different chapters and you have a 10-point multiplier, regardless of how many bands you worked. "At large" members count the same as a chapter in each state, province or country. Just remember each chapter can only be counted once, and only one "AL" contact from each state, province or country can be counted as a multiplier. The total number of contacts times the total number of multipliers equals your final score.

The CW QSO Party will be held in February. It begins at 0001 UTC Saturday, February 8, and ends at 2400 UTC on Sunday, February 9. Suggested starting frequencies are 3.530-3.560, 7.030-7.060, 14.030-14.060, 21.040-21.070, and 28.040-28.070 MHz.

The Phone QSO Party will be held in March. It begins at 0001 UTC on Saturday, March 7, and ends at 2400 UTC on Sunday, March 8. Suggested starting frequencies are 3.900-3.930, 7.230-7.260, 14.280-14.310, 21.350-21.380, and 28.400-28.430 MHz. No frequency recommendations on 2M or 6M (simplex); time periods recommended for 160M are 0400 to 0500 and 1200 to 1300 UTC. Don't forget to listen for Alaska and DX stations.

Remember this is a party, not a contest. The competition will be keen and plaques and certificates will be given for the top scores, but the main idea is FUN and GOOD FELLOWSHIP.

### Chapter affiliation

Chapter affiliation is emphasized in the QSO parties. We hope you do belong to a chapter. If not, ask headquarters for information on the chapter nearest you and plan to sign up. The fellowship of chapter activity is one of the great benefits of QCWA membership.

If you are a chapter member, make sure your secretary keeps headquarters advised of the membership list. We just learned about one chapter that has 40 or 50 people at a meeting, and close to 100 at a dinner or picnic, and only nine members were listed on Headquarters records! They are all good, paid-up chapter members, but nobody remembered to send in the list. Chapter annual reports are in the

mail and it is especially important that the new headquarters receive the update information requested. Make sure your chapter responds.

### New chapter name

Arizona Chapter #16 petitioned to change its name to the Barry M. Goldwater Arizona Chapter. The petition has been approved. Barry had been an active member of the chapter for a number of years and has contributed much to its success. Chapter #16 is sponsoring the 1992 QCWA Convention in Scottsdale, Arizona, this year and Barry Goldwater is expected to be the featured speaker.


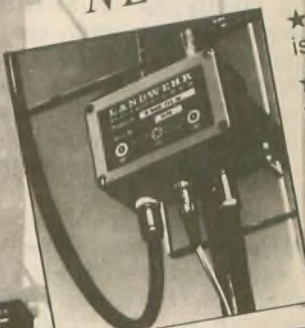
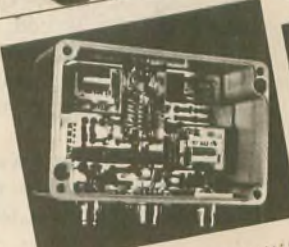
### Audio cassette program for the sight impaired

The audio cassette program chairman, Blanche Randals, W4GXZ, is anxious to spread the word about the program. She feels there are many members and potential members who are not taking advantage of the program. If you know of anyone who might benefit from having the QCWA Journal on tape, just let Blanche know. They don't even have to be a member of QCWA to be eligible. (But maybe hearing about QCWA activities would encourage them to want to join!) □

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## County Hunter

**Ace Jansen, N3AHA**

51 Kenbrook Circle, San Jose, CA 95111

County Hunting! That was the topic I was given to speak about at a recent Lockheed Amateur Radio Club (LARC) meeting. I seemed qualified so I accepted the invitation. (Plus, the speaker receives a complimentary dinner.) I prepared some charts and brought some books, maps, awards, and tape recordings for show and tell.

Sometimes when you're "too close to the forest to see the trees" you don't see the humor in your subject of discussion. For most groups, communication with all 3,076 US counties is unimaginable. Telling the group I had worked all 3,076 counties (taking 10 years) and was trying to work them a second time mobile to mobile wasn't enough. I had to tell them I was also collecting YL counties, CW counties, five-band counties and 10-10 counties. I told of the time I got stuck on a county line in Alabama and the time I thought a mountain man in the Sierras was trying to break into my van where I was sleeping. Suddenly my talk was humorous, though I never expected it to be. To a non-county hunter, it all must sound ridiculous. For a moment, a flash of a second, I thought maybe I was crazy. Nah!

### MARAC awards

Last time, in November, I discussed the Mobile Amateur Radio Awards Club (MARAC). MARAC offers many awards to keep county hunters interested and active in county hunting. All these awards can be pursued at any time; however, contacts for the second-time awards must be after the USA-CA date of issue.

All MARAC awards are available to any licensed Amateur Radio operator anywhere in the world and most are also available for shortwave listeners (SWLs) on a heard basis. You may be

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operating as mobile, portable, or any fixed location to qualify for the awards. As of Nov. '91, awards must be confirmed by QSL cards or Mobile Relay Cards. As this *Worldradio* issue was going to print, MARAC members were voting on issuing awards without requiring confirmation. All the awards may be endorsed single band or single mode, etc.

Probably the biggest award challenge for county hunters is the Five Band County Award (FBCA). Actually the basic award is relatively easy—work 1,500 counties on any one band. After that, the award is endorsed for *all* counties on the same band and 1,500 counties for each additional band. Working all counties on any one band qualifies an individual for an MARAC special plaque and all five bands for an FBCA trophy. Sounds insane, doesn't it? Tom, K9GTQ, has confirmed all counties on 75M and 20M. Galen, KB5FU, has confirmed over 11,000 of the 15,380 required county contacts for all five bands. Me? Only about 5,600 confirmed.

The USA Counties Award is an MARAC award for working all counties. There are 10 certificates available for working all counties in each call district, zero through nine, or you can wait until all US counties are worked and qualify for an MARAC special plaque. In the end, the award is equivalent to the *CQ Magazine* USA-CA but has different endorsement levels. The MARAC award is endorsed by district while the *CQ* award is endorsed in increments of 500 counties.

MARAC also sponsors the Worked All Counties Second Time Award. The rules follow *CQ's* USA-CA award and cannot be started until after the USA-CA (*CQ*) or USA Counties Award (MARAC) is issued. Many county hunters will work counties differently the second time and, gluttons for punishment, will try to make it more difficult.

The YL Mobile Award is issued for confirming contacts with YLs while they're mobile in a total of fifty dif-

ferent counties. Seals are available for 100, 200, and 500 and a plaque is available for 1,000 different YL county contacts.

The DX Mobile Award is issued for confirming contacts with 25 DX counties while operating mobile. A plaque is available for achieving DXCC (100 countries) while operating mobile.

There are four categories of mobile awards. Category one is for any mobile making contacts from at least one county in 15 or more states. Category two is for any station confirming contacts with the same mobile in 15 or more states. Category three is for any mobile making contacts from 100 or more different counties. Category four is for any station confirming contact with the same mobile in 100 or more different counties. MARAC mobile plaques are available for 48 states for categories one and two and 1,500 counties for categories three and four.

The Mobile Achievement Award is issued in three categories. Category one is for confirming contacts with mobiles in all counties in any one state. Category two is for making contacts from all counties of any one state. Category three is for confirming contacts with the same mobile in all counties of any one state.

The Last County Award is issued to a mobile station for giving someone a last county to finish all counties for a state or for all US counties. It is unusual because the award recipient does not apply for the certificate; rather, the recipient of the last county contact would initiate the award for the mobile. It is a means of showing appreciation for the mobile making the trip to the needed county.

The Cliff Corne, Jr., K9EAB, Memorial Award is awarded for confirming contacts with 100 holders of the USA-CA Counties Award or the MARAC USA Counties-All Counties Award. The award, often called Cliff Corne, honors Cliff for being the first amateur to work other amateurs in all USA counties and receiving USA-CA #1. Currently there are 731 USA-CA holders

Similarly, the Jack Scroggins, W0SJE, Memorial Award is for confirming contact with 10 holders of the MARAC Worked All Counties Second Time Award. Currently, there are over 100 holders of the Second Time Award.

It is not necessary to be a member of MARAC to apply for awards; however, award fees are more costly for non-members. Basic fees for any certificate is \$2 for members and \$3 for non-members. The MARAC mobile plaques are \$20 for members and \$30 for non-members. The MARAC special plaques are \$40 for members

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and \$50 for non-members. The FBCA basic application is \$10 and \$2 for each subsequent endorsement. The FBCA plaque is \$40 for members and \$50 for non-members.

### Contests

Here is a monthly list of contests, both state and national, that might help you work a new county.

State QSO parties—January: North Dakota; February: Vermont, New Hampshire; March: Wisconsin, Virginia, Alaska; April: Alabama,

Georgia; May: Nevada, Michigan, Florida; August: New Jersey, Maryland, New York; September: Washington, Idaho; October: California, Wyoming, Pennsylvania, Illinois.

National county contests—March: MARAC 10M CW, MARAC 10M SSB; April: MARAC SSB; May: MARAC CW.

Hopefully, these plus more state contests will be planned for 1992. Other months have contest activity but the exchange does not include the county, making it difficult to tell if

contacts would help your county totals.

For information on county hunting or MARAC membership send an SASE to MARAC, P.O. Box 64, Newport, MN 55055. MARAC membership is \$16 per year for dues and a monthly newsletter subscription sent via first class mail (\$13 per year for third class mail). Dues are \$25 US for members outside North America.

As always, monitor 14.336 MHz and 14.056 MHz for mobile county hunting activity. Until March, happy hunting! □



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IC-751A Gen. Cvg. Xcvr	1699.00	Call \$
IC-725 New Ultra-Compact Xcvr	949.00	Call \$
IC-726 HF/50 MHz All Mode	1299.00	Call \$
IC-2KL 500w	2079.00	Call \$
IC-4KL 1 kw	7275.00	Call \$
<b>Receivers</b>		
IC-R9000 100 kHz to 1999.8 MHz	5459.00	Call \$
IC-R7000 25-1300 + MHz Rcvr	1199.00	Call \$
IC-R71A 100 kHz - 30 MHz Rcvr	999.00	Call \$
IC-R1 100 kHz - 1300 MHz	624.00	Call \$
IC-R72 30 kHz - 30 MHz Rcvr	972.00	Call \$
IC-R100 100 kHz - 1856 MHz Rcvr	707.00	Call \$
<b>VHF</b>		
IC-275A/H 50/100w All Mode Base	1299/1399.	Call \$
IC-229A/H, 25/50w, 2 Meter Mobile	449/479.	Call \$
IC-2GAT, New 7w HT	429.95	Call \$
IC-2SAT Micro Sized HT	439.00	Call \$
IC-25RA 2m HT/scanner	600.00	Call \$
IC-901 New Remote Mount Mobile	1199.00	Call \$
IC-970H Multi-Band, 45w, All Mode	3149.00	Call \$
<b>UHF</b>		
IC-4SAT Micro Sized HT	449.00	Call \$
IC-4SRA 70cm/scanner	600.00	Call \$
IC-4GAT, New 6w HT	449.95	Call \$
IC-3220A/H Dual Band Mobile	659/699.	Call \$
IC-2410A 2m/70cm	889.00	Call \$
IC-2500A FM, 440/1.2 GHz Mobile	999.00	Call \$
IC-24AT New 2m/440 mini HT	629.95	Call \$
IC-W2A, 2M/70cm NEW HT	629.95	Call \$
<b>220 MHz</b>		
IC-3SAT Micro Sized HT	449.99	Call \$
IC-12GAT Super HT	529.95	Call \$

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TS-450SAT New HF Xcvr	1549.95	Call \$
TS-450S New HF Xcvr	1349.95	Call \$
TS-140S Compact, Gen. Cvg. Xcvr	949.95	Call \$
TS-890S HF Plus 6m Xcvr	1549.95	Call \$
TL-922A HF Amp	1982.95	Call \$
<b>Receivers</b>		
R-5000 100 kHz - 30 MHz	1049.95	Call \$
R-2000 150 kHz - 30 MHz	799.95	Call \$
RZ-1 Compact Scanning Rcvr	599.95	Call \$
<b>VHF</b>		
TM-741A FM, 2M/440, Triple Receive	TBA	Call \$
TS-711A All Mode Base 25w	1059.95	Call \$
TR-751A All Mode Mobile 25w	669.95	Call \$
TM-241A 50w Mobile FM	469.95	Call \$
TH-27A Compact, 2m, HT	419.95	Call \$
TM-731A 2m/70cm, FM, Mobile	749.95	Call \$
TH-77A 2m/440 HT	599.95	Call \$
TM-641A 2m/220 FM Xcvr with third band option.		
<b>UHF</b>		
TM-941A 2M/440/1.2 GHz	1199.95	Call \$
TS-790A All Mode, 2m/70cm/1.2 GHz	1999.95	Call \$
TR-851A 25w SSB/FM	771.95	Call \$
TM-441A Compact 35w Mobile	479.95	Call \$
TH-47A Compact FM, HT	429.95	Call \$
TH-55 AT 1.2 GHz HT	524.95	Call \$
TM-541A Compact 1.2 GHz Mobile	579.95	Call \$
<b>220 MHz</b>		
TM-331A Compact Mobile	469.95	Call \$
TH-315A Full Featured 2.5w HT	419.95	Call \$

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FT-747 GX Economical Performer	889.00	Call \$
FT-757 GX II Gen. Cvg. Xcvr	1280.00	Call \$
FT-767 4 Band New	2299.00	Call \$
FL-7000 15m-160m Solid State Amp	2279.00	Call \$
<b>Receivers</b>		
FRG-8800 150 kHz - 30 MHz	784.00	Call \$
<b>VHF</b>		
FT-2400 50 Watt, Mobile	419.00	Call \$
FT-411 New 2m "Loaded" HT	406.00	Call \$
FT-290R All Mode Portable	610.00	Call \$
FT-26 Mini, 2 Meter HT	329.00	Call \$
FT-415 2m HT	409.00	Call \$
FT-23 R/TT Mini HT	351.00	Call \$
<b>UHF</b>		
FT-76 Mini, 440 MHz HT	359.00	Call \$
FT-815 70cm HT	439.00	Call \$
FT-911 Compact 1.2 GHz HT	505.00	Call \$
FT-811 Compact 70cm HT	410.00	Call \$
FT-790 R/II 70cm/25w Mobile	681.00	Call \$
FT-912 1.2 GHz, 10w Mobile	581.00	Call \$
<b>VHF/UHF Full Duplex</b>		
FT-736R, New All Mode, 2m/70cm	2025.00	Call \$
FT-690R MKII, 6m, All Mode, port.	752.00	Call \$
<b>Dual Bander</b>		
FT-5200 Ultra Compact 2m/440 Mob.	749.00	Call \$
FT-8200 Ultra Compact 440/1.2 GHz Mob.	899.00	Call \$
FT-470 Compact 2m/70cm HT	576.00	Call \$
<b>Repeaters</b>		
FTR-2410 2m Repeaters	1154.00	Call \$
FTR-5410 70cm Repeaters	1154.00	Call \$
<b>Rotators</b>		
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2M Mini HT  
List \$489. CALL!  
C468A  
440 Mini HT  
List \$499. CALL!

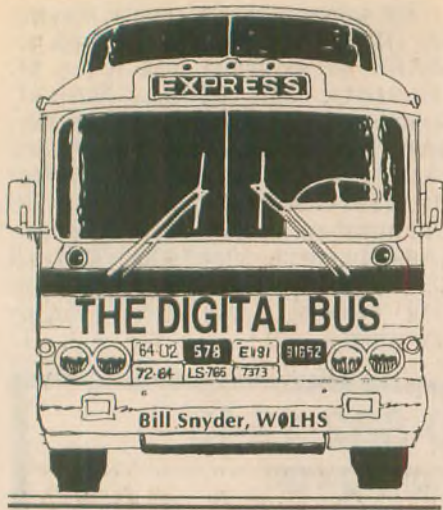


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When I checked my packet bulletin board (BBS) this morning it was receiving messages from a station down the line in Minnesota. All the traffic consisted of "junque mail": want ads, for-sale messages, etc. About 40 messages had arrived. I checked the contents of the traffic. None of the messages were for me or anyone else in our territory. It was all junk.

I'm always fascinated with the "headings" on BBS messages. For non-packet fans, let me explain. Every time a message is forwarded the BBS computer program inserts a line into the heading which serves as an audit trail for the message. Each added line gives the date and time of arrival at the BBS, the call sign and packet address of the forwarding station and, finally, the message number and zip code of the forwarder. It's a great way to see where and when the message traveled on its way to your station.

Many times the message heading is much longer than the message. This is especially true for junk mail. They seem to wander all over the country and, to my way of thinking, overload the packet system with useless traffic. But, it's only a hobby, people tell me, no real harm done.

This morning I printed out one random message. It turned out to be a short message looking for ICOM rigs to buy. The six-line message body had 21 lines in the heading—that's well over three times the message length.

The message was dated the 17th of the previous month. I got it on the 4th, so it had been on the road 18 days. The wanted message had started in western New York, hopped via the AK TELINK to Anchorage, Alaska, then via SATELINK to central California, and next it wandered through seven California BBS down to old Mexico. At this point the message had been enroute only six days.

From Mexico it hopped to Wisconsin where four BBS handled it. After that it bounced through six Minnesota BBS and arrived in North Dakota none the worse for wear. Unfortunately, it had been hung up for eight days in one Minnesota station. Long delays happen quite often in packet travels.

And so it goes. Luckily this message had no time value, but many of them do. Sometimes a message can pass through 10 BBS in one day and then spend 10 days in the next one. But, like I said, it's only a hobby.

The message numbers are interesting, too. The two highest message numbers recorded in the "Wanted" preamble record were: 65,450 and 51,915. In my BBS it picked up number 24,451. That's not a true number of all the traffic my BBS has handled in its lifetime because my board has been reset to zero at least four times. I would estimate that W0LHS has handled about 40,000 in the days since it was first hooked up on 2M.

I'm sure there are many things we could do to improve the service, and the first one is to limit the amount of junk mail that is pumped into the system. Before you put an "ALL" type bulletin into the packet traffic system ask yourself, "Am I adding to the junk mail?" If you feel you are, then don't!

### Good old TV days

A couple months ago I wrote about some of my experiences in the early days of North Dakota TV. I heard from a number of readers who had similar experiences. Jack Whitaker, W5HEZ, called to compare notes on those early days. Jack said his memories were about the same as mine and we laughed hilariously at the fun we had in those pioneer TV days.

I think what made those days in 1953 so much fun was the fact that only one of our employees had previous experience with small market TV, and as

a result we had to invent our methods and techniques. WDAY-TV, the station I worked for, was partially owned by the people who owned the local daily newspaper. The reporters for the newspaper were a good bunch of guys, but they looked down their noses at our ability to cover the news in the state of North Dakota.

We had only been on the air for about a week when the newsroom sent me and my cameras to Minot, North Dakota, 270 road miles away from Fargo. My assignment was to film the arrival of then-President Eisenhower at the Minot airport, then follow him the next day to Riverdale where Ike was scheduled to toss the first shovelful of earth to close the Garrison Dam across the Missouri River. The hydroelectric dam, a two-mile earth-filled project was one of the first big flood control efforts in the post-war period.

In Minot, I parked my car around the corner from the hotel where the President was to stay the night. Carrying two cameras I walked to the nearby Associated Press newspaper office where my press credentials were waiting for me. As I crossed the street a couple reporters from our own Fargo newspaper offered me a ride. I accepted.

"What are you doing up here?" a photographer asked.

"I'm shooting pictures of Ike's arrival at 6:30 tonight," I said.

"When do you plan on running them on TV? I'd like to see them," the other asked. I detected a bit of sarcasm in his voice. I suspected they thought we couldn't develop movie film rapidly.

"Oh, some Thursday," I said. It was Thursday. We arrived at the AP office and the reporters hauled their heavy wirephoto machinery in and set it up. I watched.

We all rode the special press truck for photographers out to the airport and waited for Ike to arrive. At about 6:30 Air Force One and a press plane, both C-54s, arrived. Ike smiled happily as he came down the stairway and transferred to an open convertible for the ride to town. I filmed the arrival and snapped a few stills. Then we all piled on the photo truck which took its place immediately ahead of the President's car in the procession. The press truck was now filled with a batch of photographers from the national newsreels, the TV networks and many news bureaus. When the procession arrived at the hotel we all scrambled for position to picture Ike walking into the hotel.

As Ike entered the building I filmed my last shot and raced around the corner to my car. At the airport I unloaded the cameras and handed the film to a pilot from the Fargo Air National

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Guard Squadron who "just happened to be there on a training mission." He jumped into his P-51 fighter and roared down the runway towards Fargo, 250 air miles away.

At the Fargo airport one of my assistants "just happened to be there" and he grabbed the film from the pilot and raced to our station. Keep in mind that WDAY-TV was only about a week old. We could only process 100 feet of film at a time on our primitive reel and tank processor. Our continuous 16mm developing machine had been on order for months but had not been delivered, so we made do with the \$30 reel processor.

The 16mm film was developed as a negative and the picture reversed to a positive in the film chain. It was a close shave time-wise, but those scenes of President Ike arriving 250 miles away in Minot hit the news program at 10:05 the same Thursday evening.

Well, as you might guess, the newspaper people were awe-struck when they watched the 10 o'clock news and saw the big event in motion pictures. The newspaper editor, who also owned stock in the broadcast company, called the TV news director and tried to figure out how we scored the beat. But our man successfully warded off complete disclosure.

The next day I followed Ike to the dam site and photographed the formal closing ceremony. Thousands of people gathered to hear the President. The chief engineer of our station and the news director flew to Riverdale in the engineer's Globe Swift airplane and carted the raw footage back for the early evening news. I headed back to Fargo by car. Along the way I stopped into a bar about 50 miles from home and watched our six o'clock news. The lead story featured clips from the second and third three hundred feet of genuine newsfilm I had ever shot in my life. What a thrill for me!

That little caper cost the station a bunch. In return for the "training flight," we made and exhibited public service recruiting announcements for the local Air Guard. It was a good trade!

### Eavesdroppings

"FB ON YOUR AGE—WELL YOU HAVE MORE TURNS ON YOUR COIL THAN I DO ... NICE TO HERE YOU HEAR ... I THINK HE WAS PULLING MY COAX WHEN HE SIGNED THAT SPRATLY CALLSIGN ... PACKET IS ANOTHER ANIMAL, AN AUTOMATED DOG ... I TRIED PUTTING A FILTER IN MY NEW TRANSCEIVER AND BY THE TIME I GOT TO THE RIGHT PC BOARD I WAS SORRY I STARTED ... WHAT IS THE EXCHANGE MESSAGE FOR THE CONTEST WE'RE IN ... I'D TELL YOU ABOUT MY EXPERIENCE IF I COULD JUST TYPE ... BY THE WAY, WHAT EVER HAPPENED TO THE FAMOUS WOODPECKER? ... I NEVER DID GET A QSL CARD FROM THE WOODPECKER, HE OWES ME A BUNDLE FOR ALL THE QSO'S HE WRECKED ... IT WILL BE NICE TO GET BACK HOME TO THE USA AND RUN A FULL GALLON AGAIN ... WE MUST BE ALLOWED TO CHEAT A LITTLE ON SIGNAL STRENGTH REPORTS—YOU'RE RST 599 ... MY WIFE TELLS RELATIVES THAT HER HUSBAND IS A SHORT WAVED HAM ... THEY GROW A LOT OF ALFALFA AROUND THESE PARTS AND THAT AIN'T HAY ... MY QTH IS FLORIDA JUST A FEW MILES FROM THE MOUSE HOUSE ... LAST NIGHT I WENT TO A MEXICAN FOLK BALLET AND I'M STILL CLAPPING MY HANDS ... I GREW UP ON SPIKED MALT —

THAT'S AN OUNCE OF GRAIN ALCOHOL IN A QUART OF NEAR BEER ... 73 FROM WEST VIRGINIA WHERE THE MOON COMES OVER THE MOUNTAIN IN HALF GALLON FRUIT JARS — BIGGER ONES THAN KENTUCKY."

Thanks to W0HAH, WA0LCF, KA0SLI and a batch of others for the help. Write me: Bill Snyder, W0LHS, 1514 South 12th, Fargo, ND 58103. My packet address: W0LHS @ W0LHS.ND.U.S.A.NOAM. 73 & DIT DIT. □

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
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### NIRTS.

Yes, NIRTS. That's what search and rescue is all about—Need It Right This Second. As you prepare your communications response plan, don't forget a chapter on NIRTS. Keeping this concept in your planning ensures you'll create scenarios to respond quickly with needed equipment and operators.

One of my favorite collections of search and rescue publications is *Search and Rescue Magazine*. The first issue came out in the fall of 1973

and, to my knowledge, was the first such publication available on a national level. Dennis Kelley (also author of *Mountain Search for the Lost Victim*) began his venture with an introduction and call for contributions to initiate a "communications media for SAR." Over 11 years later I received a final issue. Over the course of the publication Dennis covered about every aspect of search and rescue.

During this time the National Association of Search and Rescue Coordinators became better known, changed its name to the National Association for Search and Rescue and used *SAR Magazine* as its official publication for many years. NASAR was, and still is, the only nationwide organization bringing SAR individuals and groups together to share ideas.

### SAR awareness

What resulted from the 45 issues of *SAR Magazine* was an awareness that individuals and groups share common goals, desires, needs and problems. Also, people began to share ideas on a larger scale. For many years SAR was a local operation. What worked in Wyoming might have worked in Florida but there were few opportunities to share information.

All of a sudden, or so it seemed,

there were SAR groups and books and seminars and publications. My bookshelf began to sag under the weight of the many papers and conference reports that were published. One topic that continues to receive attention is the importance of communication, both within an organization and during a mission.

I would urge you to study communications—in theory and in practice. You might consider taking a communications theory course at your local college or university. While Amateur Radio has much to offer in the way of technical expertise and equipment, there's a large void we could fill in helping a group communicate.

### The printed word

I still read *SAR Magazine*, years after its final issue. I still read CAP newsletters and other publications—because there are many points still to be learned. Don't think that because it has not recently been written about, or has already been covered, the subject should be closed and tucked away. The written word is a reference. You'll find out what worked, what didn't work and most of all, maybe you'll understand the *why* of the issue. There are many good ideas in hundreds of SAR publica-

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tions. Learning and communicating these ideas continues to be critical to SAR operations.

### SAR public reactions.

A key SAR job is the public affairs person, the PAO (public affairs officer), mission spokesman or press liaison. Whatever the title, it's the person who deals with the media.

From a newspaper headline: "The press isn't the enemy." If you remember only that, you've made progress. Treat the press honestly and openly. I often get local comments after a search mission that the media misidentified something, such as a plane type; they said it was a Cessna 182 and it really was a Cessna 172. Yes, that happens. Very few reporters are pilots and fewer still have ever been on an SAR mission. They've covered them, but spending 30 minutes writing a story cannot compare with your years of public service work.

If you help the reporter by giving all the facts you know, chances are the story will get told correctly. You can't be selective. Reporters often have a sense of knowing when you're not being honest and open. This leads to them seeking information from other sources and labeling you as an unreliable source, someone whose facts always need checking. It's always been a little ironic that the SAR people who are very vocal against the media are the first to complain when a story didn't show up or was inaccurate.

You should be aware that the array of contacts in any good reporter's phonebook is awesome. If you think you're the only SAR contact, think again. It's astounding the information a good reporter can assemble quickly from a variety of sources. Having a good relationship with the media can

benefit you, because media folk are very good at obtaining information. That information could also benefit the SAR event.

Often during a mission the SAR attitude is that the media has no business asking questions about the mission. But the fact is that many reports may be prompted to ask questions about how effective the search flights are, the probability of detection and recovery, or why you're searching in a certain area. SAR people are also deeply offended if any criticism surfaces. Woe unto the reporter who mildly suggests that there was a response problem. Yet here is an open forum for self improvement. If a problem was obvious to someone else, perhaps it needs to be addressed within the SAR group.

Finally, there's nothing wrong with *initiating* contact with the media. I'm reminded of one mission for a lost plane where almost half the search area was eliminated when it was learned, as a result of the story receiving media coverage, that the missing plane had made a fuel stop after landing on a dirt road near a convenience store. That lead proved to be important.

### Media memory

Remember that new piece of equipment you bought and called a press conference to announce? Remember how you all beamed when your pictures were on TV showing your new stuff? Well, the media remembers too. Most newspapers and television stations maintain a well stocked library. This library contains everything they printed or aired as well as information they didn't print such as reporter notes and wire service stories. A reporter can call up every story about a particular topic in a matter of seconds. If you don't believe me, stop

by your newspaper library and ask. If it's not on a library computer it is in their clipping file.

It's a good idea to keep track of what you've done and said over the years. You could be embarrassed when someone digs up an old promotional story about something donated to you which never quite got used as intended. Clipping and library files go back a long way. A good public affairs person in your group is a key player both during and after missions. Don't leave this job to your least qualified person. If anything, it should be filled by someone who knows SAR and can give honest and real answers.

### Good stuff!

I've been playing with a wonderful packet program called *Arespack*. This is one super program. It formats and numbers messages, turns on and off printers at remote stations and, in short, is worth looking into.

It was written and developed in Utah and is available for distribution. You can get a copy, with documentation, by contacting Larry Driskill, KE7AU, c/o Ivie Technologies, 1366 W. Center St., Orem, Utah 84057. Don't just call or write. Send him a formatted disk, in a disk mailer, and include a return label and postage. He'll copy the files for free, but it's very unfair to expect him to supply and format the disk and pay postage. You'll like this program. It can be used by ARES groups and CAP units. Quite a flexible program and well done.

### Thanks

Happy New Year! Thanks for your continued support by way of letters, manuals, emergency plans and comments. I'm looking forward to a super 1992 with you and *Worldradio*. Keep writing and keep sharing your ideas! □

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October in Connecticut and New Hampshire is positively beautiful! For the second year in a row my wife, Tricia, and I decided to go "leaf-peeping" in New England. We packed up the Honda and drove off in a cloud of dust, headed for the haunts of Norm Brien, KA1NBW, in Manchester, New Hampshire. Norm and I had been stationed together at RAF Lakenheath, where I had elmered Norm for his ham license.

Tricia and I started our northern trek a day early, in order to take our time and make a few stops along the way. One of our planned stops was a place just outside Hartford, Connecticut — the "Mecca" of ham-radiodom, Newington: the birthplace of organized Amateur Radio, home of Hiram Percy Maxim (HPM) and headquarters of the American Radio Relay League. We arrived at ARRL HQ around noon on Friday, October 4. The beautiful fall weather enhanced the experience. After a couple of "formal" shots of the HPM Memorial Station, W1AW, taken from Main Street we ventured in the back entrance where we met Jeff Bauer, WA1MBK, the newly appointed W1AW Chief Operator.

Jeff gave us a quick tour of the main facility, pointing out the seven massive, fully automated Harris kilowatt transceivers (all donated by Fred Hammond, VE3HC, and Harris Communications) used for the W1AW bulletin broadcasts. Our discussion of kilowatt transmitters logically led us to a discussion of QRP. It turns out that Jeff is a fanatic low power operator and ardent contester. After I mentioned that I wrote the QRP column for *Worldradio*, Jeff jumped up and dragged me outside to meet Jim Kearman, KR1S, one of the ARRL

technical staff. Jim, an avid QRPer and author of the *DX Companion* (an ARRL publication), was staggering across the lawn, hungry and over-worked, headed toward the local eatery in search of some much needed lunch. Jim, Jeff and I talked QRP for about 20 minutes. It was at that time Jim said that he had to press onward to lunch, but he invited us to stop by his office when we took the HQ tour and he would take our picture (for his infamous QRP mug shot file) and show us some upcoming QST projects.

Soon we were taken on the official HQ tour by Mike Gruber, WA1SVF, another technical staff member. ARRL HQ is a fascinating blend of modern business offices and amazing radio history. While waiting for the tour to start, I was mesmerized by a rotary spark-gap transmitter. After about five minutes of inspection, I was finally able to understand how they "tuned" the antenna circuit and made the thing work. The museum in the lobby of ARRL HQ is a microcosm of early radio. On display are some original Flemming Valves, early receivers and transmitters, the dreaded Wouff Hong and equally bizarre Reti Snitch, and one of the first radio controlled gliders to ever grace the skies of New England.

First on the agenda of the tour was a swing through the DXCC offices and an explanation of how the cards are received, sorted, and credited to the applicants. What a monstrous job! Now that the DXCC staff has become computer automated, the task is easier, but it still entails a lot of work by the ARRL staffers.

Mike then took us into the technical department where we again met Jim, who showed us several unique QRP projects that will be featured in future issues of *QST*. Jim accompanied us to our next stop, the infamous ARRL lab.

Here, lurking behind a computer terminal, we encountered a familiar call on the QRP bands, Zack Lau, KH6CP/3. I have often noticed that my K7 call gets some quick results in pileups here on the East Coast. Imagine how a KH6 call does! Zack is one of the chief architects of the QRP projects that grace the pages of *QST*. Zack is a prolific builder and he is very, very good at his craft. At this point, Jim and Mike could not resist relating the story of the "Zack-lets."



QRPer Zack Lau, KH6CP/3, shows off his 20M CW Field Day rig.

These are small, oftentimes tiny, circuits that KH6CP builds up and leaves laying around the lab. No one but Zack really knows what all these little Zack-lets do, but somehow they magically multiply (when left alone in a dark room) and become QST QRP projects! The first photo shows the Zackster holding a very tiny 20M CW transceiver that he started building at the beginning of Field Day '91. When he finished the miniaturized rig he proceeded to use it to make some QSOs from the HQ FD site! The second photo shows Zack's lab bench piled high with, what else, Zack-lets. Our tour guide, Mike, has also become infected with the QRP bug and is in the process of rebuilding a used HW-9. Contrary to popular belief, ARRL HQ is positively infested with QRPer. (According to Jeff there are at least nine or ten low-power enthusiasts on the ARRL staff!)

We left Jim and Zack and followed Mike on the rest of the HQ tour, which was absolutely fascinating. Our next to last stop was at the field services section where I met Luck Hurder, KY1T. Luck and I talked at length about ARES and the possibility of starting ham radio licensing classes in the state prison where I teach. Luck was extremely positive about this and offered to lend official ARRL support if needed.

The tour concluded with a return visit to W1AW and Jeff. Here I received a certificate for operating HPM's memorial station. As we said our good-byes to the ARRL staffers, I had a gut feeling that ham radio was in good hands. What did I get out of the

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Zack's test bench at the ARRL lab. Each time the lights go out the Zacklets multiply!

pilgrimage to "ham radio Mecca"? Several things come to mind. First, the League is in the hands of some active, dedicated and highly motivated radio amateurs who are in touch with the mainstream of ham radio. Second, contrary to some doomsayers, the ARRL is on top of the Washington scene with a duly licensed lobbyist who spends several days per week in the Capitol promoting Amateur Radio as a national resource to congressmen and senators. Third, the goals and objectives of Hiram Percy Maxim and Clarence Tuska, co-founders of the League, are being realized through the ARRL staff and membership. Today the League remains the only organized body representing Amateur Radio to the Congress of the United States, special interest groups, the FCC and many other official and unofficial organizations both here and abroad. The Old Man would be very proud. What he envisioned still works over 75 years later.

Our leaf-peeping went ahead as planned the next day. Norm took us on a trip through the White Mountains of New Hampshire. The weather had closed in and fog was thick in places, but we managed to get some outstanding images of the New England foliage. Tricia and I had a great four-day vacation.

The QRP ARCI Fall QSO Party is now history. October 19 and 20 were the days and if you didn't get into the melee you missed a great contest. This year I tried something entirely different—a single-band entry. Forty meters was the chosen band and a "death-ray" loop from Radio Works was the prime antenna. The Radio Works Big-Sig 40M loop was erected in a rectangular fashion (70 by 35 feet) horizontally about 15 feet above the

ground, using the chain link fence around the perimeter of our property as support. This is a 3/2 wavelength antenna (210 feet in length) fed with a dedicated matching unit at one corner.

The Radio Works Carolina Windom was the backup antenna. One thing that I noticed very early on was how quiet the loop antenna was compared to the Windom. Noise levels on 40 were running about S3 to 4 on the Windom but dropped to S1 on the loop. Signal levels were not really any higher; however, the noise was so much lower, weak signals could easily be copied on the loop. This made for some great QSOs during the contest. K1RS and WA1MBK were worked at S8/9 levels from Connecticut during the contest.

Initially I started the contest with the Ten-Tec Argonaut II, but about two hours into the event the synthesizer locked up and the Argo was history. Since I could not get into the box (TORX screws were used on the outside of the Argo) to reset the circuitry, I shoved the Argo II into a box going back to Ten-Tec and pulled the

trusty old Argo 509 out for the remainder of the contest.

Power level at K7YHA for the contest was 2W output, using a solar charged battery supply. Mike Bryce, WB8VGE, from Sunlight Energy Systems (2225 Mayflower NW, Massillon, OH 44647), builds and markets the solar charger module (called the SunSwitch) that I have been using. More on this little jewel in another column; however, suffice to say that the SunSwitch makes solar charging batteries a breeze. I managed well over 500 QSO points and 31 states, provinces and countries in about 19 hours of operation. This was my first attempt at a single-band contest entry and I really enjoyed it. My final QSO at 2359Z on October 20 was an outstanding QRPer from the UK, Chris Page, G4BUE. A great way to end a great contest. Total contest points amounted to about 225,000, which is hopefully enough to win over the efforts of the ever omnipotent W8MVN.

Ten-Tec's Argonaut 535 (Argo II) has been out for a while now. It seems that it is suffering from some initial birth pains. In addition to the synthesizer lockup that I and others have experienced, my review radio also had some problems with RF overloading causing problems in the receiver, reception of the opposite sideband on CW, extremely high current drain, along with excessive birdies (I did not experience any objectionable birdies on my review radio but others have reported this as a definite problem) and excessive phase noise. The QRP ARCI via the *QRP Quarterly* (their newsletter) has undertaken the task of compiling a list of problems and submitting them to Ten-Tec for resolution. More on this as things develop. To all of you who are using the new Argo II and having no problems, great. Your luck is better than mine.

All for now. Hope you've had a Happy Holiday Season. 73, Rich. □

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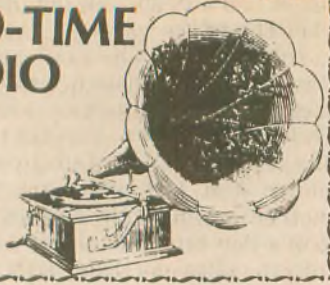
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## OLD-TIME RADIO



# Adventures in Amateur Radio

GARY E. MEYERS, KY0B

Radio has always fascinated me. As a youngster, I remember reading books from the school library, anxious to discover the magic of those mysterious circuits. My young mind was full of imagination as I gleaned all I could from them.

It was the summer of 1955 that my first real radio adventure happened. I had gone to the store with my mother and there it was, sitting on the shelf directly behind the cash register: I immediately asked the man "How much for that crystal radio set?" Needless to say the next few weeks were spent mustering up any odd job a boy of 12 could find. After what seemed forever, I was able to go back to the store and claim my prize. I handed the man \$2.98, tucked it under my arm and made an exit that would be the envy of any peacock strutting his plumage for all to see. That afternoon was spent testing my skills at not only trying to assemble that little radio, but also in

trying to figure out just what it was the instruction sheet was actually telling me (you see, nothing changes). As I was checking my wires, adjusting the cat whisker, and setting my longwire antenna across the back yard, I could hardly wait for those first sounds to come bouncing out of the earphones. With everything ready it was time for the great moment of truth!

Two years later, having reached the respectable age of 14 and with some experience under my belt, I felt it was time to move on to bigger things. A construction project article in *Popular Electronics* was chosen and the parts were collected. Once again my building skills were to be put to the test. Let's see now, poke a bit here, adjust this thing, couple it with lots of good old luck, and pretty soon I had my own broadcast oscillator off and running. I figured out how to connect a 45 rpm record changer and a microphone and, voila, the world's most loved DJ was on the air. This little jewel had a range of about 50 feet (we all have to start somewhere, right?) which easily covered my house as well as one or two neighbors. It provided many hours of delight until one day new neighbors moved next door. Little did I know what was in store for me next.

I was doing my thing with my "studio program" one afternoon when a loud knock sounded at the door. There stood my new neighbor. "What in the world is going on over here?" he asked quickly. I could tell by the sound of his voice that he was sincerely interested in what I was doing in the field of radio. I had also noticed some pretty weird looking wires around his house and figured he would appreciate a tour of my setup. I was right; he immediately told me something about BFI from my oscillator and that it was against the law. Gosh, we hit it off great right from the start, and I found myself following him back to his house to take a look at his equipment.

Wow, as I entered his room I felt as if

I were in the time tunnel seen on television. The room was filled with all sorts of black boxes. Most of them had big dials, meters, knobs and red and green pilot lights everywhere. I was getting my first look at a real ham radio station. He muttered something about the only thing he could hear on the receiver when I was interfering was Elvis getting all shook up or something. The only thing I really remember is that in just a few minutes I was talking with some guy way out in California. Well, I was hooked! I had to find out more about this thing called "ham radio." I didn't see much of my new friend after that. Seems his job demanded a lot of time and then I had my school work. He did remember to let me know when the next Novice Class would be starting, and I signed up to take it. It met every Friday night for two hours, and we learned stuff like Morse code and radio basics. Ten weeks later I took my exam and the class ended. Back then you had to send the test back to the FCC for grading. Technically nobody knew whether they passed or not, but one of the teachers cheated and gave us the good news, unofficially of course!

Time really dragged while we waited for our licenses. My thoughts centered around getting a ham station set up. Being the oldest of seven and money scarce, I elected to try my hand once again at building something. I ordered a "space-spanner" from Knight Kit (\$19.95 if I remember correctly), and assembled it in about a week. Now I could listen to that CW stuff as I concentrated on several of my friends' junk boxes. My first transmitter turned out to be a two-tube 40M oscillator. A length of 72-ohm twin wire donated by a club member and soon I had a dipole cut to the chosen frequency swinging from the trees. All that took about five weeks, yet still no license. I remember how I wished the mail could be delivered on Sunday, as it would sorta speed things up a little. Somehow it didn't seem right that my ticket might be lying in some Post Office when I needed it so desperately. I wondered if those "no antenna" promoters ever worked for the Post Office? Naw . . .

Well, good things come to those who wait, and believe me I had waited, and sure enough one day as I arrived home from school, there it was. I grabbed it and headed for my shack (which was set up in my bedroom). Let's see now, crystal in place, toggle switch on, key down, tune for maximum brightness from the light bulb, switch to the antenna, look out 40M . . . WV2MCM is on the air!

Those early days were exciting. I only had one crystal cut for 7189 kHz, and I think I tried to wear it out (it

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must have been a good one—I still have it). Eventually the CW got easier and I was pounding the brass almost every night. Needless to say, however, my station lacked in many respects and my thoughts were starting to shift toward upgrading. I remembered how upset my mother was when she found out that her favorite cake pan had become the chassis for my first transmitter, and I was careful to let her know that I was going to try to find something already put together. A little detective work and a visit to the next club meeting and I was the proud owner of a Heathkit DX-20 and an S-20-R Hallicrafter. I became quite fond of that set, and I still have the log I kept back then (it was required) along with several QSLs complete with the 3¢ stamps.

After that, time seemed to slip by unnoticed, until one day a friend called to remind me that our year was almost up on our Novice licenses. (Back then it was good for only one year, and then your only choice was to upgrade or say au revoir!) By then my code speed was at a comfortable 18 wpm, so I decided to attack the theory. Not having a book, I immediately sent for one. The reply came the next week that they were out of the book I needed but would send it as soon as they got some in. There I was, about three weeks left before I had to take the test, and no book. Surely it would arrive in plenty of time, I thought. Wrong! The time for the trip to the FCC arrived, but no book. I had about decided not to go when a friend came up with "Plan B." I would ride with him and another ham, and they would coach me through the 50 questions on the way. Hey, it just might work, I thought. After all, teenagers are known for their ability to pull off things like that. We got an early start, and they fired questions at me with the answers like a drill sergeant on the first day of basic training. These guys really know their stuff, I thought, maybe I'll actually pull this thing off. After all, I did build my first rig didn't I?

We arrived at the FCC office in downtown Buffalo, New York, in plenty of time to find the exam room and quiz each other on a few last questions. Then the FCC examiner entered the room, collected all study material and calculators (we couldn't use those things back then), and handed out blank sheets of paper for the code test. I noticed the typical government clock on the wall in front of us—you know the kind, about 15 inches round with black, large numerals and a huge red second hand. Uncle Sam must have got a real deal on those babies; I've seen them everywhere. I watched as the second hand pointed to 12, indicating it was 9

a.m. The room suddenly echoed with code. The test was on. As I reflect back to that day I am reminded how much easier it is for those who take that test today. Then, there wasn't any fill-in-the-blank test or multiple guesses. You copied what you heard and what you put down is what you got! The trick was to get at least one full minute worth of it without any errors. The code stopped as quickly as it had started. I handed my scribbled masterpiece in for grading, and soon I was called for the sending part. (I told you we had it rough back then—they even had you send with a straight hand key.) I never had any difficulty with the code once I started to use it, so I passed without a problem. Now for the theory . . .

Question one: What frequencies are allowed, etc. . . . No problem there, on to question two: When ordering a crystal for the 160M band what is the minimum tolerance allowed, etc. . . . Hey, I think I'll make it! Whoops, now here come the tough ones: Draw a diagram of a mercury vapor rectifier for the amateur frequencies, showing all component values and polarity markings. Then they hit us with all the Hartley and Colpits diagrams. They spelled "pie" wrong and then tried messing with our minds by telling us to describe a filter made out of a ladder of some kind. By the time I had finished it was quite clear that I had not done my homework! If you have ever ridden home from the FCC and were the only one in the car who didn't make it, you can share my agony.

I was off the air and about to graduate from high school. The next step for me was a tour of duty for Uncle Sam. I was living in Denver when I was released from active duty and responded to an ad in the newspaper about a ham licensing class. It was for the General Class license and I enrolled. We met two nights a week at the Army Reserve center. My job required that I

be at work at 5 a.m. so I decided to get out of bed at 3 a.m. and study theory while the house was quiet. Although I had not used the code for several years, I was amazed at how quickly it came back. The class wasn't over but I was ready to try the test again. At that time, the exams were only given once a month and I didn't want to wait another month for the class to finish. I took a day of vacation and trotted to downtown Denver to do battle with my friendly cousin Charlie once again. This time I was prepared! Not only did I pass the General exam, but I left that day with the Advanced Class exam passed. I had learned my lesson regarding the need to study, a lesson which I try to pass on to those who have the misfortune of having me for their Amateur Radio instructor. It never ceases to amaze me, though, how many people insist on learning it the way I did.

Well, that was then and this is now. I've seen a lot of changes since I first got into Amateur Radio 31 years ago. Those magical circuits still fascinate me, and I stand in total amazement when I compare the way things were done back when I built my first two-tube and today's technology. Most of my working career has been closely related to electronics as a result of this boyhood fascination. In fact, it was a 2M repeater that introduced me to my wife. We enjoyed several QSOs (on 80M CW) before we met at a hamfest. We both hold Extra Class licenses, and we share two HF rigs (you really didn't think one would work out did you?). Our activities include DXing, ragchewing and doing our part in helping others get their start in this wonder hobby.

Yes, I've seen a lot of changes, but one thing still remains as it was back then: I still enjoy heating up the soldering iron and wiring up a project once in awhile. You see, it still gives me that same excitement I found when I built that first crystal set back in 1955. □

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In life one learns about the birds and the bees sooner rather than later. When it comes to radio, it's just the other way around, as we learn about nanoteslas and megahertz later rather than sooner. Of course, the bees are easy to talk about, one not becoming very self-conscious in that discussion. The same is true of megahertz.

Indeed, at this point that's already part of our vocabulary. Thus, we all know that if we keep our operating frequency below the MUF on the path, expressed in megahertz, we can have our RF going around the globe to distant places. With the ionosphere, it's as though we live inside a big wave guide. But in contrast to the wave guide, the lower wall of our enclosure is lossy, RF being attenuated on reflection by the earth's surface. And there's another distinction; our RF really isn't reflected like at the wall of a wave guide. Instead, it's refracted, bent around when it approaches the upper reaches of the ionosphere.

All that happens as there's quite an ionized medium out there. True, it only involves a small fraction of the atoms and molecules at ionospheric levels but more than enough free electrons to do the job. In that regard, if you like numbers, and I mean BIG numbers, consider the fact that in just one hop from point A to point B one's RF moves through a column of almost a billion-billion ( $1E+18$ ) free electrons per square meter. All those electrons are excited by the electric field of our

RF waves as they pass by and radiate it like little antennas with essentially the same polarization, giving us that precious commodity, propagation.

So having gotten beyond bees and megahertz, let's get on with our discussion, to birds and nanoteslas. While I'm really not sure I understand birds all that well, I think I can talk about nanoteslas without blushing. In that regard I am referring to units of a magnetic field, indeed the earth's magnetic field. If you remember your high school physics, you'll recall that the earth has a field that's something like what you'd expect if there were a big bar magnet deep down inside.

Obviously, it's a bit more complicated than that but the earth's magnetic field is essentially parallel to its surface around equatorial latitudes and points in or out of the surface at the magnetic poles. At the equator its strength is about 0.5 Gauss, 5/100,000 Weber per square meter or 50,000 nanotesla, depending on the units one uses.

Now up in the F-region, those free electrons are not bumping into much. They can be excited by our RF but, with a magnetic field present, they'll also be gyrating or spiraling around geomagnetic field lines. That gyration affects how they re-radiate our RF and changes wave propagation. Like everything else, however, it's a matter of degree.

To see what's involved, we have to compare the frequency of our RF with that of the gyrating electrons. First we need to know the gyration frequency. There, if one does a wee bit of theory and puts in the numbers, one will find that the electron gyration frequency in the F-region (the number of spiral or circular motions per second) turns out to be about 1.4 MHz. How about that?

If the frequency of our RF were very large compared to the gyration frequency, an electron would not gyrate very much in the time it takes a wavelength to pass by. On that basis, there wouldn't be much difference between the present instance and the more elementary way we think about in the ionosphere. Thus, we'd expect the higher HF bands, say 14 through 28 MHz, to behave much like the predictions of a simple model with just free

electrons—refraction below the MUF and penetration to infinity above the MUF with losses in the lower reaches of the ionosphere and on reflections from ground, ice caps or sea water.

As soon as we relax that simplification and consider lower frequencies, life gets complicated and we have to take another look at the ionosphere. Before doing that, however, we have to pause and consider just how our RF passes through the earth's field. After all, the lines of force come out of the Southern Hemisphere and then go back into the Northern Hemisphere. (You do remember that, don't you?) So let's take stock of things before coming to grips with reality, using the example of RF going out from my QTH here in northwest Washington.

Now I'm the proud owner of a set of the Defense Mapping Agency's geomagnetic charts for Epoch 1985.0. Those charts show that at my QTH the earth's field points 21 degrees east of geographic north, has a horizontal intensity of 19,000 nanotesla, a vertical intensity of 53,000 nanotesla and a total intensity of 56,300 nanotesla. Now the important thing is that the earth's field is pointed downward, into the earth at an angle of 70 degrees from the horizontal.

Okay, if I oriented my beam 21 degrees east of north, any RF launched at 20 degrees from the horizontal would be travelling perpendicular to the earth's magnetic field (pointing into the earth)! On the other hand, if I pointed my beam 201 degrees east of north, any RF launched at 70 degrees from the horizontal would be travelling parallel to the earth's magnetic field but opposite to the direction it points (downward). And if I oriented my beam at headings of 111 or 291 degrees east of north, my RF would also be going perpendicular to the earth's magnetic field for all radiation angles.

If the RF travels in those general directions but not right on the mark, we can speak of quasi-perpendicular and quasi-parallel cases. That's a kind and gentle way of saying that whatever one works out for the ideal cases,

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perpendicular or parallel, has a reasonable chance to apply in the other, close circumstances. But after that, away from those directions, life gets ugly and I'd rather not talk about it in detail. In essence, it has to be taken on a case-by-case approach.

To back-track, we got into this more detailed discussion by lowering the operating frequency in our discussions, say below 14 MHz. What does all this mean for those ionospheric electrons and how they re-radiate our RF waves? Let's think about it!

First, we must recognize that they would carry out more of their spiraling motion in a cycle of our RF. But don't forget that the force from our RF electric field can speed up or slow down the electron's motion. If you look into the matter, that can change the radii of curvature of their motions, making their radii larger when the electrons are speeded up and smaller when they're slowed down by the electric field of our RF.

So far, everything that I've said is right but it lacks the generality, rigor and mathematical dignity that physics can provide. So if one goes to that extreme, it's soon apparent that sideways, indeed oscillatory, motions develop when our RF interacts with those ionospheric electrons. In their role as little antennas, that has the effect of complicating the polarization of the RF that they re-radiate as our wave goes by.

In short, what may have been plane-polarized radiation from our antenna can now have other components in its polarization. Moreover, the amplitudes and phases depend on the frequencies involved and the direction of the RF relative to the magnetic field. That's an elegant way of saying that the resultant RF can become elliptically polarized, just like you found with light in your high school physics class.

From this point on, things are rather complex, depending on the direction of one's RF relative to the earth's field, say parallel, perpendicular, indeed constantly changing. Thus, one must be prepared for all that can happen with elliptically polarized electromagnetic radiation as it moves through the geomagnetic field in going from point A to point B—changes in type, degree and direction of polarization, losses on reflection, you name it. Everything that can happen will happen.

But amateurs are pretty casual in the face of such adversity, eagerly sending their RF every direction relative to the geomagnetic field without a care in the world. In spite of my being a champion of the analytical approach to propagation, I'd be a fool to expect that you'd work out anything like a magneto-ionic survey before hit-

ting your paddles or speaking into the microphone. But I still want you to have an appreciation of the problems out there, such as changes in the degree or type of polarization which lead to fading as the ionosphere charges with time or you move from one band to another.

Finally, I'd like you to know that in spite of my earlier remarks used to simplify the discussion, there may be magneto-ionic effects in and above the HF bands. For example, an effect, Faraday Rotation, changes the plane of polarization of signals from satellites. In that instance, UHF signals pass through the top side and bottom side of the ionosphere; thus, what might seem like a small effect turns out to be significant. But it's just due to 10 more billion-billion electrons/sq. meter, now  $1E+19$ , the total electron content (TEC) of the ionosphere.

That's enough of a dose for now. Stay tuned for other trying episodes on this subject. This may not seem easy and I doubt these few words on the subject will change your life. But at least you'll be able to sleep better at night knowing that the RF your antenna radiates is able to find real-time solutions to one of the toughest problems of electromagnetic theory. □

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## Traffic handlers

While a traffic handler might exist without traffic (though the less traffic, the more bored one becomes), traffic cannot exist without a handler. Whether on a net or a PBBS, the message must be inserted and extracted by a traffic handler. Each net requires liaison stations to link with other nets. Section level nets require numerous stations to cover their areas.

The universe seems to run in cycles. This certainly includes the flow of traffic. After participating in the holiday traffic of Thanksgiving and Christmas, it feels as if traffic has stopped in January. Other things besides holidays exert an influence on traffic cycles. When the first evening hours of extended light re-emerge in the spring, participation in nets seems to drop off. Aside from these predictable occurrences, it does appear as if the overall body of traffic handlers has been in a steady decline.

This is not because the activity is not enjoyable. It is more likely to be a matter of exposure. Radio licenses are frequently accumulated without any particular intent of doing more than talking with some friends. Since traffic handlers have long been a somewhat exclusive club, requiring proficiency in additional levels of learning (gained through experience), traffic handling generally isn't an outlet that the new Amateur Radio

operator is aware of without the benefit of a traffic handling friend or just pure chance. Thinking back on how I became a traffic handler, it was purely a matter of chance. I happened to be "at the right place at the right time," when a traffic presentation was made at my radio club.

It's time to improve the odds. Every class teaching Amateur Radio should include a presentation on the practical uses of a radio. Thus, a few words should be given on such things as a typical QSO and the new vocabulary one is apt to encounter (es, tnx, FB); contests (Field Day, etc); DXing (pileups, split freq.); ARES activities in the area; and, of course, traffic handling. Preferably someone who is active in each activity should give a brief review of the topic. Follow-up should be encouraged by giving the class members a list of anyone in their area who would be willing to elmer a beginner in any of these activities. Additionally, why not hand out this list to anyone taking a VE exam?

## A Valentine's Day project

Every traffic handler can initiate an easy traffic project while at the same time assisting the community and doing some Amateur Radio public relations. Call or visit the principal of your local elementary school and volunteer to give a short presentation on Amateur Radio to a class (an hour would do it). Children from first to sixth grade would be able to participate. After giving the class a brief review of how traffic handlers help in times of emergencies, proceed to show how messages are sent throughout the world for practice and just for the fun of it.

The culmination of this lesson is to allow the children to write a Valentine's message to send to a relative or friend. If all goes well, other classes will probably request the same lesson. This could even lead to establishing a traffic box for the children to continue writing messages whenever they wish. The school may even become interested in organizing a radio club.

## Zero beat

Can you? Recently my Kenwood 930 quit (it takes more vacations than I do) and I switched back to my old TS

520. It is not as sophisticated as the 930, but then, it never breaks. The 930 has several narrow filters which can be turned on and off. Leaving these filters off, I can call a net or go off frequency with someone and hear him a great distance up or down the band. So who cares if the other guy can only seem to get within 1/2 or even 1 or 2 kHz away.

I call, then listen. I hear the other guy somewhere off frequency and quickly RIT him in. When I finish with him, I can instantly push the CLEAR button on my RIT and proceed to RIT in the next guy who's calling me off frequency. That's when the 930 is working.

It's quite the opposite on the 520. The one very narrow filter is permanently on. Thus, I don't even hear any distant drum beating. The RIT only has a knob which turns left or right. When it's turned on, it takes a second to find just where neutral is.

A few operators I know have tried to get the other station to zero beat them by an eccentric technique of calling the other station a million times. They seem to feel that, given enough time, the other station will surely be able to zero beat. Often when I'm sent off frequency by the NCS to wait for another station, I discover that the two stations working each other are so far apart that only one at a time can be heard without using my RIT. Frequently a weak station becomes good copy when the RIT is employed.

How can all these people be so far off? To be a first-class operator, learn how to zero beat the receive station. Since each radio has its unique technique for zero beating, read your manual. Some tips are, zero beat in "tune" position, if you have one; or tune all stations to the same CW note (try to match your offset).

## Teaching

To whom belongs the responsibility of teaching correct traffic handling procedures to people who have forgotten or never learned them? I am always hesitant to mention errors to stations. I keep hoping they will listen to good procedures and learn. But if no one ever mentions errors, they will surely be proliferated.

The NCS should remind stations checking in if they don't follow directions. Perhaps an NCS sends two stations off to pass a particular piece of traffic and while off frequency they decide they will also pass a couple others. If the NCS doesn't mention that they are only supposed to do what they are told to do, bad habits are generated.

Sometimes the NCS does make an error but often he has a plan to get the

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traffic passed in the most effective way. If two stations decide they need to change bands, should they let the NCS know first? Of course! What if he is sending others to them and they just disappear? What if it's more convenient to have them change bands after other traffic has been cleared?

NCS is in charge and check-ins should do exactly as asked and not try to second-guess. What if the NCS constantly does something incorrect? An example: He always calls the transmit station before the receive station when sending them off frequency. This seems to be happening more and more. The receive station is called first because he has to do the calling off frequency. Thus, he has to know the other station's call. After the transmit station hears his call, he only has to listen up for where to go. When he arrives he should hear someone calling him.

Thus, it's both annoying and embarrassing to be contemplating how beautiful the leaves look outside your window, hear your call, focus in and find you are to go up or down somewhere but you have no idea who you are to call when you get there. Do you ask NCS to waste time and repeat or just wander down and call QRZ? Perhaps you shouldn't have been thinking about the leaves, but it can get pretty boring waiting 20 or 30 minutes to clear one piece of traffic on a net.

Net managers should monitor how their NCSs are doing. Corrections should be taken in a positive manner. Sometimes we just forget and need a reminder. And then sometimes we find even better ways of doing things which, through discussion, can be disseminated.

#### WA4TGF

WA4TGF will go on the air beginning December 15 from the mall in Virginia Beach, Virginia. These guys have been handling Christmas traffic from the mall for several years. Most of the traffic (approximately 5,000 pieces) will go via packet. Notes are made on everyone sending traffic so that they can return replies or get additional information on service messages. They will appreciate your help in delivering and/or servicing back

traffic for/to them.

#### The Bay State

The Maritime Academy's training ship will be departing from Buzzards Bay, Massachusetts in January. N1BAT hopes to establish traffic for the cadets.

#### How does your net work?

This column should reflect how traffic is being moved whether in Virginia, California or Australia. I ask for your help in sending me information on how things work in your area. Whether you use Amlink, a PBBS, a 2M net, satellite, or are involved in HF nets, do let me know how it is performing. This information can be edited for our column so that we can share the things that are working. Send the information to me at WA3TAI.MD, or at my home address: N4GHI, 4728 Neptune Drive, Alexandria, Virginia 22309.

#### Cotton

KB9LT, Charles Willard "Cotton" Stokes, died on October 8, 1991, from cancer. He will be remembered by his traffic handling peers until they too become Silent Keys. He was always available to help anyone with any traffic problem they brought to him. Whatever you needed, you just asked Cotton. He was the STM of Northern Florida until he became too ill to continue.

He was a WWII Navy veteran and worked over 30 years as a rural letter carrier. He and his wife, Thelma, moved to Inverness, Florida, in 1981. He was active in many community activities. He utilized all modes and delighted in training new operators. He handled traffic—whether in Florida, the Fourth Region, the Eastern Area, TCC, or the world—via the IATN and our Sweden CW Net.

He'll be missed and mourned by his family, his local community and by the Amateur Radio community throughout the world. God bless you Cotton, may you rest in peace. □

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JOHN HARMON, WA6FMY

We live in a condominium, so space for antennas is definitely limited. Our "back yard" is a total of 12 x 22 feet and is home to a spa, a sauna and an antenna farm.

While the CC&Rs do not directly prohibit antennas, they say we can't do anything to annoy our neighbors (a rather ambiguous statement). However, since the Homeowner's Association is responsible for the upkeep and repair of the exterior of all units, they tend to be a little skittish about anything attached to those hallowed walls or roofs.

With these facts in mind, we set out to design a free-standing antenna farm. Our plans were submitted to the board and approved, and the biggest obstacle was behind us.

The first antenna was a Hustler 4-BTV vertical for 10, 15, 20 and 40M. The base is a 55 gallon drum filled

with sand bags. I cut a hole in the lid and welded a 2½ in. coupling with a "T" handle set screw. An eight ft. length of two in. galvanized pipe fits through the coupling into a "spreader" on the bottom of the drum.

A 1½ in. pipe was then inserted into the two in. pipe and is held in place with a "T" set screw. This enables us to raise and lower the antenna, making it easy to work on if necessary.

The base of the antenna is just above garage roof height, putting the top of the antenna at about 30 feet. The radials are spread out on the garage roof and are not permanently attached.

The second antenna was an isopole for the VHF packet station. The base is a "roof mount" tripod affixed to the patio. A piece of pipe was mounted on the tripod with the isopole on top. It worked very well for the packet, with the top of the antenna at roof-height, so we didn't raise it any higher.

Some months later we put up a 10M Butternut "butterfly beam." This antenna is mounted on another 55 gallon drum, with the same configuration as the Hustler. This mast also holds a rotor and an ATV antenna.

The two drums are set about 10 feet apart and braced with Unistrut, attached between the two masts with U-bolts at a height approximately even

with the garage roof. Other antennas are mounted on the Unistrut, including a 2M Ringo Ranger and a Spider for 10, 15, 20 and 40M. Antennas are attached to the Unistrut using miscellaneous hardware.

We often need to transport our 2M packet or HF stations to other locations. Uncoupling the radio gear is never a problem; however, taking down and putting up the antennas was always unwieldy. This setup allows for easy installation and removal of the antennas attached to the Unistrut. We have extra coax for portable operation, so we can disconnect antennas and leave existing coax in place. This is a great time and trouble saver since our shack is on the second floor.

Future plans include installation of a 6M vertical antenna on the Unistrut and a lightweight, free-standing, crank-up tower for the ATV antenna. This will allow us to raise the ATV antenna well above roof-height during operation, but keep it down and "out of sight" at other times.

When the first antenna went up, the XYL, Sandy, was a real "Nervous Nellie." Every time the wind blew she was sure the antenna was a goner. She spent a lot of time pacing the floor and peering out the window, even though I kept assuring her everything would be fine. Since we live in an area which considers any wind under 30 mph a "summer breeze," we have had plenty of opportunities during the past year-and-a-half to wind load and test our antenna farm and we have not had any problems.

This may not be the "ideal" antenna farm, but it is a viable solution when space is limited and attaching antennas to buildings is objectionable. So, if you want to get your antennas "out of the closet," consider designing a free-standing antenna farm. —Antelope Valley ARC, Lancaster, CA □

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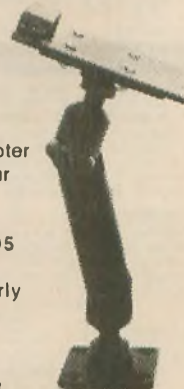
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## KURT N. STERBA

I luxuriated with a rich and aromatic Romeo Y Julieta from Habana. It was 1000Z October 26. The cacophony of the CQ WW DX Contest was about to start.

Am I a masochist? I went into this bloody battle armed only with a diminutive antenna. It is the Spider, from Multi-Band Antennas of Canoga Park, California. It's a vertical, six feet tall—a mere dipole for 14 MHz is 33 feet long—I was using six feet. My power was 100W. An amplifier-equipped station would be more than two S-units stronger, a Yagi owner would pick up another S-unit, and a contester with an antenna up in the air, instead of right on the ground, would have a massive advantage.

But in three minutes I worked two continents. The opening of the contest was max mess. Everyone was calling. Prudence would dictate (when minimally girded) to wait until the second day when the pileups are thinner, but such a weaselly approach is not my way. Fight, fight, fight is the way I go!

I went back and forth between 10, 15 and 20. Once I worked two continents within the same clock minute.

Many times I made two contacts in two minutes. During the contest, on first call, I worked a station that is as far south from here as you can get. There were times that I'd have to stand in line a bit, but I was also told, "Big Signal!" Really!

There was one time that I made five contacts in five minutes. Then I went for my afternoon nap. Another time I worked three zones in three minutes. Another time, two continents in three minutes. I'm really pleased with the

**If you don't learn from your mistakes, there's no sense making them. —Cuyahoga Falls ARC, Cuyahoga Falls, OH**

wee Spider. Sure, it's not a 6-element beam (and they make no such claims, unlike some). It's supposed to be a mobile antenna for cars, RVs and boats. Many folks are now using them as home antennas. A Spider could be placed out on a condo balcony and probably not even be noticed.

So, how did I do with a six ft. antenna in the competitive jungle? I worked a bunch of those Pajama stations and the Flying Tiger is in my log. While a few of the biggest stations may get 39 or 40 zones, under these conditions I consider it a success to get 20. Alas, I was too lackadaisical this time and only got 19. However, I did qualify for the Worked All Continents certificate issued by the ARRL and that, for me, considering my self-imposed limitations, marks a success.

To another subject: As Dave Sumner, K1ZZ, ARRL honcho, wrote about antenna discussions during QSOs, "The chances are high that you'll also hear some information that is only half true, or perhaps just plain wrong. Myths and old wives' tales about these related subjects prevail..." Sumner then talked about a series that appeared in *QST* by Walt Maxwell, W2DU, that should have dispelled the everpresent bogus, but alas, did not.

Maxwell now has a book entitled *Reflections* published by the ARRL. I'll quote a few lines:

"All power fed into the line, minus the amount lost in line attenuation, is absorbed in the load regardless of the mismatch at the antenna terminals."

"The reflection loss from the mismatch is cancelled by the reflection

gain of the tuner."

"Proven scientific facts..."

"The antenna tuner really does tune the antenna to resonance... The tuner obtains a match, by which all reactances throughout the entire antenna system are cancelled, including that of the off-resonant antenna, thereby tuning it to resonance."

"Contrary to what many believe, it is not true that when a transmitter delivers power into a line with reflections, a returning reflected wave..." (You'll have to buy the book to get the answer to that one.)

*Reflections* costs 20 skins. Maybe a couple of buddies could split the cost. If everybody reads it I'll stop getting whacko letters, but I have compassion for my critics and will accept their apologies with the serene grace for which I am well known.

Now, in my forthcoming book, I will explain why, with a vertical antenna, you should have no less than 360 radials, none shorter than .75 wavelength and no smaller than number eight wire, preferably even larger.

*(KNS goes by his alias so as the copper wire company where he is majority stockholder will not be overwhelmed with an avalanche of mail, pro and con.)*

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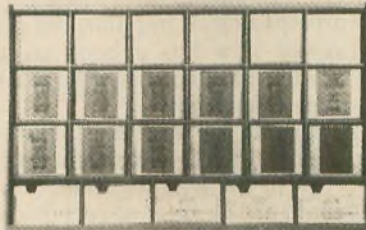
### California

NAVAL POSTGRADUATE SCHOOL ARC will be holding Winterfest 1992 on January 18 at the Monterey Peninsula College Armory. Demonstrations including ATV, SSTV, packet, etc., will be featured. Vendor spaces will be \$10 for the indoor flea market and \$5 for outdoor tailgating. Contact Pat, KA6IRS at 408/649-4444 ext. 20 days, or Doug, KC3RL at 408/663-6117 evenings. □

### Florida

SKY HIGH ARC is sponsoring the 12th Annual Citrus County Hamfest on January 25 from 8:30 a.m. at the New National Guard Armory. Hourly door prize drawings, free park-

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ing, and the "best hamfest food anywhere" will be featured. Parking for self-contained RVs will be available. Admission tickets are \$4 until December 20 and \$5 thereafter; XYs will be admitted free with OM. Indoor tables rent for \$10 each, except wall tables which are \$12 each. Outdoor flea market spaces rent for \$6. Talk-in on 146.355/955. Contact Ed Gaudet K4BRC, 904/746-2371; or SHARC Hamfest, 9, S. Davis St., Beverly Hills, FL 32665. □

### Louisiana

SOUTHEAST LOUISIANA ARC is sponsoring the 1992 Hammond Hamfest on January 18 from 9 a.m. to 4 p.m. in the SLU University Center. This year's event features VE exams, door prizes, MARS, ARRL and QCWA meetings. General admission is free. There also will be a limited number of free swap tables. Commercial vendors may set up on Friday afternoon. Contact Ernest Bush, N5NIB, 331 Rock Road, Hammond, LA 70403; 504/567-1261 day, 504/542-0034 night. □

### Michigan

SOUTHFIELD HIGH SCHOOL ARC will sponsor their 26th Annual Hamfest/Electronics/Computer Swap and Shop on January 26 from 8 a.m. to 3 p.m. at Southfield High School. Plenty of parking, food and door prizes will be available. Admission is \$4 (children 12 and under free). Tables are \$13 for each eight ft. table (reserved and paid for in advance). Doors open at 6 a.m. for exhibitors. Contact Robert Younker, Southfield Senior High School, 24675 Lahser Rd., Southfield, MI 48034; 313/746-8675. □

### Missouri

MISSOURI VALLEY ARC, GREEN HILLS ARC and RAY-CLAY ARC are sponsoring the Northwest Missouri Winter Hamfest January 18 from 9 a.m. to 4 p.m. at Tri-Rivers Expo Hall in Cameron. There will be hourly door prize drawings. Admission price is \$2, or \$3 at the door. Swap tables with two chairs are \$12 each (includes one admission), extra tables are \$9. Talk-in on 146.52 simplex, or 146.25/.85. Contact N.W. Missouri Winter Hamfest, P.O. Box 182, Cameron, MO 64429. □

### New York

METRO 70CM NETWORK is sponsoring an electronics flea market on January 19 from 9 a.m. to 3 p.m. at Lincoln High School in Yonkers. Features include free parking, unlimited free coffee and door prizes. VE Exams will be held from 10 a.m. to 2 p.m. Admission is \$4, kids under 12 free. Sellers can pre-register table space for \$15, or \$1.80 per foot if you bring your own table. Tables will be \$20 at the door. Vendor set-up will be at 7 a.m. Talk-in on 440.425R/445.425T (79.7 PL); 146.910R/146.310T; 223.760R/222.160T(67.0 PL). Contact Otto Supliski WB2SLQ, 53 Hayward St., Yonkers, NY 10704; 914/969-1053. □

THE SHORTEST DISTANCE BETWEEN TWO POINTS IS USUALLY CLOSED FOR CONSTRUCTION. —The Lark LED



## Zero District QSO Party

Sponsored by the Davenport Radio Amateur Club, this event will run from 1600Z to 2400Z on January 5.

**Operation:** Zero District stations may work anyone; all others work Zero District stations only. Work Zero mobiles again as they change county. Exchange signal report and state. Zero District stations also send county.

**Suggested frequencies:** CW—60 kHz up from the low band edge; phone—3.900, 7.270, 14.300, 21.350 and 28.360; VHF—146.52 (no repeater QSOs); packet—145.01.

**Scoring:** Count one point for phone QSO, two points for CW QSO and two points for packet QSO. Contacts with the host station, W0BXR, count 10 QSO points regardless of the mode. Zero District stations multiply QSO points by the total of non-Zero states, Zero District counties, provinces and DXCC countries worked. Any station with over 100 QSOs include a dupe sheet. Note that county and state must be logged in all cases for duping purposes. Each station may be worked once per band per mode.

## 1991 Worldradio DXathon

**ELIGIBILITY:** All licensed Amateur Radio operators worldwide.

**DATES:** Jan. 1, 1991 through Dec. 31, 1991. **BANDS:** Five bands •80 •40 •20 •15 •10 **MODES:** Five modes •Phone •CW •Satellite •Visual (SSTV, FAX) •Digital (includes RTTY, AMTOR and Packet).

**OBJECTIVE:** Contact as many nations via as many different modes as possible. A nation is defined as an entity with enough sovereignty to issue its own postage stamps.

**SCORING:** Your final score will be the total number of nations worked per mode. You may count a nation only once per mode. An example of scoring: If you work Japan on CW and SSB on 20M, the point value would be two points. If you work Poland on CW on 10M and 20M, the point value would be one, as a nation can only be counted once per mode. **SUBMISSIONS:** All entries must be submitted on official DXathon entry forms or a reasonable facsimile or computer printout with nations listed in alphabetical order by prefix, and should include call, date, time, band and mode for each entry. Use separate sheets for each mode. QSL cards are not required. In addition, a DXathon summary scoresheet should be filled out with your score totals on it. As a matter of interest, include the total different nations worked, regardless of mode. You may count Estonia, Latvia and Lithuania as separate nations for the whole year. All entries must be postmarked no later than February 28, 1992. Entries must include your call, name, address and be signed with a declaration that the contacts were complete two-way contacts. Mail all entries to: *Worldradio*, 2120 28th Street, Sacramento, CA 95818, USA. All participants will be listed in *Worldradio*. Decisions of the DXathon committee will be final. The committee has the right to disqualify an entry for violation of the letter or the spirit of the rules. By submitting an entry, the participant agrees to abide by the decision of the committee. **Awards:** Will be given based on the number of entries. 100-point minimum must be accumulated to be eligible for an award. **RULE CHANGES:** Rules may be modified over the years to reflect feedback from the participants. Please send copies of this notice to your DX friends. Send 52¢ business size SASE to *Worldradio* for entry forms and nations list.

There is a special competition feature for Zero District clubs providing a minimum of three logs are submitted by members of the club. Each log is scored individually; however, the total of all logs will determine the score in this category. Each log must con-

tain the name of the club to be considered.

**Awards:** Certificates will be awarded in a variety of categories, depending upon the number of entries. Each club entry will receive a certificate.

**Logs:** Mail logs by March 1 to W0BXR, Zero District QSO Party, 2131 Myrtle St., Davenport, IA 52804. □



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only a single coaxial cable to the transceiver. Our relays are available in one of two styles Wired or Wireless. The Wireless style uses a separate coupler module installed near the radio. The coupler combines the RF signal and the relay energizing voltage to allow the coaxial cable to carry both signals simultaneously yet independently. The remote relay has a built-in coupler that separates the RF signal from the energizing voltage permitting the relay to transfer its contacts when the energizing voltage is injected into the coupler. This permits existing systems to be expanded with little modification. For more information, call or write for Catalog #IN84.

## Classic Radio Exchange

Scheduled for 2000Z to 0400Z February 2 and 3, the Classic Exchange (CX) is a celebration of the older commercial and homebrew equipment that was the pride of our ham shacks just a few, short decades ago. The object of the contest is to restore, operate and enjoy older equipment with like-minded amateurs. A "classic" radio is at least 10 years old, an advantage but *not* required to operate CX. You can use anything, although new gear is a distinct scoring liability and not as much fun!

**Exchange:** Exchange your name, RST, QTH, receiver and transmitter type (homebrew send final amp tube or transistor)

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and other interesting conversation. The same station may be worked with different equipment combinations on each band and each mode. CW call "CQ CX"; phone call "CQ Classic Exchange." Non-participants may be worked for credit.

**Suggested frequencies:** CW—up 60 kHz from low band edges; phone—3.880, 7.290, 14.280, 21.380 and 28.320; *Novice/Tech*—20 kHz up from low band edges. 7.060 and 3.560 tend to be the most popular CX frequencies.

**Scoring:** Multiply total QSOs (all bands and modes) by the following sum: total number of different receivers and transmitters worked on each band and mode plus the total number of states/provinces/countries worked on each band and mode. Multiply that total by your *classic multiplier*; the total years old of all receivers and transmitters used, three QSOs minimum per unit to qualify. If equipment is a transceiver, multiply age by two. If homebrew, count as 25 years old unless actual construction date or design is older.

**Awards:** Certificates are awarded every now and then for the highest score, exotic equipment, the best excuse, and other unusual achievements.

**Logs:** Send logs, comments, anecdotes and pictures to Jim Hanlon, W8KGI/5, P.O. Box 581, Sandia Park, NM 87047 or Marty Reynolds, AA4RM, P.O. Box 13354, Atlanta, GA 30324. Include SASE for the next CX Newsletter. □

## YL-SSB QSO Party

**Dates and times:** CW—0001Z Feb. 1 through 2359Z Feb. 2, 1992. Phone—0001Z March 7 through 2359Z March 8.

**Scope:** The party is open to all, though emphasis is on membership participation and member-to-member contacts.

**Categories:** Single operators, DX/US Partners and YL/OM teams.

**Exchange:** Signal report; state, province or country; name; ISSB number (if member) and DX/US partner.

**Scoring:** Three points for two-way member contacts within the same continent; six points for two-way member contacts among different continents; one point for non-member contacts.

**Multippliers:** Only member stations count as multipliers—one for each of the following: working both DX/US partners; each YL/OM team; each US state; Canadian province, DX

country; each VK and ZL Call district. Two multipliers counted for running low power (250W PEP input) throughout the party.

**Frequencies:** The General portion of the Phone and CW bands. Avoid NET frequencies (14.300, 14.332, 14.336 etc). Check 40/80M on the hour; VHF/UHF simplex only.

**Awards:** Special certificates to top scorer in each US Call district, VE province and DX country.

**Logs** containing contact information plus ISSB numbers must be received by April 30, 1992. Address all questions, comments and entries to Fred Kujawa, KØETA, RR 4 Box 213-6, Stockton, MO 65785. □

## Vermont QSO Party

Sponsored by the Central Vermont Amateur Radio Club (W1BD), the party will be from 0000Z Feb. 1 until 2400Z Feb. 2

**Operation:** Stations may be worked on CW,

# Silent Keys

## Russell Bennett, W6DTU

Russell Bennett, W6DTU, became a Silent Key on October 15, 1991, at the age of 89. He was a retired chief engineer for radio station KFBK in Sacramento, California. Raised in Stockton, California, Mr. Bennett started working for radio station KWG while in high school. He became a regular technician after graduating in 1930 and was promoted to chief engineer in 1938. He served as a radar instructor with the Navy during WWII and then returned to KWG for three years, after which he joined KFBK (1948) as a transmitter supervisor. He worked 10 years as chief engineer for the station and retired in 1974.

Mr. Bennett had been an active Amateur Radio operator for nearly 65

phone, RTTY, packet, or Amtor up to five times on each band.

**Suggested frequencies:** Phone—Lower 25 kHz of the 80 to 15M General bands and 28.3 through 28.5 MHz; CW—40 kHz up from the bottom edges of the 80 to 15M band and in Novice bands; other modes in usual area of all bands.

**Exchange:** Exchange signal report and QTH (county for VT stations; state/province/country for others).

**Scoring:** Count one point for phone QSO and two points for other mode QSOs. Multiply by number of states/provinces/countries for VT stations; others multiply by number of VT counties worked. Work W1BD for an extra multiplier. Awards will be given.

**Logs:** Log sheets and scoring sheets are available for an SASE to QSO Party Manager Bob DeForge, K1HKI, RR#1 Box 271, Brookfield, VT 05036. Also send an SASE for contest results. Entries must be mailed by March 1 to K1HKI. □

years. He received his first license in 1927 and often spoke of receiving it as 6DTU, before the prefixes appeared. Coolidge was President and his license was signed by Herbert Hoover, Secretary of Commerce. As W6DTU, he was an active CW operator and always pointed out that ham radio had been a springboard to his success in commercial radio broadcasting.

I had the pleasure of working with Russ in the USNR V6 electronics program back in 1942. Our friendship continued, with triweekly schedules on 40M which began from the time the US government restored amateur privileges after the war.

Russ had many credits to his name and was an honorary member of many radio societies. He is survived by his wife of 59 years, Aline.

— Information submitted by J. V. Collett, W6ERM □

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**NEW PRODUCTS**

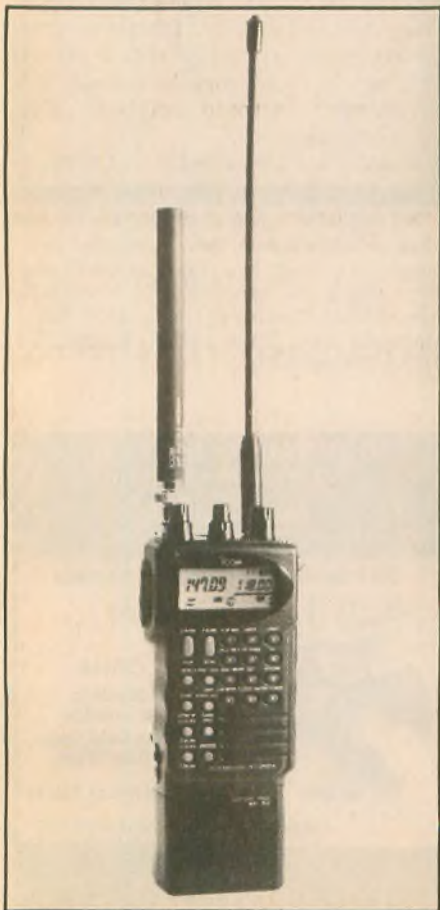
Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

## Icom HTS

Icom proudly introduces the IC-2SRA 144 MHz and IC-4SRA 440 MHz hand-held transceivers, with a wideband receiver directly installed.

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allow you to change settings in each band separately. Icom's frequency monitoring system allows you to monitor memory channels, the complete frequency band, specific parts of the band and priority channels. With the built-in pager and code squelch unit, enjoy selective calling and personalized communications without installing optional units.

There are 30 memory channels, one call channel and two frequency monitoring edge channels for the amateur bands, plus 60 memory channels, one call channel and two frequency monitoring edge channels for the wideband receiver.

Also included is a 24-hour clock, four DTMF memory channels, a variety of tuning steps plus many more attractive features. Suggested retail price for both models is \$599. For more information on the IC-2SRA 144 MHz and IC-4SRA 440 MHz hand-held transceivers please contact your local Icom dealer. □

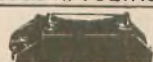
## Morse code station IDer

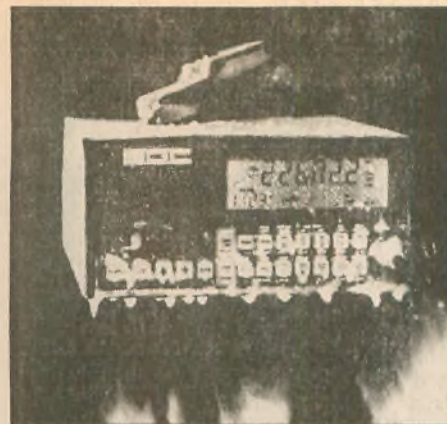
Midian Electronics' new ID-1 miniature Morse code station identifier replaces the need to verbally or manually identify each transmission. The ID-1 will automatically send a 16-character station ID and/or 130-character message at user-programmable intervals. The ID-1 is easily programmed via a 12-button Touch-Tone® style keypad with alphanumeric characters. Other programmable features include front porch delay, code speed, Morse tone frequency, bypass for PTT queuing, wait period for loss of COR input, and automatic repeat intervals. If desired, the ID-1 can also send Morse code manually.

The ID-1 takes the guesswork out of FCC-required radio user identification. Size is 1.4x1.1x.25 inches. Contact Midian Electronics for more information: 2302 East 22nd Street, Tucson, Arizona 85713-2024; 602/884-7981. □

## HF SSB transceiver

Make contact anywhere with SGC's new power-packed Model SG-2000 HF single sideband transceiver. Talk anywhere in the world, receive and send time sensitive documents, decode UPI transmissions, get the latest weather report or listen to shortwave broadcasts from around the world. Engineered for simple and efficient operation, the SG-2000 features an alarm generator, upper/lower sideband, true amplitude modulated (AM) receiver and channel scan as standard features. Exceptional features include 644 factory programmed ITU voice and data fre-

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quencies plus 100 field programmable channels. Scan all ITU channels and up to 100 memory channels in adjustable scan speeds and rates. An extra large liquid crystal, wide angle display with adjustable backlighting provides easy viewing day or night. The color coded and illuminated keypad has 130 annunciators and is easy to program and operate. The technical superiority and quality workmanship is evident in every SGC product, from the clean design of the PC boards to the sophisticated housing and user friendly front panel.

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The front panel of the SG-2000 can act as the remote head terminal, and up to eight full function remote heads can be utilized. The remote heads can be mounted flush with the bulkhead so they do not intrude on people space and the high impact, abrasion and water resistant housing will stand up well in the toughest environments. The SG-2000 front panel remote is the ultimate in compact size.

The SG-2000 has been engineered with a practical approach to use. The optional universal five-way head mount orients the control head in any direction, for easy viewing and operation. Designed for the mobile, marine, industrial and Amateur Radio markets, the SG-2000 retails for \$1,995. The SG-2000 can be used with the popular Model SG-230 microprocessor antenna coupler and the system cost is \$2,550. For additional information and product data please contact SGC Marketing Dept., P.O. Box 3526, Bellevue, Washington 98009; 206/746-6310 or FAX 206/746-6384.

## DX-World-Guide

CQ DX hall of famer Franz Langner, DJ9ZB, has published the 350-plus page *DX-World-Guide*. The generously illustrated book contains a variety of topics of interest to the DXer, including English-German DXCC cross reference, list of deleted countries, name reference to DXCC country (Gan Is. is in the Maldives, for example), prefix cross reference list, Maidenhead locators for cities around the world, CQ and ITU zone maps, and QSL bureau addresses. The bulk of the book is an alphabetic list of the current DX-CC countries, with one country per page. Each country page includes the name and common prefix of the DXCC country, area in square kilometers, capital and location of

same, continent, ITU prefix allocation, CQ and ITU zones, and licensing authority. In many cases, additional data includes DXCC notes, such as effective dates, previous names of the country, under which administration the country falls, previous prefix allocations, and national Amateur Radio society.

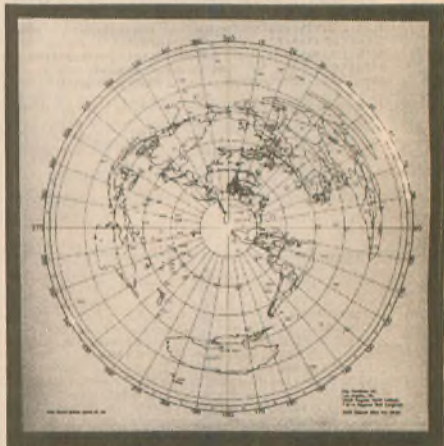
All text is in both German and English. Finally, across the bottom of the page is a two-line logbook blank for recording your own QSOs.

This book is available for \$25 (order No. FTB3) directly from Franz Langner, DJ9ZB, P.O. Box 150, D-7637, Ettenheim, FRG. □

## Beam indicator

Vector Control Systems announces its newest product, a 16 × 16 × 1 inch electronic beam indicator. Utilizing a four-color custom-plotted great circle map (centered on your QTH), the beam indicator graphically shows your antenna's direction and coverage with a five degree resolution.

A simple connection to any standard rotator control unit makes the beam indicator operational. A special feature is the adjustable beam width indicator which allows you to match it to your beam's radiation pattern.



The indicator is available in a glass covered black or silver frame, and is designed to be hung on the wall. It's priced at 189.95 plus \$8 shipping and handling, and is available from Vector Control Systems, 1655 North Mountain Ave., Suite 104-45, Upland, CA 91786; 714/985-6250. □

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# 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

Date	HOUR - UTC																								
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2/01	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/02	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/03	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/04	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/05	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/06	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/07	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/08	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/09	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/12	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/16	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/17	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/19	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/23	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
3/01	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

### Station Mid

Date	HOUR - UTC																								
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2/01	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/02	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/03	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/04	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/05	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/06	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/07	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/08	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/09	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/12	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2/14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

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# 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	Date	City	Contact	Notes
<b>Arizona</b>				Feb. 27	Lombard	KD9I 708/495-0498	w/i
Feb. 1	Tucson	K7OPX 602/886-7217	w/i only	Feb. 8	Mt. Prospect	WA9DLI 708/437-1464	w/i
<b>California</b>				Feb. 6	Mundelein	K9IW 708/367-6303	w/i
Feb. 1	Apple Valley	N6ZCA 619/244-4012	p/r pref; w/i OK	Feb. 29	Oak Forest	WG9R 708/687-0511	w/i
Feb. 2	Chico	W6YKU 916/342-1180	p/r pref	<b>Indiana</b>			
Feb. 1	Los Angeles	Ali Hassan-AA6WC 213/778-6226	w/i OK	Feb. 8	Hammond	WO9H 219/738-2728	w/i
Feb. 8	San Pedro	N6DYZ 213/325-2965	w/i OK	Feb. 1	Portage	KE9I 219/762-0580	w/i
Feb. 8	Ventura	Jess Roark, NY3S 805/483-6864; Tom St. George, KC6JLW 805/486-7619	w/i OK	Feb. 1	South Bend	NI9Y 219/255-4455	w/i OK
<b>Colorado</b>				<b>Iowa</b>			
Feb. 8	Denver	Glenn Schultz, W0IJR 303/360-7293, 24-hr. voicemail	w/i OK	Feb. 29	Council Bluffs	AA0BS 712/322-1454	w/i OK
Feb. 15	Westminster	N0BLU 303/650-6826; N0HNR 303/278-4280	p/r or w/i	<b>Maryland</b>			
<b>Connecticut</b>				Feb. 15	Laurel	WB3GXW 301/572-5124	p/r pref
Feb. 22	Gales Ferry	KY1F 203/536-0187	w/i	<b>New Jersey</b>			
Feb. 23	Milford	NB1M 203/933-5125; WA1YQE 203/874-1014	w/i	Feb. 12	Fort Monmouth	WB2GYS 908/532-5354	w/i
Feb. 26	Shelton	WJ1T 203/736-0488	w/i pref	<b>New York</b>			
Feb. 16	West Hartford	Larry, K1IED 203/644-2356	p/r pref	Feb. 19	Lancaster	Stan, N2IAE 716/887-6608	
<b>Florida</b>				Feb. 8	North Tonawanda	Vern, AA2AC 716/693-5977	p/r only
Feb. 15	Melbourne	WB9IVR 407/724-6183	w/i OK	Feb. 2	Yonkers	Emily, AC2V 914/237-5589	w/i OK
<b>Idaho</b>				<b>North Carolina</b>			
Feb. 8	Boise	W7JMH 208/343-9153	w/i	Feb. 9	Salisbury	Isabelle, AB4UX 704/284-2414	w/i OK
<b>Illinois</b>				<b>Pennsylvania</b>			
Feb. 18	Aurora	N9AKE 708/892-1252	w/i pref	Feb. 1	Erie	W3CG 814/665-9124	w/i
Feb. 15	Bolingbrook	NM9J 708/442-7100		<b>South Carolina</b>			
Feb. 15	Chicago	312/929-8500, ext. 2221	w/i	Feb. 22	Charleston	Pat Foster, AC4IH 803/553-3871	w/i
Feb. 22	Chicago	KE9X 312/233-0605	w/i	<b>Texas</b>			
Feb. 8	Dixon	W9DLU 815/284-6380	w/i	Feb. 11	Houston	ND5F 713/464-9044	p/r pref; w/i OK
Feb. 21	Elmhurst	W9PCS 708/833-7371	w/i	Feb. 8	Midland	KT5G 915/694-9450	w/i OK
Feb. 1	Hoffman Estates	NO9A 708/593-8658	w/i	<b>Wisconsin</b>			
				Feb. 1	Racine	NW9P 414/658-8390	w/i

## We miss you!

We are still missing many of your comprehensive 1992 VE exam schedules. You can send us your club's entire year's schedule (please include all exact dates) in advance, and we'll keep it here on file and list your sessions as they come up.

## DX World

(continued from page 49)

HH2PK	—P.O. Box 1095, Port-au-Prince, Haiti
OD5ZZ	—Walid Karami, P.O. Box 782, Tripoli, Lebanon
RJ8/UA6BGB	—Andy Zhukov, P.O. Box 1, Ust-Labinsk 352300, USSR
RJ8/UA6HPR	—Alan Latyshev, P.O. Box 999, Stavropol 355044, USSR
RJ8/UZ6AZF	—Oleg Zhukov, P.O. Box 410, Kaliningrad 10, Moscow Obl. 141070, USSR
RM9Q/UA9MEG	—Alex Timkin, P.O. Box 464, Omsk 644099, USSR
SV2ASP/2	—The Monk Apollo, Monastery Dochieriou, GR-63087 Dafni, Greece
UD850A1	—P.O. Box 73, Baku 370092, USSR
V73CT	—Ken, P.O. Box 1255, APO AP 965555
VP8CGQ	—Pete, P.O. Box 260/CGQ, MPA, Port Stanley, Falkland Islands
XX9AS	—Albert, P.O. Box 1787, Macao
Y11AFC	—P.O. Box 7441, Baghdad, Iraq
Y11RJ	—P.O. Box 7147, Baghdad, Iraq
Y10EB	—P.O. Box 7147, Baghdad, Iraq
ZA1DX	—P.O. Box 200/66, 1751 Budapest, Hungary
4J4A	—P.O. Box 20, Penza 440600, USSR
5J500D	—LCRA, Apartado Aereo 584, Santafe de Bogotá DC, Colombia

5J500P

—LCRA, Apartado Aereo 584, Santafe de Bogotá DC, Colombia

### Notes

1. Please QSL direct only.
2. The address in the *Callbook* is incorrect. Use Box 32, Site 3S, RR1, Windsor Junction, NS B0N 2V0, Canada.
3. IK1EDC operated from several Mexican islands and used a different manager for each. Contacts made from San Martin Island (NA-162) via IK1AIG; Smith Island (NA-163) via IK1JJB; Natividad Island (NA-164) via I1SNW; San Marcos Island (NA-165) via I1CAW; San Pedro Nolasco Island (NA-166); and Patos Island (NA-167) via I1ZL. This is confusing isn't it?

Many thanks to the following contributors: UA6HPR, UL8PC, WV1L, K1RH, W3EPR, WB3LTT, N6AW, AB6FH, K6TL, W6TUR, KK7K, W8TSF, WA0GOZ, American Radio Relay League, Salt Lake City DX Association (KB2G), Western New York DX Association (KD2YP), Northern Arizona DX Association (W7YS), Western Washington DX Club (K7WA), *The W6GO/K6HHD QSL Manager List*, *Long Skip*

(VE3IPR), *The DX Magazine* (VP2ML), *DX News Sheet* (G4DYO), *The Long Island DX Bulletin* (W2IYX), *QRZ DX* (W5KNE), *Inside DX* (N2AU), and *The DX Bulletin* (VP2ML).

The December issue contained an article about two young DXers under the age of eight who have been licensed less than a year. What we found remarkable is that one of the brothers had already worked 247 countries. This is in addition to sports activities, school work and whatever a young boy does at that age, plus having to share the radio with his brother and father! He should make the Honor Roll before age 10.

Merry Christmas and Happy New Year to you and may you be blessed with many new ones for 1992. 73 de John, N6JM.

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