Emergency Communications • Public Service • International Friendship

Worldradio

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Amateur Radio provides disaster-relief communications for flood victims

Ann S. Shaver, WH2E

"It's just like Armageddon, only everyone is alive!" That was how Salvation Army Major Pat McPherson, WW9E, described conditions at the shelter for flood victims established in April at the Grand Forks Air Force Base.

"This is truly a disaster. I've never seen shelters actually used like this before. There are 3,000 people here now. Usually, most people find their own resources. Grand Forks is the second largest place in the state, a town of 51,000. These folks at the shelter are the ones who have no other resources.

"When the immediate crisis is over, these people will still have nowhere to go. The Salvation Army realizes that and is making a long-term commitment to them.

"Amateur Radio has played a big part in all the disaster-relief efforts. From my perspective, I know SATERN (Salvation Army Team Emergency Radio Network) has been essential in our own operations," Major McPherson, himself an ardent amateur, related. Our training on 20-meter nets particularly has stood us in good stead.

"We (The Salvation Army) are responsible for providing food for the entire Grand Forks shelter. Tom Romstadt, W9NIC, is at The Army's distribution center over in Fargo. Bill Heaver, KB8QMP, is with another supply operation. We have several mobile canteens in service, each with at least one communicator as part of the team. You can imagine how important it is to have reliable communications and we need HF to be able to coordinate all this. Unfortunately, the Air Force doesn't understand that we need an antenna on the *top* of the hangar to do what we have to do.

"Here at the shelter, we put a dipole on the side of the hangar. Of course it's metal, so that was like transmitting directly into a dummy load! We're hoping to explain the situation to the Air Force authorities soon and convince them.

"In the meantime, we are relying on relay stations. Bill Davidson, KA9SWW, put up a 2-meter beam here at the shelter. We can reach John Wachal, W9HVV, in Crooksston, about 40 miles away. Bill Shillington, W9ZCL, in Mount Prospect, Illinois, is helping with relays all over the place. Ross Turner, K9STP, from Morrison, Illinois is also running hard.

"We have experienced SATERN operators throughout the Midwest who are hard at work. Tony Dacres, AA8EI, is coming from Cincinnati to Fargo to relieve Tom. Like Tom, Tony will be up there by himself so he will be doing a lot of things at the distribution center besides handling communications.

"Floyd Soo, W8RO, and his team in Mt. Clemens, Michigan are on standby, waiting to come out here as relief. The cooperation — the eagerness to help is so impressive.

"Walt Mertz, KØCLD, and his wife, Eunice, KAØSOM, came over

(please turn to page 6)

Grand Forks SATERN operating position. Walt Mertz, KØCLD (front) and Mike Bossi, KBØAYY.

One of many homes destroyed by the flooding.

NEWSFRONT

Worldradio

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

FCC Staff changes

Some staff changes at the FCC could affect Amateur Radio. The first is that of David E. Horowitz. Horowitz has been appointed Chief of the Private Wireless Division in the FCC's Wireless Telecommunications Bureau. Lisa M. Higginbotham has been appointed Deputy Chief of Legal of the Private Wireless Division. Also, Richard Engelman, N4COP, has been named Chief of the International bureau's Planning and Negotiations Division. *—via FCC Release*

The BS7H story

The long-awaited BS7H DXpedition to Scarborough Reef was forced to shut down early because of international politics. The operation appears to be the innocent victim of an ongoing feud over territorial economic rights between the Peoples Republic of China and the Philippines. Turn to DX World on page 23 for details.

Buy our bands?

One ham says that it's time for the Amateur Radio Service to ensure its survival by purchasing spectrum from the FCC. According to a posting on the *VHF Reflector* by Bob Carpenter, W3OTC, the latest FCC spectrum auction was supposed to bring in $1.8 billion to the federal coffers. Instead it pulled in only $13.6 million.

Carpenter cites a *Washington Post* story in which the FCC blames the poor showing on Congress. The FCC says Congress did not give the agency or the industry enough time to prepare for the latest auction.

But the low bids also might be a sign that the market for telecommunications licenses is becoming glutted, some analysts suggest. Carpenter says that if this is the case, then it's time for the ARRL or some other Amateur Radio group to start bidding. It's time for hams to place offers on any present and former Amateur Radio spectrum that might be put up for grabs. Bob Carpenter seems to indicate that bidding random small amounts should eliminate any doubt in the multi-national world of telecommunications giants that we hams mean to keep our frequencies for decades to come.

To read the whole story about the low bidding for spectrum, simply point your Internet browser to:

www.washingtonpost.com

Then click on *Search* using the key word FCC. *—via VHF Reflector*

Bergen ARA vs ARRL restructuring

New Jersey's Bergen Amateur Radio Association will be sending a formal resolution to the American Radio Relay League, to ask the national society to slow down and take a closer look at its proposed restructuring of the Amateur Radio Service.

The text of their resolution voted on at a May 3rd meeting, urges the League to postpone any immediate consideration of its already published restructuring proposals. It also asks the ARRL to begin extensive additional study on the various issues and, most importantly, urges the League to first begin a reevaluation of the Amateur Radio mission statement to reflect modern times and conditions.

According to the *Hudson Division Loop* electronic newsletter, many members of the club believe that the ARRL should once again focus on the basics of protecting and promoting Amateur Radio along the traditional lines, such as technical orientation and high standards of operating skill.

Club members also expressed considerable sentiment that standards should not be reduced in any way. They note that certain licensing policies have, in their view, been unsuccessful in promoting stable and sound growth.

A formal resolution is in the process of being drafted. The club plans to send it to ARRL Executive Vice President Dave Sumner, K1ZZ, Hudson Division Director Frank Fallon, N2FF, and others. Over 180 club members took part in the meeting that lead to the decision by the Bergen Club to take what appears to be a rather hard-line traditionalist stand. *—via ARRL Hudson Division Loop*

Foale on Amateur Radio

Astronaut Mike Foale, KB4UAC, likes Amateur Radio and is telling the world about it. At an STS-84 pre-flight press conference, Foale talked about Amateur Radio and his stay aboard the MIR space station.

According to information posted to the AMSAT Bulletin Board by writer Philip Chen, KC4YER, Foale told reporters that he took his Amateur Radio exam in preparation for spaceflight STS-56. His flight commander was Astronaut Ken Cameron, KB5AWP, who Foale described as pretty serious about Amateur Radio.

Foale says that Cameron encouraged the whole crew to get licensed. He did, and since then, has enjoyed taking part in Amateur Radio activities. Foale says that he is looking forward to using Amateur Radio on MIR throughout his stay. He adds that he will talk to anyone who can speak to him in English or Russian. *—via AMSAT-NA*

Israeli licensing changes

From overseas, Israel says it has changed its Amateur Radio examination structure from a single exam to separate Morse code and an integrated theory and regulations testing. An examinee can now take one or both of the parts of the exams, and only the incomplete or failed part need be re-taken at a fu-

ture examination date. In the past if one part was failed the entire examination had to be retaken.

Changes were also made to the Israeli Grade B General license and the VHF-UHF code-free license. Here the theory and regulations examinations have been integrated for both license classes. Now, if an applicant passes the "Technical" Class exams and at a later date takes the 12 word per minute code test, he will receive the Grade B license.

Old Grade D license holders wishing to become Grade Bs will be forced to take a code test. They will also be required to answer three questions in theory and three more in regulations to complete the new requirements. *(via IARC)*

Congratulations to:

Hal Williams, N6TZ,

winner of a $200 gift certificate (redeemable from MFJ). His name was selected at random by the computer from the ***Worldradio*** *subscriber list. Check here next month to see if your name has been selected.*

AMSAT-UK colloquium

The 12th annual AMSAT-UK Colloquium will be held at Surrey University, Guildford, England from 25-27 July. AMSAT-UK invites authors to submit papers about Amateur Radio space and associated activities. Papers will be presented at the Colloquium and will be published in the "Proceedings" of this annual event. Submissions should be sent to G3RWL, via e-mail to: g3rwl@amsat.org *—via AMSAT-UK)*

Mayor lauds Amateur Radio operators

At a meeting 22 April 1997, of the City and County of San Francisco Disaster Council, San Francisco Mayor Willie Brown made the following remarks:

". . . I must also tell you that I have been frankly fascinated with that unpaid group of people with those ham radios, the Auxiliary Communications Service. Now they are maybe the most active of all the volunteers. They are virtually over at the office every time I go over there. . . .Now they are an interested group of people.

"It is a communication system though, that I think now covers practically every community in San Francisco, and in some cases . . .every block in San Francisco, for emergency communication purposes, which means that a wireless system that seldom if ever can be totally disrupted by a disaster is within our grasp, and we are able to use.

"Obviously the cell phones play a role in that now, but the ham radio operators are the heart and the soul and the life blood of that system. And so we do have a system that is virtually communications disruptive-proof in terms of being able to do the communications that we may need to do.

"There is also . . . a level of training enjoyed by these people to carry out their task, and methods to identify them visibly in case of a disaster when they go into their operations mode." *—via Peter Dunckel, KE6TP, Mayor's Office of Emergency Services, San Francisco, CA*

RAC to help run ham radio in Canada

The Canadian Government has told Board members of that nation's ham radio society, Radio Amateurs Canada, to be ready to assume more responsibility in regulating Amateur Radio in that nation.

Industry Canada Assistant Deputy Minister Michael Binder has promised to move forward on the joint effort to delegate the administration of the Amateur Radio Service in Canada to a nongovernmental service company affiliated with the national society.

The effort was underway when it was halted earlier this year awaiting the formation of a long-term funding method by Industry Canada. Binder now says that he will phase in as many aspects of the plan as possible over the next several years. *—via Radio Amateur Canada*

Patty wins again

For the second year in a row, country music entertainer Patty Loveless, KD4WUJ, was named top female vocalist, during the annual Academy of Country Music Awards on 23 April. Patty was also the Country Music Association's female vocalist for 1996. She is married to album producer Emory Gordy, Jr., W4WRO. *—via ARRL*

Worldradio

July 1997

features

departments

Next month's columns will include 10-10, Computers & Basic Stuff, Old-time Radio, With the Handi-Hams, and YLs on the Air

Worldradio

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Our goal is to be a valuable resource of ideas and experiences beneficial to the Amateur Radio community. We publicize and support the efforts of those who bring the flame of vitality to this avocation. You readers are participants — an alliance of active radio amateurs concerned with reality, using radio as a communications tool to develop the skill, quality and full potential of Amateur Radio.

We emphasize the positive aspects of this great activity, and desire your contributions dealing with dramatic, personal and humanitarian uses of Amateur Radio. Articles for consideration may be submitted through the U.S. Postal Service or e-mail to kb6hp@ns.net

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Publisher's Microphone

In the world of DX there is the Honor Roll. Contact 300+ countries, send in the cards and you are on the list. Anybody can do that!

We now present the real Honor Roll. The latest to become ***Worldradio*** SuperBoosters (Lifetime Subscribers) are:

- **Christopher Linne, N2OPO, Hackettstown, NJ**
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- **David Splitt, KE3VV, Washington, DC**
- **William Eckels, W8ZNH, Big Rapids, MI**
- **Richard House, NU9X, Topeka, KS**
- **Richard Perry, Sr., NØVPA, Aurora, CO**
- **Penny Henker, NØWGJ, Livermore, CO**
- **Bill Nadzam, K8WN, Morgan Hill, CA**
- **Edward Corey, K7OC, Oregon City, OR**
- **and doing good things for his country in Europe, a hand salute to Barry Minsky, W2BJ, APO AE**

I just renewed my Amateur Radio license. I hope I last another ten years. I remember when the licenses were five years. It was periodically suggested that they be of longer duration but the government said "no." Finally, it went to ten years. No one suffered because of it, why wasn't it done sooner?

Passports were the same story. Five years. Then the government decided to reduce their workload in half by making it a ten-year renewal. To make up for less work, they ran the cost for a passport way up.

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There is always the cry of getting young people interested in Amateur Radio. Well, let's not forget the no-so-young either. Practically every service club is always searching for a lunchtime program. Surely you must know someone in the Rotary, Optimists, Lions, etc., that you could contact about putting on a program. Take some QSL cards, certificates, and a small transceiver to the meeting.

Oh, you just realized that you've been a member of an organization like that for many years and the idea of giving a little talk about Amateur Radio had never crossed your mind? Don't tell me.

The pool of potential amateurs is not what it once was for two reasons. One factor was that when everyone went in the service some number were exposed to serious radio communications for the first time and they found it interesting.

Another factor was when living room radios could get short-wave (BBC, VOA, etc.) the listener could also tune in amateurs as they were on AM just like the broadcasters. The dials would even indicate where the amateur bands were. Many found the amateurs more interesting than the programs and joined the ranks.

There isn't a draft anymore and home radios can't receive amateurs. Which means that efforts must be made to make up for the loss of those two avenues.

Icom, in an advertisement for the IC-706 said, "Easy for every class of ham to use." Isn't that a bit demeaning? What is that saying? Buy our radio because you can't figure out how to run the other ones? If we assume that the higher grade licensees (usually with some longevity as an amateur) can figure out, with some ease, how to run any radio that means the advertisement was aimed at the newer amateur. "Ooooo, an easy radio."

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On the page where the address label goes, the Des Moines (IA) Radio Amateur Association has in big letters, "Amateur Radio Is There For The Emergency."

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You've decided that it's time for a new transceiver. Contacting a dealer you are offered, let's say, $750 trade-in for your present rig. Here's how to make two people happy. Put a notice in your local radio club bulletin that you will let your unit go for $750. Someone, seeing a good price will buy it. They are happy. Send the $750 to the dealer instead of the rig. The dealer is happy. He doesn't have the expense of first checking it out and having it sit on the shelf and losing money every day it is there. Whatever price he sells it for it's about break-even at best and he just took it in to facilitate the sale.

Under the exact circumstances outlined above I bought a used camera which was a model I would never have bought new because of the price. Three people were pleased, the seller, the camera store owner and me. —*Armond, N6WR*

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The foremost in top-performing, durable, dual band handhelds now includes the FTT-12 DTMF keypad with CTCSS enc/dec. DCS enc/dec, DVRS and paging/coded squelch. Manufactured to rigid commercial grade standards, the FT-50RD is the only amateur dual band HT to achieve a MIL-STD 810 rating. Already a winner; the deluxe keypad makes this stand-out HT even better! Water-resistant construction uses weather-proof gaskets to seal major internal components against the corrosive action of dust and moisture. And, the rugged FT-50RD withstands shock and vibration, so throw it in with your gear!

Exclusive features set the FT-50RD apart, too. Wide Band Receive includes 76-200 MHz (VHF), 300-540 (UHF), and 590-999 MHz*. Dual Watch checks sub-band activity while receiving on another frequency, then when a signal is detected, shifts operation to that frequency. Digital Battery Voltage displays current operating battery voltage. Digital Coded Squelch (DCS) silently monitors busy channels. Auto Range Transpond System™ (ARTS™) uses DCS to allow two radios to track one another. And, the FT-50RD is ADMS-1C Windows™ PC programming compatible, too. To round out the FT-50RD, it has four battery savers, and super loud audio—remarkable in an HT this size.

A reliable companion where ever you go, the FT-50RD is one tough little dual bander with all the features you want!

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SATERN command in Minneapolis, Minn. Left to right: Margaret Jordon, WDØYTX, Norris Halver, KDØRI, and Matt Stephaniak, NØTNL.

flood

(continued from page 1)

from Minot and really saved the day for us with a Butternut vertical on the back of their camper here at the shelter. They've been very aggressive in getting our traffic through. They're running hard for The Army."

In truth, a lot of people are "running hard for The Army." There are so many, in fact, that Major McPherson readily admits that right now he has no idea of the names or call signs of the scores of people who have contributed their time and talents to relief efforts. And in Amateur Radio's finest tradition, many organizations, many clubs, many individuals have joined together to do what they can to mitigate suffering.

"There is great cooperation among the different radio groups. Bill Feist, WB8BZH, is the North Dakota SATERN coordinator and also the RACES director for Minot. MIDCARS is doing a great job relaying messages. South Dakota ARES is involved. Radio-wise, things are just great.

Get here ASAP

"I was scheduled to be here Tuesday (22 April), to coordinate tactical communications for Minnesota. On Saturday (19 April), Major Dave Dahlberg, National Coordinator of Disaster Services for The Salvation Army, called me and told me to get here ASAP. The head of MARS (Military Amateur Radio System) for Minnesota had called The Salvation Army there, basically calling for reinforcements. There's a great group of amateurs up there — now brand new SATERN members! Everyone is running so hard, I'm just sorry I don't yet know names and call signs. Right now, things are very hectic."

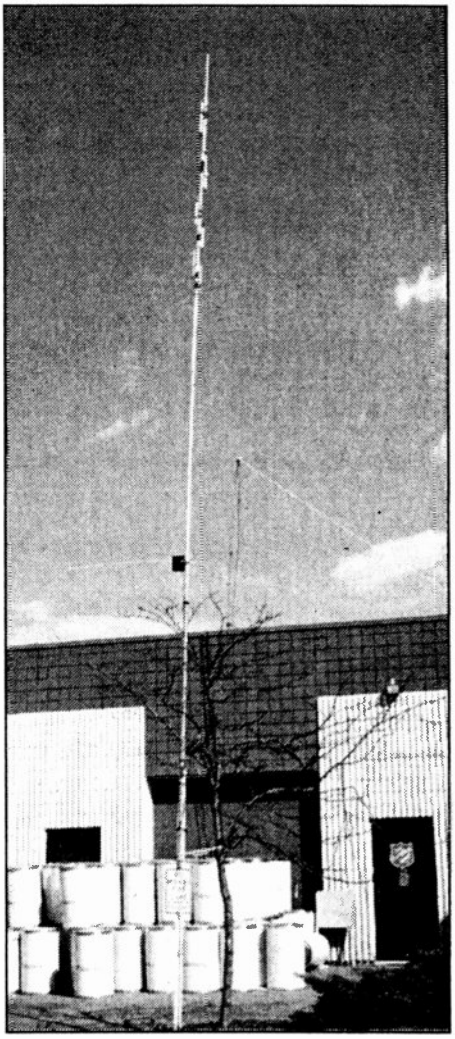
Even Major McPherson, who considers "difficult operating conditions" to be his normal environment, admitted the situation at the Grand Forks shelter was extremely challenging.

A major flood is like the paradox facing the Ancient Mariner — "water, water everywhere, nor any drop to drink." The entire town of Grand Forks had to be evacuated because the water supply was compromised. Put more bluntly, it was contaminated. No water for cooking or drinking, no water for showers, no water for flushing toilets. The town and its surrounding region was literally a disaster area.

"The motel where we're staying is charging the same rate, but there's no maid service. Even if we had water, we couldn't flush the toilets because the sewage has no place to go," Major McPherson explained.

All systems are overtaxed

The water supply is almost as precarious at the Air Force Base, site of the shelter. "Things are very fragile here at the Base. The Commanding Officer mentioned in today's briefing that their own water supplies are becoming taxed,



HF antenna set up at the warehouse operations center in Minneapolis.

that we may have to implement some form of water conservation soon." Again, how ironic to be faced with water rationing because of a flood!

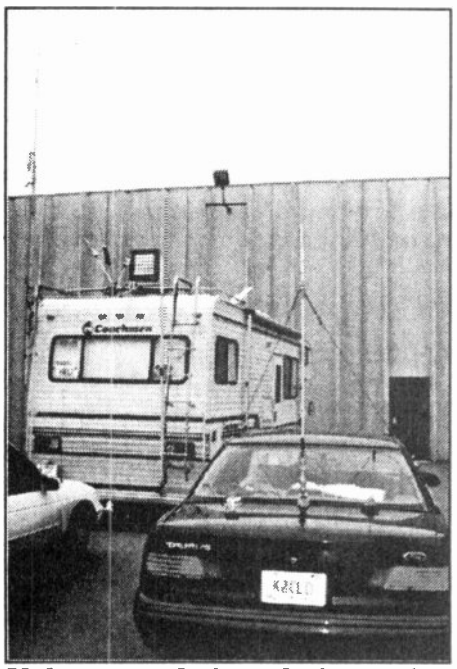
The phone system, too, is close to being overloaded, Major McPherson reported. "That's why it's so good to have back-up communications in place. We want to be confident of our back-up systems before the phones go down altogether, which we expect to happen very soon."

Among other assignments, SATERN volunteers are shadowing all the Salvation Army principals. "To tell you the truth," Major McPherson continued, "the officers don't like having someone follow them around all the time. I guess when we have time, we'll have to do some educating so they understand the value of 'shadows.' Officers like Jon Wallace, KC5OEB, who have been through something like this

before (note: Wallace was sent to Oklahoma City in the bombing aftermath, saw the value of Amateur Radio, and got his license shortly after his 'special assignment' was complete) really come to rely on the 'shadows' for more than just communication assistance. But, like the song says, 'You've have to be taught . . . .'

"Most officers, however, don't realize that cellular phones don't always work, that the wired-phone system might go down. What's more, we find that whereas an Officer might turn off his phone or let the battery run down, the Amateur "shadow" understands that it is his responsibility to be reachable at all times.

"Cell phones have a place in an emergency but they can be awfully inefficient. For example, with an 'all-points bulletin,' you have to make numerous individual calls. Sometimes you do need a private



Volunteers bring their equipment to help SATERN.

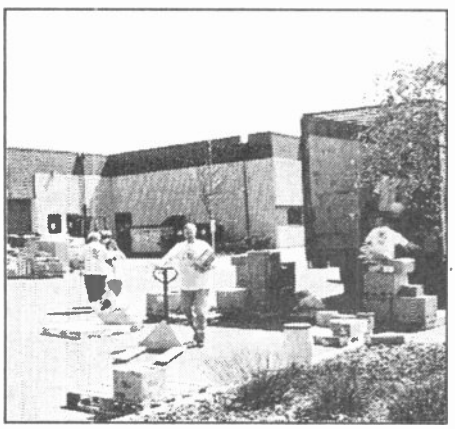
conversation, but most of the conversations we have in this type of situation rightly should be heard by all concerned. There are so many reasons why Amateur Radio still has an important place in disaster-relief efforts.

"Until you've been through something like this, you just don't appreciate what SATERN has to offer. SATERN volunteers, of course, understand that communication is their first responsibility but they are expected to contribute in other ways, too. For instance, a canteen communications volunteer has been cross-trained to know how to help with food service as well.

"But it's not just part of The Salvation Army that doesn't recognize how much hams can contribute to disaster services. Amateurs in general need to educate the public, especially relief workers, about the role they can play," Major McPherson elaborated.

It might be quite a while before Major McPherson has time to take on any additional projects. SATERN members responded in force to the devastating tornadoes that ripped through Arkansas and Tennessee in March. Before he was able to compile information for a report on that, he and other SATERN members were sent to southern Indiana in the aftermath of the Ohio River flooding. Then, before he could report on either of those operations, it was on to the Upper Plains — and a few days sooner than planned, at that. Of course, this is what SATERN is all about — using communication and other skills to help people in need! WR

Debris litters the roadway leading to East Grand Forks, Minnesota as the flood waters subside. ***—photos by Ken Havlick, KA9TRJ***



Salvation Army volunteers unload supplies.

E-mail:
w4zc@macconnect.com

DOE Says no more EMI study

The Department of Energy is pulling out of research on the possible health risks of electromagnetic fields. The agency's decision follows a report last fall by the National Academy of Sciences that found no conclusive evidence of adverse health effects from these fields.

The Department of Energy's decision to abandon further study was made in a March 7th letter to the National Institute of Environmental Health Sciences. Writing in the journal *Science*, Keith Florig, a scientific policy expert at Carnegie Mellon University says that research on EMF risks has not been very productive. As such, science really isn't up to the task of answering the question.

The decision by the Department of Energy to pull the plug on EMF research also ends another program. This one is a two decade study of possible EMF related biological mechanisms.

de W4ZC: It would be nice if this would have some effect on the recently-adopted FCC rules on measurements of Amateur Radio station emissions. However, this finding is for power-line frequencies only, and will have no apparent effect on the upcoming requirements for amateur station emission measurements. (*via* Science; *tnx ARN)*

Skywarn controversy

Amateur Radio is in the middle of a growing controversy in Alabama. Huntsville television station WAAY says it will launch its own severe weather spotter network using Amateur Radio operators and frequencies. Some hams consider the station's plans to be a violation of FCC rules.

The Huntsville television market, like others, is competitive. One station is always trying to outdo the other. WAAY has what it touts as the most powerful Doppler radar in north Alabama-Tennessee Valley. But in March, Channel 31 announced formation of its own Amateur Radio storm spotter network. Local hams started getting letters encouraging them to join. The invitations were signed by station employee Lynda Osmer, WB4TJE. The plan is not going over well with radio amateurs. They believe the station's network would be a violation of FCC rules prohibiting commercial use of amateur frequencies. Here is a typical quote: "I feel like the television station is trying to seize this opportunity to test the waters. In other words, if nobody is going to slap them on the hand, then this is a good opportunity to seize a service that the public is listening to," said Rex Free, KN4CI

Rex is a founder and driving force behind North Alabama Skywarn. That's a 10 county organized network of amateur spotters assisting National Weather Service and emergency management personnel. Free says Channel 31's plans put amateurs in a difficult position. The station provides space for amateur repeaters on its tower. And its General Manager, M.D. Smith, is a ham himself, WA4DXP.

Other amateurs involved in emergency communications question the station's motives. "I don't believe they really have public service as their ultimate goal," stated Tom Moore, KL7Q, Alabama's ARRL Section Manager. "Number one, I think it's not in the best interest of the Amateur Radio service to be involved with any commercial organization. Secondly I don't believe that they really have the interest of the public in mind in comparison to the ratings that they hope to achieve." So far, Channel 31's spotter net-

Amateur Radio Call Signs

The following shows the last call sign in each group to be assigned for each VEC Region under the sequential call system as of the first of May, 1997.
For more information, contact the Federal Communications Commission, Consumer Assistance Branch, 1270 Fairfield Road, Gettysburg, PA 17325-7245, toll-free 1-800/322-1117.

Radio District	Group A Am Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
Ø	ABØFH	KIØIB		KCØATB
1	AA1SD	KE1HP	N1ZDC	KB1CDN
2	AB2DQ	KG2LE		KC2BMQ
3	AA3PT	KE3ZP	N3ZFT	KB3BTD
4	AF4CV	KU4GL		KF4RIY
5	AC5MF	KM5IU		KD5AHU
6	AD6BE	KQ6OO		KF6KSU
7	AB7VB	KK7HK		KC7WFH
8	AA8ZY	KI8CD		KC8HEG
9	AA9UK	KG9KG		KB9QII
N. Mariana Is.	NHØA	AHØAX	KHØGT	WHØABG
Guam	*	AH2DD	KH2RU	WH2ANT
Hawaii	AH7V	AH6PA	KH7DW	WH6DDT
Amer. Samoa	AH8O	AH8AH	KH8DH	WH8ABF
Alaska	ALØD	AL7QT	KLØGK	WL7CUE
Virgin Is.	**	KP2CJ	NP2JQ	WP2AIH
Puerto Rico	NP3F	KP3AV	NP3MW	WP4NNB

*2x1 call signs are available for this group. **All of the Group A call signs for the Virgin Islands have been assigned. Any request for a Group A call sign will now be assigned a Group B format.

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

work hasn't been heard on the air.

In her letter to hams, Lynda Osmer says reports from the station's network will be summarized for on-air use as a public service. Again, Section Manager Tom Moore, KL7Q: "If they're doing it as a public service, then why haven't they contacted the NA and the National Weather Service to coordinate with them?"

How many hams are actually joining the new network is not clear. Station manager M. D. Smith is not returning calls. However, In a March 18th letter to the Alabama Section Emergency Coordinator, Smith says he is fully aware of FCC rules and regulations. Smith says the station does not intend to violate any current rules now in effect from the FCC.

In the meantime, Rex Free says North Alabama Skywarn will continue operations as usual. (*tnx ARN*)

"No" to Vanity fee increase

In ARRL related news, the League is saying no to increased fees for vanity call signs. Last month, the FCC proposed effectively raising the fee for vanity call sign from $30 to $50 for a 10 year license term.

Now the ARRL is asking the Commission to postpone the higher fee until after all four vanity call sign gates have been opened. In comments filed 23 April, the ARRL told the FCC that it does not object to the fee but says that it wants all hams to have an opportunity to request a specific call sign under the current fee schedule.

IARU AND PATU to work more closely

The International Amateur Radio Union for Region One and the Pan African Telecommunications Union have signed a memorandum of understanding, one that will lead to a closer relationship and cooperation in the development of telecommunications expertise and the Amateur Radio service on the African continent.

The memorandum provides for regular exchange of information and documentation to enhance the development of ham radio in Africa. It also supports PATU's training and development objectives.

The Pan African Telecommunications Union was established in 1977 by the Organization of African Unity as a specialized agency. Its broad objectives include building and maintaining cooperation among member states to improve, expand, develop and use the telecommunication networks and services. Its also tasked with promoting the establishment of multinational training institutes in Africa. (*tnx ARN & ARRL*)

Ohio hams win antenna exemption

Hams in Ohio are on the winning side of a new proposed state-wide plan to regulate antenna structures.

The mid Ohio Regional Planning Commission, a group of representatives from utility companies, telecommunications providers, and government officials have prepared a document entitled, "Model wireless telecommunications ordinances." This model document will serve as a guide for all of Ohio's local governments to establish local ordinances pertaining to cellular towers.

But, what is significant to Amateur Radio is just that. Amateur radio is totally missing from this document. In essence, Amateur Radio is deemed completely separate from the general realm of wireless telecommunications facilities. In this case, amateur towers are not considered towers, but they are classified as Amateur Radio operator's equipment.

A large debt of gratitude for the success in gaining an exclusion for ham radio goes to Paul Krug, N2NS, who is the ARRL Ohio State Government Liaison. The success of Ohio hams in gaining a blanket exemption to the proposed tower controls proves that advance planning really pays off. (*tnx ARN*)

Part 15, directional antennas

The FCC has announced that it will allow high gain antennas to be used for unlicensed transmitters operating in the 2400 and 5800 MHz Part 15 allocations. These bands are shared with the Amateur Radio Service.

Ed Mitchell, KF7VY, is editor of *Ham Radio On-Line Magazine*. He reports that under terms of the Report and Order in ET Docket 96-8, released 10 April 1997 very high gain antennas may be deployed at 2400 and 5800 MHz. Certain transmitter power reduction restrictions apply at 2400 MHz, but unlimited gain systems may be installed at 5800 MHz.

These systems will enable high speed Internet access using unlicensed systems. You can expect to see these systems deployed rapidly, as soon as 1998, to provide non-commercial and commercial services on these frequencies.

The complete story, including the Report and Order, is now available on-line at: http://www.hamradio-online.com or at the FCC site at: http//www.fcc.gov (*via FCC*)

RAC preparing WRC-97 position paper

On the international scene, the Board of Directors of Radio Amateurs of Canada has established a working group to prepare a position paper for WRC-97. The paper, which is expected to be in final form by mid May, will set out the concerns of Canadian radio amateurs with respect to the usage of frequencies above 30 MHz. The working group is currently seeking input from Canadian amateurs which will demonstrate the utilization of our bands, particularly those above

450 MHz. The paper will be submitted to Industry Canada and to the Canadian Preparatory Committee for WRC '97.

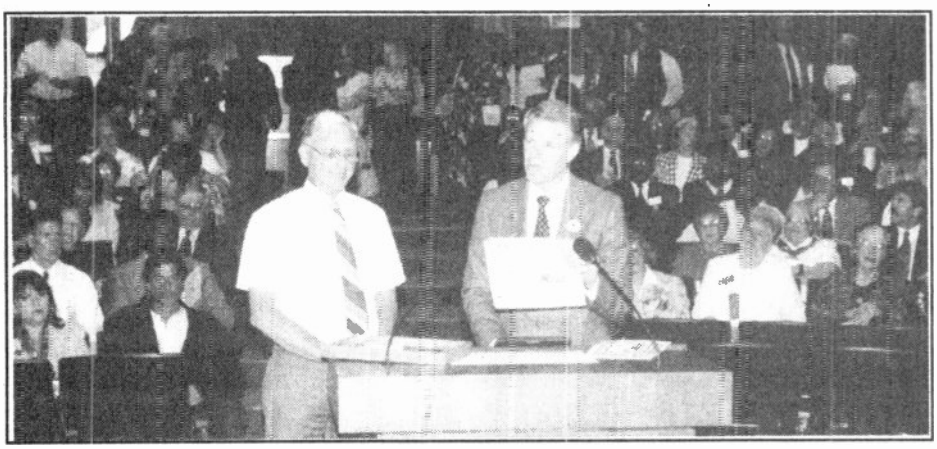
RAC board meets in Ottawa

The Board of Directors of Radio Amateurs of Canada (RAC) elected the RAC Executives for 1997 at its annual meeting in Ottawa 18-19 April: President and Board Chair: J. Farrell Hopwood, VE7RD 1st Vice President: Douglas E. Leach, VE3XK Vice President of Government Affairs: James G. Dean, VE3IQ Vice President and General Counsel: Timothy Ellam, VE6SH Secretary: David Evans, VE6DXX Treasurer: Dr. J. Kenneth Pulfer, VE3PU.

The Board honored the passing of two of Canada's extraordinary Amateurs, Noel Eaton, VE3CJ, president emeritus of the International Amateur Radio Union (IARU); and Robert Bishop, VE3JAB, a former director of the Canadian Amateur Radio Federation (CARF) and, until May 1996, an RAC Director for the Ontario North Region.

Board members learned that Industry Canada Assistant Deputy Minister Michael Binder has promised to move forward on the joint effort to delegate the administration of the Amateur Radio Service in Canada to a non-governmental service company affiliated with RAC. The effort was halted earlier this year, pending the establishment of long-term funding process by Industry Canada. Binder has said he would phase-in as many aspects of the plan as possible over the next several years.

The full text of the minutes of the RAC board meeting will be available on the RAC Web page, http://www.rac.ca, and in a future edition of *The Canadian Amateur* magazine. (*tnx ARRL Letter*) WR



Jay O'Brien, WG6O, (left) is presented with the "Citizen of the Year" plaque by Sacramento County Supervisor Roger Dickenson.

One more outstanding accomplishment

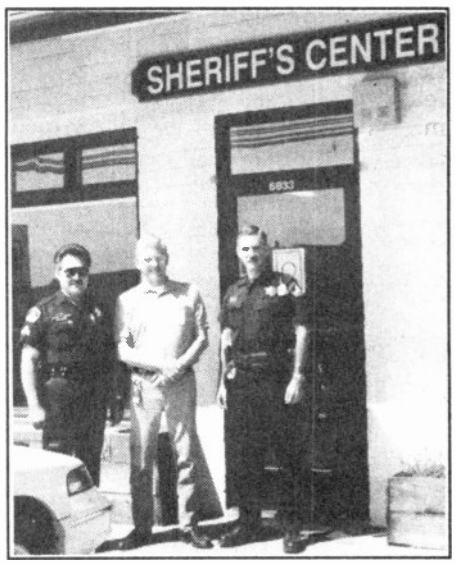
Norm Brooks, K6FO

What do you do when you're a world-class DXer, have worked every country in the world, have built a superb contesting station and have walls and drawers full of plaques and certificates to remind you of all this?

You come back to earth and become "Citizen of the Year."

Jay O'Brien, and his wife Jan, W6GO and K6HHD, live on 10 acres in Rio Linda, California. In spite of what Rush Limbaugh says, there are a lot of intelligent, hard working people in this suburb of Sacramento, CA. Jay and Jan are two of them.

Back in the 1950s Jay was elected Section Communications Manager for ARRL's Sacramento Valley Section. This is the elected position now called Section Manager. His interest turned to VHF and he set records that took years for others to break. He was a pioneer in VHF and UHF repeater stations and built repeaters on mountain tops for several clubs. He was instrumental in creating the repeater frequency coordinating council in Northern California that is now the NARCC. He was appointed Pacific Division representative to the ARRL's VHF Repeater Advisory Committee and became its chairman. He co-authored the first comprehensive FM repeater article ever to appear in *QST* in October, 1969. He and co-author Les Cobb, W6TEE received "Cover



Jay and two Sheriff's deputies outside the Sheriff's Center in Rio Linda.

plaques" for that article.

Jay retired from a 30-year engineering career at Pacific Bell in 1985. His interests turned to DX. When the antenna support structures outgrew his city-sized lot in Rio Linda, he bought a ten acre parcel nearby. There he put up a 158 foot structure and two 100 footers.

XYL Jan, not to be outdone, got her license as K6HHD and kept pace with her OM. Together they saw the need for a list of DX station QSL managers and created the W6GO/K6HHD list, which they published for many years. They sold this publication in 1994 and it is now the "The GOlist, QSL manager list."

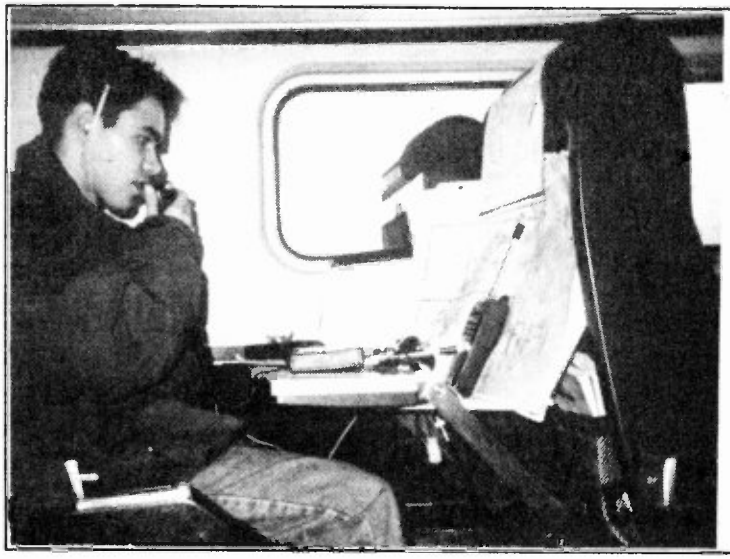
Jay is the kind of person who gives his all to any cause he participates in. He usually ends up in a leadership position in that effort. Elverta, California, is an adjacent community to Rio Linda, and many of their civic activities are done jointly. Jay became a member of the Rio Linda/Elverta Chamber of Commerce and lost no time in helping solve community problems.

Law enforcement in Rio Linda is provided by the Sacramento County Sheriff's department. In an effort to bring those services closer to the community, an earlier group tried, but failed, to open a Sheriff's Department annex in Rio Linda. Jay picked up the reins for the project, applying his usual dogged determination to causes in which he believes. He found an alternative site for the annex, got local merchants and community volunteers behind him and saw the project through to completion.

All of this did not go unnoticed. The *Rio Linda-Elverta News* named him the "Citizen of the Year." Similarly, the Sacramento County Board of Supervisors also declared him "Citizen of the Year."

We at ***Worldradio*** also congratulate Jay O'Brien, W6GO, on this outstanding achievement. WR

Jay O'Brien, and his wife Jan, W6GO and K6HHD, share a moment for the camera in their Rio Linda shack.



Hernan Hidalgo, N3OKP, makes contact just before entering a tunnel.

AMTRAK rover to Boston

Hernan Hidalgo, N3OKP

While most hams participated in the ARRL January '97 VHF contest from the luxury of their own homes, my friend Jason Foster, N3PRZ, age 19 and I, Hernan Hidalgo, N3OKP, 20, went about it in a different way. Few other means of "rover" can match the railroad's mystique for history and adventure. The train selected was Amtrak train 86 that departed from Washington, D.C. and traveled to our destination, Boston, Massachusetts.

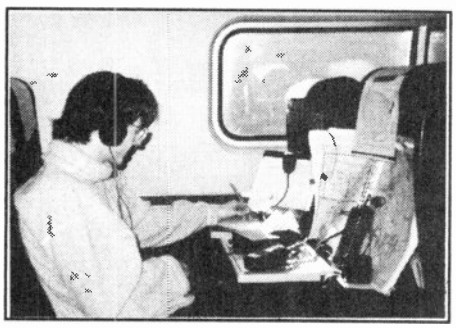
Jason and I began our adventure by boarding the train at 10 a.m. on Saturday 18 January, at Washington's Union Station. After helping some handicapped passengers get aboard the train, we managed to persuade the conductor to allow us to mount an antenna to the side of the train. While I boarded the train with three huge bags of radio gear, Jason mounted a Ringo Ranger AR-270, on one of the hand rails adjacent to the coach car door. Jason used two heavy- duty U-clamps, making sure that the height of the antenna would not exceed that of the roof of the train. Meanwhile, I chose the first seat in the coach car — that would allow us immediate access to the doors and the coax cable that came from the Ringo Ranger antenna. I began organizing the radio gear which consisted of a Kenwood TM-241, a Yaesu FT-470 dual-band, a Radio Shack HTX-212, and a Bearcat 30-channel

Amtrak train 86 prepares to depart from Washington, D.C.

portable scanner. It was quite a lot of equipment to organize in such little space, not to mention all the jacks, coax cable, maps, tape recorder, and logbooks.

Once the train blew its whistle, we both crossed our fingers in hope that the antenna would withstand the high speed of the train. We knew that we would soon find out!

Once outside of the nation's capital and into the state of Maryland, the train reached its maximum speed. From what we could tell, the antenna was still there, for we were making plenty of contacts on 2M simplex. Many of these contacts included some of our local buddies, the hams we generally talk to on the local repeaters. Some of them laughed, while others were fascinated by the fact we were "Amtrak Rover." Either way, any contacts we made were encouraging. At that point there were plenty of contacts



Jason Foster, N3PRZ, makes the first transmission: "CQ Contest, N3PRZ and N3OKP Amtrak Rover in FM-18."

in Grid FM-19.

In FM-29, just north of Baltimore, Maryland, the train suddenly came to a screeching halt. We immediately monitored the Amtrak Police frequency on the scanner and wouldn't you know it? Some culprit had pulled the emergency brake lever. A description of the individual was put out on the radio, and Jason, like any concerned ham, walked along the aisle to see if any one matching the description was nearby. Sure enough, he spotted someone who had just entered the cafe car and relayed this info to me on 2-meter simplex. I in turn, informed the Amtrak Police, who later apprehended the suspect. I guess a certain remnant of the railroad bandits as seen in the old western movies still exists today. But thanks to Amateur Radio the good guys won this time.

Activity on the radio was quite hectic passing through New York City! We were in intermod heaven! Another obstacle we had to confront was the endless number of tunnels. At times we would make contact with a station and lose him halfway through the QSO by entering a tunnel. To make matters worse, many of these tunnels were very narrow; narrow enough to cause us worry about the antenna.

When we arrived at the Manhattan station in FM-20, I got out to check to see if the Ringo Ranger was still mounted in place. Luckily it was, despite the fact that it was quite scraped. It had to endure a lot of friction! I re-tightened the U-bolts and hopped back aboard the train.

The reception of stations on VHF really deteriorated as we entered FM-31 in the state of Connecticut. We now spent more time talking to neighboring passengers by explaining them what Amateur Radio was all about. Fortunately, our rail car was lightly occupied, so we didn't annoy too many of our fellow passengers. When the train arrived at the Strasburg, Connecticut station, a familiar call, K1TMW came on the air. Al, K1TMW, was a friend whom we knew from back home. He got a big chuckle over the fact that Jason and I were "Amtrak Rover." Later we exchanged QSL cards via mail.

It was pitch dark when the train finally reached its destination, Boston. The bands were dead in FM-42. Since we heard this was to be Boston's coldest night of the year, we figured everyone's antenna must have frozen into icicles! When the train came to a complete stop, we packed up all the radio gear in to three bags and disconnected the Ringo Ranger antenna. We thanked the train crew for allowing us to use the radio gear aboard the train and headed off to a nearby motel. There we examined the logbook, counting up a total of 32 contacts. We were quite satisfied with the results. We then went to sleep and looked forward to the trip back home.

We have designed some customized, homemade QSL cards that indicate we were "Amtrak Rover." If you contacted either N3PRZ or N3OKP during the Jan '97 VHF contest and would like to exchange QSLs, send your QSL card to this address and we will respond immediately: 10111 Meadowneck Court, Silver Spring, MD 20910-1062 WR

Indonesian pirates on 10 Meters

Unlicensed stations operating from Indonesia continue to be a big problem for users of the 10 Meter band in Australia and New Zealand. Over the last few years the pirates have moved onto the 28 and 29 MHz bands in large numbers. Often they are the only signals that can be heard on 10 Meters in Australia and New Zealand.

The unlicensed operators are believed to be the equivalent of Indonesian CBers who are trying to escape the chaos of 11 meters. They can be found every 10 kHz or so right up into the 29 MHz satellite band. Most operate using high power FM or AM with directional antennas.

Australian hams say that the Indonesian pirates have no regard for amateur operators. In fact they now play a new game of jamming Amateur Radio transmissions as a new kind of sport. Complaints to the Indonesian government are being ignored. *(via The VK Intruder Watch)*

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10 Bands -- 1 MFJ Antenna!

Full size performance . . . No ground or radials

Operate 10 bands: 75/80, 40, 30, 20, 17, 15, 12, 10, 6 and 2 Meters with one antenna Separate full size radiators . . . End loading . . . Elevated top feed . . . Low Radiation Angle . . . Very wide bandwidth . . . Highest performance no ground vertical ever . . .

Operate 10 bands -- 75/80, 40, 30, 20, 17, 15, 12, 10, 6 and 2 Meters -- with this MFJ-1798 vertical antenna and get *full size performance* with no ground or radials!

Full size performance gives you high efficiency for more power radiated. The result? Stronger signals and more Q-5 QSOs.

Full size performance also gives you exceptionally wide bandwidths so you can use more of your hard earned frequencies.

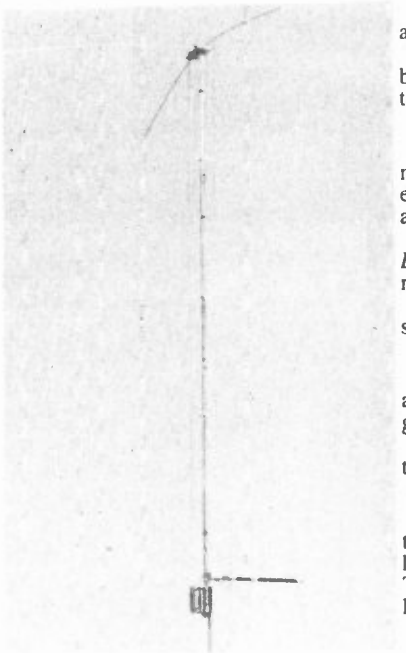
Full size performance is achieved by using separate full size radiators for 2 through 20 Meters and highly efficient end loading for 30, 40 and 75 /80 Meters.

Get very low radiation angle for exciting DX, automatic bandswitching, omni-directional coverage, and low SWR. Handles 1500 watts PEP SSB.

MFJ's unique *Elevated Top Feed*™ elevates the feedpoint *all the way to the top* of the antenna. It puts the maximum radiation point high up in the clear where it does the most good -- your signal gets out even if you're ground mounted.

It's easy to tune because adjusting one band has minimum effect on the resonant frequency of other bands.

Self-supporting and just 20 feet tall, the MFJ-1798 mounts easily from ground level to tower top -- on small lots, backyards, apartments, condos, roof tops, tower mounts.



MFJ-1798 **$269.95**

Separate *Full Size* Radiators

Separate full size quarter wave radiators are used on 20, 17, 15, 12, 10 and 2 Meters. On 6 Meters, the 17 Meter radiator becomes a 3/4 wave radiator.

The active radiator works as a stub to decouple everything beyond it. *In phase* antenna current flows in all parallel radiators. This forms a very large equivalent radiator and gives you incredible bandwidths.

These radiator stubs provide automatic bandswitching -- there is absolutely *no loss* due to loading coils or traps.

End Loading

On 30, 40, 75/80 Meters, end loading -- the most efficient form of loading -- gives you highly efficient performance, excellent bandwidth, low angle radiation and automatic bandswitching.

MFJ's unique *Frequency Adaptive L-Network*™ provides automatic impedance matching for lowest SWR on these low bands.

Tuning to your favorite part of these bands is simple and is done at the *bottom* of the antenna.

No Ground or Radials Needed

You don't need a ground or radials because an effective counterpoise that's 12 feet across gives you *excellent* ground isolation.

You can mount it from ground level to roof top and get awesome performance.

No Feedline Radiation to Waste Power

The feedline is decoupled and isolated from the antenna with MFJ's exclusive *AirCore*™ high power current balun. It's wound with Teflon® coax and *can't* saturate, no matter how high your power.

Built to Last

Incredibly strong solid fiberglass rod and large diameter 6061 T-6 aircraft strength aluminum tubing is used in the main structure.

Efficient high-Q coils are wound on tough *low loss* fiberglass forms using highly weather resistant Teflon® covered wire.

Teflon® is registered trademark of Dupont

MFJ *Super Hi-Q Loop*™

MFJ-1786 **$299.95**

MFJ's *tiny* 36 inch diameter *high efficiency* loop antenna lets you operate 10 to 30 MHz *continuously* -- including the WARC bands!

It's ideal where space is limited -- apartments, small lots, mobile homes, attics, motor homes.

Enjoy both DX and local contacts when you mount it vertically. You get *both* low angle radiation for excellent DX *and* high angle radiation for local close-in contacts. Handles 150 watts.

Super easy-to-use! Only MFJ-1786 *Super* Remote Control has *Auto Band Selection*™. It auto-tunes to your desired band, then beeps to let you know. No control cable is needed.

Fast/slow tune push buttons and built-in two range *Cross-Needle* SWR/Wattmeter lets you quickly tune to your exact frequency.

All *welded* construction, no mechanical joints, welded butterfly capacitor with no rotating contacts, large 1.050 inch diameter *round* radiator -- not a lossy thin flat-strip -- gives you highest possible efficiency.

Each plate in MFJ's *superb* tuning capacitor is welded for low loss and *polished* to prevent high voltage arcing. It's welded to the radiator, has nylon bearing, anti-backlash mechanism, limit switches and a continuous *no-step* DC motor for *smooth precision* tuning.

A heavy duty 1/8 inch thick ABS plastic housing with ultraviolet inhibitors protects it.

MFJ-1782, $269.95. Same as MFJ-1786 but remote control has only fast/slow tune buttons.

NEW!* MFJ-1788**, $359.95. Same as MFJ-1786 but covers ***40 Meter through 15 Meter continuous. Includes super remote control.

Super 80/40M Vertical

MFJ-1792 **$159.95**

Designed as a *high performance* antenna for 80 and 40 Meters, the MFJ-1792 features a *full size* quarter wave radiator for 40 Meters - - that's a full 33 feet of ruthless radiating power.

End loading -- the most efficient form of loading -- is used for 80 Meters. It's accomplished by a virtually lossless 4½ foot capacitance hat and a high-Q coil wound with Teflon® wire on a *low-loss* fiberglass form.

The *entire length* radiates power.

High strength 6061-T6 aluminum tubing, super strong solid fiberglass insulator, *Frequency Adaptive L-Network*™, heavy duty *swing* mount. Handles 1500 watts PEP. Requires guying and radials, counterpoises or ground screen.

MFJ-1793, $179.95. Same as MFJ-1792 but includes *full size* 20 Meter quarter wave radiator.

MFJ *halfwave* Vertical

6 bands: 40, 20, 15, 10, 6, 2 Meters . . . No radials or ground needed!

MFJ-1796 **$199.95**

Operate 6 bands -- 40, 20, 15, 10, 6 and 2 Meters -- with this MFJ-1796 *ground independent halfwave* vertical antenna! No radials or ground ever needed!

It's only 12 feet high and has a *tiny* 24 inch footprint! Mount it anywhere from ground level to tower top -- on apartments, condos, small lots, even motor homes. Perfect for vacations, field day, DX-pedition, camping.

Efficient *end loading*, no lossy traps. *Entire length* is always radiating. *Full size* halfwave on 2 and 6 Meters. High power *air-wound* choke balun eliminates feedline radiation. Adjusting one band has minimum effect on other bands.

Automatic bandswitching, low radiation angle, omni-directional, handles 1500 watts PEP. Goes together in an afternoon.

Box Fan Portable Loop

MFJ-1780 **$229.95**

No, it's not a fan -- it's a high efficiency portable loop antenna that's about the same size and shape as a 2x2 foot box fan, complete with carrying handle.

Carry it like a suitcase, tuck it in a corner of your car or check it as baggage on a plane.

When you get there, set it on a table or desk and enjoy ragchewing or DXing.

All welded construction, covers 14-30 MHz *continuously* including WARC bands, handles 150 watts. Remote control has fast/slow tune buttons. Separate control cable not needed.

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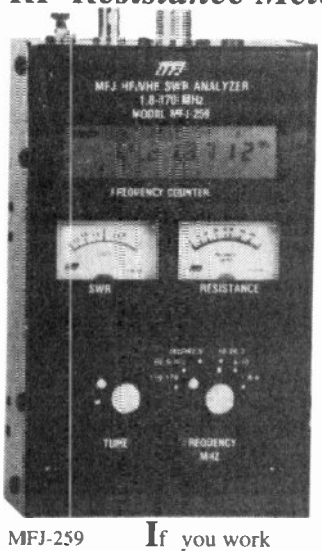
Read your antenna SWR from 1.8-170 MHz . . . 10-digit LCD frequency counter . . . RF Resistance Meter™ . . . smooth reduction-drive tuning . . . simple-to-use . . .



MFJ-259 **$239.95** If you work with antennas, MFJ's revolutionary new *SWR Analyzer*™ is the best investment you'll ever make! Now you can diagnose a wide range of antenna problems instantly with one easy-to-use instrument.

What the MFJ-259 Does

The MFJ-259 gives you a complete picture of your antenna's performance anywhere between 1.8 and 170 MHz -- you can even check SWR outside the ham bands without violating FCC rules. Set the bandswitch and tune the dial--just like your transceiver. SWR is displayed instantly!

RF Resistance Meter™

Does 2:1 SWR mean 25 ohms or 100 ohms? *The new MFJ-259 tells you at a glance!*

Now you can measure RF resistance up to 500 ohms at minimum SWR -- instantly -- on MFJ's *exclusive* side-by-side RF Resistance and SWR Meters!

Take the guesswork out of building matching networks and baluns for your antennas.

Watch the effects of spacing on radiation resistance as you adjust your antenna.

Here's What You Can Do . . .

Find your antenna's true resonant frequency from the shack.

Tune the antennas on your tower and watch SWR change instantly as you make each adjustment. You'll know exactly what to do by simply watching the display.

Tune critical HF mobile antennas in seconds -- without subjecting your transceiver to high SWR.

Measure your antenna's 2:1 SWR bandwidth on a single band, or analyze multiband performance over the entire spectrum from1.8 to 170 MHz!

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MFJ comprehensive 18 page instruction manual is packed with useful applications -- all explained in simple language you can understand! **For** free manual write or call MFJ.

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The MFJ-259 is fully portable, powered internally by 8 AA batteries or 110 VAC with MFJ-1312B, $12.95. It's in a rugged all metal cabinet that's a compact 4x2½x6¾ inches. Take it to remote sites, up towers, on DX-peditions -- anywhere your antennas are located.

For rough service, pick up a convenient **MFJ-29B**, $24.95, padded carrying pouch to keep your MFJ-259 close at hand and looking like new.

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MFJ SWR Analyzers™ work so good, many antenna manufacturers use them in their lab and on the production line -- saving thousands of dollars in instrumentation costs! Professional installers and technicians use them worldwide.

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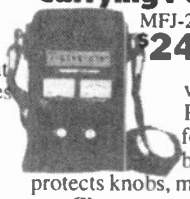
With the MFJ-259, you get full 1.8 to 170 MHz coverage, simple operation, instantaneous readings, a high accuracy frequency counter and MFJ's exclusive *RF Resistance Meter*™-- all for a low $239.95.

1.8-170 MHz *SWR Analyzers*™

MFJ-249 **$219.95** **MFJ-249** *HF/VHF SWR Analyzer*™. Same as MFJ-259 but less RF resistance meter. Includes 10-digit LCD frequency counter, *full* 1.8-170 MHz coverage and smooth vernier tuning.

MFJ-209 **$109.95** **MFJ-209** *HF/VHF SWR Analyzer*™ is same as MFJ-259 without LCD frequency counter and RF resistance meter. Has jack for external frequency counter, smooth vernier tuning.

Carrying Pouch with Window



MFJ-29B **$24.95** **Tote** your MFJ-259 /249/209 *SWR Analyzer*™ anywhere with this custom Carrying Pouch. Made with a special foam-filled fabric, it cushions blows, deflects scrapes, and protects knobs, meters and displays from harm.

Clear protective frequency display and window cutouts for knobs let you use it without taking it out of pouch. Fully adjustable webbed fabric carrying strap has snap hooks on both ends. Wear around waist or over shoulder.

Keep your analyzer safe and looking new! **MFJ-29**, $19.95, no window or cutouts.

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With a dip meter you'll save time and take the guesswork out of winding coils, measuring inductance and capacitance, measuring velocity factor and electrical lengths of coax. Determine resonant frequency of tuned circuits and measure Q of coils. Set of two coils cover 1.8-170 MHz depending on your *MFJ SWR Analyzer*™.

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Pity the poor Texans

Bob Brown, NM7M

I mean no disrespect by what I write here; some of my best friends in Amateur Radio are Texans. It's just that DXers in Texas have a problem; but it's not their attitude, it's their LATITUDE! This came up again in connection with the Heard Island DXpedition; let me explain.

Before the Heard Island DXpedition, all the Big Guns on the 160-meter band checked out their verticals and Four-Square antennas, tweaked their linears up to full legal power and lay in wait for the first signals from VKØIR. That included Texans, with all the "big spreads" at their disposal for antenna farms, and the DXers in Montana too, out in Big Sky Country.

When the time came, the first 1.8 MHz contacts began when the sun set out in the Atlantic, by the eastern provinces of Canada. It was dark at Heard Island then and as time passed, the sunset terminator swept westward and stations in the northeastern part of the U.S.A., with darkness all along their paths, were able to make some contacts. That was 17,000+ km on 1.8 MHz! Terrific!

But then a funny thing would happen; the VKØIR signals would fade out. But that was when the sun rose over Heard Island. Actually, that wasn't odd, by any stretch of the imagination; it's just what you'd expect as 1.8 MHz signals don't propagate any distance in broad daylight. AM radio tells you that.

But in January, when the DXpedition took place, there was a lot of daylight at Heard Island. So VKØIR's low-band signals would end around 2300 UTC and come back again 16 hours later, around 1500 UTC. By then it is in the early morning hours here in the U.S.A. and the terminator, now for sunrise, would be in the western part of the U.S.A.

That sixteen hours of "dead time" for VKØIR's signals translated into a "dead zone" in the USA where VKØIR's signals could not be heard, between the locations of the sunset and sunrise terminators in Figure 1. The terminators shown there, for times of sunrise and sunset at Heard Island, intersect at its antipodal point, near Saskatoon, SK; only the southerly portions of the terminators are given in the figure to show the limitations in area.

So for low-band DXers, the Heard Island DXpedition really carved up the U.S.A. into two parts, with stations to the east of the sunset terminator able to take advantage of the common darkness along the path and, similarly, those to the west of the sunrise terminator. But there was that "Never-Never Land" right there in the middle of the U.S.A., centered around 106.4 W longitude, the dividing line related to VKØIR's longitude. The area cut right through Texas, even north into Colorado, Wyoming and Montana. In fact, it was an area about five times as large as Texas itself.

With all that daylight down south, DXers in the "dead zone" never had a chance, at least on short-path, as any exchange of signals would have to go to and from the southerly direction, right over the southern polar cap in full sunlight. Some 160-meter DXers in Texas, not sensing the problem, sat there for a while, patiently waiting to hear VKØIR's signals but all they heard was silence! Others quickly gave up and I suspect that some, when they realized the problem, even cursed the Fate that put them in a dead zone, denying a "New One" to add to their DXCC list.

Now I have to say all the Texans that I know had a good, positive attitude with regard to the Heard Island DXpedition. But when it came to making short-path contacts with VKØIR, they were done in by their latitude, also their longitude, and it had to affect their spirits. The sad thing is that it wouldn't be any better with other Antarctic islands, like Crozet, Kerguelen or Amsterdam Islands. In each case, their antipodal points would be north of Texas and there would still be a "dead zone," like the large one in Figure 1.

The smaller "dead zone" in Figure 1 is for Amsterdam Island (38.1S, 77.6E), the most equator-ward of the three and roughly 15 degrees north of Heard Island. Its antipodal point is just inside the eastern border of Colorado and with 14 hours

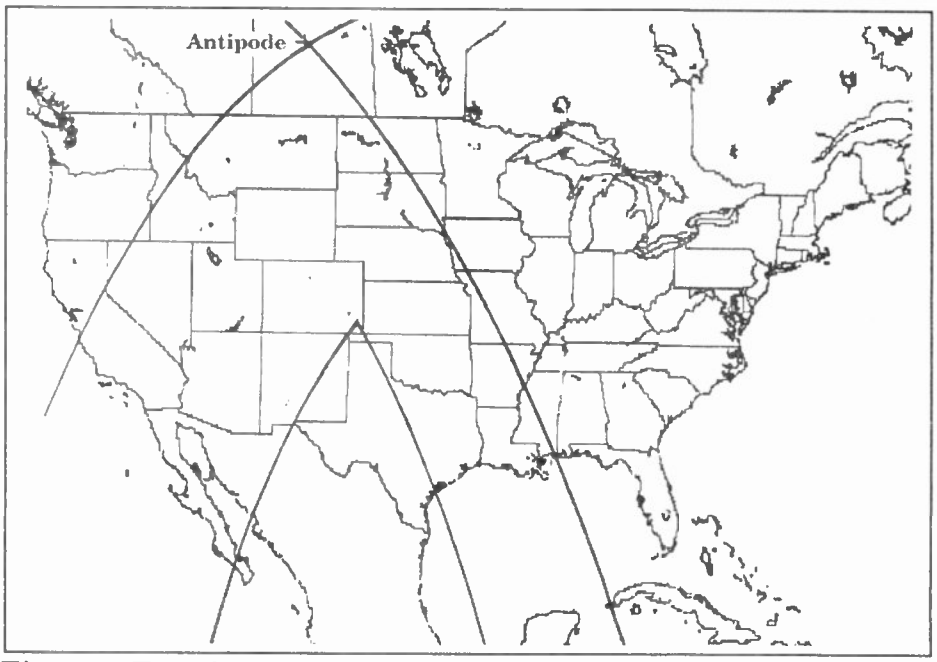


Figure 1. Terminators for sunset (right) and sunrise (left) for mid-January. The upper pair is for Heard Island and the lower pair for Amsterdam Island.

of daylight in January, the limits of the two terminators are north of Corpus Christi, to the east, and El Paso, to the west. That smaller zone would open up low-band DX contacts with Amsterdam Island to Big Guns around Dallas and Houston but the "dead zone" would still deny DXers in San Antonio, Lubbock and Amarillo.

But all's not lost; Amsterdam Island is inhabited year-round. I even worked it once in July; however, that was on 20M and with 5W, QRP. But 20-meter antennas are a lot smaller than something for 160M; beside that, July is winter in the southern hemisphere and Amsterdam is in the range of the "Roaring Forties" in the Indian Ocean. However, if you look into the terminators for July, six months later, the two terminators are in the same locations but have exchanged roles, the sunset terminator now to the west and the sunrise terminator to the east.

So in July, the "dead zones" in Figure 1, have turned into "live zones" and even Texans could work DX down in the Southern Indian Ocean in our summer. But Heard Island is the one, big exception, without any year-round inhabitants, so we still have to pity the poor Texans. That one will be denied them unless somebody gets real brave, throws caution to the wind and goes to Heard Island around an equinox when the "live zone" begins to appear. For Dallas, "Big D," it would be open for almost two hours by June, at our summer solstice, but nobody in his right mind would ever think of taking a sea voyage down there in the dead of austral winter. Some DX is not worth the risk and the Texans would accept that, without question.

As they say, operating on 160 Meters is rugged and I have to add that it takes a rugged spirit to face the challenges, some of which cannot be overcome for reasons beyond power, antennas, noise or QRM. So maybe I was wrong; I should have titled this article "Admire the Rugged Texans." Don't you agree? **WR**

"Pioneer" R.A. Fessenden

At 9 p.m. on Christmas Eve 1906, a dozen or so wireless-radio operators in the Caribbean began to hear faint, ghostly music. One said to his shipmates, "Listen, I hear an angel's voice on the radio, and music, and singing too." But it wasn't an angel, it was Canadian-born inventor Reginald Aubrey Fessenden, called by some the "Father of Radio."

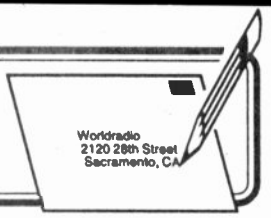
Mr. Fessenden's target audience, sailing aboard the banana fleet of the United Fruit Co., were told only that there would be a special broadcast on their ship-to-shore telegraph systems. They expected the dots and dashes of Morse code from the equipment that the company had purchased from Mr. Fessenden. Instead they heard a short voice announcement, followed by the Edison-Bell recording of Handel's *Largo*. A woman sang some carols and Mr. Fessenden scraped out "Oh Holy Night" on his violin. He sang the last verse and remarked: "If anybody hears me, please write to Mr. Fessenden at Brant Rock in Massachussets." He had become the world's first music DJ by devising a successful AM transmitter.

Mr. Fessenden had disagreed with Marconi's theory that radio transmissions were brief electrical whiplashes. The inventor believed broadcasts were like water ripples that moved in continuous waves in widening circles and that voice and music might be carried on them. Thomas Edison, his one-time employer, told Mr. Fessenden that wireless speech was about as likely as a man jumping over the moon.

The Christmas Eve broadcast was Mr. Fessenden's first publicly announced transmission over long distances. In 1900, he had sent the first voice-only message a distance of one mile: Is it snowing where you are, Mr Thiessen?

The man once called "the greatest wireless inventor of his age" accumulated more than 500 patents in his career. Many of his ideas were widely adopted — without his consent, during the First World War. In 1928, the U.S. Radio Trust paid him $2.5 million in recognition of his contributions to the medium. *—via* Key Klicks, *Calgary ARA, submitted by Donald Cole, VE6EY*

Off the air



Fried?

I am constantly astonished at the number of things that I learn for the first time on the pages of ***Worldradio***, and I was pleased to learn that one of my favorite computer and electronic parts supplier, Fry's Electronics, will be marketing my favorite line of ham equipment, Kenwood. But if you want to change their name to Fryes, I am sure they wouldn't mind.

Warren Pope, W4HDC
Downey, CA

Oops! Sorry about the extra "e" —KB6HP

What is the best CW ratio?

I enjoy reading ***Worldradio.*** It's the only Amateur Radio magazine I read on a regular basis.

I was wondering if you could answer a question for me in some future issue of ***Worldradio.*** I don't know what section of the magazine would address this question.

I would like to know: What are the advantages and disadvantages of adjusting the dot/dash ratio in CW? Why do some rigs have an adjustable dot/dash ratio feature?

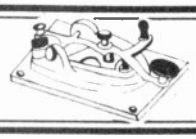
I always thought that the best CW ration was 3 to 1, 3 dots to one dash. Isn't that the standard? Why would anyone want to change that ratio? Why not just learn the correct ratio at a higher speed, if need be?

I've asked this question locally, and I get different answers. Can you folks at ***Worldradio*** enlighten me about this?

Norm Briggs, KK6DW
Bonita, CA

Readers? Here is your chance to respond! —KB6HP

Silent Keys



Sam Canter, W6TSQ

Well-known DXer Sam Canter, W6TSQ, died May second at his home in Mill Valley, California. He was 85.

Sam, whose bug fist was familiar to many DXers around the world, had been ill for several years, but had concealed his illness from all but a few close friends in the Northern California DX Club.

Sam was a ham for almost 70 years. He was a shipboard operator in the waning days of spark, and served in the U.S. Marines in World War II. I enjoyed his caustic wit, his rambunctious personality, and his uncanny ability to break into a pileup. His many friends will miss him. *—contributed by Garry Shapiro, NI6T, Editor,* The DXer

Edward P. Tilton, W1HDQ

VHF pioneer and former *QST* VHF editor Ed Tilton, W1HDQ, of Spring Hill, Florida, died March 1st, at age 89.

Mr. Tilton edited the VHF column until he retired from the ARRL staff in 1960. During World War II, he worked as an engineer for the military on radar projects, mostly at Pearl Harbor and Guam.

ARRL Executive Vice President David Sumner, K1ZZ, put it: "Ed Tilton was one of the outstanding amateur scientists of his generation. . . ." *—via ARRL*

Special Events

Woody Days

The Okemah Hams will operate N5LU from 0000 12 July to 0000 14 July to commemorate the birthday of Woody Guthrie — a world renown folk singer and poet/songwriter. Woody is best known worldwide for his song writing and literature surrounding the Depression era. Songs like "This Land is Your Land" and the hard-driving, truth-telling autobiography of Woody Guthrie called *Bound For Glory* by Pete Seeger.

Citrus Belt ARC

The Citrus Belt ARC of San Bernardino, California will operate W6JBT, 1600 UTC to 0400 UTC on 26 July, to commemorate the 50th anniversary of the Citrus Belt ARC. W6JBT will operate SSB on 3.850, 7.240, 14.250, 21.350; CW on random frequencies, 2-meter Phone and 2-meter Packet. For certificate, send QSL and 9 x 12-inch SASE to W6JBT, P.O. Box 3788, San Bernardino, CA 92413.

The Great Circus Train

Circus Train Mobile/K9ZZ will operate from 1400 UTC 07 July, until 0130 UTC 08 July, and 1400 UTC through 2100 UTC, 08 July.

The Great Circus Train special event station will be operated as the train travels from Baraboo, Wisconsin's Circus World Museum (which is housed in the original winter quarters of the Ringling Bros. Circus), to Milwaukee. The train will have 20 double-length flat cars which will carry more than 60 priceless, fully restored circus wagons for the Great Circus Parade the following Sunday.

Operation will alternate between 7.240, 14.240, and 21.325 MHz. A brief operation may also take place around 0000Z 06 July. It is hoped that there might be extended hours on 08 July. A 9 x 12 SASE, with three units of first-class postage is required for a full color certificate; DX, send four IRCs. SASEs go to Jim Romelfanger, K9ZZ, 412½ Ash Street, Baraboo, WI 53913.

MBARCs birthday celebration

On 11-13 July, the Mt. Baker (Washington) ARC (MBARC), will celebrate 50 years of continuous organization. The club began in 1947 with nine local amateurs deciding that a local club might be a good idea. One of them had been in a midwest club and had some experience to lend.

One of the original founding members still attends meetings and is active on the air. Hilmer Taxdahl, W7KCZ, remembers those who first got the club together. None remain but Tax.

The club is very active in all phases of Amateur Radio and meets every second Tuesday. The MBARC attracts 60-plus of its members to Field Day every year. The club also raised $14,000 to improve its 2-meter repeater system and to construct with volunteer labor, a radio room at the county Search and Rescue building. The club's RACES unit is very actively involved with the SAR and has participated in numerous rescues.

The club is now awaiting approval of a Sheriff Patrol plan whereby local amateurs will patrol areas where the Sheriff's forces are thin. Hams will observe and report only. Sixteen club members are active DXers and eleven are on the DXCC Honor Roll. One member is on the ARRL DX Advisory Committee.

The MBARC has published a newsletter, *The Groundwave,* every year since 1956.

The birthday celebration will include operations from selected members' stations and awarding of special QSL cards for contacts during that July weekend.

Dr. Mahlon Loomis

The Fulton County Dr. Mahlon Loomis Committee will operate W2ZZJ on 19 and 20 July, to commemorate the 171st anniversary of the birth of Dr. Loomis, the American radio pioneer, who was born in Oppenheim, New York on 21 July 1826. Operation will be from 1300-2000 UTC on the General Class phone portion of 75, 40, and 20 Meters, and, on the Novice 10 Meter phone band. Also, on area 2-meter FM repeaters. For a parchment certificate and extensive literature, send QSL, contact #, and a #10 SASE (55¢) to: W2ZZJ, 5738 State Hwy 29A, Stratford, NY 13470.

Crash at Corona

The 50th anniversary of the "Crash at Corona," near Roswell, New Mexico on 03-05 July, from 1700 UTC-2400 UTC daily). Frequencies will be approximately 20 kHz up from the bottom edge of the U.S. General licensee HF band edge, 6-40 Meters (SSB) and in the Novice/Technician (CW) HF section of 15 and 40 Meters (QRP & QRO). Listen for W5BI, WB5LYJ, NA5N and WA5WHN. The station will operate overlooking one of the debris fields, near Corona. We are awaiting a special event call sign from the FCC.

SWL reports are encouraged too (SASE required). Send QSL and SASE (9x12) to WA5WHN, Jay Miller, P.O. Box 6552, Albuquerque, NM 87197-6552. Check the W5BI web page for further developments at http://www.flash.net/~w5bi/ or contact, via the Internet, wa5whn@juno.com

SS *Lane Victory* Cruise

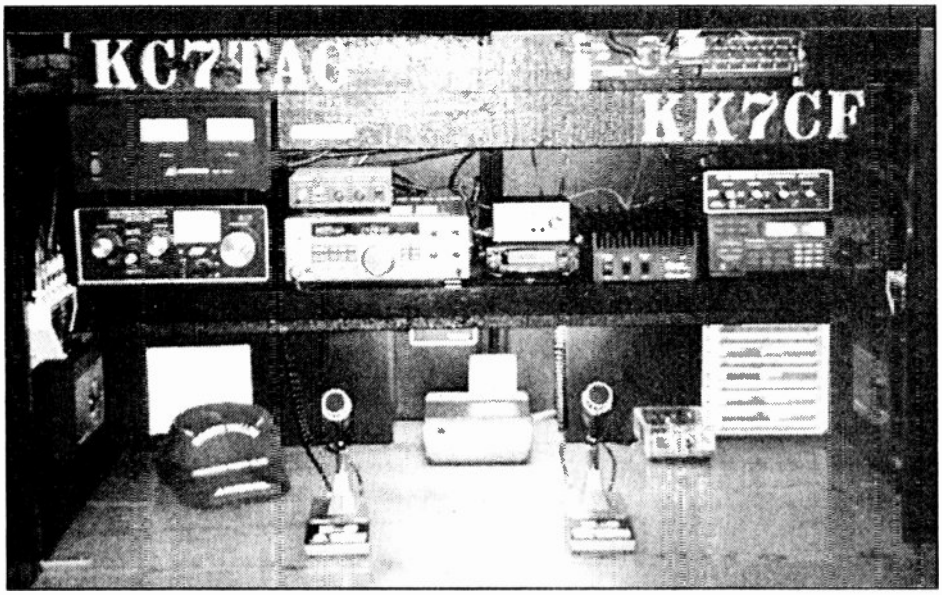
The SS *Lane Victory*, W6LV will operate 12 & 13 July. Operation will take place on 28.800, 28.380, 21.350, 14.262, and 7.245(+/- QRM). We will also operate VHF on 145.52(S) and 147.090(+), no PL. We will require a 9 x 12-inch SASE with two units of postage in order to receive our special certificate. QSL card with contact number issued, must be mailed to: Lane Victory ARC — W6LC, Attn: QSL Mgr., P.O. Box 629, San Pedro, CA 90733-0629.

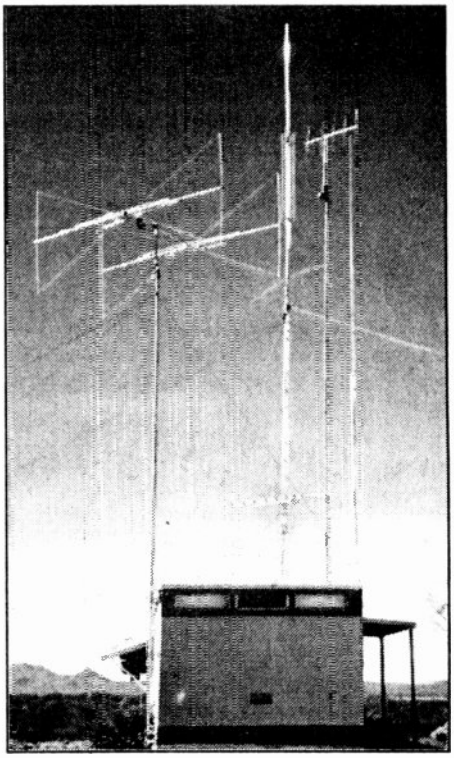
Lewis & Clark

The Clearwater Valley ARC will operate KC7VBT 0400 UTC 11 July through 1900 UTC 13 July to commemorate Lewis & Clark's Expedition through this area of Idaho, in September of 1805. Frequencies: 14.260, 7.260, 3.960, 1.960 MHz. Send QSL to CVARC, P.O. Box 1263, Orofino, ID 83544.

Pro Football Hall of Fame Festival

The Canton ARC will operate W8AL 25-27 July from 1300-2400 UTC to celebrate the annual Pro Football Hall of Fame Festival. Frequencies: 7.265, 14.265, 21.365, 28.430. For certificate, send QSL and 9 x 12-inch SASE to: Donald E. Perry, WQ8J, 968 Culverne Ave., N.W., Massillon, OH 44647. **WR**





Station Appearance

David, AB7VE (ex KK7CF) & Susan, KC7TAC Sader

The shack is a restored 1961 10' x 50' mobile home with the station occupying a 10' x 10' space and my workshop utilizing the rest of it. The antennas are from left to right: Butternut Butterfly, Gap Titan DX, Diamond-X 5-element 2-meter quad and a Diamond F-23A 2-meter ground plane. Several wires coming off the tower are 80- and 160-meter slopers. A television antenna is located on the lower portion of tower.

The station consists of an Astron RS-35M, MFJ Versa Tuner V, Kenwood PC-1A phone patch, Kenwood TS-440S HF, MFJ-812B meter, Kenwood TM-251A 2-meter, RF Concepts 2-417 amplifier, MFJ-407C electronic keyer, Radio Shack Pro-2036 scanner, Delta-4 HF switch, Delta-2 VHF switch, two Archer antenna rotor controls, two Kenwood MC-60A microphones, chrome-plated Bencher and some very large speakers. To keep all the wire under control, I use an MFJ-1118 high current outlet box.

I am serving as president of the Green Valley, Arizona Amateur Radio Club this year, while Susan has the luxury of being a member.

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

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

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**!*

What's in a call sign?

Jeffrey J. Samoska, N1UCF

I frequently write to a friend who lives in England, but is not a ham operator. I use self-stick mailing labels that have my call sign on them.

As with many hams, the call signs are frequently given non-standard letter phonetics just for fun. Mine, N1UCF: UNDER CONSTANT FIRE. However, my British friend, not understanding the call sign assignment, came up with a pretty good handle:

N1 — North Entrance #1
UCF — Upper Central Flat

Evidently, he thought the call sign was part of my address (apartment flat). Actually, I live in a house and now that I've explained the label, he's feeling a little less silly. **WR**

Alinco's NEW HTs keep you in touch while you're on the go!

Alinco believes every Ham should own a dependable HT. From newest licensee to seasoned Amateur Radio veteran, you'll be impressed with the features, prices and performance. And no matter how many radios you own, no matter what brand, every Ham should have the new DJ-S11T. There's never been anything like it at the price! Check out these terrific new radios, then check the super-low prices at your favorite Alinco dealer.

DJ-S41T 70 cm Pocket Radio

Already a "best seller," the DJ-S41T covers 425 ~ 450 MHz, has 21 memories, CTCSS encode, self-storing pivot antenna, accepts a wide range of accessories. Perfect for use with repeaters, simplex or cross-band links. At under $150, every ham in the family can own one!

NEW DJ-S11T 2 Meter Pocket Radio UNDER $150!

It's the one you asked for! Full 2 Meter coverage (144 ~ 148 MHz), 21 memories, CTCSS encode, pivot telescoping antenna, accepts standard Alinco speaker/mic and outside power, puts out 340 mw on 3 AA batteries, MARS/CAP and packet capabilities, fits in pocket or purse. You'll be amazed at its many features, performance and coverage. Get all this and more at a price under $150!!

DJ-191T and DJ-190T 2 Meter HT Prices start at under $170!

If you desire a full-size HT capable of 5 watts output, look to the DJ-191T or the DJ-190T.

Available in a number of battery/power output combinations including the DJ-191TD and the DJ-190TD dry-cell pack option. Both radios have 40 memories, accept speaker/mic units, external antenna and outside power (up to 13.8 VDC direct input), have MARS/CAP capability, extended receive and many "extra" features.

Economical DJ-190 is identical to DJ-191 in most functions but comes without keypad. It's perfect for basic communications, packet or for use in APRS "tracker" units.

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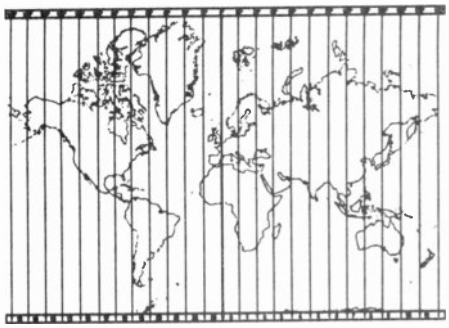
Awards



100 Nations Award

In an effort to encourage personal communications among peoples around the world via Amateur Radio, ***Worldradio*** offers the *Worked 100 Nations Award* to those confirming two-way amateur communications with permanent stations in 100 distinct countries having a permanent, native population.

The purpose of the ***Worldradio*** *Worked 100 Nations Award* is to demonstrate the unique opportunity Amateur Radio offers for communications between international borders to further worldwide understanding.

The *W-100-N* is not a radio sport award as such, but a token of achievement in communication. At the same time, it offers all Amateur Radio enthusiasts several features not found in other awards.

1. W-100-N virtually eliminates the need to work geographic areas heard only during DXpeditions. Almost all national entities have amateur stations consistently on the air.

2. W-100-N, then, will be of perennial interest. The advantage to those stations having worked a national entity long absent from the air will be minimal.

3. W-100-N is difficult to achieve, yet is within reach of all moderately well-equipped stations whose operators utilize good communication skills.

Rules

1. The *Worked 100 Nations Award* is available to any licensed Amateur Radio operator who can prove confirmation of two-way communications with government-authorized Amateur Radio stations in at least 100 different nations of the world.

2. No contacts with stations using reciprocal calls will count toward this award, such as N6JM/UL7.

3. All contacts must be with land-based stations. Contacts with ships, at anchor or otherwise, and aircraft cannot be considered.

4. All contacts shall be made from the same country.

5. Only contacts made on or after 01 January 1978 will count.

6. The application shall include the following:

a. Letter requesting W-100-N.

b. List of contacts in alphabetical order by prefix showing nation, station call, date, band and mode.

c. A signed statement by two other licensed radio amateurs, General class or above that they have inspected the required QSL cards.

d. A fee of $5 to cover the cost of the award.

7. All applications and requests shall be addressed to:

W-100-N Award Manager
Worldradio
2120 28th Street
Sacramento, CA 95818

8. There are no special endorsements to this award, however, endorsements may be made if the achievement bears such recognition. All modes and bands may be used.

Upon approval of an application for W-100-N, a certificate will be issued and the issuance of the award will be noted in a future issue of ***Worldradio.***

W-100-N nations list criteria

1. In all cases each "nation" will be both a political and geographical entity at the same time.

2. In all cases each "nation" will be a geographical and political entity independent enough to issue distinctive postage stamps acceptable in international mail.

3. In all cases each "nation" will be a geographical and political entity whose amateur stations are

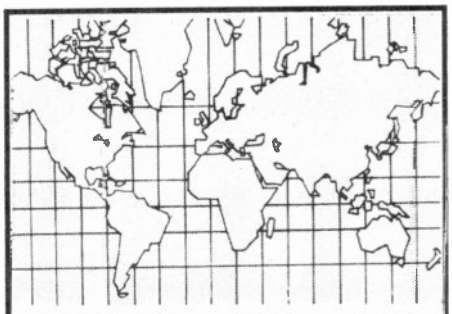
a. identifiable by a specific call sign prefix series allocation assigned to that entity by the International Telecommunications Union, or

b. identifiable by a specific call sign prefix or suffix series normally used in the issuance of amateur licenses to new amateur licensees under ITU prefix allocations by the sovereign government of the entity.

4. No geographical or political entity lacking a permanent, native population will be considered for status as a nation.

5. Geographical and political entities which do not issue distinctive postage stamps but have permanent, native populations will be considered to be part of the same entity that issues postage stamps for use in that area.

6. Geographical and political entities which issue postage stamps but do not have permanent, native populations will not be considered "nations" for the purposes of this award. WR



DX WORLD

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W-100-N

There were no applications received during the month of April for ***Worldradio's*** *Worked 100 Nations Award*.

Don't forget the CATZ Award, which requires confirmation of one station in each of 24 time zones around the world. Only contacts since 01 July 1996, count for this award.

Guinea (3X)

Philippe Lartigue, F5IEV, should be active from Guinea until 15 June signing with 3XY3A. Look for him on 20 Meters near 14.020 or 14.130 MHz. Listen carefully on that SSB frequency before you attempt to transmit.

Georgia (4L)

The *Ohio/Penn DX Bulletin* notes that amateurs in Georgia are represented by at least four different organizations, including the National Association Radioamateurs of Georgia (NARG). It is recommended that when working an amateur in Georgia that you ask him what organization represents him for QSL purposes. He may not be represented at all. Two of the organizations are: NARG, P.O. Box 123, Tbilisi 380 004, Georgia; Friendship World Wide Radioclub (FWWRC), P.O. Box 1, Tbilisi 380 002, Georgia.

Bouvet Island (3Y)

The South Sandwich Islands DX Group DXpedition to Bouvet Island has been delayed until December 1998 on the authority of the Norwegian Polar Institute. The *Ohio/Penn DX Bulletin* states that the Convention of the Conservation of Antarctic Marine Lining Resources (CCAMLR) is establishing an ecosystem monitoring program on the island and landing permits have been revoked until a management plan is in place. The Institute's concern is that all activity will disturb the environment to some degree which might cause an unacceptable impact on the monitoring program.

Scarborough Reef (BS7H)

The DXpedition team to Huang Yan Dao (AS-116), a.k.a. Scarborough Reef, shutdown operations at 0643 UTC on 03 May, three days earlier than planned. I'm sure there were many disappointed DXers who had yet to work them, especially those working souls who planned to work them during the weekend.

On Wednesday, 07 May, Tim Totten, N4GN, released the information that the DX community was waiting for:

"As has been widely reported in the media, the Philippine government announced on 28 April (within hours of the BS7H/MM departure from Guangzhou) that three Chinese military ships had been spotted in the area around Mischief Reef in the Spratly Islands. Mischief Reef is claimed by both the Philippines and China. Philippine President Fidel Ramos immediately lodged an official diplomatic protest with Beijing, and ordered increased Navy and Air Force presence in the area.

"Although the Spratley Islands lie some 300 miles to the south of Scarborough Reef, news of the escalating tensions in the region was immediately relayed to the BS7H crew. The expedition to Scarborough actually involved two P.R.C. Ocean Bureau vessels — one carrying the BS7H team with an Ocean Bureau crew, the other carrying only Ocean Bureau personnel. The two Ocean Bureau captains were disturbed by the news from the Spratly Islands, but everyone agreed to press on toward Scarborough.

"On the first day of on-the-air operations by the BS7H (30 April) two Philippine military reconnaissance jets overflew the reef at low altitude. Then on 01 May, a Philippine Navy ship arrived at the reef, eventually followed by a second Philippine military vessel.

"Philippine Navy officers visited each of the three BS7H operating sites. They were reported to be very friendly — even bringing medicine to relieve the gastrointestinal ills suffered by some of the BS7H team! In discussions with the BS7H team and the captain of the lead Ocean Bureau vessel, however, the officers asserted the Philippine position that Scarborough Reef lies within the 200 nautical mile Exclusive Economic Zone (EEZ) claimed by the Philippines.

"It is important to note that the Philippine officers admitted that there is no Philippine claim to the reef itself. The captain of the lead Ocean Bureau ship, of course, stated the Chinese position that Scarborough Reef is P.R.C. territory and provides the baseline for a 12 nautical mile Territorial Sea (TS) surrounding the reef.

"At first, the Philippine Navy seemed to be concerned that the Amateur Radio operations of BS7H were somehow an 'economic activity' subject to treatment under an EEZ claim similar to commercial fishing or oil drilling. But after observing the pileup operations, this concern was apparently satisfied. Still, the Navy officers insisted that it was okay for the P.R.C. ships to safely pass through the Philippine-claimed EEZ, but that they should not stop in any one place for a prolonged period of time.

"The captain of the lead Ocean Bureau ship was unable to reach any agreement with the Philippine Navy officers on this point. Finally, wishing to avoid a further escalation of tensions, the Ocean Bureau captains made the decision to leave the reef and return to Guangzhou, cut-

ting the planned seven-day BS7H operation down to only three days."

The real problem is that many DXers fail to see that DXing is only a hobby and is not meant to be a life or death matter. Remember that Spratley Islands DXpedition several years ago that resulted in the death of a team member after being fired upon?

For those of you who did work BS7H, QSL requests may be sent via W4FRU; QSL requests for BS7H/MM should go via W6RGG.

Don't write Scarborough Reef off yet. There are many of us who feel there will be another attempt to the reef soon.

Taiwan (BV)

In addition to the IOTA activity from P'eng-Hu Islands (AS-103) by BV9AYA, many other activity reports have been spotted during the month of April. Much of the activity reported was on 20 Meters and some of the calls found on that band are listed, with the latest date observed. Be aware that they often are found on other spots than indicated here:

BV4MU	14.170 MHz	1615 UTC	13 Apr
BV4PH	14.202 MHz	1330 UTC	29 Apr
BV4PM	14.027 MHz	1700 UTC	12 Apr
BV4QW	14.015 MHz	1515 UTC	23 Apr
BV5BG	14.194 MHz	1600 UTC	13 Apr
BV5GQ	14.243 MHz	1645 UTC	23 Apr
BV6GQ	14.010 MHz	1530 UTC	03 Apr
BV7EJ	14.015 MHz	1645 UTC	15 Apr
BV7GA	14.202 MHz	1300 UTC	19 Apr

I found most of these reports on the Internet (*WebCluster* by OH2BUA). From the amount of activity noted, this country is no longer rare.

Here are some reports for the WARC bands from Taiwan:

BV4QC	18.145 MHz	1230 UTC	18 Apr
BV4QH	18.120 MHz	0845 UTC	07 Apr
BV7FC	10.101 MHz	1415 UTC	09 Apr
BV9AAC	18.077 MHz	1230 UTC	30 Apr

St. Paul Island (CY9)

The DXpedition to St. Paul Island (NA-094), led by Mike Smith, VE9AA, is now scheduled from 26 June through 03 July, according to *425 DX News*.

Saudi Arabia (HZ)

According to *425 DX News* and others, station HZ1AB went on the air in the latter part of 1946. During the Golden Anniversary celebration (50 years on the air) of this historic DX club station, the present members in Dhahran will be active in all major contests from May 1997, through April 1998. A special QSL card will be designed and provided for contests during this period. For further information see their web page on the Internet at http://www.netcom.com/~k7jj/hz1ab.html.

Minami Torishima (JD1)

Take, JQ8NQJ/JD1, was to have left Minami Torishima (OC-073) in April. If you missed him, not to worry as he is due back in June or July. His preferred operating spots include 7.012, 10.104, and 14.028 MHz.

Mongolia (JT)

JT1BH was reported often during the month of April, with activity on at least three bands. Look for this one on 40 Meters between 7.004 and 7.009 MHz after 1430 UTC; on 20 Meters between 14.005 and 14.009 MHz around 1500 UTC; and on 15 Meters near 21.053 MHz at 0845 UTC where he was found on 13 April. On 20 phone, JT1BJ and JT1BV were both heard around 14.196 at 1400 UTC.

Ivory Coast (TU)

The operator of TU2WL reported to be on the air during the latter part of April was that of 5X4D. However, no spots were seen on the *WebCluster*, or in the DX newsletters. But, there were other calls reported during the month of April, and included the following, all via 20 Meters:

TU2JL	14.115 MHz	0700 UTC	13 Apr
TU2TP	14.115 MHz	0730 UTC	06 Apr
TU4CC	14.163 MHz	1715 UTC	06 Apr
TU5CE	14.192 MHz	0830 UTC	23 Apr

Kaliningrad (UA2)

Just a handful of calls were reported operating from Kaliningrad. Perhaps some DXers fail to note that this one counts as a separate DXCC country other than mother Russia. This area was once Konigsberg, in East Prussia (Germany).

R2MWO	14.195 MHz	1045 UTC
RA2FBC	14.198 MHz	1545 UTC
RA2FBT	7.005 MHz	2130 UTC
RA2FKC	7.006 MHz	2315 UTC
RA2FP	14.136 MHz	1500 UTC
RK2FWA	14.012 MHz	1415 UTC
UA2BD	3.505 MHz	0345 UTC
UA2FF	1.840 MHz	0315 UTC
UA2FX	14.022 MHz	1145 UTC

Cambodia (XU)

Mike, XU6WV, has been active on the bands when business commitments haven't interfered. On CW, Mike is on the low bands often with preferred spots at 3.512, 7.004 and 7.007 MHz. He is temporarily off 80 and 160 Meters as he has RFI problems with a neighbor. On SSB he can be found on 20 Meters around 14.180 to 14.194 MHz usually between 1300 and 1500 UTC.

Also on the bands is XU2FB, active on CW, SSB and RTTY. The CW reports were on 09 April near 7.013 MHz between 1300 and 1345. The single RTTY report was on 14.081 MHz around 1400 UTC on 20 April. On SSB he was found often. Try listening for this one between 14.169 and 14.226 MHz from 1330 UTC to 1900 UTC.

IOTA

DX News Sheet notes that Phil Whitchurch, G3SWH, will be operating from Mykonos Island (EU-067) between 13 and 20 June signing with SV8/G3SWH. Look for Phil on CW only! Also, the Radio Club Kungalvs Sandareamatorer will be active signing with 7S6NL from Vinga Island (EU-043) 13 through 15 June.

Look for Dundas Island (NA-118) this summer as Lew Jenkins, N6VV, and Dan Ramsey, W7DR will be signing with N6VV/VE7 31 July through 02 August.

According to the *Ohio/Penn DX Bulletin* Maurice Andries, ON4BAM, will activate three IOTA groups while on vacation this summer, using the call GM/ON4BAM, portable and mobile. He will be operating from Scotland (EU-005) 19 July to 09 August, plus Isle of Lewis (EU-010) 31 July to 02 August, and Isle of Skye (EU-008) 02 August through 10 August. He prefers QSL requests be sent to him direct (with SASE).

Islands on the Air (IOTA) activity continues to increase. During the month of April 1997, many islands were available to be worked. Here are some of them as reported on the *WebCluster*.

AF-076	Bonny Isl.	5N4BHF
AF-078	Karabane Isl.	6W2/F6BUM
AS-005	Dickson Isl.	UAØBC
AS-017	Okinawa Isl.	JR6FT
AS-018	Sakhalin Isl.	RAØFA
AS-024	Ishigaki Isl.	JA5ROH/JR6
AS-042	Severnaya Zemlya	RAØBK
AS-053	Phuket Isl.	HSØ/IK4MRH
AS-103	P'eng-Hu Isl.	BV9AYA
EU-001	Kalimnos Isl.	SV5/G4FMK

EU-008	Mull Isl.	GMØWTM/P
EU-009	Orkney Isl.	GM3POI
EU-010	Isle of Lewis	GMØKCY
EU-017	Stromboli Isl.	ID9/IK3RIY
EU-019	Franz Josef Land	R1FJR
EU-020	Gotland Isl.	SL1ZXK
EU-028	Giglio Isl.	IA5/IKØMHR
EU-029	Fyn Isl.	OZ5HCA
EU-031	Procida Isl.	IC8OZM
EU-034	Baltic Sea Coast Grp	ESØNW
EU-037	Oland Isl.	SM7CBS
EU-045	Ventotene Isl.	IBØJN
EU-046	Ringvassoey Isl.	LA1CI
NA-008	Ellesmere Isl.	VE8RCS
NA-019	Kodiak Isl.	KL7HKX
NA-031	Goat Isl.	KA3UNQ/P
NA-036	Vancouver Isl.	VE7IM
NA-055	Moose Isl.	AA1KS
NA-067	North Carolina State East Grp	WQ4RP
NA-132	Bajo Neuvo	HK3JJH/Ø
OC-006	Tasmania	VK7FJ
OC-021	Java Isl.	YB1XUR
OC-022	Bali Isl.	YC9BU
OC-028	Kwajajein Atoll	V73AT
OC-034	New Guinea	YC9WGA
OC-036	North Isl.	ZL1KP
OC-070	Ambon Isl.	YC8VHU
OC-134	South Isl.	ZL3VK
OC-137	Bribie Isl.	VK4LV
SA-008	Tierra del Fuego	LU3XQ
SA-018	Chiloe Isl.	CE7OXZ
SA-023	Itaparica Isl.	PY6JJ

Some of the island groups listed above are very common. AA1KS on Moose Island (NA-055) appears on 14.260 MHz regularly from Eastport, Maine.

If you still need a confirmation from the L4D Blanca Island (SA-065) operation on 20 and 21 November 1993, you may send your request to Phil Whitchurch, G3SWH, either direct or via the RSGB Bureau. This applies for the L4D operation on those dates only.

DX News Sheet reports that Franco Armenghi, I4LCK, and Nerio Baratta, HSØ/IK4MRH, made 3,530 contacts under very poor propagation from Terutao Island (AS-126) signing with HS9AL. Of the contacts, some 2,243 contacts were made via SSB and 1,287 contacts via CW.

Annual IOTA Contest

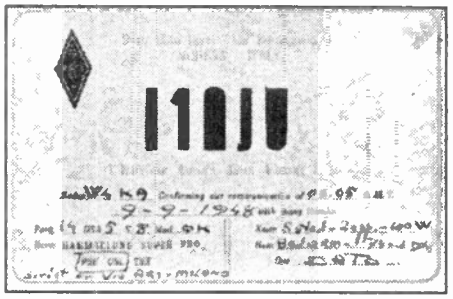
In addition to the possible IOTA island activity during the annual IOTA Contest in July, the following should be active:

EU-044	Soroya Island	LA/F5YJ
EU-058	Ile Sainte Marguerite	TMØM
EU-064	Noirmoutier Island	F5PAC
NA-065	Guemes Island	N7FL

Antique QSL Department

The selection of Antique QSL cards for this month's column are courtesy of Leo Haijsman, W4KA. Most serious DXers will remember Leo as custodian for *CQ*'s WAZ award.

The first card is just not another Canadian QSL card. It isn't a Canadian card at all! Leo, then signing W4JNG from Falls Church, Virginia, worked VO2BF of Argentia, Newfoundland. The date was 07 January 1948, about a year before Newfoundland joined the Canadian federation. Leo was able to get Newfoundland credit for DXCC. Newfoundland became a deleted DXCC country on 01 April 1949.



The operator, T. Wingo, was probably assigned to the U.S. Navy facility at Argentia. The United States no longer maintains a base there. The operator probably is the same as the present Thomas D. Wingo, W4MFR, in South Carolina. Notice the rig Tom was using; an ART-13 transmitter and a Superpro receiver. The receiver was by Hammarlund and the transmitter was by Collins that had an automatic tuning arrangement. Many years ago I saw one of these rigs self-tune itself. Very interesting.

The second card is from Italy. The call I1AJU was assigned to Doctor Dato Berti, of Modena. The whereabouts of the operator is unknown. Leo, then W4KA, worked him on 09 September 1948. Obviously, Leo had recently received his new call. Back in the 1940s and 1950s all Italian Amateur Radio calls began with the I1 prefix, except for Sardinia and Sicily, which were IS1 and IT1.

DX Conventions

The 46th Annual Pacific Northwest DX Convention is back in Vancouver the weekend of 25-27 July 1997, at the Richmond Inn. Advance registration is $45 (U.S.) or $55 (Canadian) and is due by 30 June. The price includes both the Saturday evening banquet and a Sunday morning breakfast. Make your own reservations at the hotel at 604/273-7878; fax 604/278-0188. The convention is hosted jointly by the British Columbia DX Club, and the Fraser Valley DX Club. For further information Canadians should contact Allen Buckshon, VE7SZ, at 24059 65th Avenue, Langley, BC V2Y 2H1 or via e-mail at abucksho @direct.ca. This side of the border DXers should contact Ken Thompson, VE7BXG, P.O. Box 3048, Blaine, WA 98231.

The 6th Annual New Orleans International DX Convention will be held 22-23 August at the Royal Sonesta Hotel, right in the middle of the French Quarter. Pre-registration is $60 which includes the Banquet. Guest tickets for the Banquet only is $40. Contact Michael Mayer, W5ZPA, 5836 Marcia Avenue, New Orleans, LA 70124, fax 504/524-2129. When making hotel reservations at 504/586-0300 be sure to ask for the convention rate.

Then there is the W9DXCC DX Convention and Banquet, a one-day affair on Saturday, 06 September 1997. This one meets at the Holiday Inn in Rolling Hills, Illinois. Pre-registration before 15 August is $39 which includes the convention and the banquet. Guest banquet tickets are $22 and are ineligible for the prizes. Send your registration to the 1997 W9DXCC Chairman, Phil Camera, KB9CRY, 806 Portsmouth, Westchester, IL 60154; 708/343-1696, fax 708/343-4394 or e-mail iphil@megsinet.net. The room rate at the Holiday Inn is $77 per night plus tax. The Northern Illinois DX Association (NIDXA) also hosts a Friday hospitality suite starting at 6 p.m.

I have attended all three of these conventions in the past and I assure you that you will have a good time! The programs for all three will be essentially the same, such as the latest happenings with the DX Advisory Committee, the most recent DXpedition stories, etc. DXers are a fine bunch with whom to get together. Unfortunately, the Pacific Northwest DX Convention is the same weekend as the RSGB Annual IOTA Contest.

QSL Information

Ron St. Laurent, ND5S, informs us that there is an error in one of the QSL Managers on page 30 of the May issue of ***Worldradio***. Ron states that the listings show a PJ8A/9A with a Finnish manager and cannot understand the stroke Croatia (9A). My first reaction was perhaps it meant PJ8A and PJ9A, but evidently this is also incorrect. Ron says that he has been one of only the two operators at PJ8A for the last two years. The QSL manager for PJ8A should be Bob Williams, W9NIP, 4414 Arbor Drive, Okemos, MI 48864.

Need a source of IRCs? Bob Nadolny, WB2YQH, announced on the Internet that he has IRCs for those interested. In lots less than 100 he will charge 80 cents each and in lots of 100 he charges 75 cents each. Contact Bob at wb2yqh @aol.com.

QSL Routes

The following QSL routes come from many sources and are correct to the best of our knowledge. Please inform us if any are incorrect so that we may make corrections:

3A7A	—Bureau	EI5SPD	—EI2HY
3A7G	—3A2LF	EK6OCM	—K6EID
3CØDX	—EA4URE	EK8WB	—IK2QPR
3D2RW	—ZL1AMO (* 4)	EL2DT	—IKØPHY
3DAØCA	—W4DR	EM1HO	—I2PJA
3V3BB	—I5JHW (*1)	EM2I	—UT2IA
3V5I	—I5JHW	EW35WB	—EW1WB
3W5FM	—UAØFM	EY1ZA	—W3HNK
3ZØAPA	—SP5ZDH	EY4AA	—UA9AB
3Z2GD	—SP2FOV	FK5M	—F6AJA
4A1FEC	—XE1FEC	FR/DJ4VW	—DJ4VW
4J3M	—UD6DJ	FR5DT/E	—F6FNU
4K6DFT/FT	—UA9AB	FR5KH/E	—F6FNU
4L1BW	—N3CBW	FR5KH/J	—F6FNU
4L1DX	—OZ1HPS	FS5PL	—K9PG
4L1YY	—SP5LME	FT5WE	—F5GTW
4L5O	—TA7A	FY7AE	—WA4WTG
4L8A	—OZ1HPS	GBØMPA	—GWØPUP
4L9A	—IK3HHX	GB1ØØFI/LP	—GWØANA
4N4AE	—YU4WU	GB5OTR	—Bureau
4N4AX/CX	—WA4WTG	GSØGNK	—MM1AUF
4N4I	—YU4WU	GS4TMS	—GM4UYE
4N4MX	—WA4WTG	GT4WKS/P	—GØGNF
4N7DW	—YU7BJ	GW4DIY/P	—G4DIY
4O4BYZ	—YU4WU	H44MS	—DL2GAC
4O4EBL/FM	—YU4WU	HB4FG	—Bureau
4O4WCY	—YU4WU	HFØPOL	—SP3YFM
4O4YL/ZX	—YU4WU	HG8ITU	—HA8KCK
4S7PW	—ON6TZ	HSØAC	—LA7JO
4X1UF/2BYB	—WA4WTG	HSØZAZ	—IKØPHY
4X4FF/5N4	—WA4WTG	HS5OA	—I1JQJ
4X4NJ/UF	—WA4WTG	IBØJN	—I8JN
4X6RE	—IKØZKK	IC8ØZM	—IC8QEF
4Z4HF/LF	—WA4WTG	IG9/IW9CMQ	—IT9JPK
5H3HG	—WY3V	IG9/IW9CUK	—IT9JPK
5K3W	—HK3SGP	IK8VRS/IC8	—IC8QEF
5NØSVL	—WA4WTG	IN3XUG/IC8	—Bureau
5N8NDP/9	—IK5JAN	IR2Q	—IK2WXQ
5V7MD	—K7PT	IYØORP	—IKØUSA
5X1P	—G3MRC	IZ8ANA/IC8	—IC8QEF
6OØX/YL	—VK6ZX	J38A	—WA4WTG
6O5DX	—F5PYI	J38AH	—IV3NVN
6W2/F6BUM	—F6BUM	J38AI	—IV3TMV
6Y4A	—WA4WTG	J39JQ	—IKØZKK
6Y5/W4SO	—WA4WTG	J45M	—SV5BYR
7S6NL	—SK6NL	J77FT	—DL7FT
7X2RO	—OM3CGN	J83ZB	—JH1NBN
8PØA	—WA4WTG	JWØL	—G8APB
8P6AH/KP4	—WA4WTG	JW7QAI	—LA7QAI
8P9HA	—WA4WTG	JW9PJA	—LA9PJA
8Q7BP	—EA2BP	K7NX/4X	—WA4WTG
8Q7BZ	—OE3YCB (*3)	KG4AU	—WT4K
8Q7MZ	—OE3MZC (*3)	KH4/K1NT	—K1NT
8R1K	—N5ZO	KH7K/N2NB	—NW8F
8R1ZB	—JH1NBN	KP4DQ	—UA9AB
9G1VJ	—G4ZVJ	LSØI	—LU1IB
9H3HA	—DJ4XN	LX9DIG	—DL3JTN (*2)
9H3XI	—DL5CE	LZ5W	—LZ1YE
9J2BO	—W6ORD	LZ9A	—LZ2HM
9K2MU	—WA4JTK	MSØALN	—GMØOPS
9K2RR	—KU9C	MUØASP	—F5SHQ
9M2OM	—GØCMM	N4UQM/KH2	—WB4UBS
9M2TO	—JAØDMV	OD5PN	—LX1NO
9M8/DF8AN	—DF8AN	OD5SK	—KB5RA
9M8PV	—WA4WTG	OHØAM	—OH2BAD
9M8TCR/PR	—KQ1F	OK8DDB	—DL6UAA
9N1WU	—JA8MWU	OM3A	—OM3KAG
9V1ZB/ZV	—JL3WHL	OM5M	—OM3KFF
9X/RW3AH	—RW3AH	OZ2/3/8DSB	—OZ4IO
9X4WW	—ON5NT	PJ8LP	—W1YJI
9Y2MU	—WA4JTK	PJ8N	—N7RT
A35UF	—DL5UF	PX1I	—PY1KS
A41KJ	—N5FTR	R1FJZ	—U3AJ
AH7X/AHØ	—JP1NWZ	RAØFA	—WK6C
BS7H	—W4FRU	RA2FBC	—DJ1OJ
BVØTHU	—DL5AUJ	RWØMM	—UAØMF
BV3/DL5AUJ	—DL5AUJ	RW9AV	—UA9AB
C6AHX/Y	—WA4WTG	RW9USA	—UA9AB
C6AJR	—WB8GEX	RZ9ATZ/ZA	—UA9AB
CM8DC/SH/VK	—IKØZKK	RZ9DX/Ø	—RW6HS
CO2VG	—HI3JH	SØ2R	—EA2JG
CO4BM	—CT1ESO	S21XS	—IK1FLF
CO7KR	—DL5DCA	S21YE	—W4FRU
CQ1A/C	—CT2GFK	S5ØO	—S59VM
CS7PSP	—CT1EDX	S52DD	—WA4WTG
CT1FMX/P	—CT1FMX	S79UAA	—DL6UAA
CY1COP	—VO1COP	SM1ØC	—UY5XE
D2M	—OH3LQK	SU1DZ	—9K2DZ
DAØIMD	—DL1BFE	SU1JR	—9K2RA
E21CJN	—K3WUW	SV5/HAØHW/P	—HAØHW
EA1BT/P	—EA1BT	SV5/HA6PS/P	—HA6PS
ED4MVM	—EA4SS	SV5/HA6ZV/P	—HA6ZV
EG97CMC	—EA2URD	SV9/PA3GIO	—PA3GIO

DX Prediction — July 1997

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

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

WEST COAST

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

CENTRAL USA

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

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	*(16)*	15	*19	*(12)*	*14
9	*(19)*	*(12)*	15	14	*15
11	23	*(15)*	14	17	18
13	27	17	*(13)*	*19	22
15	29	15	*(13)*	*20	*26
17	29	*(12)*	*(12)*	*20	*28
19	*27	*(14)*	*(17)*	*19	*29
21	22	*(17)*	26	17	*20
23	19	*(19)*	29	*16	*25
1	*16	20	30	*13	*21
3	*13	*(19)*	29	*13	*18
5	19	18	25	*15	*16

T22MS	—DL2GAC
T30WP	—JA1WPX
T40RFC	—CO2KG
TA2FE	—NK3S
TI9CF	—TI2CF
TJ1BF	—WA4WTG
TMØM	—ON5FP
TM5PR	—F5KCV
TM9FFP	—F6KUC
TT8FC	—EA4AHK
TU2CC	—IK2NNI
TU2WL	—IN3DYG
TU5CE	—IK3HAT
TZ6VV	—AAØGL
UA1ZO	—LA8BF
UA3CT	—AA6BB
UA3TJW/1	—UA3TX
UA9AJ/AN/UI	—UA9AB
UA9BA/5VØ	—UA9AB
UD6DFF/FT	—UA9AB
UD6F	—UA9AB
UE5ØXJ	—UA9XFJ
UE5ØXK	—UA9XK
UE5ØXN	—UA9XEN
UG/UV3ZZ	—UA9AB
UJ8RA/K8AX	—UA9AB
UL7VV/N2L	—UA9AB
UP5ØV	—UA9AB
UT7FA	—K1SE
UT7QF/W9AR	—UA9AB
V21AK	—WA4WTG
V21CW	—KA2DIV
V26SR	—N2SR
V47XC	—GØIXC
V63DA	—JE5WJM
V63SM	—JQ3EEL
V73AT	—K2CL
V73K	—W6TKF
V73WP	—JA1WPX
V73Y	—WA4WTG
V85NM	—DF8AN
VK6FOC	—DJ8FW
VK6RQ	—WA4WTG
VK8AN	—VK4FW
VP2EJT	—G3PJT
VP2MHY	—KM9D
VP5T	—N2VW
VQ9LV	—KY3V
VQ9UO	—W3FUO
VQ9VK	—AA1OJ
WJ2DX	—W2EN
WP3A	—NP4QH
WP3X	—W3FG
WQ4RI*	—K4HQ
X5SO	—YU1KN
XE2MX	—K6VNX
XK1LV	—VE1LV
XK7SZ	—VE7SZ
XT2AR	—W4BYG
XU2FB	—N4JR
XU6WV	—KØTLM
XV7TH	—SK7AX
XX9KC	—JH2MRA
XZ1N	—W1XT
Y59UF	—DL6UAA
YB9AWR	—Bureau
YC8FI	—IKØZKK
YC9WGA	—YBØBEE
YE1T/2T	—YBØPR
YI1US	—WA3HUP
YJ8AA	—VK4AAR
YM2KC	—TA2FE
YM3ATA	—TA3YJ
YN6WFM	—JA6WFM
YP9T	—YO9XC
YT4AM	—YU4WU
YU4BA/BA/BYZ	—YU4WU
YU4CF	—YU4WU
Z32XX	—KM6ON
ZB2FX	—G3RFX
ZD7WRG	—WA2JUN
ZF2CU	—W5CU/KV5X
ZF2GE	—WA4WTG
ZF2JC/8	—NC8V
ZS6AL	—KE4CLE
ZS8IR	—ZS6EZ
ZV5M	—PY5AA
ZW1B	—PY1OB
ZYØSK	—PS7KM
ZY21B	—PY2AE
ZY6R	—PT2GTI
ZZ1K	—PY1KB

9K2RR	—Faisal al-Ajmi, P.O. Box 1124, 80000 Al-Farwania, Kuwait
9M6TL	—Tony Canning, 261 Loddon Bridge Rd, Woodley, Reading, Berkshire RG5, 4BL, England
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CN8VB	—Maurice, P.O. Box 9148, Casablanca, Morocco
CU3AV	—Jose Manuel Medeiros, P.O. Box 153, P-9702 Angra Do Heroismo, Terceira, Azores, Portugal
EY8CQ	—P.O. Box 32, Moscow 117 449, Russia
JY5HF	—Samir K. Rifai, P.O. Box 851596, Amman 11185, Jordan
JY5ZH	—Zedan Hussen, P.O. Box 11020, Amman, Jordan
LZØHST	—P.O. Box 830, Sofia 1000, Bulgaria
OX3SA	—P.O. Box 1602, DK3900 Nuuk, Greenland
PY2JM/P	—Joao C. Miedzinski, Al. Lorena 461/81, São Paulo, SP 01424-000, Brazil
SV5TS	—P.O. Box 7, Paradissi, Rhodes, Greece
T97POPE	—T97POPE, P.O. Box 61, 71000 Sarajevo, Bosnia-Herzegovina
TJ1HP	—P.O. Box 2311, Douala, Cameroon
TR8BAR	—Jean, P.O. Box 177, Libreville, Gabon
YBØZZ	—DDJ Club Station, P.O. Box 84 JKWA, Jakarta 10001, Indonesia
YB2FEA	—Kundjana Sutawibawa, P.O. Box 220, Semarang 50241, Indonesia
YB5NOF	—John E. Daluas, P.O. Box 1205, Palu 94001, Indonesia
YB6JN	—Joni Setiawan, P.O. Box 111, Rantau Prapat 21401, Indonesia
YB8DOA	—H.M. Ishak Iskandar, P.O. Box 262, Makassar 90001, Indonesia
YCØJIV	—Johannes Tanara, P.O. Box 294, JKB, Jakarta 11001, Indonesia
YC1FDN	—Dadang Danumihardja, J1. Cipunagara No. 38, Bandung 40114A, Indonesia
YC8ROC	—Iwan B.M. Liwu, P.O. Box 34, Manado 95001, Indonesia
YFØNA	—Nardi Atmaja, P.O. Box 1289 JKB, Jakarta 11012, Indonesia
ZB2X	—Jorma Saloranta, Karhutie 39, 00800 Helsinki, Finland
ZP7BIA	—Tito Codas, C.C. 20, Coronel Oviedo, Paraguay
ZP9T	—Carlos Navarro, P.O. Box 1341, Asuncion, Paraguay

Notes:

*1. This route applies only for the dates 28 April through 05 May 1997.

*2. This route applies for the 1997 WPX SSB contest only.

*3. QSL requests to these calls should be routed to calls shown via the bureau or direct to OE1PYA.

*4. QSL requests shall be sent direct only.

The same applies for UA9AB (Gene Shumat, P.O. Box 17, Troitsk, 457 100 Chelyabinskaya oblast, RUSSIA). QSL requests may be sent either direct or via the bureau.

Thanks to the following contributors for this month's column: VE7BXG, K3ZO, WA4WTG, ND5S, W7CF, WL7ZA, KA8RAM, Western Washington DX Club (WAØRJY), Northern Arizona DX Association (W7YS), W9DXCC Web Page, *OH2BUA WebCluster* (OH2BUA), *Ohio/Penn DX Bulletin* (KB8NW), *425 DX News* (I1JQJ, IK1GPG, IK1ADH), *DX News Sheet* (G4BUE), *QRZ DX* (N4AA), and *Island DX News* (W5IJU).

Sorry I missed many of you in Fresno this year. This was the first one missed since we started attending over 20 years ago. My youngest daughter was married that weekend and I had the honor of escorting her down the aisle.

I missed Dayton too! My oldest daughter graduated from the Oregon State Police Academy that weekend at Camp Rilea. During her training she set new records for women cadets.

As you can see on the masthead I now can be reached via e-mail. I have already received such mail from readers, who evidently read the "fine print." The VKØIR cards are in the mail, with a very nice card. GL DX de John N6JM. WR

QSL managers

Manager	Call
3A/DJ7RJ	—DJ7RJ
3B8/IK2GNW	—IK2GNW
3DAØCB	—W4DR
3EØS	—HP2CWB
3E1DX	—NØJT
3F2A	—HP2CWB
3W5FM (EA)	—EA5KB
3W6JP	—JA2TG
3Z2GD	—SP2FOV
4A1FEC	—XE1BEF
4F3CV	—HB9CXZ
4K2/4K4BAT	—DL6ZFG
4K2OKV	—DL6ZFG
4K2QQ	—RA1QQ
4K4/EKØAK	—UA9OA
4K4/EKØAQ	—UA9OA
4K4BAT/A	—DL6ZFG
4K4BEU/A/P	—DL6ZFG
4K4BG	—DL6ZFG
4K4QQ	—RA1QQ
4L1BW	—N3CBW
4L1DX	—OZ1HPS
4L4KK	—SV2AEL
4L5A	—IK3HHX
4L5O	—TA7A
4N1Z	—YU1AVQ
5A1A/OE2GRP	—OE2GRP
5B4/DL5ZAB	—DL5ZAB
5B4AGI	—N4JR
5J6W	—HK6MKK
5K3SB	—HK3DDD
5N4ALE	—DK1RV
5N8NDP/9	—IK5JAN
5R8FH	—I1PIN
5R8KH	—WB8LFO
5T5JC	—F6FNU
5WØBS/DG/JB/KI	—K8KS
5WØTR	—K8KS
5X1N	—SM7KOJ
5X1P	—G3MRC
5Z4BZ	—F5IBZ
5Z4SS	—JA1SQI
6O5DX	—F5PYI
6W1QV	—F6FNU
6YØA	—K3DI
6Y5/K3DI	—K3DI
7Q7EH	—AA9HD
7Q7RM	—GØIAS
7S3EYO	—SK3BG
7XØAD	—EA4URE
7X2CR	—IS0LYN
7X2RO	—OM3CGN
7X4AN	—DJ2BW
7X7AD	—EA4UBE
7Z5OO	—W1AF
8P6DA	—KU9C
8P9AP	—K2WE
8P9DX	—VE3ICR
8P9EM	—G3VBL
8P9HA	—WA4WTG
8P9JA	—K4MA
8P9JB	—AA4NC
8P9NX	—WØSA
8Q7BC	—OE1HBC
8Q7CR	—DF5JR
8R1AK/P	—8R1AK
9AØCW	—9A2WJ
9A5ØD	—9A1BHI
9G1MR	—IK3HHX
9G3BQ	—PA3GBQ
9H1EU	—WA4JTK
9H3UT	—DL9GDB
9J2SZ	—SP8DIP
9J2TF	—JA2BOV
9K2/SP5UAM	—SP5PBE
9K2GS	—WB6JMS
9K2ID	—9K2RA
9K2MU	—WA4OTK
9K2RR/NLD	—KU9C
9K2/USA/ZR	—K8EFS
9M2RY	—N4JR
9M2TO	—JAØDMV
9M8BT/FH/LL	—N5FTR
9N1RHM	—KV5V
9Q5LAC	—DL5LAC
9U5CW	—EA1FFC
9U5DX	—F2VX
9U5T	—F2VX
9V1ZB	—JL3WHL
9X4WW	—ON5NT
9Y4H	—CT1BOH
A35CE	—DL2GBT
A35RK/SQ	—W7TSQ
A35UF	—DL5UF
A35WA	—DF5WA
A41KJ	—N5FTR
A92FZ	—W3HC
A92GD	—K1SE
AL7O	—AL7BL
AP2KSD/N	—IK7JTF
AY1CJY/DZ	—GACW
AY4FC	—GACW
AY5BB/DVO/EIE	—GACW
AY6EF/9HGW	—GACW
BD2BI	—BY2AA
C31LJ	—VE2GEJP
C56XX	—GØUCT
C6A/N4RP	—N4RP
C6AGN	—KA1DIG
C91CO	—W4DR
CE7AOY/8	—CE7AOY
CM8DC	—IKØZKK
CM8TW/Y	—W3HNK
CO2JD	—HI3JH
CO2KK	—W9JUV
CO2VG	—HI3JH
CO4BM	—CT1ESO
CO7KR	—DL5DCA
CP8XA	—DG9NB
E21EJC	—HS1GOS
EA1ACL/P	—EA1ACL
EA1BT/P	—EA1BT
EA1BTK/P	—EA1BTK
EA1BTL/P	—EA5OL
EA4ENK/P	—EA5OL
EA5DNO/P	—EA5DNO
EA5GQZ/P	—EA5GQZ
EA5HT/P	—EA5HT
EA5RD/P	—EA5RD
EA7URE	—EA7CWA
EA8/DJ9HD	—DJ9HD
EC5AEB/P	—EC5AEB
ED1XLE	—EA1EHE
ED3IFF	—EA3GII
ED3VGC	—EA3NI
ED5YEF	—EA5AAN
ED7MCA	—EA7IA
ED9MAG	—EA9PB
EG7DCA	—EA7URS
EKØAC/AKA	—UA9OA
EKØAKW/KA	—UA9OA
EL2DT	—IKØPHY
EM1HO	—I2PJA
EM1KA	—JA2JPA
EM2I	—UT2IA
ET3BN	—DL1RJR
EW1MM	—W3HCW
EXØV	—W6/KL7H
EX8MD	—IØWDX
EX8W	—DL8FCU
EY8/NP2AQ	—DL4FDU
EY8XX	—GW3CDP
FG5FC	—F6DZU
FG5FR/GZ	—F6FNU
FG5HR	—F6BUM
FG5MB	—F5MBF
FK8GJ	—F6CXJ
FM5FM	—F5LNV
FR/IK2GNW	—IK2GNW
FS/JE2YRD	—XW2A
FS5PL	—K9PG
FT5WE	—F5GTW
FT5ZG	—F5RQQ
FY5YE	—W5SVZ
GI2VBV	—W3JGM
H3OS/2A	—HP2CWB
H44FN	—HA8FW
H82A	—HP2CWB
HFØPOL	—SP3FYM
HH2WL	—KF6CN
HI3/DH2JD	—DH2JD
HL3ERJ	—HL1XP
HOØS	—HP2CWB
HP1XBI	—F6AJA
LU6Z/7X	—GACW
LZØA/L	—LZ1KDP
LZ5W	—LZ1YE
LZ9A	—LZ2HM
MMØALM	—GMØPKX
MUØASP	—F5SHQ
NH6/8N8CC	—K8KS
NL7G	—WL7E
NP4A	—W3HNK
OA4DTW	—N5FTR
OA4SS	—KB6J
OD5/N4MUJ	—N4JR
OD5NJ	—EA5BYP
OHØM/EP	—OH3LQK
OI1AF	—OH1MDR
OK5W	—OK1AEZ
OM3A	—OM3KAG
OM5M	—OM3KFF
OT7EPL	—ON4RAT
OX3GL	—K6DC
OX3XR	—OZ3PZ
OZ5W	—OZ1FTE
P29VIG	—JA3IG
P29VXX	—DL7UFN
P4OJ	—WX4G
P4OW	—N2MM
P4OWA	—K9UWA
P49V	—AI6V
PI4CC	—PBØAIU
PJØ/KB5DZP	—N5FTR
PJ5AA	—W1AF
PJ8/ND5S	—ND5S
PJ8N	—N7RT
PJ9/W1WEF	—W1WEF
PJ9C	—K1CPJ
PJ9JT	—W1AX
PP8BV	—PT2AA
PQ8MM	—G3HSR
PR5M	—PP5AM
PW8LF	—PY2VA
PYØFF	—W9VA
PY2JM/P	—PY2EUY
R1OOR	—DL6ZFG
R42OA	—RV6LFE
RA2FBT	—DJ1OJF
RA9LT/9	—DL6ZFG
RKØQXY	—UAØKCL
RK9XWX	—RV9XF
RT5UN	—UXØUN
RUØB/A/P	—UA9OA
RUØF/UZ9OWM	—UA9OA
RV9XF	—RA9XA
RWØF/UZ9OWM	—UA9OA
RX9FM	—W3HNK
RYØU	—UXØUN
RZØF/UZ9OWM	—UA9OA
RZ3Q	—RW3QC
SO1M	—EA7EL
S21XX	—DL3NEO
S79DQW	—SM7DQW
4S79GN	—IK2GNW
S79MAD	—GW4WVO
S92AT	—NJ2D
SN2B	—SP2FAX
4SO1VAF	—DL7VAF
SUØERA	—SU1ER
SU3AM	—DL1FCM
SX2THE	—SV2TSL
T93M	—K2PF
T93Y	—N2MAU
T94NF	—N2AUK
TA2/DL6KWN	—DL6KWN
TA2FE	—KK3S
TI4CF	—W3HNK
TN6X	—DJ6SI
TN7A	—JH1NBN
TR8VP	—F6FNU
TT8AM	—IK7JTF
TT8ED	—F5SEC
TT8WL	—DL3IAW
TU2XZ	—W3HC
TU4FF	—OH8SR
TX8FU	—NA5U
TY1NI	—PE1IVQ
TZ6VV	—AAØGL
UAØAZ	—W3HNK
UAØSJ	—UWØST
UAØX/EK250RA	—UA9OA
UAØX/UZ9OWM	—UA9OA
UAØZ/EK250RA	—UA9OA
UB5UAL	—UXØUN
UE1QQQ	—RA1QQ
UK8IZ	—IK2QPR
UK8OO	—W3HNK
UNØAA	—UL7ACI
USØU/TØU	—UXØUN
UT1ØØUDX	—UXØUN
UT5UDX	—UXØUN
UYØMM	—UB4MM
V2/DL2SDS	—DL2SDS
V21PI	—DJ5KX
V26A	—N3BNA
V26AK	—WB2P
V26B	—WT3Q
V26C	—WA2C
V26CW	—NM9H
V26DX	—KK3S
V26E	—AB2E
V26LN	—K3TLX
V26NA	—KX9X
V26R	—KA2AEV
V26RN	—KR2J
V26T	—K3MQH
V26TS	—KF3P
V26U	—WA2UDT
V31BR	—N5FTR
V31EV	—NIØB
V31ML	—N5FTR
V31SD	—N5FTR
V47CA	—VE3BW
V47KP	—K2SB
V47LDX	—N5FTR
V5/ZS6BY/M	—KYØA
V5/ZS6YG	—KYØA
V51CM	—WA2JUN
V51GC	—W3HCW
V51Z	—ZS6EZ
V63CF/K	—K8KS
V63KU	—JA6NL
V73GT	—WF5T
V73JB	—K8KS
V73RF/MM	—N3RF
V73TR	—K8KS
V85HY	—JA1WTR
VA3AAN/NJ	—VE3SJL
VI3GP	—VK3ER
VKØTS	—VK1AUS
VK4WGL	—KB5GL
VP2EV	—K7BV
VP2MEP	—W5LVM
VP2V/K1DW	—K1CPJ
VP5/K8JP	—K8JP
VP5T	—N2VW
VP8BPZ	—DA4RG
VP8CTR	—UX1KA
VQ9VK	—AA1OJ
VR96LC	—VR6LC
VS97BG	—VS6BG
VU3PMG/P	—VU2DVC
WP2Z	—KE2VB
XE2MX	—K6VNX
XK7SZ	—VE7SZ
XL9NJ	—K2NJ
XR8S	—CE8SFG
XT2AW	—DF2WO
XT2DB	—F5LGQ
XU2FB	—N4JR
XU5AM	—W7AAM
XV7TH	—SK7AX
XX9TR	—OH2BH
YB1AQT	—DL2SDS
YB1XUR	—YC1XUR
YB2ARO/SQ	—W7TSQ
YC3UUQ	—YB3BC
YC8TZR	—YB5NOF
YI1AK	—KC5HWR
YI1HK	—SM3DBU
YI1US	—WA3HUP
YI1WMS	—IK2DUW
YTØX	—YU7AL
YZ7ED	—YU7AL
Z21BA	—N5FTR
Z24S	—W3HNK
ZA1M	—IK2HTW
ZB2/G4ZVJ	—G4ZVJ
ZC4JJ	—GØCXX
ZC6MPT	—JA1UT
ZD7HI	—N2AU
ZD7JP	—N5FTR
ZD7WRG	—WA2JUN
ZD8DEZ	—GØDEZ
ZD8KFC	—N5FTR
ZD9BV	—W4FRU
ZF2AU	—W5AU
ZF2NK	—KBØYKN
ZF2VU	—N5XIQ
ZK1DI/P	—DK1RV
ZL3BQ	—LZ1KPE
ZL7ZB	—DJ4ZB
ZS5UZ	—W4DR
ZS6Y	—KK3S
ZS9C	—ZS6BRH
ZV8CL	—PY3KL
ZV8KL	—PY4KL
ZW1B	—PY1OB
ZXØZK	—PY1LVF
ZYØSG	—PT7AA
ZYØSK	—PS7KM
ZYØZ	—PY1NEZ
ZY3CEJ	—F6FNU

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RK9CWW —Radio Club, P.O. Box 17 A, 620002 Ekaterinburg, Russia

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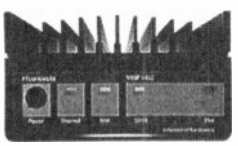

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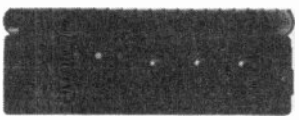

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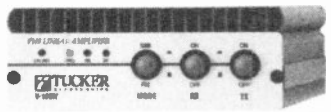

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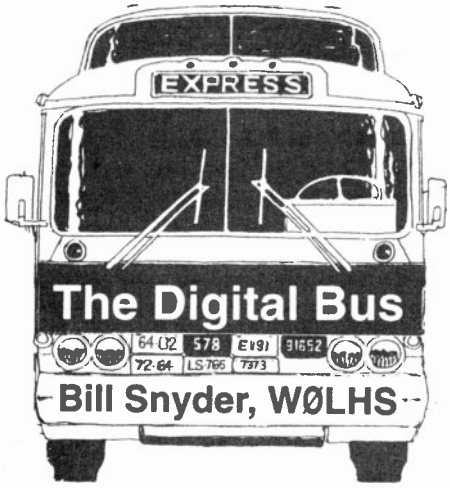

I have been writing this column for the past 15 (maybe more) years and it has had many rewarding moments. Last October I wrote a column about Mary Dosland, W5DEW, who lives in Moorhead, Minnesota, a twin city across the state line river from my home in Fargo, North Dakota. Mary, well known on the 20-meter AM phone band back in the 1930s as "The Texas Dewdrop," which I think contains the slickest phonetic for a call sign ever devised (DEWdrop), is still on the air, but not as often as she was in those "good old days."

An update note about Mary, the Dewdrop; she is now 87 years young, and she claims to be the 4th Amateur Radio YL to be licensed in the state of Texas, a feat that happened way back 62 years ago. Recently, the Dewdrop tells me, she has been copying the code practice run from W1AW. "I didn't do much CW after I discovered phone," said Mary, "and I certainly did a lot of that over the years!" I agreed, because I did a lot of listening to her in the 1930s.

In my October column I published a picture of Mary that was taken in those early days right after World War II. She was shown in front of her operating position with a war surplus Hallicrafters HT-4 transmitter in the background. The rig was the same as the one Bob Leo, W7LR, and I had when we were on the air with the Gatti-Hallicrafters African Expedition in 1947-48. Please consider this an addendum to that October column, so I would like to share the following letter with our readers.

It's from Tony Landry, W4MJG, in Lake Lure, North Carolina. Tony has me by nine years in the octogenarian department, so he is a *real* old-timer! Here is his letter:

"Your article in ***Worldradio*** brought back memories, and it answered a question that had been bothering me for a long time. What had happened to W5DEW?

"Since I read your informative article, I have been listening on the day, time and net frequency that you listed in your column where and when I might find Mary.

"As you know, the 20-meter band propagation has been a problem for some time, but I managed to hear K6PIZ at about 4:30 p.m. (EST) on Thursday, January 30, 1997 on 14.257 MHz. He was acting as net control and he had a S-9 signal here, although all the other stations were very weak and some were barely readable.

"When the net control station, who was getting check-ins, called W5DEW, Mary came back, very weak but readable Q5 here. What a thrill!

"I promptly called the net control station and asked permission to contact Mary. I explained to him that I had occasionally contacted her in 1935, but had not heard her at all for the last sixty years (that ought to be something for the record book!). The NCS granted the permission, and Mary and I had a good QSO. That contact made my day!

"In 1934, Mary was living in Port Arthur, Texas. I was living in Yonkers, New York at that time and using my original call of W2IRT."

That letter from Tony really made my day, too. I enjoy hearing from readers who have a fun experience from their operations on the ham bands. Mary Dosland is the widow of Goodwin Dosland, WØTSN, who was the president of our ARRL organization for about 10 years. The late "Dos," at the time of his ARRL presidency was a widower, and he was a practicing lawyer in Moorhead. Due to his being the boss of the League he had to speak to a lot of hamfests around the USA. On one of his speaking trips, Dos met the "Dewdrop," then a widow, at a Texas hamfest. I don't know much about the courtship, but one day the Dewdrop appeared on the air from Moorhead; and, by golly, I was really surprised to find she was married to ARRL president Dosland! You see, I was a fan of W5DEW in those pre-war days, and I'll never forget that DEWdrop call sign.

In those years I was going to college and many an afternoon, while building on my "new" transmitter, I would tune in the 20M phone band and listen to the Dewdrop chatting with people all over the country. Mary has a wonderfully sweet voice with southern accent dripping from it like honey. If you ever hear it once, you will recognize it anywhere.

Dos died a number of years ago, and Mary still lives in a nice condominium located along side one of the golf holes on the Moorhead Country Club. From there she does a bit of hamming on the 20 meter phone band. If you followed the devastating North Dakota flood of April this year, you will recall Fargo and its twin city were hit by the worst Red River flood in history. I'm happy to report that Mary survived a close call when a dike broke and the golf course was flooded! The influx of water came mighty close to hitting the Dewdrop's ham shack, but it stopped right at her door.

So, if you are a real old-timer like W4MJG, you might find the Dewdrop when she checks into the net on Thursday afternoon.

The next letter warms fond memories about my first computer, the aptly named "SOL" by Processor Technology. I bought the SOL back in 1976, and I used it for about ten years, although I did get a PC somewhere along the line while I had the SOL going. The letter is from Ron Burford, WB8KFD, ex-K3GHA in Mentor, Ohio.

"When I began reading your column in the December issue of ***Worldradio***, I thought that you were going to talk about the Heathkit DX-20 or some other radio antique. It was quite a surprise to see you talking about my old friend SOL.

"I got mine second hand from another ham who had built it from a

kit and was in need of ready cash to upgrade. People kept asking, as they must have asked you, what are you going to do with it? At that time the best answers were to keep the Christmas card list and my wife's recipe file. The first one I really did, but wife Norma assured me that her current recipe system worked just fine, even after I explained that SOL could figure out the proper quantity of ingredients for any number of people. Her reply was, 'Who needs a computer to do that?' In reality, it was just a toy.

"The only non-recreational use I ever got out of it was its function as a tireless flashcard tutor for our four daughters. It puts things in perspective to realize that the youngest is now a sophomore at Marquette and the oldest is several years out of college and has just made us grandparents. With college and living expenses what they were and are, I've not been able to upgrade like you did. I still use a nine pin printer and an old Epson Apex with five and a quarter inch drives and no hard disc thanks to my mother-in-law's generosity. Maybe some day I'll join the modern world. My shack has always looked like a museum though. My main transceiver is a Heath SB-102. That should give you some idea.

"Have you kept your SOL? Mine is under the workbench in my shack. It no longer works, and my only attempt to fix it did not pan out. I did accumulate a lot of tape recorded software for it and a big supply of technical and software books. If the rascal worked, I'd still be playing the *Star Trek* game or shooting down the rockets. I remember looking through the technical material trying to find out how they generated the sound effects that were broadcast to the radio that had to be placed nearby. It was a while before I realized that the 'sound effects' were nothing more than the radio hash that you mentioned in your article.

"I tried to get a discussion on SOL started on the Prodigy computer bulletin board without success. I guess there are not many of us out there with our happy memories. You may have heard from many others, but at least you know that you have one kindred spirit that remembers SOL with the same fondness that you seem to have for that venerable machine. Thanks for bringing back some happy memories."

I recently bought a new computer for my writing and publishing department. One of the bells and whistles I wanted was a very fast CD-ROM player that worked with caddies. On my old computer, I had an old SONY CD-ROM player that required caddies for the disks, and because of this feature, I have accumulated a pile of the little disks all in their own caddy. I believe that the caddy is the way to go in handling the disk. It takes only a few seconds to push it into the machine and get to work extracting data. So I had a Plextor 12x installed in the new one, and I will say the new player really screams when it is put to work. The *QRZ* disk finds the stuff I'm after in zip time, so I'm happy.

Eavesdroppings

YOU SHOULD HAVE SEEN THE VOLUNTEER SAND BAGGERS WORKING ON THE DIKES AROUND FARGO AND GRAND FORKS THIS SPRING — IT WAS THE AMERICAN WAY OF HELPING NEIGHBORS. . . HAMS HELPED WITH TRAFFIC IN MANY WAYS DURING THE FLOOD SEASON — EVEN HAD SOME FROM OTHER STATES HERE TO PASS TRAFFIC FOR THE SALVATION ARMY AND OTHERS...NORTH DAKOTA WAS HIT WITH RECORD NUMBER OF BLIZZARDS, RECORD AMOUNT OF SNOW FALL, THEN RECORD FLOODING, RECORD DIKE BUILDING AND RECORD NUMBER OF POT HOLES IN THE HIGHWAYS....

Thanks to N9PGE and WØML for help. Write me: Bill Snyder, WØLHS, 1514 12TH ST S, FARGO, ND 58103-4134. 73 and DIT DIT. WR

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Unified FM bandplans at last?

Will there ever be a single unified repeater bandplan across the face of our nation? In my view, probably not. But if you subscribe to any of the VHF/UHF-oriented remailers on the Internet, or browse the Usenet, you will find that this question is one of the most often brought up.

Right now, each region is free to use any plan it wants for any band it wants. This is known as "local option" and this concept can and does cause problems for adjoining areas because RF energy does not recognize geographic borders.

Two Meters is probably the best example of this. When hams began to formally "coordinate" repeaters to the band, there were few repeaters to coordinate. Those that existed were regulated to operate in the spectrum from 146 to 148 MHz only. As there were few machines, hams arbitrarily decided to space them 60 kHz apart. No input to output spacing was specified, but that eventually became 600 kHz.

When hams ran out of 60 kHz repeater pairs, spacing was cut to 30 kHz. In the late 1960s a number of heavily populated regions ran out of 30 kHz channels so they again "split" and went to 15 kHz separation. This was in an era when the "made for ham radio" equipment was markedly inferior to commercial two-way gear in the area of receiver sensitivity and selectivity. As a result, two schools of thought arose.

Most of the nation opted to simply split the 15 kHz channels while others decided to split them and also invert them. The latter idea was to always have a user's radio seeing a relatively clear 30 kHz wide channel, while placing the responsibility to minimize inter-system interference with repeater owners.

Complicating matters even further, a few years later some regions decided that they wanted no part of 15 kHz spacing and adopted a new plan conceived in Washington State based on 20 kHz intersystem spacing. At about the same time, a New York City area repeater owner, with the editorial backing of *73 Magazine* was pressuring to put the input to output separation to 1 MHz. A few repeaters actually adopted that plan and at least one is still on the air in the Metro New York area. Another, with 1.035 MHz input-to-output separation is the busiest meeting spot in all of Southern California.

It got even worse when the 144.5 to 145 MHz subband was opened in the mid-'70s. Immediately there were three bandplans offered. The northeast wanted 15 kHz inter system separation, 600 kHz input to output separation and low-in/high out. Northern California suggested a plan based on 20 kHz channel spacing while retaining the 600 kHz input/output spacing and low-in/high-out configuration and starting at 145.21 out with input 600 kHz below. Everyone liked that plan except Southern California, which argued that an extra channel pair was available if repeaters began at 145.20 MHz out. In the end, the nation followed Northern California, and, as usual, Southern California went its own way — much to the chagrin of systems in the Tehachapi Mountain range that were now only 10 kHz apart and severely interfering with one another. It took a lot of re-coordination to solve the problem and in the end gave Southern California fewer places to put repeaters than if it had gone along with the rest of the country.

As a result of all of this, there are many combinations of 2-meter repeater bandplans in use nationwide. One finds this out as one drives the nation's highways and by-ways. It's even more of a shock when you get off an airplane and start scanning the band for contacts, only to find you have to go in and reprogram your HT for a new separation and the instruction book is in your desk, 1,500 miles away.

Maybe this myriad of bandplans was a necessity a decade ago, but not in this day and age of modern, highly selective and sensitive synthesized narrow band FM ham radio equipment. Most gear manufactured since 1984 can easily handle 15 kHz upright channel spacing, so keeping the status-quo is strictly a matter of ham radio politics. With the newly formed NFCC being as much a political organization as it is a technical one, maybe the creation of unified national repeater bandplans could be one of the first issues that the group opts to undertake. At least its something to hope for.

Radio Shack takes HTX-204 HT off the market

If you're one of the few people with a Radio Shack HTX-204 dualband amateur handy talkie, you just may have a collector's item. That's because after barely a month on the market, Radio Shack has pulled the popular radio off its store shelves.

In an April 17th notice to its stores, the Ft. Worth Texas-based electronics chain ordered an immediate recall of unsold stocks of the radio. A source at Radio Shack's headquarters cites a "regulatory compliance issue" involving the transceiver.

Radio Shack says it has no imme-

diate plans to offer another dual-band HT.

The HTX-204 started showing up in the chain's 7,000 retail stores just after the New Year. An official at the company's headquarters told the *ARRL Letter* that Radio Shack is worried about "potential illegal use" of the new radio but he declined to be specific. He did emphasize that the HTX-204 is perfectly legal for use on Amateur Radio frequencies but it has been learned that the radios can be modified, something Radio Shack never intended.

The radio was to have had a unique appearance, as part of the agreement with the company making the radios for Radio Shack, but a dual band HT with the same appearance has turned up under another name, in apparent violation of Radio Shack's agreement.

This sudden recall hit many dealers by surprise. At the Birming-HAMFest in Alabama, a Radio Shack vendor was planning to put the radios on sale as a Hamfest special — but he received orders just 48 hours before the Hamfest started not to sell the radios. And because Radio Shack has discontinued its single band 440 MHz handy talkie, many dealers have few, if any, UHF radios available to sell. (*Tnx KB4KCH, ARRL, Newsline*)

UK Repeater curfew

A curfew is in place on the West London GB3WL two meter repeater due to ongoing jamming and other malicious interference. Under the terms of curfew operation the repeater is now available only between 0600 and 1900 hours local London time. This allows its regular mobile users to continue to use it during the working day, while denying those who abuse the repeater the opportunity to do so during the evening. GB3WL operates on European repeater channel pair R1. (*via GB2RS*)

Operating VHF FM and repeaters in the UK

Speaking about the United Kingdom, I recently received a copy of a note from Jim, G3CQK, posted to the Internet that tells a bit more about the way repeaters operate in the UK and the needs of users to access them. If you are planning to vacation there, this will be of interest. I have excerpted from it and elaborated a bit on key areas.

Jim says that all UK repeaters can currently be accessed with the 1750 "burst tone." This is a "beep" transmitted automatically each time you depress the transmit button on your radio. If you don't have a 1750 tone burst, try whistling an ascending or descending note. Many UK hams do, and it works.

Some repeaters, mainly in the South, can additionally be accessed via CTCSS tones. Most in the North can't. Those that can open with CTCSS are supposed to transmit a letter following their call sign that indicates the CTCSS frequency in use.

Lastly, some repeaters also require a minimum length audio transmission after the tone. This feature has been installed simply so that those that try to key up the repeater with a tone burst alone and have no intention of saying anything, don't succeed.

New Welsh repeater

There is a new 2-meter repeater on the air in North Wales. It is GB3WZ, located near Wrexham, which is now operational on channel R3. RSGB Zonal Council Member for Wales, Paul Essery, GW3KFE, officially switched on the repeater at 1100 hours on the 14th of February, and made the first call through the new repeater. A 70-centimeter repeater at the same site, GB3RC, is due to become operation on channel RB9. (*via GB2RS*)

The best repeater in town

Next time you are within the "Austin City Limits" Thomas, KC5RSV says via the America Online Radio Communications BBS to try the 147.060 repeater. Thomas says that it gives excellent coverage and the people on it are always have a warm Texas welcome for visitors, new hams, and everybody else. Coverage includes San Marcus, Smithville, Georgetown, San Antonio, and, if you know where it is, Blue, Texas.

New 6M FM repeater in Puerto Rico

According to Ed, WP4O, writing to the *VHF Reflector*, there is now a 6-meter repeater on the air in Puerto Rico. Its operating frequencies are: 51.200 input 51.700 output.

New SMIRK 6-meter reflector

If you are a 6-meter enthusiast or interested in learning more about the "Magic Band" you might want to sign on to the new SMIRK reflector on the Internet. SMIRK is the acronym for the Six Meter International Radio Klub and according to KAØNNO, this reflector deals with any questions about the group, its website, and lets you make skeds with other SMIRK members. You can also use the reflector to help new hams to obtain information about six meter operations. Discuss 6-meter equipment modifications or antenna design, or amateur satellite service on any DX QSL information rather be new or old.

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Our readers comment

From the foregoing, you might get the idea that 6 is really a hot topic this summer, not just in the area of DXing, but for just the enjoyment of the "Magic Band." This note from Jud Whatley, W4NZJ, says it all:

"A weekly 6-meter Georgia SSB Net has been started. It meets each Monday night at 8:30 p.m. local time on 50.135 MHz. Net controls are: Jim, WA4KXY and Jud, W4NZJ. The net was created to enhance and stimulate 6M interest and communications in and around Georgia.

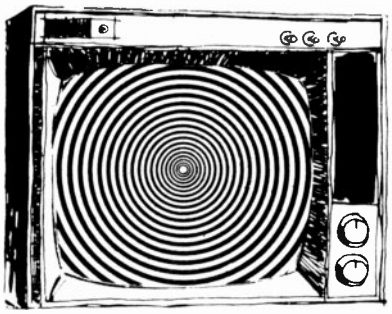
"Thus far, interest has been *excellent*. We always have at least 12-18 stations checking in and as far away as Charlotte, NC; Tennessee; Columbia, SC; and Milledgeville, GA! Stations checking in range in power levels from 10-150 watts and running a variety of antennas . . . usually beams although I have been very, very successful using a 6M 'Turnstile' giving me both horizontal polarization and some omni-directivity.

"Thanks a lot, Bill, and keep up the great VHF articles. I read them *every* month! 73, Jud, W4NZJ"

A bit higher in frequency

A new EME and 10 GHz band record has been set. On Wednesday, 12 March, DJ7FJ in Germany worked ZL1GSG in New Zealand. The two-way QSO took place at 08:30 UTC.

ZL1GSG was on from Awhitu Peninsula southwest of Auckland. The great circle distance between the QTHs is approximately 18,340 km or just under 10,000 nautical miles. (*via VHF Reflector*) WR



RFI & you

Jack Althouse, K6NY

RFI and the MIT Radiation Laboratory

Guest columnist
Yardley Beers, WØJF

Does the cover of your transceiver make good electrical contact with the cabinet? Probably not. If that is the case, you do not have the best possible protection against radio frequency interference (RFI). The transceiver's manufacturer is one of the many who are ignoring the lessons we learned a half a century ago at the MIT Radiation Laboratory.

In the Laboratory I was a member of a group that worked on radar receivers. These receivers had extremely severe shielding requirements. For example, an aircraft carrier had several radars, each emitting kW pulses. One radar might be pointed directly at another one on the same ship. We had to try to prevent interference between these radars (and also had to design circuits that would have a quick recovery from serious overloads). We developed the following rules for obtaining good shielding. Major credit is due to P.R. Bell, who before World War II had the call W4DUK.

The most important requirement is that the equipment must be completely enclosed in a metal box. Good high frequency shielding is the result of having currents flow freely in all directions over the surface of the box. Ideally, inside the box they cancel the external fields that would otherwise exist there.

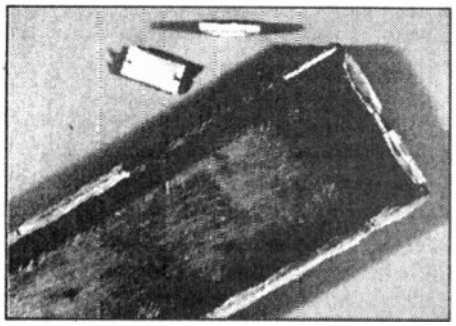
Any cover must make *good electrical contact at all edges.* Paint between contacting surfaces is disastrous. On the other hand, small ventilating holes cause little leakage. In fact, covers made of (metallic) gauze, if they make good contact, often are adequate. But a solid cover that does not make contact at one edge usually leaks very badly.

One way to have good contact at all edges is to have a lot of screws between the surfaces. However, they are nuisance in debugging and in making repairs. Service personnel after having made repairs, knowing that it takes only a few screws to hold the cover on, are apt to leave most of them out. We tried many kinds of springs. The most satisfactory were the inexpensive "anti-rattle clips" then made for automobile receivers. The accompanying photograph shows the cover of a piece of apparatus using these. They are made of 3/4" square pieces of sheet steel and folded over in the middle for slipping over the edge of the cover. The surface to go on the outside has two teeth which engage with a groove on the side of the cover and prevent the clip from falling off when the cover is removed. This is the type of cover our transceivers should have.

According to another rule, the outer shield of any coaxial lead *should be bonded to a box at the point of entry,* allowing currents on the outside of shields to flow on to the outside of the box and preventing them from entering it. Unshielded leads should be bypassed to the box immediately at the point of entry. Any jacks or connectors *must be mounted on the outside of the box.* Beware of any that are mounted inside a chassis.

Shafts of any controls not mounted on any inside surface should either be made of insulating material or they should go through a contacting bushing at the wall: Otherwise they

IF YOU WERE TO FEED THOSE WITH A T-MATCH, THEY MIGHT LOAD UP ON 430 MEGS!



Inexpensive "anti-rattle clips" were used instead of springs.

act as antennas coupling the fields outside to those inside.

Another important thing is how many superheterodyne conversions are used in the equipment and whether the local oscillator frequencies are generated on their fundamentals or utilize frequency multiplication. Remember that each oscillator has harmonics, and if there are two or more oscillators, each harmonic of one oscillator beats with each harmonic of another to generate sum or difference frequencies. Each of these harmonics or beat frequencies is a potential local oscillator frequency for producing a spurious response, either in a transmitter or in a receiver.

In the instruction books of equipment made by several manufacturers, I have not found any claims for suppression of spurious responses greater than 60 or 70 dB. At first sight, these seem like a lot. However if you make some reasonable assumptions and compute the signal-to-noise for a HF receiver tuned to a kW station at 14 MHz one kilometer from you, you will find that the result is well over 100 dB. Therefore, it is possible that if you had a receiver tuned to some spurious frequency, you could get a signal 30 dB over noise and perhaps as high as 70 dB! Therefore the number of superheterodyne conversions should be the fewest possible consistent with good frequency stability.

Connecting two unequal bypass capacitors in parallel can be a subtle cause of trouble. At high frequencies the reactance of a large capacitor can become inductive because of its leads. Therefore at some frequency, such a parallel combination can form a parallel resonant circuit, having a high impedance instead of the desired low one. At very high frequencies even connecting equal capacitors in parallel may lead to trouble. The leads between them are a transmission line that can transform the capacitive reactance of one them to an inductive one as viewed at the position of the other. If capacitors are connected in parallel, resistance to damp out the resonance should be included in the circuit.

In buying or building new equipment keep these rules in mind: (1) covers must make good electrical contact on all sides, (2) currents on the outsides of cables must not enter the box, (3) the number of superheterodyne conversions must be the minimum required for good stability, and (4) beware of bypass capacitors in parallel. Authors of product review articles also please take note. WR

Search And Rescue Communications

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Safety is no accident

Yes, we've heard this catchy slogan and we've seen it plastered on construction sites. Some businesses keep track of "accident free" days and departments are rewarded for the best safety record. My idea of a fun time with any hobby, service event, or profession does not include recovery from an accident, yet how much attention do I give to being safe?

Someone with the Civil Air Patrol mentioned they were working on effecting a "cultural change" with regard to safety. The idea, he said, is to put the focus toward making every activity safe. My response was to wonder what "culture" needs changing? Are there unsafe "cultures?" Certainly every culture or environment I'm associated with does *not* enjoy injury, pain, or death!

Let's explore safety within the Amateur Radio realm. First some examples. Yesterday a couple of friends retold their adventure of an evening trip to a repeater site. The valley temperature was mild and they didn't check a weather forecast. Several thousand feet higher, on foot, the storm hit and caught them with improper clothing in some pretty challenging terrain.

Several years ago I was atop a 10-story building taking down a large fiberglass antenna. When one of the bolts suddenly broke free, the antenna and I almost plummeted to the ground below. If it had it not been for a climbing belt wrapped around the tower, I'd have been dead. As it was, it took another fellow's help to get the antenna secured so I could get down safely. (And it took almost an hour for the legs to stop shaking so I could climb off the roof.)

I'm also reminded of the time I was tuning an HF linear. I can still vividly see that large arc from the top of one tube to my arm. I can still see all those fried surface blood vessels in my arm and hand where the current flowed. Had my other arm been the grounding point, I'd not be here today. Fortunate? Very!

Several months ago I found a good deal on a portable packet station. When I asked the Amateur Radio operator why he was selling it, he told of his fall from his tower and his many months in rehabilitation. He said he would suffer the rest of his life for that fall from the tower. His life changed because of an accident that probably should not have happened — all because of a hobby.

What makes us safe? I can assure you my tower climbing safety belt carries greater importance after my view downward from 10 stories. I'm also very careful around high-voltage circuits. I've also become a pest for others in similar circumstances. "Is your belt secured?" I'll holler up at the tower climber. I point out the value of the shielded enclosure around amplifier tubes and the reason for working only on de-energized circuits.

Battery acid in my deep-cycle cells and the goo that comes from broken gel-cells now concerns me. When I set up my field station, the ground rod gets connected before the power. Have you ever seen a NiCd battery blow up? They do if you overcharge them or your charger malfunctions, and it's not a pretty sight.

Leonard Wojcik, KB7HKL, was once a CAP safety officer. He was cursed at, confronted, challenged, disagreed with, and highly effective. He would not tolerate an unsafe operation. During his tenure accidents did not happen. What made him effective? He was once rescued from Mt. McKinley following an air crash. Did this slant his outlook on what makes one safe?

Another safety role model is Ott Webb, N7BRR. He is a charter member of the CAP, served many years as a search coordinator, and has located more air crash sites than anyone I know. He once made a forced landing in rugged terrain when the oil line on his Super Cub failed. Ott also flew the Governor of Utah around the state for many years and I recall hearing that he was favored because of his careful attention to detail. Did his forced landing help him focus on safety? I think so.

I have learned a lot from Leonard and Ott. I have observed great attention to basics and to detail. Both are experienced pilots and search coordinators. I have yet to see either operate without using a checklist before even the shortest of flights. My basic rule of flight is to *never* fly with a search pilot who does not use a checklist before each flight. I also encourage every volunteer group to designate one person as the safety officer who has the authority to stop any operation that is unsafe. These safety officers must be forceful enough to shut it down and thick-skinned enough to take the argument from those who might cut corners.

Do you need a culture change? Not in my view. What every organization needs is a basic intolerance of sloppy behavior. When I zapped my arm tuning a linear, was I paying careful attention? No. I was cutting corners by not putting the cover back over the tubes. Will the two intrepid repeater engineers check the weather and carry a coat next time? I think so.

How do we improve safety? By simply doing the basics, including safety in every training session, and giving our safety officer command authority to shut it down if it's not safe. Safety isn't a one-time topic. We don't get safe by holding a safety meeting for 10 minutes once a month. Safety is not being pushed or feeling pushed to undertake something beyond known limits. If you're the event coordinator, group commander, or mission coordinator, it's your job to keep the expectations within limits. There is never reason to place someone at risk because you're pushing them to accomplish more or trying to push the envelope just a little. "Basics" do not include cutting corners, fixing it later, doing it from memory, or letting "Bob" do it. Basics are inherent to every operation and task, and lays a foundation for proper actions within known limits! Don't take chances! Our volunteer work does not require us to experience near-death events.

Using checklists

Every good pilot I know uses a pre-flight checklist, a post-flight

checklist, and an in-flight checklist. When they get ready to land, they go through a checklist. Every effective search coordinator I know uses a checklist. I watched a police officer book a suspect into jail, and she used a checklist.

I maintain checklists for just about everything from setting up a new computer server to setting up a field communications station. If it's on my checklist, it's not forgotten!

I've heard arguments for and against checklists and I'm solidly in the "pro" column. Our events, our public safety responses, our radios are significantly complex as to almost require a checklist for efficient operation. My best argument is that some mistakes cost lives and I really don't want to be hurt because someone forgot something on a checklist.

Pilots, coordinators, leaders, and front-line volunteers, are not "good" unless they use checklists – but that's only my opinion. But then I rather like life and am somewhat opposed to hospital stays and pain. But that too is only my opinion.

Phonetic alphabet

Just do it!

Another reason for using the standard phonetic alphabet? What about high noise level environments and those who are hearing impaired? When you use phonetics to spell critical words, the message gets through in less-than-ideal environments. If you're teaching a class to *anyone* who is going to use a radio or pass information on a telephone, teach them the correct phonetic alphabet.

If you need an activity for your training night, have everyone pass one message completely in phonetics. Practice sending and receiving. Don't laugh your way through it once a year. Practice it until it is almost second nature. If you need to spell it, you should quickly move into phonetics with ease. It happens only with practice.

Which phonetic alphabet is the one to use? The International Telecommunication Union (ITU) has established the *only* phonetic alphabet we as communicators should use. It consists of 26 specific words for each letter of the alphabet and specifies how to pronounce each word. For example the Q-word is Quebec. It is pronounced key-BECK.

I don't need to go through the whole list here as you'll find it in many communications manuals and operating guides. Find it! Use it! Get familiar with it! Practice it! Quit teaching new operators cute phonetics for call signs. Don't make me write about this again! (By the way, I don't send QSL cards to stations that don't use the correct phonetic alphabet, so there!)

Station check-up

Someone asked advice as to the two best troubleshooting tools to have for station maintenance and installation. My answer: A good SWR (standing wave ratio) meter and a good multi-meter. The most common station problems have to do with antennas, power supplies, and broken wires. These two instruments, properly used, will help you fix 99 percent of station problems.

It's important to learn how the devices work and what the indications tell you. For example an SWR of 1:3 is not bad. It means your signal is probably getting out and I doubt you'll notice any difference between 1:1 and 1:3. What is more important is that you know what this ratio means to you, your transmitter, and your antenna. I'm going to leave it up to you to find an experienced operator in your area and have him or her walk you through it. Your group should spend one training session on the SWR meter and what the readings mean.

The multi-meter tells you how much voltage is reaching your radio, how much current a device is drawing, and whether or not something is shorted or open. When your microphone does not key your radio, the multi-meter can help you determine if the cord is to blame. Maybe the switch in the microphone is shot, or your connector isn't connecting.

Is your radio putting out full power? The multi-meter can tell you if the voltage is dropping too low (because you used improper gauge of wire) when you transmit. You can check to see that your batteries are getting the correct 13.8 volts so they won't cook into oblivion.

Sure it's nice to have a service monitor, RF voltmeters, signal strength meters, and the like. Most field problems, however, are because something broke from simple wear and tear or from improper installation. The object, in the field during the response, is to get it fixed quickly. If it can't be fixed quickly, get another radio on line, don't spend your time with extensive trouble shooting.

Table and chair

I added a table and folding chair to my response checklist. There are times I want to operate outside of my vehicle and all the available tables and chairs are taken. Both items were found at garage sales and the table is small but sturdy enough to hold a power supply (or battery), radio, operating gear, and not fall over if someone bumps it. The chair is comfortable and looks nice. Both table and chair fold up and fit in the car.

The last two events I attended had tables and chairs, but no room for me. It wasn't fun sitting in my car or trying to operate from the curb. The chair and table were under $10 and I'll be sitting comfortably for next week's event!

Best wishes from Salt Lake City! It's great to see you participating and enjoying public service. It is fun, it is rewarding, and it should not be life threatening. As ever, your ideas and opinions are welcome via e-mail (jw@desnews.com) or snail mail. **WR**

Work at home

Positions: Writers/liaisons
Company: ***Worldradio, Inc.***
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Contact: Inquiries for our Writer's Guidelines should be directed to 2120 28th St., Sacramento, CA 95818.

QRP
Richard Fisher, KI6SN
1940 Wetherly St., Riverside, CA 92506
e-mail: KI6SN@aol.com

The Lights Fantastic

Forget about the pot o' gold. An efficient antenna is the real prize at the end of the New Jersey QRP Club's Rainbow.

Designed by Joe Everhart, N2CX, of Brooklawn, NJ, and a team of radio amateurs from NJ-QRP, the Rainbow antenna tuner/SWR indicator is a handsome kit developed specifically for 30- or 40-meter QRP operation into end-fed half-wave antennas.

The Rainbow was co-winner in NorCal QRP Club's 1996 Dayton Design Competition, coordinated by veteran QRPer Doug Hendricks, KI6DS. Everhart credits Hendricks with providing NJ-QRP the encouragement to offer the Rainbow as a kit.

It's another example of the outstanding contributions regional QRP clubs are making to the low power community worldwide.

The project derives its name from four tiny LEDs (light emitting diodes) — red, orange, yellow and green — that collectively show the way to a matched antenna. Ironically, a full display of color is not a sign of peace and harmony where this Rainbow is concerned. Four lit LEDs means your SWR is somewhere in the 3:1 to 5:1 range. Not good. And if all four are aglow with the red at particularly high intensity, you're above 5:1, and headed for meltdown.

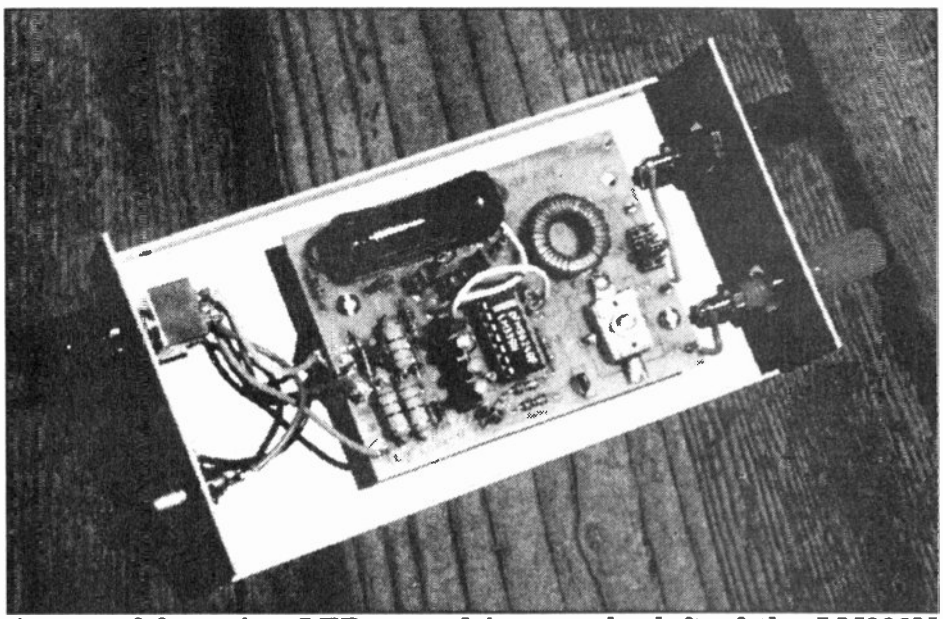
The goal is to reduce the display so only the green LED is illuminated. A simultaneous show of orange, yellow and green means you're in the 2:1 to 3:1 SWR range. Just yellow and green indicate 1.5:1 to 2:1. If it's green only, however, you're in business — the SWR is less than 1.5:1.

During tune-up, the operator adjusts the Rainbow's mica trimmer capacitor and searches for the optimum inductor tap, working toward a good match. The unit will do just fine in power ranges from 200 milliwatts to 5 watts.

The tuner itself is a simple parallel tuned resonant circuit featuring a multi-tapped toroid output. It was designed specifically for use with half-wave end-fed wires in the 7 to 10.15 MHz range, converting the antenna's high impedance to 50-ohms through the inductor. The Rainbow's small screwdriver-adjusted mica trimmer then tunes out unwanted reactance.

A clever absorptive-resistive sensing circuit is employed for the unit's SWR bridge. It's only used during tune-up, however, as it presents a 6-dB loss if left in line during on-air QSOs. A simple DPDT switch toggles the circuit in or out. And if you've inadvertently left the bridge in line, the LEDs will blink in rhythm with your CW as a reminder to switch the bridge out.

As is commonly found in absorptive-resistive bridges, the Rainbow's SWR circuit consists chiefly of a handful of resistors and diodes, forming voltage dividers and performing rectification. It's an LM339N comparator, however, that crunches the math. This 14-pin



A row of four tiny LEDs stand just to the left of the LM339N comparator chip, providing a colorful display of SWR readings in NJ-QRP's Rainbow tuner. *—photo KI6SN*

chip, working in concert with some precision resistors, simultaneously compares forward and reflected voltages and then tells which LED to light and when, indicating SWR.

A power source between 9- and 12-volts DC is needed to power the bridge circuitry. Since the sensing unit and LEDs are powered only during brief tune-ups, a tiny 12-volt alkaline cell available from Radio Shack, works great, and will last a long, long time. There's no external ON/OFF power switch needed because the Rainbow only springs into action when it sense the applied transmitter power.

Don't be fooled by the seeming simplicity of the Rainbow. There are some pretty sophisticated electronics happening here. Consider this from the Rainbow's manual:

"The rectified forward RF sample voltage from the bridge is used to turn on (a VN10KM field effect transistor) to energize the rest of the circuitry. A positive voltage here turns on (the VN10KM and a 2N3906), applying the battery voltage to (the LM339N) . . . and to the green LED. It is also fed to the negative inputs of (the LM339N) through a resistive voltage divider.

"When the positive input of a comparator section is more positive than the negative input, the output is an open circuit, so the corresponding LED does not light. When the positive input is less than the negative input, the output goes low, turning on the LED connected to that comparator section." Is this cool stuff, or what?

For all intents and purposes, the switch placing the SWR bridge in or out of line serves as the power switch by default.

The Rainbow tuner, SWR bridge and battery are all mounted on a spacious silkscreened printed circuit board just 3 inches long and 2 inches wide. The only off-board parts needed are an enclosure, antenna binding posts, a DPDT switch, transmitter input jack, battery and battery holder — all available from Radio Shack. You'll also need a short piece of small coaxial cable to form the switchable jumper between the SWR bridge and tuner. I used a 4-inch length of RG-174, and soldered it out of the way on the bottom of the board.

The Rainbow's PC board, parts and beautifully illustrated 20-page instruction and operation manual are top quality. There are step-by-step building instructions, a full schematic, graphics showing board layout, tuning capacitor modification details, bridge switching connections, LED illumination legend, installation ideas, antenna configurations and tuner circuit modifications. There are also sections on testing, troubleshooting and the technical details of Rainbow circuitry.

For its inaugural kit project, the New Jersey QRP Club has done a superb job.

The Rainbow at KI6SN went together in just a couple of hours without a hitch. The board sits comfortably in a roomy enclosure 1.25-inches high, 2.75-inches wide, and 5.5-inches deep. The transmitter input jack and IN/OUT SWR bridge switch are on the front panel. Antenna binding posts are on the back. There's nothing to stop more ambitious builders from putting the Rainbow into even smaller quarters with the LEDs panel-mounted, using an off-board panel mounted tuning capacitor, or employing a rotary switch to change toroid taps. The possibilities are almost endless.

Modifications to the housing of the mica trimmer capacitor and having to wind a tapped toroid make the Rainbow a truly homebrew effort. Putting it together, however, is not beyond the capabilities of about anyone who has some building experience.

The completion of my Rainbow was timed to coincide with the NorCal QRP Club-sponsored "QRP to the Field" contest 26-27 April. Such competitions are great proving ground for new gear.

The night before the contest I carefully cut a length of insulated No. 22 stranded copper wire to a length of 66 feet, 6 inches — about a half wavelength at 7.040 MHz. The antenna configuration also calls for a quarter wave counterpoise, measuring 33 feet, 3 inches.

The Rainbow manual offers several ideas for configuring end-fed antennas, including the inverted L, vertical and elevated horizontal. A 35-foot pine tree at my operating site, however, made the decision an easy one for me: a half-wave sloper.

One end of the 66' wire was hoisted to the top of the pine, while the other end sloped to the antenna post on the back of the Rainbow tuner. Meanwhile, the 33' counterpoise was connected to the Rainbow's ground post and stretched along the ground directly beneath the 66' antenna. And with that, the antenna work was done.

Connecting a NorCal Sierra transceiver to the Rainbow's tuner's input, it was time to get down to business. The DPDT switch was toggled to put the SWR sensing cir-

cuit in line. At key-down, all four LEDs glowed brightly. Adjusting the mica trimmer managed to darken the red and orange, but I ran out of capacitance to put out the yellow.

A small shorting stub is used to select taps on the toroid. I moved the stub to the next tap, reset the trimmer to about mid-range and keyed-down again. This time the green, orange and yellow glowed brightly, with the red at just a flicker. Again adjusting the mica trimmer, the red went out, then the orange, and finally the yellow. Just the green remained lit. Viola, less then 1.5:1 SWR.

For kicks, I continued turning the trimmer adjustment clockwise and the yellow came back on briefly. Backing off put he yellow out again, with green the sole survivor. Sharp tuning, indeed. But a very good match. No ambiguity here.

The whole tune-up procedure took about three minutes. And that's good. The contest was on, and it was time to see what the Rainbow could do.

Band conditions on 40 Meters were not good. Static and wave absorption were high, signals were down, and the Sierra's 900 milliwatts was going to need all the help the Rainbow and end-fed antenna/counterpoise could give it.

In all honesty, my expectations weren't very high. But 39 QSOs and six western states later, I was a believer. The Rainbow performed marvelously.

The log shows that signal reports ranged from 339 to 599, and I worked darned near everything I could hear — including QRP contest stations in New Mexico, Idaho, Washington, Nevada, Arizona and Northern California from my Southern California perch. Not bad for several hours of battery-powered, daytime milliwatt operation.

The Rainbow is sure to open the doors of backwoods QRP to many operators seeking simple, lightweight and efficient antennas for backpacking operation. It's well suited, too, for the apartment dwelling amateur who requires low-profile configurations. Just 66' of magnet wire and a good ground can be pretty inconspicuous.

And given its performance in "QRP to the Field," I wouldn't hesitate using the Rainbow with an end-fed wire permanently at a home location.

The Rainbow tuner/SWR indicator is available from the New Jersey QRP Club for $25 (plus $3 shipping in the U.S.; $5 DX). To order, write: George Heron, N2APB, 45 Fieldstone Trail, Sparta, NJ 07871 (e-mail: g.heron@dialogic.com). Make checks payable to George Heron.

If you've been looking for a little splash of color to spruce up your QRP layout, NJ-QRP's Rainbow may be just what you're looking for. It's a great performer in an inexpensive package. A bright idea, indeed.

QRP, briefly

The Adventure Radio Society's "Flight of the Bumblebees" is taking place 27 July and will find 50 QRPers taking to the field as the insects in the organization's open competition. Among them will be veteran QRP gear designers Wayne Burdick, N6KR, and Dave Benson, NN1G; QRP-L Internet guru Chuck Adams, K5FO, and QRP MPW-record holder Paul Stroud, AA4XX. For complete information about the event and the organization, visit ARS' website at: www.natworld.com/ars . . . Mike Czuhajewski, WA8MCQ, has been elected president and Jim Stafford, W4QO, vice president of QRP Amateur Radio Club International. David Johnson, WA4NID, has joined the club's board of directors, having served previously as an alternate . . . QRP-L, the popular Internet mail group for QRPers, had a record 20,743 postings in 1996, almost doubling the traffic posted in 1995. Since its inception in 1993, QRP-L has blossomed to more than 1,800 subscribers . . . LDG Electronics, which has been making noise in the QRP community with its classy automatic antenna tuner, is on the Internet. Its web site is: www.radix.net/~ldg . . . WR

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Visit Your Local RADIO CLUB

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Club Liaison,
Worldradio,
2120 28th St.,
Sacramento, CA 95818.

ARIZONA

Arizona Repeater Association. P.O. Box 35758, Phoenix, AZ 85069-5758. Operates 20 VHF & UHF rptrs. in AZ. Meets 4th Thurs./monthly, 7:30 p.m., APS Bldg., 21st Ave. & W. Cheryl, Phoenix. Info: (602) 849-0851. 9/97

Cochise Amateur Radio Assn., (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. K7RDG/R 146.76(-) rptr. PL162.2. 5/98

Old Pueblo Radio Club, (OPRC). P.O. Box 42601, Tucson, AZ 85733. Meets 2nd Wed./monthly, 7:15 p.m., YMCA Lighthouse Cntr., 2900 N. Columbus (So. of Ft. Lowell). 2/98

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. Meets 2nd Sat./monthly, 7:15 p.m., Dept. of Emergency Mgmt., 130 W. Congress. Net Thurs. 7:30 p.m. 146.82(-), 146.88(-), 147.08(+), 448.550(-) & 145.15 Packet. 3/98

CALIFORNIA

Amateur Radio Club of Anderson, (ARCA). Meets 2nd Thurs./monthly, 7:30 p.m. Amer. Legion Post #746, 1709 Bruce Dr., Anderson, CA. Net every Tue., 7:30 p.m. on 146.64. http://www.snowcrest.net/bgorski/index.html 4/98

Coachella Valley ARC. Box 11092, Palm Desert, CA 92255-1092. Meets 1st Wed./monthly, 7 p.m., Portola Com. Cntr., 45480 Portola, Palm Desert. Info: Bill Dews, (760) 346-8611. Net Thurs. 7 p.m. 146.025(+) PL 107.2. 5/98

Contra Costa Communications Club, Inc., WD6EZC/R. P.O. Box 20661, El Sobrante, CA 94820-0661. Meets 2nd Sun./monthly (except May & Dec.), 0630, Baker's Square Restaurant in Richmond, CA. Info: Ed Caine, KA6OFR, (707) 996-0962. 1/98

Downey Amateur Radio Club Inc., W6TOI. Meets 1st Thurs./monthly, 7:30 p.m., So. Middle Sch. cafetorium, 12500 S. Birchdale, Downey, CA. VHF net W6GNS rptr. 146.175(+) Thurs., 7:30 p.m. 5/98

Fresno Amateur Radio Club. Meets 2nd Fri./monthly, 7:30 p.m., Ernie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-). 11/97

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.85(-). Meets: 3rd Fri./monthly, 8 p.m. at 1528 Esplanade, Rm. 101, Chico. 9/97

Livermore Amateur Radio Klub, (LARK). Meets 3rd Sat./monthly, 9:30 a.m., City Council Chamber, 3575 Pacific Ave., Livermore, CA. Net Mon. 1900 on 147.12(+). For info: LARK Secretary, P.O. Box 3190, Livermore, CA 94551-3190. (510) 846-6513. 1/98

Marin Amateur Radio Club (MARC). W6SG. Box 151231, San Rafael, CA 94915-1231. Meets 1st Fri./7:30 p.m., Kaiser Hosp., Bldg. 2, Terra Linda, CA. (Summer exceptions; contact Pete N6IYU, 924-1578). Sun. AM Club at Red Cross, San Rafael. 9/97

Motorcycling Amateur Radio Club. Meets 2nd Sat./monthly, 8 a.m., Lake View Cafe, 2099 E. Orangethorpe, Placentia, CA, at 91 Fwy/Lakeview. Info: Ray Davis, KD6FHN, (714) 551-2010 or (714) 551-1036. 2/98

Mount Diablo Amateur Radio Club. P.O. Box 23222, Pleasant Hill, CA 94523. Meets 3rd Fri./monthly, 8 p.m., Our Savior's Lutheran Church, 1035 Carol Ln., Lafayette, CA. Net Thurs. 7:30 p.m. on 147.06(+) PL 100Hz. Info: (510) 932-6125. 7/97

North Hills Radio Club. Meets 3rd Tue./monthly, 7:30 p.m., Carmichael Elks Lodge, 5631 Cypress, Carmichael, CA. Nets 8 p.m. Tue., Wed., Thur., 145.190(-) PL 162.2 and 224.400(-). Contact: Bob, AC6HF, (916) 966-3654. http://www.ns.net/~NHRC 3/98

Orange County Amateur Radio Club. Meets 3rd Fri./monthly, 7:30 p.m., Orange County Red Cross, 601 N. Golden Circle, Santa Ana, CA. 146.550. Contact Bob Buss, KD6BWH, (714) 534-2995. 2/98

Southern California Six Meter Club. P.O. Box 10441, Fullerton, CA 92635. USB Net Tue., 7:30 p.m., 50.150. FM Rpt. Net Thurs., 7:30 p.m., 52.86/52.36 tx. FM Smplx, call freq. 50.300. Net Sun., 10 a.m. 50.40. 4/98

Southern Humbolt ARC, (SHARC). Meets 4th Tues./monthly, 7 p.m., Best Western Humboldt House Inn, Garberville, CA. Talk-in on 146.79(-). 5/98

Southern Sierra ARS. Meets 2nd Thurs./quarterly (Jan., Apr., Jul., Oct.), 7 p.m., Veteran's Hall, 125 East F St., Tehachapi, CA. Contact: Caroline, KD6KMN, (805) 822-5995. 147.06(-), 224.42(-), 145.090(S) Packet. 1/98

Stanislaus Amateur Radio Assoc., Inc. (SARA). P.O. Box 4601, Modesto, CA 95352. Meets 3rd Tues./monthly, 7:30 p.m., Stanislaus Co. Admin Bldg. 145.39(-) PL 136.5, 224.14, 440.225 PL 136.5. 3/98

Tri-County Amateur Radio Assoc. P.O. Box 142, Pomona, CA 91769. Meets: 2nd Mon./monthly, 7:30 p.m., Covenant United Methodist Church, corner of Towne Ave. & San Bernardino Rd. in Pomona, CA. 1/98

Trinity Country ARC. P.O. Box 2283, Weaverville, CA 96093. Meets 2nd Wed./monthly, County School Adm. Bldg. in Weaverville, 7:30 p.m., Rptrs: WA6BXN 146.73(-) PL 85.4, W6HOR 146.925(-) PL 85.4. 10/97

This month . . . *The Quannapowitt Radio Association of Burlington, Massachusetts, has won an MFJ Antenna Analyzer to share with its members. The club's name was selected at random from our "Visit Your Local Radio Club" listing.*

Poinsettia ARC. Meets 1st Thurs./monthly, 7:30 p.m., First Christian Church, Telegraph Rd. & Teloma Dr., Ventura, CA. Info: Bill Klope, KB6LJN, (805) 642-4955 4/98

River City A.R.C.S. Meets 1st Tues./monthly, 7 p.m., SMUD Bldg., Don Julio at Elkhorn, Sacramento, CA. License classes offered. For info contact Lyle, AA6DJ, (916) 483-3293. 9/97

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. & Stockton Blvd., Sacramento, CA. Info net at noon on rptr. W6AK/R 146.91(-). Steve Cates, KC6TEV, (916) 391-7341 or Les Ballinger, WA6EQQ, (916) 393-4775. 1/98

Sacramento "Old Timers" Amateur Radio Society and Sacramento Valley Chapter #169 QCWA (Quarter Century Wireless Assn.). Meets 2nd Wed./monthly, 8 a.m., Lyon's Restaurant, 1000 Howe Ave. For info contact Paul Wolf, W6RLP (916) 331-1830. 12/97

Santa Clara County Amateur Radio Assoc., (SCCARA) W6UW & W6UU. P.O. Box 6, San Jose, CA 95103-0006. (408) 249-6909. Meets 2nd Mon./monthly, 7:30 p.m., United Way, 1922 The Alameda, San Jose. Net all other Mon., 7:30 p.m. W6UU/R 146.385(+), 442.425(+) PL 107.2. 5/98

Shasta Cascade Amateur Radio Society, (SCARS). 2124 Airstrip Rd., Redding, CA 96003. Meets: 3rd Wed./monthly, 7 p.m. at the C.D.F. Conf. Rm. Grape St., near Parkview Ave., Redding, CA. Net 146.64, Wed., 8 p.m. 9/97

Sierra Foothills ARC. 1222 San Simeon Dr., Roseville, CA 95661-5365. Meets 2nd Fri./monthly, 7:30 p.m., Auburn Library (Beecher Rm.), 350 Nevada St. Thurs. nets 7:30 p.m. 145.430(-) PL 94.8, 7 p.m., Fri. 28.415. 3/98

South Bay ARC. P.O. Box 536, Torrance, CA 90508. Meets 3rd Thurs./monthly, 7:30 p.m., Torrance Memorial Hosp., 3330 Lomita Blvd., Torrance, CA. Talk-in on WB6MYD rpt. 244.38(-). Info: (310) 328-0817. 7/97

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.), 7:00 p.m. Monitors 145.52 Simplex 10 a.m.—5 p.m. 7/97

Vaca Valley Radio Club. Meets 2nd Wed./monthly, 7:30 p.m. (Board mtg., 7 p.m.) Vaca Fire Dist. Stn., Vine St. in Vacaville, CA. Rptr. WD6BUS 145.47(-) PL 127.3. Mary Turner, (707) 451-2134. 5/98

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets 2nd Tues./monthly, 7:00 p.m., Presidio Recreation Cntr., 11100 Apple Valley Rd., Apple Valley, CA. Talk-in 146.94(-), PL 91.5. Net Sun. 7 p.m. 146.94(-). 1/98

West Coast Amateur Radio Club, (WCARC). P.O. Box 2617, Costa Mesa, CA 92628. Meets 3rd Thurs./monthly, 7 p.m., Fountain Valley Sch. Dist. office, 17210 Oak St., Fountain Valley, CA. 145.440(-) PL 136.5. For info: Joe, KA6LPZ, (714) 963-4426. 10/97

Westside Amateur Radio Club. P.O. Box 11092, Marina del Rey, CA 90295. Meets 3rd Thurs./monthly, 7:30 p.m., Red Cross Bldg., 1450 11th St., Santa Monica, CA. Net every Tues., 8 p.m., 146.67(-). Voice mail: (310) 917-1100. 6/98

Willits Amateur Radio Society, (WARS). P.O. Box 73, Willits, CA 95490. Meets 4th Mon./monthly, 7 p.m., Brooktrails Fire Dept. (northwest of Willits). Talk-in: 145.13(-), PL 103.5. 9/97

Yolo Amateur Radio Society. Meets 1st Tues./monthly, 7:30 p.m., Training Rm. of the Davis PD, 226 F St., Davis, CA. Contact Dave Nishikawa, KC6YFG, (916) 756-6375/Talk-in 144.430. 10/97

Yuba-Sutter Amateur Radio Club, (YSARC). P.O. Box 1169, Yuba City, CA 95992. Meets 2nd Tue./monthly, 7:30 p.m., Yuba City Police Bldg., 1545 Poole Blvd., Yuba City. 1/98

CONNECTICUT

Tri-City Amateur Radio Club. P.O. Box 686, Groton, CT 06340-0686. Meets 2nd Tue./monthly, 7 p.m., St. Lukes Lutheran Church of Gales Ferry on Rt. 12. Info: Bob Dargel, KA1BB, (860) 739-8016. 10/97

FLORIDA

Gulf Coast ARC. P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., 3852 Prime Place, New Port Richey. WA4GDN rptrs. 146.67(-) & 145.33(-), serving all of Pasco County. 9/97

Indian River ARC, Inc., (IRARC). 597 Capri Rd., Cocoa Beach, FL 32931-3011. Meets 1st Thurs./monthly, 7:30 p.m., Community Church of the Nazarene, 400 Crockett Blvd., Merritt Island, FL. 3/98

Port St. Lucie ARA. Meets 1st Fri./monthly, 7:30 p.m., St. Andrews Church, Prima Vista Blvd., Port St. Lucie, FL. Contact: Roy Cox, KT4PA, (561) 340-4319. Call in 146.955(-). 9/97

Saint Petersburg Amateur Radio Club. Meets 1st Fri./monthly, 7:30 p.m., Red Cross Bldg., 818 Fourth St. North, St. Petersburg, FL. Nightly net 6:30 p.m., 147.06(+). Rptrs. 147.06(+), 224.66(-), 444.475(+). Info: C. Wagner, KE4EYI, (813) 896-4274. 1/98

South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tue./monthly, 7 p.m., Public Library, 540 Fee Ave., Melbourne, FL. 6/98

Vero Beach ARC, W4OT. P.O. Box 2982, Vero Beach, FL 32961. Meets 2nd Thurs./monthly, 7:30 p.m., Emerg. Mgmt., Indian River County Adm. Bldg., 1840 25th St. Net Mon., 7:30 p.m. 146.64. 1/98

GEORGIA

Dalton Amateur Radio Club, Inc., (DARC). P.O. Box 143, Dalton, GA 30722-0143. Meets 4th Mon./monthly, 7:30 p.m., Magistrate Court Bldg., corner of Waugh St. & Thornton Ave., Dalton, GA. Info: Harold Jones, N4OTC, 706/673-2291. 3/98

HAWAII

Emergency Amateur Radio Club, (EARC). P.O. Box 30315, Honolulu, HI 96820-0315. Meets 4th Thurs./monthly, 7 p.m., Lincoln Elem. Sch., 615 Auwaiolimu, Honolulu. Nets: nightly 7:30 p.m., 146.88 & 146.80. Rptrs: 146.76(-), 146.80(-), 146.88, 146.98(-), 146.94(-). Info: (808) 833-6944, WH6CZB. 10/97

Koolau Amateur Radio Club, (KARC). 45-145 Mikihilina St., Kaneohe, HI 96744. Meets 2nd Sat./monthly, 9:30 a.m., Hoomaluhia Pk., Kaneohe, HI. 4/98

ILLINOIS

Chicago FM Club Inc., (CFMC). P.O. Box 1532, Evanston, IL 60204. 146.76(-) PL 107.2/224.10/224.18/443.75 PL 114.8. Ham help line: (773) 262-6773. Info net Tues., 9 p.m. on 146.76(-). Meets 3rd Wed./monthly, 8 p.m. 7/97

Dupage Amateur Radio Club. (DARC). P.O. Box 71, Clarendon Hills, IL 60514. Meets 4th Mon./monthly, 7:30 p.m., Holy Trinity Church, SE corner of Cass & Richmond, Westmont, IL. Net Sun., 9 p.m. on 145.25. W9DUP repeaters 145.25(-) 107.2PL, 442.55(+) PL 114.8, 224.68(-). 2/98

Fox River Radio League. P.O. Box 673, Batavia, IL 60510-0673. Meets 2nd Tue./monthly, 7:30 p.m., Old Bank Bldg., 900 No. Lake St., lower level, Northgate Shopping Ctr. & Rt. 31, Aurora, IL. 7/97

Hamfesters Radio Club, W9AA. P.O. Box 42792, Evergreen Park, IL 60805. 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 145.65 MHz. Info: (312) 974-3291. 1/98

Peoria Area Amateur Radio Club, (PAARC). P.O. Box 3508, Peoria, IL 61612-3508. Meets 2nd Fri./monthly, Red Cross Chapter House, 311 W. John Gwynn Jr. Ave., Peoria, IL. Voice mail: (309) 692-3378. Rptrs: 147.075(+) & 146.85(-). 6/98

Schaumburg ARC. Meets 3rd Thurs./every other month, 7 p.m., Rec. Center, corner of Bode and Springinsguth Roads. Nets all other Thurs., 9 p.m., 145.23(-). Info: (708) 612-9446. 8/97

The Starved Rock Radio Club, W9MKS. P.O. Box 198, Tabor St., Leonore, IL 61332. Meets 1st Mon./monthly, 7:30 p.m. Rptr. net 7 p.m. Wed./wkly., 147.12(+). 11/97

LOUISIANA

Baton Rouge ARC. Meets last Tue./monthly, 7 p.m., Catholic HS cafeteria, 855 Hearthstone Dr., Baton Rouge, LA. Info: Norma Ramey, WD5GFD, (504) 654-6087. Club rptr. 146.79(-). 9/97

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME. Info: (207) 782-8699. 11/97

MASSACHUSETTS

Quannapowitt Radio Assoc., Inc. 6 Savin St., Burlington, MA 01803. Meets 3rd Fri./monthly, 8:00 p.m., at Lynnfield-Wakefield Methodist Church, Vernon St., Wakefield. Info: Jim Chamberlain, N1AKG, (617) 944-5098. 3/98

Wellesley Amateur Radio Soc., & Babson Wireless Club. Meets 1st & 3rd Thurs./monthly, 7:30 p.m., Wellesley, MA (Sept.- June) Talk-in 147.03(+). Info: J. Driscoll, NV1T, (617)444-2686. . 12/97

MICHIGAN

Adrian Amateur Radio Club, W8TQE. Box 26, Adrian, MI 49221. Meets 1st Fri./monthly, 7:30 p.m., Civil Air Patrol Bldg., Lenawee Co. Airport, Cadmus Rd., Adrian. ARES net Sun., 9 p.m. 145.37(-). Info: Brian Sarkisian, KG8CO, (517) 265-1537. 4/98

Eastern Michigan Amateur Radio Club, (EMARC). Meets 1st Tue./monthly, 8:30 p.m., Woodland Developmental Cntr., Kimball Township (Range @ Smiths Creek Rd.). Contact Frank Forsyth, N8XTO, (810) 987-3540. Talk-in: 147.30(+). 9/97

Edison Radio Amateurs Assoc. Meets 2nd Fri./monthly (Sept.-June), 7 p.m., Edison Western Wayne Div. HQ, 8001 Haggerty, Belleville, MI (So. of Ecorse Rd.). Net each Thurs., 8 p.m. on 145.33(-) and 442.80(+) rptrs. 4/98

Genesee County Radio Club, Inc. Meets 3rd Tues./monthly, 7:30 p.m., Genesee Area Skill Center, Torrey Rd., Flint, MI. (810) 634-6077. 3/98

MINNESOTA

Viking Amateur Radio Society (VARS). Meets last Tues./monthly, 7:30 p.m., basement EOC, Waseca, MN. Call-in 146.94(-). 7/97

MISSISSIPPI

Jackson Amateur Radio Club, Inc. Meets 3rd Thurs./monthly, 7 p.m., Am. Red Cross Bldg., Riverside Dr., Jackson, MS 39202. 10/97

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 2nd Sat./monthly, bkfst. mtg. 8 a.m., Country Inn, SE cor. W. Sunset, Valle Verde, Henderson NV. Club info: Jim Frye, NW7O, (702) 456-5396 or Bill Scarborough, WA6ASI, (702) 269-9551. 7/97

Wide Area Data Group, Inc. P.O. Box 3132, Sparks, NV 89432. Meets 1st Sat./monthly, 8:30 a.m., Bonanza Casino/Restaurant, 4720 N. Virginia, Reno. Info: (702) 356-8200. Call on 147.30(+) MHz. 5/98

Sierra Intermountain Emergency Radio Assoc., (SIERA). Meets 2nd Tues./monthly, 7:30 p.m., Carson Valley Museum & Cultural Cntr., 1477 Hwy 395 North, Gardnerville, NV. Contact: George Uebele, WW7E, (702) 265-4278, 147.330 MHz. 11/97

Sierra Nevada Amateur Radio Society (SNARS). P.O. Box 7727, Reno, NV 89510-7727. Meets 2nd Sat./monthly, 0800, KT's Restaurant, 5485 Equity Ave. (corner Equity & Financial). 146.61(-) PL 123. 443.075(+) PL 123. Contact Swede Ohlson, WDØAXP, (702) 852-2402. 1/98

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover, NH 03820. (603) 749-2970/332-9107. Meets 2nd Mon./monthly, 7 p.m., Rochester Community Ctr. Talk-in: 147.57. 11/97

NEW JERSEY

10-70 Repeater Assn., 235 Van Emburgh Ave., Ridgewood, NJ 07450. Meets 1st Wed./monthly (except July & Aug.), 8 p.m., VFW, Valley Rd., Clifton, NJ. Rptrs. 146.70(-), 224.84(-), 444.15(+). 10/97

Bergen Amateur Radio Assoc., (BARA). P.O. Box 304, Hackensack, NJ 07601. Meets 1st Sun./monthly, New Milford Elks Lodge, Patrolman Ray Woods Dr., New Milford, NJ 07646. Nets: 28.350 Mon. 9 p.m., 146.79(-) 9 p.m. Wed. 6/98

South Jersey Radio Assoc., (SJRA), K2AA. Meets Jan.-Oct., 4th Wed./monthly, 7:30 p.m. (Nov.-Dec. 3rd Wed), Bloomfield Fire Hall in Pennsauken, NJ. Talk-in: 145.29(-) rptr. 8/97

NEW YORK

Amateur Radio Assoc. of the Tonawandas, (ARATS). P.O. Box 430, No. Tonawanda, NY 14120. Meets 3rd Tues./monthly (except July & Aug.), 7:30 p.m., Sweeney Hose Co., 499 Zimmerman St., No. Tonawanda, NY. Talk-in: 146.955(-) rptr. W2PVL. 10/97

Genesee Radio Amateurs, (GRAM). N.Y.S. Civil Defense Ctr., State St., Batavia, NY 14020. Meets 3rd Fri./monthly, 7:30 p.m. 147.285(+) W2RCX. 1/98

Hall of Science Amateur Radio Club. P.O. Box 131, Jamaica, NY 11415. HOSARC, 2nd Tue./monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park, 7:30 p.m. Info: Arnie, WB2YXB, (718) 343-0172. 2/98

Orleans County Amateur Radio Club, (WA2DQL). Meets at Emergency Management Office, West County House Rd., Albion, NY 14411, 2nd Mon./monthly, 7:30 p.m. 145.27(-) — WA2DQL. 12/97

PROS, Pioneer Radio Operators Society. Meets 1st Wed./monthly, 7 p.m., Sardinia Town Hall, Savage Rd., Sardinia, NY. Net 9 a.m. Thurs. 3853 kHz. 3/98

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! 9/97

Suffolk County Radio Club, (SCRC). Meets 3rd Tues./monthly, 8 p.m., Bohemia Rec. Ctr., Ruzicka Way, Bohemia, NY. Talk-in: 145.21(-) rpt. Morten Eriksen, KA2UIU, (516) 929-6911. 4/98

Westchester Amateur Radio Assoc., (WARA). Meets 1st Wed./monthly, 7:30 p.m., Am. Red Cross Bldg., 106 N. Bway, White Plains, NY. Club nets: (10 Meters) 28.420 MHz Tues., 8 p.m. (2 Meters) 145.495(-) rptr., Thurs., 8 p.m. Info: Dan Grabel, N2FLR, (914) 723-8625. 4/98

Westchester Emergency Comm. Assoc., (WECA). Meets 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains, NY. Contact WB2VUK (914) 631-7424 or WECA INFO LINE (914) 741-6606 for details. Talk-in WB2ZII/R 147.06(+) PL 114.8/2A. 10/97

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) 963-1021. 146.865(-), 440.150(+). 10/97

NORTH CAROLINA

Stanly County Amateur Radio Club. Stanfield, NC. Meets 4th Thurs./monthly, 7 p.m. Talk-in 146.985(-) for location. Wed. net 9 p.m. 146.985(-). Fri. tech net 9 p.m. 147.390(+). Phone: (704) 888-4815. 5/98

OHIO

Ashtabula County ARC. Ken Stenback, AI8S (964-7316). County Justice Ctr., Jefferson, OH. Meets 3rd Tue./monthly, 7:30 p.m., County rptr., 146.715(-). 10/97

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly, 7 p.m., Municipal Bldg., Clyde, OH 43410. NF8E rptr. 145.35(-) and 442.625(+) MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS. 3/98

Greater Cincinnati Amateur Radio Assn., (GCARA). ARRL SCC, meets 4th Wed./monthiy, 7:45 p.m., Brusman's Hall, 4813 Vine St., St. Bernard. Nets: Mon. 9 p.m. EST 147.15(+), Thurs. 9 p.m., 1.936 MHz. Info: WA8STX, (513) 772-7378 or KW8X 961-3250. 11/97

Toledo Mobile Radio Association. P.O. Box 273, Toledo, OH 43697; (419) 243-3836. Meets 2nd Wed./monthly, 7:30 p.m., Luke's Barn, Lucas County Rec. Ctr., 2901 Key St., Maumee, OH. 147.270(+) Net every Sun. 8:30 p.m. 1/98

Van Wert Amateur Radio Club, Inc. P.O. Box 602, 1220 Lincoln Hwy., Van Wert, OH 45891. Meets 1st & 3rd Sat./monthly, 8 p.m. Call-in: 146.85(-). 2/98

OREGON

Central Oregon Coast ARC. P.O. Box 254, Florence, OR 97439. Meets 3rd Sat./monthly, & every Wed./weekly, 9 a.m. for brkfst. at Woody's Rest. Net Wed. 7 p.m., 146.80(-). Info: 997-2323 or 997-4074. 1/98

Keno Amateur Radio Club. P.O. Box 653, Keno, OR 97627. Meets 3rd Thurs./monthly, 7 p.m., Keno Fire Stn. Rptr. 147.32(+) W7UFM. Info: Tom Hamilton, WD6EAW, (503) 883-2736. 11/97

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Courthouse, Rm. 310, Roseburg, OR. Info: W5PII/R 146.90(-) or (541) 673-1310. 6/98

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787, Butler, PA 16003-1787. Meets 1st Tues./monthly, 7:30 p.m., Boy Scout Cntr., 830 Morton Rd., Butler, PA. Call-in W3UDX/R 147.36(+). Net 10:10 p.m. nightly. 10/97

Mercer County Amateur Radio Club, W3LIF. P.O. Box 996, Sharon, PA 16146. Meets 4th Tue./monthly, 7:30 p.m., Shenango Valley Med. Ctr, Farrell, PA. Net, Thurs. 9 p.m. on 145.35(-) W3LIF, Digi. 145.01. 3/98

Mid-Atlantic ARC. Box 352, Villanova, PA 19085. Meets 3rd Thurs./monthly, 8:00 p.m., Radnor Mem. Libraray, Wayne, PA. Call Bob Haase, W3SA, (610) 293-1919. 147.06(+) WB3JOE PBBS 145.09. 4/98

Warminster Amateur Radio Club, K3DN. P.O. Box 113, Warminster, PA 18974. Meets 1st Thurs./monthly, 7:30 p.m., Benjamin Wilson Sr. Cntr., Warminster, PA. Net on 147.09(+), Wed. 8:30 p.m. and 28.450 Sun. 9 p.m. 5/98

TEXAS

Brazos Valley Amateur Radio Club, (B-VARC). P.O. Box 1630, Missouri City, TX 77459. Meets 2nd Thurs./monthly, 7:30 p.m., Sugar Land Community Ctr., 226 Matlage Way., 3 blks SW of Imperial Sugar Co. at HWY US-90A & Brooks St. (HWY 58) in Sugar Land, TX. Talk-in: 145.47(-), 442.5(+) rptrs. http://www.hal-pc.org/~bvarc 7/97

Brownsville ARC (CHARRO). Meets 2nd Tue./monthly, 7:00 p.m., Confederate Air Force Hangar, Brownsville Airport in TX. Coffee mtg. Sat./weekly, 10 a.m., Days Inn, Hwy 83 & Price Rd. Talk-in on 147.040(+). 1/98

VIRGINIA

Southern Peninsula Amateur Radio Klub, W4QR (SPARK). Meets 1st Tue./monthly Salvation Army Community Bldg., Hampton, VA. Repeaters 146.73(-), 449.55(-). VE Exam Info: (804) 898-8031, W4RTZ. 2/98

Virginia Beach ARC. Meets 1st Thurs./monthly (except July), 7:30 p.m., St. Andrews United Methodist Church, Tucson & Princess Anne Rds., Virginia Beach, VA 23462. 2/98

WASHINGTON

The Mike & Key Amateur Radio Club. Meets 3rd Sat./monthly, 10 a.m., Salvation Army Renton HQ., 720 Tobin St., Renton, WA. Talk-in on 146.82(-) rptr. Doors open at 9:30 a.m. 5/98

WEST VIRGINIA

Tri-State Amateur Radio Assn. Meets 3rd Tues./monthly, 7 p.m., The American Red Cross, 111 Veteran's Memorial Blvd., Huntington, WV. 5/98

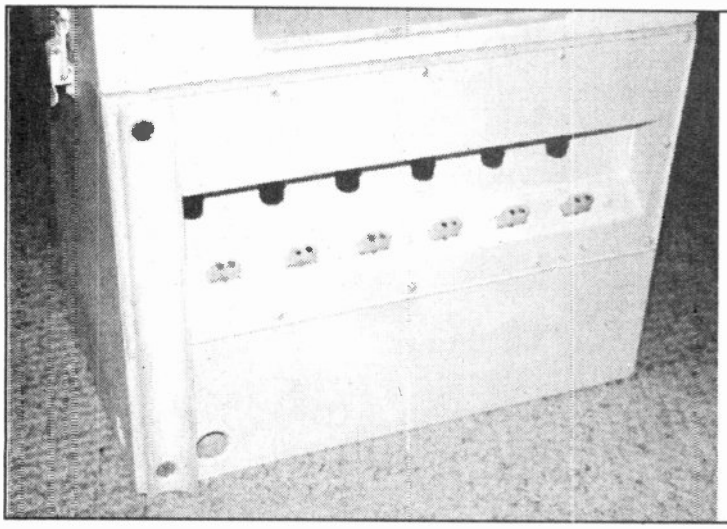


Photo showing the Portacom stack.

The Portacom

John Braden, KD6EGS

As I participated in a recent Emergency Preparedness Exercise a couple of problems surfaced, both problems pertaining to reliable communications in such an emergency. The first was reliable power. It goes without saying that we are continually admonished by emergency planning people to check the batteries for our HTs, and to carry a spare into the field. At best, these measures are not sufficient for a protracted exercise or an extended emergency.

Secondly, for reliable field communications sufficient effective radiated power is needed to reach the opposite station or the designated repeater. There is no argument about the utility and flexibility of the handheld in the field; however, on this exercise I did observe occasions where the ERP was not quite sufficient for reliability. This was due either to lack of HT power or the obstructions in the terrain.

My solution then, to both the first and second problems is a portable emergency 'base station' for use where the situation and/or conditions warrant.

Generally, teams of two are sent into the field per location. This is a good policy for reliable communications and considering work breaks. Now, as I recall it from years ago, portability of a device was defined as having enough handles so that those using it could grab hold and move the device. Hence, I envisioned a 'base station' with two handles in accordance with the above mentioned two person field team. Based upon my evaluation of available equipment, I consider the following ideal for extreme emergency conditions:

Adequate battery power — deep cycle RV battery

Transceiver(s) with sufficient power out — 2 Meters, 440 or as appropriate

Antenna — with gain and height

Multiple power connectors

Standardized Molex cables and adaptors — for power, antenna, charging

Accessory box — tools, operating gear

Stacked modules — mix and match, snap together

The photos and Figures show such a stack of equipment. The bottom module is a light weight welded steel housing for the battery which has the power connector panel, carrying handles and a fitted pad for clamping the antenna mast. You will also notice two threaded sockets at one bottom corner. When some additional stability is required for the antenna the somewhat elongated handles can be removed and screwed into these sockets effectively increasing the base footprint.

Next is a wooden module fitted with a mobile mounting bracket for the transceiver. The wooden housing protects the transceiver but has openings for the front controls and rear connections. For rough going, there are removable coverings for the openings that are normally stored in the accessory module.

The accessary module (also of light weight construction) is keyed in the stacking arrangement so that it is always the top module, thereby exposing the top opening

cover. This module is for carrying all cables, connector adaptors, tools, mike, headphones, key—anything you will need to support communications and the equipment.

All modules are pin keyed so they may be securely stacked with two suitcase draw-latches per module. Any other equipment such as additional transceivers, packet equipment, etc. may be carried in additional modules. The stack may appear somewhat ungainly or top-heavy but I can assure you that the mass in the bottom module affords sufficient stability.

My construction methods ran from wood working to metal forming and welding. I invite you to use methods most comfortable for you in implementing the concepts outlined.

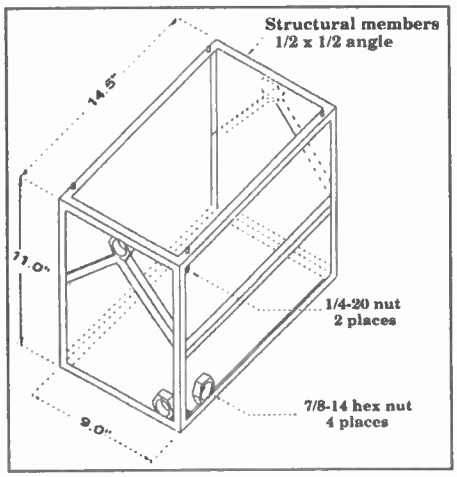
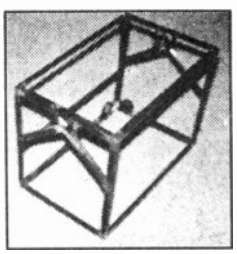


Figure 1. Battery module

Starting with the power supply module (Figure 1), I used all 1/2" x 1/2" steel angle, welded while clamped in a jig. A jig is not necessary but I went this route as well as retaining module pin templates in case any of our radio club members saw fit to duplicate the units. A 7/8-14 nut is welded to the upper angle on the centerline at each end of the module for the purpose of receiving the long pipe nipples used as handles.



Diagonals are added at the upper handle sockets for stiffness, and a horizontal member is welded on to pick up the lower edge of the power outlet panel. Two additional 7/8-14 nuts are welded to the lower members at one corner as sockets for relocating the handles if additional stability is required when the antenna is in place. It is desirable for the nuts to be flush with the inside of the module skin, so they are notched to the depth of the angle leg thickness.

Photo showing the battery housing.

As an optional detail, the outer surface of the nuts are also dressed at an angle so the outer end of the handles will be at the level of the module base. At the location selected for the antenna mount, weld a 1/4-20 nut in the upper and lower corners. As seen in Figure 1, a length of steel strap is welded in at one side of the handle socket. This location, as well as the hole pattern for the draw latches is carried to each of the modules allowing module interchangeability.

Due to the difficulty of sweating light galvanized steel to the heavier welded frame, gluing may be used. I roughed up the outside of all frame members (except the top) as well as the mating areas of the covering panels with a hand grinder before applying JB Weld glue.

The top and bottom of the assembled module is template drilled and tapped for bottom rubber feet and for the locator pins detailed in Figure 2. The locator pins consist of a 9/16" length of 3/16" milled steel rod, threaded for half the length and bull-nosed on the other end. The easiest way to hold the rod and washer true while silver brazing is to thread the 1/2" washer. While on the subject, the eyelet assembly is simply a 3/8" length of 7/32" brass tubing brazed on top of a 1/2" washer. You will probably have to ream for concentricity.

A plywood plate sitting in the bottom angles keeps the battery off the glued bottom cover plate. Wood strips center the battery on the plywood bottom, and others near the battery top, stabilize it.

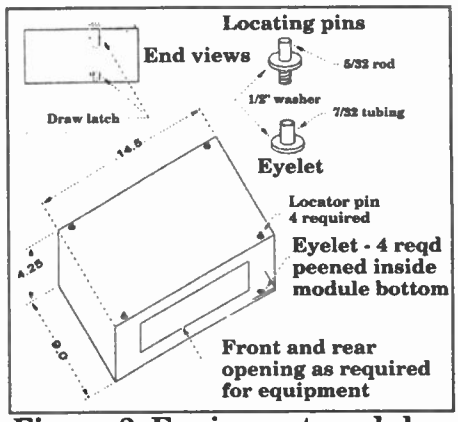


Figure 2. Equipment module

The power panel, Figure 3, containing the power outlet sockets and fuse holders could take many optional shapes. I probably went a little overboard recessing everything to prevent field damage and in reducing the configuration thickness to a minimum. The panel may be wired as a sub-assembly. For convenience each heavy duty Molex connector and associated fuse holder is wired as an individual circuit pair, to the single terminal lugs at the battery posts. Figure 3 illustrates one method of accomplishing these features.

The antenna mount is a length of conduit sawed lengthwise and spread to match your antenna mast. See Figure 4. Bar stock feet are welded on for stability and to allow for countersinking the bracket mounting screws. Incidentally I use a Cushcraft ARX-270 antenna on this rig which would leave me with radials sticking out as a real hazard. Consequently, I use a seven foot mast. This gets the protruding radials up above ordinary earth-bound humans. The antenna

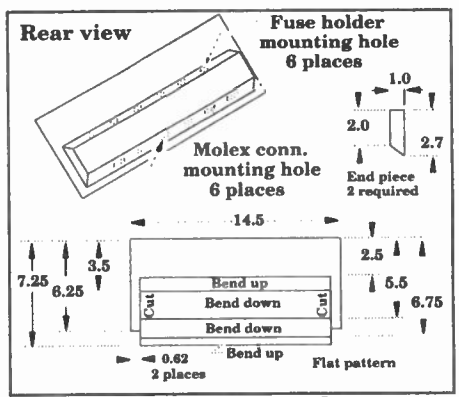


Figure 3. Power panel

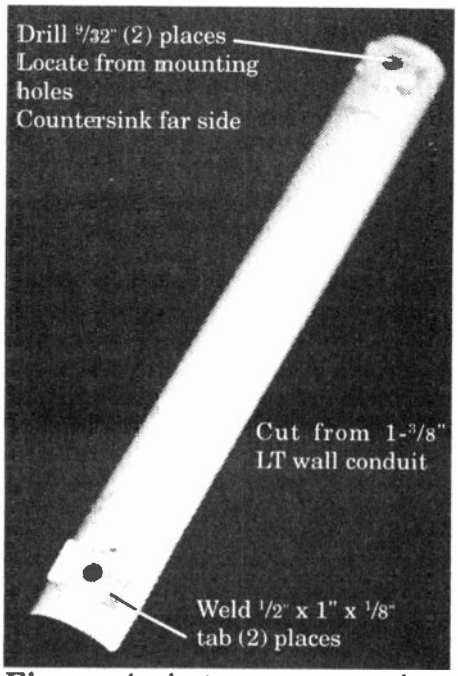


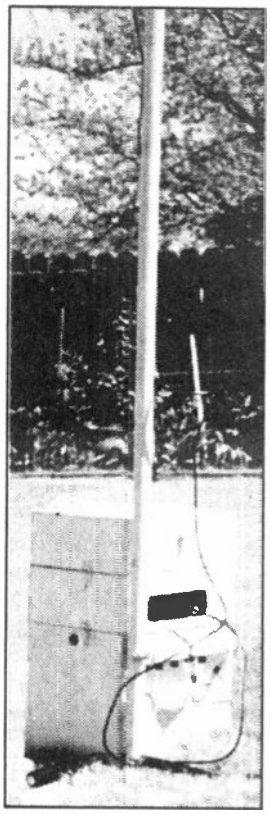
Figure 4. Antenna mounting bracket

and mast break down into a seven-foot, lightweight carrier.

The equipment mounting boxes or modules are constructed of 1/4" plywood — now 3/16". Be aware of this "modern dimensioning" when laying out your box parts. If you elect to use my locating pin and eyelet techniques for keying the units together, be sure to install the eyelets in the bottom piece and the T-nuts for the locator pins in the top before assembly to the sides. Also inlet the sides at corresponding locations, otherwise there will be interference due to flange thickness of the pins and T-nuts. The location for the pins and eyelets (unfortunately near the edges) is controlled by templating to the locations in the 1/2" angles of the power module frame. The draw-bar latches are installed with interior T-nuts at locations, again decreed by similar locations on the power module.

Just for the heck of it, before painting with real rugged epoxy appliance enamel, I treated cracks and plywood edges with my favorite secret material, Bondo!!

The same construction method is used for the accessory box except here I included a hinged top, hold-open bracket, and a lid draw-bar latch. This accessary box has no top locator pins, just the bottom eyelets



The Portacom as a complete unit with antenna. —*photos and Figures by KD6EGS*

as it is intended for only the upper position in an equipment stack.

The illustrations of this article are not in any way intended to be a complete set of construction drawings. They are intended to be a guide, an inspiration if you will, for you to fulfill a need as you see it. WR

Apple objects to 5 GHz filing

Apple Computer does not like a filing by the ARRL opposing Apple's efforts to deploy so-called Unlicensed National Information Infrastructure or UN2 devices in the 5 GHz range.

Earlier this year, the FCC made available 5.15-5.35 and 5.725-5.825 GHz to these devices under Part 15 of its rules. The spectrum involved includes part of a secondary Amateur Radio allocation. So the ARRL filed comments opposing Apple's requests insofar as they would increase the potential for interference to amateur operations.

Three petitions for reconsideration were filed by various industry groups, but Apples' was the only one that concerned the amateur allocation. Apple said the League's objections reflect opposition to any shared use of Amateur Radio Service frequencies rather than the presence of any real threat to Amateur Service operations posed by Apple's proposal. Apple went on to say that the ARRL failed to show that non-spread spectrum UN2 transmitters using highly directional antennas pose any greater interference threat to hams, than do spread spectrum transmitters using highly directional antennas.

As previously reported, the FCC relaxed the restrictions on the use of directional antennas in conjunction with spread spectrum devices on 03 April. Apple is demanding that the FCC treat UN2 directional antennas the same way. *(Via ARRL)*

Quarter Century Wireless Association, Inc.

John G. Troster, W6ISQ

Dayton's Ham of the Year

Once again a QCWA member has been named Ham of the Year by the Dayton Hamvention Committee, and once again we extend congratulations, this time to Leo Meyerson, WØGFQ, pioneer Amateur Radio equipment manufacturer. He'll ever be known for his World Radio Labs in Omaha, NE, but equally so for his keyboard talent at our conventions, when we all join in to sing old favorites. Leo has long been closely associated with QCWA and we are proud and happy that he has received this honor.

Gary Harrison, KØBC, QCWA VP

Imagine a relative new-comer to QCWA helping start a new chapter, and then, at the urging of that new chapter, running for the Board of Directors of QCWA, and what's more, being elected! Something of a go-getter wouldn't you say? Meet Gary Harrison, KØBC, ex-WAØRWS, who did all that just a couple of years ago, ending up Veep of the whole blinking QCWA.

Gary was born in Springfield, Missouri, but at an early age was moved down the road a piece to Bolivar. About sixth grade, someone told Gary he ought to build himself a radio. Being a good kid he did as he was told. It was a crystal set of sorts, and he had to wind a coil of wire over a convenient tubular, cardboard form, plus procure a blue razor blade and a safety pin, then borrow a pair of headphones, and finally throw a wire up in a tree. He hooked all these pieces together then scratched the safety pin around on the blue razor blade and surprise — he heard the AM station in his old hometown, Springfield! This enterprise was terribly exciting for Gary. Just think — he had wound a coil of wire, added a safety pin and a razor blade, and out came voice and music. This radio thing got young Gary's full attention.

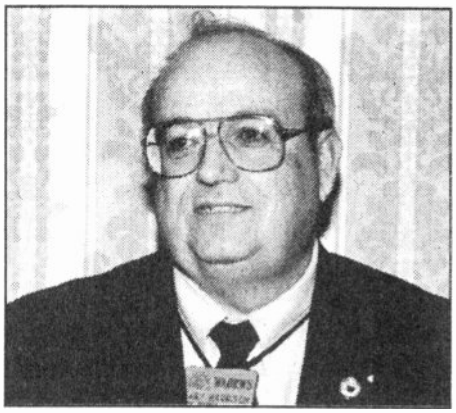
A buddy in high school, who was a radio ham, told him he ought to get a Heathkit, and build a real radio. So, again Gary dutifully purchased a simple radio kit and went to work. But first, he had to buy a soldering iron and then learn which end to hold, and what to do with the solder. As mightily intrigued with radio as he was, something else began to claim first place in his life — school and getting an education.

Gary went out for the freshman football team in high school. Sadly, this great prospect for all-state tackle wrecked his knee in the first game! But he liked athletics so much, he stayed with the football team, and also baseball team, as manager for four years. However, he never lost interest in radio, he was just too busy with school and activities, and girlfriend Carolyn, to spend much time with tubes and batteries.

From high school, he went to Central Technical Institute in Kansas City (now part of DeVry Institute). His goal was to get his First Class Telephone license and be a radio engineer at a BC station, and after a year or so in school, he started going to the FCC in Kansas City to take the exams. He got his Third Class ticket on the first try, the Second Class on his second try, and finally his First Class Telephone on his third try, just in time for graduation! Jobs were scarce in 1964. He fully qualified for a job with a 10 watt FM station on the campus of all-women's Stevens College, but alas, this was a girl's school and they dared not hire a young, unmarried male. Hellooo.

Back to Bolivar. Ahhh haaa, there was Carolyn again, attending Southwest Baptist College. Gary suddenly decided to stick around Bolivar a while. He took a temporary job with Lakeland Telephone Company — or so he thought. Thirty years later he was still there. Turned out he was the only technically oriented person in the company so he was assigned to maintain the telephone switching gear. A year later the company moved into new, improved mobile telephone service and Gary moved into the ground floor of mobile service technology. Every time a new system was added to the company's service, Gary was sent to yet another school for a few months to learn the new technical details. Thus, over the years, he saw a lot of the US of A. When the company moved into cable TV, Gary was off to another school and ultimately became a member of the Society of Cable TV Engineers.

After 10 years with the phone company, Gary's dream of running a BC station materialized. Local radio station, 250 watt KBLR, needed a qualified engineer to fill in for a few weeks. Gary took the assignment and finally nailed his First Class Telephone ticket on the studio wall for the first and only time.



Gary Harrison, KØBC, Vice President of QCWA. ***—photo by W7LVN***

It was in college that Gary found out about Amateur Radio. There were experiments with small transmitters in the lab and antenna testing exercises, and, association with hams naturally followed. When he returned to Bolivar, he decided to go for his ham ticket. He bought an Ameco record, memorized the code by looking at the written dots and dashes on the back of the record. Then listened to the record. Something of a recognition gap between the written dot/dash and the listening dot/dash occurred, but he got it together and memorized the entire record. He also had an oscillator and key, but by his own admission he had a terrible fist. He got a Technician ticket with the call WAØRWS in the summer of 1966 and became active on the local 2-meter net and also 6 Meters. He was living at his folks' home, so had a yard to put up a 5-element, 6-meter beam. He regularly worked all the AM stations within about 100 miles with his Swan 250, but says the exciting times were when six meters

opened to either coast. With his QTH in Kansas he was in position to work either coast, and at times was at the maximum range of the opening. His best 6 meter DX was LU3DCA, which ain't bad!

Gary and Carolyn married in 1968, and moved to an apartment. He had to leave the 6-meter beam behind — 6-meter rigs, and TV-watching apartment neighbors, do not often mix well. Two meters it was, for that period.

During the next several years, Gary put up a repeater in Bolivar for the local radio club. He bought an FT-101 and tried QRP operation using invisible wire antennas and even slim verticals. But guess what, his presence was still noted by the neighbors. So he stayed mostly on CW with QRPp in the Novice bands for the most innocuous signal he could generate.

Carolyn showed an interest in Amateur Radio (smart woman) so Gary taught her the code and coached her in theory. Ultimately she became WBØOUM. At the same time, Gary took a few exams himself and jumped from Tech to Extra Class. In 1979, they bought a small house on a small lot, but the TVI curse persisted, so Gary remained QRPp on the Novice bands. Finally, he sold the vertical, and there was nothing to do but move. In February of this year, they bought a house out of town on 3.6 acres! Concrete for the 55-foot tower and future 5-band quad was being poured even as we talked. By the time you read this, everything should be up and in place, and Gary should be loud and clear from coast to coast!

Carolyn didn't like to tune the radio, especially when switching bands. She thought she might blow up the rig. Gary, with very little urging, bought a TS-850 which does not require tuning from band to band, much more to Carolyn's liking. The location is out in the country and RFI currently (sic) is not allowed there. So they hope. For the new house, he also bought a JRL-2000 which doesn't happen to require tuning either. Gary says this is the first "real" ham station that he's ever had, not counting his first efforts on 6 Meters, that is.

In the late '70s, Gary became supervisor of all switching services for the telephone company. Then in the early '80s, the company, which had a single owner, distributed ownership of the company to the employees. Thus Gary became partial owner of a telephone company! In 1991, the 78 new "employee" owners sold the company to a larger company and shared the profits. Gary stayed with the new company until 1994, and then retired, at age 48. Tough, right?

Gary joined QCWA in 1991, the first year he was eligible. Soon afterward, he helped form local Chapter Number 180, the Foothills of the Ozarks Chapter in Bolivar and was its first president. During his tenure, Gary was urged to run for national QCWA office. He liked the organization and the opportunity to serve, so he submitted his name for the Board of QCWA and, much to his surprise and pleasure, was elected.

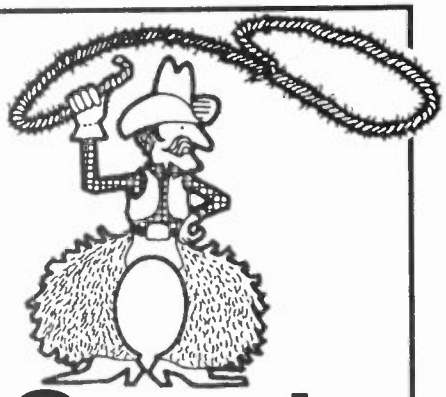
Gary is very active on the BOD, working hard to woo more members to our organization. He is also principal convention director and has already submitted his Foothills of the Ozarks Chapter to be sponsors of the national convention in 1999. He proposes the convention take place in Branson, Missouri, home of the thirty or so nationally known Western music theaters. So, if you want to hear a particular brand of western, or even Glenn Miller-type smooth swing, be there in "99." Gary will be at the outskirts of town to welcome you and pass out the tickets.

Gary is one of our QNB, "New Breed" members like *QCWA Journal* DX columnist, Chip Margelli, K7JA. Deciding early that he could and would do something for the organization, he's given outstanding energy, to make QCWA a better organization. We're happy indeed to claim Gary Harrison, now KØBC, as One of Us, the Proud, the Many, the Elite, the QCWA. Until the next one — 73 + 25. Jack, W6ISQ WR

IOTA

ON4BAM says that he will activate three Islands On The Air (IOTA) locations this summer. Planned operations will take place 19 July through 09 August. Activity will be on the IOTA frequencies.

N4UQM portable KH2 will be active from Guam for the next two years. He will be active on SSB and RTTY on all bands 80-10 Meters. His QSL Manager is WB4UBS. Cards go to: 1 Sweet Bay Dr., Columbia, SC 29209.



County Hunter

Ace Jansen, N3AHA
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Ashburn, VA 20147
E-mail : sjansen@aol.com

I don't know how many of the other columnists get feedback on their columns, but I assume we all get our fair share. The mobile amplifier contest in this column a few months back sure generated a lot of feedback. Now, without a prize, I must depend on the specific merits of my column to generate feedback. I have a plan!

Here are some valuable writing tips for my fellow columnists if they're starving for reader feedback: leave out some vital information important for full understanding of your column. Yes Sir, gets 'em every time! Gosh, maybe I should sponsor a bi-monthly contest . . . spot the glaring omission and have your name in print as the first one to call it to the author's attention. As I was saying, this months' winner is:

KENT, KL1V

Kent Reinke, KL1V, you are the lucky winner for the month of July. You correctly pointed out the glaring omission from my May column. An entire column dedicated to explaining the MRC (mobile reply card — a glaring omission from my May column), but no mention of how a reader could order MRCs. Kent went on to say the article was very interesting and thanked me. (For future reference, compliments are not required to win the bi-monthly contest . . . however . . . !)

Ordering MRCs

Lest I make the same glaring omission, a mobile reply card (MRC) is a QSL card used by county hunters to confirm multiple mobile contacts on a single card. I know of two ways to get them. The first is from the B&B Shop; 13212 N. 37th Ave. Phoenix, AZ 85029; telephone 602/938-3224 or e-mail bandb@primenet.com. The B&B Shop is a "one stop shop" for county hunter supplies.

The second is QSLs by W4MPY; Box 73, Monetta, SC 29105-0073; phone/fax 803/685-7117, or e-mail w4mpy@pbtcomm.net. You can also check out MPY's web site at: http://www.mindspring.com/~w4mpy/).

At one time, the amateur confirmation exchange service (ACES) printed MRCs, so you can check with them also; 15020 North 7th Dr., Phoenix, AZ 85023-5214 or e-mail 102361.507@compuserve.com. And NO, I do not know the going rates for MRCs . . . so you can't win the contest on that one!

County Hunter e-mail addresses

I run into a lot of the county hunters on e-mail these days. In fact, more so than on the air, since I've had to have my mobile radio out of the car lately. There are a few ways to get a list of county hunters with e-mail addresses. The first is to use the Internet and pull addresses from the County Hunter web site (http://www.delve.com/ch). There are several hot links and one will get you to an e-mail directory.

A second method is to subscribe (no cost) to a county hunter e-mail address list. Each week, ACES sends out updates to the list and you can request a full list at any time. Simply send an e-mail to 102361.507@compuserve.com with "Full List" in the subject field and your call in the message body.

A third method is similar to the second. Send an e-mail to the B&B Shop, bandb@primenet.com with the subject line "Request Email Addresses". There are over 600 e-mail addresses here, but some of them are out-of-date and are therefore incorrect.

A fourth method will not be as easy as the first, but may provide you with e-mail addresses for non-county hunters. The Buckmaster HamCall has a World Wide Web (WWW) page and you can search by call sign. There is a lot of information given for each call sign with one item being e-mail address if it was entered in the database. Try it out sometime on the Internet at URL: (http//www.buck.com/cgi-bin/do_hamcall).

Nevada Counties

There are 16 counties in Nevada, some of them with lots of wide open space and not too many amateurs. Fortunately, there is a Nevada amateur willing to drive to some counties you might need. I received a nice e-mail from Bob Wanderer, AAØCY, who says he'll be glad to hand out Douglas County to anyone who needs it.

Bob says he doesn't sign into any nets, but usually operates on 40M (around 7.030 MHz) at approximately 0230Z. Bob also has a mobile station and can hit most of the local nearby counties (Washoe, Lyon and Storey) and possibly some of those that are further away but still within a day drive.

If you need help with some Nevada counties, e-mail Bob at AAØCY@contesting.com. Bob didn't mention other bands, but ask for a different frequency or mode and possibly he can accommodate your request.

B&B Update

The B&B Shop in Phoenix, Arizona is the premier county hunter supply company. I've written a lot about their products, including mobile reply cards (MRCs) above, county outline coloring books, logbooks, etc. The B&B Shop also produces the *County Hunters Directory* and the *County Hunters Handbook*. The new Twenty Third Edition of

the *County Hunters Directory*, dated November, 1996, contains data and changes up thru 07 December 1996. It is current and vital information on county hunting and the hunters.

The Directory started in 1976, with about 1100 entries. It now contains 7940 entries with 1405 changes or additions since the last edition. This edition contains 126 pages and there are 540 more entries that in the 22nd edition.

If you are not acquainted with the Directory, it contains call sign (alphabetically), names, address, sometimes off season addresses, home county, home phone numbers, work phone numbers, e-mail addresses, Packet Addresses, Operating preferences, former calls held (the old call will be entered with a "Is Now" reference to the new call), MARAC (Mobile Amateur Radio Awards Club) membership number, awards held, spouses name (call if held), and reference to other family members if they are county hunters.

This edition of the Directory also contains a complete second section with all calls listed by name in name sequence. If you know a name but can't remember the call, it's an easy way to find it. With all the current call changes taking place, this is a good source of info of who held what calls and what their current call is.

To order your copy, send $11 check, cash or money order to the B&B Shop address below. The book will be sent via book rate in the US. For DX stations send US$12 and the book will be sent via printed matter. For faster delivery, send $1 extra to cover the extra postage. The B&B Shop; 13212 N 37th Ave. Phoenix, AZ 85029; telephone 602/938-3224 or e-mail bandb@primenet.com.

The Weekly Hunter

The Weekly Hunter is a publication providing current information on county hunter activities. It is published by Phyllis Nelson, WDØNEL (e-mail: gpns@juno.com) with Art Mager, N5DKW (e-mail: n5dkw@primenet.com) as the editor. It includes upcoming trips planned, needs lists, upcoming events (conventions, contests, etc.), awards issued, new awards, new and updated information on county hunter names and addresses. The cost is $40 and can be paid by check to Phyllis Nelson, Weekly Hunter, 8400 E. 111th Terr, Kansas City, MO 64134.

Announcing mobile trips

I received an e-mail from Ray, KD6SV, telling me he's been county hunting since mid-1995, when he made a trip to Pensacola, FL. He currently has 600 counties confirmed using MRCs. He has given out tough California counties, Modoc and Alpine and was planning another mobile trip back in June. As Ray planned his trip, he wished there was a way he could pass on news of his mobile trip so county hunters would know to listen for a county they needed. Ray was most interested in a spot on the Internet to announce trips.

The first place on the Internet is the county hunter web page (URL address listed above). There is an area on the web page for announcing mobile trips. The second opportunity is to e-mail the weekly hunter (mentioned above). The third method would be to get e-mail addresses for county hunters (sources for addresses above) and distribute your own news to the e-mail list you create.

With that in Ray's hip pocket, he just might be willing to try it out by announcing a big trip through California. If you need help with some California counties, e-mail Ray at kd6sv@aol.com and he can plan his next trip accordingly.

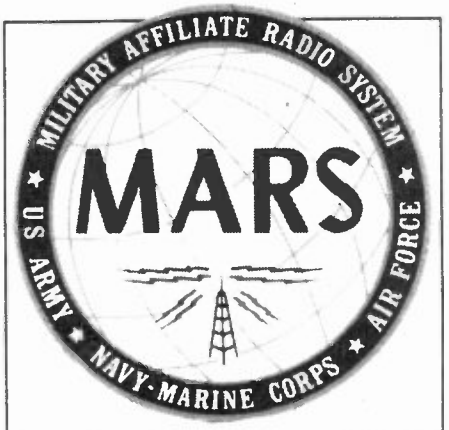
Hello Ace! Hello Ace!

When you have a name like Ace (actually it's my nickname), you have a special spot in your heart for someone else named Ace. Well, an e-mail from county hunter friend, Ace, N9CHU said he reviewed a sample copy of ***Worldradio*** and would subscribe to read this column. Boy, if that isn't pressure . . . hope I don't let you down, Ace! N9CHU Ace says he's not doing much work on the county hunters' net (14.336 MHz and 14.0565 MHz) these days and still needs 281 counties to finish his fifth time around award. Good luck, Ace . . . hope you finish them up soon!!!

Keep those cards and e-mail bits flowing and you too can have your name in bold print with the likes of Kent, KL1V. Until September, happy hunting! 73, Ace, N3 aha! WR

No accident

It was no accident that you received this issue of ***Worldradio.*** *If you are not yet a subscriber, please consider it an invitation to join.*



Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

July 4, 1776 — A spirit of independence and freedom burst forth upon this continent as never was seen before anywhere on the face of the earth. The Declaration of Independence, adopted as a resolution on July 2, 1776, was signed by the Continental Congress delegates on the 4th. They were prepared to sacrifice everything including their lives for the independence of the United States of America.

"... we mutually pledge to each other our lives, our Fortunes, and our sacred Honor."

The men and women in the services that we in the MARS programs support are equally prepared to make the same sacrifice today. MARS members everywhere salute them all.

MARS members turned out in force to support Armed Forces Day in May. MARS members continue to work morale traffic in support of our soldiers, sailors, marines, and airmen 24 hours per day and in many radio modes.

A number of members have become involved in carrying the MARS story directly to the troops and their families. A fine example of this effort has been and continues to be carried out by Frank Wegori, AAR5NG, and Roy Burmeister, AAR5KF. Together they addressed the members of the 314th Military Intelligence Battalion and their families. Roy, AAR5KF, arranged for the presentation since he is the Command Sergeant Major for the 5064th Garrison Support Unit in Southfield MI. Their briefing included an overview of the MARS program and detailed information about MARSgrams, the Army MARS Message service.

During the course of the briefing, Frank asked for a show of hands of anyone who had heard of the MARS program. Out of approximately 100 people present, only 3 hands were raised. This confirmed that MARS with its fine services is still one of the "best kept secrets" in the Army.

Frank wrote in a message to me, "Several attendees had firsthand experiences with MARS by using a phone patch to reach their families from Saudi and a remote firebase in Viet Nam. The passion with which these men described their MARS experiences was genuine and made us even more proud at that moment to be MARS members.

"As I looked into the eyes of the soldiers and their family members, one of my main reasons for joining MARS was instantly reaffirmed. The morale and welfare traffic we handle is much more than just a 'secondary MARS mission.'"

Helping members of the military to stay connected to their loved ones, regardless of the distance that separates them, is indeed a rare privilege.

With each MARSgram we handle, we serve our country, our communities, and that very special need inside that is hard to describe to anyone else."

Other members are working with Family Services and other unit meetings and resources in order to spread the MARS story to all those who need those services the most.

With the primary mission of Army MARS being emergency communications support and with the scope of the crises that have plagued this nation this year, MARS members are also serving those same military personnel by serving to provide for the families and loved ones in times of crisis.

While some operators might look at the MARS program as being confining because of the regulatory atmosphere in which we work, those of us who participate like the ordered format of our work. Rather than being confining, MARS offers the operator expanded frontiers to enter and to explore. We have the freedom to learn and use several modes of operation with new technologies developing rapidly. MARS members are not limited by license class to any particular role. All MARS members are equal.

When one reads the Declaration of Independence, the desire for the same rights of freedom, of service, and of equality come exploding through those words of courage. MARS members exemplify the spirit of the signers of the Declaration.

Many changes are coming to the Army MARS program — changes which will make Army MARS more responsive, challenging, and exciting than it has ever been before.

This issue will be in readers' hands by mid-June. It is not too late to remind all hams and MARS members that Field Day is still coming. Field Day is being held during the 28-29 June time period. This is a great opportunity for all members to participate in a real emergency communications-support based experience. Many of us will head for some open space in order to help set up and operate in a class A configuration — totally emergency power away from any commercial support of any kind. My destination is back to that mountain top north of Kingman. This is a way to get to know the hams in your area and have a lot of fun while serving a serious purpose.

Class B is for the portable station on emergency power which is not club based. This is for those individuals who like to operate on their own. Perhaps there is no club available.

Class C is for the operators who maintain mobile stations in vehicles.

Class D is for the home station on normal power and operating under normal conditions. Why is this type of station part of Field Day? I can think of two reasons. First, this provision allows all hams to participate no matter what their abilities or disabilities might be. Second, this provision recognizes that in emergencies, stations outside of the effected area can be very important when propagation requires relay of messages and information. Class E is for the home station which also has emergency power.

Everyone can participate in Field Day and I encourage all MARS members to do so. Participation can be a most rewarding experience.

Like the march of freedom through our history, beginning on that July 4th in 1776, Army MARS continues its march in helping to preserve that freedom and security — Proud, Professional, and Ready. WR

The Youth Forum

Brian Mileshosky, N5ZGT
1021 Dakota S.E., Albuquerque, NM 87108
E-mail: n5zgt@swcp.com

Amateur Radio at the 1997 BSA National Jamboree

The Boy Scouts of America National Jamboree in Fort A.P. Hill, Virginia is less than a month away! If you are one of the 30,000 Scouts and Scouters from around the country and world, planning to attend the Jamboree 28 July-06 August, this bit of information will be of interest.

The National Jamboree two-meter repeater will be on 145.17 MHz (-600 offset). K2BSA (The Boy Scout Amateur Radio station set up at the Jamboree) staff will be assigned to monitor this repeater 24 hours a day, and there will be a net each evening at 7 p.m. local for all on-site Amateur Radio operators. The evening will provide an opportunity for announcements and for operators to check in and receive messages for Scouts in their subcamps. During mobilizations and emergencies, this is the frequency to monitor!

147.42 MHz will be used as the on-site simplex frequency. If you can use this frequency to communicate with another operator, please do so to keep the repeater open for Amateurs who really need it! Thanks.

The packet BBS will run on 147.585 MHz using the call K2BSA-4. All Amateurs are invited to connect. Incoming packet messages for scouts and scouters should be sent to, and only to: <K2BSA@KC4ASF.#FRED.VA.USA.NOAM>

For messages to Scouts, put the Scout's name and Jamboree Troop number in the subject header. For incoming packet messages for hams who have packet equipment at the Jamboree, put "To: <call>" in the subject header, and the SysOp will see that the message is forwarded properly.

All of this information is accurate as of 28 April 1997. Please contact Mike Brown, WB2JWD at bbm@lightlink.com if you have questions, as he is the 1997, K2BSA Director. I'll see you at the Jamboree! Perhaps we can meet on the air, or have an eyeball.

Jamboree On The Air

Speaking of Jamboree, in the next issue of the "Youth Forum," I would like to feature Jamboree On The Air (JOTA), an annual event held each October which gives scouts and scouters (Boy Scouts, Girl Scouts, etc.) all over the world an opportunity to meet each other using Amateur Radio. If you are not involved in Scouting, this on the air event is perfect for meeting young people such as yourself! Your input, JOTA plans, ideas and pictures would be greatly appreciated, and I might publish them in the next issue!

Please send this information to my home address located in the header above this column no later than 10 June 1997. If you wish to have any materials returned, please include a self-addressed stamped envelope.

Profile

July's featured young ham is Matthew Wright, a 16-year-old Extra Class Amateur Radio operator who lives in Section, Alabama. He received his license in July 1994, and upgraded to Amateur Extra within one year! Matt became interested in Amateur Radio through 11 meters, better known as CB. He was active on 11 meters before he found out what Amateur Radio was through CBers who also were hams. He began studying for his license with the help of some Volunteer Examiners and other hams in his area.

Matt is the only Amateur in his family, and is an avid fan of CW and operating QRP (5 watts or less). One of his favorite activities in Amateur Radio is building QRP CW gear. He has his own "junkbox," which contains components, connectors and other electronics, just waiting to be put to good use — and Matt does just that. He has also built many QRP kits sold by QRP clubs and companies all over the country, including the NorCal "38 Special" (a 3x4 inch 30-meter transceiver that puts out as much as five watts — more than enough to work the world!) and a Small Wonders Lab GM-20, 3 watt, 20-meter transceiver.

Matt is an Official Relay Station for the ARRL where he passes and sends traffic all over the nation. He is also active in Amateur Radio clubs and organizations, including the ARRL, Ten Ten International, QRP ARCI, Jackson County Amateur Radio Club and more! He is also an active Boy Scout who is working to complete his Eagle Scout rank, the most prestigious rank in Scouting. From one Eagle to a future Eagle, good luck!

Some of Matt's future ambitions in Amateur Radio include achieving QRP DXCC and QRP Worked All States. "I would also like to see more young hams building their own ham gear whether tube type or solid state equipment. Also, I hope to see more young hams learning and operating CW and letting your friends know about the great Amateur Radio hobby," he says.

If you would like to contact Matt, you can reach him on either packet at AE4JM@K4BFT.#HSV.AL.USA.NA or on the Internet using cnw@HiWAAY.net .

Stories, photos needed

Would you like to be profiled in the "Youth Forum?" Do you have a subject you'd like to see here in the future? Let me know! I enjoy writing about topics that interest young hams, but I cannot do it all myself. If you have a topic about Amateur Radio, or young hams, please submit it! Anything from how you became interested in Amateur Radio, club activities, etc. to large ham radio events will be accepted. I will give careful consideration to all items submitted, however, I cannot promise that every submission will be featured in the "Youth Forum," but I will do my best.

You may send story ideas, profiles, and black and white or color photos to my home address listed on top of this column. If you would like me to return any materials, please include a self-addressed stamped envelope with the appropriate amount of postage.

I hope everybody is enjoying their summer. Until next time! 73, Brian, N5ZGT WR

Traffic

Geri Sweeney, N4GHI

Upcoming traffic

Some special event stations that we can expect to hear soon:

August — CNE (Canadian National Exposition), Toronto ON

The March EAA Fly-In (Experimental Aircraft) in Lakeland, Florida kept many of us very busy. It's nice to have lots of traffic, if only for a few weeks. The CNE (Canadian National Exhibition) also generates lots of traffic. Special Event traffic is pleasant to work, as each message is unique and thought to be appreciated by the person delivering it. It's fun to share in the fun (weather, gossip) of how the event is functioning.

K6UYK

Ted Sharp became a Silent Key in March. His cancer finally got him. He was the personification of an excellent traffic handler. He not only sent roster traffic for SSA (soaring society) and QCWA, but was active in all traffic matters. He caused the first addendum to the ARRL radiograms (ARRL Sixty Nine). He really cared; so we really cared about him. If anyone can figure out how to get a message back to Earth, he will.

State of being

It seems almost every commentary about Amateur Radio nowadays predicts dire prognostications as to losing frequencies, cramming in more SSB with CW, eliminating CW qualifications, and competing with leading-edge technologies such as e-mail. We should keep in mind that Amateur Radio is a hobby. While our hobby once was the leading-edge in communications, it now is not. Yes, a few folks are using satellites and doing high-tech stuff. But, most of us are not. Most traffic handlers, DXers, contesters, and folks enjoying a QSO are simply using the allotted bands and enjoying their activity.

In the 21st century, will Amateur Radio or e-mail and FEMA be called upon to handle communications in emergencies? To date, we have based our justifications for needing our frequencies on being there to help in emergency situations. How long can that argument hold? We can at least claim backup status for a few more years. I note that the ARRL has proclaimed this the "Year of Public Service." Involving yourself in traffic handling is public service. It gives you confidence to assist in emergencies — how, where, when. Anyone unable to figure out how to get into traffic handling, please let me know. I can furnish the name/call or your Section Traffic Manager. We need you. Public service is the backbone of keeping our frequencies. What do you think?

Net Control Station (NCS)

Lee, N9BDL, writes that he would enjoy reading about the enjoyment of being a net control station on a CW net. His comments are:

"Please don't say it's the easiest thing to do because those that find out there is a bit of work and a lot of challenge involved, will be discouraged. The challenge is the major reward."

Well said, Lee. The NCS slot is rarely the same. Anything can happen. There's always the chance that a new station, whose call isn't familiar, will check in. There's always varying amounts of traffic for different places. In a CW net, you must know a dozen "Q" signs, as well as be able to send good CW and copy awful CW. Propagation can be horrid. Relays, and change of frequencies may be needed.

On a slow traffic night, you yawn and find yourself struggling to pay attention.

On a fast night, you struggle to meet the challenge. Nothing is more fun than a night with lots of stations and traffic. When the net is over, you evaluate how you did, as with any absorbing game. You think of any mistakes you made and how you will do it better next time. You just can't wait. As Lee said, "The challenge is the major reward."

It all starts on a slow speed CW traffic net. Lee mentions the Minnesota Slow Speed Net which meets at 6 p.m., local, Central time, on 3710 kHz.

Counting Traffic

The National Traffic System's three Area chairmen (Pacific, Central, and Eastern) met in March. They concluded that "use of non-amateur circuits for the relay of Amateur Radio message traffic should be discouraged." That's in reference to sending traffic via e-mail. Also, "Traffic handlers must limit their station activity message relay counting and reporting of message traffic to that sent and received via Amateur Radio only." Bottom line — you can't count any traffic you relay via e-mail on your monthly activity report. Any comments on this? P.S. In my last column, I noted that indeed, it looks like digital might very well be out, before it was ever officially in? The three chairs voted to eliminate the position of Region digital coordinator.

Rob, K6YR, recently became the PAN (Pacific Area) Chair. He is very active in every part of traffic handling, from Local to Area nets. Rob also has a leadership roll as Santa Barbara Section Manager (SM). Rob really listens to what traffic handlers tell him. His energy and enthusiasm will be a great asset.

Newsletters

Newsletters are an excellent way to keep us all informed. Every net should have one, or be part of one. Just a few examples: The IMN (Idaho Montana Net) newsletter gives background info on proposals to change frequencies and licensing and then asks for comments from each member. The Suffolk County Radio Club, NY, prints a page of traffic stats for their area in each issue. The WaveFront, the Virginia Beach, VA, Amateur Radio Club lists a class to learn traffic handling. CSN (the Carolina Slow Net Newsletter) sends out traffic tips and lists checking. Stations like to see their calls in print.

They also have a web page on Internet with traffic information. *Traffic Call*, the newsletter of a fine independent net (Hit and Bounce), does all of the above. WA1TBY produces a Region newsletter with comments from each net manager. Whether it's a single net or a group of nets newsletter, it's a very handy tool for instruction, and for drawing together traffic handlers.

Newsletters are costly (stamps/copying). Even if members pay for

these costs, there is the hours of time spent on the computer. They are the result of one's love for our hobby. Thanks to all you editors who produce a traffic newsletter.

History

Some years ago a series of papers (The Gray Papers) were written about the NTS by W6ZRJ, "Doe" Gmelin. The first was entitled, "The ARRL National Traffic System: A Bold and Daring Plan." Summarizing, Doc says that in 1949, the NTS was organized by George Hart, W1NJM. It was patterned after the U.S. Army Communications System. It was a highly structured system. It's purpose was to create order from the ARRL Trunk Lines, which had become a large wide area system of nets. Doc mentioned relay problems between non-coordinated amateur nets and the ARRL Trunk Nets. When he wrote these papers, some years ago, he mentions that this was still a problem.

Still years later, it is an obstacle. Independent Nets are often made up of many NTS stations. Our Hit and Bounce Net here on the East Coast meets in the morning at 8:30 a.m. on 7039 kHz. It fills a void for many traffic handlers who want an early morning activity. I believe that any traffic passed to a member who can't deliver it personally, takes it to an NTS net. On the other hand, Virginia has a "Phone Net" which has many more outlets in Virginia than our NTS nets. But its joint NTS/Phone Net stations bring the traffic to the net, as well as take outgoing traffic to an NTS net.

Our problem is not independent nets with mixed members. Or, even independent nets with no mixed members — such as the Missionary Net, or other nets with a different agenda. Should the occasion arise, these other nets welcome you and try to help with an outlet for NTS traffic.

I think the problem arises with hundreds of digital PBBS, whether utilizing 2-meter packet, or HF PACTOR/WinLink. They come and go and no one has a handle on who or what they are all doing. They may or may not wish to help with third party traffic. Many digital boards relay international traffic and few know of their existence.

I once tried to feed some international traffic into one of these boards in Region 1 and was told: a) Don't send traffic unless you format it correctly; and b) I won't tell you how to do that, or anyone who can tell you how to do that. We need to get a handle on who is doing what, and whether the board owner wants to play. Even our NTS digital folks are busy doing their own thing (kind of like those old Trunk Lines).

Doc's conclusion is still valid today. He said, "Many stations were not members of the ARRL and resented any organized effort on the part of ARRL telling them what was good for them and what they could or could not do." It does take a different mind set to play a game with others, as opposed to setting up a digital board and not wanting to be bothered with anyone else's opinions. I can't help thinking how nice it would be if we knew how others were routing their traffic; even if the others wouldn't play with us.

CW slow speed

WCSPN(CA/OR/WA) 7 p.m. 3702D Local time. Let me know of any slow speed traffic nets in your area. Can there only be one slow speed traffic net in the entire Pacific Area? Why don't you start one?

N4GHI@WA3TAI.MD (packet), N4GHI@juno.com (e-mail), and/or *Callbook*™. **WR**

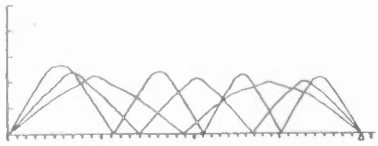
West Coast volunteer needed

The CW FISTS Club, the International Morse Preservation Society is looking for a member to start up a West Coast version of their FISTS Slow Ragchewing Net on 80M.

Charlie Cotterman, KA8OQF started up the East Coast net two years ago last January, and it has been very popular. With 80M the way it is, the two coasts really have to have separate NCS. If you would like to try this, drop Charlie a line at: 26 Mellow Ave., Dayton, OH 45410.

This is the *slow* ragchewers, so you don't have to be a fast sender, just commit to being there. It would be ideal to have a couple of volunteers, so if one could not make it, the other would be able to be present. —*via the FISTS CW Newsletter*

Propagation



Carl Luetzelschwab, K9LA
1227 Pion Rd.
Ft. Wayne, IN 46845

The best way to tell if a band is open (and if it is, to where) is to listen to signals on the band. But that generally turns out to be a hit-and-miss effort. You roam up and down the band noting who's on. That could take some time before you get a good picture of what's happening.

PacketCluster has helped in this respect, as viewing the spots gives a general idea of what's coming through. Basically you let others do the listening for you.

For a real-time evaluation of a band's condition to many different areas, it would sure be nice to have an organized system of world-wide beacons. Well, there exists such a system, and we have the Northern California DX Foundation (NCDXF), in conjunction with the International Amateur Radio Union (IARU), to thank for it. What I'm talking about is the NCDXF/IARU International Beacon Network.

You might be familiar with the "old" system. It consisted of the following eight beacons: 4U1UN/B, W6WX/B, KH6O/B, JA2IGY/B, 4X6TU/B, OH2B, CT3B, and ZS6DN/B. These all operated on 14.100 MHz, and they each had a one minute time slot. In this one minute time slot, they identified and then sent long dashes at 100W, 10W, 1W, and .1W. Listening during this 8 minute period gave a good idea of what 20M was doing.

Over the years, the NCDXF has been upgrading this system. They've added more stations to better cover the world, and have added 17M, 15M, 12M, and 10M to better cover the HF spectrum. The following is a summary of the information that can be found on the NCDXF/IARU International Beacon Network web site at <http://www.ncdxf.org/beacon.htm>. Eventually there will be eighteen beacons. They will operate on 14.100 MHz, 18.110 MHz, 21.150 MHz, 24.930 MHz, and 28.200 MHz. Since each beacon has to transmit on five frequencies, the time slot on a given frequency has been reduced to ten seconds. Thus it will take three minutes to listen to all eighteen beacons on a given band. But in those three minutes, you'll have a very good picture of where the propagation is. Table 1 shows the time slots assigned to each beacon, and the status of each beacon at the time this was written. Check the aforementioned web site for updates.

Table I
NCDXF/IARU International Beacon Network

Call	14.100	18.110	21.150	24.930	28.200	Status
4U1UN	00:00	00:10	00:20	00:30	00:40	On the air
VE8AT	00:10	00:20	00:30	00:40	00:50	On the air
W6WX	00:20	00:30	00:40	00:50	01:00	On the air except 17M,12M
KH6WO	00:30	00:40	00:50	01:00	01:10	On the air except 17M,12M
ZL6B	00:40	00:50	01:00	01:10	01:20	Not on yet
VK6RBP	00:50	01:00	01:10	01:20	01:30	Not on yet
JA2IGY	01:00	01:10	01:20	01:30	01:40	On the air only 20M
USSR	01:10	01:20	01:30	01:40	01:50	Not on yet
CHINA	01:20	01:30	01:40	01:50	02:00	Not on yet
4S7B	01:30	01:40	01:50	02:00	02:10	Not on yet
ZS6DN	01:40	01:50	02:00	02:10	02:20	On the air
5Z4B	01:50	02:00	02:10	02:20	02:30	On the air
4X6TU	02:00	02:10	02:20	02:30	02:40	On the air
OH2B	02:10	02:20	02:30	02:40	02:50	On the air
CS3B	02:20	02:30	02:40	02:50	03:00	On the air
LU4AA	02:30	02:40	02:50	03:00	03:10	On the air
OA4B	02:40	02:50	03:00	03:10	03:20	Not on yet
YV5B	02:50	00:00	00:10	00:20	00:30	On the air

Each station consists of a Ken-

wood TS-50S transceiver, a Cushcraft R-5 vertical, a Trimble Navigation GPS receiver, and a controller. In each ten second time slot, the station identifies and sends four dashes at 100W, 10W, 1W, and .1W. It then moves to the next frequency and repeats the process.

Table 1 arms you with what you need to check how the bands are doing. Well, almost — it'd help to have a good clock with a second hand so you could keep track of who's on at a given time. I tried that, but the going back and forth between Table 1 and the clock soon became very tedious. Is there an easier way?

There sure is. And it comes from the company that offers the ionospheric prediction program CAPMAN — Kangaroo Tabor Software. What they offer is a freeware program called Beacon Wizard. You can download it from their web site <http://www.wtrt.net/~ku5s>. It needs Windows 3.1 or higher to run.

What it does is present a window with the current beacon that is transmitting highlighted, the previous beacon that transmitted, and the next beacon that will transmit. This is updated every ten seconds as each beacon takes its turn. You point and click on which band you want to see.

In addition to showing which beacon is currently transmitting, the short-path heading, the distance in kilometers, the long-path heading, the beacon sunrise and sunset times, and your sunrise and sunset times are displayed in the same window.

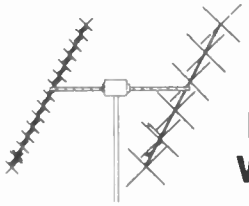
After setting my PC clock exactly to WWV, I found it very easy to just sit there and watch Beacon Wizard tell me which beacon was transmitting. They popped up (the ones I could hear, that is) in the allotted time slot just like Beacon Wizard said they should.

So take advantage of the NCDXF/IARU International Beacon Network, and go get Beacon Wizard to help you assess propagation. Hopefully the remaining non-active beacons will come on-line as Cycle 23 moves up in sunspot numbers. Then we'll have a true worldwide system to check our 14-30 MHz amateur bands. **WR**

Learning center station

The Phoenix, Arizona Center for Amateur Radio Learning now has ham shack open and on the air. The station's call sign is W7ASC. It operates weekdays from 9 a.m. to 5 p.m. and weekends 10 a.m. to 5 p.m., operating the HF bands and making local VHF and UHF contacts. The sponsor's goal is to expose thousands of Arizona Science Center visitors to Amateur Radio. For more information please visit their site on the Internet at: http://www.w7asc.org.

Amateur Satellites



Terry Douds, WB8CKI

344 E. Fifth Ave., Lancaster, OH 43130
e-mail: wb8cki@amsat.org

Hello everyone! As I finish writing this column, I'm getting ready for Dayton — it's been a wonderful time lately, with the exception of the information that I received right at the deadline for the last issue, and we could not get it in until this issue — that the European Space Agency (ESA) has delayed the launch of Phase 3D once again! This time, we are supposed to go up in September . . . let's all keep our fingers crossed!

If you are as anxious as I am to see this bird get up into space, I'm sure you also feel the frustration that delays like this bring to satellite operation. All the hype seems lost somewhat when things begin to slow down . . . and since all of us have been so active in fundraising for this bird, because it's the first one we've had to "buy" a launch for, it's even more exasperating. However, there is good with the bad. First of all, it has allowed for additional testing of the various modules to help to insure "perfect" performance of the satellite. Another plus is the fact that the longer and more in-depth the study of the flight of Ariane 501, the more likely that we will have a flawless launch and deployment, which is something we *all* want.

I know that many people have raised the concept of launching the bird on an existing Ariane 4 launch, but there are many different reasons why that is neither feasible nor a really great idea. One, the Ariane 4 launches are booked full well in advance, just as our Ariane 5 flight has been. We would have to be lucky to see someone cancel out of their launch. Secondly, we have designed P3D to be the bottom payload inside the payload bay of the launch vehicle . . . this would prohibit use of the bird above the Structural Bearing Subsystem (SBS). It's just not a "plug and play" situation — there are some serious design considerations that have to be taken into account. Also, the Ariane 4 vehicle will place the bird in a much lower orbit than would the Ariane 5, which would take additional fuel and burns of the main motor on the satellite. This would use up a great deal of our precious fuel, which, though feasible, would not be really practical. Hence, we'd better hang on and wait.

The negatives attached to waiting include higher rental costs for facilities (like the lab in Orlando), in addition to rescheduling flights to Orlando for the integration teams, as well as for the final checkout phase in Kourou, French Guiana. When one looks at the big picture, it is really an amazing feat of international cooperation that we are able to put together a project of this scope at all! We all need to thank tireless individuals like Karl Meinzer, DJ4ZC, (P3D Project Leader/AMSAT-DL), Dick Jansson, WD4FAB, (P3D Director of Engineering/AMSAT-NA), Stan Wood, WA4NFY, Lou McFadin, W5DID, Keith Baker, KB1SF, (P3D Project Manager/AMSAT-NA), and a host of others whom I will mention soon in an upcoming article on the bird for their tireless *unpaid* work on the project. As has been quoted numerous times, if this satellite had been constructed "commercially," it's value would be on the order of 100 million dollars! It's really a bargain when we are only responsible to raise 4.5 million to put it together and launch it into space — value like that is very hard to find!

Our biggest risk right now is the launch on the Ariane 5, however, in my opinion, we really shouldn't be terribly worried. What many people are not aware of is that ESA has all their eggs in the Ariane 502 basket right now. If 502 is a failure, it will be a major blow to any future work that they hope to do for years to come. They need a vehicle that will enable them to go higher and deploy multiple payloads efficiently, and this one will fill the bill — but they cannot have another "mistake" like the 501 flight (which if you haven't been reading past issues, had to be blown up 38 seconds into the flight due to a *software error*. . .) As you can imagine, that kind of thing is not tolerated in an industry where normal launches cost on the order of 10 to 15 *million* dollars (per satellite)! This fact alone should give us a bit more peace of mind concerning the launch.

On to some different subjects. A wonderful primer on satellite operation, known as "Working the Easy Sats" was written last year by Gary Rogers, WA4YMZ. In it he covers everything you would need to start working on the satellites, especially the "Easy Sats." The document covers RS-10 and RS-12, RS-15, DO-17, FO-20 and FO-29, AO-27, Mir/SAFEX II, and SAREX. For those of you waiting to get started, this article will help you a

great deal! He has recently revised it, and you can download it directly off the Internet by going to the AMSAT-NA web page at http://www.amsat.org — it will be listed under feature articles. If you don't have web access, you can download the file via ftp from ftp.amsat.org. The file name is easy30.wri. It is in Windows Write format, but it is easily converted to any word processing format you might have. It runs about 42 pages, but it only takes about two minutes to download it at 28.8 kbps. It is also available in a pdf format for those of you with Adobe Acrobat Reader software — see the web page for more details.

Since the fire occurred on Mir in February, general Amateur Radio operations have been curtailed until some repairs are made on the space station. However, some MIREX QSOs have still been taking place. In April we also had a problem with the shuttle, which cut short a mission and kept a few schools from completing their scheduled SAREX QSOs — they will hopefully be rescheduled with the "makeup" launch of the Shuttle for that flight, which is scheduled for later this summer.

As I reported in my last column, we have a new Mode A satellite from our Russian friends, RS-16. Unfortunately, as of the date of this writing it still has not been opened up for amateur use. A note from the control stations in Russia stated recently that they hoped to have it opened up by the end of May, hopefully by the time you read this, it will be in regular operation.

On a sad note, you may remember last fall my excitement over a new satellite from Mexico known as UNAMSAT. Initial reports were good. Then no one was receiving it anymore. Tom Clark, W3IWI, recently reported more details on the fate of MEXICO-OSCAR 30 (MO-30). In his update, Tom was able to confirm a number of unofficial reports that the satellite failed on orbit and has now been declared lost.

The satellite, which also contained a 40 MHz meteor radar, was built at UNAM (The Autonomous University of Mexico) in Mexico City by David Liberman, XE1TU, and his students. The basic spacecraft was of the same design as the other AMSAT Microsats (including LUSAT, DOVE, WEBERSAT, ITAMSAT and EYESAT).

The first UNAMSAT was destroyed (along with the Israeli Techsat) when its Russian START launch vehicle exploded shortly after the launch from Plesetsk in March of 1995.

Tom reports that UNAMSAT-1's spare parts were successfully flown late last summer on a different launch vehicle, also from Plesetsk. The new satellite, which ultimately became MO-30, was successfully deposited in orbit and transmitted telemetry for about one day.

Unfortunately, according to Tom, the launcher was very cold. MO-30 separated from the launcher at a temperature of about -30C because the satellite was under the launcher shroud for a couple of hours.

Apparently, the crystal oscillator in the uplink receiver's first local oscillator (LO) never started oscillating, so the satellite was totally "deaf." Because there was no functioning uplink, battery charging parameters suitable for the unanticipated cold temperatures could not be loaded, and the satellite ran out of power. Later attempts to revive it were unsuccessful.

Both Tom and Jim White, WDØE, briefly reported on the status of the (then ongoing) revival attempts for MO-30 at the AMSAT symposium in Tucson last fall. However, as those valiant attempts have since proven unsuccessful, MO-30's project managers have now concluded that MO-30 has been lost, apparently for good.

Obviously, we take the bad occasionally, but we always hope for the good. Let's keep thinking positively and have only good wishes (and luck!) for our upcoming launch of P3D. 73 and hope to hear you soon on the birds! **WR**

Apt leaving NASA

Astronaut ham Jay Apt, N5QWL, says that he is leaving NASA to accept the directorship of the Carnegie Museum of Natural History in Pittsburgh, Pennsylvania. The Carnegie is one of the largest natural history museums in the country, with a permanent staff of 85. Apt expects to move to Pittsburgh this summer. (*via AMSAT-NA BBS, ARRL*)

AERIALS

Lil Paddle

The 18th edition of *The ARRL Antenna Book* is hot off the press. Actually, it seems as if they just took the 17th edition and walked it by the fire. If it were a computer program it would probably be version 17.01.

There seems to be very little new in it. The photographs all seem to be the same we've been seeing for a decade now. I did spot four new pages about the 160-190 kHz band. Is this an AMATEUR band? You get to put no more than one watt into a 50-foot antenna at a wavelength of 1750 Meters. Sorry, a masochist I am not.

The "Multee" is still in the book (7-16). Has anyone every built one of these? Has anyone ever even heard of anyone building one? Probably not. The fact that it would work poorly seems to just leap off the page at you. I shall stand corrected if need be but I doubt that a folded dipole 70 feet long would (as the book says) "present a 'high feedpoint impedance' at 1.8 MHz." Should you find that it does, you will be granted space here.

Many pages are devoted to trying to get a dipole to work well across the 75-80M spread. Alas, they never mentioned Kurt's writing about using six-conductor rotor cable as the antenna. Each of the six wires is trimmed to a different portion of the band.

A page is still being devoted to the "Fishbone" antenna. Has any amateur ever built one or even heard of anyone building one?

The factor preventing utilization of such an antenna is probably the vague references to the many capacitors needed and the lack of values for them.

The very light of my life, one KNS, designed a coax-fed antenna (double reverse, off-centerfed dipole) that allowed operation on all HF bands 20M and above. No one else has chosen to reprint it even though he offered it to all. Pity, but to be expected.

I'd like to see Figure 22 on page 24-16 turned horizontally and given a full page, that would make it easier to read. This is the chart that shows the "Cable Attenuation, dB per Hundred Feet" of the various feedlines. The next logical step would be, of course, to present the chart that compares the "Line Loss in dB When Matched" to the "Additional Loss in dB Caused By Standing Waves." But, incredulously in the 700-plus pages of the book it is not to be found. That is rather an egregious flaw, particularly when one can find that chart on page 19.6 of the 1997 *The ARRL Handbook For Radio Amateurs.* That this rather important chart is in the *Handbook* which has but a few chapters on antennas, and NOT in a book entirely devoted to antennas defies logic. Is anybody there paying attention?

The antenna book still contains what I consider what must have been sent in as a joke. On page 18-30 is a 4-element Quad for 2M. The formula for cutting the Reflector length is 1046.8 divided by the Frequency in MHz. We are cutting antennas for 2M down to a tolerance of 1/10,000?

Let's see what happens if we throw caution to the winds and round 1046.8 to 1047.

1047/146=7.1712287671 ft.

1046.8/146=7.16986301369 ft.

The difference is .00136986302 of a foot or 0.01643835624 of an inch which translates to 1/61 of an inch.

And note, that was rounding from 1046.8 to 1047. If through miscalculation you had put 1046.9 instead of 1046.8 into your calculator you would have been 1/122 of an inch off.

How silly is it getting down to 1/61 of an inch? About as silly as worrying about 1/6 of an inch at 14 MHz. Can you honestly say that after the four bends of the quad and all that you are within 1/6 of an inch of perfection. And, how far, really far, off would you have to be for it to be read as a hairline difference on a Field Strength Meter or be heard on the other end?

Speaking of "on the other end". . . this book may save some (who read it) a great deal of time and money. Regarding the 1/4 wave vertical, (page 3-3) it is established that 120 radials, each 0.4 WL long, presents an essentially perfectly conducting ground. It then goes to show that 90 radials at 0.25 WL long will show a power loss (at low angles) of 0.5dB.

Then it shows that 60 radials, each 0.2 WL long will have a loss of 1dB. If you had an audio oscillator playing a single frequency continuous tone into your station microphone, and you kept cutting in an out a 1-dB attenuation pad, the station at the other end would not be able to tell when you were doing it.

I also draw attention to page 6-5 where is says that "4 to 8 elevated radials can provide performance comparable to 120 1/4-wave long buried wires." True, True, True.

While I have poked some fun at *The ARRL Antenna Book* in reality there is nothing like it for the price, or beyond. If you read (and understand) one chapter per night you will be one smart cookie indeed. Many could well find the enclosed

software package alone worth the $30 price of the book.

It may be helpful to some to look at this little exercise.

14.350/14.000=1.0250

148/144=1.0277

Or, 147.60/144=1.0250

It shows the bandwidth relationship (as a percentage) between 2M and 20M. When it comes to antenna design that's what counts.

Members of the 10-10 club seem to have a good time but the best reason for belonging may well be the fine antenna column by L.B. Cebik, W4RNL. He presents the information in a fine manner and never wanders into the nonsense that seems to afflict some of the better known writers.

Don Stoner, W6TNS, one of the SSB and solid state pioneers, in writing about wattmeters in his recent column in CQ *VHF* magazine said the exact same thing that Kurt has been saying and receiving abuse over. Stoner is, of course, quite correct and anyone saying differently is talking into his hat.

A little challenge: Has anyone made serious tests on Two Meters (or higher) pitting the "J" antenna against the 5/8-wave antenna?

A serious challenge: Is it the antenna or the automobile? After getting your mobile whip all primed up to its absolute best, and a field strength reading has been taken, reverse the feedline connections so that the coax center conductor now goes to ground and the shield now goes to the antenna. **CAUTION-WARNING!!!** You must "float" the battery when you perform this experiment. You do NOT want the battery grounded and thus grounding the transmitter, when the coax center conductor is also grounded. Again, just to be sure: Use a 12V battery to power your transmitter that is NOT in any way connected to the car. Then transmit and check the field strength.

Due to the sharp eye of a Kurt pal we see that a company in Indiana is claiming 11.2dBd gain for a three element Quad. Despicable!

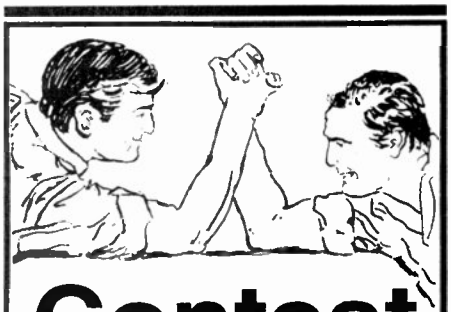
A company, in their literature, says that changing your antenna from #16 wire to #8 wire will raise your signal 3dB. Asinine!

We'll have lots more next month.

(The deadly duo continue on in what Bob Hickman, AA5WE, calls "fighting an almost thankless battle against misinformation.") **WR**

New DX mailer

Bernie McClenny, W3UR, has begun publishing *The Daily DXer*. This is an Internet HF DX bulletin sent out Monday through Friday. DX-related news such as DXpedition announcements and reports, press releases or general DX information are welcome via e-mail at bernie.mcclenny@mail.wdn.com, or fax him at 301/854-5105. *(tnx W3UR)*



Contest Corner

Don Durk, KA1DWX
76226.1414@compuserve.com

Summer Doldrums??

During May and June you may have noticed or heard about multi hop openings on 6 and 10 Meters. This is sporadic E time and it's not too late to try it out! Sporadic E occurs through early September, usually between 9 a.m. and noon or 3:30 p.m. through 9 or 10 p.m. local time (last season we had good runs into Europe from the Northeast as late as 3 a.m. local time on this mode!) To the best of my knowledge, sporadic E is not predictable but you can watch 6 Meters for the start of openings or look for weak signals on 10. For you West Coast folks look for Oceania and JA stations. From the East Coast look for European stations.

The noise-ridden summer in our hemisphere is a blessing to our fellow hams in the Southern Hemisphere who find the openings quite conducive to greater on-air time. So if you need countries or islands, or are seeking awards from those in the Southern Hemisphere (and can overlook the static crashes), now is a good time to find them, especially on the lower bands.

The lazy days of summer may be a good time to start working on your low power skills. With the propagation about to improve, what better challenge than to try QRP? From W6/W7, plan to try for JA. On the East Coast, try for Europe this coming fall. Start on 20, 17, 15, 12 or 10 and then try 40 or 80! Good luck!

Late June 'tests

(see June *Worldradio* for details)

•ARRL Field Day
28 June 18:00-29 June 21:00

•SP QRP CW 'test
28 June 12:00-29 June 12:00
(RST+number+power class)

•Marconi Memorial CW 'test
28 June 14:00-29 June 14:00
(RST+number)

July 'tests

•RAC Canada Day CW/Phone 'test
01 July 00:00-24:00

(RS(T)+number or prov/terr (12) for Canadian stns 160-2 Meters. Score- pts (w/Canadian stn 10 pts; non-Canadian 2 pts; RAC suffix Canadian stns 20 pts) x mults (1 mult per mode per band for provinces and territories). Single op/all band; single op/low pwr/all band; single op/1 band; multi op/1 transmitter (note packet or other assistance means you are multi op) Trophies. RAC, Unit 6, 614 Norris Ct., Kingston, Ontario K7P 2R9, Canada

•DIE Spanish Island SSB/CW/RTTY 'test
06 July 05:00-13:00

(RS(T)+number for non Spanish Islands; RS(T)+ DIE/ DIEI ref number for Spanish Islands) Q 1x per band- ck rules. EA Island stations 80-10. Score: pts (for EA Island stns-2 per Q 80+40; 1 per Q 10-20; for others-2 for ea DIE, DIEI or ref number 80/ 40 and 1 for DIE, DIEI or ref number 10-20) — no mults. Classes: A-E Spanish Islands; F-E A8; G-Portuguese Islands; H-EA non island stns; I-General rest of world; J-Spanish novices (EC stns). Plaques. Certs to all. Separate logs per band + dupe sheet to: DIE Contest, P.O. Box 194, Pedreguer, Alicante, Spain

•YV SSB DX 'test
05 July 00:00-06 July 24:00
(RS+number)

Q 1x per band. 80-10 Meters. Score- pts (1 own country; 3 per Q for other countries in same continent; 5 for Q w/ other continents) x mults (DXCC+YV call areas). Plaques and certs. Separate log sheet for each band. Radio Club Venezolano, Concurso Indepedencia, P.O. Box 2285, Caracas 1010-A, Venezuela

•CQWW VHF WPX 'test
05 July 18:00-06 July 21:00
(Call+ grid square)

Q 1x per band, not per mode. 50 MHz and up. Score- pts (1 pt for 50 and 144 MHz, 2 pts for 220 and 432MHz, 4 pts for 903 and 1296, 6 pts for 1296 or higher) x mults (prefixes + grid squares per band). Single op fixed; multi op class 1 [any band above 50 MHz] portable; multi op class 2 [only 4 bands] rover. See *CQ* for details.

•DARC Digital Corona 'test
06 July 11:00-17:00
(RST+number)

Q 1x per mode-RTTY, AMTOR, CLOVER and PACTOR. 28 MHz only. Score- pts (1 per Q) x mults (DXCC/WAE list and each call district in JA, W and VE). Single op or SWL. Separate log per band. DF5BX

•IARU SSB/CW HF World Championship
12 July 12:00-13 July 12:00

(RS(T)+ITU zone [not *CQ* Zone!] or IARU member society abbreviation if HQ station)

Q 1x for each mode per band if mixed mode or 1x per band if single mode entry. 1.8-30 MHz (not 10/18/24 MHz). Score- pts (1 pt for Qs in ur ITU zone or w/IARU HQ stns; 3 pts for Qs in ur continent but different ITU zone; 5 pts for Qs in different continent) x mults (total ITU Zones plus IARU HQ stations on each band). A. Single op, SSB only, CW only or mixed mode B. Multi op, single transmitter, mixed mode. Certificates and achievement awards to those making at least 250 Qs or 50 or more mults. IARU HQ, Box 310905, Newington, CT 06131-0905.

•QRP ARCI Homebrew CW Sprint
13 July 20:00-24:00

(RST+state/prov/DXCC countrty + ARCI number if a member or pwr out if nonmember)

Q 1x per band. 160-6 Meters. Freqs: 1.830, 3.560, 3.710, 7.040, 7.110, 14.060, 21.060, 21.110, 28.060, 28.110, 50.060. Score- pts (5 w/ ARCI member; 2 w/ nonmember same continent; 4 w/nonmember different continent) x mults (all band total states/provs/DXCC countries) x power mult (>5W=1x; <5W=7x; <1 W=10x; < 250mW=15x). Add bonus points for homebrew (hb) equipment for each band on which used (+2,000 for hb xmtr; +3,000 for hb rcvr; +5,000 for hb xcvr). Single band; all band; high band (20/15/10/6); low band 160/80/40). N6GA or e-mail to CamQRP@cyberg8t.com

•North American RTTY QSO Party
19 July 18:00-20 July 06:00
(Name+state/prov or DXCC country)

Q 1x per band? (check w/ AB5KD) 80-10 Meters. Try 3.585; 7.085; 14.085; 21.085; 10 Meters at 1900 and 2000Z; 15 Meters at 1930 and 2030Z. 150W max output. 12 hrs ok for multi's; single op max is 10 hrs — mark logs for time outs of not less than 30 mins. 10 minute rule for multis. Helpers or spotting nets for single ops not permitted. Score- pts (1 per Q) x mults (per band U.S. states incl KH6 and KL7 + 12 VE provs + other North American countries). You may work other countries for QSO point, but no mult credit. Classes: Single op; multi op 2 transmitters (keep separate log for ea transmitter) — dupe sheet for ea band. Certs for 200 Qs. AB5KD

•HK Independence SSB or CW 'test
19 July 00:00-24:00
(RS(T)+number)

Q 1 x per band, 80-10 Meters. This is not a mixed mode test. You must be all CW or all SSB. Score- pts, non HK (1 for own continent; 3 for other continents; 5 for HK stns) for HK stns (1 for other HK Qs; 3 for other South American Qs; 5 for other continents and San Andreas Island) x mults (DXCC countries per band+HK call districts per band + 1 for HK). A. Single op, single band; B. Sin-

gle op, multi band. C. Multi op, multi band, one transmitter. D. Multi op, multi band, multi transmitter. 10 minute rule. Trophies and awards. Liga Colombiana de Radioaficionados, P.O. Box 584, Santafe de Bogota, Colombia

•RSGB Lo Pwr CW FD 'test

13 July 09:00-12:00; 13:00-16:00

(RST+number+pwr out)

Q 1x per band 40 and 80 only. Low power FD stns are not to be supplied by mains lines. Score- pts 15 per Q w/ portable/p stns; 10 per Q w/ QRP fixed stations; 5 for other Qs. Categories: A. Max output 10W. B. Max output 3W. No mults. Logs in 15 days to G3UFY.

•AGCW-DL QRP Summer 'test

19 July 15:00-20 July 15:00

(RST+nr+category-QRO>25W out; MP, 25W out; QRP<5W out; VLP,1W out)

Q 1x per band, 80-10 Meters. 9 hr rest time required. No QRO to QRO QSOs. Score- pts (1 w/other continent; w/DX 2 pts; extra pts for Q w/VLP/QRP/MP if they submit log) x mults (ea DXCC country per band=1 mult but will count double if log from other party is submitted). The contest manager will calculate the score. DJ7ST.

•South Pacific 160 SSB/CW 'test

19 July 05:00-20 July 23:59

(RS(T)+number

160 Meters only!

VK, ZL and P2 Q all. All other stns Q only VK, ZL, P2 stns Score- pts(for non VK/ZL/P2 stns 5 per Q; for VK/ZL/P2 stns 2 for own call area 5 for other call areas or DX) x mults (number of VK/ZL call areas worked for non VK/ZL/ P2 and add different DXCC countries worked to the call areas if you are VK/ZL/P2 stn). ZL1AAS

•SEANET CW 'test

19 July 00:00-20 July 24:00

(RST+number)

Q 1x per band 160-10 Meters (no WARC). SEANET countries: A4, A5, A6, A7, A9, AP, BV, BY, DU, EP, HL, HS, JA, JD1, JY, KH2, P29, S79, VK, VQ9, VS6 VU, V8, XU, XV, XW, XX9, YB, ZK, ZL, ZL9, 3B6, 3B8, 4S7, 4X, 8Q7 9K2, 9M2, 9M6, 9N, 9V. Score- pts (1 pt per Q w/SEANET country except your own country then no point but ok for mult) x mults (total nbr of SEANET countries X 3). 9M2FK, P.O. Box 13, 10700 Penang, Malaysia.

•YV CW DX 'test

26 July 00:00-27 July 24:00

(RST+Number)

See 05 July listing for SSB.

•Russian RTTY WW 'test

26 July 00:00-27 July 24:00

(RST+CQ Zone or 2 letter oblast abr. for Russian stns)

Q 1x per band 80-10. Single ops allowed only 36 hrs. Score- pts (5 w/own continent: 10 outside ur continent) x mults (ea DXCC country and Russian oblast per band). Categories: Single op all band; single op single band; multi op all band. Separate logs per band. For 100+ Qs — dupe sheet. UA4LCQ

•RSGB IOTA (Islands on the Air) SSB/CW2 'test

26 July 12:00-27 July 12:00

(RS(T) + number+IOTA reference # if island station)

Q 1x per mode per band 80-10 Meters (No WARC bands). Score- pts (15 pts for Q w/ IOTA stn; Q w/own country or same IOTA 2 pts; other Qs 5 pts) x mults (total IOTA references for CW and SSB on all bands). Single op CW/SSB/mixed; single op ltd (12 hrs or less) CW/SSB/mixed; multi op 1 transmitter (use of packet or other assistance means you are multi op). Note: For IOTA directory try W4BAA/G3KMA. Trophies and certs. G3UFY.

•Bumble Bee CW QRP 'test

27 July (4 hours) starting at 10 a.m. PDT, 11 a.m. MDT, 12 a.m. CDT and 1 p.m. EDT

(RST+state/prov/DXCC country + name)

This is a new concept! The bumble bees go to the transmitting site by walking, boating (not power boats) or biking and sign/BB (home-based participation is also encouraged).

Q 1 x per band /BB stns and others. 5 watts max 40-10 Meters. Try 7.040,14.060, 21.060 and 28.060. Score- pts (1 per Q on 40; 2 per Q 10-20) x mults (ea bumblebee/BB QSO is three mults). AA7QU — russ@natworld.com

7/19 Weekend

•NA RTTY Party

August 'tests

8/2 Weekend

•ARRL UHF 'test

•EU SSB/CW HF Championship

•NA CW QSO Party

•YO SSB/CW DX 'test

8/9 Weekend

•WAE CW DX 'test

•MD/DC SSB/CW QSO Party

8/16 Weekend

•ARRL 10GHz Cumulative 'test

•Keyman's Club of Japan CW 'test

•SARTG RTTY 'test

•SEANET SSB 'test

•W/VE SSB/CW Islands 'test

•NA SSB QSO Party

•NJ SSB/CW QSO Party

8/23 Weekend

•TOEC CW GRID 'test

8/30 Weekend

•Handi-Ham SSB/CW 'test

September 'tests

9/6 Weekend

•All Asian SSB 'test

•LZ DX CW 'test

•AGCW Straight Key Party

•IARU Region 1 SSB Field Day

•North America CW Sprint

•Panama Anniversary SSB 'test

•Digital DARC Corona 'test

9/10-12

•YLRL Howdy CW/SSB Days

9/13 Weekend

•ARRL Sept VHF Party

•WAE SSB 'test

•North America SSB Sprint

9/20 Weekend

•ARRL 10 GHz Cumulative 'test

•Scandinavian Activity CW Contest (SAC)

•Washington State Salmon Run CW/SSB

•Atlantic SSB QSO Party

9/27 Weekend

•Scandinavian Activity SSB Contest (SAC)

•CQWW RTTY DX 'test

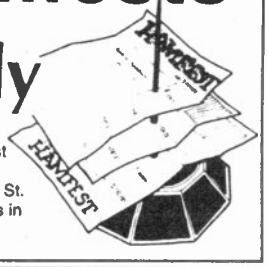
•TN SSB/CW QSO Party **WR**

6M in contests?

The ARRL's Contest Advisory Committee is studying the interest and impact of adding 6 Meters to ARRL HF contests, for contests that do not currently have 50 MHz already included. Some examples would be Sweepstakes and the ARRL DX Contest.

Contest Advisory Committee representatives would like to know how you feel about adding 6 Meters to ARRL HF Contests. Please send your ideas via e-mail directly to the Contest Advisory Committee at: cac@arrl.org. *—via ARRL*

Hamfests July



Do you have a hamfest coming up? Send your information to our 28th St. office at least 2 months in advance of your event. We'll send prizes!

Canada

The **63rd Glacier Waterton International Hamfest** will be held 18-20 July at the Three Forks Campground (16 miles west of East Glacier). Features include seminars, dealer displays, VE exams, barbecue and activities for non-hams and children. Contact Gary Leach, VE6BVZ, 55 Templegreen Pl., N.E., Calgary, Alberta T1Y 4Z2; telephone 403/285-5547, fax 403/285-6154. E-mail leachg@cadvision.com Talk-in on 146.52(S).

California

The **Livermore ARK** will hold a swap meet on 06 July from 7 a.m. to noon at Las Positas College, 3033 Collier Canyon Rd., Livermore, CA (Airway Blvd., exit to north of 580 highwav). Features include new, used, surplus ham, computer gear, miscellaneous electronics and testing equipment, refreshments available. Admission and parking are free; vendors $10 per space (equals two parking spaces). No VE exams. Contact Noel Anklam at 510/447-3857 (eves.) or 510/783-2803 (days). Talk-in on 145.350(-) PL 100 (receive and send), 147.045(+) PL 94.8, 147.120(+) PL 100.

Colorado

The **Colorado Bighorn Museum of Amateur Radio** will hold its annual open house, swapfest and barbecue on 05 July from 8 a.m. to 4 p.m. at the Museum, located at 301 Main Street in Genoa. For additional information, contact Don Zielinski, KØPV at 719/763-2296 or e-mail cbh.museum @juno.com or write the Museum at P.O. Box DX, Genoa, CO 80818. Talk-in on 447.650 repeater.

Illinois

The **Rockford ARA** will hold the Rockford Hamfest and Computerfair on 26 July from 8 a.m. (setup the night before from 5-9 p.m. and Sat. morning 6-7:45 a.m.). Features include CW receiving contest and HF radio tossing contest, computer, radio, antenna items, new and used connectors, electronics, tailgating, flea market inside tables, outside vendors, large drive-in unloading/loading. Admission $5 at the gate (ages 10 and under free), wall tables $15, regular tables $10. All have electricity, one chair furnished per table (bring your own extension cord). Talk-in on 146.61(-) PL 114.8.

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The **Fox River Radio League** will hold a hamfest on 13 July from 8 a.m. (vendor setup after 7 p.m. Saturday or 6-8 a.m. Sunday) at the Waubonsee Community College (Route 47 and Harter Rd.) in Sugar Grove. Commercial dealers, computer vendors, huge outdoor flea market, VE exams (10 a.m., bring original license, copy of license and photo ID), free parking, refreshments. Admission is $4/advance, $5/door, tables $12. For information, contact Diana, Skube, WD9API, c/o FRRL, P.O. Box 673, Batavia, IL 60510; 630/293-7485. Talk-in on 147.210(+) (PL 103.5/ 107.2).

Maryland

The **Baltimore Radio Amateur Television Society** will hold the Maryland Hamfest and Computerfest on 27 July from 8 a.m. (setup may bein at 2 p.m. on Saturday) at the Timonium Fairgrounds. Tailgating/flea market area opens at 6 a.m. Admission is $5 per adult (children under 12 are free). Outdoor tailgating spaces are $7 each. Features include a wide range of Amateur Radio and computer equipment, surplus military and commercial electronics, test equipment, and other assorted radio and computer parts, supplies, and accessories. For information, see our web page at http:// www.smart.net/~brats; e-mail brats@ smart.net; call or fax 410/467-4634; or write BRATS Hamfest, P.O. Box 5915, Baltimore, MD 21282. Talk-in on 147.03(+) and 224.96(-).

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The **MidAtlantic DX & Repeater Association** will hold their Sweatfest '97 on 20 July at the MARC Train Station in Brunswick. Features include seminars, flea market, demonstrations, VE exams (9 a.m.), commercial vendors. For information write MADRA, 230 N. Potomac St., Suite 2A, Hagerstown, MD 21740; 310/416-8447; web site http:// members.aol.com/madraclub; e-mail madraclub@AOL.COM Talk-in on 147.060(+) and 448.125 (+) repeaters.

Michigan

The **Straits Area ARC** will hold a swap and shop on 12 July 8 a.m. to 1 p.m. at the Emmet County Fairgrounds 4-H Building in Petoskey. Features include exhibits and refreshments. Admission at the door is $3, tables are $5. For more information, call Jim, KC8FFS, at 616/537-2422. For VE exam information, call Floyd, KG8CS, at 616/526-5503. Talk-in on 146.68(-).

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The **AuSable Valley ARCs** willhold their annual swap-n-shop on 19 July from 8 a.m. (vendors 7 a.m.) at the Mio AuSable High School, on M-72, one mile west of the blinker in Mio. Plenty of free parking. Admission is $4, tables $5, trunk sales $2. For more information, send an SASE to AuSable Valley ARC, P.O. Box 1, Mio, MI 48647; 517/848-5996 or 517/ 826-6454. Talk-in on 145.35(+) or 146.52(S).

New York

The **Genesee Radio Amateurs, Inc. (GRAM)** will hold the 1997 Batavia Hamfest on 13 July from 6 a.m. to 4 p.m. at the Alexander Firemen's Recreation Grounds (NYS Thruway [I-90] to Exit 48 [Batavia]. Take Route 98, just south of the Village). Admission is $4/advance, $5/gate (under 12, free). Make checks payable to GRAM. Send large SASE to Cheryl Wittman, KB2ZFH, 39 S. Lake Ave., Bergen, NY 14416; 716/494-1506. Flea market space $2 (8'), $4 (8' covered space). No charge for overnight camping. For information, call 716/ 786-3622 or e-mail carlson@frontier .net. Talk-in on 147.885(-) W2RCX repeater.

North Carolina

The **Western Carolina ARS** will hold its 22nd annual hamfest on 26 July from 8 a.m. to 4 p.m. at the Haywood County (NC) Fairgrounds, Exit 24 off Interstate 40 then south on Hwy 209, 3 miles. Dealers, flea market, tailgating. Admission $4/advance, $5/gate. Free parking. Food and re-

freshments by Haywood County Shrine Club. VE testing 2 p.m. (contact Normal Harrill, N4NH, 704/253-1192.) For dealer/covered flea market info, contact Dan Henderson, N1ND, 704/684-6339. For tickets: Bob Helton, KS4FX, P.O. Box 1488, Asheville, NC 28802; general information: Tommy Queen, K4BNP, 704/258-2639.

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The **North Carolina Alligators Group** will hold their Firecracker Hamfest on 05 July from 8 a.m. (vendors 6 a.m.) to 1 p.m. at the Salisbury Civic Center (from Interstate #85, take Hwy #52 west/east Inns St., turn left on South Boundary Street). Admission is $3/advance with SASE or $4/door (XYLs are free). Auction of goods will be at 1 p.m. Hot dogs, cold drinks and coffee will be available all day. Tables are $5, no charge for any of the outside flea market spaces. For additional information, contact Walter (Alligator) Bastow, N4KVF, 3045 High Rock Rd., Gold Hill, NC 28071; 704/279-3391. Talk-in on 146.625.

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The **Cary ARC** will hold their 25th annual Cary Mid-Summer Swapfest on 19 July from 8 a.m. Features include dealers, prizes, examinations, forums. Admission $4/advance, $5/gate. Preregister by 01 July. Mail to: Cary ARC, P.O. Box 53, Cary, NC 27512. Include SASE (no SASE, tickets will be held at the door). Talk-in on 147.15(+).

Ohio

The **Van Wert ARC** will hold their 10th annual hamfest on 20 July from 8 a.m. to 3 p.m. (vendor setup 6 a.m.) at the Van Wert County Fairgrounds, on U.S. 127 South. Admission is $4, parking is free, overnight parking $10, tables $10 (8 ft.). VE exams given with preregistration by 13 July. Send SASE or call Bob High, KA8IAF, 12838 Tomlinson Rd., Rockford, OH 45882; 419/795-5763. For table reservations send SASE with your name and address to: VWARC, P.O. Box 602, Van Wert, OH 45891. Telephone Bob, WD8LPY at 419/238-1877. To place an order on the Internet go to: barnesrl@bright.net or http://www .bright.net/~barnesrl/w8fy.htm Talk-in on 146.85(-).

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The **Triangle ARC** will hold a hamfest on 06 July from 8 a.m. to 3 p.m. at the Columbiana County Fairgrounds in Lisbon. Acres of outside flea market spaces ($1 per vehicle). Admission $5. Indoor tables (limited) $8 plus admission. SASE to Dick Sisley, K8JKB, 1218 Northside Ave., East Liverpool, OH 43920; 330/385-1245. Talk-in on 146.70(-), and 146.805(-) repeaters.

Oklahoma

The **Central Oklahoma Radio Amateurs, Inc.** will sponsor their 24th annual "Ham Holidays '97," 25 July from 5-8 p.m. and 26 July from 8 a.m. to 5 p.m. at the Oklahoma State Fair Park (Hobbies, Arts & Crafts Building), northeast of the I-40 & I-44 intersection. Features include technical and nontechnical programs, Fox Hunt, VE testing, flea market. Admission $7/advance, $9/door. Flea market tables $10/advance, $15/door (if available). Additional information and registration forms available on the CORA web site: http://www.geocities.com/heartland/7332. Address other inquiries to Ham Holidays '97, P.O. Box 95942, Oklahoma City, OK 73143 or e-mail n1lpn@swbell.net Talk-in on 146.82(-).

Oregon

The **Coos County ARC** will hold their annual hamfest on 19 July from 9 a.m. to 3 p.m. at the North Bend Junior High School in Coos Bay/North Bend, Oregon. Shopping centers and restaurants within walking distance. There will be hourly drawings for door prizes with the grand prize drawing at 2 p.m. Admission is $3/advance, $4/door. Tables are $10/non-commercial, $20/commercial. Free RV parking (no hookups) available from Friday evening until Sunday afternoon. For more information, contact Hugh MacDonald, N7OKM at 541/347-7019, or Bob Mason, N7DCD, 599½ N. Cedar St., Coquille, OR 97423; 541/396-4479. Talk-in on 146.61(-) K7CCH repeater.

Pennsylvania

The **Harrisburg Radio Amateur Club** will hold its Firecracker Hamfest on 04 July from 8 a.m. to 2 p.m. at the Monagahan Fire Hall, in Dillsburg. Prizes, food, VE testing. Admission is $4, tables $12. For information, call the HRAC AnswerLine at 717/232-6087. Talk-in on 146.76(-).

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The **North Hills ARC** will hold a hamfest on 13 July from 8 a.m. to 3 p.m. at the Northland Public Library, 300 Cumberland Rd., Pittsburgh. Free admission and free parking. One free automobile-sized space per tailgater; each additional space $5. Handicapped and wheelchair accessible. Refreshments will be available. For additional information, contact Bob Ferrey, Jr., N3DOK, at 412/367-2393, or via e-mail at bferrey@nauticom.net or through the North Hills Amateur Radio Club's web site at http://nharc.pgh.pa.us Talk-in on W3EXW 147.09(+) repeater.

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The **Mid-Atlantic ARC** will hold a hamfest on 13 July from 7 a.m. at the Kimberton Fire Company Fairgrounds, Route 113 — south of the intersection at Route 23. Admission $5. Tables $10 each (1-4); 5 or more tables $8 each, (does not include admission). MARC, P.O. Box 352, Villanova, PA 19085; or call Bob Haase, W3SA, 610/293-1919; fax 610/293-7688; e-mail wb3joe@voice net.com. Talk-in on 146.835(-) and 443.80 PL 131.8.

Wisconsin

The **Racine Megacycle Club** will hold its annual swapfest on 27 July from 8 a.m. to 2 p.m. at the South Hills Country Club located west of Racine on the I-94 east frontage road between Highway 20 and County Road K. Features include tailgate and air-conditioned indoor individual and commercial exhibits of ham gear, computer and other electronic parts and equipment, free forums, ham license testing, refreshments available. Admission $4/advance (plus SASE), $5/door, tables $8. Contact the Racine Megacycle Club, P.O. Box 3, Racine, WI 53401. For more information, call Dave Voss, WB9USI, 414/554-7565. Talk-in on 147.87(-). **WR**

Science is the orderly arrangement of what, at the moment, seem to be the facts. —anonymous

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

Comet SMA-501 antenna

Comet makes several HT antennas designed with an SMA type connector. Many new generation handhelds use this connector including the Yaesu FT-50R and the Standard C-508A. Pictured is the FT-50R with the Comet SMA-501 dualband antenna. It is only 1.75" tall, the perfect size for either radio. It radiates a 1/4-wave on both 2M and 70 cm, and works surprisingly well.

The SMA-3 is 9.75" tall. The SMA-503 is a mid-size antenna, with a very thin, light, and flexible whip, 8.5" tall. All are now available at most major dealers. For more information, contact NCG Company at 1275 N. Grove St., Anaheim, CA 92806; 800/962-2611 or visit their web site: http://www.cometantenna.com

Celtronics Battery Systems

Re-energize all types of Ni-Cd, Nickel Metal Hydride and Lithium Ion rechargeable batteries and never worry about tired batteries again.

The electro chemical imbalance caused by the normal use and recharge of the Ni-Cd, Nickel Metal Hydride and Lithium Ion chemistries is completely reversible with our Celtronic Battery Saver Systems.

A patented industry-proven technology guarantees to re-energize to full capacity all serviceable batteries used in 2-way radios, cordless tools, cell phones, laptop computers, video cameras, survey and emergency equipment and more.

If you use battery-powered equipment or work at home, a Celtronic Battery Saver System can be the most important investment you make.

This is an effective, affordable, and fully-guaranteed product.

For information, contact Tim Day, Wenco Electronics, 1224 NE Walnut, #207, Roseburg, OR 97470; 888/258-8787 or fax 541/459-5294.

"Wizard" HF propagation prediction software

Kangaroo Tabor Software introduces "Wizard" for Windows®: Powerful HF propagation prediction software. "Wizard takes an innovative approach to personalized ham propagation analysis, with 'Smart Report,' featuring signal-quality evaluation," announced Jim Tabor, software developer and founder of Kangaroo Tabor Software.

In short, Wizard clarifies the highly specialized data created by its fast 32-bit IonCAP+ prediction engine. The result is ham-specific concise table-view reporting that is easily understood at a glance.

Point-and-click Smart Reports, include:

- Best Band Summary: An hourly look at the band most likely to provide the best quality for a communication circuit.
- All Band Summary: A 24-hour report on the expected circuit quality (poor, fair, good, excellent) by hour for each ham band.
- Band Summary+: Adds additional data for your consideration including — percent probability of circuit support, mode of propagation and antenna take off angle.
- Dynamic Band Summary: toggle quickly between CW or SSB modes, signal quality, S/N ration, antenna take off angle, propagation mode and service probability.

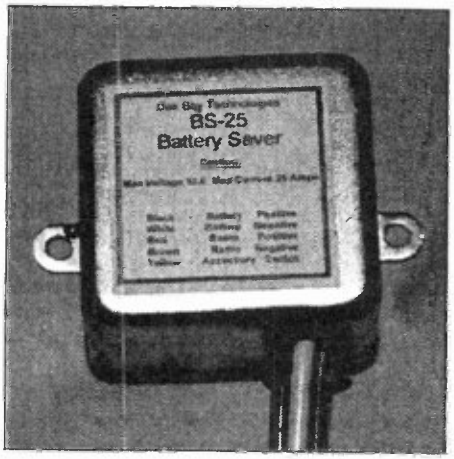
An intelligent Mercator world map is dynamically linked to a full-featured database that includes DXCC list and U.S. counties.

Plot database locations on the map and find database entries by clicking the map. Active-Status indicators show latitude/longitude, grid square, distance, azimuth and sunrise/sunset times as you move your mouse.

Wizard requires Windows® 3.1 or '95 and a 486DX or better CPU. Introductory price of $29.95 plus $5 S/H for USPS priority mail, outside U.S.A., please add $2.

For more information, contact Kangaroo Tabor Software, Rt. 2 Box 106, Farwell, TX 79325-9430; e-mail

ku5s@wtrt.net; web site http://www.wtrt.net/~ku5s. Order by sending check or money order to the above address or fax 806/225-4006 with Visa/MC number and expiration date. Please state where you learned about Wizard.



Save your car's battery

Oak Bay Technologies new addition to their two-way radio accessory line could save you from a dead car battery. The BS-25 Automatic Battery Saver module installs between your mobile radio equipment and the vehicles battery, automatically removing power from the mobile radio or accessory shortly after the ignition switch is turned off.

Power to the transceiver or accessory is routed through the BS-25 and is controlled by the ignition/accessory switch in the car. Once the ignition/accessory switch is turned on, the BS-25 module begins supplying power. When the ignition/accessory switch is turned off the BS-25 module internal circuitry takes over, and continues to provide power for an additional 4 to 8 minutes, plenty of time to end a QSO in progress. When asked about the BS-25 benefits, Oak Bay Technologies President Mark McKibbin said, "Not only will the BS-25 prevent dead car batteries for those of us who are forgetful and leave our equipment on, the BS-25 promotes proper transceiver wiring directly to the battery."

Rated to handle high-current radios, mobile amplifiers and other accessories up to 25 amps at 14.8 volts. The BS-25 module is housed in a rugged steel-cad plated enclosure for durability and measures only 2" x 2"x 1¼" The BS-25 comes complete with fuse, installation instructions and has the Oak Bay Technologies one year warranty.

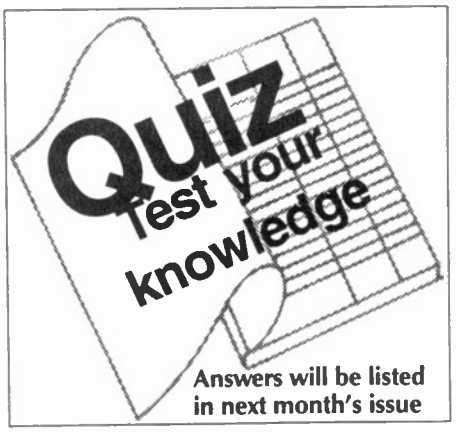
Suggested retail price for the BS-25 is $39.95. For additional information contact your nearest dealer or Oak Bay Technologies, Inc. P.O. Box 65494, Port Ludlow, WA 98365. Phone: 360/437-0718 or visit their web site at http://www.members.aol.com/oakbaytec>

MJ-500 Deluxe Micro-Jet™ Torch

Solder-It Company announces their new Deluxe Micro-Jet™ Torch (MJ-500) based on the popular *Fuel Cell Technology* of their standard Micro-Jet™ Torch. The new ergonomically designed Micro-Jet™ Butane Torch produces a pinpoint 2400F flame and is fueled by a refillable butane fuel cell (included) or by readily available disposable cigarette lighters. Additional new features include a front-trigger ignition and chain-secured nozzle safety cap. Included with the MJ-500 is a free syringe of Solder-It Silver Bearing Low Temperature Solder Paste. Use Micro-Jet™ for coax connectors, emergency repairs, camping, crafts, electronics, heat shrink tubing, and hundreds of other household, hobby, and professional repair applications. Order MJ-500 for $24.95 + $5 S/H (check, Visa, Mastercard) from Solder-It Co., P.O. Box 20100, Cleveland, OH 44120. 800/897-8989. Visit our web site at: http://www.solder-it.com for more info. **WR**

Reflections

Take a moment to reflect on what experiences you've had in Amateur Radio. If you have something to share with ***Worldradio*** readers, write an article! All your news, features and letters are happily accepted at our 28th Street offices (2120 28th St., Sacramento, CA 95818).



The answers to the quiz questions for last month are: 185. B; 186. D; 187. D; 188. B; 189. D; 190. C; 191. D; 192. C; 193. C; 194. B; 195. C; 196. C; 197. A; 198. B; 199. B; 200. B; 201. B; 202. A; 203. A; 204. C

205. What are the elements of a unijunction transistor?
A. Base 1, base 2 and emitter
B. Gate, cathode and anode
C. Gate, base 1 and base 2
D. Gate, source and sink

206. For best efficiency and stability, where on the load-line should a solid-state power amplifier be operated?
A. Just below the saturation point
B. Just above the saturation point
C. At the saturation point
D. At 1.414 times the saturation point

207. What two elements widely used in semiconductor devices exhibit both metallic and non-metallic characteristics?
A. Silicon and gold
B. Silicon and germanium
C. Galena and germanium
D. Galena and bismuth

208. What are the three terminals of an SCR?
A. Anode, cathode and gate
B. Gate, source and sink
C. Base, collector and emitter
D. Gate, base 1 and base 2

209. What are the two stable operating conditions of an SCR?
A. Conducting and nonconducting
B. Oscillating and quiescent
C. Forward conducting and reverse conducting
D. NPN conduction and PNP conduction

210. When an SCR is in the triggered or on condition, its electrical characteristics are similar to what other solid-state device (as measured between its cathode and anode)?
A. The junction diode
B. The tunnel diode
C. The hot-carrier diode
D. The varactor diode

211. Under what operating condition does an SCR exhibit electrical characteristics similar to a forward-biased silicon rectifier?
A. During a switching transition
B. When it is used as a detector
C. When it is gated "off"
D. When it is gated "on"

212. What is the transistor called which is fabricated as two complementary SCRs in parallel with a common gate terminal?
A. TRIAC
B. Bilateral SCR
C. Unijunction transistor
D. Field effect transistor

213. What are the three terminals of a TRIAC?
A. Emitter, base 1 and base 2
B. Gate, anode 1 and anode 2
C. Base, emitter and collector
D. Gate, source and sink

214. What is the normal operating voltage and current for a light-emitting diode?
A. 60 volts and 20 mA
B. 5 volts and 50 mA
C. 1.7 volts and 20 mA
D. 0.7 volts and 60 mA

215. What type of bias is required for an LED to produce luminescence?
A. Reverse bias C. Zero bias
B. Forward bias D. Inductive bias

216. What are the advantages of using an LED?
A. Low power consumption and long life
B. High lumens per cm per cm and low power consumption
C. High lumens per cm per cm and low voltage requirement
D. A current flows when the device is exposed to a light source

217. What colors are available in LEDs?
A. Yellow, blue, red and brown
B. Red, violet, yellow and peach
C. Violet, blue, orange and red
D. Red, green, orange and yellow

218. What type neon lamp is usually used in amateur radio work?
A. NE-1 C. NE-3
B. NE-2 D. NE-4

219. What is the DC starting voltage for an NE-2 neon lamp?
A. Approximately 67 volts
B. Approximately 5 volts
C. Approximately 5.6 volts
D. Approximately 110 volts

220. What is the AC starting voltage for an NE-2 neon lamp?
A. Approximately 110-V AC RMS
B. Approximately 5-V AC RMS
C. Approximately 5.6-V AC RMS
D. Approximately 48-V AC RMS

221. How can a neon lamp be used to check for the presence of RF?
A. A neon lamp will go out in the presence of RF
B. A neon lamp will change color in the presence of RF
C. A neon lamp will light only in the presence of very low frequency RF
D. A neon lamp will light in the presence of RF

222. What would be the bandwidth of a good crystal lattice band-pass filter for a single-sideband phone emission?
A. 6 kHz at -6 dB
B. 2.1 kHz at -6 dB
C. 500 Hz at -6 dB
D. 15 kHz at -6 dB

223. What would be the bandwidth of a good crystal lattice band-pass filter for a double-sideband phone emission?
A. 1 kHz at -6 dB
B. 500 Hz at -6 dB
C. 6 kHz at -6 dB
D. 15 kHz at -6 dB

224. What is a crystal lattice filter?
A. A power supply filter made with crisscrossed quartz crystals
B. An audio filter made with 4 quartz crystals at 1-kHz intervals
C. A filter with infinitely wide and shallow skirts made using quartz crystals
D. A filter with narrow bandwidth and steep skirts made using quartz crystals

225. What technique can be used to construct low cost, high performance crystal lattice filters?
A. Splitting and tumbling
B. Tumbling and grinding
C. Etching and splitting
D. Etching and grinding

226. What determines the bandwidth and response shape in a crystal lattice filter?
A. The relative frequencies of the individual crystals
B. The center frequency chosen for the filter
C. The amplitude of the RF stage preceding the filter
D. The amplitude of the signals passing through the filter

227. What is a linear electronic voltage regulator?
A. A regulator that has a ramp voltage as its output
B. A regulator in which the pass transistor switches from the "off" state to the "on" state
C. A regulator in which the control device is switched on or off, with the duty cycle proportional to the line or load conditions
D. A regulator in which the conduction of a control element is varied in direct proportion to the line voltage or load current

VE exam schedules

As a service to our readers, ***Worldradio*** presents a feature listing of 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 October, please have the information to us by mid-July.

Worldradio, 2120 28th St., Sacramento, CA 95818.

Please mark the envelope "VE Exams."

List the location (City), any information examinees should have (advance registration, etc.) and the name and telephone number of a person to contact for further information. Examinees should bring their original license (along with a photo copy) two forms of identification (at least one should be a photo), and required fee.

p/r pref. = pre-register preferred but w/i OK
p/r = pre-register only — no w/i

w/i pref. = w/i preferred to p/r
w/i = walk-in only

State	City	Contact	Notes
Alabama			
8/05/97	Mobile	David, WA4VAC 205/649-5229	
Arizona			
8/09/97	Tucson	Joe, K7OPX 520/886-7217	w/i
Arkansas			
8/09/97	Siloam Sprgs.	Mike, KJ5OP 501/524-8090	p/r
California			
8/09/97	Brea	Robert, KD6DA 310/691-1514	p/r
8/03/97	Chico	Jackie, W6YKU 916/342-1180	p/r pref.
8/28/97	Colton	Harold, AB6RN 909/825-7136 days or 909/685-6073 eves	p/r pref.
8/03/97	Concord	Gene, WW6H 510/254-5090	w/i only
8/30/97	Culver City	Scott, K6PYP 310/459-0337 or Dave N3BKV 818/559-2572	w/i
8/09/97	Culver City	Clive, AA6TZ 310/827-2538	p/r pref.
8/02/97	Cupertino	Emmett, AE6Z 408/243-8349	w/i only
8/16/97	Downey	Wes, KA3DSE 310/923-5598	p/r pref.
8/30/97	Escondido	Harry, WA6YOO 760/743-4212	p/r
8/21/97	Ftn. Valley	Allan, AB6UB 714/531-6707	p/r pref.
8/05/97	Fremont	Dennis, K6DF 510/791-0954	w/i only
8/08/97	Glenn Ellen	Jim, 707/996-6461	p/r pref.
8/02/97	Lake Isabella	Hotline 619/379-2947	p/r pref.
8/16/97	Long Beach	Donald, NN6Q 310/420-9480	p/r pref.
8/18/97	Mission Viejo	Louis, 714/951-0336	p/r
8/09/97	Murphys	Lynn, AC6CY 209/736-4337	p/r pref.
8/02/97	Ontario	Gary & Pamona 818/810-0442	
8/12/97	Palm Desert	Don, W6EEN 760/345-8780	p/r pref.
8/30/97	Pomona	Don, WA6HNC 909/949-0059	p/r pref.
8/16/97	Redwood City	Joe, KB6OWG 408/255-9000	w/i only
8/10/97	Sacramento	Dick, N6DK 916/383-2113	p/r pref.
8/09/97	San Pedro	Elvin, N6DYZ 310/325-2965	p/r pref.
8/13/97	Santa Ana	Red Cross 714/835-5381 x140	w/i
8/16/97	Stockton	Mark, W6DKI 209/465-7496	w/i
8/09/97	Sunnyvale 1	John, KG6XF or Gordon, W6NW 408/255-9000	w/i only
Colorado			
8/09/97	Denver	Glenn, WØIJR 303/366-0155	w/i pref.
8/02/97	Littleton	Dave, NØHEQ 303/795-5718	w/i pref.
Connecticut			
8/08/97	Stamford	Tom, WB1L 203/363-0319 or Marv, N1AWJ 203/438-7889	
8/21/97	Trumbull	Kevin, N1KGM 203/268-5015 or Bob, KA1ZMF 203/933-9587	
Florida			
8/14/97	Ft. Myers	Norm, AF4AZ 941/694-2505	w/i
8/03/97	Jacksonville	Register at the convention on 08/02/97 (10 a.m. to 2 p.m.)	p/r pref.
8/16/97	Melbourne	Bill, WB9IVR 407/724-6183	p/r pref.
8/28/97	Pensacola	Steve, KO4TT 904/968-1092	
8/21/97	Vero Beach	Roger, K4RS 561/567-3979	w/i
Idaho			
8/09/97	Boise	Lem, W7JMH 208/343-9153	w/i pref.
Illinois			
8/16/97	Morton	James, NT9C 309/266-6756	p/r pref.
8/09/97	Oak Forest	David, NF9N 708/448-0580	p/r pref.

State	City	Contact	Notes
Indiana			
8/09/97	Chesterton	Bill, N9SLQ 219/762-2887	w/i pref.
8/20/97	Indianapolis	Tom, N9LFU 317/326-3168	p/r
8/03/97	Terre Haute	Fred, K9EBK 812/466-2122	p/r pref.
Iowa			
8/30/97	Council Bluffs	Lorraine, AAØBS 712/322-1454	p/r pref.
Maryland			
8/26/97	Annapolis	Lois, KA3VVQ 410/647-4178	p/r pref.
Massachusetts			
8/16/97	Melrose	Scott, WB1F 617/665-7654	p/r pref.
Michigan			
8/02/97	Iron Mountain	Fuzzy, WD8HDP 906/246-3641	p/r pref.
Nevada			
8/16/97	Reno	Steve, W7VI 702/972-3672	p/r
8/09/97	Reno	Don, W7FD 702/851-1176	p/r
New Jersey			
8/21/97	Bellmawr	Diane, N2LCQ 609/227-6281	w/i
8/09/97	Cranford	24-hour hotline 201/377-4790	w/i pref.
8/23/97	Dennisville	John, AA2TZ 609/884-8117	w/i pref.
8/13/97	Ft. Monmouth	Jerry, WB2GYS 908/532-5354	p/r pref.
8/04/97	Sayreville	Larry Makoski, N2ELW 908/390-5857	w/i pref.
New York			
8/12/97	Bethpage	Bob, W2ILP 516/499-2214	w/i pref.
8/03/97	Yonkers	Emily, AC2V 914/237-5589	p/r pref.
Ohio			
8/02/97	Cincinnati	Herb, WA8PBW 513/891-7556	p/r pref.
Oregon			
8/18/97	Medford	Dale, N7IXS 541/772-6865 or Rick, KG7PX 541/779-3404	p/r pref.
8/13/97	Roseburg	Dick, AA7GC 541/672-7564	p/r pref.
Pennsylvania			
8/02/97	Erie	Norma, W3CG 814/665-9124	w/i only
8/07/97	Philadelphia	Dusty, ND3Q 215/879-0505, 215/448-1139(tape)	p/r pref.
Rhode Island			
8/14/97	Providence	Judy, KC1RI 401/231-9156 or Al, NN1U 401/454-6848	w/i pref.
8/30/97	Slatersville	Bob, W1YRC 401/333-2129 or 401/333-2373	
South Dakota			
8/09/97	Rapid City	Frank, NUØF 605/348-6564	p/r pref.
Texas			
8/16/97	Austin	Jim, AB5EK 512/327-6184	w/i
8/09/97	Brownsville	Bob, K5VC 210/542-7449 (days) or 210/546-4779 (eves)	p/r pref.
8/14/97	Ft. Worth	Ted, AB5QU 817/293-6745	p/r
8/12/97	Houston	Harold, ND5F 713/464-9044	p/r pref.
Vermont			
8/22/97	Essex Jct.	Mitch, W1SJ 802/879-6589	p/r pref.
Wisconsin			
8/02/97	Hudson	Greg, KB9JHL 715/386-9857	w/i pref.

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Two men, children rescued in high desert

Mike Higgins, KA6IYS

Two men and their children were rescued by the Indian Wells Valley Search and Rescue unit after spending the night in Last Chance Canyon near Red Rock Canyon State Recreation Area, California, last February.

Kenn Musselman of Newberry Park set out on a Sunday with his 5-year-old son for a day of exploring in the Randsburg area. His friend Mark Ray and his 5-year-old daughter also came along.

By late in the day, they had taken several turnoffs into the El Paso Maintains and were lost in the maze of trails and box canyons.

"We went out there a little too late, took a wrong turn and it got dark," Musselman said. "I just figured [that] before we got hurt or anything else happened, I should just call for help."

Musselman (call sign unavailable) used his radio, and calling from his Chevy Blazer, reached George Grimshaw, a ham in California City who contacted the Sheriff's Department.

"He did very well," said Sgt. John Diederich, SAR coordinator for the Kern County Sheriff's Department "He had food. He had water. He had good equipment with him, and he did the right thing — he stayed put."

Twelve members of the Indian Wells Valley SAR unit were called into action, and began scouring the area where the men believed they were. Compass readings given by Musselman turned out to be inaccurate, something Dierderich attributed to the iron ore content in the mountains.

Musselman and Ray stayed up all night keeping in touch with Search and Rescue and the ham operators.

The children slept through most of the night as the two men flashed the headlights and spotlights to help rescuers locate them.

After they were found and safely brought out, they then decided that it had been quite an adventure! —*Coachella Valley ARC*

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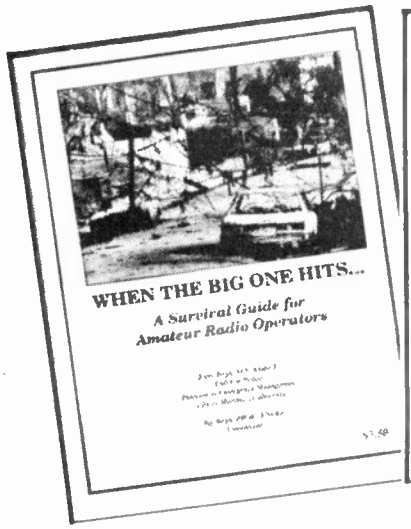

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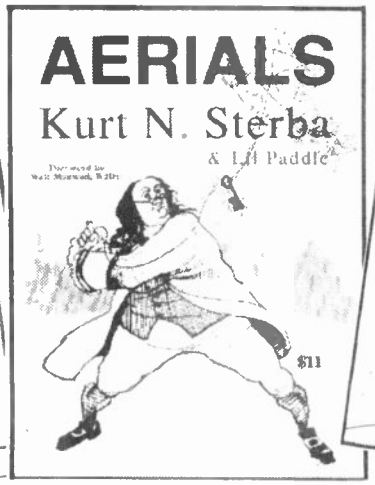

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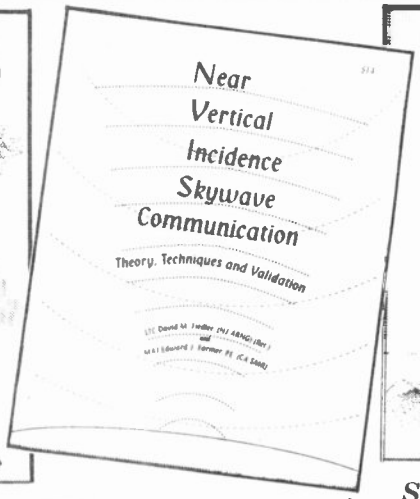

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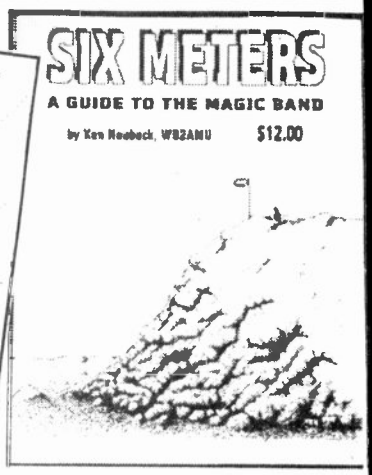

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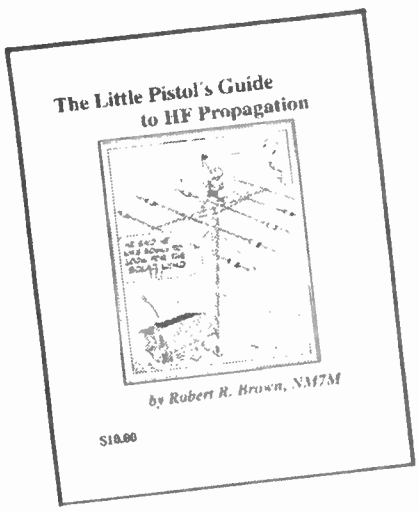

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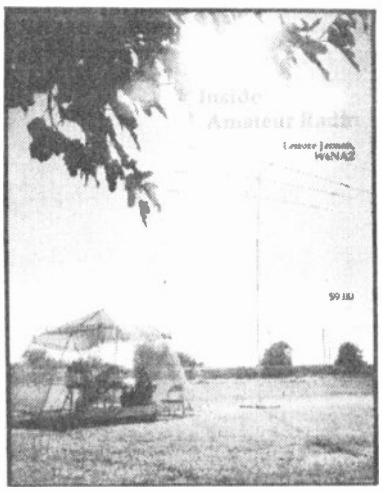

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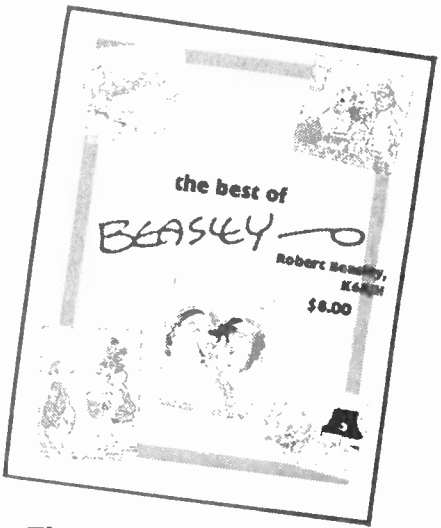

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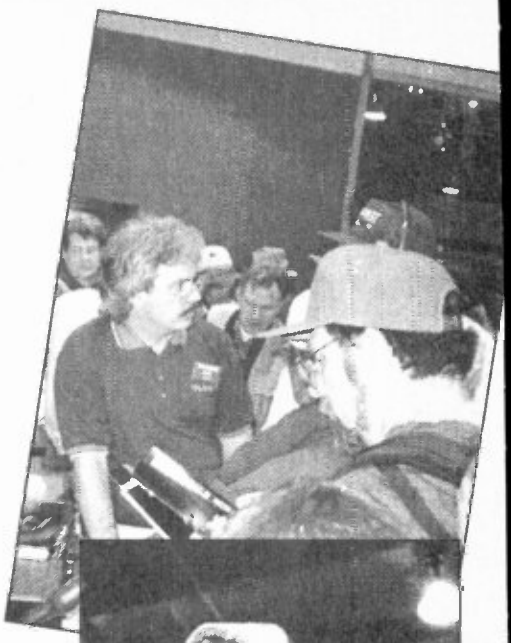

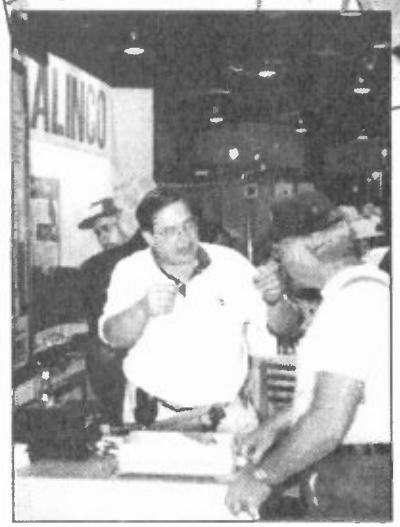

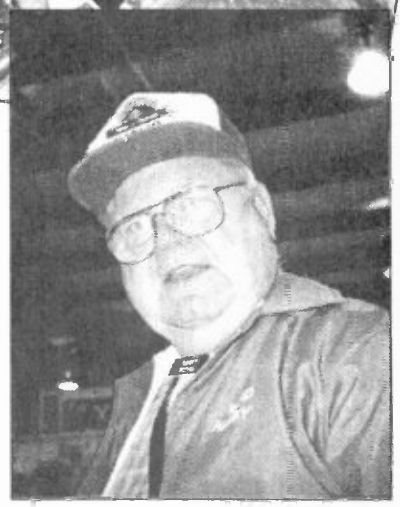

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