Worldradio

Year 23, Issue 12 June 1994 • $1.25

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Katashi Nose, KH6IJ

We regret to inform you that Katashi Nose, KH6IJ, passed away on 7 April, 1994 at the age of 79. He had suffered a severe stroke on 27 March, 1994, almost exactly 15 years after suffering an initial stroke. Funeral services were held 13 April, 1994.

KH6IJ was born in Honolulu on 27 July, 1915, the second son of Jusaku and Tokino Nose, who had emigrated to Hawaii from Fukuoka, Japan. His older brother Ryuitsu settled permanently in Fukuoka, where he was a political and economic advisor to the American Counsul in Fukuoka City.

KH6IJ, once called "the Pacific powerhouse," was first licensed as K6CGK in 1932. In 1937, he became the first ham in Hawaii to earn the ARRL's Worked All States award — the first WAS ever issued outside the continental United States. In 1948, he became the first ham in Hawaii to earn the ARRL's Worked All Zones and DXCC awards. He received his Extra Class license in 1952, the fifth ham in the United States to earn this ticket. Noted as a contest op and DXer, he also patiently worked and tutored Novices on 15 and 10 meters. The Dayton HamVention 1983 "Amateur of the Year Award" was just one of the many honors awarded to him.

Matsuyo and Katashi Nose, KH6IJ.

For 56 years, KH6IJ wrote a newspaper column on Amateur Radio for the *Honolulu Star-Bulletin*. He also authored countless articles for Amateur Radio magazines.

Katashi earned a bachelor's degree from the University of Hawaii in 1937, and from Harvard University, a master's degree in 1960 and in 1969, a certificate of advanced studies.

He is survived by his wife Matsuyo, son Joseph K. Nose, daughters Elizabeth Nose and Frances McKenney.

Katashi truly enjoyed the fellowship of hams, and we are grateful for the Amateur Radio community's support over the years. — *Information submitted by Mrs. Matsuyo Nose.* WR

Pitcairn ARC

Tom Christian, VR6TC, reports that Pitcairn Island has a newly issued club callsign, VR6PAC.

Pictured left to right are Pitcairn Island's amateurs: Meralda Warren, VR6MW; Kari Young, VR6KY; Irma Christian, VR6ID; Tom Christain, VR6TC; Dave Brown, VR6DB; Mark Elmoos, VR6ME; Brian Young, VR6BX; Dennis Christian, VR6DR; Betty Christian, VR6YL; Trent Christian, VR6TA; Shawn Christian, VR6SC; and in front, Clarice Brown, VR6CB. Raelene Christian, VR6RC, Tom and Betty's daughter, is at present in New Zealand. WR

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— Ted S. Henry

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Sixteen year dearth ended — FCC issues club call sign

NORM BROOKS, K6FO

The FCC has issued an Amateur Radio license for the Don Wallace Museum Radio Club at Rancho Palos Verdes, CA. The call sign, of course, was that held by the late Don Wallace, W6AM.

The announcement was made by Joe Locasio, K5KT, at the International DX Convention at Visalia, CA on 17 April, 1994. Joe is the trustee for the new club station.

Many remembered that the FCC had not issued a club station license for the past sixteen years. Joe proudly showed them the license, and they became believers.

Don Wallace, the late W6AM, passed away in 1985. He was famous as a DXer who had worked every country in the world from his huge "antenna farm" in Rancho Palos Verdes. He was well liked by everyone in DX, and even well known by amateurs not into DX.

It is fitting that an Amateur Radio museum and Amateur Radio Club be established in his honor. **WR**

Clinton names Chong to FCC

President Clinton has selected San Francisco telecommunications lawyer Rachelle B. Chong to fill one of two vacancies at the Federal Communications Commission. Chong, a 34-year-old Republican, would become the FCCs first-ever Asian-American commisioner if confirmed by the Senate. She would replace Sherrie Marshall, whose seat at the FCC has been open for nearly a year. Chong's term would last through mid-1997.

President Clinton also intends to nominate Susan Ness, another communications lawyer as a Commissioner. Ness has worked as a senior lender and as group head in the communications industries division of American Security Bank in Washington. During the mid-1970s she was assistant counsel to the House Banking Committee. She holds a law degree from Boston College Law School and a master's degree in business administration from the Wharton School.

— The Westlink Report

Rwanda

ARRL reports that Paul, F3EXV is safe in Burundi and has been evacuated from Rwanda. He had been operating as 9X5DX. This operator was active from 7O in the past, and donated equipment to 7O1AA. He expects to be operating from Kenya soon.

Coast Guard Ham Club

If you have a current FCC radio Operator license and serve, or served, in the regular U.S. Coast Guard or Reserves, regardless of rank or rate, general service or aviation, you can help establish an informal Coast Guard Ham Operators Club (CGC).

For more details, please send a SASE to RMCS Don Gardner, AD4PT (USCG, Ret.), 3908 Briarwood Ave, High Point, NC 27265-1204.

Peter I QSLs

Cards for the recent 3Y expedition were being printed in Belgium and then shipped to the states.

Jerry Branson, AA6BB, stated that label printing was about seventy five percent complete, and a final mailing expected sometime in May.

He advises SSB QSLs are to sent to AA6BB, with CW and RTTY cards to go to KA6V. *— ARRL Bulletin #20*

Worldradio — your place for news

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Worldradio

June 1994
Vol. 23, No. 12

is published monthly by
Worldradio, Inc.
2120 28th Street
Sacramento, CA 95818 USA
916/457-3655

Subscription Dept.
Worldradio
520 Calvados Ave.,
Sacramento, CA 95815
1-800-366-9192

Second class postage paid at Sacramento, CA & additional offices.
POSTMASTER: Send address changes to **Worldradio Inc.**, P.O. Box 189490, Sacramento, CA 95818 USA

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

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

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

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Subscription rates: $14* per year; $27* for two years; $39* for three years; $140* for life; *$10 extra per year for surface mail delivery outside the U.S. Please remit international postal money order. IRCs will be accepted.

PUBLISHER'S MICROPHONE

Once each year in England is published the Honors List , displaying for all to see, those who deserve knighthood.

We do it once a month. The latest to join the ***Worldradio*** SuperBoosters (Lifetime Subscribers) are:

- Mary Jane Herrington, KA3WWG, Marydel, MD
- Vance Lepierre, W5IJU, Fernandia Beach, FL
- Preston Wegman, WA8NEJ, New Philadelphia, OH
- B. Leon Harschbarger (awaiting call) Greenville, OH
- Charles Schilling, NØMUI, Princeton, MO
- James Howard, AA5R, Austin, TX
- Gabe Sellers, III, (awaiting call) Northglenn, CO
- Gerard Simber, NØJKD, Fort Collins, CO
- Michael Mitchell, KB7WDL, Tucson, AZ
- Gil Robinson, KC6BLF, Upland, CA
- E. William Gruber, KD6BGU, Fontana, CA
- Arthur Schaper, KB6MOL, Yermo, CA
- Antonio Delrio, N6ZGB, Vacaville, CA
- Charles Roesel, KL7JKT, Petersburg, AK

The above mentioned Michael Mitchell, KB7WDL, needs no one to tell him how valuable Amateur Radio can be. On 11 March 1994, while rock climbing, he fell 20 feet and broke his back. Through a repeater he reached Ray Brackstrom, KB7SKV, who dialed 911 and Search and Rescue was contacted.

He was rescued after about 12 hours and is now recovering.

I suppose that thousand of hams have their eyes filled with tears. They were just so overcome with gratitude regarding the W5 who offered to send your completed license renewal Form 610 to the FCC for only $5. You hardly get an offer like that every day.

I'd like to clarify something. It is said that for every one letter a publication receives there are 100 more who feel that way but didn't write.

I did get one steamed letter! A bit ago, in reporting that the number of people signing up to get private pilots licenses had dropped considerably, I suggested that they take a page from the Amateur Radio book and make ground school a lot easier and quit all those hard questions about stall speed and the like.

The letter I received had every sad scenario in it including crashes into the control tower and colliding with a 747, due to poorly qualified pilots.

So to the other 100: I thought that all would interpret my statement as the pointed parody that was intended.

Well, we know one town where amateurs don't get a hard time about antennas and the like. That's Long Lake, Minnesota. Seems the Mayor is the well-known Tod Olson, WØTO, Director of the ARRL Dakota Division.

Speaking about antennas... HOT off the presses from **Worldradio Books** is "More About Cubical Quads" by George McCarthy, W6SUN, (342 countries confirmed). George offers the benefit of his long experience and ideas from other famed Quad devotees. As I mentioned last year, in October I went to George's QTH for the *CQ* WW DX Contest. Getting a full night's sleep both nights, stopping for leisurely meals and chats I worked 84 countries on 20M.

George's book is only $10 plus $2 for shipping and handling. Californians add tax please. And, we're very close to completing our book about Six Meters.

As always, the DX Convention in Visalia was great. Iris Colvin, W6QL, was presented with the Lifetime Achievement Award. And how justly deserved! As I've said before, Lloyd and Iris did SO much more than DXers who (attain acclaim) just by building a massive home station to get the overseas contacts. The Colvins *were* the overseas contacts. They went to some of the countries where the hotels, food, water, sanitation, medical care, etc., are about 180° out from what the comfortable DXer working them is accustomed to.

Oh, woe is me. Dick Norton, N6AA, was passing out papers at the DX Convention to those who had entered the *CQ* WW DX Contest. The sheet contained your "uniques."

What the committee did was take the computer discs from many entrants, load them all, and then, out comes your very own "I can't believe it" sheet. It seems my log entry showed HK2PK, everybody else was working HH2PK. As they should have. My log shows CX3BF, alas, all the others had worked CX7BF. I couldn't believe my sloppy typing. Dick said, "Yours was better than most." I hope he wasn't just saying that.

At the convention I obtained (due to Post Office Regulations I'll not say how) a Daiwa Digital Power Meter DP-810. It reads power average or peak SWR (with alarm) and is nice looking. I have no need for this unit. It retails for about $150. I'll entertain bids. The highest bidder will be notified to make out their check to the Handi-Hams. When I get the check, I'll send it to Handi-Hams, mention the winner in this column and send the meter. Entries close 30 days after this issue goes into the mail.

The highest bidder gets a tax deduction and a bit of feeling helpful in assisting amateurs who have overcome handicaps to become involved in this activity.

— Armond, N6WR

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Specifications subject to change without notice. Specifications guaranteed only within amateur bands. Some accessories and/or options are standard in certain areas. Check with your local Yaesu dealer for specific details.

Ham radio and the emerging information superhighway

BILL PASTERNAK, WA6ITF

The following is a partial excerpt of the remarks of FCC Private Radio Bureau Chief Ralph Haller, N4RH, given on Saturday, 5 February, 1994 at the Tropical Hamboree in Miami Florida.

"There have been several events in history that have really changed the way that people communicate, and the way people live. Among those are the printing press. When the printing press was developed, people were then able to get news that was no more than a few hours or a few days old.

"Radio and television fostered an era that brought information to people within minutes of its happening. The telephone allowed for a real time two way interchange of information. Two-way radio untethered people to be in motion but still be in full communications. Underseas cable and satellites have made it as easy to talk around the world as it is to talk across the street.

"Today we are witnessing a real marriage of technologies that will permit people to communicate from any two locations on earth — maybe even beyond earth someday — doing so in both voice and data modes.

"With digital video compression, I suspect that many of us will actually see the Dick Tracy 'wrist television' in our lifetimes. Not only will we see it, we will own it and use it. . . .

"It is important to remember that with all of the technological changes that are occurring today, it is very important that we as the users and developers of that 'system' make sure that it serves us and that we do not ultimately wind up being driven by it.

"Recently, I had the privilege of attending the facility of a major electronics manufacturer. What I learned really boggles the mind. For a guy who got into radio in the vacuum tube era, the thought of a few million transistors on piece of silicon so small that you literally cannot pick it up — but a machine has to pick it up — is pretty frightening. It's beyond belief. But these devices are real, and they are in use every day in communications equipment that we use and operate.

"It is even more frightening to think about the pace with which technology continues to advance. As we continue to demand more and more from mobile services, there is going to be a greater demand for spectrum and spectrum efficient technologies as well. This is true not only in the commercial world, but in the Amateur Radio world as well. Many of the things that we (FCC) have done — for example the codeless Technician class have brought more people into your ranks. And, that's very good for your service. It shows that your service is healthy, but it also means that you, like the commercial world are going to have to look for more efficient technologies to get all of the communications capacity that you can out of the very valuable spectrum that you have.

"You are fortunate that there are many advances in technology that have helped to improve spectrum efficiency or else we might literally be out of spectrum today. Just recently I granted a waiver for a new technology in the SMR (Special Mobile Radio) band. These are people who provide dispatch services for hire to plumbers and taxi-cab companies and such. That technology promises to be up to forty times as efficient as today's analog FM technology. . . .

"Another SMR company has just put a system in Los Angeles that is up to fifteen times as efficient as the analog technology that they were previously using, and the analog technology that you (Amateur Radio) are using today.

"Paging data rates have increased tremendously. Just a few years ago, pagers required a two second tone burst for activation. Now pagers not only provide paging, but they provide voice messaging. And the signaling rate is up into the kilobits!

"I also find it amusing that the limiting factor on much of the equipment today is not the size of the electronics inside, but keeping the equipment large enough so that a human being can operate it. The calculator industry went though that (evolution) where calculators kept getting smaller and smaller and smaller and finally people could not operate them even though they had many features. So, the limiting factor today is very often the ability of the human being to interface with the equipment.

"How many of you have looked inside of a television set recently? Its about two chips and a picture tube. Compare that to just a few years ago when you had twenty-five or thirty vacuum tubes inside. Technology has just increased exceedingly fast.

"The computer world is another area where the same thing is happening. Only a few years ago mainframe computers were looking at 40 megabyte hard-drives. Now, that's small for a laptop P.C.

"So we have got to think about how we are going to handle this improving technology that gives us so much more capacity, but also, how are we going to handle all of that in the future to be sure that the spectrum is there?

"Cellular is another area. Ten years ago cellular radio did not exist. Today there are fifteen million cellular customers and I suspect that several of you in this room use cellular radio as well.

"What all this means is that the

American public will begin to learn something of the advantages that you learned a long time ago about mobile radio. It is going to be as commonplace for people to have their own version of mobile communications as it is to have a telephone at home or in the office. They will not only learn to depend on that, they will demand it in the future. And with that will come an entirely new way of doing business.

"I foresee a time when you can go anywhere in the world, get off of an airplane, and talk on your wrist communicator to anyone else, anywhere else in the world. If you have a phone call, there will be a system that is smart enough to find you and bring that call to you.

"The Commission just made some landmark decisions in terms of the future. . . the Commission adopted some new rules that will create a new class of mobile radio service called the Commercial Mobile Radio Service (CMRS). Providers of cellular, third party providers of paging and SMR services will all be regulated as common carriers. The system as put in place will preempt all of these people from state entry and rate regulation — a factor that was preventing some of them from providing communications services that they wanted to do in the past.

"We think that this is also going to spur a cycle of entrepreneurial activity and innovation like we have never seen before in the mobile communications area. All types of communications including voice, data, fax and digital messaging will soon be available on portable communicators that you can hold in your hand.

"I say that will soon be available; in fact I have seen them in operation. The Nextel company in Los Angeles has a little communicator that provides all of those functions and more. You can hook up a data terminal to it. It is amazing what is out there!

"All of this technology I think will go two ways. In many of these areas, you as radio Amateurs have developed some of the technologies that are now in place in the commercial side. I think that some of the technologies that are now being developed in the commercial sector are also going to spill over into Amateur equipment as well. So in the near future I think that you are going to see some communications devices that are far beyond what is out there on the exhibit floor today! And you are going to be able to take advantage of those technologies and use them to the fullest.

"It's an exciting time. It is a very exciting time to be involved in communications. We are at the very beginning of what the White House is calling the 'Information Superhighway.' A network that is going to provide communications to you and to others anytime you need it.

"Many of you who are involved in communications are probably familiar with the Internet. . . . With it, you can turn on your computer and 'talk' to almost anyone, anywhere else in the world today. Now it's not wireless, but it will be as soon as wireless data terminals come on-line.

"These kinds of advancements are things that only five years ago could have hardly been thought of. Today they are in existence. And just think for a minute; ponder what the future is going to look like.

"If you look back five years, then look where we are today and then try to project five years out, it is pretty hard to do. And no matter how creative you are, you will probably underestimate what will be there in five years. But that is what makes an exciting time to be in the world of communications.

"The Amateur Radio service, I think, is going to play a major role in the Information Superhighway and the advancements that come on-line in the future. You are the people who have the practical knowledge of communications. You are the people who have come up with some of the innovative networks. Your packet data systems are now very common in the commercial world. I guess what I am saying to you is that while I am not particularly concerned about many more of your frequencies being in jeopardy at this time because there are no plans for that, I am concerned that you continue to move forward and keep pace with the commercial side so that the technologies that you have on the air will in fact provide you with all of the kinds of feature-rich functions that are going to be available to the general public. In fact, you ought to have even more features because you are more qualified. . . .

"It is an exciting time. I hope that you share that view with me because it is really going to make a difference in the way we live in the future.

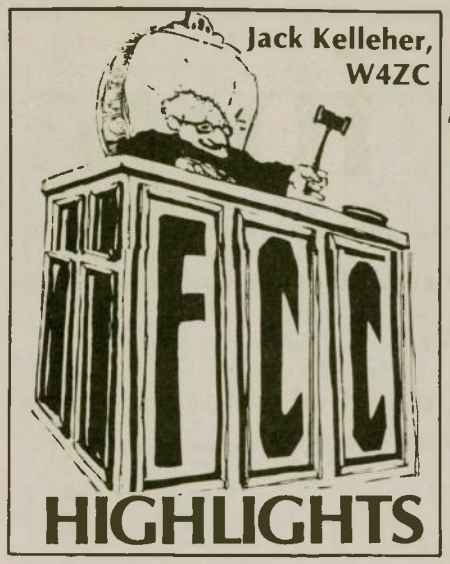
"All of these things are very possible. They are going to happen and they are being planned for today. It is an exciting time and I hope that you make the effort to keep up with what's happening on the commercial side.

"Never before have we had a White House that has as one of its major goals the Information Superhighway and the development of electronics. It is an area that is in the forefront of this country's future and you are a significant part of it." **WR**

Famous phrases

- Don't unplug it, it will just take a moment to fix.
- Let's take the shortcut. He can't see us from there.
- What happens if you touch these two wires tog . . .
- We don't need reservations.
- It's always sunny there this time of year.
- Don't worry. It's not loaded.
- They'd never be stupid enough to make him a manager.

—Amador County ARC
Pine Grove, CA



This month's column is devoted mainly to two items — telephone interference, and "immediate temporary operating authority."

The FCC survey of telephone interference seems to us to be the beginning of more effective regulation in the RFI field. Control of emissions from non-radiating devices is effected via Part 15. The other side of the coin is to require that consumer equipment have a modicum of resistance to interference from RF radiation. Bells and whistles are convenient provided they do not unduly compromise the ability of equipment to perform satisfactorily in a real-world environment. The FCC survey demonstrates that the real-world environment is already "hostile," and will become more so as we turn more and more to "wireless" for our personal and business communications. And it's not only telephones that are "victims," but also home entertainment systems, and home intercoms.

The generally negative comments on the proposal for immediate temporary operating authority indicate that the Amateur Radio fraternity has not forgotten its traditional pride in its ability to regulate itself, and to use its allocated and assigned spectrum responsibly and efficiently. An amateur's call sign is his badge of identity and responsibility. Let's keep it that way.

FCC surveys telephone interference

The FCC has released the results of a telephone interference survey, and concluded that, since some telephones are "bulletproof," all of them should be.

The survey's goals were to pinpoint the following:

- What telephones are affected;
- What type transmitting stations are involved (including power levels);
- Whether commonly available filters are effective in eliminating interference; and
- Whether specially designed telephones are effective in eliminating interference.

Thirty-five FCC field offices each picked three random cases of telephone interference on record, and then visited the scene. The transmitting stations included 47 citizens band, 27 amateur, 23 AM broadcast, 10 FM broadcast, and one international broadcast station. None were specifically identified. The power levels of the transmitting stations varied from two watts to half a million watts, one third of them running less than ten watts

At the location experiencing interference, FCC personnel first tested the telephones on site, then tested their own "bulletproof" telephones, as well as several commercially available filters. Altogether, 241 different telephones were tested.

At the transmitting station, FCC personnel logged the type of station, measured its power, and got information on antenna height, antenna gain, and distance from the complainant.

At the complainant's location, FOB personnel disconnected all telephones, then plugged them, one at a time, into a single jack, while the station was transmitting. Also tested was the effectiveness of several commercially available telephone filters. Finally, FCC personnel connected "bulletproof" telephones to the telephone jacks and listened for interference.

Of the 241 telephones tested, 68% received interference. In tests of the AT&T Z100B1 filter on 138 telephones receiving interference, 62% continued to receive interference. A number of other filters were tested on 82 telephones receiving interference. As a group, these filters eliminated interference on 29% of the telephones, the FCC said.

The FCC tested its "bulletproof" telephones at 52 locations and found them

Amateur Radio Call Signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of the first of April 1994.

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

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
Ø	AAØQT	KGØML		KBØMIQ
1	AA1JB	KD1UG	N1RPQ	KB1BHC
2	AA2RR	KF2UQ	N2YKM	KB2QXV
3	AA3HM	KE3MQ	N3RUC	KB3BBG
4	AD4RD	KR4QD		KE4KXC
5	AB5TP	KJ5WI		KC5GCF
6	AC6BN	KO6AI		KE6GNH
7	AB7BV	KI7XI		KC7BTH
8	AA8ON	KG8HY		KB8SBS
9	AA9KM	KF9UW	N9WPG	KB9IXQ
North Mariana Is.	KHØB	AHØAS	KHØCR	WHØAAY
Guam	WH2D	AH2CU	KH2JL	WH2ANK
Johnston Is.	AH3D	AH3AD	KH3AG	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6NF	WH6TE	WH6CRE
Kure Is.			KH7AA	
American Samoa	AH8J	AH8AG	KH8BF	WH8ABB
Wake Wilkes Peale	AH9C	AH9AD	KH9AE	WH9AAI
Alaska		AL7PP	WL7RN	WL7CHN
Virgin Is.	WP2J	KP2OC	NP2HH	WP2AHU
Puerto Rico		KP4WO		WP4MOC

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96% effective.

Among the FCC's conclusions was that transmitter power did not seem to be a significant factor; they said that 10 watts or less caused telephone interference in one third of the cases.

The FCC said that filters worked only one-third of the time. Manufacturers can design telephones to be interference free, the Commission said, citing its bulletproof telephones, which were immune from interference virtually all of the time.

The FCC said the transmitting stations most likely to cause telephone interference are citizens band, amateur and broadcast stations. Citizens band stations accounted for half the telephone interference cases, while amateur and broadcast stations caused the other half.

The FCC said that telephone interference filters "cannot be relied upon to eliminate interference" since, in two out of three cases in this survey, they didn't work.

The report emphasized that because the survey was based on what the FCC called a random sample "it cannot be claimed that identical results would be derived under scientific surveying and testing, nor should the results be construed as FCC endorsement or criticism of any particular manufacturer's product." The FCC also said, however, that "given the enormous numbers of instances in which this type of interference is experienced by consumers, it is our hope that this survey, notwithstanding its informality, will serve as a catalyst for affected parties to productively address and resolve this problem. As always, FOB remains ready to assist in that effort."

Note: If you would like a copy of the survey, which includes a list of telephone models checked, send an SASE with two units of first-class postage, plus a specific request for the "EMI/RFI FCC Telephone" package, to the ARRL Technical Department Secretary, 225 Main Street, Newington CT 06111. If you are having an interference problem that involves an Amateur Radio station (not CB), you may contact the ARRL for help. The ARRL has other interference information packages available. They also publish the book *Radio Frequency Interference — How to Find It and Fix It*.

FCC information on Internet

The FCC announced in late February that some of its information is now available on the Internet, including the FCC Daily Digest, news releases, some public notices, and the text of speeches by Commission officials. File names are listed on the Daily Digest. The FCC's Internet address is ftp.fcc. gov.

Immediate temporary operating authority

Several months ago we noted an FCC proposal to grant immediate temporary operating authority to examinees who have passed the requirements for their initial amateur radio license. Now, amateurs wait up to 3 months before making their initial contacts, since they do not have a call sign to identify their transmissions.

The proposal envisioned that newcomers would identify their stations for up to a 6-month period by using the prefix "WZ" followed by a geographical area number (determined by the person's mailing address) and three suffix letters representing the first, middle and last initials of their name. An additional two-letter identifier would indicate the license class for which the applicant was qualified.

The comment and reply comment period has expired, and a summary of responses appeared in the March 1st issue of *W5YI* Reports, as follows.

The ARRL opposed the proposal, expressing an opinion that early implementation of electronic filing was a better way to address the problem of delay. The League also raised legal and practical issues.

Seventy seven comments were received by the Commission. The W5YI organization saw none that supported the use of an examinee's initials in the call sign, since there would be no way to determine if the applicant was in fact a qualified operator. Commenters noted that the Citizens Radio Service went to a temporary licensing plan some time ago and now operates on a blanket licensing basis without any call signs.

Some suggested alternative plans for temporary operating authority. W5YI-VEC Inc. suggested that prefix blocks be divided by the FCC among the VEC's for distribution by the VEC's in suffix sub-blocks to the VE's. The VE team would be responsible for assigning and recycling specific temporary call signs to new amateurs. For enforcement purposes, each VE team's suffix sub-block could be made a matter of public record.

Since the ARRL and W5YI VEC programs account for more than 80% of testing, W5YI suggested that the prefix WX be assigned to ARRL, WY to the W5YI-VEC, and all other VECs share the WZ prefix. W5YI-VEC Inc. filed a Request for Special Temporary Authority (STA) to test such a system over a one year trial period, in the event that the FCC is unable to adopt a system which would allow qualified newcomers to immediately begin operating.

In Reply Comments, ARRL restated their belief that electronic filing is the preferred solution, and that the FCC plan was flawed and should not be adopted. It pointed out that present temporary operating authority in other services suffers severe problems with unlicensed operators. The League also opposed any alternative plans, stating that "there is absolutely no statutory basis for delegation of call sign assignment authority... VE-assigned temporary call signs do not solve the problem of accountability; there would still not be any centralized database of call sign assignments that is readily available for checking the validity of a particular use of a call sign." ARRL asked that the Commission ". . . not deprive the Amateur Service of the ability to self-regulate by making the database effectively useless as a means of determining who is licensed with what call sign... The Commission should terminate this proceeding without action, and proceed as soon as it is practical . . . with implementation of electronic filing arrangements . . ." WR

How to work a hamfest

BY PAUL WILKINS, AB4CY

A hamfest serves many purposes: a vendor's new equipment showcase, a miscellaneous spare parts emporium, a used equipment swap and sell and a meeting place for friends, new and old. It's a chance to join a new organization or to buy a new antenna. You might get a personal name tag with your call sign, and who knows what else might happen?

Local ham clubs sponsor most hamfests, and hundreds attend even the smallest, while the larger ones, like the Foundation for Amateur Radio's September gathering at Gaithersburg, MD, draw thousands. The granddaddy of all hamfests in Dayton, OH, attracts 30,000 from all over the world. You must reserve a year in advance for the Dayton HamVention or stay in a motel 50 miles away!

Working a hamfest provides valuable exposure for the new ham, giving a broad overview of the multi-dimensional nature of our hobby. One can see antique radios from the 1920s and 30s, some beautifully restored and some needing TLC. World War II surplus radio equipment, some of it still serviceable or useful for homebrewing parts, will be there. There are early SSB radios made with tubes and without digital readouts. There is even recent equipment, with all the bells and whistles, whose owners have upgraded to the very latest.

The sellers set the prices at hamfests, but prices are negotiable. Often several vendors offer the same equipment at different prices, so always shop around. The first rule of hamfests: if you want a crack at the good stuff, get there early. By 9 a.m., the cream is long gone. Of course you should arrive with some idea what you want and how much you are willing to pay.

On your first encounter, you might accompany a hamfest regular. Significant others who aren't hams rarely enjoy hamfests, so don't insist on bringing yours.

The best strategy is a fast walk through with a note pad, selection of a few prospects, then going back to investigate further.

Try to get an instruction manual with any equipment purchase. Though sources of manuals for popular items exist, they are a nuisance to find and waiting for their arrival can be tedious.

Ask about equipment condition. Most sellers will answer honestly. Get the seller's name, call, address and phone number so you can follow up if necessary. After, if you feel your purchase was misrepresented, the hamfest sponsors can help you obtain a satisfactory resolution — important because you can't usually test the equipment at the hamfest. There's an element of faith involved.

At a hamfest, whether in the chill of winter or heat of summer, you can delve into the past and project toward the future. Arrive early, conduct your business, then relax and enjoy. There's treasure, if only you can find it. Sure, more than a few boat anchors are for sale, too (some are free). Hey, you might find a use for one of them. But if you can't, you can always bring it to the next hamfest.

— *Magnolia Report,* Jackson, MS

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

The author is shown above — KA1SVV/rickshaw mobile.

Far East HTs

OZZIE ORMOND, KA1SVV/AE

I flew into Osaka, Japan in September 1992 to join the LNG Supertanker *SS Lake Charles*. With too little time to acquire the reciprocal operating permits for the member nations in IARU 3, I had grabbed my license, Yaesu FT-470, a 2.5 and 5 watt battery packs, charger and rubber duck. I put them in my carry on bag, along with a repeater directory and mapbook directory when I left home! If the customs people confiscated my gear I'd deal with that when it happened through the shipping company agent in that country; I wasn't about to forgo all the contacts, friendships, and experiences possible for the price of an HT.

The meager expectations I had of operating maritime mobile, initially were well founded on my part! Nobody in Osaka knew of any repeater directory for Region 3 and I could not have deciphered it anyway. I am not the least bit knowledgeable in any of the Asian alphabets or languages. Subsequently, I spent countless hours off-watch trying to make heads or tails out of what was going on between S. Korea, Taiwan, Philippines, Singapore, Indonesia and Malaysia on the VHF-UHF bands.

My first big break came one evening while sitting at the bar in a local Borneo watering hole called "Angel's." A crew member from a Japanese ship also in port told me that he was Bert, N6HIT. He told me that in the straits of Malaaca there was a great deal of activity on 448 MHz! I had been scanning there but couldn't find any calls to get back to. According to my new friend that was to be expected, because no one used calls; only their first names. Pirates!

I later came to find out that all Indonesian hams are prohibited from using VHF-UHF frequencies for any communications outside of Indonesia. I spoke of my dilemma with the port agent in Arun, Sumatra, Indonesia. It is most likely that because I was there to work, he gave me the local repeater frequency (146.260 MHz +) and told me I would not have any restrictions ashore! I had given him a photocopy of my license and did know him somewhat. I had hoped all these things would help but I never dreamed they would help this much. Certainly to have a local government official take your paperwork through made the difference. I highly recommend that you contact the ARRL for all the license rules and applications to operate in a foreign country. They are very helpful and knowledgeable in fulfilling the necessary requirements.

I worked the machine from on board the vessel while at the dock, still a little skeptical, and eventually in town

from several locations.

It was through this machine that I met Ram, YB6GR, and later on, Aled YB6CA, Fauzi YC6CVO, and Daud YD6CDN. Our far eastern counterparts were most gracious to me and we had a few cold drinks poolside in the midday sun during a get-together we managed to get in. They tend to be of the opinion that no one realizes they are there but I can verify that there are many fine hams in Indonesia, as throughout Region 3, and they are very eager for HF work down on the equator!

We were too distant from shore for me to work voice repeaters in the Philippines, or in Taiwan. There are such machines on the coasts but I only tried machines with English language QSOs in progress. Also, working FM voice from the Yellow Sea onboard an LNG Supertanker at the point where the borders of S. Korea, N. Korea, China all meet, "MIG Alley," was a simple case of the potential rewards not worth the risks involved for me under those circumstances! South Korea has a "sometimes" third party traffic agreement over the Christmas holidays with us.

An educated guess is that it is heavily dependent on the tension in the area. Only the Philippines has a normal third party traffic agreement with us. I do know that there is an Amateur Radio Club at Osan Air Force Base in Sontang, Republic of Korea, but I have yet to contact any of its members. The ship is in port for only 24 hours and the club meets once a month so all the stars must be in the proper alignment in the heavens for it to come to pass. It is still a wonderful oasis for books, telephone calls, news, food, and mail from home. Our wholehearted thanks to all its personnel for being very helpful in thousands of ways to everyone and keeping that genuine smile on their faces even under the most trying of situations, from the Commanding Officer on down the chain of command.

On the day following Christmas Day, 1992, I had my first of many enjoyable and informative QSOs with Ian Carnegie, 9V1WD. I was in the international waters off Singapore when I heard an English QSO in progress with legitimate calls on the 145.625 (PL 67.0) machine in beautiful Singapore. He was ragchewing with Joe Seah, 9V1NQ, whom I also contacted from sea on 8 January, 1993, for another QSO on 2 meters.

It was not until my next voyage on the *Lake Charles* some nine-plus months later that I had the most wonderful time ashore in Singapore, along with a chance to meet with 9V1WD! Singapore isn't just clean, it's immaculate for a large modern city on the equator. A multiracial tropical paradise where the best of the world's cultures meet in a very much English speaking society. The two most striking differences I found were that it is unlawful to chew gum in public, and it is forbidden to take your HT outside of your QTH! I can see the discarded gum becoming a problem, and due to the politics of the region, the HT ban.

Throughout Region 3 there is almost impossible QRN. To understand why people would use voice and digital machines for whatsoever mode they wanted when they felt like it, you first must realize what is going on over on the opposite side of the world.

These are the fastest growing economies on the planet and they are, by and large, somewhat insular societies. To bridge the gap is a mammoth task when you consider they have very few support services in place outside of metro areas. The only work is in the cities. Most nationals come from the countryside and in some cases, the jungle! Tarzan didn't use your friendly long distance service to call Jane! Twenty-first century counterparts buy a couple of HTs, leave one at home and carry one with them. Viola! Portable emergency communications; in many instances more reliable than the local twisted pair. Grin and bear it; it is a small inconvenience for what is in store for you during your visit into IARU 3.

Singapore is about SEANET, the net is on 1200 UTC on 14.320 MHz daily. The club meetings in Singapore are on the last Thursday of the month, excepting December, at 8 p.m. local time. The meeting is held in the alumni building, on the Singapore General Hospital (SGH) grounds. You can take the mass rapid transit (MRT) directly to SGH! Sometimes there is a 7 p.m. net on the 145.625 machine, also club members do monitor this machine. I'm looking forward to signing the book at the club meeting myself.

Some day, with some good fortune the ban on HTs will also only exist on the local history pages! WR

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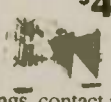

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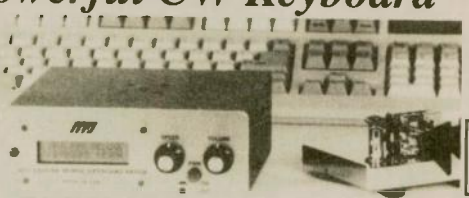

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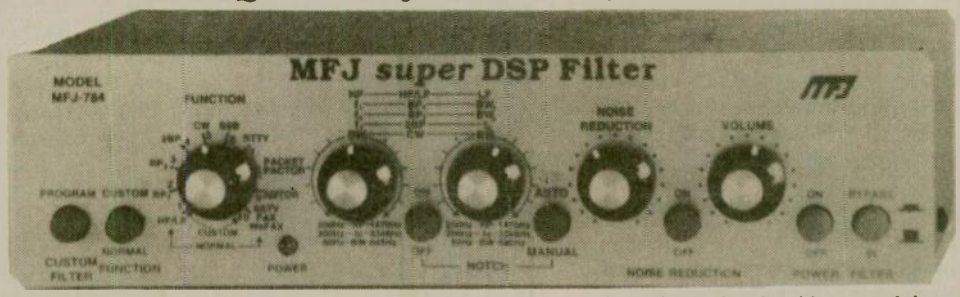

MFJ's *super* DSP filter automatically eliminates heterodynes, reduces noise and interference *simultaneously* on SSB, AM, CW, packet, AMTOR, PACTOR, RTTY, SSTV, WeFAX, FAX, weak signal VHF, EME, satellite -- nearly any mode you'll ever encounter.

You get MFJ's *tunable* FIR linear phase filters that minimize ringing, prevent data errors and have "brick wall" filter response with up to 60 dB attenuation just 75 Hz away.

Only MFJ gives you *tunable* DSP filters. You can tune each lowpass, highpass, notch and bandpass filters and *vary* bandwidth to pinpoint and eliminate interference. The last tunable filter setting is saved -- it's ready to use when you switch back to it again.

Only MFJ gives you 6 *factory pre-set* filters and 10 *programmable pre-set* filters that you can customize. Instantly remove QRM with a turn of a switch!

You get MFJ's *automatic notch filter* that searches for and eliminates *multiple* heterodynes.

You also get MFJ's advanced *adaptive noise reduction*. It silences background noise and QRN so much SSB signals sound like a local FM repeater.

The *automatic* notch filter and *adaptive* noise reduction can be used with *all* tunable and pre-set filters.

Automatic notch filter

MFJ's *automatic* notch filter searches for and eliminates *multiple* heterodynes in *all* filter modes -- it's so fast interfering CW and RTTY signals are also eliminated.

If you leave the *automatic* notch filter on during a phone contest, you'll never be worn down by the heterodynes of tuner-uppers.

Voice signals aren't degraded. The *narrow* automatic notch is silently working in the background destroying unwanted tones when they appear.

With up to 50 dB attenuation, you'll copy stations that would otherwise be masked by heterodynes. You'll miss fewer calls and be less exhausted when the contest is over.

When you need to *selectively* remove tones -- like when you're enjoying a CW ragchew and a couple of annoying CW stations appear nearby -- you can use the *two* MFJ *tunable* notch filters to completely knock them out.

Adaptive noise reduction

Pressing the "ON" button silences background noise. Some SSB signals sound like a local repeater! It makes noisy FM and AM signals readable and works with CW, Data and other signals.

It works in all filter modes and on all types of random noise including -- white noise, impulse noise, static, ignition noise, power line noise, hiss and atmospheric noise.

The LMS algorithm gives you up to 20 dB of noise reduction depending on the type of noise. You can adjust the amount of noise reduction to prevent distorting some signals.

Reducing random noise reduces fatigue and makes QSOs more fun -- especially, when the band is full of tiring noise.

Tunable highpass/lowpass filters

For Voice and Data nothing beats MFJ's exclusive *tunable* highpass/lowpass FIR linear phase "brick wall" filters.

You can *tune* the lower cutoff frequency 200 to 2200 HZ and the upper cutoff frequency 1600 to 3400 Hz.

Signals *just 75 Hz* away literally disappear -- they are reduced a *thousand* times, 60 dB!

Unlike other filters, speech clarity is not reduced by envelope distortion caused by unequal time delay.

By adjusting the highpass and lowpass filters you can create *custom* filters for Voice, Data and other modes.

When signals are weak, you can improve copy by removing high and low speech frequencies. They contain little information but are full of noise that reduce readability.

On crowded HF bands, overlapping SSB signals make copying difficult. You can improve copy by slicing off some overlap with razor sharp "brick wall" responses.

You can also highpass filter out hum, pulses, rasp and other irritating low frequency noise.

Tunable bandpass filters

Narrow band signals like CW and RTTY jump out of QRM when you switch in one of MFJ's three *tunable* FIR bandpass filters.

You can *tune* the center frequency from 300 to 3400 Hz. And *vary* the bandwidth from 50 Hz to 680 Hz -- from super tight CW filters to wide razor-sharp Data filters.

As you narrow the bandwidth, interfering signals just drop out because, just 60 Hz away, they're down by over 50 dB.

You can use *narrower* bandwidths to fight tough QRM because these linear phase filters don't distort signals with unequal time delays.

Even with the narrowest 50 Hz bandwidth, you'll never have a problem with ringing.

One position gives you *two* tunable filters you can use together on one signal. For example, on RTTY, tune one filter to mark, the other to space and set each bandwidth tight for an incredibly sharp RTTY filter.

16 *pre-set* filters -- use factory set or program your own

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The Phield Day phenomenon

Last month's issue (pg. 16) began Steve's thorough explaination on how to prepare for Field Day. Here is the conclusion. . .

STEVE KATZ, WB2WIK/6

At our 1992 FD we used what I'll call a "Fire Tower" (for lack of a better description) which existed on-site and had no antennas mounted to it prior to our FD setup. This tower was large — about sixty feet tall, and about twenty feet square at the base, and probably capable of supporting ten thousand pounds of antennas — and we made good use of it to support two Meter beams, omnidirectional VHF and UHF antennas, and a couple of big inverted vee antennas for 80 and 160 Meters.

Other popular FD antenna supports include unused utility poles (please don't use them if they have AC wiring on them!), tall trees, beachfront lifeguard stands, and whatever else you find. The FD rules allow stations exactly 24 hours to set up their stations and antennas, and we use every minute of it, starting our setup at exactly 1800 hours UTC Friday. Stations who don't begin their FD setup until 1800 UTC Saturday, when FD actually begins, are allowed to operate 27 hours rather than the normal 24 hours; but I've found that the "3-hour bonus" isn't worth much, compared to having no time to set up. So, we take a whole day to set up, and finish operations at 1800 UTC Sunday, when everyone's tired and ready to pack it in, anyway.

Our setup typically includes several antenna towers, ranging in height from 30 to 70 feet, supporting numerous beams for the various bands, plus dozens of "slip-up" (telescoping) masts, from 20 to 40 feet tall, to support smaller beams and many wire antennas. The K6CAB, FD 40 Meter CW antenna was a 3-element wire beam supported by what appeared to be three 60-foot tall bamboo poles! (Don't ask me for details, I didn't want to get too close to this monster.)

On 20 CW, we used a 3-element monoband yagi at 70 feet, mounted on a Tri-Ex LM470D 4-section telescoping tower, which in turn is mounted on a 4-wheel trailer for easy transporting. Besides various other 3 and 4-element yagis used on 15 and 20 Meters, we had a 5-element long-boom monoband yagi on 10 Meters, 7 elements on 6 Meters, 38 elements on 2 Meters, etc., etc., all the way up to a 44 element quagi array on 440 MHz and a 9-dB gain omni for 1270 MHz. Our Novice station used an 80-40-15-10 Meter multiband inverted vee whose apex feedpoint was 60 feet above ground, supported by one of the towers.

And verticals! We had verticals, from CushCraft R-7s to GAP 33" tall multiband monsters, from Ringo Rangers to homebrew co-linears, we had lots of verticals, mounted on everything from pickup trucks to tower tops. We had 15 Meter beams cut down to work on 12 Meters, and 20 Meter beams cut down to work on 17. We had dipoles and slopers hanging from every available support. In all, I counted 56 antennas at our site, at about 8:00 PM Saturday. (The count changed from hour to hour as experimenting and fine-tuning continued throughout the event.) You need lots of antennas when you're only running 5 watts.

When deciding on equipment and antennas, start making checklists for everything! Don't forget to include feedlines, connectors, adapters, guy wire, support ropes, warning flags (so people don't run into guys and ropes!), tools, flashlights, extension cables, generators, batteries, generator fuel — the list goes on and on. Don't forget signs to be posted on the approach to your FD site to help others and visitors find it. And surely don't forget food, drink, paper plates and cups, plastic utensils, and lots of trash bags. And barbecues, coolers, canteens, insect repellent, fly-swatters, charcoal starter and all the things you might normally bring to a "campout," which is what most FDs really are.

Each band captain should make a checklist of all the things he or she will need for his station, and begin lining up all the gear at least three months ahead of time. Plan on a "spare" for every rig you'll use, as some rigs won't ever show up and some won't work. Don't forget to "checklist" things like microphones, headphones, keyers, log sheets, dupe sheets, clipboards, pencils, tables and chairs, tents or other shelter, patch cables and all the things normally needed to assemble a working station. Keep your checklists handy, so every time you think of something to add, you can write it down and add it to the list. Before long, each list will be very long. Better a too-long list than a too-short one. When packing for the final assault on the FD site, check every item on each list to make sure everything is packed and on its way.

VII. Make maps of the FD site setup. On your first or second visit to the FD site (and many visits should be planned, unless you are very intimately familiar with the site and everything there), at least 3 months before Field Day, bring a long tape measure (like a 100 footer, the kind landscapers use) and draw a "map" of the entire site, measuring off distances between landmarks and putting it all down on paper. This first map can be crude, but it should be as accurate as possible. When you get home, draw it out better, preferably on graph paper and to scale (like 1" equals 10 feet or something), and then start sketching in where you think all the stations should go. Remember to include space for all the antennas, their supporting towers (or whatever), tents, campers, RVs, trucks, cars and so forth.

If your FD site has limited space, use

as much of it as possible for actual FD operations and get everyone to park their vehicles out of the area after unloading. Unless yours is to be a real "he-man" operation which includes no YLs at all, definitely plan on having some portable toilet facilities delivered there. Your local "Yellow Pages" will tell you where to order these items (look under Toilets-Portable), and you'll be surprised to find these folks will deliver their products nearly anywhere, including the middle of the woods, as long as a truck can make it in.

Don't forget to include adequate space for cooking facilities, and maybe even a First-Aid station if your setup is to include a lot of people. At our FD setup, we had two real, honest-to-goodness First Aid volunteers, the kind who are certified and trained to perform lifesaving operations. This isn't a bad idea, especially if you intend to operate from a rather remote site where hazards abound. When you're mapping out your operation, try to put as much space as possible between antennas for the same band or for harmonically-related bands. Remember, the second harmonic of 40 CW falls in the 20 CW band, etc. Interference between bands will probably still exist, but it can be minimized with intelligent antenna spacing.

VIII. Do some advance PR work! Under FD Rules, Bonus Points Section 2(A) allows 100 points for media publicity. Usually, to get any, it must be arranged in advance. We sent out press releases to all the local newspapers, magazines, radio and television stations briefly describing our FD activities, along with a name and phone number for a "PR" contact within our club. Not only did we get our FD written up in all the local papers, but we had news crews, complete with cameras, show up at the site! (The previous year, we had a television station camera crew visit us and we were on the Saturday Evening News.) When you do get publicity, document it, as proof is required to get the 100-point bonus. Send out your press releases at least two weeks in advance.

Just when you learn to make the most of it, most of it is gone.

IX. Do some operator training! I did this, and it was a first for our club. I organized a special club meeting a few weeks before FD weekend, and used viewgraphs to discuss all the FD rules and procedures, then had everyone make "sample" FD contacts on phone and CW. We had a good turnout, and the newcomers learned a lot, which made it much easier for them to jump in and operate when the real thing came about. Make sure all your operators know the FD exchange, and the standard abbreviations for the ARRL Sections, which is part of the exchange.

X. Set up! Assuming all the groundwork has been laid and you've followed Steps I through IX, now you're ready to set up and operate. The Band Captains should be on site early to make sure their respective bands are set up and operational well in advance of the FD starting time, 1800 UTC Saturday. Since it usually takes more time to erect antennas than it does to plug in radios, I recommend doing the antenna work first. Then, set up the shelters that are to be used (tents, trailers, RVs, vans, or whatever), get them in place and leveled, and then wire up the radio equipment.

Large antennas, like multielement beams for HF which might take 2-3 hours to assemble, should be worked by "teams" of a few people each, with one leader advising the others. Refreshments, especially cool water, should be available for the workers right from the very start, as the end of June can be a very hot time in many places. If a lot of work needs to be done and you'll be stretched to the limit with manpower, I'd recommend doing all the work before taking a food break. Food takes a lot of energy to digest and tends to make workers a bit lazy for at least an hour. Better to do as much work as possible, then reward yourselves with a meal.

If you're setting up in an area that will have foot or motor vehicle traffic at nighttime, be sure to set up lighting to illuminate hazard areas during the dark hours. Propane lanterns work well for this, and generate a lot of light while using very little fuel. Hang safety (warning) flags on guy wires or ropes that might be run into by people or motor traffic. And, as stated in Section VII, it pays to have a First Aid station available for emergencies, as well as an escape plan if someone requires hospitalization.

XI. So, operate already! Be ready to make your first contact right at 1800 UTC Saturday, and try to keep your "QSO rate" as high as possible all throughout the 24-hour FD period. If your "Q rate" drops off to something disappointing, try a band change to bring it back up. Remember, your entry category only tells how many transmitters you have on the air simultaneously, but there is no restriction regarding what bands you use. If you want to be a "5A" station (5 transmitters) and you see your QSO rate on 10 Meters falls off after sundown, don't hesitate to switch that 10 Meter rig to another band-mode (one you're not already using, of course!) and go at it. This will not change your classifica-

tion — you'll still have 5 transmitters on the air, they'll just be on different bands now. This is okay. Actually, it's even okay to add bands if you wish and think this will make your FD score more competitive.

But if you add bands during FD, this will change your classification. For example, if you start out as "5A" and during FD you decide you'd really like to run 7 transmitters at once, go ahead and do it — but be advised that from that point forward, you're now "7A," and you must enter in the "7A" category. This is a decision that should be made in the most educated possible manner, if you wish to remain competitive. The important thing is, follow the FD rules as printed in the May *QST*, and use them to your advantage. The rules are highly flexible in many respects, and if you understand them thoroughly, can help your group make the highest possible score for the manpower, equipment and site you are using.

Don't forget the bonus points! A single satellite contact is worth 100 points. So is a single packet QSO. And so is making 5 contacts using "natural power." (We use solar panels for this, which is easily done at the 5 watt power level.) Copy the W1AW message — and make sure you submit a printed copy with your FD entry. This is an easy 100 points, and the rules are so flexible, you don't even have to copy the message directly from a W1AW broadcast — it may be copied from any source you wish, including a local packet cluster. Check out all the bonus points that are available, and try for as many as you can.

XII. All over! Break down and clean up. Considering you'll spend months planning FD, and possibly 3-4 hours of preliminary work for each hour of actual operating in FD, it's all over pretty quickly. When 1800 UTC Sunday arrives, get everyone off the air and pick up all the logs and dupe sheets right away, before any get lost, buried, splattered with mud or meet some other dismal end. Put all the logs and dupe sheets in a special place where they won't be damaged and you'll be able to find them when you arrive home, and then start dismantling all the stations.

It's amazing that break-down goes so quickly, compared with the set-up. I've operated probably a hundred or so contests, and I'd say that for each hour of set-up time, only five or ten minutes of break-down time is required. Probably this is because while things have to go together in a certain order, they don't necessarily have to come apart that way. Exercise caution, don't let anyone get hurt, and get it all down and packed away. Don't forget to police the area and make it look even better than it did when you first started to set up, especially if you ever want to use the same site again.

If permission was required to use the property, send thank-you notes to whoever granted the permission, and make them sound sincere. Look forward to a shower, a rest, and preparing your Field Day entry.

In preparing your FD entry, refer to the FD rules to see what is, and is not, required. They do not require all your log sheets. They do require a list of calls worked on each band-mode. This list can be chronological, as it would be in your log, or alphabetical, as it would be in a dupe sheet, but if it is chronological, then it should be accompanied by a real dupe-sheet as well. These sheets may be hand-written or computer-generated, but keep them accurate, and clearly labeled with the correct band-mode for each. Also submit proof for all bonus points.

When you write up your FD entry on an "official entry form," there is no place for you to calculate and add in your bonus points. Don't worry — the League does that part for you. Just be sure to list which bonuses you are applying for, and submit proof for each, and all will be well. Keep the original log sheets until after the FD results are published, and surely keep photocopies of everything you're submitting with your entry. If you have good photographs of your FD setup, send those in with your entry, too. Mail it all in, and keep your fingers crossed for four months. You may have won!

See you in Field Day. And don't forget your insect repellent. WR

(final of two part series)

S.S. *Jeremiah O'Brien*

The restored former Liberty Ship S.S. *Jeremiah O'Brien*, has left San Francisco, sailing her way toward the fiftieth anniversary of the D-Day invasion of the beaches of Normany. The vessel debarked on a voyage which will take her through the Panama Canal, across the Atlantic to reach the French coast in time for the 4-6 June celebrations, and then return to San Francisco.

On board are Amateur Radio operators Bob Gisslow, KB6YYL, Joseph Mazzeo, KC6YYY, and Arnold Sears, WA6RJI. While they will be reporting position, speed in knots, etc., at regular intervals, it is unclear as to whether they will be "working the world." The group may also use W6PW as a comemorative call. You may look for them on 40, 20, and 15 Meters on the following frequencies: 7.232, 7.240, 14.300, 14.342, 21.417MHz.

Please be sure that they are finished with their reports to their at-home contacts before jumping in to call. WR

JARGON

BILL BEVERLY, WG8J

In the last issue of our club newsletter, I suggested that lack of courtesy, redundancy, and jargon are three problems on our repeater that could be discussed. In this article I would like to address jargon. Jargon is defined as "nonsensical, incoherent, or meaningless talk," which sometimes fits, or "the specialized or technical language of a trade, profession, or a similar group." (None of which I consider ham radio to be.)

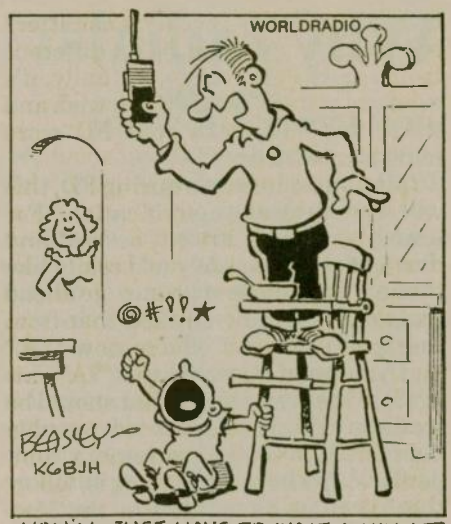
I'm a schoolteacher. The educational racket has more jargon than anyone. Not because we need it, but because we think it makes us sound more like doctors, or lawyers; some group with a specialized language known only to us.

My student teacher is now an "intern." I am that person's "mentor." Kids who steal "fail to identify their own property." Kids who fight "settle individual differences in a socially unacceptable manner." It makes me ill. When I go to a teacher's meeting, excuse me, a "classroom educator in-service action group," I don't know what the heck they are talking about. Or care.

Too often, in Amateur Radio, we use jargon that a ordinary person wouldn't understand. That impedes communication, and makes us sound like a bunch of show-offs who no longer speak English. Why say "twisted pair" when "phone" is shorter and clearer? Why say "destinated" when "I'm home" or "I've arrived" are available? Why use Morse Code Q-signals on FM at all? Perhaps only because we think it makes us sound as if we are members of some in-group. We're not, folks. All you have to do to be a ham is pass two relatively simple exams. You want a secret society? Join the lodge.

Let's reduce our dependence on inappropriate jargon. Q-signals are great on CW. Phonetics are fine on SSB or even on the repeater, under marginal conditions. Legitimate radio vocabulary is fine. (Do we really want to replace "VFO" with "that little frequency changing thingy that lets us tune the radio?" I think not.) Let's continue the use of "73." It's been around longer than any of us.

I often demonstrate Amateur Radio in my classroom. I want those kids who hear us on the bands to think that we are a group of intelligent, interesting people who they would like to join. Which we are. I don't want them to think that we are a bunch of weirdos who sound funny and don't want anyone else to understand them. —*Chirps & Clicks and Spurious Emissions*, a publication of the Kalamazoo ARC



YOU'LL JUST HAVE TO WAIT A MINUTE- CAN I HELP IT IF THIS IS THE ONLY HOT SPOT IN THE HOUSE ?

Why radials?

Part IV

DON NEWCOMB, WØDN

So far, we've been talking about vertical antennas operating with and without radial systems at ground level. Can't we simply raise the antenna a few feet above ground and forget about radials and losses as some of the ads suggest? Not really, unless we're willing to forget about efficiency too, and in the case of most base-fed verticals we'll probably need resonant radials to get low SWR if we raise the antenna more than about 10 feet above ground level. A physical 1/4-wave radiator, you recall, can operate in a resonant condition because the earth, even lossy earth, provides a "mirror image" of the "missing" half of a 1/2-wave dipole. The lower end of such an antenna is at a low-voltage/high-current point and has a feedpoint impedance of about half that of a dipole, or 35 ohms plus ground loss resistance, and if the feedpoint is quite close to the earth such an antenna will also be resonant. If, however, the antenna is elevated more than a foot or so the length of any vertical lead to the ground connection will become part of the vertical radiator and the antenna will no longer be resonant on one or more bands. For the same reason an elaborate radial system at ground level will do little or nothing for a vertical antenna atop a tall tower. Any radial or other ground system should enter the picture right at the antenna feedpoint of a base-fed antenna.

We know that it takes about 100 radials at ground level to overcome all our ground losses (bearing in mind that very few amateurs have either the real estate or the ambition required for 100 radials) and that four quarter-wavelength radials will provide about the same efficiency at antenna base heights of a half-wavelength or so. As the height above ground decreases the number of radials required for the same efficiency naturally increases, so at heights of a quarter-wavelength a dozen or more resonant radials might still be required for an essentially lossless ground system. Then there's another problem to solve: that of finding a tower or mast to support the antenna. (How much are you willing to spend to accomplish what?).

Apart from reducing the number of radials needed for reducing the ground loss resistance to some minimum level, is there really any great advantage to mounting a vertical on a tall tower or mast? Maybe, maybe not. If the antenna is in a dense forest full of leafy trees that can soak up vertically polarized RF energy or in an urban canyon of apartment buildings it makes sense to elevate a vertical in order to be clear of local obstructions, particularly on the higher-frequency bands. If, on the other hand, the antenna is in the clear at ground level — and if you have the room for radials — it's unlikely that the cost of a tall tower could be justified. The vertical angle radiation pattern of a vertical at ground level is essentially the same as that of the same antenna fifty feet above ground where initial adjustment will be more tedious and hazardous. The main difference between above-ground and ground level vertical installations if both are in the clear is that more radials will be needed at ground level to overcome the earth loss resistance.

But what about the no-radial designs with or without a remote matching device at the lower end? One ad asks us to believe that a 17-ft. radiator is a "halfwave" or at least plays like one on 20 Meters, although a half wavelength on 20 Meters is closer to 33 feet. Still, 17 feet is tall enough for relatively high radiation resistance on 20 Meters, and the loading from the traps for the higher frequency bands probably don't introduce too much loss resistance. But how well would this antenna play on that band at ground level or even a few feet off the ground? Probably no better or worse than our plain-vanilla quarter wave radiator because the ground loss resistance will still be there waiting to gobble up most of your power. "No ground radials" perhaps sounds alluring, but until we can make claims for "no ground LOSSES" the world will remain a dangerous place for RF from vertical antennas operating in the HF range! "Ground radials," one must assume, are lengths of wire that are to be buried in the earth or draped on the surface. Why these should be more annoying than, say, "counterpoise radials," the kind that are NOT to be buried, is a bit unclear. One "no ground radial" antenna seems to employ a "counterpoise" system of greatly shortened radials (so it uses radials after all!) though perhaps not as the ad-writer imagined.

At this point we should probably make a detour for a few definitions in order to make better sense of what follows. for years the terms "ground radials," "ground plane" and "counterpoise" have been used almost interchangeably until their separate meanings have been all but lost.

The *ARRL Antenna Book* (15th edition) offers the following definitions:

Ground plane — A system of conductors placed beneath an elevated antenna to serve as an earth ground. Also see counterpoise.

Counterpoise — A wire or group of wires mounted close to the ground, but insulated from ground, to form a low-impedance, high capacitance path to ground. Used at MF and HF to provide an RF ground for an antenna. Also see ground plane.

A counterpoise, then, depends on a fair amount of capacitance to ground for proper operation, and that means (a) that the counterpoise must be near the earth in terms of wavelength and (b) that the counterpoise must cover enough surface area to develop the necessary capacitance between it and the earth below, if you view the counterpoise as one plate of a capacitor and the earth as the other it's obvious that the capacitance between the two will diminish as the separation between them increases.

Counterpoises are most often used with vertical antennas for the lower-frequency bands when buried radials are out of the question, and the conductors that make it up often take the form of a spider web for the sake of increased capacitance. They're seldom placed any higher above earth than is necessary to permit unimpeded foot traffic, about seven feet or so. At much greater heights where capacitance to earth is not a consideration elevated 1/4-wave radials will suffice. And don't overlook the possibility that a set of

resonant radials for one band may also provide an effective counterpoise system on one or more lower-frequency bands. Four 1/4-wave radials for 40 Meters, for example, should provide enough capacitive coupling to earth to function as a capacitive counterpoise on 80/75 and 160 Meters when antenna base heights don't exceed about 25 feet. This height represents less than 1/10 wavelength on 160 Meters and twice that on 75/80 Meters, and it is within this approximate range that counterpoises can be expected to work without becoming much larger. Keep this point in mind as we resume our discussion of the "no radial" vertical antenna.

It should be apparent that most mobile antennas operate according to the counterpoise principle, the metal body of the vehicle providing the capacitive coupling to the earth itself.

In the case of our "no radial" antenna that uses an abbreviated "counterpoise radial" system we might well wonder what its precise function is. Near the ground the short radials won't do much to reduce the ground loss resistance — certainly no more than the same number of ordinary wire radials of the same or greater length — and at even greater heights it's not at all clear how the vestigial radial system will take the place of the dozen-odd 1/4 wave radials we'd need for a real dent in the ground loss resistance once the antenna is raised to a 1/4 wavelength or so above the earth on 20 Meters. The remote tuning/matching device takes the place of resonant radials as far as overall resonance and SWR are concerned, but will do nothing about ground losses. Elevated radials are usually 1/4 wavelength because it's a convenient resonant length, but even longer radials would be desirable if they didn't make the overall antenna system reactive.

The function of a "ground plane" radial system (see above definition) is the same as that "ground radials" or "counterpoise radials": to provide low-loss "return" paths for currents that might otherwise prefer to flow on or along the lossy earth, and once again "the more wire the better" is a safe principle to follow. The makers of the "no radial" antenna have recently introduced a slightly taller 7-band version that claims "electrical half-wave length" operation, although its physical height falls well short of that required for even a quarter wavelength on 40 Meters.

How well this "no radial" vertical may be expected to play under competitive conditions on 40 Meters where the short "counterpoise radials" will be even less effective in reducing ground losses at any height than they are on 20 Meters is probably a fair question that deserves an answer, particularly since the manufacturer insists on this antenna's "independence of ground." That's going a bit too far, perhaps, because its performance will depend on the same factors that affect more conventional vertical antennas that use messy, unsightly, inconvenient and totally inexpensive "ground" radials to deal with ground losses. Independent of ground in that the remote tuner/matcher provides low SWR? Okay, no quarrel with that. But low SWR by itself tells us next to nothing about how well the antenna is performing. Independent of ground as far as efficiency is concerned? NO WAY!

Suffice it to say that any vertical that will play close to the earth with no radials at all will play MUCH better over a good radial or counterpoise system, and whether a particular system is a good one depends largely on how much surface area it covers and how many wires are used to cover it. A simple "no-radial" multiband-band vertical may be easily constructed for next to nothing if one already has an "antenna tuner" and a handy tree limb. If the vertical wire is made about 25 feet long its performance should be roughly equivalent to that of any commercially available "no-radial" vertical antenna of the same general length (height) on 40 through 10 Meters and occupying the same space, the longer wire lengths tending to favor the lower bands and the shorter lengths the higher bands. SWR at the feedpoint may reach 20:1 or more, but "ladder-line" has very low loss to begin with, so the additional losses because of very high SWR are unimportant.

The difference in performance between this simple vertical wire and the

(please turn to page 22)

SPECIAL EVENTS

D-Day anniversary

The MANCHE RADIO-AMATEUR and AMERICAN HAMS A.D.U.B.R.A. will operate a special event station commemorating the 50th anniversary of the landing of allied forces on 6 June, 1944. The station will be located on Utah Beach, Normandy. Operation will be on the following frequencies:

CW: 3.544, 7.030, 14.044, 21.044, 28.044 kHz

phone: 3.775, 7.070, 14.244, 21.344, 28.444 kHz

satellites — VHF: 144.244 MHz

QSL via F6KFW, P.O. Box 234, 50102 Cherbourg France.

Boy Scout Camporee

The Mount Pleasant Iowa Amateur Radio Club will operate WØMME during the Boy Scout Camporee on 11 June. Operation will be on phone and CW in the lower portion of the General and Novice subbands. Those attending the event may contact the station on the 147.39(+) and 444.95(+) repeaters. The annual event, sponsored jointly by the Southeast Iowa Council of Boy Scouts and the Midwest Old Threshers Association, draws over 700 scouts from five states. For a QSL, send an SASE to Dave Schneider, WDØENR, RR3 Box 307A, Mount Pleasant, IA 52641.

American Cancer Society

The Westchester Emergency Communications Association is sponsoring the "American Cancer Society Overnight Relay" special event station starting 10 June 2100 UTC to 11 June 2100 UTC in Dobbs Ferry, NY. The station callsign will be WB2ZII operating approximately 25 kHz above the Novice portion of the bands. Send QSLs to WECA Special Event Station, P.O. Box 831, North Tarrytown, NY 10591-0831. For more information, call the WECA information line at 914/962-9666.

Vancouver festival

The CLARK COUNTY AMATEUR RADIO CLUB of Vancouver, WA will operate "VANFEST" on June 18-19. Operation will be in the General portion of the 75, 40, 20 and 15 meter bands and in the novice portion of the 10 meter band. It is planned that club members will operate from their individual homes, using the Club call, W7AIA. A QSL or certificate will be available for a SASE to CCARC, P.O. Box 1424, Vancouver, WA 98668.

Appreciation Day

R.A.D.I.O. (Radio Amateur Downstate Illinois Organization) will operate club station, WD9GTW at the Mt. Carmel Airport Appreciation Day on 12 June from 1200 UTC to 2100 UTC. Operation will be on General phone subbands 15, 20 and 40 Meters, 28.490 on 10 Meters and 146.490, Mt. Carmel, IL repeater. For certificate send SASE with QSL to MCPA, R.R. 1 Box 54, St. Francisville, IL 62460. For information call 618/948-2413.

Eyeball QSO

The Magellan Amateur Repeater Network will host the 1st Filipino-American Ham Radio Grand Eyeball QSO on 11-12 June at the Lopez Lake Recreational Area in San Luis Obispo, CA. For a special QSL, send QSL to Joel Pastor, AB6BX, 608 Marie Ave., Los Angeles, CA 90042. For more information, contact Joel Pastor, AB6BX, at 213/257-1084.

Pioneer Village 41st anniversary

The Hastings ARC will operate a special event station from the Amateur Radio display booth at Pioneer Village in Minden, NE on the 41st anniversary of the village on 4 June from 1400Z-2200Z and 5 June from 1400Z-2100Z. Frequencies will be plus or minus on 3.980, 7.280, 14.250, 21.320, 28.400 and CW in the 15 Meter Novice band. For QSL send QSL and SASE to Hastings ARC, P.O. Box 128, Hastings, NE 68902-0128. WR

Why radials?

(continued from page 21)

commercial "no-radial" vertical will not be worth examining in the average case, and either can be made to outperform the other by laying out a GOOD radial or counterpoise system at the antenna's feedpoint, especially when the antenna is near the earth. Earth losses are the major limiting factor to vertical antenna performance, and no remote tuner or matcher can do anything about that.

Obviously, there are a number of trade-offs involved in every antenna installation, and there is no single antenna type or particular installation that will be ideal for everyone on every band. Before you blow your lunch money for the next six months you should probably become familiar with the most basic types and understand their characteristics. If you have an *ARRL Antenna Book* read it. Most of the answers to your questions are there, though you have to dig a little to find them. It's well worth it.

If you retain nothing from the foregoing discussion but a vague awareness that radials are somehow FUNDAMENTAL to the successful operation of vertical antennas you've grasped the main point. Even those vertical antennas that supposedly "don't need" radials will always operate more efficiently over a good radial system than over no radials at all. Radials may or may not affect the SWR of elevated or ground-level verticals, but that's incidental to their primary function, which is to reduce the ground losses that might otherwise keep the vertical from operating more efficiently. WR

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Product Review

High performance TS-50S

PHIL SALAS, AD5X

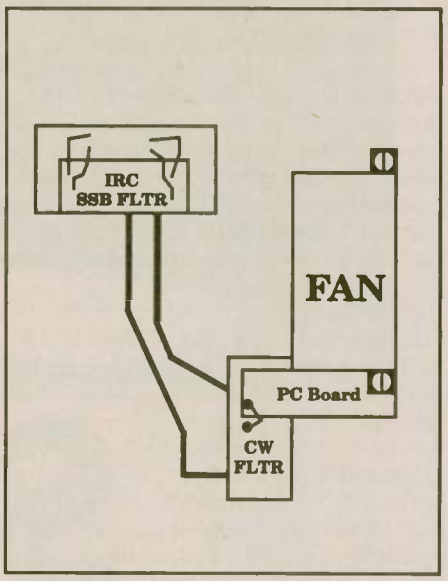
A few months ago I read in ***Worldradio*** that International Radio And Computer, Inc. (IRC) was selling an 8-pole SSB crystal filter for the TS-50S. My only complaint with my TS-50S has been that the SSB filter seemed wide. As it turns out, the stock SSB filter is a ceramic filter that is 6 dB down at 2.2 kHz, and 60 dB down at 4.8 kHz (a shape factor of about 2.2). A recent *QST* review of the TS-50S talked about signal blow-by around the SSB filter. I believe they were just hearing the poor selectivity of the ceramic filter. On the other hand, the IRC 10.6H2.1 is 6 dB down at 2.1 kHz and 60 dB down at 3.4 kHz (a shape factor of 1.6). I ordered the IRC crystal filter ($80 + $6 S/H) and received it less than a week later.

When I received the IRC filter, I was surprised to see that it was so large that when it is installed, the CW filter can't be installed! Since I operate CW at least 50% of the time, this was unacceptable to me. As it turns out, I was able to install the CW filter - I'll show you how later. But first, lets discuss the installation of the IRC SSB filter.

The first thing you must do is remove the factory installed ceramic SSB filter from the TS-50S filter board. The board is easily removed, however the removal of the ceramic filter requires some care. You need to use a small soldering iron and solder wick to get up all the solder you can. There are SMT components located all around the ceramic filter pads so you need to be careful not to damage any of them. Get off all the solder you can, then use an X-ACTO knife with a long, thin, sharp blade to carefully cut away any remaining solder between the wire leads and the printed circuit board pads. Next, unsolder the ground tabs on the ceramic filter case and remove the filter. Follow the IRC instructions for placement of the crystal filter on the board. Instead of the wires supplied by IRC to connect the filter to the filter board, I used 0.1 inch diameter single conductor shielded cable I found at Radio Shack. OK, so much for the SSB filter. Now how about the CW filter?

Obviously, you won't be able to mount the CW filter on the filter board. Remove the filter board (which has your new IRC SSB filter installed) and attach two six inch pieces of the small conductor shielded cable to the CW filter in/out pads on the bottom of the filter board. Re-install the filter board and route the two shielded cables so that they extend towards the internal fan.

The location I found for the CW filter was right over the vertical SMT hybrids near one end of the internal fan. Place a piece of double-sided tape (available from Radio Shack) over the hybrids and a small piece of double sided tape along the extreme end of the fan grill (make sure you don't block any of the grill openings). Now carefully place the CW filter sideways over the hybrids such that it contacts the tape over the hybrids, and the small piece of double-sided tape on the fan grill. Refer to the attached drawing for the proper placement. Next cut a small piece of copper clad printed circuit board material and drill a hole in one corner so that it can be held in place by



the fan screw as shown. When the fan screw is tightened, the PC board will hold the CW filter snugly against the tape over the SMT hybrids. To ground the filter case, solder a short piece of bare wire from the filter case to the printed circuit board as shown. Now, cut the miniature coax cables extending from the bottom of the filter board so they don't have too much length, and solder the cables to the filter. Connect the coaxial cable shields to the inner filter pins, and the coaxial cable center conductors to the outer filter pins. That's it. You're finally finished. Close up the TS-50S and turn it on.

The IRC SSB filter instructions show you how to reset the USB and LSB carrier set points (this only takes a few

seconds). You won't believe the difference in selectivity! It is extremely noticeable. Also, with the narrower, steeper sided SSB filter, the IF SHIFT on the TS-50S really shines! And, of course, I also have my 500 Hz CW filter still available to me.

Would I recommend this modification? Absolutely! However, if you are not used to working on small SMT printed circuit boards, let someone with experience do it for you. The whole installation procedure I described will take about two hours.

What's next? Well, IRC is coming out with an RF speech processor for the TS-50S. This unit also mounts inside the radio. You toggle it on and off by switching from SSB to another mode and then back to SSB. The TS-50S gives a long beep when the speech processor toggles on. I should receive one of these RF speech processors shortly and I'll let you know how it works.

The IRC 10.6H2.1 8-pole crystal filter is available from: International Radio & Computer, Inc., 3804 South US #1, Fort Pierce, FL 34983; 407/489-0956 fax 407/464-6386. **WR**

New DSP filter for SSTV

CHARLEY SCHEID, KO4VX

A new DSP Filter featuring special software to suppress carrier tones that disrupt SSTV pictures has been tested over the past year with excellent results. The manufacturer is JPS Communications, Inc of Raleigh, NC who worked closely with Amateurs who have been seeking solutions to interference problems.

Slow Scan TV, a mode actually invented by a ham and principally used in ham radio, has had its ups and downs over the past thirty years. With recent developments of higher resolution and high color, the video mode has attracted more and more enthusiastic hams. The final breakthrough has been new ready-made line-scan converters available for under $230 that turn the PC computer into a powerful graphics system. More recently, a software driven system using a 741 Opamp by Ben Vester, featured in the January '94 *QST*, permits anyone to assemble a highly effective color slow scan system for less than $20. Hundreds of hams eager to build their own unit and also do some programming (a welcome return to experimenting in Amateur radio) is bringing hundreds into the world of ham video each week. But, alas, all is not peace and quiet in the SSTV world!

Amid all the good news, one serious problem has persisted: Interference by jammers and nearby stations. Surviving on SSTV channels is not easy. Yet many believe that SSTV/FAX video, featuring high color, high resolution and world-wide coverage will soon become the new dimension for the 21st century in spite of malicious interference. Some hams have tried to solve the problem of interference by appealing to the FCC and the ARRL with very limited success. Digital Signal Processing now opens the door to effectively eliminate much of the interference, especially that created by tuneups on-frequency.

Why, you might ask, is slow scan video so easy to disrupt?

The answer lies in how SSTV is generated. Briefly, audio tones are used to encode luminance (light) and chrominance (color). Some tones are also used as a vertical interval signal (VIS) code that precedes the actual picture. The VIS code automatically sets the receiving equipment for speed, black/white or color and the video format. Highly precise timing is involved. Since the system is inherently dependent upon audio tones, a carrier that occurs on the frequency can trigger the system, shutting it off or switching it into a different format. There are more than two dozen different types of video formats or protocols. Each has certain advantages with respect to noise immunity, relative susceptibility to interference, transmission time, color "trueness" and picture clarity or resolution.

To receive the picture adequately, the band pass must be wide enough to permit the tones between 1200 to 2300 Hz to arrive at the demodulator without loss of essential information. Any effort to narrow the band pass, cuts off tones and portions of the picture (detail and color) are lost. This situation makes SSTV incompatible with voice-only SSB transmissions. The two modes do not coexist very well. Nearby SSB plays havoc with the pictures, too.

To eliminate interference, it is necessary to remove the unwanted carrier tone while not disturbing the essential SSTV tones — a tricky task to say the least!

Obviously, a technical solution can often be circumvented. However, in this case, the interference problem has been reduced to manageable size by this product.

The price of the SSTV-1 is $160 from the factory. You can reach JPS Communications by phone at 919/790-1011 or fax 919/790-1456. **WR**

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Rules: Any authorized amateur frequency and legal mode of communications may be utilized. The person/station applying for the award must demonstrate, to the satisfaction of the Certificate Manager, the following:

1 — That the applicant's transmitter output power, during the period of qualifying communications, was accurately measured to be less than one watt (QRPp).

2 — That the distance between the applicant's transmitting antenna and the receiving station was over 100 kilometers (63 miles).

3 — That no artificial means of active relay was used to complete the communications (i.e. repeaters, satellite transponders, digi-peaters, landlines, etc.). However, reflections off of the ionosphere, mountains, tropospheric ducts, auroral curtains, meteors, the moon, satellites, buildings, aircraft bodies and other passive reflectors are acceptable and encouraged.

Application: A — Send a signed statement to the Certificate Manager affirming that the transmitter power was less than one watt, the distance was greater than 100 kilometers, and that no artificial means of active relay was utilized.

B — Provide the Certificate Manager with a photocopy of either the station log, or the confirmation QSL card, clearly showing the date, time, mode and frequency on which the qualifying communication took place.

C — If desired, provide the Certificate Manager with information concerning any endorsements (such as longer distances, even power levels, WAC, WAS, WAZ, Solar powered, etc.) that you may want listed on your certificate.

D — Mail $4 US ($5 foreign), along with application materials A, B, and C above to EFT, Low Power Award, P.O. Box 460101, Aurora, CO 80046-0101.

WR

Silent Key

Dave Atkins, W6VX

Dave passed away at his home in Los Angeles, CA on 23 December 1993. He had been ill for ten months — since his wife, Connie, passed away earlier in the year.

I first met Dave in 1930 when he came to England to join a ship commissioning in the north of England. He was to be the ship's radio officer. From our first meeting grew a lifelong friendship extending over 63 years and being firmly cemented by regular radio contacts which commenced after WWII. These had continued for some 45 years and were mostly on 21 MHz, Dave's favorite band. We also used other bands to take advantage of prevailing conditions.

Dave's interest in radio started in 1921, and shortly afterwards he was using a QRO ½ KW spark transmitter. This was fully licensed and reached "all the way to Nevada!" he wrote in 1976. Next was a UV-202 QRP 5 watt transmitter which "got out better. . . worked Oregon!"

Originally licensed as 6AEP, Dave became U6VX in 1928, and it was after this that Dave obtained his commercial license and went to sea. Following his days at sea, Dave settled down in the Hollywood area, and worked for ABC Television, which was just getting on the air. When he retired, he and Connie travelled much of the world, and they had some great experiences. If their travels took them through London, they would always come and stay with us in Surrey. It gave us great pleasure to show them quite a lot of the English countryside staying at country inns — these they found most intriguing. Similarly, after I retired some 23 years ago, my wife and I visited them on numerous occasions staying with them in their delightful home in Los Angeles. They, in turn, showed us much of California and neighboring states. Happy memories, never to be forgotten.

Dave's contributions to Amateur Radio, and his recollections of the early days in "wireless" will be sadly missed. Dave was a real gentleman, a good, kind and gentle man. Amateur Radio will be the poorer for his passing. All who knew Dave would, I am sure, wish to extend their condolences to his daughter, Constance, and the family.

— Information submitted by George Bennett, G5BZ

WR

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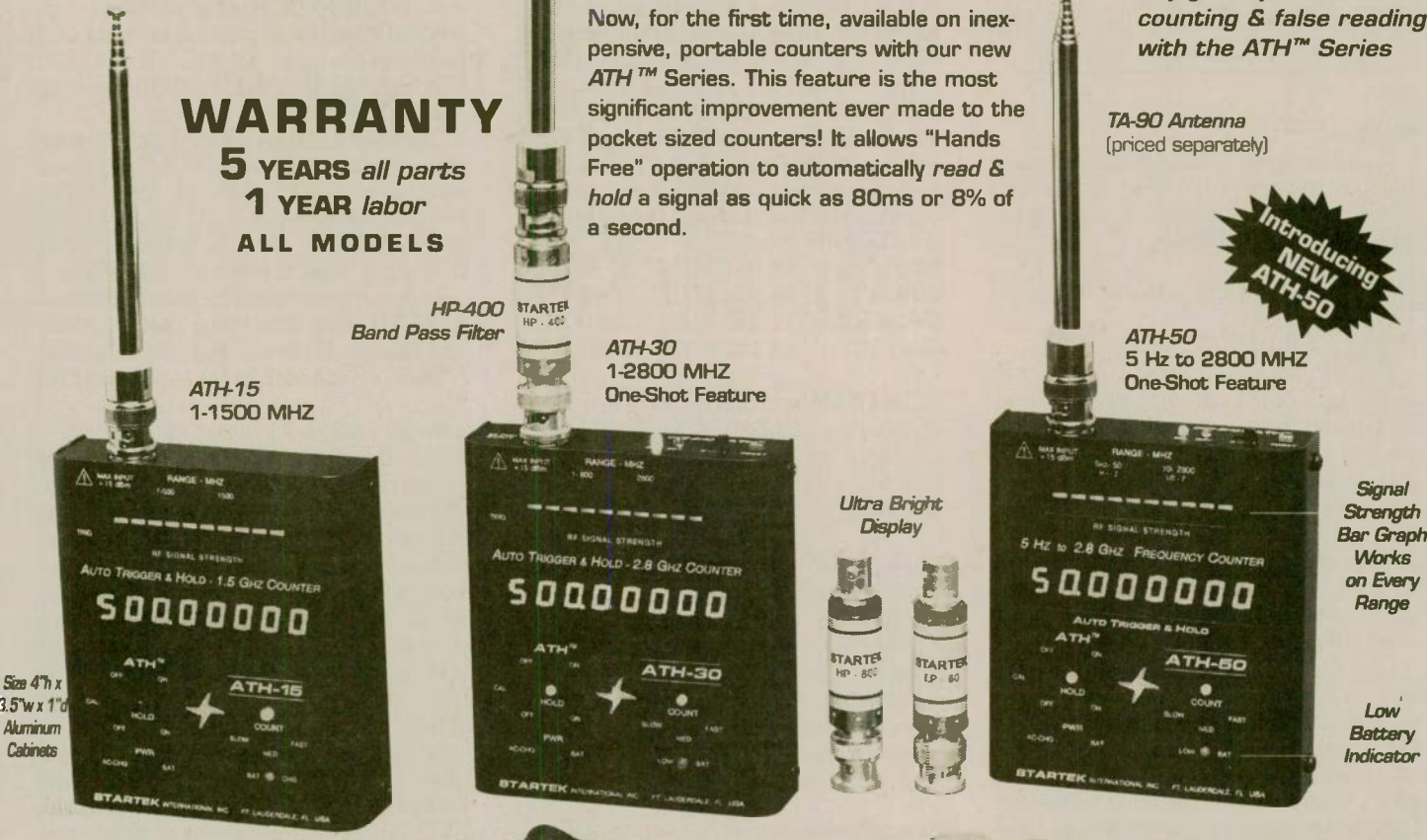

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E	*RD-2750*	27-50 MHZ rubber duck	28.
F	*RD-800*	800 MHZ rubber duck	29.
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DX WORLD

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

W-100-N

The following DXers completed the requirements for ***Worldradio***'s Worked 100 Nations Award during the month of March 1994:

472. K3RYA William P. Jacobs 03 Mar 94

Peter I Island (3Y0PI)

The subject of the Peter I Island will be the talk of DX conventions to come. The latest figure regarding contacts we have seen, which included their total operations as 3Y0PI and their contacts from VP8BZL, VP8CDE, ZD8D, 4K1F, and 4K1/XE1L, approached some 70,000. When requesting your QSLs be sure that you have the routes to the correct managers. They all do not go to the Bransons.

The Low Band Monitor had some interesting comments on the operations that we shall quote as follows: "This was one of the best operations of all time, if not the best. This 3Y0PI group wasn't operating from paradise, they were operating from a real hellhole of a location and had some real adversity thrown in at almost every step of the way.

"The 3Y0PI groups choice to use mostly SSB on 160 Meters will be discussed and debated for years. This really confused a lot of 160 Meter purists. If someone spends $20K of his own money and risks his life to give me a new country and asks me to bark like a dog — I will bark like a dog! Quack like a duck — no problem! Just put me in the log!"

I will not go into what is said. The understanding and appreciative DXer will accept it. The DXer who wears blinders will never know and probably works all his DX from list operations.

If you haven't already sent your QSL requests to the Bransons, don't forget that donation. The total cost of the trip was well in excess of $300,000.

Nigeria (5N)

The DX Bulletin reports that 5N0/DL9GMM will be active until the end of the year and is present active on 20 Meters around 14.019 MHz between 2100 and 2300 UTC Mondays. Other activity from this one includes 3.513 MHz and 7.013 MHz at 2300 UTC, 10.104 MHz between 2000 and 2300 UTC, and 21.015 MHz at 1800 UTC.

Activity from Nigeria is also reported by several other stations. On 20 Meters we have the following:

5N0MVE	14.287 MHz	2115 UTC
5N0SVL	14.226 MHz	0345 UTC
5N1MRE	14.210 MHz	2000 UTC
5N8LRG	14.247 MHz	0130 UTC

On 15 Meters there has been:

5N0AIP	21.020 MHz	1200 UTC
5N0BHF	21.257 MHz	2000 UTC
5N8ALH	21.291 MHz	2100 UTC
5N8NDP	21.248 MHz	1300 UTC

On the 12 Meter WARC band the deserving DXer found:

5N0BHF	24.965 MHz	1415 UTC
5N0HBK	24.945 MHz	1515 UTC
5N0SVL	24.940 MHz	1400 UTC

The Low Band Monitor reports 75 Meter activity by 5N0MVE who was reported on 13 February at 0045 UTC on 3.792 MHz.

Lesotho (7P)

From Lesotho, 7P8SR has been holding his own. On RTTY he has been worked near 21.085 MHz around 1745 UTC. Other spots to look for this one operating CW only includes 10.107 MHz at 2100 UTC, 14.026 MHz at 1900 UTC, 18.069 to 18.088 MHz between 1700 and 1800 UTC, 21.019 MHz at 1300 UTC, and 28.020 MHz at 1100 UTC.

The only other station reported recently was that of 7P8EZ, on 21.003 MHz around 1900 UTC on 19 February working into Colorado.

Botswana (A2)

At least six calls were reported active from Botswana recently with A22CT the most active. Look for this one near 14.219 MHz and 18.119 MHz at 1900 UTC, and 24.954 MHz at 1600 UTC. All reports were as reported in *DX News Sheet* published by RSGB. U.S. DXers will have to visit the DX net on 21.355 MHz at 1800 UTC.

A22JR works North Americans and has been found on 21.207 MHz at 1830 UTC and 28.489 MHz at 1300 working into the east coast.

Another active one is A22MN who visits several bands, who has been worked on 1.827 MHz at 0300 UTC, 7.027 MHz at 0430 UTC, 18.074 MHz at 2015 UTC, 24.905 MHz at 1700 UTC and 28.470 MHz at 1530 UTC.

Less active calls reported include:

A22DX	21.026 MHz	2015 UTC
A22EX	21.281 MHz	1630 UTC
A22RV	14.227 MHz	1100 UTC

Tonga (A3)

Bob Preston, W7TSQ, was visiting Tongatapu Island (OC-049) and operated as A35SQ during February and March. He was reported on several bands which included 3.799 MHz at 1145 UTC, 7.062 MHz at 1030 UTC, 14.017 MHz at 0430 UTC, 18.145 MHz at 0045 UTC, 24.950 MHz at 2300 UTC and 28.031 MHz at 2045 UTC. Bob even visited the DX nets to the delight of the list masters!

A35CT is also active from Tonga. Look for him between 14.235 and 14.247 MHz between 0300 and 0600 UTC. And, on 15 Meters you might try listening for A35MR, who was reported on 21.014 MHz at 0030 UTC around the middle of February.

Pakistan (AP)

The DX Bulletin reports that AP2JZB is on often on 21.295 MHz after 1200 UTC. This station has also been active on 20 Meters between 14.175 and 14.192 MHz after 0200 UTC and on 17 Meters near 18.136 MHz around 1300 UTC working Europeans.

Another station often found on 15 Meters is AP2MIZ near 21.270 after 1100 UTC most days according to *The DX Bulletin*.

We have reports of two other calls from Pakistan with that of AP2AL on 14.201 MHz at 1200 UTC and AP2SD on 3.511 MHz at 0100 UTC. The later is a European report one early Friday morning the end of February.

Andorra (C3)

The administration of licenses in

Andorra had been by France and the Episcopal See of Urgell (Spain), due to the historical and very unique ties between Andorra, the head of state of France and the Bishop of Urgell, reports J. Manel Sauri, C31US, President of Unió de Radioaficionats Andorrans (URA).

Andorra now has its own Constitution and is the 184th member of the United Nations. Andorra has membership in the International Telecommunications Union. And, URA has membership in Region 1 of the IARU.

It has been more than three years since a guest license (a call with the C3Ø prefix) has been issued. As a result the following calls are reported to be illegal:

C3ØEJA	SSB
C31/OZ3JK/M	SSB
C31AZ	SSB
C31LX	CW
C31NP	CW/SSB/RTTY

If you have worked these calls you will be wasting your time and money as they will not be processed though the U.R.A.

The prefix system presently in use in Andorra is as follows:

C31XXX	Resident calls with all privileges
C32XXX	Evidently restricted operation
C33XXX	Limited license in the process of upgrading to C31.

There is some confusion on the C32XXX where the explanation says "those only for MHz band operation."

Madeira Islands (CT3)

If you need the Madeira Islands on 75 Meters check CT3FT around 0700 to 0800 UTC between 3.790 and 3.800 MHz. He also works 12 Meters and has been found between 24.940 and 24.955 MHz working SSB from 1615 to 1830 UTC. If you can't reach beyond the DX nets try 21.355 MHz around 1800 UTC.

Also reported from this one included CR3R, on 160 Meters near 1.849 MHz at 0000 on a Sunday at the end of February working Europeans; and CT3GU, on 75 Meters at 0145 UTC on 3.798 MHz, working into Minnesota 20 February.

Angola (D2)

Active in the DX nets that meet on 14.222 MHz, 14.247 MHz and 14.256 MHz is D2EGH. Occasionally appearing in the nets is D2SA.

However, D2EGH works outside the nets and has been reported at the following spots:

14.194 MHz at 0600 UTC
14.241 MHz at 2300 UTC
14.261 MHz at 2130 UTC
21.235 MHz at 1845 UTC
28.470 MHz at 1500 UTC

Activity for D2SA includes the following spots: 7.045 MHz at 1800 UTC, 14.195 to 14.273 MHz between 2330 and 0200 UTC, 21.232 MHz at 2100 UTC, and 28.493 to 28.498 MHz between 1300 and 1630 UTC.

A third call from Angola has also been reported with that of D2EV. This station has been worked on 17 Meters near 18.072 MHz at 1730 UTC, on 15 Meters near 21.157 MHz at 1600 UTC working Europeans, and 12 Meters on 24.897 and 24.975 MHz, on both CW and SSB, between 1400 and 1500 UTC.

San Andreas Island (HKØ)

Some 20 years ago if you needed San Andreas Island you had to work Francisco, HKØBKX. Francisco was responsible for the only contact with the island for many of the deserving DXers. Times have changed with much activity on the bands from San Andreas Island.

Very active near 21.026 MHz is HJØVGJ. Look for this one between 2100 and 2300 UTC. He has also been reported on 40 Meters between 7.004 and 7.007 MHz after 0400 UTC.

Radioteletype operators might check for HKØDPA who shows often on 20 Meters. Look for this one between 14.086 and 14.091 MHz from 2130 to 2230 UTC.

HKØER is a multi-band station as he has been reported on 7.014 MHz at 2300 UTC working into Europe and on the WARC bands, 10.100 MHz at 0100 UTC, 18.069 MHz at 1745 UTC, and 24.905 MHz at 1730 UTC.

Other calls reported from San Andres Island during February and March include the following:

HKØNZV	24.950 MHz	1945 UTC
HKØNZY	14.226 MHz	1515 UTC
HKØOEP	24.944 MHz	1700 UTC
HKØTCN	21.277 MHz	2015 UTC

Incidentally, if we recall, HKØBKX is now a Silent Key.

Pitcairn Island (VR6)

The DX Bulletin reports that VR6ID is a regular on 15 Meters at 1600 UTC Mondays on 21.290 MHz.

VR6DB is also active and seems to prefer the DX nets as he has been reported in such a net that meets on 14.226 MHz around 2000 UTC. However, there is other activity as VR6DB has been reported on 7.189 MHz at 0800 UTC.

Two other calls were reported during this period. On 2 March, VR6CB was reported working into West Vir-

ginia on 14.235 MHz around 0530 UTC. VR6ME was up on 10 Meters near 28.471 MHz around 1930 UTC working into Iowa on 16 February.

India (VU)

Several calls have been worked on the bands recently and include the following:

VU2AU	14.177 MHz	1800 UTC
VU2HJA	14.006 MHz	1915 UTC
VU2MPS	14.185 MHz	1345 UTC
VU2PSJ	14.199 MHz	1215 UTC
VU2PT	21.025 MHz	1845 UTC
VU2PTT	14.025 MHz	2200 UTC
VU2RAK	14.177 MHz	0300 UTC
VU2RX	24.932 MHz	1415 UTC
VU2SVO	14.192 MHz	0245 UTC
VU2TS	21.006 MHz	1645 UTC
VU2VK	14.185 MHz	1200 UTC
VU2YK	14.179 MHz	0215 UTC
VU2YU	14.178 MHz	0230 UTC

VU3HKQ and VU3RMS have also been reported. These stations are not operating from India, but rather the Indian base located at 71°S 12°E in Antarctica.

Cambodia (XU)

Laci Szabó, HAØHW will be active from Phnom Pehn signing XUØHW for two weeks from 5 May. He will be operating with Sanyi, HA7VK, whose Cambodian call is XU7VK. There is a possibility that they may also operate for a few days from Rong Island in the Gulf of Thailand signing with XU9HA.

XU7UK will be active from Cambodia through February 1995. Presently, he has been reported on RTTY near 14.084 MHz around 0400 UTC, on 20 Meter SSB between 14.283 and 14.288 MHz between 1500 and 1600 UTC. *The Low Band Monitor* reports XU7VK on 3.553 MHz around 1530 UTC on 9 February.

The DX Bulletin reports of XU8DX that checks into one of those DX nets on 14.227 MHz. Try listening around 2000 UTC.

IOTA

The activity in the IOTA program continues to grow with many islands never activated before showing on the bands. To IOTA hunters these new ones create a mad dash, almost with as much enthusiasm as with the DXCC DXpeditions. Once they have been activated there seems to be little or no activity again.

Some time ago *DX News Sheet* printed a list of the most needed IOTA islands. This was a list of the island groups that already were assigned reference numbers. It would be helpful to have such a needed IOTA island list, which would be patterned after the Most Needed List that is prepared annually by *The DX Magazine*. Such a need list would be helpful for those interested in planning an IOTA DXpedition. What islands do you need?

Tom LeClerc, WB1CBY, will be returning to the eastern Arctic this spring. Beginning on or about 20 May for 35 days, Tom will be signing WB1CBY/VE8 from Baffin Island (NA-047). From there for another 30 to 35 days he will be signing with the same call from Resolution Island beginning on or about 25 June. The reference number was given as NA-156, but the IOTA Directory gives the reference as NA-130. Finally, on 1 August Tom will be operating from a new IOTA island near Victoria Island.

Here is a sampling of the IOTA activity that has been on the bands in March:

EU-031	Vervece Island	
IC8BNK/VR	14.262 MHz	1130 UTC
EU-039	Chausey Island	
F6KFV/P	14.256 MHz	1900 UTC
EU-082	Kil'din Island	
4K3RO	14.030 MHz	0700 UTC
AS-012	Amakusa Island	
JN6WGF	21.260 MHz	0900 UTC
AS-042	Sredniy Island	
RU6LC/Ø	14.260 MHz	0130 UTC
AS-070	Gusmp Island	
UAØQBO/A	14.259 MHz	0930 UTC
AS-101 Koh	Samui Island	
HSØZAU	14.243 MHz	1600 UTC
NA-036	Vancouver Island	
VE7DUG	3.768 MHz	0645 UTC
NA-055	Vinal Haven Island	
AK1L	14.258 MHz	1700 UTC
NA-069	Long Key	
K2OLG/P	14.260 MHz	1700 UTC
NA-075	North Pender Island	
VE7LQH	14.260 MHz	1845 UTC
NA-085	St. George Island	
WB8GEX/1J4	14.258 MHz	2145 UTC
NA-110	South Carolina group	
KB4GYT	14.259 MHz	1815 UTC
NA-138	Amelia Island	
W5IJU	14.260 MHz	2000 UTC
NA-141	Florida State East	
WD8MGQ/4	14.260 MHz	2115 UTC
NA-180	South Water Cay	
V31BW	7.005 MHz	0045 UTC
OC-049	Tongatapu Island	
A35SQ	14.195 MHz	0800 UTC
OC-119	Jolo Island	
DU8ARK	21.260 MHz	1015 UTC
OC-130	Mindanao Island	
DU9ECX	14.260 MHz	1445 UTC
OC-192	Ontongjava Atoll	
H44MS	21.260 MHz	0800 UTC
SA-018	Chiloe Island	
CE7OXZ	21.260 MHz	0015 UTC
SA-064	Los Chonos	
CE7AOY	14.195 MHz	0745 UTC
SA-068	Laguan Island	
8R/N4VA	10.104 MHz	0115 UTC

A resident on Vinal Haven Island (NA-055) is Ray Tabloski, AK1L. Vinal Haven Island is part of the Maine State East group. Ray says he is the only amateur on the island and operates both CW and SSB. Ray's address is P.O. Box 802, Vinal Haven, ME 04863. And, be sure to include an SASE

DXAC matters

The DX Advisory Committee Chairman Robert Beatty, W4VQ, has announced that the question of new country status for Pratus Island (BV9) has been removed from the DXAC agenda pending receipt of further information from the petitioner. A vote had never been scheduled on the petition. Upon receipt of the requested information, the matter will be placed on the agenda, and a vote scheduled.

DXCC desk

The DXCC Desk reports that documentation has been received and approved for the following operations, with their beginning dates:

3V8W	17 Jul 93
7Q7JA	07 May 90
8Q7BX	07 Dec 93
8R1/KD4GMV	11 Jan 94
8R1/KK4WW	11 Jan 94
9M2/DK7PE	17 May 93
A35CW	06 Jan 94
FS/W2QM	01 Dec 93
H44/DK7PE	13 Dec 93
HI8/7Q7JA	19 Jul 91
P29VCW	18 May 93
T7/DK7PE	10 May 93
VK9MM	18 Sep 93

DX Prediction — June 1994

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

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

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	*(19)*	16	*17	*(13)*	*14
10	*(21)*	*13	*15	*(14)*	*16
12	25	15	14	17	19
14	28	18	*(13)*	19	24
16	31	18	*(13)*	20	*27
18	*31	*(16)*	*(13)*	21	*29
20	26	20	24	19	*30
22	21	22	29	17	*27
24	18	22	31	14	*23
2	*16	21	31	12	*19
4	*17	20	29	*15	*17
6	23	19	*25	*17	*15

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	*(16)*	*19	*15	*(14)*	*18
12	*(18)*	*15	*14	*(14)*	*(17)*
14	*(21)*	*17	*13	17	22
16	*(23)*	18	*(13)*	19	26
18	25	*(15)*	*(13)*	20	28
20	26	19	24	18	30
22	21	22	29	16	27
24	*(18)*	24	31	13	24
2	*(16)*	*26	31	*(11)*	*20
4	*17	*26	29	*(15)*	*17
6	23	*25	25	18	*15
8	19	*24	*17	18	*14

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	*(18)*	16	*19	13	*15
9	20	*(14)*	16	15	*15
11	24	*(16)*	14	18	19
13	28	18	*(14)*	*19	23
15	30	16	*(13)*	*21	*27
17	31	*(13)*	*(13)*	*21	*29
19	*28	*(15)*	*(16)*	*20	*30
21	23	*(17)*	27	18	*28
23	20	19	30	*17	*26
1	*17	21	31	*14	*21
3	*14	20	30	*12	*18
5	21	20	27	*16	*16

V51/7Q7JA	18 Jul 91
V63MV	23 Dec 92
YJØAXX	23 Dec 93
ZD9SXW	29 Sep 93
ZK1ACW	17 Jan 94
ZVØASN	01 Jan 94

The 3V8W operation is valid for CW only on 7, 14, 18 and 21 MHz. T7/DK7PE was a 144 MHz operation.

DXCC backlog

The number of unprocessed DXCC applications at the DXCC Desk at the end of February was 497 (or 52,707 QSL cards). A total of 687 applications (60,558 QSL cards) was received during the month.

The DXCC Desk also stated although the sunspots have begun to fade their work load has not. The number of applications received for January and February was 75 percent of the same period for 1993. There were 83 percent more cards than that of last year.

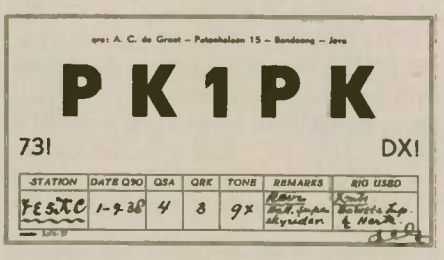
Northwest DX Convention

The annual Northwest DX Convention will return to Canada this summer. The convention, co-sponsored by the BC DX Club and the Fraser Valley DX Club, will be held in Richmond over the weekend of 23-24 July. This will be the 42nd year for this convention that rotates yearly between Oregon, Washington and British Columbia.

We have attended every one of the conventions that have been held in Richmond since 1982 and plan to return again this summer. For further information please contact: Earl Dery, VE7IN, 16969 20th Avenue, South Surrey, BC V4B 5A8, CANADA.

Antique QSL department

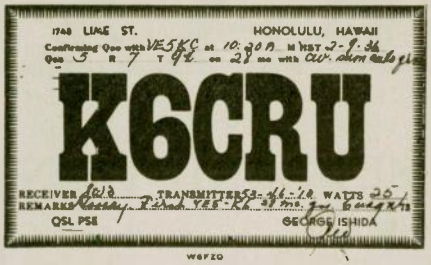
Our three antique QSL cards this month were submitted by Al Miller, VE7KC, who signed as VE5KC during the 1930s. At that time British Columbia was part of the 5th Canadian call area.



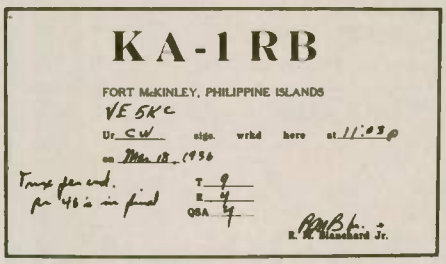
Al worked PK1PK back in 1938. The operator was given as A.C. de Groot, of Bandoeng, Java, which was part of the Dutch East Indies. No band or time was given on the card. The Dutch East Indies has since become Indonesia.

K6CRU was the call assigned to George Ishida of Honolulu. Al worked this one on 9 February 1936 on 10 Meter CW. In those days the prefix K

was for U.S. territories, such as K6 for Hawaii, K5 for Canal Zone, and K7 for Alaska. It cost two cents to mail the card from Honolulu to Vancouver.



KA1RB was the call used by R.M. Blanchard at Fort McKinley, in the Philippines. Again the KA prefix for a U.S. territory. Al's contact with KA1RB was on 18 March 1936 on CW. No band was indicated. The stamps on the reverse side of the card total ten cents. The stamps included both the United States and Philippine Islands on them.



As the Philippines gained their independence in 1947 we wonder if anyone has submitted a card with the KA prefix for DXCC credit. You old timers who have never applied for DXCC, why not check your QSL collection to see so you can rattle the DXCC Desk.

QSL information

Fred Laun, K3ZO, is *not* the QSL manager for the overseas operations of Tom Warren, K3TW. Fred's wife, Somporn, had assumed such chores for a period of time. She no longer holds that responsibility and hasn't done so since 1990. This includes Tom's calls of K3TW/4S7, 5HØT, 5H1TW, 5H3TW, ATØT, D68TW, J2ØTW, VU2TJW and VU4ØTJW. All QSL requests should be sent to Tom directly at 5912 Walnut Street, Temple Hills, MD 20748.

Fred adds, "I take pride in the efficiency with which I have answered QSL requests for my own overseas operations, and am somewhat concerned that Tom's non-responsiveness to his QSL responsibilities will in some manner reflect on me. It is for this reason that I am writing this letter. Recently the International Amateur Radio Union adopted *The QSL Manager's Ethics*, point 3 of which states: "Any DX station appointing a QSL Manager must accept responsibility for that manager's performance." Thus K3TW is the one who is responsible if people are not getting answers to their QSL requests for his operations.

Fred had been returning IRCs and green stamps that he had been receiving for Tom's operations at his own expense, but will soon cease doing such.

I think what Fred is trying to get across and what we have been saying at various times is don't blame the QSL manager for not receiving an answer in a timely manner. It could be several reasons from no supply of QSL cards to not receiving the logs. The supply of QSL cards on hand is something that must be worked out between the DX station and the manager. The manager shouldn't have to assume the expenses of QSL cards unless he agrees to do so beforehand. Now, a lazy QSL manager is another issue. However, that is not the point we are getting across.

Incidentally, K3ZO is not the QSL manager for BV7GG, HSØAC, HSØB, TU4EI or any XT2 operation either.

Herman Franke, WD4IFN, who has operated as HL9FN and most recently as TU4EV, wants to know if ***Worldradio*** maintains a data file on QSL managers and if we are going to publish a book on such. There have been books covering such material in the past, although we have not taken on such a task. However, there is a good source of worldwide QSL managers in the W6GO/K6HHD *QSL Manager List*, published monthly and is also available on disk. For further information we suggest you write to Electronics Enterprises, P.O. Box 700, Rio Linda, CA 95673-0700. Subscription rates are $25 per year with a single copy at $2.50. You may call them at 916/991-7263.

U.S. DXers are reminded that U.S. postage is not valid in Canada. It seems that QSL manager VE1AL received such SASE for VA1S QSL cards. Evidently, some DXers must think Canada is just another state! And, this reminds us of an incident a couple of years ago when the XYL mailed a letter to Canada. She found some Canadian mint postage that we happened to have and affixed the postage to the envelope. The post office accepted it! We don't know her logic. She must have thought — Canadian address, Canadian postage.

Of course, we do dumb things too. Like the time I took the video camera on a hike and put it back into my day pack forgetting to turn it off. Everything went dark, except for the sound of zip! She doesn't let me forget about that one.

QSL routes

3B8/F5PXQ	--F5KDZ
3D2CL	--JI3ACL
3D2KR	--JH1GZV
4K1/XE1L	--WA3HUP
4K1F	--KF2KT
4K2MAL	--UA4RC
4K3RO	--UA1ZIQ
4K6FT	--UD6FFF
4K8F	--UA9AB
4M1I	--I2CBM
4O7AV	--YU7AV
4O9S	--YU7KMN
4U1ITU	--HB9CJX (See Note 2)
4U1ITU	--I1YRL (See Note 1)
4U9ITU	--DARC Bureau
5NØ/DL9GMM	--DL9GMM
5NØDEY	--WB7F
5NØSVL	--4X1UF
5TØREF	--F6FNU
5U7K	--JA3XCU
5WØXA	--ZL1AFA
6B2X	--K5TSQ
7Q7JL	--GØIAS
7Z1IS/P	--OE6EEG
8P9DX	--VE3ICR
8P9NX	--WØSA
8Q7LX	--DF5WA
8R/N4VA	--N4VA
8R1/N4VA	--N4VA
9A5Y	--9A1CCY
9G1MR	--IK3HHX
9G1PW	--WB2YQH
9I2A	--DL7VRO
9I2M	--DL7VRO
9I2Z	--SL7VRO
9J2BO	--WØORD
9Q5TR	--IKØPHY
9X5OM	--DF9TA
A22JR	--N5FDX
A22MN	--WA8JOC
A35JJ	--JR2KDN
A35MR	--VK9NS
A35SQ	--W7TSQ
A61AD	--WB2DND
AA2MN	--WA8JOC
AHØT	--JA6BSM
AH6MM/KP4	--KC6CEX
AH8AE	--AA6LB
BV94ARL	--Bureau
BV9P	--BV2TA
C21/WK3D	--JR2KDN
C21/MI	--JR2KDN
C91AI	--CT1DGZ
C91AJ	--CT4RM
C91HA	--CT1DJZ
CE7AOY	--CE7ZK
CF1YX	--VE1YX
CN2VV	--N2TT
CP1OZ	--JO1MEE
CQ6E	--CT1EAT
CR7CNI	--CT1CNI
CR8A	--WA1ECA
CS9FF	--CT3YW
CT7E	--CT1EEN
CUØNSM	--CU2AU
CU2AA	--KA1HFL
CU2DX	--W3HNK
CXØXY	--CX3AN
CX7BF	--CX1AA
CY9CWI	--VE2SEI
D2/AA4HU	--W3HCW
D3C	--F6FNU
DK9DR/DU6	--DF7ZH
DU8ARK	--I2YDX
EA4ENK/P	--EA5OL
EA9PB/P	--EA5OL
EA9UK	--K5TSQ
EE5WPX	--EA5YJ
EK4JJ	--GM3CDP
EK7ZH	--RA4CDE
EL2LE	--K4ZLE
EL2PP	--N2CYL
ER1AM	--SP9HWN
ET3LJ	--DJ5IO
ET3JR	--F5OYK
EU5R	--EU1FC
EW1AAA	--F6AML
EW1CZ	--DL1OY
EY8M	--UJ8JMM
F6FXX	--WD4IFN
F6HQK	--WD4IFN
FG/KA3DSW	--KA3DSW
FG5BP	--KA3DSW
FH/DJ2BW	--DJ2BW
FH/DF9PG	--DF9PG
FH/DK2BI	--DK2BI
FOØHAD	--VE7GDX
FOØHAR	--WD5N
FOØPT	--DJØFX
FR/F5PXQ	--F5KDZ
FR5ZQ/J	--FR5ZQ
FR5ZU/E	--FR5ZU
FT5XJ	--F5NLL
FT5YF	--F3CJ
FY5GJ	--F2YT
FY5YE	--W5JLU
FY9IS	--FYØEK
G3PJT/VP9	--G3PJT
HBØ/DL9GFB	--DL9GFB
HC8A	--WV7Y
HG5A	--HA5ML
HG5C	--HA5KKC
HI/N2AUK	--N2LDV
HKØ/K1WGM	--K1WGM
HL9FN	--WD4IFN
HP1XBH	--W4YC
HSØ/G3NOM	--GØCMM
HSØAC	--W5VSZ (See Note 4)
HSØZAU	--WB6MZL
HT1T	--SMØKCR
HV4NAC	--IK8FVC
HZ1AB	--K8PYD
IBØC	--IK8AZG
IB4M	--I4ABF
II9E	--IT9JOF
IO2L	--IK2QEI

IQ6A	--I6FLD	UR6F	--LY1FF	ZK1NAR	--WD5N	ZP9XB	--PY5BI
IQ9K	--IT9JOF	UU5J	--LZ3DB	ZK1WTU	--N7WTU	ZS9Z	--ZS6EZ
IR2W	--IK2EGL	UU8JM	--LZ1KDP	ZK2XV	--WIØS	ZXØF	--PY5EG
IS0GCD	--IS0QDV	UU8JWA	--LZ1KDP				
IU6F	--IK6BOB	UX2HO	--I2PJA				
J52AG	--SMØAGD	UX4UA	--DK1RV				
J73BA	--J73Z	UX7IA	--UB5INT				
JW1BJA	--LA1BJA	V2/YU1NR	--YU1NR				
JW5VK	--LA5VK	V27T	--YU1RL				
KC6KT	--JR6IQI	V29NR	--YU1NR				
KG4CB	--WD9APE	V31BW	--WB5B				
KG4CG	--WD9APE	V31EN	--LF8NN				
KG4CI	--XE1CI	V31RM	--DL7UUO				
KG4WP	--WQ5Y	V31TP	--WCØW				
LSØA	--LU4AA	V31UO	--DL7UUO				
LT1N	--LU2NI	V44KM	--WN5K				
LT1V	--LU1VV	V59PI	--DJ6SI				
LT5F	--LU1FC	V63SD	--K7ZSD				
LX4A	--LX1NO	V7A	--V73C				
NØRHL/ZL	--NØOFR	V85CQ	--JH1QQN				
OHØKDY	--OH2KDY	V85NL	--JA4ENL				
OM7M	--OM3PA	VA2TA	--VE2BQB				
OM8A	--OM3RM	VE8ST	--VE1ANJ				
P4ØGG	--K8GG	VKØAQ	--VK5AVQ				
P4ØQ	--W6QSS	VK6CHI	--VK6LG				
PA6WPX	--PA3CAL	VP2E/JA1VPO	--JA1VPO				
PJ4/K2NG	--W2NHA	VP2E/JG1RXQ	--JA1VPO				
PJ5/K3UOC	--W1AF	VP2E/WJ2O	--WJ2O				
PJ6/N4UYU	--N4UYU	VP2EE	--KA3DBN				
PJ8CW	--K1BXE	VP2EEE	--KK3K				
PJ8NA	--K1NA	VP2EJA	--JA1VPO				
PJ9JT	--W1AX	VP2MBO	--KE9XY				
PQØZ	--PY1NEZ	VP2MR	--N5DXD				
PQ4B	--PY4BA	VP2V/W2GUP	--W2GUP				
PRØR	--PP5JR	VP5/AB5MF	--AB5MF				
PYØA	--PT2GTI	VP5L	--K4UTE				
PYØB	--PP1CZ	VP5N	--N2VW				
PYØFM	--PY5CC	VP8CBE	--W6MKB				
PYØTUP	--PY1UP	VP8CFM	--GM4KLO				
RK4WWQ	--AA4NU	VP8HK	--K1EFI				
RW3TT/Ø	--DL8AAM	VP9ID	--K1EFI				
RZ3DW/MM	--EA8BWW	VP9KG	--K1EFI				
S212Z	--JA2OCU	VP9KK	--K1EFI				
S50K	--S57EK	VP9KR	--K1EFI				
SU1/I4EFE	--IK4NZD	VR2IH	--G4RGK				
SU9HA	--Slim!	VS6WO	--K9EC				
SVØHS	--DJ8MT	VU7LI	--VU2STG				
T23JJ	--JR2KDN	XA5T	--XE2KB				
T30JJ	--JR2KDN	XE1/AH6MM	--KC6CEX				
T39M	--DL8OBC	XE2MOO	--KD5RQ				
T5YOU	--WA6YOU	XF4C	--XE1BEF				
T94CR	--SM5AQD	XR1I	--CE1HIK				
T97T	--SM5AQD	XR1Y	--CE1YI				
TI9CF	--TI2CF	XU7V	--HA6HW				
TI9JJP	--TI2AOC (See Note 3)	YB2ARO	--W7TSQ				
		YI1OM	--F8RZ				
TL8HB	--WB8TGP	YM3D/7O	--TA3D				
TM1C	--F6CTT	YRØDCF	--YO4DCF				
TM5FB	--F5XL	YS/WD4IFN	--WD4IFN				
TM6CDG	--Bureau	YZ94DX	--YU1DX				
TT8OBO	--WA4OBO	Z31ET	--DL5SES				
TU2PA	--KEØLS	Z32VP	--DL5SES				
TU5EV	--WD4IFN	Z37DRS	--DL5SES				
TZ6WO	--WB6EQX	ZF1CQ	--W8BLA				
UB3JWW	--W2FXA	ZF2MC	--N7MCA				
UK8FU	--K9FD	ZF2VZ	--N1MFW				
UK8ZAA	--K9FD	ZF2VZ	--N1MFW				
UM2A	--G3LZK	ZF8BS	--AA6KX				
UR4WWT	--WR3L	ZK1AT	--WB6EQX				
UR5WA	--SP5IUL	ZK1AVY	--N7WTU				

QSL routes

4JØQWJ	-- Boris G. Surov, P.O. Box 9, Chersky, Yakutia 678830, RUSSIA
4S7IP	-- Stefan, P.O. Box 907, Colombo, SRI LANKA
5T5MS	-- Mohammed, B.P. 327, Nouadhibou, MAURITANIA
7Q7UN	-- P.O. Box 30230, Lilongwe, MALAWI
8R1XPO	-- P.O. Box 10868, Georgetown, GUYANA
9G1SB	-- Sewell Brewer, P.O. Box B-199, Tema C-2, GHANA
9N1AA	-- Satis, P.O. Box 2, Rajbirj, NEPAL
AP5N	-- Andrzej Makowski, SP5DIR, P.O. Box 36, 00-976 Warsaw 13, POLAND
AR5N	-- Andrzej Makowski, SP5DIR, P.O. Box 36, 00-976 Warsaw 13, POLAND
C94BE	-- Carlos Alberto Santos, CT4DK, P.O. Box 574, Carcavelos, 2777 Parede Codex, PORTUGAL
CE5BYE/CE9	--Vincente Sales, P.O. Box 3016, Valparaiso, CHILE
EG9A	-- P.O. Box 307, 11280 Algeciras, Cadiz, SPAIN
H7ØO	-- P.O. Box 4636, Managua, NICARAGUA
HH2MED	-- David, P.O. Box 105, Port-au-Prince, HAITI
HJØVGJ	-- P.O. Box 852, San Adres Island, COLOMBIA
HP2DUI	--P.O. Box 1390, Colon, PANAMA
J6/DL5XAT	--P.O. Box 1411, D-21454 Reinbek, GERMANY
J6/DL9XAT	--P.O. Box 1411, D-21454 Reinbek, GERMANY
JN6WGF	--Youichi Takanishi, 9919-4 Goryou, Ituwa, Amakusa, 863-23, JAPAN
RU6LC/Ø	--Yuri Chubuchenko, ul Bolshaja Sadowaja 176 Kw 14, 344022 Rostov-on-Don, RUSSIA
SV2ASP/A	--Monk Apollo, Monastery Dochiariou, GR-63087 Mount Athos, GREECE
T3ØDW	--David Ollew, P.O. Box 66, Bairiki, Tarawa, KIRIBATI
TA2FU	--P.K. 321, Kizilay, Ankara, TURKEY
TU2KC	--Gerard Karpe, F5LBL, P.O. Box 7, F-54560 Audun le Roman, FRANCE
UAØQBO	--Boris G. Surov, P.O. Box 9, Chersky, Yakutia 678830, RUSSIA
UZØQWJ	--Boris G. Surov, P.O. Box 9, Chersky, Yakutia 678830, RUSSIA
V51C	--Ian Sutherland, P.O. Box 2327, Walvis Bay, NAMIBIA
VR6DB	--Dave Brown, P.O. Box 13, PITCAIRN ISLAND. via New Zealand
YA/RW6AC	-- P.O. Box 16, Armavin 352900, RUSSIA
YI1AA	-- P.O. Box 140, Swaleh, JORDAN
YI1EYT	-- Imad, P.O. Box 27110, Baghdad 12605, IRAQ
YI1SAS	-- P.O. Box 7147, Baghdad 12216, IRAQ
YI1SSS	-- Suher, P.O. Box 140, Swaleh, JORDAN
ZB2JO	-- Alex, P.O. Box 516, GIBRALTAR

NOTES:

1. This route applies for the dates of 12-13 March, 1994, only.

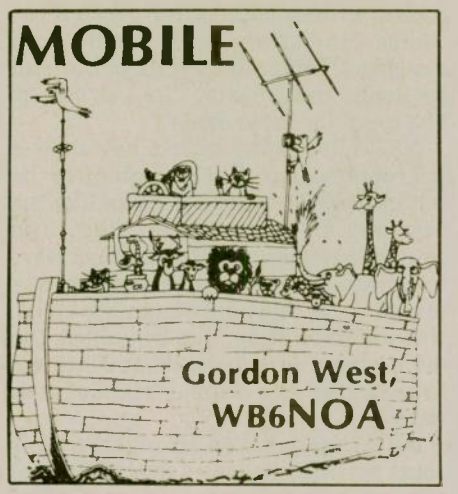
2. This route applies for the dates of 21-25 March, 1994, only.

3. Some DX newsletters suggest not QSLing to this manager and he has a habit of not replying keeping your IRCs, green stamps, etc. Registered mail doesn't help either.

4. This manager can handle cards for HSØAC *only* for the period of 14-23 August, 1993.

Many thanks to the following contributors: C31US, UAØQBO, VE7KC, VE7SZ, N2SAD, K3ZO, WD4IFN, KC5ALW, W6TUR, K6YO, KA8RAM, NE8Z, Salt City DX Association (KB2G), Western New York DX Association (KB2NMV), Northern Arizona DX Association (W7YS), Western Washington DX Club (WAØRJY), HamNet SysOp (W3VS), The American Radio Relay League (K5FUV), *The Low Band Monitor*, *Long Skip* (VA3JS), *The Long Island DX Bulletin* (W2IYX), *DX News Sheet* (G4DYO), *QRZ DX* (W5KNE), and *The DX Bulletin* (VP2ML).

Often we get mail directed to us via the Calvados Avenue address. This address is for ***Worldradio*** subscriptions only. The correct address is listed in every issue, both headquarters and my address included with the column head. Headquarters is OK, but there will be a delay as we only go there a week before the column is due. **WR**



Remotely possible

There is no vehicle or motorcycle too small that you can't fit a single- or dual-band, 50-watt, mobile radio into it. This is now possible thanks to the popular remote head option of most mobile transceivers. The head and controls go up at eye-level, and the rest of the body buries beneath the seat or conveniently under the dash. And if there's no place to put the remote head, you can buy equipment with everything — including readout — on the microphone. Read on — there is no car, boat, plane, or motorcycle too small...

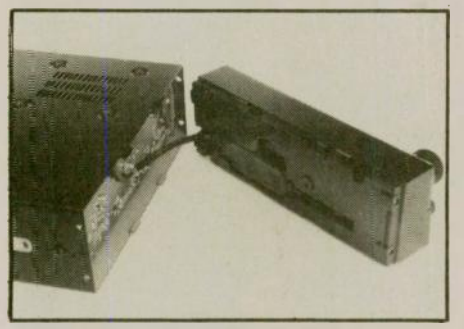
The best feature of the remote head is the SAFETY of a heads-up display. You are just asking for a crash if your transceiver is mounted down by your knees, and you must take your eyes off the road to manipulate the controls, or figure out what channel you are on.

There is not necessarily one brand radio remote control system that is best for everyone. Each has its own unique features, and I have had an opportunity to work most of these transceivers in some trial installations, and here is what I have come up with:

For motorcycle mobile as well as near-sighted drivers, put everything you need in your hand with a speaker microphone controller with LCD readout — from Standard Amateur Radio Products. The Standard C1208 is a single-band, 50-watt, 2 Meter transceiver with all of the controls — including the big LCD display — on the mike itself. It looks good in the daylight, and works great in the palm of your hand.

About the only thing we would have like to have SEEN in this all-in-one microphone would be a back-lit display behind the keypad. But we understand that may be a patented technology that only Yaesu can offer, so let's take a look at what Yaesu has. . . .

The Yaesu 5200 is a dual-band transceiver with remote-head option, and I liked the operation of this radio a lot better than their original FT-4700 which would sometimes lock-up on transmit when RF got into the remote-mounted head. We had no problems with the Yaesu FT-5200, and the remote was small enough to sit nicely on the dashboard with the dual-band box



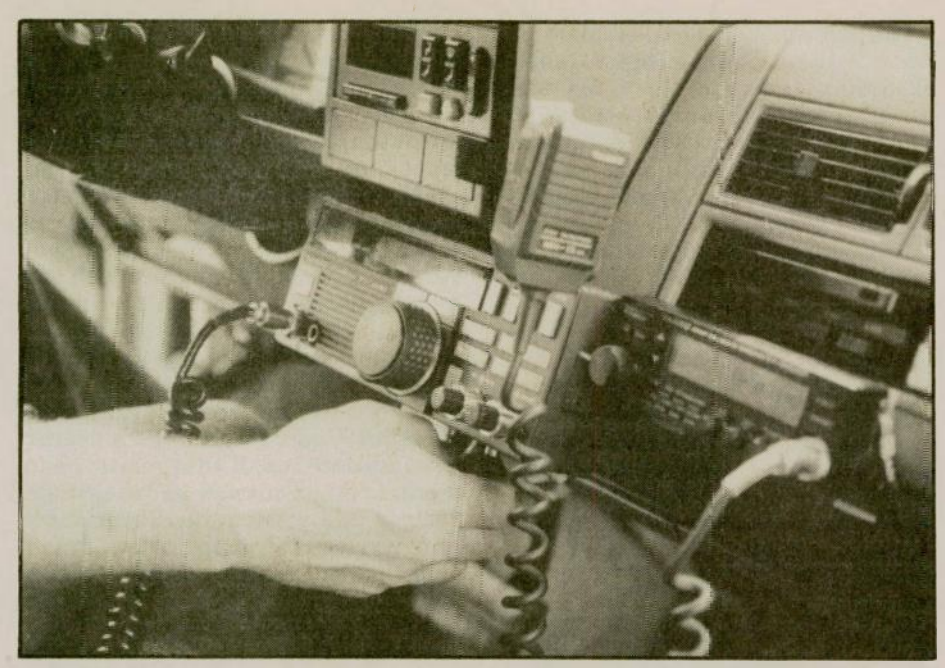
It is a one minute task to separate the remote head from the radio.

out of the way below the seat. We don't recommend mounting the transceiver box in the trunk as is sometimes mentioned in the instruction manual. This makes your 12 volt run way too long for the amount of current necessary for a 50-watt rig. It also could create a fire hazard to have a 12 volt cable running the entire length of your vehicle.

Put your remote-mounted box safely out of the way in the dash area, or under the passenger seat, and make darn sure nothing will pinch those red and black wires. Always make sure to run some ground strap off of both the mobile transceiver's box to chassis ground, as well as from the remote mounted head to chassis ground. If the head is left "above ground," it could do some pretty interesting things if enough RF gets into it from a nearby on-glass antenna. If your remote head seems to blank out now and then, then I suggest grounding the head unit for minimal RF interaction.

Yaesu does make a back-lit microphone, and this allows you to easily see the keys in total darkness. But while you'll find back-lit keys on different brands of equipment, you'll find the back-lit microphone an exclusive with Yaesu.

Over at Kenwood, they have more remote control single-band, dual-band, and tri-band rigs than anyone else. I like their idea of "split decisions" which allows more three-way convenience to



Mobile HF remote head is mounted on the left and the VHF is seen on the right.

remote controlling their tri-band transceiver 742/942. The transceiver box goes down below, out of the way, fed with hefty red and black 12 volt wires for its powerful 50 watts output. They say you may stash it in the trunk, but I disagree — that's too far away from your battery source. The control unit

Controls on the mike are designed for driving safety.

goes in an area where you can easily reach it, and the display unit goes on top of the dashboard for a heads-up view. The display unit is small enough that it won't impair your vision of the roadway ahead when it's sitting on the dash—this made possible by separating the control portion of this tri-band rig in an area where you can easily reach it. This three-piece set-up certainly deserves applause for driver safety and convenience in mind.

The Alinco dual-band DR-600 is another fabulous set-up where the box gets hidden away, and an extremely long cable tethers the compact head and controls to go just about anywhere. The DR-600 also has capabilities for 800 MHz receive, and coupled with out-of-band receive on VHF and UHF bands also turns itself into a powerful scanner with AM aircraft capabilities as well as a great dual-band ham transceiver. I recently saw the Alinco DR-600 installed in a communications bus, and they made up their own extension cable that was over 65 feet long. It was shielded, and it worked great! You don't necessarily need to use the same exact wiring as they recommend or supply.

ICOM has introduced their Delta 100H triple-band mobile with the display head that separates and goes up where you can see it and the road at the same time. This most amazing radio offers 642 memory channels organized in two separate banks, and allows you and your better half to preprogram the memories for your own operating needs depending on who's in control of the equipment. Sort of like those memory power seats that get their cue from which key goes in the ignition!

ICOM also suggests putting the big 50-watt box way back in the trunk. Again, unless you have a foreign car where the battery is in the trunk, I disagree. This makes your power run too long, and unsafe. The box can go easily under most seats.

ICOM has switched to a new type of microphone jack that is common in the land mobile industry. It looks like the common telephone line plug, and couples to a microphone that has more functions on it than you can believe — except for a digital frequency output. But unfortunately, like Standard, the microphone is not back-lit, and is tough to see in the dim compartment of your vehicle.

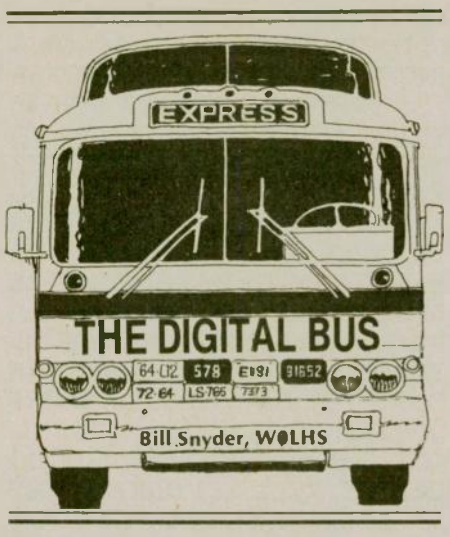
ICOM has done something that takes some getting used to — the traditional volume and squelch knob is THEIR volume and dial selector knob. The little outside knob that is normally volume now controls the ICOM frequency or channel selection. The inside larger knob which usually does squelch on most radios now controls the ICOM volume. The squelch control is either automatic or a squelch step button, and it's going to take you several weeks to get out of accidentally changing frequencies when you go to turn up the volume, accidentally changing volume when you go to set the squelch, and trying to remember where the squelch is when you've tried turning just about everything else!

You will probably find that the new ICOM 100 is best run off of the microphone itself; and once you get the feel for this new tri-band rig, you will like it as much as I do. But I'm still not convinced that the traditional single big knob for turning the frequency/channels, and the traditional big and small knobs on a single shaft for volume and squelch is what we are all used to when we're fiddling around trying to watch the road and change the channels.

In fact, when I travel around the country doing seminars and use a rental car, I prefer the single-band simplicity of a 20-channel memory radio that gives me separate knobs for volume, squelch, and channel changing, with a real big display that I can glance at while zinging down the highways.

For temporary mobile operation, safety should always be your first consideration, with a ridiculously simple-to-operate 50-watt rig on 2 Meters as your second important option. **WR**

Pictures season every story! All photos submitted to ***Worldradio*** *will be returned in unaltered condition.*



One of the finer points in living in North Dakota is the fact that our population density is rather sparse. There are suburbs of USA cities that have more population than our whole state (634,000). Furthermore, North Dakota is one of the few states with a declining population (a 2.9% decrease between 1980 and 1990). I understand there are only 1,486 Amateur Radio licenses in the state which makes it a rare state for WAS and contests. I know that for a fact — I always get a pile of QSL requests whenever I enter a contest.

For years our radio local club has sponsored the North Dakota QSO party each January. I always enjoy getting in it on CW as it brings back memories of my DXing days from British East Africa (1947-48). From there I could call one very short CQ and start an instant pile-up. It's about the same from my home station on North Dakota QSO Party days. After a couple CQs, the pile up starts; people line up to get QSL cards from the Flickertail State.

But this year, the committee in charge apparently waited too long to advise the magazines of the dates, times and rules, so nothing was printed anywhere to tell the WAS needy out there in radio land about the party. So, if you need North Dakota, watch for the North Dakota QSO Party in January of next year. The committee says it's sorry!

The ten message derby

The ten message non-scientific test I started back in February is over, but messages are still dribbling in at this writing, so I have no final numbers to dish out. I want to say it was a lot of fun for me because I made a lot of new friends by swapping messages with them, and friendship is what ham radio is all about.

Chip Purchase, N5NPR, in Houston, Texas and I found a common bond in theatrical stage work. He's a professional and I did it in my youth. When I went to college I worked as a part-time stage hand in a movie/vaudeville theater. It was during the dying years of vaudeville.

Chip and I compared notes on everything from hemp slivers in your hands from handling the ropes holding up scenery to the zany actors we worked with. I always remember the two signs that were posted by the lighting switchboard which was near the stage door. The first sign advertised a hotel a few doors from the theater that offered cheap rates to the vaudeville traveling troupers. The other signboard was a gag playfully aimed at the vaudeville acts themselves: "Don't send out your laundry till we've seen your act." From what I was able to learn, that gag was posted in a lot of vaudeville houses that played five assorted acts of singers, dancers, jugglers, comedians, magicians, tumblers. . . along with silent movies. Vaudeville died shortly after the movies began to talk. By the way, Chip and I have been corresponding on packet for longer than the ten thing, he's well into the 70 plus count as I write this.

Bill Dews, K6AWO, of Redondo Beach, California didn't send ten messages, but he sent along this comment on traffic overseas: "Thought I would tell you about sending messages back and forth to a ham pal in Germany. I just received one that was sent over a month ago. We can usually get them back and forth in a week. Counted the paths on the month message and it had ten. We did the number trick, too, and after a while we just gave up. We are going to see if PACTOR will help us out. Satellites can help the time factor, but we don't seem to get them in the play all the time. Just getting a message to North Dakota seems harder than to DL1 land." Bill's message to me took seven days and 13 relays.

My own experience with Germany happened when I was given the packet address of DL6PK by John (WA6PGA and HB9CBP) and Margrit (N6FQG) Schmid of Lompoc, California.

John didn't just stop at ten numbered messages, he sent a total of 24 (and we are still in contact). Four of the total (1, 5, 6, and 17) never arrived at my shack. They must have been sent by the Bit Bucket Network. At first I thought number 3 was missing, but on second look at the printout pile, I discovered what I thought was number 1 was actually number 3. Look at the arrival sequence: 3, 4, 2, 7, 8, 11, 15, 16, 14, 13, 12, 19, 10, 9, 21, 20, 18, 22, 23, and 24. The first one was mailed on 26

January and the last one arrived at my BBS on 18 February. So, you can see that John and Margrit's messages certainly arrived in a random order. One message, received after the test ended, was very badly jumbled and garbled, but that happens only rarely in our packet system.

At John's suggestion I sent a packet to Wolf, DL6PK near Koblenz. It didn't take very long to get an answer from him because of the nifty satellite link between Belgium and Winnepeg, Canada. Wolf's message to me took only three days and eight relays, which ain't bad! According to Wolf, he and John correspond almost every day over the system. DL6PK makes periodic trips to Lompoc to visit his grandson and family who live there, and Wolf says he will be QRV from there this coming summer.

Packet solution

When the April issue of ***Worldradio*** arrived at N8MBK, Nathan Burnett's shack, he read my column and promptly sat down and sent me the following message via the packet system: "Just read your column in the April '94 issue of ***Worldradio***. Was interested in the bit about the unreliability of the PBBS mail system. I have a solution, and it's a very simple one also. Ban AX.25 and run TCP/IP instead. I use IP a lot and send a lot of mail all over the world with it and so far not one message has gotten lost or garbled. Also the mail reaches its destination in minutes instead of days. A couple hours max.

"I still have trouble understanding why hams even bothered with AX.25. When packet first came out amateurs almost immediately had the 44. Class A address block assigned to them.

"The reliability of TCP/IP and the AMPRnet is amazing. If a radio path to a destination doesn't exist the connection can just hitch a ride on Internet via gateways because the protocols are the same.

"Just my opinion"

If you have opinions or comments on Nate's message, please send them to me. I remember being at an ARRL digital meeting at the Air Force Academy a number of years ago and one of the early packet advocates gave a paper on the TCP/IP system. Most of what he said went right over my poor old aging head, because I was having trouble with the AX.25 bit and another system was all I needed to confuse my old "RTTY as a hobby" mind further. It was fun to see those bright youngsters who gave us TAPR packet radio and AMSAT OSCARS discussing stuff they obviously understood completely, but what was all Greek to me — and most of it is getting Greeker!

In fact, I would like to turn this column over to one of those "bright young" experts because in the past few years I have felt like a guy in quicksand being swallowed up by the technology avalanche. I'm from the slide rule and hand-cranked Monroe calculator generation, and I'm still amazed at any mathematical calculation requiring numbers with more than two digits on the right of the decimal point. When I started ham radio 62 years ago, the radio text books still had stuff about rotary spark-gap transmitters in them — spark rigs were still being used on certain ships. I go back before the introduction of the screen grid to a three element vacuum tube, boy that was something! When I built my second ham receiver, I used a screen grid tube plus the two standard 201-A triodes which were in my first one. The RX was powered by batteries. Yup, I'm an old timer.

EAVESDROPPINGS

WHAT IS THE TECHNICAL DIFFERENCE BETWEEN PARTLY CLOUDY AND PARTLY SUNNY?. . . I'M GOING TO THE MIDWINTER MADNESS FLEA MARKET WITH MY BUDDY WHO, WHILE I LOOK FOR PRACTICAL THINGS TO BUY, HE GOES FOR STUFF WITH MASS AND WEIGHT. . . I'VE GRADUATED FROM BEING A LITTERBUG TO A CLUTTERBUG WHICH, ACCORDING TO MY XYL, IS MUCH WORSE . . . I'VE BEEN TYPING FOR 40 YEARS AND IF THE LITTLE LETTERS WERE NOT PRINTED ON THE KEYTOPS, A MONKEY COULD DO AS WELL AS I DO. . . I FIND IT IS CHEAPER TO BUY APPLES IN THE FALL THAN TO HAVE MY APPLE TREE SPRAYED IN THE SPRING. . . WE'RE STILL DOING MANY MULTIMEDIA PROJECTS LIKE THE ONES YOU SAW AT FRANKFURT . . . WE HAVE AN INTERACTIVE CALCULUS BOOK WE THINK WILL DO PRETTY WELL. . . I DISCONNECT MY BEAM ANTENNA WHEN THE FIRST THUNDERSTORM COMES AND RECONNECT IN THE FALL WHEN THE FIRST SNOWSTORM HITS. . .I REALLY DON'T KNOW THE GENDER OF THE PERSON IN THE MOON THESE DAYS. . .WHEN THE STOCK MARKET GOES DOWN MY XYL GOES INTO PRAYER. . . WHEN WE WERE KIDS WE HAD THE ICE WAGON, THE MILK WAGON, THE JUNKMAN'S WAGON, THE ASH MAN'S WAGON, AND THE GARBAGE WAGON ALL HAULED BY HORSES WHO LEFT THEIR TRADEMARKS ON THE STREETS . . . THE LAST MAN IN THE HORSE-DRAWN CIRCUS PARADE DURING OUR YOUTH WAS THE STREET SWEEPER WITH HIS BROOM. . . HE SWITCHED FROM RTTY TO AMTOR TO PACTOR AND NOW HE'S LIVING IN CLOVER. . . HE SAYS DAYTON IS A STATE OF MIND FOLLOWED BY THREE DAYS OF BEING LOST IN A FLEA MARKET.

Thanks to W7VFR, AA7AJ, N5NPR, WCØM, and host of others for help with this column. If you wish to communicate with me, my mail address is 1514 So. 12th St., Fargo, ND 58103. Packet is WØLHS @ WØLHS.#SEND.ND.USA.NA. 73 de Bill Snyder, WØLHS. DIT DIT. WR

Want to be a ham?

Call 800/32-NEW-HAM (800/326-3942). You will receive "how-to" information, lists of local clubs, classes and instructors, and VE test sessions in your local zip code area. — *The Readout, Stanislaus ARC*

OLD-TIME RADIO

That Good Old Ten Meter Skip

RUSS RENNAKER, W9CRC

The first story I ever sold was about an Amateur Radio operator. The year was 1919. I was twelve years old.

Those were the days of the spark transmitters and crystal detectors and coils wound on Rolled Oats boxes. I quickly found out I could receive much farther than I could send.

It was a Saturday and I was running the slider up and down the coil looking for a signal. There it was, very weak and scratchy but clear as a bell. It took me a few seconds to realize it was sending "SOS." He made the call several times and then gave the ship's location. It was off the New Jersey coast and had sprung a leak and was in danger of sinking. After about a minute he made contact with another ship some distance away, whose signal I couldn't hear, who agreed to come to the assistance of the disabled vessel.

Local atmospheric conditions (static) soon drowned out the weak signal and I heard no more. But that incident gave me the idea for my story.

I have long since forgotten the details of the story, but it was about an SOS signal, the ship sank and the Captain was brought up on charges having something to do with the information the radio operator had sent out. An Amateur Radio operator, who had heard the whole thing, turned up at the trial and testified, clearing the Captain. I received $5.00 for the story.

Some forty years later I was involved in a radio incident that brought back memories of the story I had written so many years before.

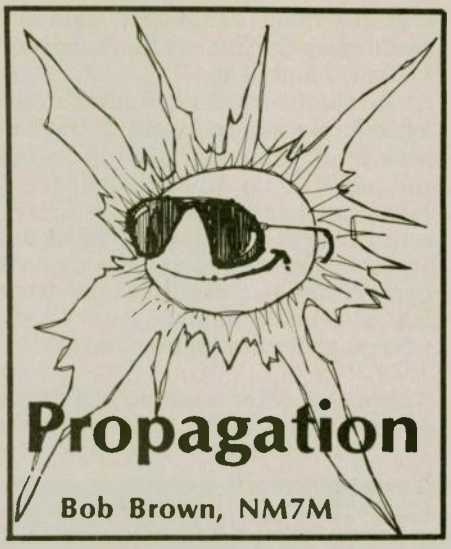
This occurred at the time the ten Meter band was at its height. It was a Sunday afternoon and I lived in Cedar Rapids, Iowa, running one of the famous Collins S Line receiver and transmitter. I was looking for a spot to call CQ and I heard a station say something about an emergency. He was calling CQ for any station.

I answered him and he came back to me. He was mobile and out of gas in some remote section of New Jersey. The emergency was that he was on the way to a hospital with his pregnant wife. I explained that I was in Iowa and not in any position to help. We talked for a few more minutes and suddenly a second station broke in. He also was mobile and apparently not too far from the first mobile. He could not hear the other station but said if I would relay the information to him he would try and help.

I sat there for thirty minutes relaying information back and forth. The second mobile stopped at a gas station and picked up a can of gasoline and delivered it to the stalled vehicle. I kept in touch until he arrived at the hospital. I cannot remember the call signs of the two stations and never contacted either again.

So much for ten Meter skip!

Note: Rennaker is author of *A Radio Journal*, 1912-1945 **WR**



"Time and tide wait for no man!"

Remember that one? As one of the scientific persuasion, that has a lot physical meaning for me and I take it as a truism, not a platitude. But I didn't realize the full extent of the part about tide until we retired here to our island home. One of the first things we did was buy a little sailboat and did some cruising around the San Juan Islands.

Now my wife was an experienced sailor, having crewed on boats in the San Francisco Bay. Needless to say, I had a lot to learn. Then came "Mistake #1": I tried to learn it out of a book, reading learned tomes like "Sailing Theory and Practice" by Marchaj. While I never got into deep trouble, like a friend who tried to learn how to ski from a book, I had my share of problems. Fortunately, my wife's skills made up for my shortcomings and I started up the learning curve.

Some of the first things a sailor learns are about the length of anchor lines and tides. There are plenty of stories to go around about anchor lines but the only source of information on tides that's readily available comes in tide tables, found in every hardware and sporting goods store up here. The nautical stores even carry current tables, something invaluable to boaters who go cruising.

Ebb & flow

As I gained experience (something quite distinct from confidence), I began to lose interest in the aerodynamics of sails and the hydro-dynamics of hull resistance. In their place, I turned to questions about tides and, as a practical matter, I used them to make cruising more enjoyable, say departing on an ebb tide and then returning from a cruise on a flood tide. Somehow the term "Slingshot" became associated with those events, joyfully being carried along with the tide. And so I started to read about the physics of tides, a topic which is truly global in character and encompasses not only the oceans but the "solid" earth and the atmosphere as well. For most of us, however, the tidal effects on the oceans are the ones most commonly observed. But I might add that results of tidal effects are easily observed by Amateur Radio operators but simply not recognized as such. More on that later.

On reading that last sentence, you might be tempted to shout, "Whoa, what are you talking about, tidal effects on the atmosphere or the ionosphere?" In reply, I'd have to say "Both, but let's take them one at a time." Before that, however, I have to make a few remarks about tidal effects on the oceans. Okay?

The problem of tides in the oceans is both ancient and honorable, first having been tackled by Newton back in 1687. Thus, having found the Law of Gravitation that bears his name and getting Kepler's ideas about planetary motions on a firm foundation, he turned his attention to tides and other geophysical problems.

Newton's approach

I won't say the problem of ocean tides is an easy one but it does have an advantage over that about atmospheric tides as the oceans are dense and have a finite extent, not wispy and thinning out at high altitudes as with the atmosphere. So Newton's approach was to consider the ocean as a thin layer surrounding the spherical earth and find the pull of gravity on a small volume of water from the earth itself and another astronomical body, say the moon or the sun.

When worked out, that tide-generating force from the moon's attraction deforms the ocean into a prolate spheroid, sort of like a European football, with its longest axis toward the moon. The solid earth, of course, rotates almost frictionlessly around its axis within the tidal bulge which surrounds it, the bulge fixed along the earth-moon direction. On that basis, an observer fixed on the earth would move through the tidal bulges and see high water twice a day.

With that simplified approach to the problem, one can find the moon's tidal effect and then compare it with that of the sun. When that is all worked out, noting the differences in both mass and distance for the two cases, it turns out that the moon's tidal effect is the greater of the two but that of the sun is not negligible. In fact, if one works out separately the maximum heights of lunar and solar tides on the earth, the ratio is 2.2 in favor of the moon.

Reality

One can go just so far with idealized examples and then reality sets in. That involves collecting data on tides over a long period of time and looking at the patterns which result. In the case of ocean tides, the general rule is that of a semi-diurnal type of tide, two high and two low waters in each day. But the "tidal day" is more like a lunar day, 24 hours, 53 minutes, than a solar day, 24 hours and with high tides about 53 minutes later each day due to the moon orbiting the earth.

So what do we do about the atmosphere and the ionosphere residing within it? For starters, measure one of their properties, do the same sort of time-series analysis and look for the dominant periodicity. In the case of the neutral atmosphere, the easiest thing to do is measure pressure at the earth's surface while for the ionosphere, ionosonde measurements of the critical frequencies would be the way to go.

But storms must be kept out of the records, as much as possible. In the case of atmospheric tides, that means going to low latitudes (the "doldrums" in mariner-speak) where the atmospheric pressure shows only small variations. For ionospheric purposes, however, an eye should be kept on the geomagnetic field, avoiding sounding data taken from periods during magnetic storms.

And what, pray tell, do you think comes out of those studies? For the atmosphere there is a regular, twice-daily rise and fall of the barometer at low latitudes while the critical frequency of the F-region in the ionosphere shows a complicated variation with latitude but on a once-daily basis. Interesting, don't you think? Two effects, one semi-diurnal and the other diurnal, result of the sun's action on the atmosphere. But how do we explain the difference?

Not gravity

Would you believe solar radiation instead of gravity? That idea came from the great French mathematician Laplace in 1799. His argument was that the barometric variations, the only thing they had in the way of observations at the time, followed the solar day rather than the lunar day. So he concluded that pressure oscillations had to be thermal rather than gravitational in origin and, of course, driven by solar radiation.

But the data he relied on was from higher latitudes which, as we well know, are subject to pressure variations from traveling weather fronts. By 1882, however, it was known that the tidal pressure variation of solar origin was really semi-diurnal in nature and Lord Kelvin, another giant in the scheme of things, put forward a "resonance theory" to explain why "with comparatively small magnitude of tide-generating force, the resulting tide is greater in the semi-diurnal term than in the diurnal."

That suggestion launched decades of theoretical research, all the while experimental advances were being made with the atmosphere explored "from the bottom up" by balloons and the ionosphere by sounding techniques. In that time, it became apparent that the atmosphere was heated from below, solar radiation in the visible spectrum passing freely through the atmosphere, then being absorbed by the earth's surface and re-radiated upward as infra-red radiation with a significant fraction absorbed by atmospheric constituents.

The ionosphere, on the other hand, was shown to be created "from the top down" by the absorption of another part of the solar spectrum, the extreme ultra-violet.

Present day

At this point in the discussion, I have to "make a long story short" by saying that the resonance theory of Lord Kelvin never came to be established. Instead, present-day theory suggests that in spite of a strong diurnal driving force from solar radiation, the 24-hour tidal oscillation is suppressed by damping while the 12-hour oscillation that is observed results from a moderate amplification. And the heat inputs associated with the two modes are different, radiation absorption by ozone associated with the diurnal mode and absorption by water vapor for the semi-diurnal mode.

As for the part of the ionosphere we're interested in for Amateur Radio purposes, it begins with the E-region around the 100 km level and extends to the F-region peak up around 300 km. While those regions are far removed from where atmospheric pressure oscillations are generated, the tidal mode from heating is still semi-diurnal but the magnetic and ionospheric variations are diurnal in character. This is the case as both phenomena result from an additional effect, the photo-ionization of the atmosphere on the sunlit side of the earth.

But the important thing for both phenomena is the tidal motions in the atmosphere. Thus, due to viscosity and tidal winds, free electrons and positive ions created by photo-ionization are carried across the geomagnetic field lines, producing a horizontal electric field by dynamo action. Around the 100 km level, where electrical conductivity reaches large values, ionospheric currents flow giving a diurnal character to the magnetic variations.

On the sunlit side of the earth, the electric field from dynamo action is in the west-to-east direction. Near the magnetic equator, electrons at higher altitudes, moving east-to-west under the influence of the electric field go across the north-pointing geomagnetic field and drift upward in their motions because of the magnetic force. Electrons north of the geomagnetic equator drift further north and those to the south move toward that direction. As a result, a "fountain effect" re-distributes electrons, giving an F-region 10-20 degrees either side of the equator which is higher and richer in electrons than it would be without the dynamo effect from tidal motions.

Geomagnetic currents

This ionospheric feature has been known since the days of WWII and the related geomagnetic currents established even earlier. The greater density of electrons at higher than normal altitudes give rise to anomalous propagation effects: higher than normal MUFs on paths that cross the magnetic equator and hops beyond the usual 3500 km limit for normal F-regions.

Lone path

At this point in time, most amateur operators are aware of that strong mode of propagation. In my long-path work into Europe from here in the Northwest, I make use of the "equatorial anomaly" all the time, getting long hops from Africa into Europe. But one doesn't have to only work long path to enjoy the benefits described above; my XYL and I used it recently in contacting the 3YØPI DXpedition, just another FB trans-equatorial contact. If you worked 3YØPI, you probably took advantage of it too, perhaps without even knowing it.

All in all, that's what we'd have called a "slingshot" in our boating days but ionospherically speaking, the basic tidal motions result from Laplace's ideas about solar, thermal excitation instead of Newton's lunar, gravitational attraction. That's important when you explain it to someone else so don't forget it. Okay? **WR**

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

10-10 Elections

10-10 elections are held every other year, and this is the year that all officers and five of the ten directors are up for election. Active (those with paid-up dues) will receive ballots via first class mail early in June. It is important for you to vote. Review the list of candidates in the April issue of the *10-10 International News* and send your ballot in the pre-addressed envelope enclosed with your ballot. Your vote is important!

Hill Country 10-10 gathering

The 6th Annual Hill Country 10-10 gathering will be held this year on 22 May at the QTH of Jack Moore, K4NF #50708. Everyone, 10-10 member or not, is welcome. If you are in the area, enjoy a day with this active group of 10-10ers. For more information contact Jack at: Rt. 12-Box 378, New Braunfels, TX 78132; or call Jack at 210/885-2194. Jack can also be reached via PACKET at K4NF@K3WGF.# SAT.TXUSA.NA.

Preview of results of the 1994 Winter SSB QSO Party

The City of Lights Chapter has finished scoring the Winter '94 SSB QSO Party and here is a preview of the top scorers:

Top overall score worldwide went to KC5ACP/P4 with 975 Qs and 1,762 points.

Top USA district winner was WN9P with 536 Qs and 992 points.

Top chapter score went to the Possum Trot Chapter with 46 logs submitted, 2,624 QSOs and a total point score of 4,994.

Congratulations to the top winners. With QSOs in the numbers noted, ten Meters can't be all that dead!! The complete list of all logs scored will be published in the July issue of the *News*.

10-10 DX

The count for 10-10 Countries is now at 269. 24 new DX stations joined 10-10 in the past three months. Croatia 9A2YC #64678, and Guatemala TG1TH #64671 are two of the newer DX stations and will be sought by many. If you need Puerto Rico, watch for Ramon, WP4JYA #65171. He likes 28.455 at 1600Z-1700Z daily. Carlos, LU2NI, #235994, is very active on 28.457 on Sunday at 2200Z. Thanks to Mike, KC5CP, #24949, *10-10 News* DX editor for the DX information.

10-10 WPX Award

The new 10-10 WPX Award has attracted a great deal of response. Rex Holford, KFØYF, #20426, WPX Award Manager, conducted the initial drawing for certificate numbers on 9 January, 1994 and awarded 126 certificates. WPX certificate number one went to Carl Fisher, WØHIK, #40678, of Augusta, KS. There were 16 DX members who were in the original drawing for certificate numbers. With all of those new prefixes out there, not only in the US but also in DX land, this could become the most popular 10-10 Award.

If you would like the rules and an application, send an SASE to Rex Holford, KFØYF #20423. 10-10 Worked all Prefix Award Manager, 3123 11th Avenue, Council Bluffs, IA 51501.

Las Vegas 10-10 Bash

A group of 10-10ers, under the chairmanship of Don Zielinski, KØPVI #9902, have scheduled a super 10-10 get together for the weekend of 18-20 August in Las Vegas. Arrangements have been made with the Hacienda Hotel and Casino on the strip for special room rates and a meeting place for the group to assemble. In addition to a friendship gathering there is scheduled a 10-10 net and other activities. If you would like to attend this 10-10 gathering, room reservations can be made direct with the Hacienda Hotel at 800/634-6713. Be sure to mention the 10-10 Amateur Radio Bash for the special room rates. Reservations are a must and the deadline for the special room rates is 1 July, 1994. Additional information may be had by sending an SASE to Don Zielinski, KØPVI, #9902, P.O. Box 229, Byers, CO 80137.

Next 10-10 QSO Party

The next 10-10 QSO Party (or contest) is the Spring CW contest, which will begin at 0000Z on 7 May and end at 2400Z on 8 May. Exchange callsign, name, state or country and 10-10 number. Some stations may request your county. Logs must be kept in UTC time and a dupe sheet is required. If you need information about preparing a dupe sheet, send a #10 size SASE to Harry Syring, WB1FTQ, #23934, 10-10 Contest Manager. You will receive a sample dupe sheet and instructions on how to dupe a contest.

You do not have to be a 10-10 member to participate in 10-10 contests. Everyone is welcome. For non-members, 10-10 contests are a great way to collect your required ten contacts to qualify for your very own 10-10 number. Members can send their logs to the City of Lights Chapter, c/o Joe Dubeck, NA9A, P.O. Box 1383, St Charles, IL 60174 before 1 June 1994 for scoring.

Information about 10-10?

If you are not now a 10-10 member and would like to learn more about the 10-10 organization, send a green stamp ($1.00) to help cover the cost of printing and postage, along with two first class stamps and an address label for the return of the 10-10 information package. Please no SASE, as the 10-10 information package requires a 9 x 12 envelope. You will receive a copy of the 36 page informational manual along with a copy of the latest issue of the 32 page *10-10 International News*. Send to: Mike Elliott, KF7ZQ, #54625, 9832 Gurdon Court, Boise, ID 83704.

Finally

If you have let your 10-10 membership dues expire, or have lost your 10-10 number, the same as above ($1.00 + 2 stamps + address label) to Mike will get you the information package along with your lost 10-10 number. WR

Visit Your Local RADIO CLUB

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

ALABAMA

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

ALASKA

North Pole Hamsters ARC. Meets 1st Mon./monthly, 7 p.m., VFW Bldg., Old Rich Hwy. & VFW St., P.O. Box 56424, North Pole, AK 99705.

South Central Radio Club. 8023 E. 11th Ct., Anchorage, AK. Meets 2nd Fri./monthly, 7 p.m., UAA Business Ed. Bldg., Rm. 220. KL7CC, (907) 338-0662 for info. Club rptr: KL7CC/R 146.37/146.97 PL 103.5 Hz.

ARIZONA

Central Arizona DX Assoc., (CADXA). Meets 1st Thurs./monthly, 7 p.m., Salt River Project Pera Club, 1/2 mi. West of 68th & Continental Dr., Scottsdale, AZ. Rptr. K5VT 147.32/92. Packet Cluster nodes (S): 145.09, 144.93, 145.03. Info: (800) 283-4319 or (602) 876-2718.

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

Scottsdale Amateur Club. Meets 1st Wed./monthly, 7:00 p.m., Scottsdale Sr. Cntr., 7375 E. 2nd St., Scottsdale, AZ. Net Tues., 7 p.m., 147.18 rptr. Info: Barbara Myers, KB7UKD, (602) 837-6492.

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. Meets 2nd Sat./monthly, 7:15 p.m., Pima Co. Sheriff Bldg., 1750 E. Benson Hwy. Net Thurs. 7:30 p.m. 146.22/82 (146.88-, 147.08-, 448.550-, & 145.15 Packet).

CALIFORNIA

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

Amateur Radio Club of El Cajon, WA6BGS. P.O. Box 50, El Cajon, CA 92022. Meets 2nd Thurs./monthly, 7 p.m., La Mesa Church of Christ, 5150 Jackson Dr., La Mesa, CA. Rptrs. 147.675(-), 224.08-. PL 107.2. Nets 147.570 Wed./Sat., 7 p.m. Info: (619) 697-2700.

Calveras Amateur Radio Society, (CARS), WA6YGA. P.O. Box 391, Angels Camp, CA 95222. Meets 3rd Thurs./monthly, 7:30 p.m., Fire Dept., 1404 Hwy 4, Angels Camp, CA. Net each Mon., 7:30 p.m., WB6MFV/R, 145.170(-), PL 100 Hz. Contact N6EL, Lloyd, (209) 754-3714.

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

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

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.25/85. Meets: 3rd Fri./monthly, 8 p.m. at 1528 Esplanade, Rm. 1108, Chico.

Kern River Valley Amateur Radio Club. P.O. Box 2611, Lake Isabella, CA 93240. Meets 4th Sat./monthly, 4 p.m. with potluck supper following. Talk-in on 144.450 Simplex.

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

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

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

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

Motorcycling Amateur Radio Club. Meets 2nd Sat./monthly, 8 a.m., Denny's Restaurant, 2314 17th St., Santa Ana, CA, (100 yds. west of the 55 Fwy.) Info: Ray Davis, KD6FHN, (714) 551-2010 or (714) 551-1036.

North Hills Radio Club. Meets 3rd Tue./monthly, 7:30 p.m., Elks Lodge, on Cypress at Hackberry in Carmichael, CA. (P.L. 162.2) Net K61S Thurs., 8 p.m. 145.190. 220 Net, Tue. 8 p.m. 224.40(-).

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

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

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. + Stockton Blvd., Sacramento, CA. Info net every noon on rptr. W6AK/R 146.910. Jim L. White, N6UGO, (916) 773-5890.

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

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

Santa Clara Valley Rptr. Society, (SCVRS). P.O. Box 2065, Sunnyvale, CA 94087. (408) 247-2877. 146.76(-), 224.26(-), 444.60(+). 2 meter/220 net Mon. 9 p.m. Mtgs./3rd Fri.

Shasta Cascade Amateur Radio Society, (SCARS). 2955 Shasta St., Redding, CA 96001. 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.

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

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. 244.38/78. Info: (310) 328-0817.

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

Stanislaus Amateur Radio Assoc., Inc. (SARA). Meets 3rd Tues./monthly, 7:30 p.m., Stanislaus County Admin. Bldg. (lower level conf. rm.), 11th & H St., Modesto, CA.

Stockton-Delta ARC. Meets 2nd Thurs./monthy, 7:30 p.m., Red Cross Bldg., 747 N. Pershing Ave., Stockton, CA Rptr. 147.165(+). Net Wed., 8 p.m. 146.655.

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.

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.

Vaca Valley Radio Club. Meets 2nd Wed./monthly, 7 p.m., Vaca Fire Dist. Stn. on Vine St. in Vacaville, CA. Rptr.: WD6BUS 145.470- PL 127.3. Dan Bissell (707) 446-7411.

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

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.

West Valley Amateur Radio Assoc. P.O. Box 6544, San Jose, CA 95150-6544. Meets: 3rd Wed./monthly, 7:30 p.m. (except Dec.) Cambrian Sch. Dist. Office, 4115 Jacksol Dr., San Jose, CA. W6PIY/R. Net Tue., 8:30 p.m. 147.39(+), 223.96(-).

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.

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

CONNECTICUT

Shoreline ARC, (SARC). P.O. Box 256, Westbrook, CT 06498. Meets 3rd Thurs./monthly, 7:30 p.m., Westbrook Ingraham Sch., (203) 245-1969. Call-in: 145.29.

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

FLORIDA

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

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.

Orlando Amateur Radio Club. P.O. Box 3262, Orlando, FL 32802. Meets 1st Wed./monthly, Beardall Center, Gore St. & Orange Ave., Orlando. 146.76(-), 145.11(-), 146.82(-), 147.015(+), 443.275. CTCSS 103.5 Hz on all except 146.76.

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

GEORGIA

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

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo, HI 96721-1938. Meets: 2nd Tue./monthly, 7 p.m., HELCO Auditorium, 1200 Kilauea Ave., Hilo. Talk-in on 146.68(-), 146.76(-), 146.88(-), 147.02(+) & 147.04(+).

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(-), 148.80(-), 148.88(-), 148.98(-) 146.94(-). Info: (808) 621-5916.

IDAHO

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

Kootenai Amateur Radio Society, (KARS). P.O. Box 5222, Coeur d' Alene, ID 83814. Meets 2nd Mon./monthly, 7:30 p.m., Sheprock Bldg., Coeur d'Alene Airport.

ILLINOIS

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 145.250. W9DUP repeaters 145.250(-) (107.2PL), 442.550(+) (114.8PL), 224.680(-).

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

Hamfesters Radio Club, W9AA. P.O. Box 42792, Chicago, IL 60642. Meets 1st Fri./monthly, 8 p.m., Crestwood Civ. Ctr., 139th & Kostner, Crestwood, IL. Nets: Sun. (local) 0100 UTC, 28.41 MHz; Mon. 9 p.m. 146.43 S., Packet Mailbox 145.07. Info: (312) 974-3291.

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

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

Six Meter Club of Chicago, Inc., K9ONA. Meets 2nd Fri./monthly, 7:30 p.m., St. John's Lutheran Church, 47th St. & Brainard Ave., La Grange Pk., IL. Info net every Tue., 9 p.m. K9ONA/R 146.970(-), 443.300(+), 107.2 Hz PL.

The Starved Rock Radio Club, W9MKS. P.O. Box 22, Tabor St., Leonore, IL 61332. Meets 1st Mon./monthly, 7:30 p.m. Rptr. net 7 p.m. Wed./wkly., 147.72/.12.

Wheaton Community Radio Amateurs, (WCRA). P.O. Box QSL, Wheaton, IL 60189. Meets 7:30 p.m., 1st Fri./monthly, College of DuPage, Glen Ellyn, IL. Nets Sun. & Tue. 8 p.m., 145.39 MHz. 440 MHz net on Tues., 8:30 p.m. on 444.475 MHz. RTTY Net Sun. 9:30 p.m. 145.31.

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

MICHIGAN

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

Oak Park Amateur Radio Club. Oak Park Comm. Ctr., 14300 Oak Park Blvd., (same as 9 1/2 Mile Rd., west of Coolidge) Oak Park, MI 48237. Meets 2nd Mon./monthly, 7:45 p.m. Talk-in on our 224.36 MHz or 146.64 MHz.

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

MINNESOTA

Minneapolis Radio Club. P.O. Box 583281, Minneapolis, MN 55458-3281. Meets 3rd Fri./monthly, Mpls. Red Cross Bldg., 11 Dell Place, Mpls, 7:30 p.m. Making waves since 1916.

MISSISSIPPI

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

MISSOURI

Central Missouri Radio Assoc. P.O. Box 283, Columbia, MO 65202. Meets 2nd Tues./monthly, 7 p.m., Boone Electric Coop, 1413 Rangeline Rd., Columbia, MO. Talk-in 146.76.

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

NEBRASKA

The Ak-Sar-Ben ARC of Omaha, NE. Meets 2nd Fri./monthly, 7:30 p.m., Omaha Red Cross near 38th & Dewey St. 146.34/94. Contact Jim Miller (NØORV), (402) 253-8272.

NEVADA

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

Wide Area Data Group, Inc. P.O. Box 3132, Sparks, NV 89432. Meets 1st Sat./monthly, 9 a.m., Bailey's Cafe, 4124 Kietzke Ln., Reno. Info: (702) 356-8200. Call in on 147.30 MHz.

NEW HAMPSHIRE

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

NEW JERSEY

10-70 Repeater Assn., Inc. 235 Van Emburgh Ave., Ridgewood, NJ 07450. Meets 1st Wed./monthly (except July & Aug.), 8 p.m., VFW, Valley Rd., Clifton, NJ. Rptrs.: 146.10/70, 223.24/224.84, 449.15/444.15.

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

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

NEW 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/.355 rptr. W2PVL.

Hall of Science Amateur Radio Club. P.O. Box 131, Jamaica, NY 11415. HOSARC, 2nd Tue./monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park, 7:30 p.m. Info: Charlie, WA2JUJ, (518) 420-0046.

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

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

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

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

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

Westchester Emergency Comm. Assoc., (WECA). Meets 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains. Contact WB2VUK or call WECA INFORLINE (914) 962-9666 or WECA landline BBS (914)738-6857 for details. Talk-in WB2ZII/R 147.66/06 MHz.

Yonkers Amateur Radio Club, (YARC). Meets 2nd Sun./monthly, 10 a.m., 1st Pct., Yonkers Police Station, E. Grassy Sprain Rd., Yonkers, NY. Info: P.O. Box 378, Centuck Sta., Yonkers, NY 10710. (914) 963-8995. 146.865-, 445.15/440.15.

NORTH CAROLINA

North Carolina Chapter TSRAC. Meets Mondays, 28.35 on the air, 8:30 p.m. local time, Sat. 10 a.m. on 7240 and Wed. 9 p.m. on 7259. "The Alligators" — all mouth, no ears.

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

OHIO

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

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly, 7:30 p.m., Municipal Bldg., Clyde, OH 44811. NF8E rptr. 145.35 and 442.625 MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS.

Firelands Area Rptr. Assn., (FARA). Meets 4th Tue./monthly, 7 p.m., Ohio Veterans Home, Sandusky, OH. WB8LLY rptr. 146.805-/205. Net Sundays, 8 p.m. Info: Rob Harshbarger, N5XRB.

Greater Cincinnati Amateur Radio Assn., (GCARA). Meets 4th Wed./monthly, 7:45 p.m., Cincinnati Museum of Nat. History, 1720 Gilbert Ave. Amateur Radio Station W8DZ. Info: WA8STX or (613) 563-7373.

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

Northern Ohio Amateur Radio Society, (NOARS). Meets 3rd Mon./monthly, 7:30 p.m., Gargus Hall, Rt. 254, Lorain, OH. Info: rptr. K8KRG 146.70, DX alert rptr. 145.15.

Sandusky Valley Amateur Radio Club. Meets 1st Sat./monthly, 9 a.m., Sheriffs Bldg. in the D.S.A. office, 2323 Country Side Dr., Fremont, OH.

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

Triple States Radio Amateur Club. Meets Wed./weekly on 28.48 at 8:30 p.m., 7260 at 9 p.m. Rptrs. 146.91- & 146.115/715-. P.O. Box 240, Rd. #1, Adena, OH 43901. (614) 546-3930.

Van Wert Amateur Radio Club, Inc. 1220 E. Ridge Rd., Van Wert, OH 45891. Call-in: 25/85. Meets 1st & 3rd Sat./monthly, 8 p.m.

OREGON

Central Oregon Radio Amateurs, (CORA). P.O. Box 723, Bend, OR 97709. Meets last Thurs./monthly, 7 p.m., Bend Sr. Ctr., 1036 NE 5th, Bend, OR. Net Sun. 7:30 p.m. 147.06(+) MHz. Info: (503) 385-1156.

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

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

Salem Amateur Radio Club, (SARC). Meets 4th Tues./monthly, after school, McKay High School Auditorium, 2440 Lancaster Dr., NE, Salem, OR. Talk-in 146.86. Info: (503) 393-9604.

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

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787, Butler, PA 16001-1787. Meets 1st Tues./monthly, 7:30 p.m., Boy Scout Cntr., 830 Morton Rd., Butler, PA. Call-in W3UDX/R 147.96/36. Net 10:10 p.m. nightly.

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

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.

VIRGINIA

Southern Peninsula Amateur Radio Klub, (SPARK). Meets 1st & 3rd Tue., Salvation Army Community Bldg., Hampton, VA. Repeaters 146.13/73 & 449.55(-5). VE Exam Info: (804) 898-8031, W4RTZ

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

WASHINGTON

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

WEST VIRGINIA

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

Tri-State Amateur Radio Assn. Meets 3rd Tues./monthly, 7 p.m., Green Valley Fire Dept., 16th & Norwood Rd., Huntington, WV. Monthly breakfast 1st Sat., 9:15 a.m., Bonanza.

WYOMING

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

MEXICO

Lake Chipala Amateur Radio Group. Meets Fri./weekly, 10 a.m., St. Andrew's Episcopal Church, Chipala, Jalisco, Mexico (30 mi. so. of Guadalajara). Simplex 146.49. Info: W4AFW/XE1. Charles C. Leonard, APDO 381 Ajijic, Jalisco, Mexico.

Amateur radio for me? Yes!

LISA HANDEL, KB5YVM

Amateur Radio can be a great hobby, but I didn't realize just how great until my brother Eliot, WB2S, got me started studying for my Technician license. I read the book, and he explained to me what I had read, taking the theory and turning it into practical radio. . . stuff that I could use and understand. He introduced me to ARRL, and I soon became a member. I look forward to getting *QST* every month. Eliot also told me about the Courage HANDI-HAM System, and I became a member there as well!

At first, though, I wasn't sure if I could join HANDI-HAMS. I have epilepsy, and, while I have the use of my arms, legs, and eyes, this condition does affect my brain waves and neuromuscular system. Would I be allowed to join?

The answer was yes! I was eligible! Even though I didn't consider myself handicapped in any of the usual ways, I knew that I could get help through the HANDI-HAM program.

On 2 January 1993, I took and passed the Novice and Technician tests on the first try. It felt WONDERFUL! The "ticket" finally arrived, after a wait of just about forever, in March. I received many well-wishes, and now when I'm talking with my new friends on the Fort Smith repeater (146.64), I sign off by sending 73 to all. It's kind of like the Walton's saying good-night, with five to ten people wishing each other well. "Y'all come back again soon, ya hear?" Ham radio is sure fun and exciting!

People with disabilities can get their "tickets" and operate their own stations, if only they decide to do so. I know that when I see a person with a disability succeed at something like Amateur Radio, I think to myself, "I can do that too!" The *HANDI-HAM World* newsletter features inspirational stories about people who have risen above their disabilities to get their Amateur Radio licenses.

All of us have special operating interests, but I find Amateur Radio to be a necessity. With my radio, I can quickly contact emergency assistance. When I have a seizure and cannot dial a phone, I can still work the radio.

My radio keeps me in contact with the outside world. Last year we had a severe thunderstorm and I was home with my eight year old daughter. The power and phone went out, but my trusty ham radio kept me informed of the storm's path and let me relay news of our safety.

HANDI-HAM members reach out to the greater ham radio community as well. I joined my local ham radio club here in Tahlequah, and within a year, I was elected president. It is an honor and a responsibility that I accept gladly. I am the net control for our Wednesday night net on 147.24. This has been a great way to learn how to organize a net and handle traffic.

Our club is making a roster of inactive hams in our area, and we are planning to write them and find out if we can assist them in getting back on the air.

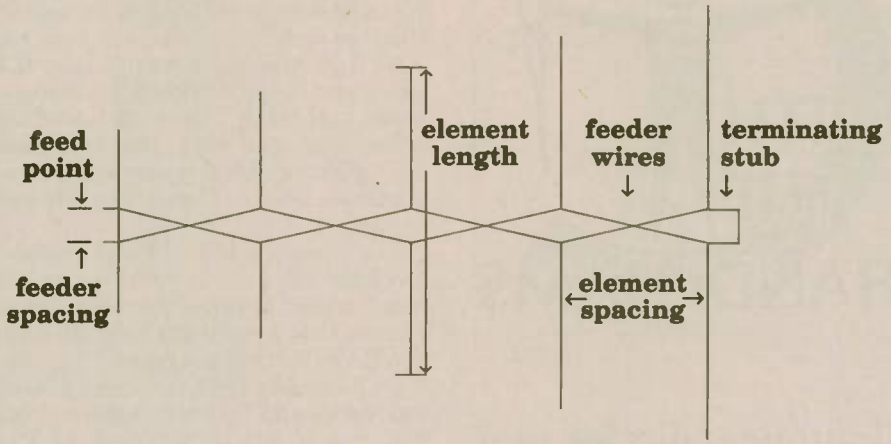
HANDI-HAMS. . . It's "hams helping hams." WR

Want to be a ham?

Call 800/32-NEW-HAM (800/326-3942). You will receive "how-to" information, lists of local clubs, classes and instructors, and VE test sessions in your local zip code area. — *The Readout, Stanislaus ARC*

Computers & BASIC STUFF

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



Log periodic dipole array

Log periodic antennas

To paraphrase the old phrase: Everybody talks about a broadband antenna with gain, but nobody does anything about it. Actually, several such antennas exist. The one that seems to be every town's favorite is the log periodic array.

At least I think it's every town's favorite, judging from what I see in my neck of the plains. Log periodic antennas would seem to outnumber all other types combined!

Unfortunately, all of the log periodics in my town are the relatively small affairs sitting atop television masts. It's a shame that what works so well for television isn't used more often in the ham bands.

The log periodic antenna, also called a log periodic dipole array (LPDA) is a relatively new antenna, as far as antennas go. It was first designed and tested in 1955 at the University of Illinois, where it proved to be a truly wide-band gain antenna. It was almost immediately accepted for military communications and, of course, TV reception. How well do they work? The ARRL Antenna Book points out that a well designed log periodic will give high forward gain, good front-to-back ratio and low SWR. Gain can exceed 10 dBi, with some references going as high as 13.5 dBi.

One reason we don't see more HF LPDAs, I think, is because they're so big at the lower frequencies. Its longest element is as long as a half-wave dipole and its boom length can be somewhat longer. A log periodic antenna would certainly be out of the question for an apartment dweller who doesn't even have room for a dipole.

Unless, of course, he's willing to experiment. Wire LPDAs are somewhat common on high frequencies, and V-swept and inverted-V designs have been used, apparently with good results.

One other reason that log periodics aren't very popular probably has something to do with design criteria (or lack of it). In one reference book the writer suggests drawing a lowest-frequency dipole on a sheet of paper, then adding additional elements, each about 10% shorter, until you get one the size of a half wavelength on the highest frequency. Then add three more....

The book goes on to say that calculation of matching impedance and determining the number of active elements is complicated, but if you look at enough (other) publications you might be able to work something out. The instructions go on to suggest that you try something in the range of 300 to 600 ohms.

Actually, the design process is fairly simple and flexible, including the part about impedance matching. Drawing figures on a sheet of paper can work, or you can use a slide rule or calculator to work the formulas. But, best of all, a simple BASIC program in your computer can let you play with all sorts of parameters to see what kind of design will work best for you. This month's program, written in generic BASIC, does just that.

The program uses the hardware information to compute the feeder spacing which, in turn, establishes the antenna's impedance. Coax impedance,

```
10  CLS: PRINT "LOG PERIODIC DIPOLE ARRAY, BY KD5DL, 4/1/94": PRINT
20  PRINT "HARDWARE SELECTION: ":PRINT: INPUT "COAX IMPEDANCE
    (OHMS)";CZ
30  INPUT "FEEDER WIRE SIZE (AWG)";WS: FD=.46/(1.1229322^(WS+3))
40  INPUT "DIAMETER OF SHORTEST ELEMENT (IN)";E: PRINT
50  INPUT "LOWEST FREQUENCY (MHz)";A: INPUT "HIGHEST
    FREQUENCY";B: C=B/A
60  PRINT: INPUT "DESIGN CONSTANT (.80 TO .98)";F: G=F*.243-.051
70  PRINT "  (SPACING CONSTANT RANGE IS .05 TO";INT (100*G)/100;")"
80  INPUT "SPACING CONSTANT ";H: J=4*H/(1-F): K=1.1+7.7*(1-F)^2*J:
    L=C*K
90  N=1+LOG(L)/LOG(1/F): IF N-INT(N)<.3 THEN N=INT(N) ELSE N=INT(N)+1
100 D=984/A: P=D/2: S=P
110 FOR R=1 TO N-1: S=S*F: NEXT R
120 X=S*12/E: Y=120*(LOG(X)-2.25): XO=4*CZ: KO=H/SQR(F)
130 ZO=XO^2/(8*KO*Y)+XO*SQR((XO/(8*KO*Y))^2+1)
140 FS=FD/2*10^(ZO/276):T=.5*(P-P*F)*J
150 PRINT: PRINT "ELEM LNGTH   DIAMETER    SPACING": PRINT
160 LI=1: PRINT INT(P*100)/100, INT(P*12000/X)/1000, INT(T*100)/100: S=P:
    U=T
170 S=S*F: U=U*F: T=T+U
180 IF LI<N-1 THEN LI=LI+1: PRINT INT(S*100)/100, INT(S*12000/X)/1000,
    INT (U*100)/100: GOTO 170
190 PRINT INT(S*100)/100, INT (S*12000/X)/1000: T=T-U: ZT=6: IF D<30 THEN
    ZT=D/8
200 PRINT: PRINT "BOOM LENGTH: "; INT(T*100)/100;" FT."
210 PRINT "FEEDER SPACING: ";INT(FS*100)/100;" IN."
220 PRINT "TERMINATING STUB: ";INT(ZT*100)/100;" IN.": PRINT
230 INPUT "NEW CONSTANTS";A$: IF A$="Y" OR A$="y" THEN 60
240 INPUT "RESTART OR QUIT (R/Q)";A$: IF A$="R" OR A$="r" THEN 10
    ELSE END
```

ing to reenter hardware and frequency data.

Using the example from the *ARRL Antenna Book* for a 4-band LPDA covering 18.06 to 29.7 MHz, and using 52-ohm coax, AWG #12 feeder wire, a half-inch small element diameter, a design constant of 0.8 and a spacing constant of 0.06, you should get the following:

Elem Length	Diameter	Spacing
27.24	1.22	3.26
21.79	.97	2.61
17.43	.78	2.09
13.94	.62	1.67
11.15	.5	

The boom length should be 9.65 feet long, the feeder spacing should be 2.41 inches and the terminating stub should be 6 inches long.

What else can you do? How about mixing and matching bands. Why not try a 21 to 55 MHz LPDA, or a six- and two Meter array, or something in the 2 Meter to 70-centimeter range? If you're interested in log periodic antennas you can find more information in the ARRL's publications, including their Antenna Book, and other amateur radio books and magazines. You might even want to try publishing your findings as an article in ***Worldradio***. WR

array feeder wire and element diameter information set the feeder dimensions (based on using 4:1 balun to match coax to feeder).

The smallest element diameter establishes the length-to-diameter ratio for all the other elements. A perfectionist might use this information, but it isn't absolutely necessary. If you're designing a wire antenna, just enter the wire diameter and ignore the given diameters.

The design and spacing constants determine the operating characteristics of the antenna. The design constant, usually illustrated with the Greek letter tau, is the parameter used to determine element lengths and spacings. Its value is usually chosen to fit in the range .80 to .98, and as the value increases so will the number of elements for a given frequency range.

The spacing constant, called sigma, has an optimum value for maximum gain, but that value also dictates a long boom length. The value G in lines 60 and 70 give the optimum sigma, but also allow you to choose something less for a shorter boom.

Just remember that a higher design constant (tau) means more elements and a higher spacing constant (sigma) means a longer boom. In our program, line 230 allows you to loop back to change these constants without hav-

YLs on the Air

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

YL contest news

Congratulations to Harriet Rayonor, KB8JVY, of Kirtland, Ohio, who won YLRL's "Meet the Novices and Technicians Day" contest, held in January. This was Harriet's first YL contest so she's off to a great start.

Participation in the YL-OM contest this year seemed fairly sparse for some reason. Some of the OMs were asking. "Where are all the YLs?" It's a shame if you didn't get to operate in this contest, because it was a lot of fun.

Now that the DX-NA YL contest in April is over, the YL contest season is closed down until Howdy Days in September. But there are still a lot of activities in which to participate, so be sure to get on the air. To paraphrase the old saying about reading; "The person with an Amateur Radio license who doesn't get on the air is no better off than the person without a license." So turn on the radio and talk to someone!

YLRL's DX-YL Adoptee program

One of the primary purposes of YLRL, as specified in the YLRL constitution, is to sponsor the participation of foreign YLs in YLRL activities. This has been accomplished by the DX-YL adoptee program, in which YLs in this country pay the YLRL dues for foreign YLs, who might have trouble paying in U.S. currency. Many times the DX YL then reciprocates by enrolling the U.S. YL in her country's YL group, but in any case, it's usually a very worthwhile relationship.

The program promotes international friendship and supports YLs and YL groups all around the world. It's surprising how many of the YLs eventually meet in person, after meeting on the air and years of correspondence. I'm currently sponsoring three YLs: one in Indonesia, one in Korea, and one in England. I've met two of them already and hope to meet the third some day.

Lois Gutshall, WB3EFQ, just returned from a trip to New Zealand, where she visited her adoptee, Marilyn Thorp, ZL2BOA; Kyoko "Miyo" Miyoshi, JF3MVF, just returned home from a visit to her sponsor Jeanie Parker, WA6UVF, and YLRL President Christine Haycock, WB2YBA, visited her adoptee Mavis Stafford, VK3KS, in Australia, in March.

But even when the sponsors and adoptees never meet, they can and do still become very close friends. It's a very nice way to learn about the customs and cultures of another country.

Lorraine Witkowski, WA1EDR, is YLRL's DX Chairman, who coordinates the program. U.S. YLs who want to adopt a DX YL can pay dues for a YL they have met on the air or write to Lorraine to see if there may be any DX YLs waiting to be adopted. Dues are $16.00, which includes $8.00 for air mail postage of YLRL's newsletter *YL Harmonics*.

Radio cats

Janis Cameron, VE7AAP, has created a great way of combining three of her interests. She and her husband Garry, VE7ACM, have three cats, A.C., Cuddles, and Koska. They say Koska is a "techno-cat" and is fascinated by their computers and radios, and that if she were human, she would certainly have an Amateur Radio license and would probably be a mechanic or technician. Koska is featured on Janis's QSL card.

Janis and Garry are very active on 10 Meters and enjoy chasing Ten-Ten chapters and operating their local chapter. One day while Garry was tuning across 10 Meters, A.C. and Koska were both on the operating desk. Janis snapped a quick photo and later sent it to Ed Redwine, K5ERJ, in Wichita, Kansas, and Dick Davis, WA1EBJ, in Haverhill, Massachusetts. When Ed sent back a picture of his cat Doofus, and Dick sent a picture of his cat Mitty-Sam, Janis decided to put those two pictures into an album and to ask amateurs around the world for pictures of their "radio cats." They now have over 100 pictures, from several countries and at least half of the 50 states, and they brought the album to the Ten-Ten Convention in Wichita last September.

Garry and Janis are also interested in the restoration of old cars and are currently restoring a 1954 Plymouth. They have found many other amateurs on the air who are also old car buffs, and since the two hobbies seemed to complement each other, they organized their local Ten-Ten chapter, Restoration Project. About 70% of their cat photos have come from Ten-Ten members so they have a special certificate called Feline Friends, and these numbers are collectible on the Restoration Project award.

Now if you are not a cat lover, this may all seem a little strange. But I have a picture of my cat Tom on my QSL, and I have been really surprised at the number of people who have written very nice letters after receiving my card and telling me all about their "radio cats," so I know there are a lot of cat lovers out there in radio land. By the way, I now hold Feline Friends #CG65C (Care Giver #65 of Cat), so give me a call on 10 Meters. This number is just for fun, but it does give extra points for the Restoration Project. I have more info on the Feline Friends/Restoration Project, or you can write to Janis Cameron, VE7AAP, 3528 11th Avenue, Port Alberni, B.C. Canada V9Y 4Y7. Her packet address is VE7AAP@VE7EMO.#NVI.BC.CAN.NA. Garry and Janis can also be found

on the Air Capital Net on 28.775 MHz, at 2030 UTC, on Sunday afternoon.

YL Update

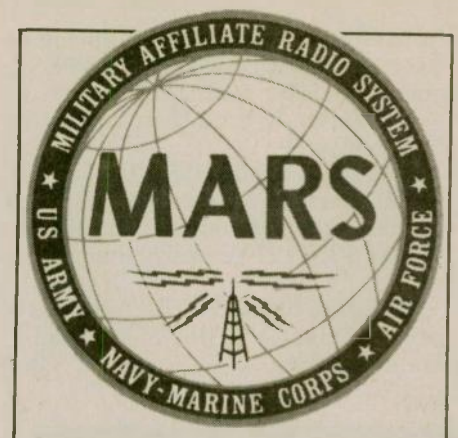
Beth Lewis, KA7AKK, of Apache Junction, Arizona, was recently honored as "Ham of the Year" by the Kachina A.R.C. for her participation in public service events, special events, field days, and emergency drills and preparation. She was also recognized for teaching Amateur Radio classes and serving as encourager, enabler, tutor, and friend to her students.

Marion Witvliet, 5R8DY, is currently active from Madagascar, and can sometimes be found on the Africaner Net, 21355 MHz, at 1800 to 1900 UTC. She and her husband Ben, 5R8DS, can work 160 through 10 Meters, but Marion is most active on 15 and 20 Meters, weekdays from 1100 to 1500 UTC, and weekends from 1630 to 1900 UTC. Her address is P.B. 404, Antananarivo, Madagascar.

Nellie de Lazard, XE1CI, operated from Guantanamo Bay this spring as KG4CI, and Ruth Geering, IT9ESZ, operated /HV4 from the Vatican in early March. QSL to their respective home calls.

Bergitta Astrom, SMØFIB, has left Saudi Arabia and returned home to Sweden. Her new address is Batholmsbacken 13, S 127 42 Skarholmen, Sweden.

Christine Shaw, 7Q7BX, also has a new address. It is Box 5698, Limbe, Malawi, Africa. **WR**



Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

"What is so rare as a day in June?" That question has come to us through the years with as many answers as there are people who consider it.

To MARS members everywhere, June, 1994 holds the promise of much practice in emergency communications both at home and in the field.

Grecian Firebolt 94 is the worldwide communications exercise sponsored by the United States Army Information Systems Command (USAISC) and is being conducted from 11 to 25 June, 1994. The exercise involves worldwide military communications as well as support to civilian disaster agencies reacting to simulated natural incidents such as hurricanes, earthquakes, floods, et al.

The USAISC is the Army parent command for Army MARS. It is responsible for the flow of communications and information throughout the units of the United States Army.

From 11 to 25 June, 1994, during this exercise, the Army MARS system will be expected to provide auxiliary communications to a wide variety of Federal agencies. "The entire Army MARS system will transform into one integrated operating entity."

Army MARS will try to involve other service MARS stations into the exercise through the operation of the TEXN protocols. (TEXN - Traffic EXchange Network) This integration of all services, all modes, all frequencies, and some experimental operations should make this a most interesting exercise for everyone concerned.

While Grecian Firebolt 94 will find most MARS stations operating out of their own home stations, June holds another emergency exercise opportunity as well — participation in the ARRL sponsored national Field Day to be held during the last weekend in June.

Field Day indicates exactly that — operation from the field (locally the college soccer field) without the benefits of commercial power or the fine home stations that many operators have developed over the years. Every operator, no matter what his/her license class should experience Field Day. There is a plan of operation for every operator no matter what his or her capabilities are. There are categories of operation in which the home station may be used with full commercial power. It is recognized that in an emergency, not all operators will be in a field. Many operators will be at home and operating relays and other services for those operators who are in the field. ARRL has set up Field Day with this recognition in mind and with the hope that all operators have an opportunity to participate.

Many Field Day "crews" are composed largely of MARS members from all services. This is one day where all services and civilian Amateur Radio operators work together shoulder to shoulder and have a great time doing it. I have seen dipoles shot into trees by bow and arrow, on weighted fishing lines cast upward with a lot of hope (and accuracy) and thrown over the branch of a tree by some good baseball player's pitching arm. I know where there is a tall pine tree with a brand new wrench dangling from an upper branch. The antenna made it just fine but the line to which the wrench was attached spun and tangled. I needn't mention the fine barbecues that are part of the enjoyment.

Underlying the interest and the fun, of course, is the real reason for holding these events. Preparedness — preparedness which was so evident in the Southern California Earthquake, in the floods of 1993, in local searches and rescues, in all types of emergencies or disasters that a community or a region might face.

Some operators question the need for constant training and review since they feel that they are already trained to carry out emergency communications and handle such message traffic as occurs during these periods. Some of the objectives of these exercises and experiences include the examination of the various networks in terms of effective communications, the evaluation of the effectiveness of emergency procedures and plans, provide station validation of emergency power and antenna capabilities, improve message handling and system or network integration, examine and evaluate new technologies and the capabilities and appropriate uses of the new modes of operation. Many elements of emergency communications are studied as we operate in field or emergency configurations.

Side by side, all the service MARS organizations serve the public. Army MARS, Air Force MARS, and Navy/Marine Corps MARS may have different operational parameters for the service that each supports; but they stand united in serving this country and its people.

Army MARS. . . Proud. . . Professional. . . Ready All MARS services. . . Proud. . . Professional. . . Ready WR

Keep it up! Send your news, features, construction projects and commentaries to 2120 28th St., Sacramento, CA 95818. Share your experiences in Amateur Radio with hams around the world.

Bil Blick, AA8GL

STATION APPEARANCE

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

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

I was first licensed in 1958 as KN9PXV, in Moline, IL while I was a senior in High School. I have always had an interest in radio. My dad, K9PXU got his license at the same time. We used a Johnson Adventurer and a Hammarlund HQ-110 for our first rig. We then graduated to a Johnson Viking Valiant, a Heathkit Warrior linear amplifier and a Hammarlund HQ-170C when we upgraded to General class in 1959. In 1961 I left for college, sold out my interest in the equipment and took up new interests, and let my license lapse.

In 1991 I decided that I had enough of procrastinating and picked up some software for Morse code study and the FCC exams and away I went. I took my Novice test in Flint, MI on 14 December, 1991 and finished my Extra class requirements in 1 February, 1992. My new Novice call sign was KB8NKV and my Extra call sign is AA8GL.

Now I have returned to a world of miniature radios, automatic antenna tuners, FM repeaters with offsets both up and down, packet, computers, iambic keyers and no-tune amplifiers. What a reality check!

The equipment has changed dramatically but the people are the same wonderful folks they always have been.

My station today consists of a Yaesu FT-1000D, FT-736R, Kenwood TS-440SAT and an Alpha 374 amplifier. Also in the shack are Kenwood TM-241A, PK-88, PK-232MBX a 486/33 computer for packet activities. For the mobile activities I have a FT-890AT with the Outbacker Perth HF mobile antenna and a TM-741A with the Diamond dual-bander antenna.

In addition I have put together my nostalgia station of a Hammarlund HQ-170C, Johnson Adventurer, Ranger and Viking Valiant transmitters and two Collins receivers that I could not afford when I was a kid, a 75A-3 and 75A-4. I have also found the Heathkit Warrior amplifier that my dad and I built in the early 60s and will have that in my shack as soon as I drive to Iowa and pick it up. That is the only piece of ham gear I will have from my early days of the hobby.

My antennas are a Mosley Pro 57-B on a Pirod 70 foot free standing tower and a 80 Meter and a 40 Meter coaxial dipoles up about 40 feet in the air. I use the Comet dual-bander antenna for 2 Meter/440 work and have a 2 Meter 11 element antenna, horizontally polarized for 2 Meter SSB activities.

My favorite band is 17 Meters because it reminds me of 10 Meters when I was on the air in the late 1950s and early 1960s. You can also find me on 7.167 MHz once a month talking to my old high school buddy who helped me get into this hobby in the first place, Bill Coopman, K9CHZ, Moline, IL.

I am 52 and plan on retiring in a few years. Then I hopefully will have more time to devote to the hobby. I believe that you should always try to give more to your interests than you take and I am trying to do that with this hobby/service.

There is an old adage that says that you don't really know what you have until you lose it, well that has been the case for me with ham radio. I knew that I did a totally stupid thing when I let my license lapse back in the 60s, and today I am very grateful to enjoy the privilege, not the right, to be on the air again. I can tell you that I will not let this license lapse.

I hope it shows that I am truly grateful to be a ham radio operator and I hope that I am a good role model for others and that I am giving more than I am taking from this fantastic hobby.

Amateur "Hi"

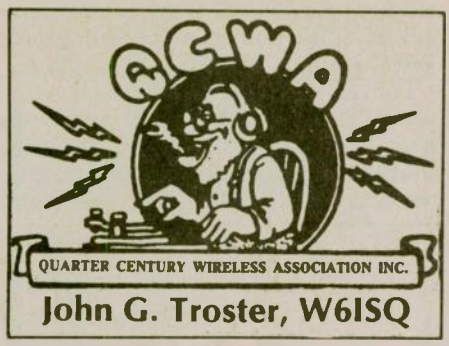
Ever had a funny or strange experience with Amateur Radio, either on or off the air? If so, type it up (or print neatly) and send it to us for consideration in our monthly AMATEUR "HI" contest. You could win a free year's subscription to **Worldradio***!*

Keeping in step is Judith K. Roush, AA7UC.

It wasn't long ago that my husband, N7SQU, treated me to lunch in a local restaurant. We were seated at a window booth overlooking our car in the parking lot.

As we finished our repast, we noticed a fellow standing behind our vehicle, staring intently. We paid the cashier and left. If there was a problem, we wanted to know.

"Ma'am, I've been studying your license plate. With those letters, 'AA7UC,' I figure you have a customized plate." Not knowing it was an Amateur Radio plate, he continued: "What happened, lady? Did you get permanently stuck on the 7th step of a 12-step program?" WR



John G. Troster, W6ISQ

The new *QCWA Journal*

Among the many interesting articles in the spring *QCWA Journal*, one hit not just close to home, but right at home with me. It was the one about K8CFU, Arch Doty and his wife. Arch currently serves on the board of QCWA, although he is not seeking re-election. At the board meeting last spring, Arch and I were rummaging around QCWA HQ in Eugene, Oregon, when we began playing "where ya from." Turned out he's from Yonkers, New York, same as I. Of course, he lived in the high rent district up in North Yonkers, while I lived in South Yonkers, closer to New York City.

I can say that because he can't defend himself — ha! One month not too long ago, we offered up in this column, the special reward of a letter of welcome from Arch to the next person to join QCWA from Yonkers. So far, no Yonkersites have collected on the offer, but it still stands. Arch wants to write that letter, so if you know an eligible person from Yonkers, tell him Arch is ready.

Surprise surprise surprise

By popular demand (well, ahhhh, we were deluged with an oversized post card), we managed to lasso our peripatetic Vice President, soon-to-be-President, Chef Lewigi McCoy to scribble down another of his famous hot recipes to soothe your yearning stomach. This one designed to be easy on QCWA types' digestive tracks.

Here is it. . . just as Veep McCoy scribed it. McCoy's Pork Surprise "This is a casserole dish that I concocted many — many — years ago.

I entered the recipe in a national home magazine (which will remain unnamed) hoping that I might get at least honorable mention.

However, no word from them until about a year later when lo and behold, there was my pork surprise recipe — exactly, but credited to somebody else.

Well — you can't win 'em all. Is it plagiarism when one steals a recipe?

Chef Lewigi McCoy, W1ICP.
— photo by W6ISQ

Why is it called Pork Surprise? When I lived in the Ozarks, many years ago, money (and meat) were hard to come by. I made a dish with just the potatoes. A visitor one evening upon dishing some out into this plate, found the pork underneath the potatoes. He said,"Ahhh, meat!" So I named it Pork Surprise. I really should add something here to let you in on a cooking secret I have. Back in 1950, I was on tour for ARRL lecturing on the casuses and cures of TVI. One of my stops was in Forth Worth, Texas and one afternoon, I was walking down the street near the hotel I was staying at. This marvelous aroma of spices hit me and following my nose, I ended up in an old building that housed the Fort Worth Spice company. I bought up a bunch of spices, including a very fine chili blend at ridiculously low prices. In any case, over the years I have recommended this company to many people. The company is no longer named Fort Worth Spices — they have gotten fancy and took the family name — Pendry's, 1221 Manufacturing, Dallas, TX 75207; 800/533-1870. I buy my original chili blend seasoning by the pound, which was $5.75 last time I looked. I recommend the original blend, also ground cummin powder, and for spaghetti sauces, they have good prices on anise and fennel seed and a very unusual catalog ($2.00).

I have several more unusual recipes — let John Troster know — I'll be happy to oblige. My wife has a dish called tamale pie like you have never eaten! Lew McCoy, W1ICP"

Ok, all break for the kitchen immediately, and let me know what you think of Pork Surprise.

Frankly, I think Lewigi should use more garlic.

Thanks for writing

Thanks for letters and notes of inquiry from WB6DPI (presume you got dues information pronto from our hard-working Manager-Of-Everything, Jim Walsh, W7LVN at Eugene, OR, HQ).

Also thanks for information requests from Gerald Georgopolis, WF1D, and the others. We appreciate the interest from all of you who wish to join the Honor Society of Amateur Radio, The Many, The Proud, The Elite, The QCWA.

Geeez, I forgot. Letter from Walt Brink, W3WPY, historian, reader of *Chesapeake*, raconteur, crab-cooker, horn blower, and, on the side, member of QCWA board. Recall Walt's recipe for hot salsa that we published in March to gladden and redden the throats of younger QCWA types?

Well, Walt writes: "did I forget to mention about the salsa, that the number of jalapeno's could be reduced to suit the taste, and you can remove the seeds and webbing. Be sure to wear plastic gloves when handling peppers. Do not touch eyes."

Authors Note:

We're publishing this admonition for all those who can still see after concocting this gourmand masterpiece.

Walt concludes, "do you want me to bring my copy of *Chesapeake* to the meeting? You could catch up while you are here." He refers, of course, to the book by Michener which I am much enjoying, but at my own pace which I reckon to be different from Walt and probably many other readers.

Pork Surprise

Ingredients:

4 or more pork steaks or chops, remove the fat.
1 small can of tomato paste
1 chopped onion
Potatoes, sliced. Number depends on servings. (Three or four medium potatoes enough for two people.) I make my slices slightly less that 1/4 inch thick.
2 Tbsp. brown sugar
1½ Tbsp. of chili powder
Dash or two of Lee and Perrins sauce
1 minced garlic clove
Sliced American or Velveeta Cheese, enough slices to cover sliced potatoes.

Depending on how many servings one wants, choose a casserole for proper size. I use one that is about 12" on a side and 2" deep.
Brown the meat and then lay out the meat in the bottom of the casserole.
Next, using a good size bowl, mix the tomato paste with 2 to 2½ cans of water from the tomato paste can.
Use a whisk or fork and stir the water into the paste. Add all the remaining ingredients and stir.
In the casserole, put a layer of potatoes and cover with sauce, then more potatoes and sauce.
Bake covered for 90 minutes at 350° or until potatoes are tender.
Remove cover and place sliced cheese over potatoes.
Cook for five minutes or until cheese melts.

The last short book that author wrote was *Tales of the South Pacific* one of his first books. I've read that three or four times, having been there.

Since that success, Michener has written longer and longer books which I also enjoy, but on this wise: read one chapter of a Michener book, then finish two or three other books, then read the next Michener chapter, etc.etc.

I'm up the the War of 1812 in *Chesapeake* which means I'll read another dozen or so books before I find out how it ends. What Michener should I read next?

Back to the *Journal* 'Ere departing this month I want to mention another article in the *QCWA Journal* which I found especially interesting. The biography of WAAC Lt. Esther Given, W6BDE, written by Carol King, K5CPZ.

Esther was on the QCWA Board and wrote this ***Worldradio*** column for many years. This lady was one of the first WAACs in The Big One and led an adventurous life as a radio operator aboard Army Hospital ships in both the Atlantic and Pacific theater.

You'll enjoy reading this story, so don't miss it. Also, there is a good piece for OMs in a column called "Ham's Health" written by Dr. Dub George, WA5BFF. Things to know! Also another good one by QNB ("New Breed") Chip Margelli, K7JA, on "CQ DX." If you have been around long enough to be a QCWA member or eligible for QCWA, how come you are not on the DXCC Honor Roll?

Whacha been doing all these years?

QNB Chip will fire you up. If you are not a QCWA member and would like a complimentary copy of the next, summer edition of the *QCWA Journal*, write now to Old Jim (OJ), General Manager, W7LVN, QCWA HQ, 159 East 16th Ave., Eugene, OR 97401-4017 .

Or if you would like a copy of any of the articles mentioned here, ask him for a re-print. He's a good old Swab Jockey type and glad to please everyone.

About the time you read this, the board will be meeting near Washington, D.C. We'll bring you the untold details in a future edition of this tabloid. 73 + 25

Jack, W6ISQ **WR**

Work at home

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

FM & REPEATER

BILL PASTERNAK, WA6ITF

An FM perspective

When Garrison Keillor of "A Prairie Home Companion" fame was asked why he returned to radio with a similar but show, Keillor answered "Never make a decision when you are tired."

I too, decided that it was time to cut back; I made a big decision when I was very, very tired! Sorry Garrison.

The simple fact of the matter is that almost every ham is an FMer and Repeater User. How many amateurs do you knowwho don't own some sort of 2M FM rig? How many hams do you see at conventions and hamfests who do not have a hand-held on their belt? Its safe to say that the 2M hand-held has become almost like the 'American Express Card of Amateur Radio.' Hams rarely leave home without one.

Also, we must not forget that the very nature of the code-free Technician class license makes the vast majority of these newcomers into 'instant FMers.' True, a few here and there wander off to try other modes, but as sales statistics prove out the first radio purchased by the majority of no-code Techs is a 2M hand-held! Some 4500 to 7500 new no-code Techs coming to the service every month — and that number is steadily rising.

Hopefully, this new FM and Repeater column in ***Worldradio*** will not only remedy this, but will lead other publications to provide their readers with similar coverage.

So I have broken the promise I made to myself and to paraphrase a line out of a popular movie: ". . .we're back!" And with my thanks to Garrison Keillor for his sound advice, there is no time like the present to get started.

The first practical ham radio repeater

I guess I keep coming back to writing about my friend Wayne Green, W2NSD, because in the world of repeaters he has accomplished a lot more than most. He is also a very controversial member of our amateur community, to say the least.

Say what you want about W2NSD. Say you love him. Say you hate him or say anything between. The story is often told his first-ever repeater, of how he jury-rigged a receiver and transmitter atop a building in mid-Manhattan, NY, in the late 1930s. This device permitted hams in three states to exchange RTTY messages. Eventually lost his site and had to take down the machine.

But experiments are one thing and practicality is another. Wayne's repeater was a noble experiment that worked, but for the hams of that day it was way ahead of its time. It just was not practical for them. It would be another twenty years and 3000 miles before the first practical repeater would come on the air.

It would happen on a hilltop in Los Angeles, California and would eventually lead to Arthur M. Gentry, W6MEP, being named the DARA Specific Achievement Award winner for his development of the first practical Amateur Radio repeater.

The road to relay

Back in the 50s and 60s most hams did not even know repeaters existed. They did west of the Continental Divide, but the majority of hams on the VHF bands were still content to run their stations in the AM mode. That made keeping contact while mobile was quite a chore.

On a trip out to California in 1964 I had discovered something new and different. It was called a repeater.

As I was to learn, this repeater held the call sign K6MYK, and that call being sent out in MCW every few minutes. The "machine" as its users called it was located atop Mt. Lee in the Hollywood Hills (that is the same place the famed "Hollywood" sign is located), and the K6MYK repeater appeared to be some sort of magical way of taking even the weakest station and make it sound as if it were right next door.

Back then I still lived in what is now known as the "Big Apple" of New York, but I traveled frequently on business. I had first heard the K6MYK repeater on my Heathkit "Twoer" on a business trip a few months earlier. In fact, I even had a QSO with its "inventor" Art Gentry, W6MEP. Art and his XYL Millie, K6JJN even invited me over to visit, but I had very little time so we conversed over his repeating machine.

When I got back from the trip I had told all my friends on six meters about this marvel. Guess what? They all but refused to believe me.

I brought home a live-on-tape demonstration of what hams in the Los Angeles area were doing to extend their mobile communications range. I finally had the proof.

I played it to just about everyone I could think of. Guess what? Nobody was interested. At least nobody who I knew. I was one of the few who knew the truth and was able to experience it first hand. Repeaters made mobile operation on VHF fun. A way to whittle away the hours on the 405 freeway in rush-hour, smog laden, traffic snarls; a way of meeting new friends. A way of learning that technology was moving ahead in the world of Amateur Radio.

Little did I know that the fun was only starting and where it would lead me. It would be another half decade before FM and repeaters would join together on a national scale. Once they did, it became ten- fold the enjoyment and there are few hams that do not own at least one VHF FM rig.

The civil courts and ham radio

Last month we discussed a new FCC interpretation of Section 97.205(e) of the Amateur Radio service rules. A reading that came as a letter to the lawyer for a southern California radio club which is trying to evict unwanted users from its repeaters.

In the simplest possible terms, the new interpretation of 97.205(e) simply says that a repeater licensee has the right to kick any user off of his repeater whose on-the-air operations he deems detrimental to the legal operation of the system. Short, sweet and not open to any further discussion. But to understand how it all came about, you also have to know the story behind the story. And that was best chronicled by Burt Hicks, WB6MQV, in his *Westlink Report* subscription newsletter. Here, reprinted with permission is a abbreviated version of that article.

"Civil court order ham off repeater"

"California Judge Says FCC Should Act Against KJ5KE"

"A man described as a disgruntled former member of a Southern California Amateur Radio club has been ordered by a civil court to stay off the

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organization's repeaters or face the possibility of going to jail. The action against Tim W. Seawolf, KJ5KE, of Quail Valley, California took place on 8 February and is precedent setting in that the matter was handled as a civil action that places KJ5KE under a three-year restraining order to keep his distance from all frequencies used by the Claremont Amateur Repeater Association.

CLARA's attorney Sidney Radus, N6OMS says that the club filed a civil harassment action against Seawolf after the former member began harassing a number of people on the system. He was asked to cease this type of operation but refused to cooperate

In January of this year, the radio club decided to file a civil harassment action against KJ5KE. A civil harassment action is only possible where the alleged intimidation has produced emotional distress. As such, it is a harder case to prove; but if enacted it becomes a far more stringent type of court order than a simple restraining order. Under California state law, the violation of a civil harassment order is a misdemeanor punishable by up to a $1,000 fine and six months in county jail each time it is disobeyed.

The CLARA organization had Seawolf served with the initial order and a date was set for a hearing as to whether to make the petition permanent. The hearing was held in of the Superior Court in and for Orange County, before Judge Daniel J. Didier. It turned out that Judge Didier is an Advanced Class licensee. On learning that he had been assigned the case, Judge Didier noted on the court record on three occasions before the hearing began that he was a radio amateur, was aware that the CLARA repeater existed and had listened to it on several occasions. Each time defendant Seawolf, who was not represented by counsel, declined the judge's offer to withdraw from the case.

Evidence introduced by the radio club included the testimony of club president and club secretary, that each had suffered emotional distress as the result of what Seawolf had allegedly said to them and others over the repeater along with recordings of KJ5KE's on air verbiage. Also entered into evidence was a letter from John B. Johnston, W3BE, Chief of the FCC's Private Radio Branch that said, in effect, that there is an unqualified right for the owners of any repeater to prohibit anyone from using a repeater system. *(Author's note: This letter was discussed in-depth last month.)*

In his defense, Seawolf testified that he had the constitutional right to say what he wanted at anytime and to anyone using any medium he chose and therefore the entire proceeding was without merit. He attempted to call several witnesses to try to validate this point but the court found that none could be considered as "Expert Witnesses" in the legal sense and each was summarily disqualified.

After a short deliberation, Judge Didier decided to issue the restraining order against Seawolf. He barred him from use of any of the CLARA repeaters, instructed him to in no way interfere with any of the repeaters input or output frequencies and restrained him from annoying, harassing or molesting any member of the Claremont Amateur Repeater Association. KJ5KE was also assessed $2,100 in attorney fees, $182 in legal filing fees and the $175 cost of service of the petition.

Judge Didier also brought the matter of Seawolf's alleged on-the air behavior into the official court record. He ordered the attorney for the plaintiffs to turn a copy of the hearing transcript along with the audiotapes used in evidence to Los Angeles' FCC Engineer-in-Charge, James Zoulek. He also admonished Seawolf's on-the-air activities terming them as being among the most despicable things he has ever heard on Amateur Radio. Judge Didier also told KJ5KE that if it were within his power to do so, that he would immediately revoke Seawolf's Amateur Radio License.

The clean-up won't stop here

According to Attorney Radus the court decision in favor of the CLARA organization is a first step in returning the club repeaters to use by the members. He noted that other hams who supported Seawolf's activities may also be subject to actions for civil trespass to private property or criminal complaints for ". . .theft of use, a misdemeanor." Radus did say that at least a dozen notices are being sent to hams throughout the area who are alleged to be the sources of harassment to the CLARA repeaters and the organizations members." (From *Westlink Report* #667, 28 February 1994)

Commentary: a mixed blessing

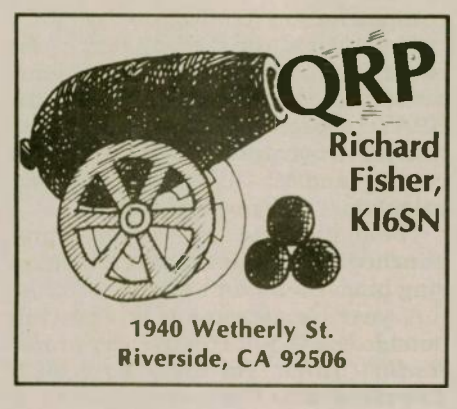
While lots of hams have been quick to praise the outcome of this hearing, many do not understand the overall impact it has. Yes there are a lot of positive points but there is also a major negative. That being the concept of Federal Preemption over all radio communications.

We in the Amateur Radio community are quick to call on "Federal Preemption" when a city or court wants to restrict our right to put up an antenna or simply operate a radio. But we also seem very willing to look aside and permit state (and other local) courts to actively involve themselves in matters of communications because we do not like the way a particular ham operates his station.

I have never heard Tim Seawolf, KJ5KE, operate his station, so I cannot and will not be his judge. Maybe he is as poor quality an operator as the Claremont Amateur Radio Club says he is. But I have to ask this important question. No matter how bad an operator a given individual is, do we want to dilute the concept of "Federal Preemption" that hams have fought so hard and so long to secure? Many legal experts believe that if we open one aspect of our service to control by state or local government we set a precedent that could open it all. Think about it before you ask a state or municipal judge to order a ham — any ham — off your repeater.

Will you or your ham station be next? While I have a lot of sympathy for the members of the Claremont Amateur Radio Club, and while I can understand their frustration in dealing with the federal bureaucracy, I also have to say that in regard to the hallowed ground of "Federal Preemption" over our communications service, we cannot have it both ways. de WA6ITF

(FM and Repeater column author Bill Pasternak WA6ITF receives mail at 28197 Robin Avenue, Saugus, CA 91350. His 24 hour/day voice and fax line is 805/296-7180. He can also be reached by electronic mail on the following services to the mailboxes: (GEnie) B.Pasternak; (Internet) b.pasternak@genie.geis.com; (America Online) BILLWA6ITF; (MCI Electronic Mail) 324-1437.) WR



QRP ARCI's new president Les Shattuck, WN2V, has recently been named the new president of QRP Amateur Radio Club International, one of Amateur Radio's oldest and largest QRP organizations. Paula Franke, WB9TBU, stepped down 20 March after more than four years in the club's top post.

Les' selection was made following a telephone poll of QRP ARCI's board of directors. His term will extend through 31 December 1995.

Les takes over an organization with membership numbers now surpassing 8,000. In a letter to the board of directors, officers and committee chairman, Paula said that there "are several things over which I can exert no control, not the least of which is the medical problems and finding ways to pay for the accompanying bills, and constantly fighting the insurance companies."

She cautioned that QRP ARCI's presidency "isn't a job for just one person — unless that person has no other life." Among the recommended agenda items Paula left for the club are clarification and continuation of The QRP Honor Roll/Hall of Fame Award program; establishment of special annual awards or a scholarship in the names of Luke Dodds, W5HKA, and Bob Spidell, W6SKQ, both longtime club members who recently became Silent Keys; and club sponsorship of QRP awards for low power entrants in major contests by such organizations as the American Radio Relay League and *CQ* magazine.

Rich Arland, K7YHA, former ***Worldradio*** QRP columnist, has been playing a leading role in the push for establishment of the awards programs. Also, discussions about joint awards sponsorship have been held with the Rev. George Dobbs, G3RJV, of the QRP Club of Great Britain. Paula says that although she's no longer president, for the time being she will continue to serve as editor of QRP ARCI's publication *QRP Quarterly*.

QRP Field Day Antenna

In the March edition of the ***Worldradio*** QRP column, Joe Bulger, AA6WG, of Los Angeles put out a call to readers for suggestions for a good 80 Meter antenna that he can use this month on Field Day.

"I will have access to some 90-foot tall trees at an elevation of 6,000 feet. I would like to be able to work the West Coast, the Midwest, and the East Coast, propagation permitting," Joe said. He also suspects he may have a lot of atmospheric noise to cope with, so he is looking for "something that will have gain and also be quiet."

Overwhelmingly, readers encourage Joe to get a loop antenna into those towering pines later this month.

If I had some 90-foot trees at my disposal, I'd put up a quad loop (circumference = 1005/F in feet)," writes Bill Shanney, KJ6GR, of Torrance, CA. "Fed at the center of the bottom wire for horizontal polarization it has a high radiation angle for local QSOs, and is very quiet on receive," he says. "Fed at the center of one of the vertical sides it has a low angle vertically polarized pattern and will probably have lower noise than a vertical." Bill's articles on antenna design and station grounding have been widely published in many U.S. magazines and periodicals, as well as in Europe.

"If the antenna is fed with ladder line that is one-half wavelength long at both places, the polarization and angle can be switched by shorting the unused feedline and connecting the other to a transmatch." Bill assures that the loop antenna "is also fairly broadband and the impedance will be about 100 ohms at the tuner — as long as the half wavelength feedline is used — which is easy to match. The higher, the better for 80 meters."

Listen for Bill on Field Day '94 as he holds down the 80 meter operating position for the gang at W6TRW.

Another endorsement for the loop came from longtime QRPer and solar power authority Jack Halliday, W5PIZ, of Albuquerque. It's a "good Field Day antenna for 80 meters. Besides, you can tune it up for other bands and that will give you gain."

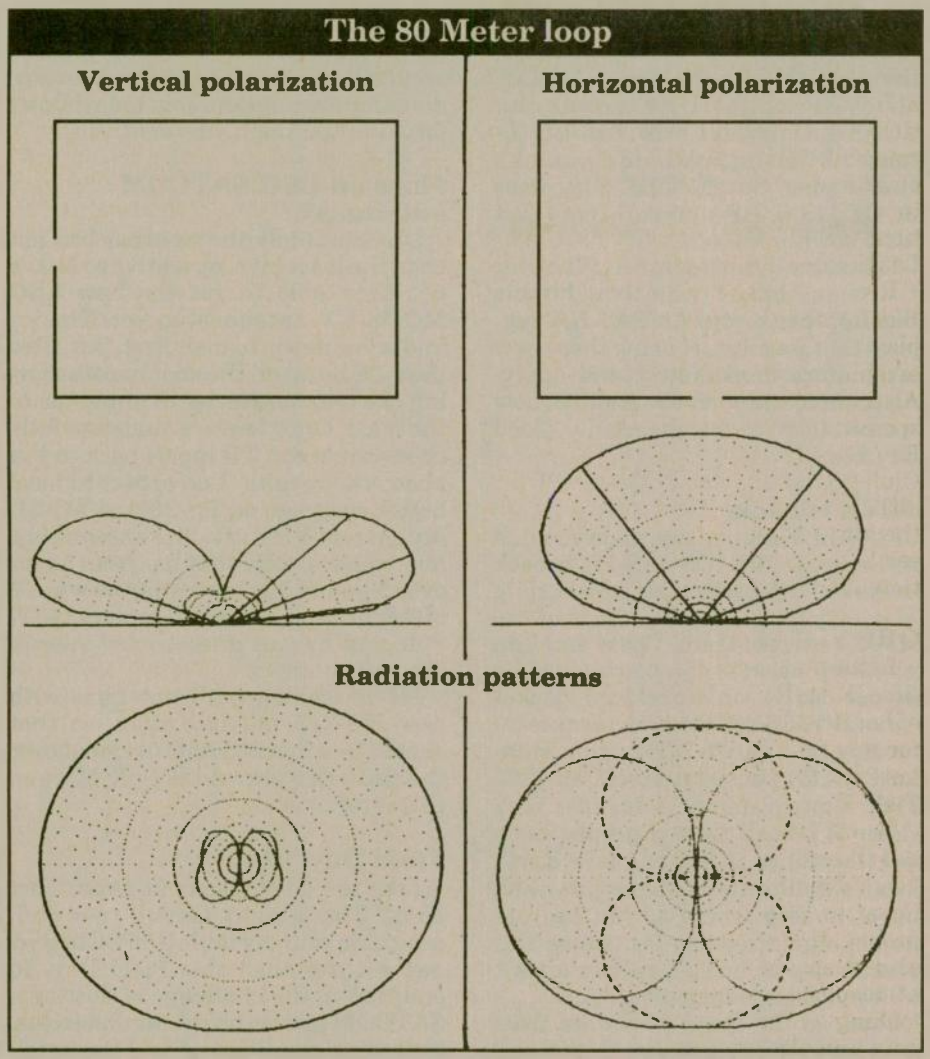
Jack cautions that "baluns, traps, tuners all take some power away. I try to get away from this if possible. I have been able to get out very well and keep up with the big boys. You need gain in the antennas. Also get them high in the air. . . in the clear if possible."

New QRP club in Pennsylvania

A handful of QRP operators in the Keystone State have locked arms to form the QRP Society of Central Pennsylvania, according to John Jaminet, W3HMS.

"We're not a spectator group," he says. About five percent of the organization's efforts are placed in administration, and the remaining 95 percent are on participatory activities and technical matters — or "real radio," as John prefers to describe it.

The members organized in August, 1993, and have been gathering monthly. The group currently meets at 6:30 p.m., the first Monday of the month at the Lutheran Church in Churchtown, PA. Sessions typically consist of a technical discussion led by one of the members, "with a view on how then to apply that knowledge," John says.



At present, there are about ten members of the society. John foresees membership growing to a maximum of about 20, in an effort to prevent the society from becoming unwieldy.

The hierarchy of the society is made up of two officers: W3HMS, is co-president in charge of technical matters, and Bob Wicks, W3HAH, is co-president for business matters.

"Our focus is on homebrewing," John says, "and not shelling out tons of money." For now, there are no publications, dues, or membership numbers.

The group is considering producing a transceiver kit. A QRP SWR bridge is already in the works. Anyone interested in learning more about the QRP Society of Central Pennsylvania is encouraged to contact John. He can be reached by telephone at 717/697-3633.

Tips for the QRP homebrewer

If you're a builder — either a beginner or an old hand at homebrewing — a periodical produced by Doug Heacock, AAØMS, is well worth a close look.

It's called *The Radio Craftsman* and comes out six times a year featuring articles ranging from reviews on the latest "books for the bench," and practical information on applying basic electronic principles, to articles on test equipment and hamfests.

The March/April 1994 edition, for example, had articles on basics about air variable capacitors, a review of the K9AY transceiver kit by A&A Engineering, a feature about 624 Kits 1994 catalog and tips on using scientific calculators in homebrewing.

The eight-page periodical comes prepunched for easy insertion into a three-ring binder for safe storage.

A year's subscription is $10 ($15 outside the U.S.). To order, write *The Radio Craftsman*, P.O. Box 3682, Lawrence, KS 66046.

Wanted: Field Day stories and photos

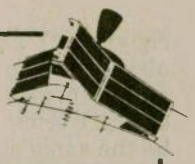
With Field Day right around the corner, it's time once again to put out the call for QRP Field Day reporters and photographers.

Worldradio's QRP column is a great place to tell the story of FD '94 from your QRP perspective, whether it be with a group of operators, or whether you're going it alone.

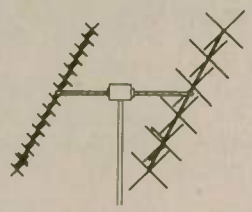
During this year's fray, why not take a few moments to document the action with a camera? Either black and white, or color photographs will be fine.

And after the dust has settled, how about jotting down a few lines about your experience in a card or letter? I'd be glad to carry your story in the pages of ***Worldradio***. Send your items to the address at the head of this column. And if you'd like the photographs returned, please let me know. I'll be happy to do it.

Meantime, here's hoping that Field Day '94 is safe and successful, and that you'll share your QRP story with us all. **WR**



SPACECOM



K7YHA
Rich Arland
Box 1691 • Wilkes-Barre, PA • 18703-1691

Several letters received lately have inquired why this column does not cover the latest information on satellite launches and up-to-the-minute happenings in the field of amateur SATCOM. The reason is simple. First of all, SPACECOM is a bi-monthly column. I have a ten week lead time every other month for column submission to ***Worldradio***, hence I am at a decided disadvantage trying to cover the latest news in the satellite communications arena. Secondly, there are two other magazines that run regular monthly columns on amateur satellite communications. Steve Ford, WB8IMY at *QST* and Andy MacAllister, WB5ZIB at *73 Amateur Radio Today* do an outstanding job of covering breaking news stories of interest to the amateur satellite communicator. Finally, SPACECOM is a beginner's column.

I write for the SATCOM neophyte, not for the seasoned satellite veteran. With constant emphasis being placed on the glamour and glory of the high orbit satellites like AO-10, AO-13 and P3D (when it's launched) a newcomer to the satellite communications arena is often confused as to how to pursue SATCOM without huge expenditures of cash and tons of expensive, highly specialized pieces of equipment. In my SPACECOM column you will find many answers to your questions of how to get involved with amateur SATCOM without spending endless sums of money. After all the name of the game is to have FUN not play "Break the Bank!"

New satellite mode designations

Finally someone in charge at AMSAT has done something the makes sense regarding Phase 3D! At last we can do away with the useless, nondescriptive terms like Mode-J and Mode-B! Instead of these designator, MODE-B is now MODE-UV (UHF uplink/VHF downlink). MODE-J becomes MODE-VU (VHF uplink/UHF downlink). MODE-L translates to MODE-LU (L-Band (1.3 GHz) uplink/UHF downlink). Another one? Sure. MODE-S becomes MODE-US (UHF uplink/S-Band (2.4 GHz) downlink).

This actually makes sense. Who ever it was at AMSAT who thought this idea up, thank you! AMSAT-NA suggests that we all start using these new designators immediately and applying them to the current satellites now in orbit. I agree wholeheartedly. Good job AMSAT!

DOVE is back!

FINALLY, after many, many months of silence, DOVE (OSCAR-17) is back on the air with packet transmissions of telemetry thanks to the efforts of the DOVE recovery team. These satellite telemetry packets can be received by anyone active on terrestrial packet radio. DOVE/OSCAR-17 transmits telemetry on 145.825 MHz using standard AX.25 packet protocol at 1200 BPS. A programmable scanner or 2 Meter HT is all that is needed for a receiver. Since DOVE is a Low Earth Orbit satellite its 2 Meter downlink signal is very strong so you can use simple, omnidirectional antennas (i.e., quarter wave vertical, rubber ducky, 5/8 wave mobile mag mount, etc.).

Load up the latest Kep data from your local RBBS, listen for DOVE and copy the telemetry packets. AMSAT-NA (P.O. Box 27, Washington, D.C. 20044) has software available for decoding. Write or call them at 301/589-6062 and obtain their latest software catalog. AMSAT PLUG.

While you are at it, if you aren't a member of AMSAT-NA, (and you really should be) why not join? Cost is only a paltry $30/year for membership and a subscription to their outstanding bi-monthly newsletter *The Journal*. By supporting AMSAT you are securing a future for the Amateur Radio satellite program. Join today! Don't forget to tell them who sent you.

More on LEO SATCOM antennas

Unfortunately the weather has not been the least bit cooperative so I have not been able to get the new LEO MODE-UV antennas up yet. The ice and snow needs to melt first, but after that, I'll be up on the shack roof securing the two quarterwave antennas to the mast. Once I have a chance to fully check them out, I'll report back to you about the results. I do expect to have better coverage on RS-10 and AO-21. My current VHF satellite antenna is a homemade J-pole that has been up for over 5 years. The new quarter wave 2 Meter ground plane will replace the J-Pole and has an unrestricted view of the local horizon.

I'll be feeding both antennas with new RG-213 mil-spec coax, so that should be a marked improvement over the existing 5 year old RG-8X! More on this later.

Field Day '94

Like the advertisement says: "Just do it!" That's right. Get off your duff, assemble your portable SATCOM gear and hit the bush this Field Day. In addition to the challenge of putting a SATCOM station on the air under less-than-ideal conditions, Field Day satellite contacts are a great way to demonstrate this fascinating area of the radio hobby. Don't forget the additional bonus points available for putting a SATCOM station on the air for your Field Day group. I will guarantee that for each pass you have, there will be an audience of radio amateurs eager to watch you work QSOs through the bird. I suggest you concentrate on the Low Earth Orbit satellites since they normally require much less hardware and simpler antennas.

As I did last year, I will make this column available to those of you who give SATCOM a try during Field Day. Just send me a brief description of your Field Day efforts (including gear, antennas, power levels, number of QSOs completed, satellites used) to the address listed at the top of this column or drop me a packet message at: K7YHA @ KB3QW.#EPA.PA.USA. I'll be looking forward to hearing from you.

Bencher does it again

I have three lovely daughters. All three are pretty young women who never seem to be able to agree on

anything. However, every once in a while they seem to come together and reach a consensus on some obscure feminine belief. All three of my girls say that a girl needs a "little black dress" in the closet for those "special occasions." Hmmmmmm. . . sounds reasonable. If I might borrow that adage and expound a bit: every active Amateur Radio operator needs a straight key on the operating bench, for those "special occasions."

In this day of electronic keyers and computer generated CW, it is a refreshing idea to add a straight key to the shack and work CW the old fashioned way. Unfortunately, finding a good straight key can be a bit of a frustrating experience. Used surplus J-37 and J-38 military straight keys are quite expensive, ranging in price from $25 to $40, depending upon condition. These old surplus keys are quite rugged and have a certain "military flavor," but they are not very pretty to look at.

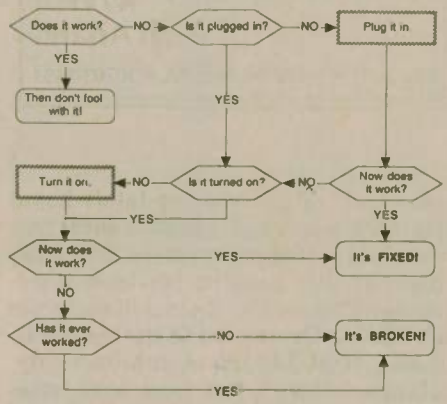
Enter the RJ series of straight keys designed and manufactured by Bencher, Inc., 831 N. Central Ave., Wood Dale, IL 60191. This new product line is a first for Bencher, who manufactures the outstanding BY series of keyer paddles. The RJ keys are in memory of Jim Rafferty, N6RJ, who died last June. Jim was an outstanding DXer and contester who personified the epitome of an Amateur Radio operator. In fitting tribute, Bencher, Inc. has introduced a beautifully crafted straight key to the amateur market.

Upon opening the mailing container, I was very favorably impressed by the design of the key. This key is built like a tank. It is sturdy, robust and several other adjectives. The RJ keys come in black steel base or all chrome. All the parts that attach to the base are done in a bright chrome finish. The key base has four non-skid rubber feet that keep it from scooting all over the operating bench. Oil impregnated pivot bearings give this straight key very nice keying characteristics and "feel." The arm height, tension and contact spacing are fully adjustable so you can customize the RJ key to your needs. All these adjustments are lockable to preclude the key from becoming maladjusted. The Bencher RJ straight key absolutely shouts "Quality!" I called Bob Locher, W9KNI, one of the owners of Bencher, Inc., to tell him how much I liked my key.

During the ensuing conversation I learned that the folks at Bencher had designed the RJ series of keys from the ground up. The idea was to design and market a very functional key that would enhance the appearance of the operating position. Just as my BY paddles are a pleasure to look at, so is my new RJ straight key. To be honest, the key is a radical departure from other straight keys I've owned. Gone is the "military look" replaced by flowing lines of beautiful chrome steel. About the only complaint I have regarding this key is that when adjusted to my liking (arm height low, to keep the knob low to the table) there is too much tension on the return spring with the tension screw was run all the way out. My solution to this was to cut about 1/3 of the coils (starting from the bottom of the spring) off and thereby, lessen the tension on the arm. This might be somewhat radical to a few of you out there, so I asked Bob if Bencher could ship two springs (of different tension) with the key so the operator could have a choice in spring tension for various arm heights. He assured me that I was the second person to address this and Bencher would look into this option. I like my new Bencher RJ chrome straight key. Like my daughters' "little black dress" it serves a useful purpose when you want to roll the years back and enjoy CW at a more leisurely pace. I keep my RJ key connected to my HF rig via a "Y-Cable" that allows me to also hook the keyer up to the radio simultaneously. This gives me the best of both worlds. RS-10 and 12 will never be the same again!

For current prices and ordering information, write or call Bencher, Inc., 708/238-1183 or fax 708/238-1186. Say you saw it in ***Worldradio***. That's a wrap for this month. See you on the birds during Field Day! 73 **WR**

UNIVERSAL TROUBLE SHOOTING GUIDE



— *The Mag Mount*, Valley of the Moon Amateur Radio Club.

Search And Rescue Communications

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

Are you ready for the big one? It's that time of the year again — Field Day! This is an excellent time to put your skills (and equipment) on display. If you haven't given it much thought, there's still time to rally the group and practice and develop your emergency response skills.

Today's search and rescue response fits with the business strategy of contingency management. In general, it's the practice of molding the response to the situation. In past years SAR groups advocated a central operating center and central control. Government entities built centers from which coordination would happen during the "big one."

Permanent mission base

Many smaller groups emulated this by building their own operations centers located near their primary resources. For example, the Civil Air Patrol commonly locates a mission base at the airport or at their state headquarters (usually near an airport facility). Coast Guard Auxiliary units similarly set up at marina facilities.

Having a permanent mission headquarters still makes sense as long as you place it in the perspective of effectiveness. Years ago, our equipment was bulky and less mobile. Our communications center required some pretty hefty stuff, not to mention the power requirements.

Now we're into mobility and flexibility. This sheds a new light on an operations center purpose. Here are some considerations:

— It is your storage and training site. Packaged equipment for quick deployment can be maintained here. You can keep your mission records and specialized equipment here (stuff you don't need each time you respond).

— It is your weekly meeting site. Having maps, white boards and materials saves set-up time and improves the quality of your meetings and training sessions.

— You can be "strategic." If you're at an airport or marina, you're an asset to other agencies' emergency planners. Let them know of your availability and what resources you have. If you become part of other emergency plans, your people have additional responsibilities to keep trained and prepared.

— It is your starting point. This might be the most important response consideration. Your operations center is where you open your mission and get it started.

Create learning opportunities

From past columns you may know that I'm violently opposed to incident commanders/mission coordinators who run things from their house via walkie-talkie. There's reasoning behind this view, including limited phone lines, limited communications resources, limited response to unexpected events (like having one of your search planes crash), and limited training opportunities.

When you respond to any mission, treat it just as you would any other — a search is an emergency! This style of response means you involve people! During this process you train others on how to respond, plan and manage a mission. Running the mission from your house, all by yourself, means when you're burned out, no one has been prepared to fill the gap.

This is where your "starting point" becomes important. When your resources are alerted to the mission and meet at your operations center, you can make choices. Based on the type of mission and response needs, an overhead staff could remain and an on-scene group dispatched.

It may not be possible to run things from your established location and by having your resources there, you can quickly respond to the incident base — which is where our response focus today should be: How quickly can you respond?

Quickly deployed

Equipment is more efficient and compact for today's emergency responder. A whole array of communications systems can be transported in a small vehicle (or airplane) and be on the air by the time the search or rescue teams

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

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

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

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

HAM IT UP!

W5YI-VEC
P.O. Box #10101
Dallas, TX 75207
(817) 461-6443

Let's get Amateur Radio growing again!

arrive. This is where Field Day can be used to your advantage! Why not plan a training exercise with a local agency. Late Friday night, you issue the alert and meet at your group's headquarters. Brief your people and inventory your available resources.

Put together a response plan and then do it. Set up at the Red Cross building, or at the Civil Air Patrol mission base. Maybe you could use the front lawn at the fire station. Operating on generator or battery, dispatch members to set up packet stations at various parts of the city or with other agencies.

You might even try to link several area Field Day sites together via packet or tactical repeater. Pass some messages and show off a little. Be visible — hang out some large signs. Put on a show! Most of all, involve your people, focus around an objective (such as a mobility exercise) and display your talents.

Don't forget the steaks, hot dogs and hamburgers and have some fun! Sometimes we forget and take ourselves too seriously. Combining a training activity and a picnic goes farther than you think toward group image and perception by agencies such as fire and police departments. When you come across as "real" people and make friends with other agencies, you increase your value — after all, it is friends we count on during emergency responses.

Plain text, please

Can someone shed light on the purpose for having cute code phrases during search missions? Let me pose an example.

The police department gets a call that someone is firing shots in an apartment building. The responding officers arrive on scene, but cannot use the term "subject" or "weapon." During their shift briefing, they were told the code phrase for a suspect is "ice cream" and the code for weapon is "parakeet."

The officers have located the person firing the gun and notify dispatch (in an excited, out-of-breath tone of voice for they have just run up several flights of stairs in pursuit): "Dispatch, Car 28. Ice cream in custody with a smoking parakeet."

Does this sound professional? NOT! Yet SAR volunteers continue to issue and use code names during missions. Why? During a plane search, the CAP pilot is briefed to use "lodgepole pine" and not say "crash site." Does this sound silly when the search crew asks mission headquarters to notify the sheriff to check out a lodgepole pine?

If someone would be kind enough to enlighten me to ANY reasons to avoid plain language ESPECIALLY during search and rescue missions I would be happy to print the reasons. I could understand it if we were on a stakeout and tracking dangerous criminals, but this is pure silliness for public service efforts.

In the above air search example, what did the sheriff do after notified? In plain language, he called a deputy to check on a plane crash — and sounded a lot more professional than if they were out checking for trees!

I was asked by a search pilot if he sounded "professional" when he reported finding a plane crash recently. His worry was that he didn't sound too excited and that he was calm and professional. My response was that he sounded fine, just a little silly reporting a "Tally Ho" off the departure end of an airport runway.

Hey folks! Wake up! It's OK to be a little excited when you spot the target and need rescue teams. Good communicators communicate! Veteran dispatchers still indicate severity through the tone of their voice — they don't get silly but they do communicate effectively. I've seen firefighters in tears after rescuing someone. I've interviewed police officers who are emotional after trying to pull someone from an ugly car wreck.

I can understand the need to communicate and I understand the goal to improve how we communicate — but training people to be unemotional doesn't make sense. I would much rather work with someone who cares (an emotion) than someone who keeps everything bottled in because that's "professional." What are your thoughts, opinions and ideas? Is this an emotional issue? Are you adamant when you train your people to be non-emotional?

Let me know (I might change my opinion). This is your chance to be heard! Call or write. The U.S. Snail address is at the top of this column. Internet mail (Jerry.Wellman@m.cc.utah.edu) and packets (WB7ULH@WB7ULH.SLC.UT.USA.NOAM.WORLD.UNIVERSE) are OK too. I've done a silly thing and gone back to graduate school (and at my age!). This has severely limited the amount of free time that I didn't have anyway. So, for the next year, you may encounter "educational" delays.

Best wishes from Salt Lake City! WR

Worldwide DX CONTESTING

John Attaway K4IIF/ZF2JI

P.O. Box 205 • Winter Haven, FL 33882

June, June, June is a month when many contesters lightly turn to thoughts of vacation, be it the beach, the Great Smoky Mountains, Yosemite, or one of our other fine national parks. However, if you are from the northern climes where record snowfall occurred this year, the weather just showed a total to March 18 of over 93 inches of snow in Boston, with 125 inches in Binghamton, NY and 108 inches in State College, PA, it's also a good time for major antenna projects. The fall contests will be here almost before you can snap a finger, so if you're planning a new tower, getting up that 3-element 80 Meter beam, a new tribander or just some new wire, now is the time. With daylight savings time you can work outside until 8 or 9 pm in June. Get with it! As the sunspot cycle continues to decline it will be tougher and tougher just to equal last years score, to say nothing of setting any new records.

Meanwhile, back in the hamshack, if you are a CW contester you don't want to forget the 35th All Asian DX Contest, CW weekend, which takes place each year starting on the 3rd weekend in June. This years' test begins at 0000 UTC June 18, and ends at 2400 UTC June 19. There are eight (8) entry classifications as follows:

(1) Single Op.	1.9 MHz Band
(2) Single Op.	3.5 MHz Band
(3) Single Op.	7 MHz Band
(4) Single Op.	14 MHz Band
(5) Single Op.	21 MHz Band
(6) Single Op.	28 MHz Band
(7) Single Op.	Multiband
(8) Multi Op.	Multiband

Asian stations will call "CQ Test," while non-Asian stations will call "CQ AA." The exchange is unique in that it has a "gender factor." OM stations send RST plus two (2) figures denoting the operators' age. YL stations send RST plus the two figures 00 (zero, zero).

Complete rules, summary sheet and sample log sheet may be obtained by sending a SASE to K4IIF, or directly to JA1TRC/KH2J, J.A.R.L., P.O. Box 377, Tokyo Central, 100-91, JAPAN.

Contesting from here and there

Turks and Caicos Islands (VP5) — Jack, N2VW, writes about the operation by K2TD, WB2YOF, and himself from VP5JM's place on Providenciales during the 1993 CQ Worldwide Phone Contest.

The VP5JM Station is equipped with an Icom 751A and an AT-500 antenna tuner. The antennas include a rotable, 7-element Mosley PRO-67-B antenna for 40-10 Meters, a High-Gain Hy-Tower and dipoles for 80 and 160 Meters. In addition, Jack's group took a second 751A, an amplifier and two laptops. They furnished Customs with a list of equipment, including serial numbers and dollar value (used) going into the island, then gave them a list on the way out. However, 'it was not necessary to furnish a deposit. Jack indicates that everyone on the island, both government and private, were very easy to work with, good-humored and courteous, and they have already made reservations for the 1994 *CQ* Worldwide in October. In the future they plan to take 2 amplifiers so their multiplier station will also have additional power output.

Guam (KH2) and Saipan (KHØ):

Tony, WB2P/ZF2ML visited both KH2 and KHØ where licensing is a snap since it is only necessary to add /KH2 or /KHØ to your stateside call. However, Tony advises that you should carry your U.S. passport with you.

On Guam, Tony recommends the Hotel SunRoute Guam, which is accustomed to having amateur radio operators as guests, and to use a room on the 7th floor. There is easy access to a flat roof on the 8th floor where a vertical may be mounted on a vent pipe and the coax extended across the room and dropped to the 7th floor balcony. A two bedroom suite went for $98.00/day including tax. The hotel may be reached via P.O. Box 10839, Tumon, Guam 96911; phone 011-671-649-9670.

At Saipan, the Hotel Summer Holiday, suites would not allow antennas so the KHØ operation was from the Mariannas College using gear brought from the home station. A 2 Meter hand held is suggested for the local repeater.

Tony added these final comments: 1) It's a long flight from the U.S. east coast, 2) there are plenty of both fast food and good restaurants on both islands, and 3) there are a lot of World War II artifacts.

Results of the 1993 A.R.I. (Italian) contest

Thanks to the efforts of A.R.I. HF Contest Manager, Paolo, I2UIY/N7PMC, there was active and enthusi-

astic participation in the 1993 A.R.I. test despite poor propagation conditions. North American contesters including favorable comments to the organizers with their scores included K8JLF, VE3DSN, VE4MF, W3QYL, W9HE, N8FU and WA8FLF. W3QYL expressed special thanks to the stations who dug out his signal from a "very weak 80 watts into a hidden trap dipole on a balcony." Top scores in the contest by continent were:

Category	Africa	Asia	Europe	N. America	Oceania	S.America
Single Op, CW	DL8YR/T5	RV9WB	UY7E	FM5CW	VK5DID	PY2OU
Single Op, SSB	C9LCK	RA9ST	RY7E	W3QYL	P29JA	PRØR
Single Op, mixed	7Q7XX	UA9RZ	UA4WHW	N8FU	VK2APK	—

The high worldwide scores in each category were as follows:

Category	Callsign	#QSOs	Points
Single Op, CW	UY7E (op. UB5ECE)	824	1,119,230
Single Op, SSB	C9LCK (op. I4LCK)	1,954	4,033,523
Single Op, mixed	UA4WHW	1,406	3,157,798
Multi-operator	LZ5W	1,328	2,979,382

U.S. entries included W9HE, K8JLF, NØKJI, W3QYL, N8FU, KA1DWX, N6JM, KL7FAP, WAØWHT and WA8FLF. WA9AUW sent a checklog. Top Italian scores per category were:

Category	Callsign	#QSOs	Points
Single Op, CW	I8RIZ (op. I7ALE)	865	244,666
Single Op, SSB	I4UFH	794	385,814
Single Op, mixed	I1JQJ	577	177,689
Multi-operator	13MAU	1,346	748,372

If you are interested in the full results of this contest, send an SASE to K4IIF for a printout.

Contesting overseas — some Caribbean spots

Frank, WA6RAY, has operated from both St. Lucia and Guadeloupe and sends the following interesting information.

St. Lucia (J6) — "I operated the 1992 *CQ* WW Contest as J68FG. As St. Lucia shares a reciprocal licensing/operating agreement with the U.S., it is quite easy for U.S. amateurs to obtain an operating permit. However, it must be done in person. In Castries, the capital, report to the Ministry of Communications, Works and Transport. The information window will direct you to the communications office on the 2nd floor. The communication office (phone 452-1128) will have you fill out a double-sided application form in triplicate. You will need your passport, the model numbers and serial numbers of the equipment you plan to bring into the country and a photocopy of your FCC license. A fee of $20.00 E.C. (about US$8.00) is charged for one year, but if you tell him you will be there for just a week there will likely be no charge. Special request callsigns will be granted if available.

If you take your own equipment into St. Lucia, customs will hold it until you have obtained a clearance permit from the communications officer. This is the only document which customs will accept, and it lists each piece of equipment along with serial and model numbers. This form will have been filled out by the communications officer at the time you obtained the operators permit. You will also be required to leave a deposit with the customs officials which will be refunded when you leave the country with the equipment.

We found the Hotel LaToc (name may have been changed) to be very accommodating regarding installation of an antenna. Their address is P.O. Box 399, Castries, St. Lucia, West Indies; phone 809/452-3081 and fax 809/452-1012. The rate at the time of my last visit was US$100 per night. The power is 220V.

The national amateur radio society is the St. Lucia Amateur Radio Club, P.O. Box 489, Castries, West Indies. There are two, 2 Meter repeaters: 146.910/146.310 and 146.940/146.340. However, I was not able to raise either of them with a handheld.

Guadeloupe (FG7) — Obtaining a license to operate from Guadeloupe was very easy. It was only necessary to send a copy of my U.S. license and 100 French francs to CGRP, B.P. 61, 94371 Sucy en Brie, Cedex, France. I sent by express mail and had my license as FG/WA6RAY in only 8 days!

Customs at Guadeloupe was also much easier. They didn't look at the bags and boxes and there was no fee.

For accommodations I recommend the Hotel Marissol-Bas-Du Fort, Le Bas-Du-Fort, 97190 Gosier; phone (590) 90 84 44; fax (590) 90 83 32. The rate was US$125 per night and there was no problem with the antenna. The power was 220V.

CONSTRUCTION

"Why radials?" Part IV of a four-part series is on page 20.

Big foot on 80

JOHN K. MUNROE, W7KCN

There's something very appealing about a really Fine Business antenna that's cheap to build.

There is one right across the border near Whonnock, B.C. It stands out because the owner-builder, Lee Sawkins, VE7CC, spots more 80 Meter DX on our local packet node than anybody else. Lee also belongs to the Fraser Valley DX Club, of which I am a member, so I asked him a few things about it. "It's just made of wires, and it's in the middle of the woods," answered Lee. "In the middle of the woods? Do you mean right in there where all the trees soak up the RF?" I queried. "Aha. That's what everybody says, but it isn't true," he replied.

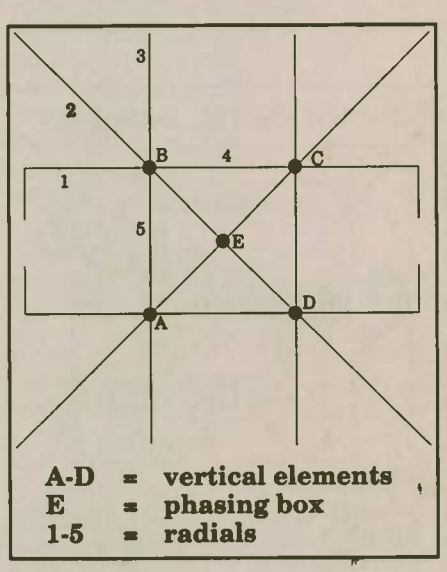
I drove to Lee's QTH one morning taking camera, notepad, and tape recorder to see for myself. He was certainly right about the woods.

When he gave me directions, he said, "You won't be able to see any antennas from the road." I couldn't see a one even though Yagis are growing out of numerous tree tops and mounted on towers. When I drove in, he took me directly to the center of the big square. It's difficult to see more than a small part of it because of all the trees. "I must have climbed eight or nine 100-foot trees to get this thing up there," declared Lee. "And you can see the result of my frustration. See those stumps over there?"

Four-square antennas are surely not new. What makes Lee's unique is its location deep in the woods, and its economy. It's all wires. No aluminum anywhere. He does use hardline, 500 feet of it, but it was some he "just had on hand." The phasing box was a bit pricey. It's a commercial product Lee modified. For one thing, the ceramic disc capacitors melted straightaway. Lee replaced them with mica.

The antenna is two pairs of verticals. A dummy load is installed to absorb any out-of-phase power reflected between the two sets.

Four quarter-wave lines are connected to all the verticals, closely measured for length.



The coax is kept about eight feet above ground (supported by twigs, limbs, sticks, etc.) to stop ground currents from feeding into the antenna system. And all wires are raised high enough to provide clearance for the deer and the neighbors' horses.

Three independent radials are placed at each corner. Each leg has five radials, but two are common. Lee added, "They should go in a straight line, but my property is not quite wide enough, so some take a convenient bend."

The top lines are 90 to 100 feet up in the trees. Ropes at the top are fed through large ceramic egg insulators so the ropes will slip easily.

Each element is connected by a quarter wave of coax to a phasing box in the center. The box has four outputs: one at zero degrees, two at 90° and one at 180° Through relays, the array can be switched to fire in any one of four different directions by changing the phase relationship between the outputs.

Verticals and radials are #12 insulated wire. The feedline to the shack has an RF choke made out of a coil of coax to isolate it from the array. The control link also has a choke of coiled coax. The vertical elements are each made in a fan arrangement. There are two wires joined together at each feed point, and they spread out to five feet apart at the top. They are joined together at the top. This increases the bandwidth as well as decreasing the necessary height.

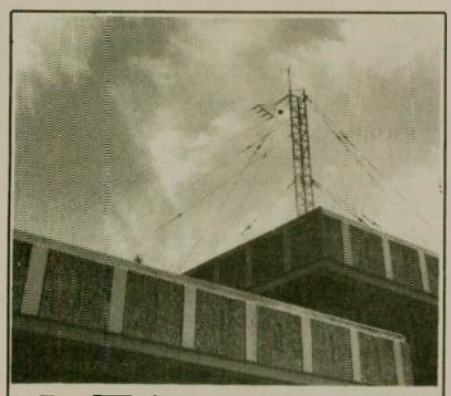
If each element is resonant at 3600 kHz, the system can be used both on CW and SSB. If CW only is desired, the elements could be resonated at 3300 kHz, but this array has worked very well on CW. The resonant frequency of the complete array is about 200 kHz higher than the resonant frequency of the individual elements.

Inside the shack, Lee was anxious to demonstrate the SWR figures. He can switch any quadrant for greatest signal strength, and showed me with an incoming signal from Portugal how a signal can easily go from zero to Q5 on the correct quadrant. Then came the SWR test. Starting at 3500, he fed in a signal which showed 1:1 VSWR. Then he moved all the way to the top of the band where 1.4:1 was the highest value we could find.

Lee says he gets as much as 30db front-to-back on local signals and about 5dB forward gain. Sky wave front-to-back ratio depends on arrival angle and is less for short hop signals.

Costs? "If you haven't got 500 feet of hardline, use RG11 foam," says Lee. "It's got to be foam." Wire costs about $50. Rope cost nearly $100. The phasing box was $300. RG11 foam is 69 cents a foot from one national dealer.

The way propagation has been lately, 80 Meters looks better all the time. Lee has more than 200 countries confirmed on 80, and this FB inexpensive antenna is one of the reasons. WR



AERIALS

KURT N. STERBA

In late February a telephone call came into ***Worldradio***'s office. It was from an amateur who felt he had been treated unfairly in my column.

You may remember a few months back I had commented on an antenna advertisement in *Wireless Fungus* which claimed 9 "S" units over a 10-element Yagi.

Well, the caller impressed upon the office staff how displeased he was that I had doubted his word. He really should have written to me instead of arguing with typewriter pounders and paper shufflers.

When the suggestion was made to him that possibly the 10-element Yagi he was using for a comparison antenna may have been maladjusted he replied that such wasn't possible because the SWR reading was very good.

Oooooooh. In actuality, the SWR reading, to quote the Gabor sisters, "It means nah-zing." You can indeed have minimal SWR on a Yagi that has less gain than a dipole.

It was suggested to the caller that he accept the challenge of the trip to Dayton at Kurt's expense if he subjected his antenna to the rigors of the measurement games and was indeed correct. The caller said he couldn't get away the weekend of Dayton.

Then it seems that there was something about the gain figures he quoted being on receive but not on transmit. At that time, not knowing what to say, the ***Worldradio*** staffer wished the caller a nice day and went back to seeing that all the lines of type were in straight lines.

Allow me to digress for a moment then we'll return to the saga. Now, here is how people who are serious about antennas look at them. We'll back into this slowly. Pretend you have a tennis ball. (Or a golf ball, basketball, baseball, soccer ball or whatever you prefer.) With a knife (pretending it is the globe) cut the ball along the equator. You now have two pieces. Pretend now that you have cut the ball horizontally along the equator and then vertically along the Zero Meridian. (That's through England... for those who now take social studies instead of geography.) You now have four pieces.

OK, now we're going to make in our globe about 208 slices vertically and 208 slices horizontally. That's 43,264 little pieces. Now, this may not be the exact number but it's close enough. I would look it up but we just moved and all of my books are in boxes in the back of the pickup (in the garage) with all kinds of other stuff still stacked on top of the boxes.

Anyway, the serious antenna types look at the radiation pattern of an antenna cut into (about) 43,264 bits. This is heavy stuff. Some guys go to college for ten years to learn how to do it right. And then they go into the industry and work with it every day for decades. Just think how embarrassing it must for them when someone who has only been fooling with this since 1992 just blows them all right out of the water.

It does appear that science has, up to now, been suffering under the severe handicap of being deluded by the theory of reciprocity. That is, an antenna has the same pattern on receive as it does on transmit. Apparently, this chap in Oklahoma has proven such not to be so.

To assist him in receiving the proper recognition that he so richly deserves, I, through the ***Worldradio*** offices have made him this offer:

On July 29-30 will be held the 1994 Central States VHF Society Conference. The location is Memphis, Tennessee, (almost as much fun on CW as Mississippi) not too far from Oklahoma. I will pay for his transportation, hotel and food if, at the antenna measurement competition his antenna beats a proper 10L Yagi not by the 9 "S" units he claimed but by 9dB. And to show I'm a good sport, I'll even lower it to 7dB. And, it can be on receive or transmit, his choice.

Will Kent Britain, WB5IGF, or Marc Thorson, WBØTEM, who are running the antenna program at Memphis call ***Worldradio*** on the Monday after the conference and say, "He did it! That four element loop beat a 10L (realistic) Yagi by at least seven dB." Will I be paying out the equivalent of a whole Social Security check? Stay tuned.

These VHF antenna competitions are quite interesting. The amateurs bring that expensive measuring gear

from work and have quite stringent testing procedures. A few years back one ham brought a manufacturer's latest antenna offering. It was properly assembled and showed something like 4dB down from a dipole.

To another matter. Some may be suffering from an error in logic. They hear a weak signal and then rotate the beam into the proper direction. "Wow! Listen to that signal come up, this beam really has gain." NO. What you did was actually go from, say, minus 20 up to minus 5. A beam can have directivity but have no gain. Gain is that amount of improvement over a dipole, NOT above the beam's response off the back or the side.

It seems that the 10-10 International has a true straight arrow member. Writing in their bulletin, L.B. Cebik, W4RNL, said — about antennas: "the 3-element Yagi. . . . 6.1dB over the dipole. . . . Do not expect much more improvement than this, even if a manufacturer cites much higher numbers."

Hams often ask, in comparing two (simple) antennas, "Which one is better?" Better for what is the only answer. Where do you want the best signal? At what range: 12, 120, 1,200 or 12,000 miles? Questions often are comparing some sort of dipole with some sort of vertical. The answer: Both! In a contest like Sweepstakes, with a dipole and a vertical, one or the other would be stronger at least one-third of the time. No, it has nothing to do with the polarization of the other station's antenna. It has to do with the angle from which the signal is coming.

A nice antenna is that Half-Square from Antennas West. It's a quarter-wave vertical with a half-wave of wire going to another quarter-wave, fed in one corner with coax. But, even in his literature he warns that this, as good as a DX antenna it is, is not the best for up-close work.

To talk to your pal in the next town, the low dipole will be best. If there is no room for that, the horizontal loop, (1/4 wave or 1/3 wave on a side) not too far above ground, will do a fine job.

Trying to get settled, rummaging through packed stuff, I came across a page I tore out of the September, 1993 issue of *23 Skidoo*, page 82. A "2" was selling plans for $20 for an antenna that gives (and I quote) "20dB gain on 160 to 10M over a dipole." If anybody sent for that would you let me look at it? Haw, you are saying, "I read both of your books, read your column every month and you expect me to admit to you that I actually parted with 20 hard-earned bucks for that?" C'mon, this isn't a trap. I promise that it will be our very own secret. I won't tell a soul.

Seems to be a mix-up in terms out there. A half-wave vertical does need radials if it is end fed (at the bottom). But the same half-wave vertical does not (as much, hardly at all) if it is fed in the center, like a dipole tipped over. Both are still half-waves, true. But, where it is fed makes a considerable difference.

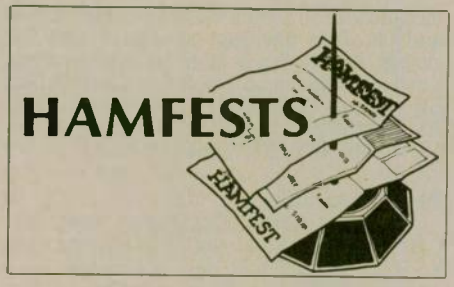
Here's another misconstrued idea: A mobile antenna and its loading coils, or whatever. No, you are not making up the missing wire (difference between 61 ft. (on 75M) and the 8 ft. mobile antenna. All you are doing is adding the proper amount of inductive reactance to cancel out the capacitive reactance of that short stick. A short stick is a short stick. We can't make it any better, what we're trying to do is not let it be any worse than it is.

One reader, (I am protecting his identity so that a particular antenna company doesn't send their goons after him), did some profound work. He plotted the gain vs. boom length claims of seven VHF manufacturers. Six of seven seem to be square shooters. One of them, however, if you extrapolate the curve back. . . you still have 9dB gain at ZERO boom length. Oh, how do they look at themselves in the mirror? Mucho thanks to, you know who you are!

Many letters have come in regarding a new antenna being advertised. Well, I haven't used this antenna but part of the statements make real sense. For many years I was beating the drum for turning the vertical upside down. Get the feedpoint (high current) off of the ground (lossy). Did this company, we'll call them the Mudd Co., just take my idea? I don't know. But it is a good one. For 20M their new antenna (20 ft. tall) will work well. It appears there is a 12 ft. top hat. However, I doubt the phrase "full size performance" on 80 or 40. Alas, there is only one way to have full-size performance and that is with a "full-size" antenna. As for "highest possible efficiency" that would be correct if it was added "under the circumstances." As for "awesome performance". . . well, you get "awesome" performance from rhombics that are 10WL on a leg up 120 feet. You get "awesome" performance from stacked six-element monobanders up 280 ft. What we may have here is an outstanding antenna for its size. But, we'll only know when hams use them and give their results to the rest of us.

What would impress me is if any of these companies would rent a football field for a day, set up their antenna, and their competitors, and put field strength meters out a hundred yards or so. Tell us the results from the shoot-out.

(Kurt is now at the NCFAARAR LRAR. That is, the National Center for Advanced Amateur Radio Antenna Research at Little Rock, AR.) **WR**



California

THE LIVERMORE ARK is sponsoring an Amateur Radio/Electronic/Computer Swap Meet on 5 June from 7 a.m. to 12 noon at Las Positas College. Features include refreshments, free parking and covered spaces in the event of rain. Admission is free. Sellers pay $10 space fee. Talk-in on 147.045(+) from the west and 145.350(-) PL 100Hz from the east. Contact Noel Anklam, KC6QAK, at 510/447-3857 eves. or leave message days at 510/783-2803.

Colorado

The NORTHERN COLORADO AMATEUR RADIO CLUB will host a hamfest on 11 June from 8 a.m. to 3 p.m. at the Larimer County Fairgrounds. Features include commercial exhibits, VE exams and refreshments. Admission is $3. Talk-in on 145.115(-). For more information contact Musser Moore, AAØPB, 303/221-3698.

Connecticut

The NEWINGTON AMATEUR RADIO LEAGUE will sponsor a flea market on 5 June from 9 a.m. to 1 p.m. at Newington High School. Features include radio and computer items, tailgating (weather permitting) and ARRL HQ/W1AW Open House nearby. Contribution is $4. Talk-in on 145.45(-), 146.52 simplex, 224.84(-), 443.05(+). For more information, send SASE to Al Gerke, N1JWF, c/o NARL, 63 N. Washington Ave., Plainville, CT 06062-1921.

The RADIO AMATEUR SOCIETY OF NORWICH will sponsor a ham radio auction on 11 June beginning at 10 a.m. at the Bozrah Moose Lodge, Fitchville Road. Free admission and free parking. Bring your gear to sell, 10% commission to RASON. Talk-in on 146.730(-). Contact Rick, KD1LC, 203/376-2216 or Tony, N1MQS, 203/859-2041.

Illinois

The STARVED ROCK RADIO CLUB will hold a hamfest on 5 June (doors open at 6 a.m.) at the Bureau County Fairgrounds in Princeton. Camping and outdoor flea market area is free. Admission is $4 in advance or $5 at the gate. Talk-in on 146.955(-). Contact Bruce, KU9A, or Debbie, N9DRU, Burton, 1153 Union St., Marseilles, IL 61341-1710; 815/795-2201.

The EGYPTIAN RADIO CLUB will sponsor Egyptianfest on 12 June from 6:30 a.m. to 2 p.m. at Belleville Area College campus (Granite City). Features include indoor dealers, 24-hour building security, outdoor flea market spaces and refreshments will be available. Admission is $3 at the door, or 3 for $5 when purchased in advance. Talk-in on 146.76(-). Contact ERC Hamfest, P.O. Box 562, Granite City, IL 62040; Larry, NZØP, 314/524-3254.

The SIX METER CLUB OF CHICAGO, INC. is sponsoring a hamfest on 12 June beginning at 6 a.m. at Santa Fe Park in Willow Springs. Features include free parking, displays, refreshments, picnic grounds and large swappers' row. Admission is $4 in advance or $5 at the gate. Talk-in on K9ONA, 146.52 or K9ONA/R 146.97(-). Contact Joseph Gutwein, WA9RIJ, 7109 Blackburn Ave., Downers Grove, IL 60516; 708/963-4922.

Indiana

The LAKE COUNTY AMATEUR RADIO CLUB will hold a hamfest on 19 June beginning at 8 a.m. at the Lake County Fairgrounds in Crown Point. VE exams will be at 9 a.m. Refreshments will be available. Admission is $4. Talk-in on 147.00(+). Contact Ken Brown, KE9TC, 918 Chippewa Dr., Crown Point, IN 46307; 219/663-5035.

Iowa

The DES MOINES RADIO AMATEUR ASSOCIATION will sponsor a ham/puterfest on 18 June from 8 a.m. to 2 p.m. at Valley High School. Features include seminars, forums and food. Admission is $3. Talk-in on 146.94(-). Contact DMRAA Ham/puter-fest, P.O. Box, Des Moines, IA 50301; 515/255-6131.

Kansas

The CENTRAL KANSAS ARC is sponsoring a hamfest on 5 June from 8 a.m. to 3 p.m. in the 4H Building in Kenwood Park. Features include commercial booths, flea market and refreshments. Admission is $4. For more information, contact Larry White, KBØBH, 336 Sunset Dr., Salina, KS 67401; 913/827-3737.

Kentucky

The NORTHERN KENTUCKY AMATEUR RADIO CLUB will sponsor a hamfest on 12 June beginning at 8 a.m. at the Erlanger Kentucky Lions Park. Features include packet and antenna forums, indoor exhibit area, outside flea market and refreshments available. Admission is $4 in advance, $5 at the door, children under 13 free. Talk-in 147.255(+) and 147.375(+). Contact KC4FET c/o NKARC, P.O. Box 1062, Covington, KY 41012; 606/341-1213.

Maine

The PINE STATE AMATEUR RADIO CLUB will sponsor a hamfest on 11 June from 8 a.m. to 1 p.m. at the Hermon Elementary School. Features include free parking, dealers, VE exams, demonstrations, forums and CW contest. Admission is $3. Talk-in on 146.94(-). Contact Roger W. Dole, KA1TKS, RR#2 Box 730, Bangor, ME 04401; 207/848-3846.

Maryland

The FREDERICK AMATEUR RADIO CLUB will hold a hamfest on Father's Day, 19 June, from 8 a.m. to 3:30 p.m. at the Walkersville Firemen's Carnival Grounds. Admission is $5, non-ham wives and children free with one paid admission. Talk-in on 147.06(+), 146.52 and 448.425(-). Contact Frederick Hamfest, P.O. Box 1260, Frederick, MD 21702; 301/695-2633 code 6393.

Michigan

The CHELSEA AMATEUR RADIO CLUB, INC., will sponsor a swapmeet on 5 June beginning at 8 a.m. at the Chelsea Fairgrounds. Admission is $3 donation, YLs,

XYLs and kids under 12 free. Talk-in on 146.98(-). For more information, send SASE to CARC, P.O. Box 325, Manchester, MI 48158; 313/428-9398.

The MIDLAND AMATEUR RADIO CLUB is sponsoring a hamfest on 18 June from 8 a.m. to 1 p.m. at the Midland Community Center. Features include new and used electronics and equipment and VE exams. Admission is $4. Talk-in on 147.00(+). Contact MARC Hamfest, P.O. Box 1049, Midland, MI 48641; 517/832-3053 evenings and weekends.

Minnesota

The SOUTHWEST METRO AMATEUR RADIO TRANSMITTING SOCIETY, INC. will sponsor a hobby electronics show on 11 June from 7 a.m. to 2 p.m. at the Chaska Community Center. Features include free parking, seminars, VE testing and indoor flea market. Admission is $2 in advance or $4 at the door. Under 16 admitted free. Talk-in on 147.165(+). Contact S.M.A.R.T.S., Inc., P.O. Box 144, Chaska, MN 55318; or call Dave or Audrey at 612/466-5852; Dean at 612/466-3808; or Tim at 612/474-9232.

Missouri

The LEBANON AMATEUR RADIO KLUB will sponsor a swapfest on 5 June from 10 a.m. to 3 p.m. at the Missouri National Guard Armory. No admission fee. Set-up time is 9 a.m. Talk-in on 146.70(-). Contact LARK, P.O. Box 104, Conway, MO 65632-0104.

New Jersey

The BERGEN AMATEUR RADIO ASSOCIATION will hold a hamfest on 4 June from 8 a.m. to 2 p.m. at Fairleigh Dickinson University in Teaneck. VE exams available, for exam information contact the BARA VE hotline at 201/797-0151. Admission is $2, XYL and Harmonics free. Talk-in on 146.79(-) and 146.52 simplex. Contact Jim Joyce, K2ZO, 201/664-6725. Please no calls after 10 p.m.

The RARITAN VALLEY RADIO CLUB, INC., is sponsoring a hamfest on 18 June from 8 a.m. to 2 p.m. at Columbia Park (near the intersections of Route 529 and 28). Features include ARRL, AMSTAT, QSL bureau representatives, DXCC verification, refreshments. Admission is $5. Talk-in on 146.625(-) and 146.520 simplex. Contact John Manna, WA2F 908/722-9045 before 8 p.m.

New York

The 8th INTERNATIONAL CHAVERIM CONVENTION will be held 10-13 June at the Fallsview Hotel in Ellenville, NY. Features include varied program of social and athletic activities, nine hole golf course, three Kosher meals per day, private cocktail party on Sat. night, dancing and show every evening. For more information, contact Arnold L. Halpern, W2GDS, 450 Brighton Ave., Long Branch, NJ 07740; 908/222-3009. For information on packet contact Sy, WB2MEW at WA2UMX.

North Carolina

The FORSYTH AMATEUR RADIO CLUB will sponsor the Winston-Salem Hamfest on 11 June from 9 a.m. to 5 p.m. at the Dixie Classic Fairgrounds. Features include air conditioned dealer exhibits, flea market, free parking, seminars and VE exams. Admission is $6 in advance or $7 at the door. Talk-in on 146.64(-). Contact Don Edwards, WB4KQN, Winston-Salem Hamfest, P.O. box 11361, Winston-Salem, NC 27116; 910/723-7388 (24 hours).

Pennsylvania

The TAMAQUA TRANSMITTING SOCIETY and ANTHRACITE REPEATER ASSOCIATION will hold a hamfest on 5 June beginning at 9 a.m. at the New England Fire Company, R.D. 1 in Tamaqua. Features include free parking, homing pigeon demonstration, expert electronic technician available for free rig check-up, VE exams and Pennsylvania Dutch Cooking prepared by the Ladies of the Fire Company Auxiliary. Talk-in on 146.67(-) and 147.105(+). Contact A.R. Breiner, K3NYX, 127 Market St., Tamaqua, PA 18252; 717/668-3098.

The BREEZESHOOTERS AMATEUR RADIO CLUB is sponsoring a hamfest on 5 June from 8 a.m. to 4 p.m. at the Butler Farm Show Grounds. Features include free parking and handicap parking, indoor and outdoor spaces, overnight campers welcome, hook-ups available at $10 each. Admission is $1 donation. Talk-in on 147.96(-). Last year's attendance was over 5,000 (biggest in tri-state area). For more information, send SASE to Rey Whanger, W3BIS, R.D.#2, Box 8 Cove Run Road, Cheswick, PA 15024-9451.

The SVARC and Milton ARC will sponsor a hamfest on 12 June from 8 a.m. to 4 p.m. at the Winfield Fireman's Grounds. Admission is $4. Talk-in on 145.18(+) and 146.82(-). Contact SVARC, Inc., Box 73, Hummels Wharf, PA 17831; 717/473-8050. Packet WY3M@NR3U.PA.

Washington

The INLAND NORTHWEST HAMFEST ASSOCIATION will hold a hamfest on 18-19 June from 9 a.m. to 5 p.m. on Sat. and from 9 a.m. to 1:30 p.m. on Sun. at the Spokane Interstate Fairgrounds. Admission is $6 in advance or $7 at the door, kids under 12 free. Contact Ivan Brown, E. 537 Nebraska, Spokane, WA 99207; 509/489-2667.

Wisconsin

The CENTRAL WISCONSIN RADIO AMATEURS, LTD. will hold a swapfest on 12 June from 8 a.m. to 1:30 p.m. at the University Center on the University of Wisconsin-Stevens Point campus. Features include educational seminars, VE testing, air conditioning, food, rest rooms on site, free parking and is accessible to the handicapped. For more information, contact Art Wysocki, N9BCA, 3356 April Lane, Stevens Point, WI 54481; 715/344-2984.

Wyoming

The INDEPENDENT REPEATER ASSOCIATION will sponsor a hamfestival on 18 June from 8 a.m. to 2 p.m. at the Wyoming National Guard Armory. Features include dealers, sellers, eyeball QSOs and VE exams. Admission is $4 in advance or $5 at the door. Kids under 12 are free. Talk-in 147.16. Contact IRA, 562 92nd St. S.E., Byron Center, MI 49315; or call Tom, KA8YSM, or Kathy, KB8KZH, at 616/698-6627. WR

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

RDF Attenuator

Attention: Fox Hunters!

Arrow Antenna introduces the Fox Hunt Attenuator, a 5 step attenuator with 75dB in 5dB steps. An RF attenuator box designed for Radio Direction Finding. The box is made from double sided fiberglass PC board. The five pi-network resisitive sections use full size slide switches with gold contacts. The box measures 4¼" long by 1⅞" wide by 1¼" deep, not counting switches & connectors. Available with UHF or BNC connectors. The Fox Hunt Attenuator is available fully assembled for $49 + Shipping $3, US ($5 Canada). from Arrow Antenna, 1461 Peacock Pl., Loveland, CO 80537.

Kantronics introduces a new mode

G-TOR, a new mode for the KAM Plus and KAM Enhancement Board, is now available from Kantronics. This error-free mode can reliably transmit data more than twice the speed of Pactor in most band conditions. G-TOR operates at either 100, 200, or 300 baud, automatically adjusting the speed as necessary based on band conditions; Huffman compression and run-length encoding contribute to G-TOR's speed. Errors are easily corrected through the combination of Golay forward error correction and full frame data interleaving. Together in G-TOR, these techniques combine to provide fast, error-free data transmission in a mode that resists interference and reduces multi-path effects.

G-TOR is now standard in the KAM Plus and KAM Enhancement Board at no extra cost and is available as an inexpensive EPROM upgrade for the KAM Plus or KAM with Enhancement Board.

For more information contact your authorized Kantronics Dealer or Kantronics at 1202 E. 23rd St., Lawrence, KS 66046; 913/842-7745 TELCO BBS 913/842-4678, fax 913/842-2021.

Dacron guy rope

Davis RF Co. is pleased to offer a Military Type Dupont, double braided Dacron (R), ultra violet resistant rope for use in supporting wire antennas, antenna supports, vertical antennas/supports, towers, general antenna erection/installations and gin poles, etc. This highly stretch-resistant Dacron is preferable to nylon rope which will stretch and can become dangerous in terms of elastic lash-back upon breaking. Unlike competitors' single braid Dacron, the Davis RF product is a double braid rendering greater strength and ultra violet resistance. It is available in three sizes: 3/32" (255+ lbs strength); 3/16" (765+ lbs); and 5/16" (1,765+ lbs.).

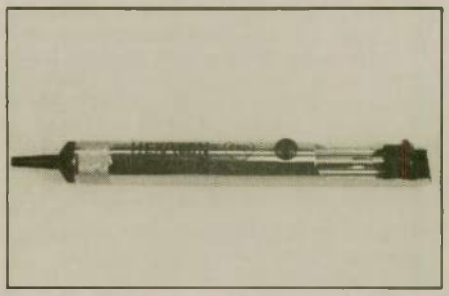
Cost is 6, 11, and 16 cents per foot, respectively, sold in increment lengths of 50 feet up to 3,000 ft continuous (3/32"); 1,000 ft continuous (3/16"); and 500 foot continuous (5/16").

This double braided Dacron can be purchased direct from Davis RF Co., 24 hours per day, by calling 800/328-4773 (800/DAVIS RF) or by calling RadioWare Corp, 10-6 p.m. EST, M-F at 800/950-9273.

Desoldering pumps

Two new desoldering pumps from Hexacon are now available from the Tool Resource. These new desoldering pumps allow for the safe, quick removal of solder during rework.

The S501AS ($14.99) is an anti-static



desoldering pump which provides instant vacuum for safe desoldering with high impact. The heat-resistant plastic body and self-cleaning black conductive teflon tip are included.

The S601CD ($17.99) model is a conductive pump for use on static sensi-

tive materials. The metal body is extra durable and a black conductive teflon tip is also included. These two new desoldering pumps from Hexacon are a simple and economical solution to fit your desoldering needs. For more information contact The Tool Resource, P.O. Box 1106, W. Dundee, IL 60118; phone/fax 708/468-0849.

PROLOG QSL route management system

Datamatrix has released the latest version of the PROLOG QSL Route Management System. Supported by a database of over 35,000 routes, the data management system provides rapid and effortless access. The built-in editor permits the user to modify, delete or add entries.

Information is conveyed using two display windows. The first contains information on the requested DX station including the direct address and whether the station accepts IRCs, green stamps or both. If a manager is listed, a second window, will in most instances, display the managers name, and mailing address.

PROLOG also features a built in DXCC prefix and U.S. States database that provides related information such as: country, location, continent, *CQ* and ITU zones, third party restrictions, bureau availability and bearing information from you QTH to any of the DXCC countries or U.S. states. The bearing information consists of short and long path, return short and long path, and the point-to-point distance in miles and kilometers.

Resolving those unusual prefixes that are heard from time-to time is easy using the built-in table of the worldwide Allocation of International Prefixes. Just enter the first two characters of any callsign, and you will be presented with the country associated with that prefix series.

As with the route database, the prefix database is fully editable using the stand-alone prefix editor. This powerful capability will ensure that your prefix database is always up to date whenever prefix allocations or country assignments change. Additional features include: A windows-like menu driven user interface. Browsing mode provides record review in a scrolling fashion. Portable callsigns may be entered in either pre or post stroke format, PROLOG will find the route. A color editor allows the user to customize the screen colors to taste. Also featured is an integral screen saver with user defined on-time duration. Printer output is provided for hard copy of QSL route information.

The system requirements for PROLOG are minimal, running on any microprocessor from an 8088 to a PENTIUM, using DOS 3.3 or later, with 125K of available memory and 8 megabytes of hard disk space. PROLOG will support both color and monochrome displays.

Keep your database up to date by subscribing to the update subscription service. Our contributors submit monthly, and every two months DATAMATRIX offers a compilation of all the latest changes and new routes. As a bonus, update subscribers receive free program updates whenever they become available.

The price of the PROLOG QSL Route Management System is $20 shipped domestic, and $22.00 shipped international. The update subscription service, consisting of 6 bi-monthly updates and program updates is an additional $36 shipped domestic and $48 shipped international.

The PROLOG QSL Route Management System is available on your choice of media. 5.25", 1.2M or 3.5", 1.44M.

DATAMATRIX is located at 5560 Jackson Loop NE, Rio Rancho, NM 87124; phone/fax 505/892-5669.

Worldwide Ham-Shortwave Radio Atlas

Ear glued to the speaker grill, slowly turning the dial, searching through the noise and crackle for a signal, a voice from a faraway place. It's a common scene for the shortwave listener or country hunter. Searching the airwaves for those rare stations is one of the exciting aspects for shortwave enthusiasts.

Worldwide Ham-Shortwave Radio Atlas is a brand new book that brings whole new view to shortwave listening. Maps of every country in the world, combined with geographical shortwave broadcast ham radio postal information, beam headings and mini contact logs provide the information that brings the "voice in the radio" to life. Why just listen to your shortwave radio, when you can see exactly where in the world you are tuned. Make your hobby more fun by searching the world country by country and keeping contact logs of who and when you "made that rare contact."

This graphically handsome book will be an often used and invaluable companion to your shortwave or ham radio setup. 356 pages. 8½" x 11". $19.95. For more information contact Bill Smith, P.O. Box 1428, Burbank, CA 91507; 818/843-4080 or fax 818/846-2298. WR

When will AMSAT-OSCAR-13 be in range?

ROSS FORBES, WB6GFJ

Those just starting out in the world of OSCAR communications would like to know when they can hear a satellite. The following charts are produced to give you a rough idea as to when OSCAR-13 will be within range of your location. The three charts as printed are centered on the following geographic locations East = New York City; Mid = St. Louis, MO; West = Reno, NV.

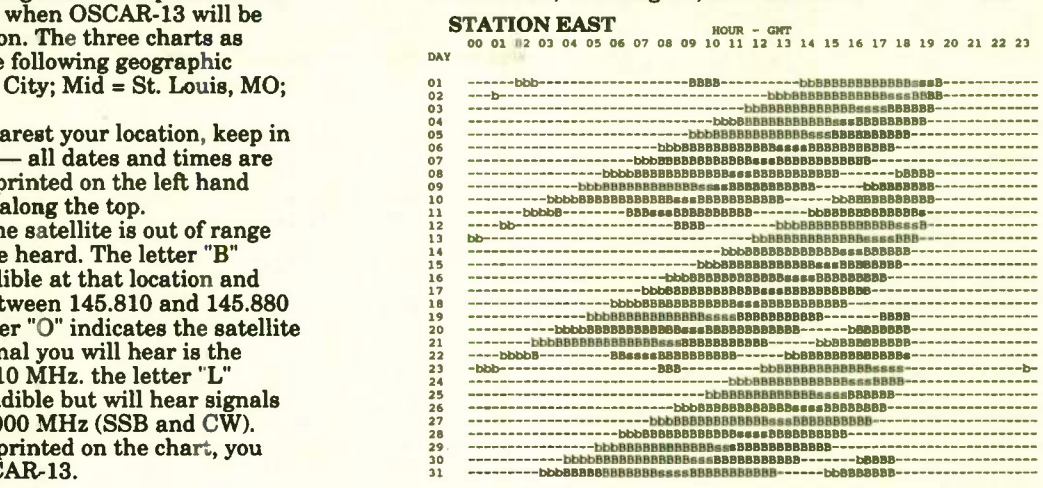
As you read the chart nearest your location, keep in mind the following details — all dates and times are given in UTC. The date is printed on the left hand column and the UTC hour along the top.

A dash mark indicates the satellite is out of range and therefore not able to be heard. The letter "B" indicates OSCAR-13 is audible at that location and signals should be heard between 145.810 and 145.880 MHz (SSB and CW). A letter "O" indicates the satellite is audible, but the only signal you will hear is the telemetry beacon on 145.810 MHz. the letter "L" indicates the satellite is audible but will hear signals between 435.650 and 436.000 MHz (SSB and CW).

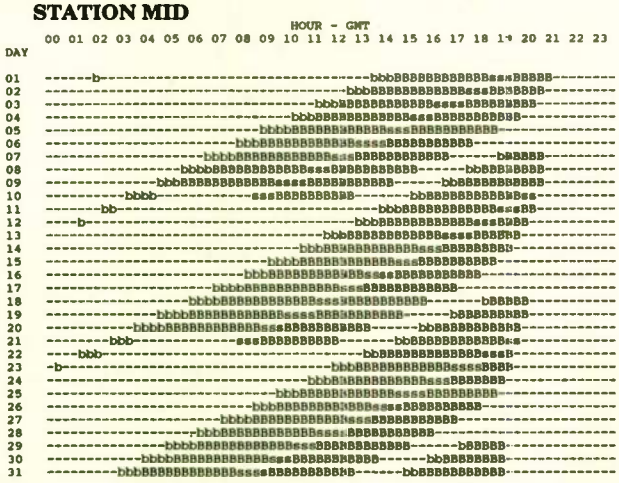
Remember, if a letter is printed on the chart, you should be able to hear OSCAR-13.

For more information about OSCAR, please send an SASE to either of the following: Project OSCAR, P.O. Box 1136, Los Altos, CA 94023-1136; AMSAT-NA, P.O. Box 27, Washington, D.C. 20044. WR

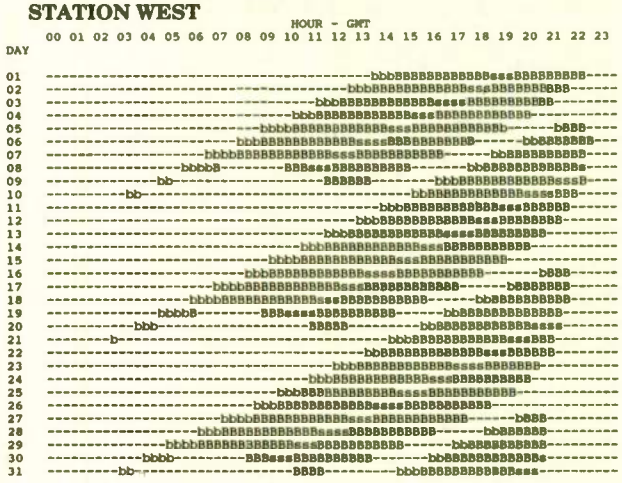
STATION EAST



STATION MID



STATION WEST



VE exam schedules

As a service to our readers, **Worldradio** presents a feature listing those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is three months in advance. For example, if your VE group is scheduling an exam for September, please have the information to us by mid June.

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

Please mark the envelope "VE Exams."

List the location, any information examinees should have (advance registration, etc.) and the name and telephone number of a person to contact for further information.

p/r=pre-register w/i=walk-in

Date	City	Contact	Notes
Alaska			
7/9/94	Anchorage	Jim, KL7CC 907/338-0662	p/r; w/i
Arizona			
7/9/94	Tucson	Joe, K7OPX 602/886-7217	w/i
7/16/94	Tucson	Micki, AA7RR 602/883-8305	p/r
California			
7/6/94	Sacramento	Jim, AB6OP 393-8839 or Earl, AB6CN 331-1115	p/r pref.; w/i OK
7/9/94	Adelanto	619/244-1396 or 619/247-5433	w/i only
7/9/94	Jackson	WZ6Y 209/295-7947	w/i
7/9/94	San Pedro	N6DYZ 310/325-2965	p/r pref.; w/i ltd.
7/9/94	Santa Barbara	Darryl, KF6DI 805/969-2326	w/i
7/9/94	Santa Rosa	Dave, 707/527-0961	p/r pref
7/16/94	Long Beach	Don Boyce, NN6Q 310/420-9480	p/r pref
7/18/94	Stockton	Mark, W6DKI 209/465-7496	w/i
7/21/94	Fountain Valley	Tom, N6XKY 714/778-1542	p/r
7/28/94	Long Beach	W6LRF 714/847-6370; N6LUH 310/592-1713	w/i OK
7/30/94	Culver City	Scott, K6PYP 310/459-0337 or Dave, N3BKV 818/559-2572	w/i
7/30/94	Fairfield	Jerry, AA6NO 916/662-0801	w/i OK
7/30/94	Vacaville/Elmira	Barbara, KM6AC 707/429-4878	w/i only
Colorado			
7/9/94	Denver	Glenn, WØIJR 303/360-7293, 24-hr. message	w/i OK
7/16/94	Westminster	Phil, NP2X 303/421-2795	p/r or w/i
Connecticut			
7/10/94	Milford	NB1M 203/933-5125; WA1YQE 203/874-1014	w/i
7/12/94	Thomaston	WJ1T 203/283-1044	w/i pref.
Florida			
7/9/94	Orlando	Lou, AC4GB 407/898-0429	p/r pref
7/16/94	Melbourne	WB9IVR 407/724-6183	w/i OK
Georgia			
7/22/94	Lilburn	Howie, W4NVF 404/921-8363	w/i OK
Hawaii			
7/16/94	Hilo	AH6P 808/935-8893	w/i
Idaho			
7/9/94	Boise	W7JMH 208/343-9153	w/i
Illinois			
7/3/94	Paris	WO8X 217/463-2213	p/r; w/i
7/9/94	Oak Forest	David, NF9N 708/448-0580	w/i
7/16/94	Bolingbrook	Ralph, WB9RGZ 708/964-3417	w/i
7/16/94	Godfrey	KF9F 618/466-2306	p/r no-code
7/16/94	Loves Park	Dennis, W9SS 815/877-6768	p/r; w/i
Iowa			
7/23/94	Mt. Pleasant	Dave, KAØFBL 319/986-6677	w/i OK
7/29/94	Sioux City	WYØV 712/258-7262	w/i OK
Maine			
7/6/94	Brunswick	Steve, WZ1J 207/725-5155	w/i OK
Maryland			
7/27/94	Glen Burnie	Jerry, NU3D 410/761-1423	p/r pref; w/i ltd.
7/16/94	Laurel	WB3GXW 301/572-5124 after 6 p.m.	p/r pref; w/i OK
Massachusetts			
7/9/94	Braintree	Phil, K1UPY 617/326-6446	
Michigan			
7/9/94	Houghton	George, W8FWG 906/337-2542	
Missouri			
7/2/94	Kimberling City	NQØG 417/739-2888	w/i OK
7/6/94	Deaconess Hospital West	Gregg, KAØVWC, 314/567-8777	p/r only
7/9/94	Belleville	Ken Davis, KF9IA	p/r
7/14/94	Deaconess Hospital West	Gregg, KAØVWC, 314/567-8777	p/r only
7/16/94	St. Louis	NØIS 314/892-4434	w/i OK
7/17/94	Washington	NFØQ 314/946-0948	p/r pref; w/i OK
7/30/94	Creve Coeur	Ron Lemons, KBØDIY 314/647-3223	p/r
7/30/94	HighRidge	James Berger, WAØFQK 314/942-2268	p/r
New Jersey			
7/9/94	Cranford	24-hr. hotline: 201/377-4790	
7/13/94	Fort Monmouth	MARS 908/532-5354	w/i
7/16/94	Pennington	AA2F 609/737-1723	p/r pref; w/i OK
7/21/94	Bellmawr	WA2VQG 609/933-1500	w/i
New York			
7/3/94	Yonkers	AC2V 914/237-5589	w/i OK
Ohio			
7/2/94	Cincinnati	Herb, WA8PBW 513/ 891-7556	w/i OK
7/5/94	Bellevue	John, N8RFK 419/684-7822	w/i OK
7/21/94	Youngstown	James, N8IRL 216/534-1394	p/r only
Oregon			
7/9/94	Eugene	Steve, AA7CF 503/689-5534	p/r pref.
7/13/94	Roseburg	KB7CMB 503/672-5997 or AA7GD 503/672-7564	w/i OK
7/20/94	Florence	Hal, N7NNA 503/997-2323 or Bob, AA7MG 503/997-6448	p/r pref; w/i ltd.
Pennsylvania			
7/2/94	Erie	W3CG 814/665-9124	w/i OK
7/8/94	Nazareth	Robin, Moseley, WA3T 610/820-9110	w/i
Rhode Island			
7/14/94	Providence	Judy, KC1RI 401/231-9156 or Al, NN1W 401/454-6848	w/i OK
South Carolina			
7/16/94	N. Charleston	Ed, KC4OOZ 803/871-4368	
Texas			
7/9/94	Houston	Jim, KB5AWM 713/488-4426	w/i only
7/9/94	McGregor	AB5BA 817/859-5374	w/i OK
7/12/94	Houston	Harold, ND5F 713/464-9044	p/r pref.; w/i OK
7/23/94	Austin	Jim, AB5EK, 512/327-6184	w/i
Virginia			
7/9/94	Chesapeake	KC4YX 804/424-4764	p/r pref.; w/i OK
7/23/94	Culpeper	Bill, AC4KP 703/547-3089	p/r; w/i
7/30/94	Gloucester	Fran, KD4UEY 804/693-2117	w/i OK

THE MART

Classified
• Buy • Trade
• Sell • Inform

MART deadline 20th of the month two months prior to issue date. Please include an address on all ads so prospective clients can contact you by mail, if they prefer.

Commercial rate: 35¢/word, prepaid.
Private rate: 20¢/word, prepaid.

THE MART *Worldradio*
2120 28th St., Sacramento, CA 95818

WORLDRADIO ON CASSETTES for the blind. For information, contact TOM CARTEN, K1PZU, 1602-Y King's College, Wilkes-Barre, PA, 18711. F194

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QSL SALE! 300/$14, 500/$20, 1000/$28, 1500/$38, 2000/$48. Many designs! Free shipping! Phone or write today for samples or ordering. SHELL PRINTING, KD9KW, P.O. Box 50, Rockton, IL 61072; 815/629-2193. Anytime. 593-994

COMMERCIAL WIRE/CABLE: Standard and custom design. Premium quality, small/large lots, businesses call DAVIS RF CO., P.O. Box 230, Carlisle, MA 01741. 800/328-4773, ask for Chris or Steve. 694

CODE PROFICIENCY DRILLS are transmitted from WB3IVO Brass Pounders ARC each Saturday, Sunday, Monday and Thursday on 7040 kHz, starting 2000Z, each Tuesday and Friday on 14060 kHz, starting at 2000Z. Speeds range from 20 to 60 wpm. F194

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FOREIGN AIRMAIL POSTAGE for successful QSLing! Many countries, monthly bargains. Plus European airmail envelopes! Samples, prices: BILL PLUM, 12 Glenn Rd., Flemington, NJ 08822; Fax 908/782-2612. 11-1294

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THE SPEC-COM JOURNAL is published bimonthly, 6 times per year. Dedicated to Fast Scan Television but committed to covering slow scan television, facsimile, RTTY, ASCII, AMTOR, packet radio, satellites, TVRO and all other specialized modes of communication. Now with thicker, color enhanced issues. Back issues and sample copies $3.50 ppd. Annual subscriptions: USA $20, Canada/Mexico $25, foreign surface $30. MC/VISA add 5% and Iowa residents add 4% for tax. KAØJAW has now joined WBØQCD to co-publish the SPEC-COM Journal for specialized amateur enthusiasts. MEMBERSHIP SERVICES, P.O. Box 1002, Dubuque, IA 52004-1002; 319/557-8791. F194

WANTED: TUBES. I pay cash or trade for all types of transmitting or special purpose tubes. MIKE FORMAN, 1472 MacArthur Blvd., Oakland, CA 94602. 510/530-8840 or fax 510/530-0858. 10-1094

PERSONALIZED HOURLY HF SKYWAVE PREDICTIONS from your city or town: SKYCOM 1.5 floppy disk for Apple Macintosh or IBM PC and compatible personal computers. Includes complete mathematical description of theory ($30). DX window 2.0 floppy disk circular projection world radio map centered on your QTH shows sunrise-sunset gray line for any time of interest. Includes feature which displays any of 400 prefixes on world map instantly. For all Apple Macintosh machines ($50). SASE for more info: ATTN: DX; ENGINEERING SYSTEMS INC., P.O. Box 939, Vienna, VA 22183. F194

CHASSIS & CABINET KITS. SASE. K3IWK, 5120 Harmony Grove Rd., Dover, PA 17315. 792-894

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RTTY DIGITAL JOURNAL. The premier source of digital radio news and knowledge! Published ten times per year by the American Digital Radio Society. Whether a beginner of veteran, you need the RDJ for its coverage of all modes/bands from technical data to contesting. $20 per year (foreign higher). ADRS, Box 2465, New York, NY 10185. F195

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The MART (cont.)

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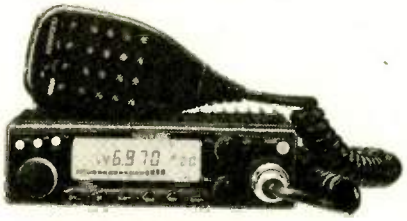

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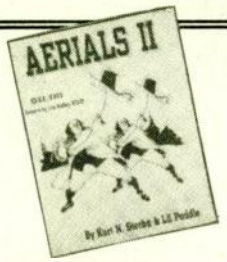

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Lifetime Achievement Award

Iris Colvin, W6QL, was named the recipient of the Lifetime Achievment Award, sponsored by the Southern California DX Club. At the International DX Convention which was held in Visalia, California, Iris was honored for her long-time accomplishments in DXing. Along with her husband Lloyd, W6KG(SK), whom she married in 1938, Iris has traveled the world over giving DX contacts from more than two hundred different DXCC locations.

First licensed in 1945 as W6DOD, she later changed calls to her present W6QL. Getting countries on the air, often after years of silence on the Amateur bands, became a matter of custom with the Colvins. From Abu Ail to Zaire, many countries have been deleted from the "most wanted DX" list because of the dedication shown by this year's Spirit of DX Award, Iris Colvin. WR

Iris Colvin, W6QL, and Milt Bramer, N6MB, await the start of a forum at the International DX Convention in Visalia.

Colvin Award to benefit Amateur Radio Dxing

DAVID SUMNER, K1ZZ, Executive VP, ARRL

While he never made a public fuss about it, Lloyd Colvin, W6KG, gave an insurance policy on his own life to the ARRL and made an annual contribution to the League to pay the premium. The proceeds of the policy were to be used in accordance with an agreement between Lloyd and the ARRL.

Upon Lloyd's death late last year, the proceeds of the policy — more than $150,000 — became available to the League.

It was Lloyd's intent that the income generated by this endowment, to be called the Colvin Award, would be used to further the aspect of Amateur Radio that he held most dear: the strengthening of international friendship through DXing. While the details of how the Colvin Award will be administered are still being worked out, the ARRL will proudly honor Lloyd's memory by fulfilling his intent.

During his lifetime, W6KG made great personal contributions to international friendship through Amateur Radio. Through the Colvin Award, those contributions will continue in perpetuity. WR

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Three generations of fun

BY AL MILLER, VE7EC/ AA7EB

A.M. (Tony) Craig, VE7XQ has been a close friend going back to the 1940s, when he was an airways dispatcher and I handled his messages on the CW circuits. When I also learned how many hams he had in his family, I thought it would be of interest to Worldradio.

Originally licensed as an Amateur in 1932, he was endorsed for all operations on all bands in 1938. That certainly helped Tony get a job with Yukon Southern Air Transport. They based him at Fort St. John. The company equipment there was a home-brewed monstrosity was fixed frequency. Tony was able to persuade the company president to be allowed to use his own ham transmitter and receiver as the base station instead of theirs!

In 1942, he was moved to Vancouver, and at the end of the war was one of the first Amateurs to return to the air with the call VE3XQ. He holds a Commercial Radiotelephone Certificate, and in 1959 upgraded his amateur license to Advanced Amateur.

Fast forward a few years to March of 1976, when son Murray heard that his mother and sister were going to write by two or three weeks. Murray is VE7CQY.

Daughter Beverly J. Harris wrote her exam in early April of that same year, and was issued VE7BQH. Panic ensued — the DOC had issued her an existing license! That problem was quickly solved, Beverly is now VE7CKA.

Tony's wife Marion took her exam a week later than Beverly, and was issued VE7CQX, which she held until 1980, when the call VE7CFA was transferred to her name.

Oldest son Terry waited until 1983 to join the Amateur fraternity, and holds the call VE7FXQ.

Son-in-law Phil Harris, VE7KPH, daughter Susan Harris, VE7BXQ, and granddaughter Briana Harris, VE7XBH were all persuaded to attend the Langley (BC) Amateur Radio Club's course and bring the family ham count to eight.

The Craigs are still working on the other three grandchildren, hoping to persuade them all to take the time to get their licenses too.

"Amateur Radio has played an important role in my life," says Tony. "Apart from the fact that it was a key factor in my getting started in the airline industry, it also made me aware that it had potential to provide help and assistance in many, many ways.

"This hobby has fulfilled a desire to experiment with electronic components that gave tangible and sometimes intangible evidence of its potential. Amateur Radio has provided communication to and from local and distant places in the world that was not previously possible.

"It has allowed communications during times of local or national disaster when regular sources were not available. It is a valuable teaching tool for groups who train those severely handicapped individuals who otherwise might never have a window to the outside world."

To Tony's way, Amateur Radio has so many facets and modes that it is unsurpassed by any other form of recreation. Since his retirement in 1978, he has made it a project to promote Amateur Radio to all those who will listen. Obviously, almost everyone in his immediate family has been convinced.

From left to right: (front row) Lacy the dog and Briana Harris, VE7XBH; (middle row) Tony M. Craig, VE7XQ; Marian Craig, VE7CFA; Beverly Harris, VE7CKA; (back row) Murray Craig, VE7CQY; Terry Craig, VE7FXQ; Phil Harris, VE7KPH; Susan Harris, VE7BXQ.

— photo submitted by Al Miller, VE7EC/AA7EB

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