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Year 25, Issue 11

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Hope springs eternal....or

Can Amateur Radio get a foot in the CC&R door?

Lou Ann Keogh KB6IIP

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Hope springs eternal....or

Can Amateur Radio get a foot in the CC&R door?

Lou Ann Keogh, KB6HP

The FCC has issued a Report and Order (FCC 96-78) preempting most local regulations, including CC & Rs, as they relate to satellite earth station antennas. In this ruling, satellite dishes one meter in diameter in residential areas, and dishes two meters in diameter in commercial areas are presumed to be reasonable, and local entities can't ban them.

What does that have to do with Amateur Radio? On the face of it, nothing at all. But in the long run, there may be important implications for us.

In 1985, an FCC ruling known as PRB-1 said in part ". . . state and local regulations that operate to preclude Amateur communications in their community are in direct conflict with Federal objectives and must be preempted." This was a "limited" preemption, though.

Restrictive covenants were not included. PRB-1 also required the amateur to exhaust all non-federal remedies, including all litigation remedies in a dispute with, say the local township, before coming to the Commission for relief. Obviously that has meant long and costly court battles for many hams trying to get permission to install a tower on their property.

With the passage of the Communications Act of 1996, Congress directed the Commission to "prohibit restrictions that impair a viewer's ability to receive video programming services through devices designed for over-the-air reception of television broadcast signals multichannel, multipoint distribution service, or direct broadcast satellite services." The companies that supply those services are industry giants. Hughes Network Systems, GE, DIRECTV, to name a few, have spent a lot of money on research and development in addition to the extraordinary costs of launching satellites into orbit and establishing their networks.

By comparison to these wealthy and powerful businesses, Amateur Radio appears to be a pretty small player in the overall scheme of things. What makes the future look brighter for the average ham are the steps the FCC has taken to give relief to the users of small satellite receiving dishes.

In the newly released FCC 96-78, the Commission has stated in no uncertain terms that it does indeed have the legal authority to act in these matters, saying in part ". . . the Commission may preempt nonfederal zoning regulations when the non-federal body has 'created an obstacle to the accomplishment and execution of the full purposes and objectives' of the Commission acting within its congressionally delegated authority."

Next, local governments which in the past may have required permit or variance fees are instructed that when they are permitted to charge fees that they must be ". . . minimal." The prospect of long and costly court fights have been eliminated for TVRO (television receive-only) owners. A local government has 90 days in which to issue a permit, or the complainant may go to the Commission for relief. And then only the parties involved (no long line of neighbors, for example) will be heard.

Localities must demonstrate something peculiar or unique about the situation to justify a waiver to the FCC's preemption. An example of such a situation would be a historic district, already substantially protected against signs and dumpsters being visible, etc.

Attached to FCC 96-78 is an 11 March Further Notice of Proposed Rulemaking (comment date 15 April, reply comment date 6 May). In this the Commission specifically states: "No restrictive covenants, encumbrance, homeowners' association rule, or other nongovernmental restriction shall be enforceable to the extent that it impairs a viewer's ability to receive video programming services over a satellite antenna less than one meter in diameter. . . The presumption in favor of small antennas can be rebutted only by health and safety concerns. Non-governmental restrictions would appear to be directed to aesthetic considerations. Thus, we tentatively conclude that it is appropriate to accord private restrictions less deference on this basis."

The Commission determined what a "reasonable" antenna size is permissible. For the most part existing regulations may no longer be used to prevent the homeowner from installing a "reasonable" TVRO antenna.

So what are the implications for Amateur Radio? On 7 February 1996, The American Radio Relay League petitioned the FCC to modify Part 97 to change ". . . its policies and procedures governing preemption of state and local regulation of the siting and maintenance of antennas and antenna support structures for use of licensees in the Amateur Radio Service." Assigned the designation RM-8763, the proposed amendment asks the FCC to compel state and local governments to make reasonable accommodation for Amateur Radio antennas and activities.

"No restrictive covenants, encumbrance, homeowners' association rule, or other . . . restriction. . . ."

The League is also asking the Commission to acknowledge that it has an interest in the effective performance of Amateur Radio stations in areas regulated by deed restrictions or restrictive covenants. Starting to sound familiar? There is more:"Any state or local antenna restriction or regulation which, on its face or as applied, would limit amateur station antennas to heights below 70 feet is presumed unreasonable."

By asking the Commission

(please turn to page 7)

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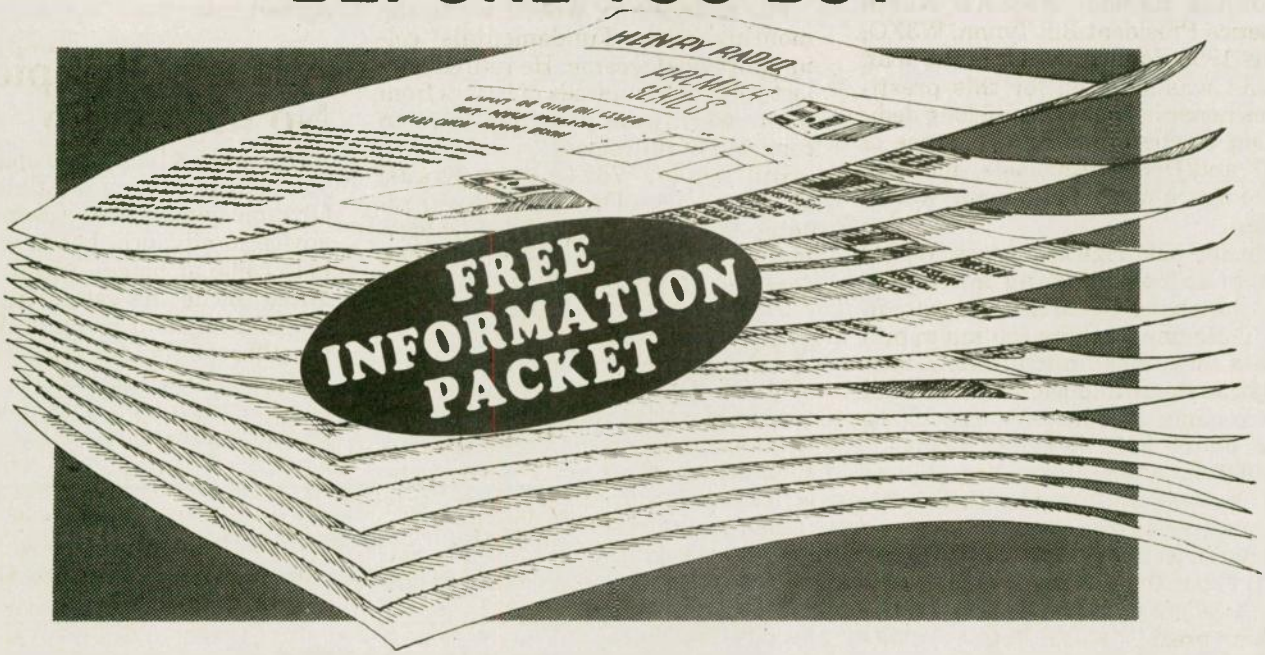

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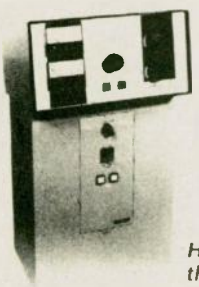

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Worldradio NEWSFRONT —

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

Dayton awards

The Emmys and Oscars of ham radio have been announced.

Amateur of the year

The Dayton Amateur Radio Association has named AMSAT North America President Bill Tynan, W3XO, as its 1996 Radio Amateur of the Year. Tynan was selected for this prestigious honor based on his lifelong dedication to championing the cause of VHF and UHF enthusiasts, and ham radio space communications, worldwide.

For the past eighteen years, W3XO has been contributing editor for "World above 50 MHz" column in *QST*. He has used the column to provide a medium to nurture new communication techniques, encourage DX performance and improve contesting rules on the VHF and UHF bands.

Bill Tynans' greatest contribution to the new world of Amateur Radio was his pioneering the establishment of the Radio Amateur Satellite Corporation. From the founding days of the first OSCAR-6 launch to his present post as president, Bill Tynan, W3XO has sacrificed much of his personal time, talent and resources to the promotion and development of the amateur satellite program.

His vision continues with the Phase 3-D ham satellite project, scheduled for launch in December. Thanks to Bill Tynan's guiding hand, Phase 3-D will usher in an entirely new dimension of Amateur Radio space relay communications technology.

Special Achievement award

Chosen to receive the DARA Special Achievement Award is Professor John Kraus, W8JK. Professor Kraus has contributed much to advancements in antenna design over the years with several new antennas including the W8JK beam antenna. He also invented the helical antenna and most recognizable, the "Big Ear" antenna.

Technical Excellence award

The DARA Technical Excellence award goes to a man known to just about every ham, William I. Orr, W6SAI.

Bill Orr as he is better known, has inspired new and veteran hams alike with his consistent encouragement and technical expertise. Amateur Radio has benefited from numerous Bill Orr publications including *The Radio Handbook*, the *Beam Antenna Handbook*, *The Quad Antenna Handbook*, *The UHF/VHF Manual*, and many other ham shack standards.

For many years W6SAI wrote the monthly "Radio Fundamentals" column in *CQ Magazine*. He retired only last year, but hundreds of letters from hams worldwide prompted him to come out of retirement.

Bill Tynan, W3XO, John Kraus, W8JK and Bill Orr, W6SAI, will receive their awards at the Dayton Hamvention Grand Banquet the evening of 8 May.

VEC change

The FCC has formally eliminated conflict of interest provisions that had kept those involved in the manufacture, distribution or sale of ham radio gear from taking part in the VEC testing system. The FCC action also brought the ham radio rules into conformance with to the new Communications Act of 1996, recently signed into law by President Clinton.

The former provisions essentially precluded equipment manufacturers and their employees and anyone who prepares or distributes ham radio license study materials from administering Amateur Radio license examinations. The purpose was to prevent an employee from favoring examinees who had purchased manuals or equipment produced or distributed by the VE or the VE's employer. The FCC has concluded that other rules provisions, combined with current Amateur Radio license examination procedures, will protect against potential abuses.

The Commission has also eliminated a requirement that volunteer examiners and volunteer examiner coordinators maintain records of out-of-pocket expenses and certify those expenses to the FCC annually. The FCC says that VEs and VECs still may recover actual out-of-pocket costs from examines. The maximum reimbursement fee is $6.07 for 1996.

The rules changes became effective February 28th. The FCC says that because each exam is administered by three VEs and coordinated by a VEC it would be highly unlikely for any examinee to be favored by a VE or VEC. The agency notes that twelve years of experience with the VEC system has shown that breaches of trust by VECs and VEs can be dealt with swiftly and immediately by disaccrediting the offending VEs or rescinding the VEC agreement.

Atlanta Olympics: No ham radio

If you are a ham radio operator and you plan on coming to Atlanta for the Olympic games, here is some friendly advice in advance. Leave your handheld radio at home—you won't be allowed inside the gate. This warning comes from Andrew Funk, KB7UV, a member of the Olympic Broadcast Frequency Coordination Committee. He is very familiar with plans for RF management during the Olympic Games, and says all RF radiating devices at any venue connected to the games will be tightly controlled.

All RF gear—including broadcast equipment—will be required to pass a separate Olympic certification inspec-

(more NEWSFRONT, page 11)

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We emphasize the positive aspects of this great activity, and desire your contributions dealing with dramatic, personal and humanitarian uses of Amateur Radio. ***Worldradio*** is an independent magazine not affiliated with any other firm, group or organization. Its pages are open to all.

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PUBLISHER'S MICROPHONE

We now present those who, to use a term from service days, have "reupped" for the max. The latest to achieve the high status of ***Worldradio's*** Super-Booster (Lifetime Subscriber) are:

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•William Ozment, W6LSW, Pollock Pines, CA
•Everett Curry, Jr., K6VGL, Hillsboro, OR
•James Sackey, N9ESM, North Bend, WA

•

Tom Travis, WA9NGO, La Porte, IN, said he likes this magazine because, "the news is more timely."

•

As I was reading through a club bulletin I came across a review of the *ARRL Handbook* in which the phrase "exhorbitant price" was used.

Well, being a bit familiar with printing costs I must say I can't see how the League produces the *Handbook* for what they charge! Compare any book in a bookstore on the basis of pages, size of pages, cover and then the price with that of the *Handbook*. What must also be taken into account is the obviously monstrous amount of man hours expended creating that book before it goes to the printer. Just screening all the halftones for all those pictures would be a big project alone. Who drew all the diagrams? The typesetting? Believe me, that book is a bargain! And don't forget the software that comes with it.

•

In a recent issue of ***Worldradio*** a letter was printed in which the writer said, "When dealers jack up the price of their current stock when the yen/dollar gets worse, this is simply greed. If there is a valid reason for this, I'd be happy to learn it." The reason for the price rise is that the dealer has to replace that unit on the shelf with equipment that costs him more. So, unless he is running a charity he has to charge more than before to cover the new higher price from the manufacturer to him. In reality, the word "greed" can not be used to describe the actions of ham stores today (if ever). A better phrase would be "hanging by the fingernails for survival."

•

You may have seen the articles which predicted that because of the Internet the need for Amateur Radio in emergencies would diminish greatly. However, it seems that in a most recent massive need for communications the amateurs came through with their usual excellent job. So much so that *TIME* magazine mentioned it. An $8.5 million dollar government emergency radio system collapsed (as the Associated Press stated it, "failed miserably") but the amateurs, as usual and par for the course, saved the day.

Where the return address goes on the bulletins of the Raleigh (NC) Amateur Radio Society, in large, bold type it says, **Amateur Radio — A National Resource.**

•

In Canada an Amateur Radio license costs $24 a year. Somehow I doubt that it costs their government a tad over a million dollars a year to accomplish the necessary administrative work.

In Belgium the cost is around $60 a year, and another $60 if you want to go mobile. If you should want to operate HF, VHF, UHF, at home, mobile and portable, the hit will be almost $200 per year, and that's in a country where gasoline is almost $5 a gallon.

•

In a couple of minutes I'll get our registrations in for the International DX Convention being held in Visalia, CA. This way, world-famous K6FO, our DX editor N6JM and I will be eligible for the pre-registration goody. This is a great convention and any serious DXer who has never attended has really missed something! Well-known amateurs from around the world will be there and it is truly a great event. My first one was about 25 years ago and I've missed very few since. It's teriffic!

Many amateurs like to wear various pins on their caps or jackets. I just got one to wear — "Dinky Dau." How many people reading this know what that means? Drop a note if you do.

—Armond, N6WR

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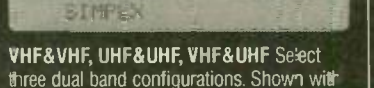

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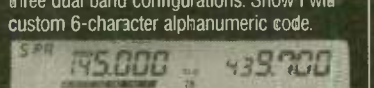

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Getting ready for Field Day

John E. Gercken, KA9EPO

I know it's early, but it is not too early to start planning for Field Day. Planning and looking ahead certainly make for a fun and efficient Field Day. I know. I have been to plenty of them having been a ham for 16 years. For seven of those years my brother Glenn, NØPNQ, has been going with me to every Field Day.

In this article, I would like to mention some of the things that we have found which worked well for us so that other Field Day participants can learn from our experience.

We found out early-on, to expect all kinds of weather on Field Day. One time I went with Glenn to Herman, Missouri, and joined up with the MacDonnell-Douglas ARC. We were on a big hill out in the boonies. It had rained some the previous day and by the time we arrived at the site the sun had come out and was bathing us in steam. We got Glenn's pop-up camper set up and the radios ready inside, then proceeded to launch antennas. We had what we thought was a good slingshot system, but we were proven wrong. I had some bright orange golf balls with an eye-hook screwed into each one to tie the fishing line to. Well, the slingshot's leather pouch was too small to go around them, and we couldn't get off a good shot to save our souls. We ended up just trying to throw the ball by hand in an effort to get it over whatever tree branch we could. We were working 15 and 17 Meters.

As the night passed, it started getting colder and a storm front came through and dampened us and our gear. I felt sorry for the other guys in the open pavilion (nothing but a roof supported by some poles) sitting there out in the wind trying to keep their logs from either blowing away or getting soaked. Later, as daylight began to warm our spirits, some fog rolled in. As it burned off we were again bathed in steam! The only thing it didn't do on this particular Field Day was snow!

One thing that has helped us in remembering what we need to take along is making a list of essential items. To the right of the list, I make two check-off columns, one called "gathered" and the other called "loaded." I keep everything I need for Field Day in my basement except for my tent and a couple of antennas. I use "banker's boxes" from a local office supply store to store my stuff because they are sturdy, have lids and handle holes on each end for easy lifting. I also have them labeled as to what is in each. I don't list each and every item on the box, just general stuff like "stakes and rope" or "connectors and cables." Once I have my items gathered, I check off the "gathered" column by each item. Then, when I go to load my van up, I check off the "loaded" column. Keeping all of your Field Day stuff in one spot in the house helps a lot.

When I tear down my station in the house to pack it up for Field Day, I put everything I need on a table and reassemble the station like I am going to operate Field Day. That way, I will know for sure whether I am missing any cables, coax jumpers, or jacks, etc. I actually connect everything up, then when I am satisfied that I have everything, I take it all apart piece by piece and put it in the appropriate boxes. You may think this is silly, but there is method to my madness. On separate occasions, I went off to Field Day without my footswitch for my favorite boom-mike headset and was forced to use a hand mike.

Antenna launching

Two years ago, Glenn and I finally got smart and got bows and arrows for antenna launching. I use the aluminum arrows and I blunt the tips so they will bounce off the tree branches instead of sticking into them. The end looks like a round nosed bullet instead of a point. I also have a small hole drilled just 2" ahead of the fletchings with a small cotter pin inserted into it. I have the head of the cotter pin on the same side as the odd colored fletching and I have the split end formed tightly around the body of the arrow. This allows me to attach the fishing line via a fishing swivel to the arrow. If you don't use the fishing swivel, chances are greater of the line breaking and you losing your arrow. I know. I have lost some already.

This antenna launching system is virtually flawless! I rarely miss a shot. The bow is a Little Bear 50" recurve and has a 35 lb. pull. It is basically a child's bow, but you don't need a compound bow unless you want to shoot an arrow into the next county. The spinning reel that I use is a Zebco 404 because it has a large enough capacity for a lot of fishing line. I use 15- to 20-lb test mono-filament. You are likely to do some heavy tugging and pulling when the line gets stuck in the tree as you are reeling the rope up and over the top of the tree back to you.

One trick I learned about using the bow and arrow is how to make your arrow fall straight down after crossing over the tree branch that you are aiming for so that your arrow does not fly way over into another tree or something. Just after the arrow clears the tree branch, have another person hit the brake (the big button) on the back of the reel momentarily. This stops the line from feeding out for a second, enough to slow down the arrow.

Using dipoles

One thing we have learned about using dipole antennas is that in order to minimize crossband QRM during Field Day, you need to string your dipoles end to end. We found that this works very well. We have worked all bands with our dipoles oriented end to end and have not had a significant amount of QRM from any of the other stations at our site. Why does this work? It works because the radiation patterns are all facing the same way — broadside to the wire. Since there isn't much energy emitted from the end of a dipole, QRM is minimal especially when a dipole is mounted as a flat top (parallel to the ground).

In my early days as a ham, I was with one club that mounted their dipoles 90 degrees from each other. I was on 75 Meters and another station was on 40 and we were constantly causing each other QRM. One would have to stop transmitting for a while in order to let the other station make some contacts!

The kinds of dipole antennas I like best are the Double Bazooka and the G5RV. The Double Bazooka is a dipole made of RG-58U coax and TV twin-lead. The advantage of this dipole

over a conventional dipole is that it is broad banded, and has a certain amount of gain. Two years ago we put up a 20-meter Double Bazooka about 20' above a round, steel-roofed shelter in a park by a lake, and WOW! What a signal we put out!

My other favorite is the G5RV, which has the advantage of being an all-band antenna and has some gain on the upper frequency bands. I have one here at home and two for Field Day. I use 450-ohm ladder line for the vertical portion and I made a choke balun out of 11 turns of RG8X coax in a 6" diameter coil tightly wrapped so it looks like a nice round donut. I soldered the center conductor and braid to the two conductors on the ladder line and weatherproofed it. I tried using a 4:1 balun, but I found that after a while it started heating up and making my SWR go up to 1.5 instead of staying at 1.1. It happened that way when I used CW, and I was only running 100 watts. With the choke balun, I didn't have that problem.

Keeping tabs

A few years ago, I started keeping track of the scores and problems encountered in each Field Day event for future reference, and changed my operating strategy accordingly to make my efforts more efficient and to guard against making the same mistakes. This has helped tremendously. I think it would be a good idea for clubs to hold a "Post Field Day Debriefing Meeting" to discuss what went right and wrong. The old timers are not going to be around forever for the younger ones to ask questions, so some kind of permanent record should be kept.

73 and have a Great Field Day 1996! **WR**

Hope springs. . .

(continued from page 1)

to clarify its preemption policy as set out in PRB-1, the ARRL says municipalities would be guided in enacting provisions that make fair accommodation for amateurs.

Does this petition have any possibility for success? The FCC's willingness to act in the case of television receive-only antennas is a hopeful sign, but there's a big difference between a 70-foot transmitting tower and a one-meter, receive-only dish. There's also a big difference in the influence on government of multi-million dollar corporations and any hobbyist group, no matter how dedicated.

How do we help ourselves? Joining the ARRL is a good start. Someone recently told me that they didn't always agree with the League. Well, do you always agree with other members of your own family on every topic? Probably not. You probably do manage to pull together on issues that have serious impact, though. Even then, you do have to talk to one another about serious matters and let your views be known. The idea is the same with the League. If you want to have a voice that matters, join the League and participate. If you don't always agree, say so. At least you will be part of the most effective group that does its best to represent the interests of Amateur Radio. **WR**

WRTC-96

Norm Brooks, K6FO

If you are the average Amateur Radio operator, you have the impression that amateurs who make big scores in contests are those who are operating from "contest stations" that have high power, many sophisticated antennas, and are located in favorable geographical locations. These impressions may be true in some cases. But we left out one criterion that is the most important of all — the operating skill of the operator. How do you separate out the operating skill criterion from the other criteria? It is being done in what is called the World Radiosport Team Championships (WRTC.)

Charles "Rusty" Epps, W6OAT, in a forum at Pacificon on 21 October 1995, described how the WRTCs are designed to pit two-person teams comprised of some of the world's top operators in a head-to-head competition. To emphasize operator ability, each team runs the same amount of power from stations having similar terrain and antenna systems and located in the same geographical area. The winners of this contest can then be truly identified as the best Amateur Radio operators in the world. The WRTC was first tried in Seattle, WA during the 1990 IARU HF Championship.

To give you the picture of how all this is done, here are the "rules" for the WRTC in 1996:

Teams: 52 two-person teams.

Location: 52 typical amateur stations in the San Francisco Bay Area.

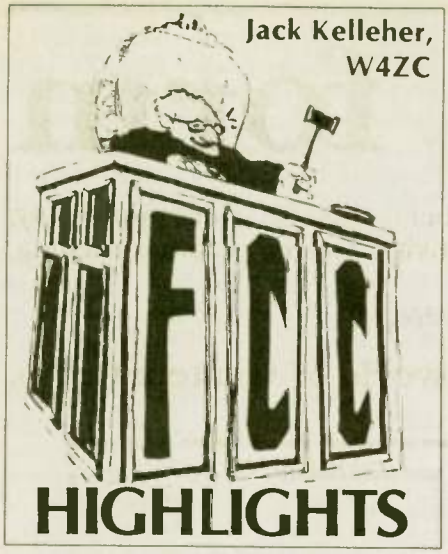
Time: During the IARU HF Championship contest 13 and 14 July, 1996. The WRTC teams will operate from 12:00 UTC Saturday, to 06:00 UTC Sunday. This is 18 hours, even though the IARU HF Championship runs for 24 hours.

Power: 100 watts maximum.

Bands/modes: 40,20,15 and 10 meter bands only, CW and SSB only. All CW contacts must be made in the lowest 100 kHz of each band.

Forty-five teams are allocated to 27 invited countries, one team to the de-

(please turn to page 12)



Spectrum hearing date set

The FCC set 5 March as the new date of its hearing on spectrum policy and management. The original hearing date was 31 January. It had to be rescheduled because of the Federal furloughs triggered by the congressional budget deadlock, and heavy snow which extended the shutdown.

The FCC will hear oral presentations and will allow a direct exchange of viewpoints between individuals and representatives of affected industries. The commission will select panelists from among those who have submitted letters of interest. They will address future spectrum demand and user needs, trends in technology, and approaches to spectrum allocation and assignment, including licensing and uses.

ARRL files request to expand PRB-1

PRB-1 could be expanded to further protect the rights of radio amateurs to erect towers and install antennas. This, if the American Radio Relay League gets its way. The League wants the Commission to take additional steps to compel state and local governments to make reasonable accommodation for Amateur Radio under PRB-1 and apply the least restrictive means to regulate amateur antennas and activity.

In a petition for Rulemaking filed 7 February, the League called on the FCC to amend Section 97.15(E) to say that any state or local ordinances restricting ham radio antennas to heights below 70 feet would be presumed unreasonable, unless the state or local authority could show that its restrictions support a clearly defined health, safety or aesthetic objective. State and local governments also could not impose substantial application costs on amateur service licensees.

The league also wants the FCC to acknowledge that it has an interest in the effective performance of Amateur Radio stations in areas regulated by deed restrictions or restrictive covenants rather than by local zoning ordinances.

The league says clarifying the preemption policy of PRB-1 will help guide municipalities to enact provisions that make fair accommodation for amateurs and avoid highly divisive litigation between hams and localities. Under the suggested changes, state and local governments could apply to the Commission for a full or partial waiver of the amended rules in unusual circumstances. The FCC has not assigned a rulemaking number to the League petition.

Vanity call sign program stalled

FCC says that it will probably not start up the vanity callsign program in the foreseeable future. The FCC will delay until at least mid—1996 announcing the date when it plans to open the first gate or gates of the program.

A Commission spokesman says the FCC must first deal with remaining Petitions for Reconsideration asking for numerous changes in the way vanity calls will be issued. The FCC had been expected to announce opening dates early this year. Now it could take up to a year or more before the current crop of petitions for reconsideration are addressed. While vanity call sign application 610-V is now available, the FCC says that it will not accept completed forms until it opens the appropriate filing gates. That could be many months, or possibly years, away.

FCC says yes to hams on 219-220 MHz

The FCC has affirmed the secondary allocation of 219-220 MHz to Amateur Radio. The action, for the most part, denies a Petition for Reconsideration filed by Orion Telecom, an Automated Maritime Telecommunications System (AMTS) licensee.

Orion had argued to rescind the de-

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 March 1996.
For more information about the call assignment in the Amateur Radio Service, see Section 97.17(f) of the FCC Rules, or write to the FCC, Consumer Assistance Branch, Gettysburg, PA 17325-7245.

Radio District	Group A Am Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
Ø	ABØBA	KIØBM		KBØVLN
1	AA1PQ	KE1EE	N1WRE	KB1BWW
2	AB2AG	KG2FT		KB2YCU
3	AA3NR	KE3WA	N3WXH	KB3BNP
4	AE4RF	KT4LS		KF4HFX
5	AC5GR	KK5XL		KC5TBY
6	AC6SZ	KQ6EI		KE6BSN
7	AB7PE	KJ7VF		KC7PLX
8	AA8WE	KG8VV		KC8CON
9	AA9RK	KG9FO		KB9MWF
N. Mariana Is.	KHØV	AHØAW	KHØER	WHØABE
Guam	WH2S	AH2DB	KH2PY	WH2ANP
Hawaii		AH6OL		WH6DAE
Amer. Samoa	AH8O	AH8AH	KH8CL	WH8ABF
Alaska		AL7QI		WL7CRW
Virgin Is.	WP2W	KP2CJ	NP2JD	WP2AIC
Puerto Rico				WP4NJY

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cision to allocate 219-220 MHz to ham radio. It says the 50-mile exclusion distance between AMTS and amateur operations was insufficient to protect primary AMTS operations from harmful interference. Orion asserted that a 575 mile exclusion distance was necessary. This would have precluded Amateur Radio operation in many areas.

The FCC did agree with Orion's concern that the amateur rules do not adequately specify the frequency range of AMTS operations. The FCC amended its rules to specifically call attention to the fact that one must look at 217-218 MHz assignments to know what AMTS coast stations are operating in a given area.

ARRL Executive Vice President David B. Sumner, K1ZZ, said the League is pleased that the FCC reaffirms its commitment to provide some relief to the amateur service at 219-220 MHz to offset the loss of access to 220-222 MHz. Sumner says the ARRL has a procedure in place to ensure that amateurs planning to use 219-220 MHz are aware of their obligations to avoid harmful interference to other services.

ARRL vs. auto location

In comments on an FCC Notice of Proposed Rule Making to temporarily remove hams from the band, the League asked the FCC to maintain existing ham allocations from 75.5 to 81 GHz to spur development of short-range, high-speed data links.

Automobile manufacturers differ on the issue of continued Amateur Radio use of the 76-77 GHz band. Ford Motor Company opposes continued use of the band by hams. General Motors says that vehicle radar systems would not be adversely affected by continued amateur use of the band. Japanese auto makers don't want to use these frequencies at all. They say they prefer 60-61 GHz for these systems.

Amateur Radio restructuring

This item is not an FCC highlight; but it does have a bearing on the ARRL's future position on licensing, on international licenses, and other quasi-regulatory issues. Therefore, it is being included here rather than in the ARRL news, with the concurrence of John Swafford.

At the Annual meeting of the ARRL Board of Directors on January 19 and 20, the following Resolution was adopted.

WHEREAS, various concepts for simplification of the Amateur Radio Service licensing structure are being discussed in the amateur community; and

WHEREAS, the League is committed to the principle that no structural changes should reduce the privileges of existing classes; and

WHEREAS, maintaining integrity of the amateur examination and licensing process is essential to the future health and growth of Amateur Radio; and

WHEREAS, the League is cognizant of efforts to harmonize the standards for amateur licensing in different countries, which supports the objective of reducing the barriers to the movement of radio amateurs across international borders; and

WHEREAS, these issues are related to the provisional WRC-99 agenda item to consider Article S 25 of the international Radio Regulations, the technical and operational rules governing the Amateur and Amateur Satellite Services, including but not limited to the requirement to demonstrate Morse code ability in order to operate below 30 MHz; and

WHEREAS, the ARRL Board of Directors recognizes that it is essential for the League to solicit input on these issues from the broad range of its membership and to develop policies that will insure the future health and growth of Amateur Radio; NOW THEREFORE,

BE IT RESOLVED, that the President is authorized to appoint a committee made up of Board members and other representatives of the broad range of the membership. The terms of reference shall be to make recommendations for ARRL policy positions encompassing the issues listed above. The committee's first tasks shall be to define the process by which membership input should be solicited and the opinions of the membership objectively determined, and to formulate a request for funding for this process and for the remainder of the committee's work. The target date for completion of these initial tasks shall be 120 days after appointment. The committee's final report shall be rendered to the Board no later than 17 December 1996.

HTs at the Atlanta Olympics

From Andrew Funk, KB7UV, Assistant News Operations Editor of WAGA-TV and a member of the Atlanta Olympic Broadcast Frequency Coordination Committee sends the following:

"A word of warning for hams coming to Atlanta for the Olympics: leave your HT at home!

"As a member of the Olympic Broadcast Frequency Coordination Committee I am familiar with plans for RF management during the 1996 Centennial Olympic Games in Atlanta. To say things are going to be tightly controlled is an understatement. For example, all broadcast-related RF gear will be required to pass an Olympic certification inspection in addition to that required by the FCC. (And I once found Amateur repeater coordination difficult!)

"This will undoubtedly have an impact upon Radio Amateurs attending the games. As our VHF and UHF handheld radios are known to be easily modified for wideband use, security officers will not permit Amateur HTs at Olympic venues.

"Some may argue that this policy is unreasonable. It may or may not be, but it will be in effect and enforced. I suggest that hams attending the Olympics avoid the hassle — don't bring your HT to the games.

These last two items are in line with this columnist's intent to change the content of this column to "Radio Amateur Regulatory Highlights," and to include not only FCC highlights, but also relevant highlights emanating from the National Telecommunications and Information Administration (NTIA), the Department of State, and the International Telecommunication Union (ITU). The timely information which is becoming available in ever-increasing volume via the Internet and the World Wide Web should make our collection and editing task easier (but not easy). WR

"We all get heavier as we get older because there's a lot more information in our heads." —*Rocking Chair Copy*, Clark County (WA) ARC

NEWSFRONT
(continued from p. 3)

tion, along with normal FCC certification. Andy says that since amateur VHF and UHF handheld radios are known to be easily modified for wideband use, security officers will not permit amateur HTs into any Olympic event. This may or may not be an unreasonable policy, but Andy suggests you avoid the hassle by NOT bringing your HT to the Atlanta games.

JY1 promotes peace

On the international scene, Jordan's King Hussein, JY1, is in the news once again. The king was in Washington in March where he joined the U.S.-led efforts to prevent a wave of terrorist bombings in Israel from destroying chances for peace in the Middle East. In a meeting on 14 March with President Bill Clinton, the king said the bombings, which have killed 57 people were the work of a small group acting against an overwhelming majority of people in the Middle East who are seeking a lasting peace.

According to several newspaper reports, King Hussein's powerful words helped to strengthen a drive led by the United States to isolate the militants behind the bombing campaign and keep the Middle East peace process alive.

While JY1 has condemned the bombings previously, his presence in the White House alongside President Clinton gives a much higher profile to his own anti-terrorism stand.

Train crash aid

Ham radio also stepped in to help after a freight train carrying liquid propane derailed early on the morning of 4 March in Weyauwega, Wisconsin. One tanker car exploded, and others caught on fire.

Authorities quickly evacuated 1,700 residents of the town, west of Appleton in Waupaca County, fearing another explosion. Among those evacuated were residents of two nursing homes. County Emergency Coordinator Robert Krueger, N9BKF, says the Wisconsin Division of Emergency Government called the hams in immediately after the incident. He says that ARES volunteers from several counties worked in three shifts around the clock to provide communication for emergency personnel. Hams also provided communications for the American Red Cross, which has set up two shelters in the town of Waupaca.

Krueger, who is also County RACES officer for Waupaca, says that hams used several 2-meter repeaters to support communication at the incident command post and at a staging area back from the scene. RACES volunteers handled long-haul traffic on 75-meters to the state Division of Emergency Government and the Red Cross in Madison. As we go to press, this emergency situation is still ongoing.

UK Radio Agency bombed

The new office of the United Kingdom's Radiocommunications Agency in London's Dockside region has been severely damaged in a terrorist bomb blast. Fortunately none of their employees were injured. The GB2RS News Service says that following the explosion on 8 February, the Radiocommunications Agency was forced to move out of its headquarters building. At this time the Agency does not know where or when it will be relocated.

The Radiocommunications Agency is Great Britain's equivalent of our FCC.

New RAC Secretary

Henry Tait, VE7FYU, is the new secretary of Radio Amateurs of Canada. A British Columbia native, he replaces Kenneth Pulfer, VE3PU, who remains as RAC treasurer and a member of the national executive. Pulfer also continues as a member of the Amateur Radio Working Group negotiation with Industry Canada.

Alabama tornado

One person was killed and about 45 people were hurt by the storm, which spawned tornadoes, high winds and heavy rains in Selma Alabama on Wednesday, 3 March. Violent winds ripped down trees and utility poles, peeled pieces off roofs and twisted an 800-foot-tall broadcast tower into crumpled metal.

The coordinator of emergency services for Dallas County told the media that ham radio operators assisted by reporting on damage to dwellings. Some of the information flow concerned trailers that exploded, overturned or were blown into nearby trees. Hams also reported on ten other mobile homes that were destroyed at a 50-home park north of Selma.

WRTC

(continued from page 7)

fending champions from WRTC-90, and six teams to wildcard entries which may come from any country. The invited countries have been allocated a number of teams determined by the number of logs submitted from those countries in recent international contests. The actual selection of the teams in each country will be managed in that country by contest clubs, contest managers or other respected individuals in the contest community. Wildcard teams will be chosen later from among direct applicants to the WRTC Team Selection Committee.

The 27 invited countries are: USA 10; Japan 4; Germany 2; Spain 2; Italy 2; Poland 2; Russia 2; Canada 2; Ukraine 1; Sweden 1; Czech Republic 1; Finland 1; United Kingdom 1; France 1; Argentina 1; Brazil 1; Norway 1; Slovenia 1; Netherlands 1; Denmark 1; Lithuania 1; Slovak Republic 1; Yugoslavia 1; Australia 1; Belgium 1; Hungary 1; Bulgaria 1.

The wildcard teams provide an opportunity for contesters who are not residents of invited countries, and for residents of invited countries who are not otherwise selected, to participate.

Judges for the event are Chief Judge: Lew Gordon, K4VX. Associate Judges: Roger Western, G3SXW; "Bear" Kumagai, JA3RHJ; Fred Laun, K3ZO; Dick Frey, K4XU; Tom Taormina, K5RC; Glenn Rattmann, K6NA; Gene Walsh, N2AA; Dick Norton, K6AA; Phil Goetz, N6ZZ; Ville Hiilesmaa, OH2MM; Tine Brajnik, S5ØA; John Brosnahan, WØUN; and Rush Drake, W7RM. Many of these individuals are themselves contest legends. Their very presence will lend enormously to the stature of WRTC-96.

There is one more factor that will make WRTC-96 even more interesting. None of the 52 teams will know the call sign they will use until just before the contest starts. Hopefully, the FCC will assign a special event call sign to each of the stations for a one-time use. If the call signs are distinctive, other stations will be looking for them to see if they can work all 52!

We'll be looking for you in the IARU HF Championship 13 and 14 July 1996. WR

Coping with the code

Art Sadler, KC7IG

If you'd like to upgrade, but you're stuck at a code speed somewhere between 5 and 20 wpm, don't give up. This article will explain in detail how to reach your objective. It's very likely that you're having trouble due to the way you learned code, to bad habits you've developed, or both. The advice I offer works equally well in any case because it forces you to learn the one skill you must develop to succeed: direct recognition of characters by their sound.

If you want to follow the method I recommend exactly as outlined below, you'll need the following — an Amateur Radio license, HF rig, antenna, and key (a straight key is fine) that will allow you to QSO with CW operators,

- the ability to send and receive at 5 wpm or more,
- the willingness to spend 40 minutes a day divided into two 20-minute training sessions,
- an hour or so each week of other code activities including QSO,
- a tape recorder and appropriate cables to record CW off the air, and
- access to fairly recent back issues of *QST*. Don't despair if you lack anything on the list; pretend for the moment that you have it all. When I have completed explaining the method, I'll tell you how you can work around your limitations. Okay, let's get started.

First, establish your level of competence or initial "baseline speed" as follows. Every issue of *QST* contains a transmission schedule for W1AW. Read the text which accompanies the schedule and determine the best time and frequency for code reception in your area. Record the entire code practice transmission then listen to the recording and compare what you copy with the text in the magazine.

The fastest speed at which you can copy 80-90 percent is your baseline. Hereafter it will only be necessary to record the parts of the transmission covering your baseline speed and the next speed or two above it. It is best to record each speed on a separate tape. This is easily done once you become familiar with the announcements used by W1AW at each speed change.

Second, follow a daily routine as rigidly as possible. You will need two 20-minute sessions a day. In this case, more is not better. Two 20-minute sessions will give the best results. Schedule one as early as possible in the morning and another late in the day but before you're too tired. During the first five minutes of each session copy W1AW recordings at the next higher speed above your baseline speed. If you're copying more than, say, 25 percent, the speed is too slow. Shoot for 10-25 percent comprehension.

At the end of the five minutes, throw your copy away. You'll have a general idea how you're doing and that's enough. Now, spend the next 15 minutes copying at your baseline speed. If you can't make it all the way to 15 minutes without a break at first, pause for a minute or so then continue; endurance comes with practice. Try to do at least 5 minutes straight.

When you've copied 15 minutes, stop and compare your copy with the text in *QST*. Don't overlook the call signs and scores sent at the end of each speed. These are invaluable preparation both for the exam and for QSOs. If you copied 90 percent or more in two successive sessions, increase your baseline speed one step in your next session.

Third, start a list of all letters, digits, punctuation, etc. that you miss in your training sessions. We'll call them "troublemakers." Every time you see that character ("Y" for example) during the day, sound it out loud enough so that you can hear yourself: dahdi dahdah! If other folks are near by, it might be well to explain what you're doing to avoid giving the impression that you've lost your mind. As your baseline speed increases, remember to look for new "troublemakers."

Fourth, don't worry about plateaus — those brief periods when your progress comes to a halt. The mind's learning curve is not linear. If you go from 10 to 15 wpm in one month, do not expect to reach 20 wpm four weeks later. It will probably take more time, but could take less. Don't get discouraged if progress comes in jerks and halts. The method you are following will minimize plateaus.

Fifth, learn to recognize burnouts. The method I use will force your mind to break old habits and form a more efficient way of handling code. Some day your mind may rebel and you'll experience a burnout. Your ability to copy code at your current baseline speed, may drop below 50 percent. Put down your pencil, walk away, and do nothing whatsoever for the next 24 hours that relates even remotely to code. This would be the perfect time to discharge the social duties you've been shirking to reach your goal! No cheating. Take at least 24 hours off. Return to your routine next day, with confidence, at your current baseline speed.

Sixth, spend at least one hour each week on QSOs. If you're rusty on prosigns, Q signals, CW abbreviations and the like, publications available at your library or radio dealer will bring you back up to speed. Be sure to record your QSOs. If the transmitter blocks the recorder's electronics, move the latter as far away from the rig as possible, try a shielded cable, or bypass the cable at the recorder end. How's your sending? Did you find any new "troublemakers" in the code you heard? You know what to do about those problems.

Seventh, set aside at least 10 minutes each week for listening to W1AW recordings while keying in step with what you hear, using the text in *QST* as your source. If the tape and you don't agree, you have probably found a new "troublemaker." In asking you to invest at least 70 minutes a week in sending code, I realize that you will be developing a skill that is not tested in the exam. Even if you do not plan to operate CW after getting your new ticket, it would be a mistake to ignore my recommendation. Copying and sending code are complementary skills, one passive, the other active. Working on either helps both.

That's all there is to it. When your baseline speed reaches 13 wpm (for General) or 20 wpm (for Extra) consider taking a trial run through the exam with the purpose of familiarizing yourself with the layout. Who knows — maybe you'll pass! But don't be crushed if you fail. It would be best to increase your baseline speed beyond the FCC requirement before taking the exam "for real." This will compensate for exam day jitters. Earlier in this article I mentioned that it is possible to use the essence of the method I have just explained even if you lack some of the requirements to follow it exactly. Here are a few suggestions to get you started.

If reception of W1AW is a problem in your area, try one of the other Amateur Radio stations offering code practice My favorite is Raymond Evans, K7HLR, at 0000 and 1400 UTC daily on 7058 kHz. The stories of his experiences as a shipboard radio operator are a real treat. The speed range is 5 to 40 wpm.

Another alternative is using your home computer for code practice. Of the code programs I've tried, my first choice is Morse Tutor Gold from GGTE. The method used to teach the code and the variety of practice modes provided are very impressive. You can, for example, use the "Text File Input Of A QSO" mode to key in step with the software, using a printed copy of the file as your source; the "Computer Generated Random QSOs" mode allows you to create this file, print it, and save it to a disk. If you don't have a rig or oscillator to key, a battery and buzzer will serve.

I wish you well in your efforts to upgrade and hope to meet you on the air someday. CW operators are a bit like the Marine Corps: we're always looking for a few good men . . . and women. Women are especially welcome — they usually have better fists! BCNU. WR

Armed Forces Day

D.A. Vittum, W1DV

The annual Armed Forces Day Communications Test is set for 18 May. The emphasis is a continuing climate of mutual assistance and warm esteem between the military and Amateur Radio communities. The traditional military-to-amateur cross band operation and broadcast of the Secretary of Defense message are the featured highlights and include operations in CW, SSB, and digital modes.

These tests give both Amateur Radio operators and shortwave listeners (SWLs) the opportunity to demonstrate their individual technical skills. Special commemorative QSLs will be awarded to those operators achieving a two-way radio contact with any of the participating military radio stations. Interception of these contacts by SWLs will not be acknowledged by QSL cards; however, anyone who receives and accurately copies the Armed Forces Day CW or digital mode message from the Secretary of Defense can qualify to receive a special commemorative certificate from the Secretary.

Cross band contacts

The military-to-amateur cross band operations will be conducted for the 24-hour period commencing at 1300Z (UTC). Note: Some military stations may not operate the entire 24-hour period depending on propagation, signal paths, and station parameters.

Receiving test

The CW and digital modes broadcasts will be special Armed Forces Day messages from the Secretary of Defense to any Amateur Radio operator or SWL desiring to participate. A ten minute tuning call will precede each transmission. The receiving tests will be run as follows:

The CW broadcast will be transmitted at 25 wpm beginning at 0230Z. It will be transmitted by the following stations on the listed frequencies (in kHz): AAE, Fort Sam Houston, TX: 7358.5, 20941.5; AAH, Fort Lewis, WA: 6988.0, 10151.5, 14488.5, 18212.5; AAR, Fort Bragg, NC: 7309.0; AIR, Andrews AFB, MD: 13997.5; WAR, Fort Detrick, MD: 6998.5, 13992.5; NAV, Cheltenham, MD: 10259.5; MHK, Kaneohe, HI: 14820.0; NBL, Groton, CT: 14385.0; NMN, Chesapeake, VA: 6970.0.

Digital broadcasts will be by RTTY (100 wpm, 170 Hz shift) at 0330Z, pactor at 0430, and AMTOR at 0530. They will be transmitted by the following stations on the listed frequencies: AAE, Fort Sam Houston, TX: 7358.5; AAH, Fort Lewis, WA: 6988.0, 10151.5, 14488.5, 18212.5; AAR, Fort Bragg, NC: 7309.5; AIR, Andrews AFB, MD: 13986.5; WAR, Fort Detrick, MD: 13992.5; NAV, Cheltenham, MD: 10259.5; NBL, Groton, CT: 14385.0. WR

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

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What the MFJ-259 Does

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

RF Resistance Meter™

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

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

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

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

Here's What You Can Do . . .

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

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

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

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

Measure inductance, capacitance, resonant frequency of tuned circuits, transmission line velocity factor/impedance/loss.Test RF chokes, transformers, baluns.

Adjust your tuner for a perfect 1:1 match without creating QRM.

And this is only the beginning! The MFJ-259 is really *four* test instruments in one: an accurate RF signal generator, a high resolution 170 MHz frequency counter, *RF Resistance Meter*™ and an *SWR Analyzer*™.

Free Manual

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

Take It Anywhere

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

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

How Good is the MFJ-259?

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

Get More by Paying Less

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

1.8-170 MHz *SWR Analyzers*™

MFJ-249 **$219.95** **MFJ-249** *HF/VHF SWR Analyzer*™ has all the features of MFJ-259 but less RF resistance meter. Includes 1.8-170 MHz *continuous* coverage, 10-digit LCD frequency counter and smooth vernier tuning.

MFJ-209 **$109.95** **MFJ-209** *HF/VHF SWR Analyzer*™ is same as MFJ-259 without LCD frequency counter and RF resistance meter. Has jack for external frequency counter. MFJ-249/MFJ-209 are 4x2½x6¾ inches and uses 8 AA cells or 110 VAC with MFJ-1312B, $12.95.

Carrying Pouch with Window

MFJ-29B **$24.95** **Tote** your MFJ-259/249/209 *SWR Analyzer*™ anywhere with this custom Carrying Pouch.

Made with a special foam-filled fabric, it cushions blows, deflects scrapes, and protects knobs, meters and displays from harm.

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

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

Dip Meter Adapter

MFJ-66 **$19.95** **Plug** a dip meter coupling coil into your *MFJ SWR Analyzer*™ and turn it into a sensitive and accurate bandswitched dip meter.

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

Free MFJ Catalog

Write or call . . . 800-647-1800

10-160M *SWR Analyzer*™

MFJ-207 **$79.95** **If** you're an HF man, this compact MFJ-207 *HF SWR Analyzer*™ will help you build 10-160 Meters antennas that'll make working DX almost routine.

Just plug in your coax to find the SWR of any HF antenna on any ham band 10-160 Meters. Has jack for external frequency counter. 7½x2½x2¼ inches.

2 Meter *SWR Analyzer*™

MFJ-208 **$79.95** **MFJ-208** 2 Meter *VHF SWR Analyzer*™ finds the SWR of any antenna from 138-156 MHz. Jack for external frequency counter. 7½x2½x2¼ inches.

For Commercial VHF Radio

Same as MFJ-208 but for commercial VHF. **MFJ-217**, $79.95, covers 30-50 MHz and **MFJ-218**, $79.95, covers 150-170 MHz.

440 MHz *SWR Analyzer*™

MFJ-219 **$99.95** **Read** SWR of any antenna 420 to 450 MHz -- just plug coax of your antenna into SO-239 connector, set frequency and read SWR. Uses microwave integrated circuits and microstrip technology. Jack for external frequency counter. 7½x2½x2¼ in.

MFJ-219N, $99.95, sames as MFJ-219 but with "N" connector.

MFJ-219/218/217/208/207/203 uses 9 volt battery or 110 VAC with MFJ-1312B, $12.95.

Bandswitch Dip Meter™

MFJ-203 **$99.95** **The** MFJ-203 is a sensitive *Bandswitched Dip Meter*™ that covers all ham bands from 160-10 Meters. There are no plug-in tuning coils to keep up with or break.

Has detachable coupling coil, dual FET oscillator, op-amp meter amplifier and jack for external frequency counter. 7½x2½x2¼ in.

MFJ Antenna Bridge

MFJ-204B **$79.95** **Great** for determining feedpoint resistance of antennas and for designing impedance matching networks. Measure RF resistance up to 500 ohm. Covers all ham bands 160-10 Meters. Built-in resistance bridge, null meter, tunable oscillator-driver, frequency counter jack. 7½x2½x2¼ inches. Use 9 volt battery or 110 VAC with MFJ-1312, $12.95.

Nearest Dealer/Orders: 800-647-1800
Technical Help: 800-647-TECH(8324)

• 1 year **unconditional** guarantee •30 day money back guarantee (less s/h) on orders from MFJ • **FREE** catalog

MFJ ENTERPRISES, INC.
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MFJ TUNERS

MFJ's world famous 3 KW Antenna Tuner

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

The MFJ-989C is not for everyone.

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

Here's why . . .

Massive Transmitting Capacitors

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

Precision Roller Inductor

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

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

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

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

$349.95 MFJ-989C

Cross-Needle Meter

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

Super Heavy Duty Balun

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

Ceramic Antenna Switch

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

Plus much, much more

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

Don't settle for less, get yours today!

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

MFJ's deluxe 300 Watt Tuner

MFJ-949E **$139.95** More hams use the MFJ-949E than any other antenna tuner in the world! Why? Because you get proven reliability, the ability to match just about anything and a one year *unconditional* guarantee.

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

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

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

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

MFJ's versatile 1.5 KW Tuner

MFJ-962C **$249.95** Use your barefoot rig now and have the capacity to add a 1.5 KW PEP amplifier later! Lighted Cross-Needle SWR/Wattmeter. 6 position antenna switch, *Teflon*® wound balun, ceramic feedthru insulators for balanced lines. 1.8-30 MHz. 10¾x4½x14⅞ in.

MFJ's portable/QRP Tuner

Tunes coax, balanced lines, random wire 1.8-30 MHz. Cross-Needle Meter. SWR, 30/*300 or 6 watt QRP* ranges. 6x6½x2½ in. MFJ-971 **$89.95**

MFJ's super value Tuner

MFJ-941E **$109.95** The new MFJ-941E gives you a 300 watt PEP tuner with *lighted* Cross-Needle Meter. Covers 1.8-30 MHz.

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

2 Knob Differential-T™ Tuner

MFJ-986 **$299.95** The MFJ-986 Differential-T™ 2 knob tuner uses a differential capacitor to make tuning foolproof and easier than ever. It ends constant re-tuning with broadband coverage and gives you minimum SWR at only one best setting. 3 KW PEP. 1.8-30 MHz.

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

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

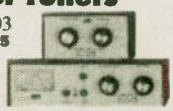
MFJ's mobile Tuner

MFJ-945D **$99.95**

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

Small 8x2x6 inches uses little room. Lighted Cross-Needle SWR/Wattmeter with lamp switch. 1.8-30 MHz. 300 watts PEP. **Mobile mount,** MFJ-20, $4.95.

MFJ's 6 Meter Tuners

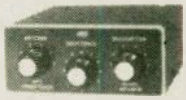


The MFJ-906 has lighted cross-needle SWR/Wattmeter, bypass switch. Handles 100W FM, 200W SSB. For coax fed antennas. MFJ- 903, same as MFJ-906, less SWR/Wattmeter, bypass switch.

MFJ-903 **$49.95**

MFJ-906 **$79.95**

MFJ's smallest Versa Tuner



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

MFJ-901B **$69.95**

MFJ's random wire Tuner

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

MFJ-16010 **$39.95**

MFJ's VHF or UHF Tuners

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

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

MFJ's artificial RF Ground

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

MFJ-931 **$79.95**

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SPECIAL EVENTS

Marconi Memorial Tower

The Ocean-Monmouth ARC (OMARC) will operate KB2VPQ from 1600Z 4 May to 1600Z 5 May to commemorate the Marconi Memorial Tower site. CW will be up 10 kHz from bottom of Novice subbands and 10.145, 14.045, 18.080 MHz and bottom of General 80-, 15- and Novice 10-meter Phone subbands. For certificate, send a 9 x 12-inch SASE (or $1 U.S.) to KB2SEO at his *Callbook*™ address.

Camporee on the air

The Whitman ARC will operate K2BSA/1 at the Old Colony Council Boy Scout Camporee at 12 p.m. 3 May through 12 p.m. 5 May. Operation will be on 14.285 and 18.140 +/- QRM. All QSL replies *must* be sent with an SASE to the Whitman ARC, P.O. Box 48, Whitman, MA 02382.

Samuel F.B. Morse

The Poughkeepsie ARC will operate W2CVT from Samuel F. B. Morse's home 4 and 5 May from 1200-2000Z. Operation will be on 3.703, 7.103, 10.103, and 14.303 MHz. For certificate, send a 9 x 12-inch SASE to D. Stein, W2PTF, 3 Little Rd., Wappingers Falls, NY 12590.

Dayton Hamvention

The Dayton Amateur Radio Association will operate W8BI/8 on 17 and 18 May from 1200-2100Z, and 19 May from 1200-1600Z, to commemorate the 1996 Dayton Hamvention. Operation will be 25 kHz up from lower General/Novice on Phone/CW band edges (operator's choice). For QSL send SASE to W8BI/8, P.O. Box 44, Dayton, OH 45401-0044. For additional information, contact Charlie, KA8OQF, at 513/256-3783.

Titan Missile Museum

The Green Valley ARC will operate W7PU from 1600Z, 27 April to 2300Z, 28 April at the Green Valley Titan Missile Museum, a historical National monument. Operation will be on 3.860, 7.230, 14.250, 21.330, 28.450, and 145.29(-) MHz. For certificate, send QSL and a 9" x 12" SASE to GVARC, 601 N. La Canada, Green Valley, AZ 85614.

FAIRS 5th anniversary

The Foundation for Amateur International Radio Service (FAIRS) will operate KK4WW, US5WE, BY1QH, 8R1WD and S21AM in their own countries on 11 and 12 May on the General portion of the 40-, 20-, and 15-meter bands, to celebrate the 5th anniversary of FAIRS. For certificate send QSL and 9 x 12-inch SASE to FAIRS, P.O. Box 341, Floyd, VA 24091.

QCWA 1996 Banquet

The Southwest Ohio Chapter of the Quarter Century Wireless Association will hold its 1996 Annual Banquet in conjunction with the Dayton Hamvention on Friday, 17 May, at Alex's Continental Restaurant in celebration of Dayton's Bicentennial. The program will relate Dayton's role in the development of radio. C.O.D. bar at 7 p.m., banquet at 7:30. Reservation deadline is 15 May. QCWA membership is not a requirement for attendance. For tickets ($15 each), make check payable to Robert L. Dingle, Treas. Chapter 9 and mail to 1117 Big Hill Rd., Kettering, OH 45429-1201.

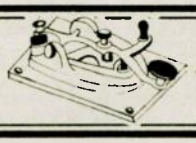
Civil War Battle

The Mt. Vernon ARC will operate NJ4F on 4 May to commemorate the 133rd anniversary of the Civil War Battle of Chancellorsville. This will be from the site of "No Man's Land" on the original battlefield. Operation will be in the General portion of the 40- and 20-meter phone bands. CW contacts by request. For certificates, send QSL and large SASE to MVARC, P.O. Box 7234, Alexandria, VA 22307.

Last Battle of the Civil War

Charro ARC will operate KC5PCN on 11 May, to commemorate the last battle of the Civil War. Operation will be from the battlefield in the General 40, 20, and 15 Meter Phone bands and the Novice portion of 10 Meters. For certificate, send QSL and SASE to Charro, 3554 Boca Chica, Brownsville, TX 78521. WR

SILENT KEY



Fred Mason, KH6OR

I am saddened to report the death of long time DXer and dear friend, Fred Mason, KH6OR. Fred passed away 29 January at Kaiser Hospital, in Honolulu, Hawaii, after months of illness. During Fred's final months, he was assisted greatly by long-time friend, Jim, KH6HAP, and, visiting him the past 10 days, his friend Benji, NB7J.

Fred has been a fixture on the north shore of Oahu since the early 1960s. He originally went to Hawaii in early 1942 on loan to the Navy from Bell Labs in order to develop the Navy's communication system throughout the Pacific. He and his crew of 40 men were headquartered at the old Halekulani Hotel in Waikiki. The Halekulani was to be their home until the end of the war. When Bell Labs asked Fred to return to New Jersey in 1946, he respectfully declined and remained in Hawaii for 50 years where he met and married his lovely wife Aileen, who survives him.

Fred was 90 years old at his death, but his mind had remained as sharp as ever. Originally from the Healdsburg, California, area and a University of California, Berkeley, graduate, he had input on a number of ham radio products which have come to market via companies whose engineers or owners valued Fred's advice and test results.

Fred opened his home to numbers of DXpeditioners as they passed through Hawaii, and there are many whose calls are well known by the DX community who have enjoyed his gracious hospitality. He will be missed by all of us who knew him, and especially his long time buddies who met him daily on 14.177 and enjoyed his views and humor and valuable contributions to our hobby. —*submitted by Burt Myers, WØRLX.*

1996 RC KONTES *Mail Order Mini Catalog ...*

PART#	PRICE	DESCRIPTION
•UHF CONNECTORS & ADAPTERS		
U300	$0.75	PL-259 Nickel-plated/Ryton insulated
U301	$1.25	PL-259 Silver-plated/Teflon insulated
U303	$1.50	PL-259 Gold-plated/Teflon insulated
U305	$0.30	UG-176 Silver-plated reducer for RG-8X
U306	$0.60	UG-176 Gold-plated reducer for RG-8X
U308	$0.30	UG-175 Silver-plated reducer for RG-58
U309	$0.60	UG-175 Gold-plated reducer for RG-58
U310	$1.00	UHF Female-to-female adapter
U311	$3.00	UHF Female-to-male-to-female adapter
U312	$1.75	UHF Male-to-BNC female adapter
U314	$2.75	UHF Male-to-female rt.-angle adapter
U315	$1.00	UHF Female 4-hole chassis mount
U316	$2.75	UHF Male-to-N female adapter
U318	$2.00	UHF Female-to-female bulkhead adptr.
U319	$2.50	UHF Male- "Quick"-to-female adapter
U320	$2.75	UHF "T" Female-female-female adapter
U325	$1.50	UHF Male-to-male adapter
U326	$1.00	SO-239SH UHF Single-hole chassis mount
•BNC CONNECTORS & ADAPTERS		
B505	$1.00	BNC Female-to-female barrel adapter
B506	$2.00	BNC Male-to-male adapter
B507	$2.50	BNC Male-to-female rt.-angle adapter
B508	$3.00	BNC "T" Female-to-male-to-female adptr.
B509	$2.50	BNC Female-to-female bulkhead adapter
B513	$1.75	BNC Male-to-UHF female adapter
B517	$1.50	BNC Female 4-hole chass s mount
B521	$2.50	BNC Silver/Teflon connector for RG-58
B522	$2.50	BNC Silver/Teflon conector for RG-8X
•DC PLUGS		
A224	$0.75	1.0 mm DC power plug
A223	$0.75	1.3 mm DC power plug
A222	$0.75	3.0 mm DC power plug
•RCA CONNECTORS		
A227	$0.75	RCA metal shielded plug
A231	$0.75	RCA metal shielded in-line jack
•N CONNECTORS & ADAPTERS		
N	$3.00	Solder Tp. 2-pc. Silver/Teflon N connector
R801	$3.75	N "T" Female-to-male-to-female adapter
R804	$3.00	N Male-to-UHF female adapter
R805	$2.75	N Male-to-BNC female adapter
R807	$1.75	N Female 4-hole panel mount
R810	$2.75	N Male-to-male adapter
R811	$2.75	N Male-to-female right angle adapter
R823	$3.00	N Female-to-female adapter
•AUDIO & KEY PLUGS		
A201	$0.75	1/4" Stereo metal shielded plug
A208	$0.75	1/4" Mono metal shielded plug
A214	$0.50	1/8" Stereo metal shielded plug
A218	$0.50	1/8" Mono metal shielded plug

•DCI BAND PASS INTERMOD FILTERS	PRICE
DCI-146-4H 144 MHz Band pass filter	$85.00
DCI-223.5-3H 223 MHz Band pass filter	$85.00
DCI-445-10C440 MHz Band pass filter	$105.00
•UNADILLA	
W2AU 1:1 Tnsfmr. Balun 1.8-40 MHz 1.5 kW	$24.00
W2AU 4:1 Tnsfmr. Balun 1.8-40 MHz 1.5 kW	$24.00
W2AU 1:1B Tnsfmr. Balun (Beam version)	$24.00
W2DU 1:1 Current Balun 1.8-30 MHz 1:5 kW	$26.00
W2DU VHF 30-300 MHz 1:1 Current Balun	$26.00
W2DU HFB 10-40M Beam Current Balun	$26.00
HI-Q Low-loss end insulators (pair)	$6.00
Dipole traps 10-40M (1 pair)	$41.00
Dipole traps 30 & 40M (1 pair)	$42.00
Dipole traps 80M (specify phone or CW) (1 pair)	$48.00
•BENCHER	
BY-1/ST-1 Paddles (Black case, chrome components)	$74.00
BY-2/ST-2 Paddles (Chrome base & components)	$94.00
BY-3/ST-3 Paddles (Gold base & components)	$259.00
BY-4/ST-4 Paddles (Black base, gold components)	$154.00
RJ-1 Hand Key (Black base, chrome components)	$69.00
RJ-2 Hand Key (Chrome base & components)	$79.00
YA-1 Low-pass filter >80dB @ 54 MHz, 1.5kW	$54.00
ZA-1A 1:1 Balun 3.5-30MHz, 1.5kW CW, 5kW PEP	$34.00
HWK Boom mounting kit for ZA-1A Balun	$9.00
•ARROW	
2M Corner Beam, 2 sq.ft. wind load	$139.00
220 MHz Corner Beam, 1 sq.ft. wind load	$139.00
450 MHz Corner Beam, 1 sq.ft. wind load	$109.00
2M/440 MHz Corner Beam, 3 sq.ft.	$159.00
2M/4 Arrow Shaft el. Walking Stick portable Yagi	$64.00
70 cm. 5 Arrow Shaft el. Walking Stick portable Yagi	$44.00
2M 4 Solid el. w/mounting bracket Yagi	$64.00
220 MHz 5 Solid el. w/mounting bracket Yagi	$64.00
Fox Hunt 75dB Step attenuator (specify BNC or UHF)	$44.00
Fox Hunt Active attenuator (specify BNC or UHF)	$55.00
•ANTENNAS WEST	
Tiger Tail 2M HT Ground Extender	$7.00
TuffDuck 2M HT Antenna	$23.00
Floppy Duck 2M/440 MHz HT Antenna	$19.00
Pico J J-Pole Antenna (2M)	$18.00
Pico J J-Pole Antenna (220 MHz)	$18.00
Pico J J-Pole Antenna (2M/70 cm.)	$23.00
G5RV 204-ft. 160-10M Antenna	$63.00
G5RV 102-ft. 80-10M Antenna	$45.00
G5RV 51-ft. 40-10M Antenna	$36.00
TNT Windom 256-ft. 160/75M No-tune Antenna	$117.00
TNT Windom 132-ft. 80,40,20,17,12,10M No-tune Antenna	$81.00
TNT/2 Windom 66-ft. 40,20,10M No-tune Antenna	$71.00
All Half-Square Antennas (specify band)	10% off
•THE POUCH	
Belt-type Neoprene HT Protector (specify HT)	$15.00
Chest Pouch HT Protector (one size fits all)	$30.00
•BELDEN CABLE	
8219 RG-58AU Stranded center/foam/ft.	$0.21
9258 RG-8X Stranded center/foam/ft.	$0.23
8214 RG-8U Standed center/foam/ft.	$0.58
8267 RG-213 Mil Spec/ft.	$0.60
9913 RG-8U Low-loss Solid ctr. air dia/ft.	$0.58
8484 4-wire/4-20AWG Rotor cable/ft.	$0.25
9405 8-wire/2-16, 6-18 AWG Rotor cable/ft.	$0.55

We assemble custom coax cables built to your specs, using Belden Cable and your choice of N or UHF connectors. In addition to the material costs, we charge $1.50 per connector. Workmanship and materials guaranteed!

•DAVIS RF	
Flex Weave #14 AWG 7x24/36 bare/ft.	$0.13
Flex Weave #14 AWG 7x24/36 clear PVC/ft.	$0.21
450-Ohm Twin lead #18 solid/ft.	$0.14
440-Ohm Twin lead #16 stranded/ft.	$0.21
300-Ohm Twin lead #20 stranded/ft.	$0.19
3/32" 260 lb. Black Dacron rope/ft.	$0.05
3/16" 770 lb. Black Dacron rope/ft.	$0.10
5/16" 1,770 lb. Black Dacron ropt/ft.	$0.15
•BUTTERNUT ANTENNA	
HF2V Vertical, 80/40M, 32 ft.	$185.00
HF6V-X Vertical, 80,40,30,20,15,10M, 26 ft.	$195.00
HF9V-X Vertical, 80-6M, 26 ft.	$245.00
HF5B 2-el. Beam, 20-10M	$295.00
TLK Top Loading Kit for HF2V	$25.00
30MRK 30M Add-on Kit for HF2V	$45.00
A-17-12 17/12M Add-on Kit for HF6V-X	$45.00
TBR-160-S 160M Add-on Kit for Verticals	$75.00
STR-II Radial Kit for HF6V-X, HF9V-X	$45.00
RMK-II Roof Radial Kit HF6V-X, HF9V-X	$75.00
CPK Capacitive Counterpoise Kit	$50.00
•TJ ANTENNA	
BB3 3.5-30MHz Motorized Mobile Antenna	$260.00
BB3Chrome 3.5-30MHz Motorized Mobile Antenna	$285.00
160M Coil for BB3	$34.00
Remote Control Unit for BB3	$34.00
•LAKEVIEW	
HamStick Mobile Antenna (75-6M, Specify band)	$19.00
Quick Disconnect for HamSticks	$7.00
IM-1 Matching coil for HamSticks	$9.00
Tri-Mag Mobile Mount	$37.00
Quad-Mag Mobile Mount (with 4" magnets)	$49.00
Discone Scanner Antenna (includes 800MHz)	$36.00
2M On-the-Glass Antenna	$32.00
Dual Band On-the-Glass Antenna 2M/70cm	$39.00
2M Colinear Mobile Antenna	$19.00
220MHz Colinear Mobile Antenna	$19.00
440MHz Colinear Mobile Antenna	$19.00
Economy dual Band Mag Mount Antenna 2M/70cm	$15.00
•KLM ANTENNAS	
KT-34A 20, 15, 10M 4-el. 16-ft. boom Yagi	$499.00
6M-5 6M, 5-el, 11.75-ft. boom Yagi	$209.00
2M-13LBA 2M 13-el. 21.5-ft. boom Yagi	$99.00
•CORROSIONX	
Lubricant, penetrant, rust inhibitor 4-oz. Enviro-Spray	$6.75
16-oz. Refill for Enviro-Spray bottle	$12.55
(Special) Both 4-oz. Enviro-Spray and 16-oz. refill bottles	$17.95

Flat rate shipping:

$0–$100.00 = $4.50 • $100.01–$500.00 = $6.50

$500.01–$1500.00 = $9.50 • Over $1500.00, shipping is **FREE!**

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RC KONTES, 465 Croft Dr., Idaho Falls, ID 83401-4419

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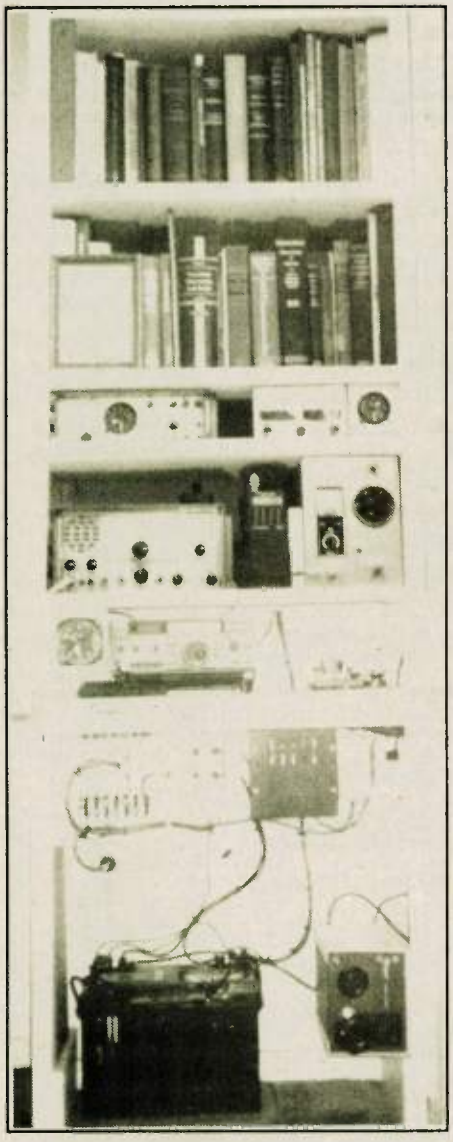
STATION APPEARANCE

Jim Eakin, W6SBY

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

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

This little ham station was built into a two foot floor-to-ceiling niche in a corner of a guest bedroom. It was either that or build an outside radio shack here at 5,820 feet above sea level in this southwestern New Mexico lightning country.



A wood shelf arrangement was constructed to accommodate the gear and a few books. All equipment operates on 12.6 volt DC. The bottom section contains the power supply equipment consisting of a 60 ampere-hour lead acid deep cycle floor-mounted storage battery; vertical wood panel-mounted RS 2.5 amp 13.5V regulated DC power supply; battery disconnect switch; discharge fuses and barrier terminal strips for distribution to the various loads. On the shelf above, an aircraft altimeter next to the Icom 725 transceiver serves as a weather barometer.

The next level contains a homebrew 5-watt, 7 MHz QRP CW transceiver (originally shown in ***Worldradio***, Oct. '75). A 2-meter RS HTX-202 transceiver, powered from the 12.6V station battery is next to the antenna switching and VSWR monitoring unit.

The upper equipment shelf houses a WWV receiver/8-day 24-hour UTC time clock, a DC charge/discharge monitoring panel and a 12V local time clock.

Antennas consist of 4 dipoles, a 350-foot longwire and ground radial system covering the amateur HF spectrum. The L/C longwire tuner is mounted just above the floor by the battery providing for a 2-foot lead to the outside station ground.

This arrangement makes for current feed of the longwire with no detectable RF inside the shack.

The W6SBY Class B ticket was issued while I was in high school in 1939. All the gear was homebrew for the next 30 years with the exception of a surplus BC348-Q receiver. There followed the assembly of a Heathkit mobile receiver and transmitter for base station use.

About 1975, the 5-watt, CW-transceiver shown in the photo was combined with a Ten-Tec Argonaut QRP rig for use on a small cruising sailboat. About 10 years ago, I succumbed to the lure of those wonderful little solid-state, frequency-synthesized digital readout rigs with the many bells and whistles.

Amateur Radio has been a wonderful lifelong experience and now there is even more time to enjoy it. **WR**

Amateur "Hi"

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

Where have all my old friends gone?

Joe Nihen, N3LBC

I have very few original friends as compared to when I became a ham about four years ago. I am seeking your insight as to possible reasons for this development.

The loss began when I told a group of these friends about my lucky "double-bagger," my first Special Event Station and DX contacts back in April 1992.

The SES was N6MM, the Euro-Disney commemoration, and the DX QSO was with a CO5 amateur. All I said was that I spoke with Mickey Mouse and a fellow who phonetically spelled his name as "Juliette — Echo — Sierra — Uniform — Sierra," and that I did this all on the same day! Why was my enthusiastic announcement met with fleeting glances and sad expressions?

The next group of friends disappeared when I told them that I was chasing ETs and UFOs — you know, suffixes necessary for the "Worked all UFOs Diploma" offered by XE1UFO. I just don't understand why those friends turned tail and hurried away. Why are they behaving so strangely?

The latest group disappearance came after my disclosure that I regularly converse with people from MARS. My last group of old friends actually ran from me when I further reported that I AM from MARS!

And, to top off this whole sorry affair, why do people become so belligerent when I tell them I communicate with FISTS?

Fortunately, I have made a number of ham friends over these four years. My new friends are just great, but I really do miss my old buddies. Could you tell me what has happened to them? **WR**

DAYTON hamvention® '96

✣ May 17, 18, 19, 1996 ✣

General Chairman, Ken Allen, KB8KE — Asst. General Chairman, Dick Miller, N8CBU

✷ Giant 3 day Flea Market ✷ Exhibits ✷ Activities for the Non-Ham

When and Where •• •• NEW DATE THIS YEAR •• ••
May 17, 18 and 19, 1996; Dayton, Ohio at Hara Arena

Communications

FAXMail: (information sent to you via FAX): Set your Fax to manual send/receive, then call (513) 276-6934

BBS via America Online: Keyword "Ham", then "Conference", then "conventions", then "Hamvention"

PHONE: (513) 276-6930. For fast response, please obtain the committee Voice Mail box numbers via FAXMail or BBS.

FAX (incoming): (513) 274-8369

MAIL: Hamvention, Box 964, Dayton, Ohio 45401-0964

E-MAIL: Hamvention@aol.com or n8emo@ix.netcom.com

WWW: http://users.aol.com/hamradclub/dayton.htm

Special Services

Lodging information and special award nomination forms were in our 1995 Program. A limited number of Handicap parking permits are available. License Exam by appointment only. For Form 610, call 1-800-418-3676
Call, FAX, Mail, or BBS for more information.

Bus service

Bus service will be provided between Hamvention, Air Force Museum, Salem Mall and Forest Park Mall parking areas. Many hotels/motels will have bus service for a nominal charge.

Returned Checks

A $25 service charge will be assessed on all returned checks.

Deadlines

In order to have time to return tickets to you, we must have advanced registration orders postmarked not later than May 3 (USA) or April 26 (Canada). Tickets will not be mailed before January 15th,1996. Ticket requests that are received **AFTER** the deadline will be processed and **HELD** for pick-up at the Hamvention Office in the Silver Arena. Tickets can be picked up beginning Thursday, May 16 at 8:00 a.m.

Flea Market

Flea Market Tickets (valid all 3 days) will be sold IN ADVANCE ONLY. No spaces sold at gate. A maximum of 3 spaces per person (non-transferable). Electricity is available in a portion of the last Flea Market row for $50 additional. Rental tables and chairs are not available in the Flea Market. Vendors ***MUST*** order an admission ticket for each person when ordering Flea Market spaces. Please send a separate check for Flea Market space(s) and admission ticket(s). Spaces will be allocated by the Hamvention committee from orders mailed by February 5. Please use 1st class mail *only*.

Notification of Flea Market space assignment will be mailed on or about **March 25, 1996**. Please indicate in the box below if you would like to attend regardless of Flea Market space assignment.

HAMVENTION Is sponsored by the Dayton Amateur Radio Association Inc.

Advance Registration

Enclose check or money order for amount indicated in U.S. dollars and type or print your name and address clearly.

Make checks payable to:

Dayton HAMVENTION Mail to -
Dayton Hamvention Box 1446, Dayton, OH 45401-1446

Flea Market tickets *Please check one and enclose **two** checks.*

- ❑ Send admission tickets **only** if flea market space(s) assigned.
- ❑ Send admission tickets **regardless** of flea market space assignment.

		How Many	
Admission (valid all 3 days)	_____	@ $12.00*	$_____
Grand Banquet	_____	@ $23.00**	$_____
Alternate Activities			
Saturday Luncheon	_____	@ $9.00	$_____
Sunday Luncheon	_____	@ $9.00	$_____
		Total	$_____
Flea Market ‡ (Max.3 spaces)	_____	$45/1 space	
	_____	$100/2 adjacent	
	_____	$200/3 adjacent	$_____
Electricity	add _____	$50.00	$_____
Covered tent	_____	$290.00 ea.	$_____
		Total	$_____

Name _____ Call _____

Address _____

City _____ State _____ Zip+4 _____ – _____

Daytime Phone # ( ) _____ Evening Phone # ( ) _____

* $15.00 at door
** $25.00 at door, if available
‡ *Admission ticket must be ordered with flea market spaces*

PRODUCT REVIEW

NIR-12 Dual DSP Noise/ Interference Reductions Unit

Steve Hall, WM6P

While DSP technology has been used for many years by the aerospace and defense systems, it has been unavailable to hams due to high cost. Today that is not the case. New products available to hams are small and available at an acceptable cost.

Background

Some years ago the first Digital Signal Processing (DSP) for audio began appearing for the use on the amateur bands. The processors available to designers were expensive and of limited capability. Limitations were placed on the size of software and limited the capability of early units. Today, far more powerful DSP processors are being used and the DSP units are better than ever. Let's take a look at a new and very capable unit produced by JPS Communications, Inc., one which uses DSP. Rather than going into great detail as to how this product was designed or explaining the technology in depth, let's look at the practical effectiveness that I have experienced at my station. I have made measurements of noise reduction and this system really works.

The product I have reviewed here is the NIR-12 (a new product announcement in ***Worldradio's*** July, 1995 issue, page 62).

Back in June of 1993, I reviewed the JPS product, the NIR-10. It was one of the first DSP audio processors available to hams and it did a fine job of eliminating heterodynes and limiting many forms of noise interfering with radio communications. As JPS developed new software, it was made available as an upgrade to existing users.

As new hardware became available to designers, JPS developed and is now offering a new product, the NIR-12. It uses two DSP processors of greater speed than earlier products and new software with more advanced algorithms. The new NIR-12 is a significant improvement over earlier generations of units produced by various manufacturers.

Installation

The NIR-12 uses digital signal processing to filter audio between your receiver and speaker or headphones. The NIR-12 has a low noise audio amplifier builtin with an output of 2 watts into an 8-ohm load. It is more than enough audio for even noisy environments. A separate headphone jack is on the rear of the unit.

Audio from your receiver can be from either the speaker output or the headphone output. I find it best to use a ¼-inch phone plug that can be plugged easily into headphone outputs, as I use this unit with several of HF and VHF transceivers. The unit is powered by 12V DC at 1 amp. A wall transformer is available. If you use the headphone jack for audio input to the unit be sure to change internal jumper JP-1 from low to high input impedance.

Modes

•Notch — Several modes of filtering can be used either individually or together. One of the most effective modes is capable of eliminating multiple heterodynes. Unlike a notch filter that can be used to reduce a single heterodyne and must be tuned to the frequency of the heterodyne, this mode requires no tuning and is effective against multiple heterodynes simultaneously.

•Bandpass — This mode has two controls allowing continuous adjustment of both center frequency and bandwidth. Unlike conventional audio filters, DSP filters have much sharper skirts and no ringing at narrow widths. I use this capability to limit unwanted high audio frequencies of noise and adjacent channel SSB signals. Even more useful is its use on CW and digital modes to eliminate unwanted tones. On CW, the minimum available bandwidth of 50 Hz is extremely effective and without ringing. During a test of CW effectiveness I was able to select, at will, any of three separate CW signals within the bandpass regardless of comparative amplitude. If your receiver does not have narrow IF bandpass filters, this bandpass mode is particularly valuable.

•NIR mode — This mode looks at the character of the audio and attempts to pass only those components of the signal that appear to be human voice, all other elements are blocked. A front panel adjustment is used to set a balance between intelligibility and aggressive noise reduction. In some cases, more noise reduction gives the perception of higher distortion of the desired signal. The individual can set the balance between these two attributes to personal preference.

This mode can be effectively applied to locally generated static, powerline, ignition noise and even white noise internally generated within the receiver or antenna preamp in the case of UHF and VHF systems. No effectiveness was observed against atmospheric static crashes on HF.

•Dynamic Peak Mode — This can be used in conjunction with NIR to further reduce white noise. For me, one of the most valuable applications for this unit is its effectiveness in reducing or entirely eliminating fatiguing background noise between words or during longer periods of no signal, much like a squelch capability. During net operations or long periods of monitoring of HF or VHF SSB calling frequencies where typical squelch circuits use would limit your ability to detect weaker signals, the combination of NIR and DYN Peak reduces background noise entirely but will not mask weak signals. I devised a test to ensure that weak signals would not be lost when aggressive noise reduction was used, simulating complete squelching of the audio.

This particular test involved a band condition of constant HF background noise of amplitude S-3 on the receiver's S-meter. The squelch capability was

completely quieting the speaker output, but when the receiver was tuned to a weak SSB signal, the voice signal was heard without loss. This signal was of such a weak level that is did not raise the S-meter above the band's S-3 noise measure.

Limitations

As mentioned, this unit is not effective against all noise forms, such as one-time noise crashes of thunderstorms. This is due to the non-repetitive nature of these crashes, not allowing software characterization and effective filtering. When noise levels reach such an extreme that the AGC action of the receiver completely desensitizes a receiver, even the elimination of the noise from the audio will not recover signals lost due to AGC receiver gain reduction.

While undetectable signals below the noise level do not become loud and clear, so much noise can be eliminated that long periods of operation are far less tiring. No product yet designed can manufacture intelligibility where none exists, but it can certainly attempt to retain what intelligibility is there.

Unfortunately the headphone jack is on the rear of the cabinet, making access difficult in some installations. While the three-position Peak Factor switch may not be used often, it unfortunately is also on the rear of the unit, making selection difficult unless you can see the rear of the case.

By using both the NIR and DYNAMIC PEAKING modes together (PEAK FACTOR on MIN and NIR at about 10:00), and changing the receiver AGC from SLOW to FAST, a significant improvement in operation with static crashes will be noted.

Transmitting applications

While the most common uses of this unit will be in receiver noise reduction, there are possible applications that could be applied to transmitted audio. While I have not tested these uses, in extremely noisy environments such as mobile installations where ambient noise is a serious problem, the NIR-12 could be used to filter wind and engine noise present.

A motorcycle would represent an extreme case.

For use in transmitting circuits, the unit would be used between the microphone and the transmitter. As mentioned in the Instruction Manual supplied, unamplified microphones would normally not have sufficient output to properly drive the NIR-12 and an amplified mike or external amplifier may be needed to complete the installation. Such an installation might require additional hardware, certainly careful level setting and possibly impedance matching for optimum transmitted audio quality. WR

You know you're a ham when. . .

. . . the only time you are up at 6 a.m. is for a hamfest.

. . . you have breakfast with a guy in England every morning.

. . . your ARES/RACES kit is always packed.

. . . the girl with the KISS t-shirt asks what bands *you* like, and you reply "2," and "20."

. . . a clerk asks you to spell your name, and you do so — phonetically.

. . . you live in a shack.

. . . you hear a scraping sound when you go through the line at the fast-food restaurant.

. . . "sight-seeing" consists of looking at rooftops for antennas. —David Thege, NØXBN, *EV ARCer*

Atlas Radio update

Worldradio received a telephone call from Diane Brandis of OM Radio in response to the items we printed in the March issue. She, in turn, spoke to Herb Johnson of Atlas Radio, and said he wished to relay the following message to ***Worldradio*** readers:

"I am terribly disappointed with the problems that Atlas faced. I am very upset that we were never able to bring the Atlas 400X up to the level that was expected, but there were just too many problems. I am very disappointed in my own lack of getting the radio to work right. The only way the black cloud will ever get straightened out, (and my last ambition is to straighten this out) is to make sure that every ham who ordered a radio, gets a radio. I appreciate ***Worldradio*** for printing my comments and I really want to be able to send letters to all of the hams who ordered a radio. I am thankful that OM Radio has offered to help, and I want to thank everyone for their good wishes, patience and understanding. Best regards and '73..."

We received a telephone call from one of the gentlemen who ordered an Atlas and had requested a refund in July 1995. He had again (late February 1996) written to Atlas at the Roselle Street address in San Diego to request that his refund be expedited. His letter was returned marked "no longer in business."

We have not heard that Atlas Radio has filed for bankruptcy. WR

OFF THE AIR

Customer service

Earlier this month I had a problem with my Ramsey FX-146 Transceiver. After replacing the T/R switching transistor we found the receiver to be deaf. After further examination, I found the preamp transistor was dead, probably from pumping the transmitter output into it. Unable to find a replacement for this transistor I planned on calling their tech support. To my surprise their receptionist answered my question regarding the replacement and sent it out the same day. Two days later I received the transistor, installed it and was immediately back on the air.

Not only was I surprised to get such fast answers but to receive the part that fast is unheard of. Their highly trained staff is very commendable. Not having to run up a monstrous phone bill running through a dozen touch tone sequences to finally be told to leave a message that no one ever responds to was a pleasant surprise. All ham radio and computer manufacturers should look to them as an example of how to treat customers.

I can assure you I will be buying more Ramsey equipment as time goes on.

I am sending this to you in hopes that it could be published so other hams will know that Ramsey not only sells high quality kits but superb support when it is needed most — when you have a problem.

Larry Reitz, WA8CWD
Walbridge, OH

Shocked and saddened

Down through the years, and they be many, I have always found hams to be a good bunch, law-abiding and considerate of the ethics of our society, and being essentially self-policing; which really means no police necessary. I therefore join the many who are shocked and saddened by the vile garbage which litters our ham bands, and corrupts our precious franchise. What a horrible misuse of such a valuable resource!

The FCC has seen fit to further weaken the rules by instituting the code-free license. Sounds like the *wrong way* to me! I haven't heard much vulgarity on CW. Maybe the FCC should institute a "no-voice" license, and ban all voice transmissions. This would not only reduce the use of profanity, but in those cases where it persists, protect the casual listener.

How about that!

Warren E. (Bud) Dion, N1BBH
Terryville, CT

Supports Radio Shack

I received "sample copies" of ***Worldradio*** from Keith Hedgecock, WIØN, to read. I just passed my Technician Class exam in December and because of the government shutdowns, received my call on 18 February. I am now studying my Morse code to upgrade to General Class.

I read the Publisher's Microphone in the February '96 issue. You have a very good magazine. I read January's issue about Radio Shack radios. I own a 2-meter HTX-212 which works very fine. If the other radio manufacturers would follow Radio Shack's lead in producing lower priced, quality electronics I think there would be more Amateur Radio enthusiasts.

Keep up the good reporting, you have a great magazine. Thanks to Keith for sharing ***Worldradio*** with me.

Stephen T. Gaal, KBØUXD
Mancos, CO

Bad gasoline

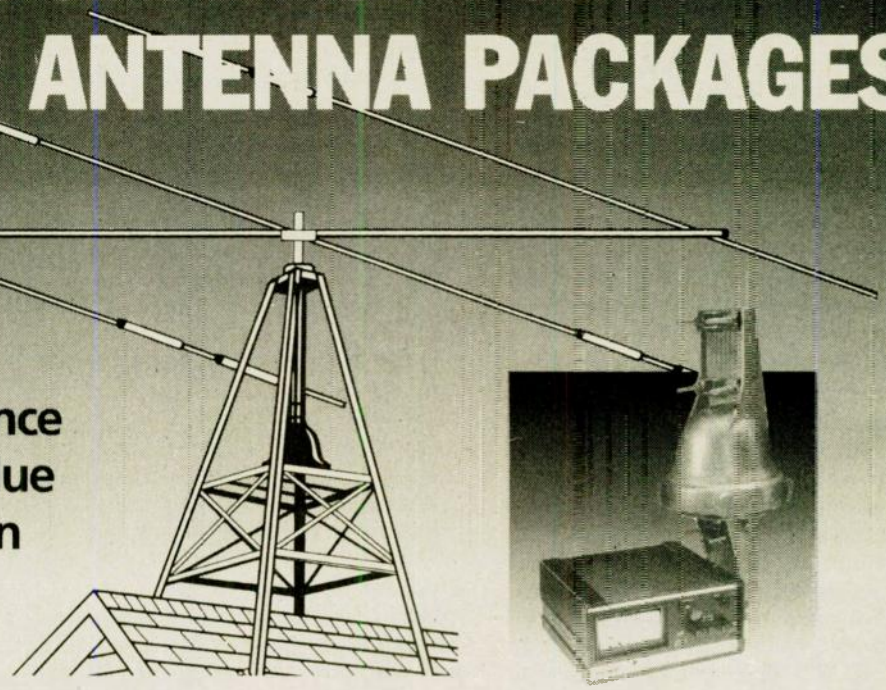
Regarding Bob's, KD6FXQ article on bad gasoline in power generators. Oh yes! Never leave old gas in your emergency generator *unless* . . . As in my case, the gasoline has never been changed in my generator since 1990.

Yes, some gas was added during the Landers earthquake emergency. But once a month (when I remember) I just make two pulls on the Honda starter cord and away it runs, purring like a kitten. I also test the electrical circuits by hooking up a large electric motor and extension cords and lights. *You read correctly!* Same gasoline in tank for over five years plus. The secret? Add "STABIL" as directed on the label of the red can. This product will keep gasoline from jellying and turning to gunk!

From the land of shake and bake,

Stan Spaeth, WB6QFE
Landers, CA

Hy-Gain Put It All Together...
YOU SIMPLY PUT IT UP.
ROOFTOP ANTENNA PACKAGES



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✔ Easy Installation

Hy-Gain has put together four terrific Rooftop Antenna Packages. Each system includes everything, even the cables. You can easily assemble any of these systems, and if you can install an outside TV antenna, you should be able to put up the system, too.* These systems are an exceptional value—just compare the package price with the manufacturer's suggested retail. Incredible.

HF PACKAGES

PACKAGE #1
TH-3 MK4 3 Element Beam 1500 W PEP
Ham IV Rotor
4.5 foot Rooftop Tower
75 feet RG8 with PL 259 on one end
75 feet 8 Conductor Rotor Cable
5 foot Mast
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PACKAGE #2
TH-3 JR. 3 Element Beam 600 W PEP
CD 45 Rotor
4.5 foot Rooftop Tower
75 feet RG8 with PL 259 on one end
75 feet 8 Conductor Rotor Cable
5 foot Mast
$799.95

VHF PACKAGES

PACKAGE #3
64DX 6-meter Beam
CD 45 Rotor
4.5 foot Rooftop Tower
75 feet RG8 with PL 259 on one end
75 feet 8 Conductor Rotor Cable
5 foot Mast
$786.95

PACKAGE #4
28FM 2 meter 8 Element Beam
CD 45 Rotor
4.5 foot Rooftop Tower
75 feet RG8 with PL 259 on one end
75 feet 8 Conductor Rotor Cable
5 foot Mast
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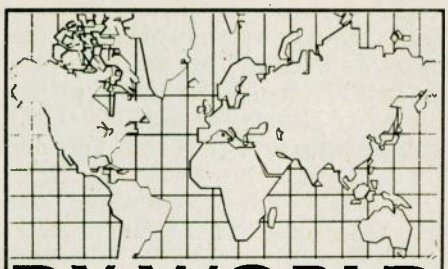


DX WORLD

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

W-100-N

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

506. Donald Backys, K9UQN

Pratas Island (BV9P)

You should all have received your QSL cards for the BV9P (if you requested one) by now. They were promised to be sent out at the end of February and in time for the 1 April submission date. If you have not received a card by now, perhaps you should try resubmitting a request to Steve, KU9C. The card for N6JM was received in the mail on 1 March. Some 261 pounds of cards left the printer for Steve to fill out. The present card will be used to confirm all contacts for BV9P. Some of the earlier picture postcard type QSL cards are not valid and should be replaced with these cards.

Cuba (CO)

I was in the middle of collecting Cuban calls when the brave Cuban military shot down unarmed civilian aircraft recently.

Here are the Cuban calls that were reported in the various newsletters from the latter part of January through February, listed by band:

CO2EG	1.831 MHz	0500 UTC
CO7EH	1.832 MHz	0100 UTC
CO2MA	3.503 MHz	0600 UTC
CO2PL	3.503 MHz	1100 UTC
CO3JA	3.504 MHz	1145 UTC
CO6RD	3.506 MHz	1115 UTC
CO7EH	3.502 MHz	1130 UTC
CO8LY	3.507 MHz	1100 UTC
CO3WR	3.797 MHz	0330 UTC
CO3RN	7.001 MHz	0215 UTC
CO8LY	7.005 MHz	0345 UTC
CO2KG	18.084 MHz	2230 UTC
CO8LY	21.012 MHz	2115 UTC

Balearic Islands (EA6)

These Mediterranean offshore islands count as a separate DXCC country. Not much activity was reported on these recently. Stanley Ingram, EA6ZY, has been active on several bands in the CW mode. Look for him near 7.027 MHz around 0500 UTC, 14.024 MHz from 1700 UTC and 21.027 MHz from 1500 UTC. He is a retired Brit residing on the Balearics and also holds the call G6ZY.

Only two other calls were reported from this one: EA6BH on 10.108 MHz at 2315 UTC on 9 February and EA6MS on 3.795 MHz at 0100 UTC on 25 February.

St Pierre & Miquelon (FP)

This should be an easy one for you DXers on the east coast as this little bit of France is just off the coast of Newfoundland.

FP5EJ is very active on 40-meter CW. Try 7.002 to 7.005 MHz around 1200 UTC. He was also on 80 Meters, 26 January near 3.501 MHz at 2215 UTC.

Other calls reported, some on more than one band, included the following:

FP5AC	3.777 MHz	0015 UTC
FP5CJ	3.785 MHz	0045 UTC
FP5AC	7.065 MHz	2000 UTC
FP5CJ	7.075 MHz	2030 UTC
FP8AA	7.002 MHz	2245 UTC
FP5AC	14.208 MHz	1800 UTC
FP8AC	18.159 MHz	1630 UTC

United Kingdom (G)

Great Britain is running into similar call sign allocations as we have and will now start using the "M" prefix. As of 1 April, the new calls will be issued, with the first call, MØAAA, awarded to the Reading and District Amateur Radio Club. The club will use the club-station version of the call, MXØAAA, and offer a special QSL card to mark the occasion.

The allocation will follow the same pattern as the G prefix: M for England, MD for Isle of Man, MI for Northern Island, MJ for Jersey, MM for Scotland, MU for Guernsey, and MW for Wales. These new calls are going to sound a lot like N types. Be sure to use your phonetics!

Desecheo Island (KP5)

DX News Sheet notes that the U.S. Department of Interior has declared Desecheo closed to visitors because of pirate ships, illegal aliens and drug trafficking disturbing the refuge. Future DXpeditions to Desecheo could become scarce.

Faroe Islands (OY)

It's too late for this season, but OY9JD was a regular on 160 Meters found on 1.823 and 1.834 MHz. He was reported at various times. His only other activity was 80 Meters near 3.511 MHz at 1015 UTC on 5 February. OY1CT was reported on at least three bands: 1.834 MHz at 0415 UTC; 7.004 MHz at 1145 UTC, and 10.102 MHz at 1930 UTC. Twenty-meter activity was OY1JD on 14.160 MHz at 1515 UTC and OY3QN on 14.035 MHz at 1515 UTC.

Papua New Guinea (P2)

P29PL has been very active recently from Papua New Guinea. All of his reports have been on the lower bands. Outside of a couple of days on 160 Meters near 1.831 MHz between 1400 and 1500 UTC, try the region on 80 Meters between 3.501 and 3.508 MHz from 1000 to 1500 UTC. For 40 Meters, listen between 7.001 and 7.013 MHz around the same times. There was a single SSB report for this one on 8 February where he was working Texas on 3.797 around 1345 UTC. Perhaps the call was reported in error as there was only one other 75-meter report found in the newsletters, P29WK on 3.800 MHz at 1215 UTC on 12 February. Two other calls were noted, both on 20 Meters. P29EP was worked on 14.260 MHz at 1000 UTC on 22 February. P29TL was on 14.199 MHz around 2145 UTC on 25 January.

Iceland (TF)

During the *CQ* Worldwide WPX Contest at the end of March, several Belgian DXers, Fred ON6QR, Peter ON7PC, Jack, ON5OO, and Steve ON1KSZ, were to have operated from Iceland. They also planned some operation from the Westman Islands, (EU-071), which counts separately for IOTA purposes. The prefix for that one is TF7. On 20 Meters,TF3GC was reported often during the early part of February. Try looking for this one around 14.240 MHz around 2200 UTC. He has also been found at both ends of the SSB band and at several different times.

Other January and February activity included the following by band:

TF3DX	3.507 MHz	1015 UTC
TF3GC	3.790 MHz	1045 UTC
TF3DX	7.006 MHz	0045 UTC
TF3TF	7.002 MHz	1430 UTC
TF3WS	7.031 MHz	1945 UTC

Heard Island (VKØ)

The most current list of operators for the January, 1997, Heard Island DXpedition includes the following: Michel Sabatino, EA8AFJ; Vincent Denecker, GØLMX; Willy Rusch,

HB9AHL; Ted Algren, KA6W; Ralph Fedor, KØIR; Bob Allphin, K4UEE; Mike McGirr, K9AJ; Bob Schmieder, KK6EK; Bob Fabry, N6EK; Carlos Nascimento, NP4IW; Peter Casier, ON6TT; Arie Nugteren, PA3DUU; Igor Harry Booklan, RA3AUU; Glenn Vinson, W6OTC; Wes Lamboley, W8FMG; Glenn Johnson, WAØPUJ; Al Hernandez, WA3YVN; and James Brooks, 9V1YC. Two additional operators will be chosen from Australia and Japan.

Macquarie Island (VKØ)

Warren, VKØWH, is still active. However, he has other commitments that limit his time on the radio. He prefers CW due to the heavy interference on SSB.

South Orkneys (VP8)

The Argentine CW Group did a fine job with their LU6Z (AN-008) operation. Closing down on 23 February, the group had made over 23,000 contacts, mostly on CW. They were very active on 40 Meters and had a very good signal into California. They were also active in the ARRL International DX Competition. The QSL manager is Raul, LU6EF. He requests two to three IRCs for direct QSL requests. Otherwise send your QSL requests via the bureau.

Kermadec Islands (ZL8)

A Kermadec Islands DXpedition to Raoul Island has been set for eleven days of operation, 4-14 May. They still need some $25,000 (U.S.) to charter the boat to get them there. All donations may be sent to: The Kermadec DX Association, c/o Mr. Ken Holdom, P.O. Box 56099, Tawa, Wellington, NEW ZEALAND.

IOTA

If your summer vacation plans include islands, you might want to consider bringing along your radio. The island you visit might just be the one island hunters are looking for. Be sure to let me know in advance (at least two months) and I will publish your itinerary.

425 DX News reports that from 24-28 April there will be a team of six Italian operators active from the Egadi Islands (EU-054) signing with IQ8B. They will be operating from at least five different islands, all good for the Italian Islands Award. They will be active 10 through 80 Meters, WARC included. Modes selected will include CW, SSB and RTTY.

DX News Sheet reports that Malcom, VK6LC, will be active in May from the Lacepede Islands. This will be a new one for IOTA credit. The cost of putting this one on the air will be $5,000 (U.S.) as the islands are remote and very difficult to reach. In February from Cancun Island there were three calls busy on the bands: Oliver, XF3/OH2NSM; Henry, XF3/OH3JF; and Arno, XF3/OH7XM. Unfortunately, these count only for Mexico, and do not count for IOTA. Here are just a few of the many IOTA islands that were reported during the month of February:

EU-031	Campania Region	IC8/IK8VRS
EU-057	Ruegen Island	DL4PM
EU-133	Gulf of Finland group	RA1ACD
EU-165	Sardinia Coastal	IMØMBP
AS-005	Dickson Island	RAØBK
AS-109	Obskaya Gulf	R3AA/9
NA-055	Moose Island	AA1KS
NA-055	Vinalhaven Island	AK1L
NA-061	Ridley Island	VE7EKZ
NA-065	WA State North	KA7X
NA-065	WA State North	KJ7NS
NA-069	Long Key	K2OLG/M
NA-082	South Padre Island	WB8YZL/5
NA-123	Turneffe Island	V31RL
NA-140	Kent Island	KA3UNQ
NA-141	Florida State East	WB8WCU/4
NA-180	South Water Caye	V31JZ
OC-121	Java Island	YC1XUR
OC-137	Queensland State	VK4CY

OC-195	Deal Island	VK7DI
SA-027	La Paz Island	PT5T
SA-053	San Pedro Island	CE7PWE

There was a big pileup on 14.260 MHz on 17 February with 4MØI handing out NA-020. That happens to be Aves Island and counts as an individual DXCC country.

DXCC Applications

The DXCC Desk reports that the number of unprocessed applications at the end of January was 111 (11,934 QSL cards). During the month 227 applications (22,976 QSL cards) were received for endorsements and new awards.

Applications being sent out at the end of the month were received only a couple of days earlier. A few received prior to that time were waiting for paper records to be converted, or were being audited, and so had not yet been completed.

Disqualified!

The ARRL Awards Committee met recently to review submitted documentation for the 1992-1993 P5RS7 operation submitted by Romeo Stepanenko.

After a review of all material available, the Awards Committee voted unanimously to disqualify Romeo Stepanenko from participation in the DXCC program. This disqualification is based upon Rule 12, Operations Ethics, and Rule 13. The disqualification means that Stepanenko is not eligible to participate in the DXCC program in any manner. This includes, as provided for under Rule 12, paragraph (b) disallowance of contacts made with any station or DXpedition operated by him from the time of this action.

Seasoned DXers are not surprised by this action and were expecting it. After the fraud on the DX community with the P5RS7, Romeo caused much embarrassment to respected DX leaders who had supported his DXpedition. The sad part is there will be many DXers out there who will not accept the fact that they have been fooled and will blame the Awards Committee.

Committee to study DXCC

At the ARRL Board of Directors meeting in Savannah, "it was voted that the ARRL president assign a committee to review the entire DXCC program and make necessary recommendations, in order to encourage broader participation by more amateurs, make the program more equitable, create better understood criteria for DXCC 'Countries,' improve the process of reviewing requests for additions and deletions to the ARRL DXCC List and increase efficiency in the administration of the program."

ARRL President Rod Stafford, KB6ZV, has appointed John Kanode, N4MM, to chair the committee. Other committee members appointed by President Stafford are: Larry Price, W4RA; Rick Roderick, K5UR; Jim Maxwell, W6CF; Walt Stinson, WØCP; Garth Hamilton, VE3HO; Bob Winn, W5KNE; Wayne Mills, N7NG; Bill Kennamer, K5FUV; and Chuck Hutchinson, K8CH.

The goal is to have any changes to the DXCC program in place by the year 2000. (For that reason this has been unofficially called the "DXCC 2000" committee.) It is anticipated that there will be no restart of the entire DXCC program. Applicable "country" credits from the current DXCC program will continue to count regardless of what other changes may occur.

Destroying logs

Carl Smith, N4AA, editor of *QRZ DX* responds to the recent subject of QSL managers destroying logs of past DXpeditions. This was prompted by a South American QSL manager stating he was going to destroy the logs of several DXpeditions by the end of 1996. Carl's comments should be considered by all such QSL managers who are considering "closing their logs." Carl responded: "Numerous QSL managers as well as non-managers were very vocal in condemning such action. A number of *very* legitimate reasons for asking for confirmation months or even years after an operation were given . . . home burned and all QSLs lost . . . amateur radio history . . . revived interest in obtaining awards and scouring old log books to try and get QSLs . . .etc., etc.

"It seems that there are plenty of DX Clubs and/or individuals, throughout the world who would come forward to fill the void rather than let the logs be thrown out or destroyed.

"I urge any QSL Manager to reconsider before destroying expedition or contest logs. Let it be known that you are no longer interested, or able, to respond. I can publicize the information and come up with a volunteer to handle the task."

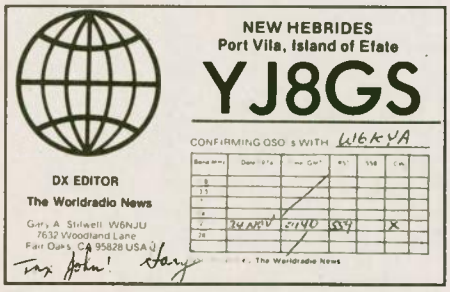
You may contact Carl at P.O. Box 16522, Asheville, NC 28816-6522. Surely, DXpedition logs should take up little space. Most likely many have been converted to electronic data and take less space. This could be a good project for some DX clubs to take on. Surely, it would be more productive than sitting on your laurels bragging to each other how many countries you have worked.

DX Dinner

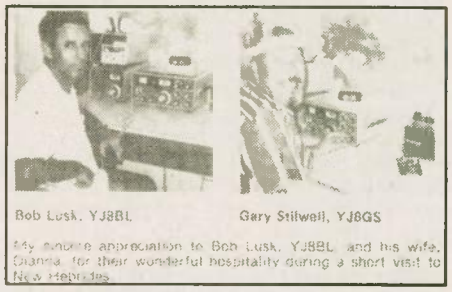
The 1996 Dayton DX Dinner, sponsored by the Southwest DX Association, will be held on Friday evening, 17 May, at the Stouffer Renaissance Hotel, downtown Dayton. There will be a cash bar beginning at 6:30 with dinner at 7:15. Tickets must be purchased in advance from Tom Inglin, NR8Z, 4061 Eaton Road, Hamilton, OH 45013, at $29 each. Checks should be made payable to SWODXA. Please provide an SASE for ticket return. Seating is limited, so if you plan to attend the Dayton Hamvention you had better order your tickets now.

Antique QSL Department

The antique QSL card YJ8GS is not that old, but it is unique. Sharp-eyed readers might catch something familiar with this card, especially long-time subscribers to ***Worldradio.***



Front (above) and back (below) of QSL card for YJ8GS.



The second card is another one from my own collection. When I was still on the East Coast I worked Jack Mokren, VO6AO, on 21 December 1955. The QSL card confirms a 15-meter contact on AM, receiving a report of "Q5 S9."

The address given on the card is 924th AC&W Squadron, APO 677, New York. The log data gives the location as Saglek Bay, which was on the northern coast of Labrador. Are there any readers who were familiar

with this station? What I would like to know is if the the squadron (one of those ancient early warning radar systems) was on an island in the bay or on the mainland of Labrador. Nothing is known of what happened to the operator and my Buckmaster on CD-ROM shows nothing for that surname.

Both QSL cards were used in this column several years ago. However, many new DXers have joined the DX ranks and now are reading this for the first time.

Mexico Convention

Ohio/Penn DX Bulletin reports that the 36th Annual Association of Radio Amateurs of the Republic of Mexico (ARARM) Convention will be held in Uruapan, 18-20 July, 1996. Uruapan is located in the western Sierra Madre in the State of Michoacan.

The convention site is the Plaza Uruapan Hotel and Resort with accommodations ranging from $21.50 to $26.90. Additional rooms are available at the Mansion de Cupatitizio are slightly higher rates. Air transportation to Uruapan via Mexico City is provided by America West, Aero Mexico and Aeromar. Separate programs will be provided for spouses.

The sessions will cover emergency communications, satellite, packet radio, a DX forum, antennas, and more. Additional information is available from Sergio Valdes Sada, XE2RJ, by telephone: 5283 + 35-33-68 or 5283 + 35-71-13 or 5283 + 35-34-76. Don't forget the international access number.

QSL Information

Pedro, HK3JJH, suggests not sending IRCs with your requests to him as he is having many problems with them. Use a green stamp instead.

Ed Eklin, KG8CY, has assumed the QSL manager duties for Pedro Katz, HC1OT/HD1OT/HD9OT. His former QSL manager, W2KF, is now a Silent Key.

Z.R. Kabraji, VU2DK, offers some good QSL advice via the INDEXA newsletter: "Beware of postal problems when sending QSL requests to the VU2 area. All foreign mail is pilfered and tampered with by some local people." His suggestions include:

- Use only strong, well-sealed envelopes or covers.
- Nothing must be seen or felt through the envelope.
- Properly disguise contents.
- No call signs on envelope.

These suggestions apply to all countries and not just India. It doesn't take long to figure out what is going on when a large batch of foreign mail is being delivered on a regular basis. This is just another reason to make use of the QSL bureau. Of course it would help if these DX stations would take advantage of services offered by stateside QSL managers.

Ian Emslie, ZS1QD, says his address show in the earlier *Callbook™* (prior to 1996) is no longer good. He also reports that IRCs are not yet valid in the Republic of South Africa. So, I assume green stamps are acceptable. Frankly, this is not rare DX, so why not use the bureau system.

Frank Acklin, HB9NL, who has operated from Liechtenstein as HBØNL (1969-1985) and HBØ/HB9NL (1986-1995), answers all QSL cards via HB9NL direct or via the bureau. His address is good in the *Callbook™*. Please include sufficient funds for direct returns.

DX Prediction — May 1996

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	*(15)*	13	*15	*(12)*	*13
10	*(18)*	10	14	*(11)*	*14
12	23	*13	13	15	17
14	26	16	*(12)*	17	21
16	28	15	*(12)*	19	*24
18	28	*(13)*	*(11)*	18	*26
20	23	*(18)*	22	16	*28
22	19	20	27	*(13)*	*27
24	*(16)*	19	28	*(12)*	*22
2	*14	19	28	*10	*18
4	*15	*(17)*	27	*14	*16
6	20	16	23	14	*14

WEST COAST

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

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	17	13	*18	*(10)*	*14
9	*(17)*	*(10)*	14	13	*15
11	22	*14	13	16	17
13	25	16	*(12)*	*18	21
15	27	*(13)*	*(12)*	*19	*24
17	27	*(10)*	*(11)*	*18	*26
19	*25	*(13)*	*(17)*	17	*27
21	21	*(16)*	*(25)*	16	*27
23	17	*(18)*	27	13	*25
1	*15	*(18)*	28	*11	*20
3	*12	*(17)*	28	*13	*17
5	18	15	23	*13	*15

QSL Routes

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

3D2AA	—VE6VK	9Q5WF	—W4WDR	GB5SF	—GWØPUP	KHØ/KN6AH	—KN6AH	TT8BP	—IK5JAN	VP2EJA	—JA1MZR
3D2KZ	—JA1KJW	9U/F5FHI	—F2VX	GMØNES/P	—G7DKX	KH9/W4PGX	—KB4VHW	TT8FT	—DL7FT	VP2EN	—AA4NC
3D2SY	—JI3CEY	9U5FHI	—F2VX	GS7UEG/P	—G7DKX	KX6PP	—W4WDR	TU5A	—W8AEF	VP2ES	—KCØZC
3V8AS	—IK5GQM	A61AF	—N1QMM	H44MS	—DL2GAC	LG5LG	—SMØDJZ	UA1ZO	—LA8PF	VP2ESJ	—W5SJ
3W6YL	—JH3GRE	A92GD	—K1SE	HC1OT	—KG8CY	LU6Z	—LU6EF	V31DX	—AA6BB	VP2EZ	—WAØPUJ
4K9W	—DL6KVA	BZ4DHI	—I1YRL	HC8N	—AA5BT	LX4A	—LX1NO	V31EV	—NSØB (SeeNote3)	VP2MDE	—W5ASP
4L2M	—DJØIF	CEØY/JH2MRA	—JH2MRA	HD1OT	—KG8CY	LZØA	—LZ1KDP			VP2MDY	—NW8F
4MØI	—I2CBM	CEØY/JR2AIU	—JH2MRA	HD9OT	—KG8CY	OA461QV	—OA4QV	V31JZ	—NN7A	VP2MEY	—JH1NBN
4S7BRG	—HB9BRG	CE9AAV	—CE4AAV	HI8LC	—VE9RHS	OT6A	—ON7LR	V31RC	—WG9L	VP2V/KK9A	—KK9A
4U1SCO	—F5SNJ	CN2PI	—OE1ABK	HK1ØØGM	—HK3DDD	OY1IPA	—OZ5AAH	V31RL	—NG7S	VP2VDX	—KT6V
5N3/SP5XAR	—SP5CPR	CO2JD	—HI3JH	HL9CW	—N7RO	PAØR	—K4UEE	V31TU/MM	—KC7EY	VP5/JJ2QEH	—JJ2QEH
5V7GL	—EA5WX	CQ5EWA	—CT1EWA	HL9DC	—N7RO	PA6V	—PI4KGL	V4ØZ	—AA7VB	VP8CDR	—SP2QOH
5Z4SS	—JA1SQI	CQ5FMX	—CT1FMX	HP1XVH	—KFØUI	PJ2J	—K1CPJ	V47HP	—JA2OEU	VQ9DX	—AA5DX
7Q7A	—JH1ORL	CU/DL3KDV	—DL3KDV	HP2CWB	—WT3B	PJ9C	—K1CPJ	V47NZ	—NØBSH	VS6WO	—K9EC
7Q7RM	—GØIAS	CU/DL4XS	—DL4XS	HS7AS	—HS1CDX	PJ9G	—WA2NHA	V47W	—AA7VB	VU2AXA	—VU2DVC
7S7JC	—SK7JC	CY0UP	—VE1CBK	IRØC	—IKØAZG	PJ9T	—AB4JI	V51CM	—WA2JUN	W4WDR/KH9	—W4WDR
8P9EN	—VE4GV	D68SE	—F6FNU	IR1A	—IK1GPG	PPØF	—PP1CZ	V63BP	—JF6BCC	W7TSQ/HR2	—W7TSQ
8P9HU	—K3KG	EA8/DJØLC/P	—DJØLC	IR3X	—IK3QAR	PP2ZDX	—WD6L	V63BT	—JG6TWS	W7TSQ/HR6	—W7TSQ
8P9II	—DL7DF	ET3BN	—DL1JCE	J37K	—W8KKF	PP5/PA3AXH	—PA3AXH	V63BU	—JA6PFR	X5ACL	—YU1FW
8Q7CR	—DF5JR	F7CL	—W4WDR	J6/DL2SDS	—DL2SDS	PQ1J	—JH2MRA	V63CB	—JM6VOV	XU1FL	—I8KUT
8Q7SS	—K5GO	FM/WJ2O	—WJ2O	JW/SMØAGD	—SMØAGD	PS7NA/PYØF	—JH2MRA	V63CD	—JR6OCL	XU6WV	—KØTLM
8R1ZG	—W4FRU	FOØCW/M	—F2VX	JW/SMØDJZ	—SMØDJZ	PYØTI	—PY1UP	V63MK	—JA6EGL	YB2CPO	—DL5MEL
9G5MF	—KC7V	FOØCW	—F2VX	JW1BJA	—LA5VK	PYØTL	—PY1UP	V63YT	—JE1SCJ	YI9CW	—SP5AUC
9H3SC	—DL5XAT	FOØCW/A	—F2VX	JW2TAA	—LA2TAA	PYØZFB	—JH2MRA	VI1ØØGM	—WB2FFY	YN2EJG	—WD51QA
9H3TY	—DL7VRO	FO5VO	—N6VO	JW5VK	—LA5VK	PYØZFF	—JH2MRA	VI3GP	—VK3ER	ZD7VJ	—G4ZVJ
9J2BO	—W6ORD	FP5EK	—K1RH	JW6VDA	—LA6VDA	PY3ZYM/PYØF	—JH2MRA	VI75RAAF	—VK4LV	ZF2FT	—N5OCD
9J2PI	—KBØKVA	FS/NØBSH	—NØBSH	JW6VM	—LA6VM	R3AA/9	—RW3GW	VK4FW	—VK4CRR	ZF2NE	—W5ASP
9J2SZ	—SP8DIP	FS/WE9V	—WE9V	JW7XJA	—LA5VK	SØ2ØR	—EA2JG	VK8MI	—VK4AAR	ZF2OP	—K3DI
9J2TO	—JA1NZV	FS/WX9E	—WX9E	JY8XA	—K2XA	S79JD	—F6AJA	VK9CA	—AE4EZ	ZK1DD	—G3MCN
9L1MG	—NW8F	FS5PL	—WX9E	KB1AGK/KH2	—JA6PJS	S79R	—9H3UP	VK9CR	—DK7NP	ZK1PYD	—K8PYD
9L1PG	—NW8F		(SeeNote1)	KC6FS	—JH6RTO	SJ9WL	—SMØDJZ	VK9XH	—AE4EZ	ZK1WTS	—WT8S
9M8PFB	—PBØALB	FT5XK	—F6KQD	KC6KF	—KHØCG	SO8HW	—SP8AG	VK9XL	—UAØZDA	ZL1HY	—ZL1BIL
				KC6VO	—JM6VOV	T32BE	—WC5P	VK9XRS	—ND3A	ZL9GD	—ZL4MV
				KC6WG	—WHØAAV	T94EU	—N2MAU	VK9XY	—DK7NP	ZS6MA	—WA3HUP
				KG4GC	—KQ4GC	TG/KA9FOX	—KA9FOX	VP2E	—NØZSU (SeeNote2)	ZW5CIA	—PP5VB
				KG4NA	—KD4D	TG9IGI	—KA9FOX			ZW5IZ	—PP5VB
				KG4SH	—N4KHQ	TI/W7TSQ	—W7TSQ	VP2EEU	—W5EUQ	ZW8P	—PS8DX
				KHØ/KH2S	—JH4RHF	TJ1AG	—F5RUQ	VP2EFO	—W8TPS	ZY5A	—PP5SZ

Notes:

1. This route applies for the contest operations only.
2. This route applies for the ARRL DX Contest during the SSB weekend. This call has been used by others so confirm you have the right operator(s).
3. It is not necessary to request a QSL as all contacts will automatically be confirmed via the bureau. However, if you can't wait, then send the usual SASE with your request to the manager indicated.

Phil Kellen, K6CJ, points out our error in the charges for the Outgoing QSL Bureau. It should have read $3 per pound, or fraction thereof instead of $2. It's still a bargain at that price. If you have ten cards or less the fee is $1.

QSL addresses

9K2HN —Hamad J. Al-Nusif, P.O. Box 29174, 13152 Safat, KUWAIT

9K2YY/ 9K2ZC —Derek McClure, KC4ELO, 5 McKenzie Circle, North Augusta, SC 29841

9K2ZZ —Ray McClure, W8CNL, 5 McKenzie Circle, North Augusta, SC 29841

AZ9W —Alex Cozzi, LU5UL, P.O. Box 12, 9120 Puerto Madryn, Chubut, ARGENTINA

EL2WA —Johnny Connelly, P.O. Box 192, Monrovia, LIBERIA

HB9NL —Acklin Frank, Sonnenrainstr 27, CH 6233 Bueron, SWITZERLAND

HS7AS —Club Station of Suphanburi, P.O. Box 7, Suphanburi 72140, THAILAND

LU1ZAB —Marco Quintana, 4489 San Fernando, 1646 Buenos Aires, ARGENTINA

PZ5DX —John Mantell, K3BYU, P.O. Box 2137, Brevard, NC 28712-2137

VK9CA/ VK9XII —Kiyoshi Endo, AB4EZ, 8 Amlajack Blvd., Ste. 362, Newnan, GA 30265

XZ1R —SCSDX Team, P.O. Box 111, 24101 Salo, FINLAND

ZD7VJ —Andy Chadwick, G4ZVJ, 5 Thorpe Chase, Ripon, North Yorkshire HG4 1UA, ENGLAND

ZD8VJ —Andy Chadwick, G4ZVJ, 5 Thorpe Chase, Ripon, North Yorkshire HG4 1UA, ENGLAND

ZS1QD —Ian W.B. Emslie, 5 Alleyne Yeld Crescent, Silverlea Fish Hoek, 7975 REPUBLIC OF SOUTH AFRICA

Many thanks to the following contributors: HB9NL, K6CJ, KC5ALW, KG8CY, AA8GQ, Western Washington DX Club (WAØRJY), International DX Association (W4WMQ), American Radio Relay League (K5FUV), *425 DX News* (I1JQJ), *The Ohio/Penn DX Bulletin* (KB8NW), *The Low Band Monitor* (KØCS), *DX News Sheet* (G4BUE), *QRZ DX* (N4AA), *Inside DX* (N2AU), and *The DX Bulletin* (VP2ML).

Sometimes there is something better than working DX. My wife and I had a sudden unexpected vacation. We took off on a cruise where our youngest daughter was a principal performer on the M.S. *Leeward*, the newest ship of the Norwegian Cruise Line. This was a good excuse to go on a cruise.

We visited IOTA islands of Key West (NA-062), Isla Cozumel (NA-090), New Providence Island (NA-001), and Great Stirrup Cay in the Berry Islands (NA-054). We went snorkeling on the latter (first time in over 30 years). I should have brought my radio to Great Stirrup Key, instead, as I came home with a tremendous sunburn! Good DX to you! 73 de John N6JM. WR

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A War Story

Bill Millard, W4PBN, of Fayetteville, Tennessee sends this interesting story about how he became a career radio operator in the Navy.

"I got started back in the year 1940," Bill writes. "I'm sure you remember the Civilian Conservation Corp (CCC) that was started in the 1930s by President Roosevelt. I first enrolled in 1938 and was sent to a U.S. Forest Service camp located in the upper peninsula of Michigan. On my second hitch I was sent to a camp in the lower peninsula. While there in 1939, the Army's Ninth Corp Area Headquarters asked for volunteers to become CCC radio operators. I was the only person in camp who put my name on the list.

"I forgot all about it, and in January, while out in the woods on a Forest Service project, a truck came out to the site and told me that the CO wanted me at once. I was a little worried because I thought that either I had done something wrong or there was a problem at home.

"As it turned out there was a truck waiting to transport me to the radio school. The CO gave me a half hour to get my gear together and do the transfer paperwork.

"The so-called school was located about 75 miles away near Lake Huron. There were five prospective radio operators in the class. Our instructor was a Signal Corps radio operator who had been in the infantry during WWI. "Our code equipment consisted of an old doorbell buzzer, a battery and a key. We were given instruction on the International Morse Code, traffic handling, and the "Q" signals. The class lasted eight weeks, at the end we could copy the code at fifteen wpm.

"After graduation, each of us were assigned to another CCC camp where we assumed full charge of the radio station. I was sent to an established station. I had to get there quickly because the radio operator had joined the Regular Army and been assigned to Fort Sheridan, Illinois with the rating of Corporal. I spent only one day with him learning the procedures. It was a real learning experience for an untried trainee!

"I remember that the man I relieved had an amateur license and had been active on the ham bands while there. I'm not sure of his call, but I think it was W8UEY.

"The RCA radio equipment was quite good. The transmitter put out about 100 watts and the receiver was a general coverage type. The antenna was a long wire; the horizontal part up about fifty feet. I would tune the transmitter in the old-fashioned way, with a light bulb!

"My call letters were WUEH, and I was responsible for the traffic of five other camps in a seventy five mile radius. We had five, half-hour schedules a day, five days a week. Once in a while we would also have an evening or Saturday schedule. After I got familiar with how to play the game, I was able to send and receive better than 18 wpm. I had purchased the Vibroplex bug from the previous operator, and I got quite good with it. I didn't have a typewriter, so I copied all messages with a pencil by printing at 18 to 20 wpm.

"The camp was composed of veterans from WWI. I was, for the most part, treated very well and the CO was like a father to me. It was an ideal setup and one of the highlights of my career in communications.

After doing the allotted time that was permitted in the CCCs, I was discharged in the summer of 1941. I went to Detroit, Michigan to look for employment.

"I landed a job in the Good Humor Ice Cream Co. plant where the ice cream products were made. At that time all of the sales were done by street vendors using trucks, bicycles and whatever.

"When Pearl Harbor was bombed, I went to the Navy recruiting office at four thirty the next morning and joined a long line waiting to be enlisted. I had always wanted to get in the Navy since I was ten years old, so I signed up.

"When I arrived in boot camp, I had no problem adjusting because of my two years in the CCCs. After a week we were given a test to determine our aptitude to understand the Morse Code. The Navy test consisted of two letters either the same or slightly different. We had to put down whether they were alike or different. I not only put down whether the letters sounded alike or not, I put down what they were.

"I, of course, was picked number one to go to the Navy radio school in Connecticut. It was one of two schools in existence at that time. There I learned theory, touch typing, and proper military traffic handling procedures. After three weeks of classes, I was made an assistant code instructor.

"I graduated in April, 1942, number three man in a class of about one hundred trainees. I was beaten out by one classmate who had been a ham and another who had been a railroad telegrapher. My code speed was 34 wpm, the railroad telegrapher 37, and the ham 36.

"At the beginning of WWII the German Submarine Service was

having a field day sinking allied shipping. During 1942 there was a unit formed in Washington that was called the 10th Fleet. It was a paper fleet of the Navy's best cryptographers, radiomen and language experts. The purpose was to study German Submarine communication tactics and methods.

"In early 1943, our communications officer asked if I would like to work on a special detail. I was on board a ship doing convoy duty at that time, so the special work I would be doing would be while at sea.

"The German Submarine Service had taken 12 or 13 letters of the International Morse Code and rearranged the dits and dahs to fit their own needs. Along with another radioman, I had to learn this peculiar code. It took us about a week and a half to master the code. Then we were given an off-limits area with four radio receivers and we stood split phone watches.

"Most of our listening was at night because the subs would surface in the dark to send messages back to their bases. The subs would send sighting reports, weather reports, fuel or supply requests and requests to return to port. The German were using high speed and very short bursts of traffic. We had two Navy Intelligence and cryptographic experts aboard so we gave them all kinds of material to work on. In time, the code was broken and in due course the German Sub Service was demolished.

"I also had some detached duty for a short time and participated in a sub hunt aboard a destroyer. I will say one thing about that: it can be quite exciting.

"Another thing I did while on board ship was copy the Press Wireless so that we could put out a ship newspaper. I would do this at night. It was really fast code and there were only a few radiomen with the ability to copy high speed plain language. I also copied a bit of German press. That was amusing because the Germans were making fantastic claims even while they were taking a beating out at sea.

"Later in my Navy career, I went to school and learned the Cyrillic Alphabet so I could monitor Iron Curtain countries. I was stationed where the Navy had a very large 360 degree listening antenna called the Wullen-Weber. My target was a portion of Russia and again I copied everything I heard, and again the cryptography experts worked on it. I don't know how successful they were because I was never told.

"So that is a thumbnail sketch of my Navy career. Like everyone else I could probably write a small book with a lot of funny and sad things that happened along the way. By the way, I obtained my amateur license in 1957, but that's another story."

Ham license plate stuff

Last year, in this column, I printed a request from 11-year-old Michael Spenn, P.O. Box 33216, San Antonio, TX 78265, for ham callsign license plates to add to his collection. I recently received another letter from Michael thanking me for the plug in this column. "It really helped my collection," said Michael. He still is short a few states and he listed the ones he needs. Here's the list: RI, ME, DE, GA, LA, AR, IA, KS, SD, NM, UT, NV, PA, and MD. If you have an old ham call plate for one of these states, why not wrap it up and ship it to the young lad. You can make his day, I'm sure.

Bob Burchardt, AB5QH, in Crescent, Oklahoma writes this: "A while back the Bighorn Museum in Byers, Colorado requested old amateur license plates. Well sir, I sent them two of my old ones from New Mexico, N5EZK and KJ5FL. I thought they could have at least acknowledged them, but nary a word." Enough said.

More ham plate stuff

I recently served on the board of directors of the Cass County (ND) Historical Society. The society operates a 15-acre museum in West Fargo consisting of 42 buildings that were donated to our historical village. We have a radio museum in the planning stage, and I would like to get a collection of license plates to put in our forthcoming building to give an idea of the spread of ham radio. If you want to donate one to the museum, please send it to Bonanzaville, PO Box 719, West Fargo, ND 58079-0719. You'll get an acknowledgment for it, I'm certain.

EAVESDROPPINGS

I DON'T KNOW WHY ANYONE WOULD LIKE TO MONKEY WITH DINOSAURS — MAYBE HE THINKS HE CAN MAKE A BIRD OUT OF THEM . . . MY TEN-TEC DOES NOT HAVE A GENERAL COVERAGE RECEIVER; THE ONLY THING IT HAS IS A NOTCH FILTER AND OLD AGE SPOTS. . . .

Thanks to AB5QH, WCØM and W4PBN. If you have any war stories for this column, write me, Bill Snyder, WØLHS, 1514 12TH St. S, Fargo, ND 58103-4134. My packet address is WØLHS @WØLHS.#SEND.ND.USA. NOAM. 73 and DIT DIT. WR

Appointment

Ted Rappaport, N9NB, has been promoted to full professor at Virginia Polytechnic Institute and State University. Rappaport established the Mobile and Portable Radio Research Group within the school's Department of Electrical Engineering.

He's a specialist in wireless communication and has contributed to research into radio wave propagation within buildings and in local areas.

Rappaport is a graduate of Purdue University. He joined Virginia Tech's faculty in 1988.

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Friend Dave

Let's start this month with my personal answer to the question: "What is ham radio really all about?"

To me, it is friendship. It's people, who are united by a common bond of their interest in radio, and who use that interest to create everlasting closeness. It is people like my neighbor David Booth, KC6WFS.

I first met Dave on the "N6ENV Valley 220 Repeater" when he and his wife Cindy were awaiting the arrival of their first child. Dave caught me and introduced himself, adding that he and Cindy were in the same Lamaze class as my daughter and son-in-law (Kelly, N6PNY, and Steven Lenhert).

As it happens, Dave and I live about a quarter of a mile from one another and we also work the same shift in Hollywood. I work over at KTTV, and Dave works for a company that does digital video processing for the film and television industry. We both operate on the same VHF bands and enjoy modes other than FM. We are employed in different facets of the same industry and share the same work schedule.

For the past year, it's been routine for us to talk on simplex or when a group is involved or distances are great, over a repeater on our way to and from our respective jobs. It's a rare evening not to hear us chatting away from about 11:30 p.m. until a quarter past midnight.

And so it was one recent evening when I was about fifteen minutes ahead of Dave and headed north along Interstate 5, when my car's right rear tire began to go flat. I told Dave that I was pulling off the freeway and would call the auto club. As an ex-smoker who now suffers from coronary artery disease as a result of two decades of that habit, I rarely attempt changing a tire any more. That is what roadside assistance is for.

A good ham radio friend—Dave Booth, KC6WFS. *—photo WA6ITF*

Dave said not to bother; he was closer and could be there well before the emergency road service driver. In less than a quarter of an hour, Dave was on the scene and 15 minutes later we were back on the road, headed home caravan-style.

Only one problem. I had not bothered to look carefully at the spare tire. It looked good. It had never been used and had plenty of air. But it was also eight years old and very dry. In a few minutes it began to shred. Dave warned me how bad it was and I made it off the freeway—on the rim.

Thankfully, Dave was close behind. He was also ready to take charge. It was now close to 1 a.m. and while we were parked near three open "gas stations" none of them had a mechanic on duty. So David loaded my original flat tire and me into his Honda hatchback and then drove eight miles across the Newhall Pass to Santa Clarita. There he found an all-night service station where a guy named Al installed a miracle patch. We then drove back across the pass where Dave installed the repaired tire, loaded the dead spare in my trunk, and then insisted on following me all the way home!

I hope that Dave never finds himself in the position I was in, but if he ever is, I will be there for him as he was there for me. Had it not been for our common interest in personal radio communications, we might never have met. Now that bond has made us friends for life. This month's column is dedicated to Dave and the thousands of other unsung ham radio heroes like him who know what the word "friendship" is all about.

An update on SPOC

Efforts to develop a single point of contact between the nation's amateur repeater coordinators and the FCC have reached an interesting stage. The committee of amateurs involved in writing the "SPOC" proposal has released its recommendations on who should serve as the contact point and it is not the American Radio Relay League!

The very concept of creating a SPOC has been a really controversial issue and one that could ultimately affect the repeaters you use for communication. At the center of the dispute is whether the ARRL should serve as contact liaison between coordinators and the Commission on coordination and interference issues.

The controversy grew after an October, 1995, meeting in St. Charles, Missouri, between coordinators, League representatives and the FCC. Those in attendance voted to name the ARRL as the SPOC and chose a committee

to write what amounts to a Memorandum of Understanding on this between the ARRL and the coordination community. The committee's initial report came out more than 3 months after that often-heated conference that saw some coordinators complaining of a "railroad job" in favor of making the League the single point of contact.

Now, if what the committee proposes becomes reality, the League won't have that role. Instead, a council of amateurs would be created and called the National Frequency Coordination Council or NFCC. NFCC would hope to receive start-up money and other support from the League, but the ARRL would not oversee or direct the Council's activities.

That arrangement is considered likely to please coordinators who opposed having the League serve as the single point of contact. Coordinators from each state would be able to vote on key issues. The number of votes each state could cast has not been settled. One popular method might be based on the size of its amateur population; i.e., the more hams a state has, the more votes its coordinators can cast, but that's only one option.

Another committee recommendation is mandatory coordination. This could mean a major change affecting repeaters and other Amateur Radio systems nationwide. That means it could ultimately be illegal to put a repeater on the air that is not coordinated, and many coordinators support rules making currently uncoordinated repeaters fully responsible for fixing existing interference problems.

Requiring repeaters to be coordinated would mean changing FCC rules governing the Amateur Radio service. Coordinators are presently discussing whether to ask the FCC to hold a Rule Making proceeding to make that happen.

Frequency coordinators across the country had 60 days in which to respond to the Committee's suggestions. Depending on what additional action is taken, the Committee could then proceed with plans to incorporate.

The Committee's work may also signal the beginning of a solution to the entire single point of contact issue. The Alabama delegation initially opposed the single point of contact proposal, but later changed its position. The Southeastern Repeater Association, SERA, which has also gone on record as opposing the idea, has clarified its position. SERA now says it, too, can support a single point of contact if that liaison is made up only of the nation's coordinators, without political involvement or control by the American Radio Relay League.

The only question now is, will the ARRL support and possibly fund an organization over which it will have no authority? This writer very seriously doubts it.

One must remember that the ARRL is a political entity. A membership directed one, but none-the-less it is a politically volatile group. As such, it has to justify on both a political as well as an organizational level every move that it makes and every dollar it spends. Therefore its directors must put their ham radio altruism aside and ask themselves, from the standpoint of a service corporation, how each can vote to justify the expenditure of possibly $10,000 — or more — each year, in creating and supporting an entity over which they have absolutely no control. I doubt that they can find such justification, and I also doubt that they would act positively on an SPOC proposal that relegates the League to the role of "banker" and nothing else.

There is another problem that the coordination community faces in creating the single point of contact. It is running out of time. The ability to get this matter before the FCC and to have the Commission act favorably was based on what the Washington political crowd calls a "window of opportunity." That window existed while the FCC was on hold and waiting for Congress to pass the Telecommunications Reform Act of 1995 and for President Clinton to sign it. That is now reality and the FCC has been handed the document with a Congressional mandate to implement it posthaste. This means changes in the FCC as it reorganizes to do the Congress' bidding. Jobs and job titles will change. People will be transferred between bureaus and some are expected to leave and enter the private sector. We could, and probably will, lose some who are friendly to the ham radio cause.

What this all amounts to is that the attention of the agency is quickly focusing elsewhere and the "window of opportunity" to create the SPOC is very quickly closing. In fact, by the time you read this, it will be closed. If by now the coordinators have not agreed with the ARRL on a set of guidelines to create the SPOC, there is a good chance matters will be back to where they were before the St.

Louis meeting last October. That place is no place at all.

Organized repeater jamming in Tampa Bay

Warren Elly, WA1GUD, is a long-time friend, a professional broadcast journalist and a very active radio amateur in Tampa Florida. We first met when I was writing Looking West for *73 Magazine* and, for a while, Warren was my editor. That was many years ago and today Warren is a well-known television newsman who anchors the evening report for WTVT — the Fox affiliate station in Tampa.

Recently, Warren used his journalistic talents to inform the nation's packet community of some high-level malicious interference problems being suffered by the Tampa VHF/UHF repeater community. He posted the following notice and request for information. Later we spoke and I agreed to include it in my column for those of you who have not seen the original, but who might have ideas on how to help:

"The amateur community here is being plagued by jammers who do everything from disrupting our nets, to using our autopatches to making false calls to 911. Our efforts to locate what's become a growing number of copy-cats have been aggravated by a complete lack of help from the FCC (they tell us they have been ordered to NOT enforce the amateur regulations), and a lack of training in DFing mobile-based interference. Our jammers, put simply, don't follow the suggested ARRL fox-hunting rules.

"We have been told this is a national problem; that other communities are under assault from these foul-mouthed dysfunctionals. If you are involved in work to rid your repeaters of jammers, we'd sure like to hear from you in hopes of sharing tactics and so on. We're also interested in what kind of luck you've had in enlisting the help of local law enforcement, since FCC help is apparently out of the question at this point. Your replies would be most appreciated."

If you have any ideas, you can send them to Warren by packet to wa1gud @wa1gud.#tpa.fl.usa.noam, or via the Internet to him at elly@gate.net or elly@wtvt.com. Please copy us here at ***Worldradio*** to billwa6itf @aol.com, and we will include your suggestions in future columns.

Reader feedback

Tom O'Hara, W6ORG writes:

"I read with interest your March '96, ***Worldradio*** column about those who believe they can split-channel and self-coordinate.

You hit upon the main reason for interference — receiver IF filter bandpass rejection curve. But most do not know how wide an FM signal is. With 5 kHz deviation you get full power over 10 kHz and modulation sidebands sloping down to twice the modulation frequency to 26 dB (Carson's rule and FCC Rule 97.3(8)).

"Some believe since voice power is very low at 3 kHz the total occupied bandwidth is not 16 kHz. This is only true if the mic gain is set right, and the operator doesn't raise his/her voice well into limiting. Packet, of course, with its 2200 Hz tone, will have the greatest consistent spectrum power density. What is most often forgotten is to add in frequency drift and tolerance.

"This is why we had to go to 25 kHz channel spacing in the 23cm band plan, instead of the 20 kHz that the only commercially available radios at the time had in them. My year-old multibander has a frequency stability of +/- 10ppm which works out to 1.4 kHz at 2M, and 12 kHz at 23cm. So on 2 Meters, just from the transmit side, 20 kHz channel spacing would be the minimum practical. To go less, the deviation can be turned down with a little less FM carrier-to-noise advantage from the lower modulation index, and the frequency tolerance and setting accuracy improved. That was what a lot of us did here in So. California when the 15 kHz channels in the upper 2 MHz was adopted years ago—but then most of us knew where to find the deviation pot in our rigs and turn it down to 4 kHz—I am not so sure *(the operators know that)* today.

"On the receive side, you could go to narrower and sharper filters at the sacrifice of some fidelity, to the point of acceptable 'communication quality.' You still have the frequency drift and accuracy problem, only more so.

"Bandplans and coordination need to be made on sound engineering principles in order to accommodate all modes and the most stations with least probability of interference. That is only logical but it seems (that) most of those who self-coordinate anyway just have to have their own ego box on the hill."

(Note: Tom O'Hara, W6ORG, is the President of PC Electronics — one of the foremost manufacturers of fast scan ATV equipment. Tom is also a pioneer in ATV repeater coordination and serves as ATV Technical Liaison with the Southern California Repeater Remote Base Association.—de WA6ITF) **WR**

OLD-TIME RADIO

CQ and me

Robert Burchardt, AB5QH

Whenever I am tuning across the bands looking for some DX I often hear other operators calling for this elusive operator known as "CQ." I smile when I hear their calls because I believe that I am one of very few who has actually made contact with old CQ, but it was long before I became interested in Amateur Radio and it was not in the ham bands, as a matter of fact, it was around five thousand kilocycles.

It happened during the summer of 1959 in the Mediterranean Sea. I was a young ensign attached to the USS *Leary* (DDR-879) and we had been assigned to tow a target sled in order that the U.S. Sixth Fleet could finish gunnery competition. I was to man the radio to "rake" the shots, and my two partners and I worked from the after three inch gun mount.

At 0700 on the first day of the big gun shoot, the flagship, USS *Des Moines*, pulled into position and just as I was about to key up and tell her to open fire, this very thick British accent came on frequency and said, "This is Charley Quebec, Charley Quebec, Charley Quebec," and did this for three minutes. This guy had enormous lung capacity as he never seemed to breathe, I mean he could time out a simplex frequency!

When he finished his three minutes of this, he got down to business of conducting radio checks with twenty-one different stations. Meanwhile, the entire Sixth Fleet was twiddling its collective thumbs waiting for this guy to shut up so we could get on with our business.

Finally he stopped and I then keyed up and informed the flagship to commence firing. Talk about whacking a hornets nest with a stick! Old CQ came on and told me very bluntly to get off of his frequency and that it was his frequency and no one else could use it! I replied that I could not do that as it was assigned to several organizations and that we could share the frequency. He was not very happy and launched into a tirade about my ancestry, as well as some very disparaging remarks about "Yanks" in general. I ignored his ranting and we did managed to work around him and his QRM although any transmission from a U.S. vessel brought forth yet another tirade of anti-Yank remarks from him.

On the third day something happened that mellowed old CQ somewhat. Another heavy cruiser, the USS *Macon*, hauled into position and let fly with one of her eight inch guns. That's a couple hundred of those silly little millimeters for you metric types, and something went wrong, very wrong!

We had no trouble hearing the incoming round and it hit short, skipped, then went over my ship and impacted a hundred yards away where it exploded. Man, that really got our attention! I vaguely remember screaming over the radio to cease firing and that we were pulling the target and not pushing it.

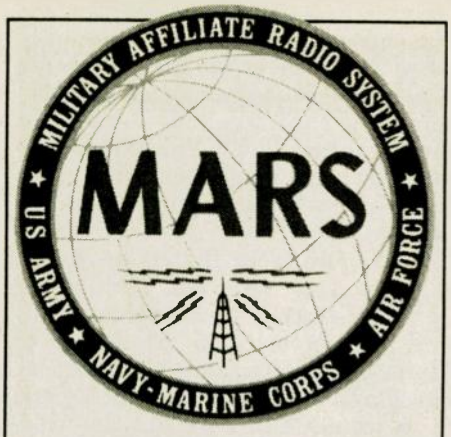
Macon apologized and wanted to know if we had suffered any casualties. I blurted out something to the effect that they had ruined 212 sets of undershorts. Now old CQ thought this was hilarious as he was laughing when he came one the air and offered to send us some laundry detergent. I told him that we had plenty, but thanks for the offer. This short QSO made a changed man out of him as he was then willing to share the frequency.

During lulls in firing, he would ragchew. His name was Tommy and he was a sergeant in the British Army and a transportation dispatcher on Malta, a mere ten miles north of us. He offered to tell us all about England if we would tell him about the "colonies!"

The Admiral called us on UHF and said to humor the guy and maybe he would not launch into any more of his tirades about Yanks. This we did and we talked several times per day for a week. He told me about England and I, in turn, informed him about the "colonies" that I had been in. He invited me to Malta for a "pint of bitters," but I was never to set foot on the island. During his morning radio checks I would come up on the air and check in as "number twenty-two." His usual reply was "righto Bob, I hear you two by two, too loud and too often."

Finally the day arrived for us to give the target sled to a British tug and haul out of there and go protect the world. Just before we knocked down the net, I gave him one last call and informed him that we were leaving the area. He acknowledged and said how most of it had been fun. He never did apologize for his early actions, but his parting words were "cheers dears," a term that I have used since.

I don't know what became of CQ, but I do know that I was one of the very few outsiders to engage him in a QSO. As he said, "cheers dears." WR



Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

This month of May will see much coordination and activity for Army MARS. As mentioned in last month's column, the Dayton Hamvention, the Armed Forces Day activities, and the Army MARS In-Progress-Review conference coincide this year.

This particular column will address some of the topics to be discussed at both the MARS booth and at the MARS forum. MARS members serving at the early spring hamfests from various parts of the country have reported similar areas of interest by visitors to their booths.

Army MARS and emergency operations

Chief Army MARS, Robert L. Sutton, is proud to announce that Army MARS has been officially written into the Federal Response Plan for meeting emergency situations. With this official backing, Army MARS is being well received by current customers and potential customers as a capable provider of information and of reliable emergency support communications. Army MARS has agencies seeking it out with a view to integrating assets and operations.

Many of the joint agency/Army MARS exercises for 1996 reflect this acceptance and recognition by the disaster/emergency relief agencies at the highest levels.

Army MARS capability to operate in an emergency environment is already well documented in 1996 operations. Weather-generated emergencies in the Northeast, the North Central states, and the Northwest have created a new emergency designator "White Blanket" for the EEI reports from those areas.

The importance of the Army MARS mission of providing EEI Reports early and in a continuing flow of information cannot be overstated. The set of EEI reports from the Northwest for its devastating storms in mid-February could easily be designated as the "Anatomy of an Emergency." The earliest EEI warning of impending problems was sent out from the state of Washington. A member noticed black ice forming along river banks indicating a flow of water under the river ice and the ice rising to let the water escape. It might have meant nothing, but he sent the report anyway. This is a crucial point.

A report may be an isolated incident and unimportant to anyone or it could be THE vital link in the flow of information. The individual EEI reporter has no way of knowing the impact that his/her message might have. In this case, the black ice report was a key element in the alert mechanism at DOMS at the Pentagon.

Operators throughout the Northwest responded with similar reports of anomalies occurring in their respective locations. Put together, these reports painted a very accurate picture of the flooding, the avalanches, the train wrecks, the overall havoc that weather created in Washington, Oregon, Montana, Idaho, and Utah.

The report of one train derailment was sent out by a brand-new Army MARS operator. His report was the first news received about that incident in Washington, D.C. He can be proud of his accomplishment that day.

The operation of the emergency net (officially the Oregon Army MARS Emergency Net) was superb with operators from all of the Western Area States and some from Central Area participating. Eastern Area was having its own flooding problems at the time, and I am sure that Central Area operators supported their emergency nets as well. Traffic was smoothly handled and information was the key to a very successful operation. This is what the emergency agencies are beginning to recognize—that Army MARS is up and running 24 hours per day every day of the year. This is of vital importance to the effective management of any emergency.

Army MARS membership

Visitors to hamfest booths often ask about the qualifications needed for Army MARS membership. There are two persistent pieces of misinformation that keep recurring.

A potential MARS member does NOT have to be a retired military person or to have served in the military services at any time. Many of our Army MARS members do meet this criterion, but many do not.

A potential MARS member can join Army MARS with ANY class of FCC Amateur Radio license. Once trained in MARS operating procedures, ALL classes of FCC licensees have the same operating privileges on the MARS frequencies. This allows operations by Novice and Technician license holders that are denied to them on the amateur bands. Army MARS membership offers great opportunities for a new ham in all modes of operation. This taste of additional operating privileges has motivated many new ham operators to upgrade their amateur licenses.

Army MARS members must have high tech stations?

With all the discussion of Army MARS entry into and adaptation of high tech modes and systems, this is a natural misconception.

Army MARS will remain a radio-based organization. Other technologies are being integrated into that radio base in order to guarantee the seamless worldwide communications system that is ideal for Army operations. This maximizes the support that Army MARS can devote during national disaster situations. It is strictly the choice of the individual operator as to how far into the other modes that he or she wants to go. For those who are technologically oriented, Army MARS offers some exciting times ahead. For those who are not so oriented, Army MARS offers exciting times ahead. In other words, there is something here for everybody.

Very simple stations have made excellent Army MARS stations in the past and will continue to do so into the future.

Other areas of interest will be addressed at the conference and at the booths all over the nation. This column will report further on the topics of strong interest. It is fascinating that topics of interest are similar from year to year. This could be attributable to a rotation in readers of various publications where MARS articles have appeared, to a rotation in Amateur Radio licensees, and to a renewed interest by people whose life styles, perhaps, have changed — retirements, etc. It is as though we have a new generation of hams each year. I see excitement in this phenomenon. Where else do generations develop so quickly?

Army MARS continues to march . . . proud, professional, ready. **WR**

Alinco donates radios for use at Handi-Hams camp

Doug Wynn, KB6YZD

Alinco Electronics donated VHF radios for use at the Handi-Hams Radio Camp, held 3-10 March, at Malibu, California.

The Handi-Hams Radio Camp is dedicated to helping handicapped individuals enjoy the hobby of Amateur Radio. During the camp, instruction is given to participants with the objective of each one passing Amateur Radio licensing examinations, administered at the conclusion of the camp.

"Alinco is proud to assist the Handi-Hams Camp," said Taka Nakayama, AB6VE, vice president of Alinco Electronics, Inc. "Handi-Hams is a wonderful program that opens the world to persons who are not as free as others to move about. Amateur Radio is a way for them to reach out and explore the world."

Alinco provided radios for VHF communications and were used for both voice and data communications.

I believe that Alinco salutes the efforts of the volunteers who instruct the students as well as those who administer the exams. We receive many requests for donations and assistance and we wish we could respond to all in a positive way. Handi-Hams Camp has proven itself to be a very positive program with a successful track record. We're glad to be in a position to assist their efforts.

Persons wishing to support the efforts of Handi-Ham Camps are encouraged to contact the Courage Center, 3915 Golden Valley Road, Golden Valley, MN 55422 or call 612/520-0511. **WR**

Send your news and photos to ***Worldradio!***

Search And Rescue Communications

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

There's nothing quite like a sunny spring day and finishing one or two projects that you've been putting off for several months or years. Some months ago I wrote about "de-junking" our shacks by getting rid of stuff that has collected for years. I want you to know that it works! Over many years I have stashed all kinds of neat stuff in my shack, just in case the time would come that I would need it. In recent weeks I've been sorting through and tossing out large quantities of collected treasures. Not only is it amazing what I found lurking inside boxes, I am actually finishing up projects that had been on hold for years.

Have you ever stashed small lengths of coax for the time you were going to sit and build jumpers? I admit that for about a decade I have stashed coax scraps and salvaged connectors for the time when I could sit and make jumpers. (You know what jumpers are. They are the one- or two- foot coax lengths with PL-259 or BNC connectors on each end. Jumpers are what you need to hook SWR meters into your station and what you can never find when you want to check your SWR!)

Last night I discovered my collection of connectors and coax and spent about 90 minutes building jumpers. My emergency response box now has twelve new jumpers! Some have PL-259s on both ends, some have BNCs on both ends and some have one of each. The extra small lengths of coax got pitched and another project is finished.

A dark stormy night

Why would anyone care about having a bunch of coax jumpers in a response box? If you have ever needed one during a rainstorm with which to connect equipment, you would know! It is quite an undertaking to assemble connectors in rain, snow, wind, in the dark, or away from your soldering station and bench. Having a dozen of them assembled and tested (and of various lengths) is one of those little things that gets you on the air and lets others know you take emergency communications seriously.

It's called finesse. It's called going the extra mile. It's called being prepared. Here's a challenge for you. If I can build jumpers (which I've been wanting to do for years) you can find and complete something you've been meaning to do to become better able to respond in time of need. Take a minute and let me know what you did so we can learn from each other about those little things that "finesse" our readiness.

Value of HF-SSB

Some of us have been known to hang around those strange Amateur Radio bands with names such as "40 Meters," "20 Meters," or "75 Meters." Also known as high frequency, these bands are often neglected or overlooked when we talk emergency service response. Radios on these frequencies once glowed in the dark (they used tubes) and occupied significant space if you attempted mobile operation. Today these rigs are small, compact, and easy to operate from mobile and field stations.

Advantages of HF include long-range contact and station-to-station connection (no repeaters). It is on HF that we work friends overseas or listen to maritime mobile nets. For many years, my understanding of HF was simply "long distance." If I needed to pass a message to a Civil Air Patrol or Amateur Radio operator in a nearby state, I turned to HF. If I needed to contact local stations, the frequency choice was VHF or UHF.

But there was this dead zone — VHF was line-of-sight or repeater-line-of-sight (maybe 100 miles) and HF was 300 miles or more. If I needed to contact a station 150 miles away I had to wait for the right band conditions, or relay through a distant station. A couple of years ago I heard the term "near vertical incident skywave" or NVIS. It caught my eye because it claimed that local HF contact was possible — in other words, no dead (or skip) zone.

Radiation angle

Our usual HF antennas have what engineers call a low angle of radiation. In other words, the signal leaves the antenna kind of aimed at the horizon. Because the ionosphere reflects HF signals, somewhere in the far distance our signal hits this layer and reflects back to the earth. Because of the low radiation angle, the signal may go a thousand miles before it hits the ionosphere and reflects down another thousand miles putting us in contact with a station 2,000 miles away.

What would happen if we aimed our HF signal straight up (a 90-degree angle)? It would hit the ionosphere and then reflect straight down. Picture it this way. Think about a hose with a high pressure nozzle on it. Turn the water on all the way. If you hold the hose at a 30-degree angle, the water will get your neighbor all wet. Now ask your kids to stand next to you and

point the nozzle straight up. The water goes up and then comes down and gets you and your kids all wet. By changing the angle at which you spray the water, you can get various objects at different distances all wet.

This works with HF signals as well. If you aim your signal at an 80-degree angle, you can make contact with stations between 100 and 300 miles. This makes it possible to work stations on the other side of the mountain (where there are no repeaters) or perhaps stations down in canyons.

There are other tricks to NVIS such as proper antenna choice, proper frequency selection, and ensuring the other station is so configured as well. If you sent an NVIS signal over the mountain, the other station has to bounce it back the same way or the signal will skip over you. It's not rocket science, but it takes some planning and preparation. A simple dipole about 15 feet above ground will work pretty well for 40 or 80 Meters. If you mount your HF mobile whip high on your vehicle, you can fold it over and work NVIS while you drive.

Good information

One of the people who literally wrote the book on HF communications and short-haul HF contact is Alan S. "Chris" Christinsin. Chris served as a military communications officer and expert for many years and wrote a number of books and pamphlets for the Air Force Communications Command.

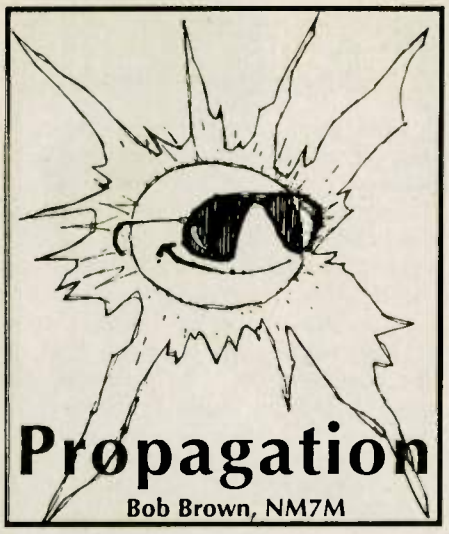
A number of his articles were compiled into a compendium by the AFCC in 1986. This compendium (if you're lucky enough to find one) is a fine addition to any radio library and not only instructs the reader on theory but on how to use HF radio in support of tactical field operations.

In the past couple of years Chris has written two outstanding books on HF communications. Volume one covers NVIS and mobile operations over short path operation and volume two covers short and medium path operation. I have read both of them cover-to-cover and am very impressed with Chris' work. (These volumes contain information contained in the AFCC compendium and Chris has updated the data as well.) I highly recommend it to EVERY emergency communicator. Each volume is $24.95 and $5.00 shipping and handling. You can contact Chris and order these books in care of ACS & Associates, Ltd., 1201 Dawn Drive, Belleville, IL 62220. They do NOT take charge cards, so use your checkbook or send a money order. If you're into HF radio, you will not be disappointed.

I cannot begin to tell you how much I learned about HF in general by reading both books. I must admit that the second volume was my favorite but both are full of theory, design, practical application, and personal wisdom. You can tell that Chris has set up more than a few field mobile stations.

In the past few years several military and Amateur Radio publications have covered NVIS operation and in coming months I'll give you more references if you want to look at other opinions and ideas. Spring is coming and it's an ideal time to get out in good weather and try some different types of HF antennas. Start with a basic half-wave dipole and suspend it horizontally less than a quarter wavelength above ground. That will get you started with NVIS.

Until next month, best wishes from Salt Lake City! Thanks for your comments via e-mail (radar@desnews.com) and regular mail. **WR**



Propagation

Bob Brown, NM7M

"Twinkle, twinkle, little star;" remember that one? I had a hard time getting beyond the second sentence, "How I wonder what you are." But it all came to mind in many ways recently — twinkling, stars, radio, the works — all because of a remark by a friend. But let's take them one at a time.

When it comes to stars, so-called stellar objects, twinkling is familiar to us but to astronomers, it's an unpleasant word, having to do with bad "seeing." And, of course, when it comes to siting large telescopes, "seeing" is a matter of serious concern, even having something like its own industry and competition associated with it.

And when it comes to radio, there's a "twinkling" or scintillation that's associated with radio signals from orbiting satellites which are of interest to us. So let's look at the two cases, poles apart in the electromagnetic spectrum, and see how the two problems resemble each other and yet how they're different.

In the case of light in the visible spectrum, we're talking about wavelengths in the hundreds of nanometers and the twinkling results from light passing through turbulence or density fluctuations in the neutral atmosphere. But when it comes to finding sites for telescopes, more mundane matters come up — the number of clear days, how many are partly cloudy and whether there's a significant amount of dust or haze in the atmosphere. Given those simple ideas, we can all come up with our own list of unsuitable sites. But what about good sites? Hmmm?

Of course, "higher is better," or so it would seem. But then there's the matter of prevailing weather patterns, cloud structures and water vapor above or below a mountain top; those have to be considered too and they came to the fore recently in regard to picking telescope sites in Hawaii. But all those ideas are seasonal, related to weather and the tilt of the earth on its axis.

well as ionized atoms and molecules, neutral in the aggregate but not so individually, and created by radiation in the UV and x-ray range coming down from above.

And with the ionosphere starting up around 60 km altitude, there's no point in putting HF radio installations on mountains. When we come to shorter wavelengths, measured in meters and centimeters in the VHF and UHF regions, it's another story. As for matters like line of sight or not very far over the horizon, that's somebody else's worry so let's move on.

Now stellar and planetary objects are well beyond the earth's atmosphere but optical astronomers would like to obtain sharp images in their

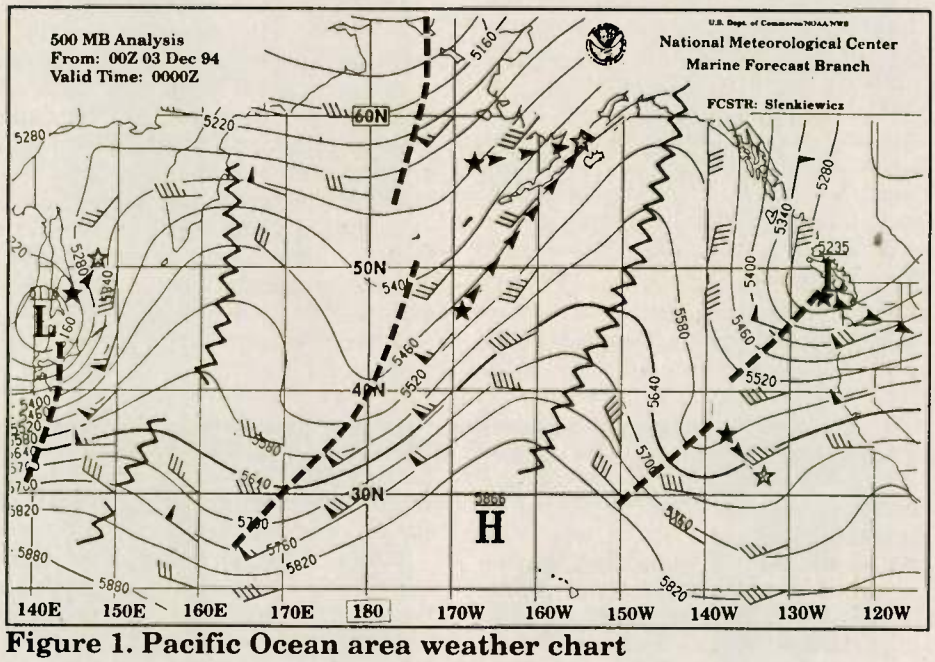


Figure 1. Pacific Ocean area weather chart

There's nothing about solar activity in those discussions because the atmosphere is made up of neutral atoms and molecules and largely heated by infrared radiation coming up from the ground. Not so, when it comes to the ionosphere; there, we're dealing with the region which contains electrons as

records. Exposures vary according to the magnitude of whatever they're looking at and the time-fluctuations in the arrival of photons are of no great concern. More important are the density fluctuations along the line-of-sight which are responsible for changes in refraction or spatial variations of the image location, determining the total size of the image produced by photons from a point source at great distance.

In contrast to that, when listening to space vehicles carrying radio gear, our concerns are less about the physical focus as we're within footprints of large size and so more with the time-fluctuations or scintillations of the signals. The reason, of course, is that signals from space vehicles are transmitting intelligence at some rate while stars are steady sources of radiation. So we have to worry about how the data bits per second from the satellite radio compare with the fre-

quency of signal scintillations. We can bring all this discussion down to simple terms: astronomers are "seeing in space" and we're "hearing in time." Okay?

But our "cloudy days" depend on whether we're listening to transionospheric propagation from a satellite or whether we're hoping that the ionosphere will focus signals from a source below the F-layer peak, at least for a while, on our antenna. In the case of transionospheric propagation, scintillations are a problem at auroral latitudes and in the equatorial regions, the former more sensitive to solar-terrestrial conditions than the latter.

One of the ways to observe effects of ionospheric irregularities on signals passing through the ionosphere from above is to listen to transmitters on HF satellites, like the 29 MHz beacons on Russian RS-10 and RS-12. As they go across the auroral zone at night when magnetic activity is present or as they go across equatorial latitudes, some strange and wondrous sounds are heard. Of course, auroral flutter can be observed in QSOs on the HF bands but with signals from a satellite, one is quite conscious that electrons pouring down the field lines, past satellite altitudes, are responsible for the effects heard.

There may also be ionospheric propagation of satellite signals after they have penetrated the ionosphere and are reflected upward at ground level. In the case of signals from across the polar regions, they may be returned by patches of intense ionization in the polar cap during times of high solar activity, as discussed in connection with RS-12 signals in the September '93 issue of ***Worldradio***.

But the propagation of RS-12 signals across equatorial latitudes is much more common, only depending on the intense ionization in the equatorial ionosphere. That region continues to support transequatorial propagation right through solar minimum and gives rise to satellite signals even after the receiving site is out of the satellite's footprint. In both cases, whatever features are impressed on signals by irregularities above the F-region peak, they remain after ionospheric propagation and may be heard from great distances, not just when the satellite is above the local horizon.

While the effects of ionospheric irregularities may be evident for HF paths wholly within the ionosphere and density changes may affect "seeing" here on the earth, the two circumstances differ in one important aspect: radio paths from point A to point B are not always unique while optical paths are. In the ionospheric case, refracting region has its greatest electron density at high altitudes and that often admits the possibility of multiple paths or modes for signal propagation from point A to point B, say 1F-, 2F-hops, etc. That is not the case for visible light as the density of the refracting medium, air, is greatest at ground level and decreases upward. Thus, multiple paths for light are rare, only found in unusual circumstances (mirages).

But multiple paths connecting point A to point B means that one signal, say a dot sent out on CW, will result in more than one signal at the receiver. At slow signal rates, as with CW, that is not much of a problem but at high signal rates, say with RTTY, delayed signals from higher modes of propagation can cause confusion in the conversion of RTTY signals, marks or spaces, and give garbled transmissions.

To get a feeling for the problem, note that signal rates are expressed in baud or data bits per second. Thus, 100 baud corresponds to 100 bits per second or 0.010 second per data sample. If one goes to 300 baud, as used in HF packet, data pulses come every 3.3 msec and that means if multipathing exists, signals from higher modes which intrude in the data stream, say with 1-2 msec delay, might then corrupt the translation of data bits into text at the output.

While HF pulses travel at less than the speed of light, that value may be used to get a feeling for the magnitude of the difference in path length between modes which could delay signals, say by a millisecond. That works out to be about 300 km or about 5% of the length of a 2F-hop. So multipath signals could have an adverse effect at 300 baud, making for many retries on HF packet. But for the same

path, AMTOR at 100 baud would be more reliable and RTTY at 45 baud would suffer less from multipathing (but still be vulnerable to QSB and QRN).

Those modes make up what is termed "digital radio" on the amateur bands, discrete signal pulses generated at the transmitter and then subject to the effects of HF propagation in transmitting text from one point to another. But there's another type of transmission, images instead of text, using analog rather than digital methods. One of the earliest modes of that type was with facsimile transmission. There, an object or document is scanned with a small spot of light, line by line, and the intensity of reflected light is converted into a voltage; that voltage is used to modulate an audio oscillator whose signal is then radiated by a HF transmitter.

At this point, I have to pause and bring in the friend who got me involved in this discussion. His interest was on the effects of HF propagation on weather facsimile transmissions (WEFAX) to mariners. Obviously, propagation conditions, as affected by low sunspot numbers or magnetic storms, would be important and I wrote an article in that regard for NOAA's "Mariners Weather Log." The emphasis there was that going toward solar minimum had the effect of lowering the frequencies which could be used for successful WEFAX recording of weather charts, as that for the Pacific Ocean area in Figure 1, transmitted by the U.S. Coast Guard.

But WEFAX transmissions are not just of interest to professional mariners; here in the Northwest, there is an extensive community of boaters, and a number of them are amateur operators who cruise in the Pacific Ocean area. All you have to do to convince yourself of that is listen to the Boater's Net on 14.313 MHz in the evening. And with the rapid development of laptop computers and introduction of AEA's FAX III module, it is well within the reach of boaters to monitor weather conditions with WEFAX while at sea, even beyond the range of VHF radio.

But those are analog transmissions, reflected light from a scanner converted into a voltage in a continuous manner. Then the voltage is used to frequency-modulate an audio oscillator, from 1,500 Hz for black to 2,300 Hz for white and shades of gray in between. But for WEFAX charts, as in Figure 1, the frequency shift is between the extremes for black lines on the chart and white spaces in between. The duration of modulation at the audio frequencies depends on the extent of the color region involved and the varying audio frequency (of constant amplitude) is used to modulate the HF transmitter in the USB mode.

Here in the Northwest, one of the principal WEFAX stations is NMC at Point Reyes, just north of San Francisco. NMC broadcasts on five different frequencies — 4,346 kHz, 8,682 kHz, 12,730 kHz, 17,151 kHz and 22,528.9 kHz — with the lowest frequency transmissions limited to night and the highest frequency to daytime. Amateur Radio operators with HF experience would readily appreciate why the day- and nighttime limitations and now during the last stages of solar minimum, they would understand why the higher frequencies would be less in use.

All three signals were strong (S9) on a one-hop path.

Earlier, the point was made that multipath effects disturb the reception of digital transmissions. What about analog transmissions, as in the case of WEFAX; would there be multipath effects too? The answer is in the affirmative but in an interesting way. In particular, with WEFAX the conversion of signals from analog to digital form is at the receiver instead of the transmitter. But any multipath delay in reception of the audio signal, say for a feature of the chart being scanned, would result in the appearance of a signal at a point later in time than from the lowest propagation mode. Thus, delayed analog voltages from the transmitter may be converted to a delayed digital voltage from the receiver and result in pixels on the computer screen which are displaced later.

An illustration of those effects was given by Jacques d'Avignon, VE3VIA, in the January '95 issue of *QEX*. In that article, he showed a WEFAX record taken from the Canadian station CFH when received on three different frequencies — 4.271 MHz, 6.496 and 10.536 MHz. All three signals were strong (S9) on a one-hop path. But when different frequencies were used, one after the other, the poorest quality was at the lowest frequency where multipath effects and absorption were quite pronounced. The best quality was at the highest frequency for which higher propagation modes were not possible.

The addition of multipath effects is one more matter of concern when it comes to successful communication on the HF bands. First, there is the question whether the ionosphere supports propagation on the frequency in question, matters dealing with FOT, MUF and HPF. Added to that is the question of signal strength relative to noise, SSB communication requiring S/N ratios the order of 50 dB (relative to noise in 1 Hz bandwidth).

But for RTTY and WEFAX reception, multi-path considerations mean that given a choice of frequencies which will meet those levels of S/N, the higher frequency should be chosen so as to minimize the possibility of multipath interference from the higher propagation modes. But there is a limit to consider for WEFAX as transmissions last the order of 15-20 minutes. Thus, signal stability or fading may force a trade-off between some effects of multipathing and obtaining a complete record of the image.

These ideas may seem complex but sailing is a serious business, whether by amateurs or professionals, and not to be taken lightly. So if an aid like WEFAX is within the grasp of a mariner, the effort required to master it is worth the time that's required. Put it another way, you and I can always turn off the rig and walk out of the shack if things aren't going our way; sailing is "for keeps" and that luxury is not available to someone at sea. **WR**

Visit Your Local RADIO CLUB

ALASKA

South Central Radio Club. 8023 E. 11th Ct., Anchorage, AK. Meets 2nd Fri./monthly, 7 p.m., UAA Business Ed. Bldg., Rm. 220. KL7CC, (907) 338-0662 for info. Club rptr: KL7CC/R 146.97(-) PL 103.5 Hz. 2/97

ARIZONA

Arizona Repeater Association. P.O. Box 35758, Phoenix, AZ 85069-5758. Operates 20 VHF & UHF rptrs. in AZ. Meets 4th Thurs./monthly, 7:30 p.m., 1515 E. Osborne, Phoenix. Info: (602) 631-4879. 9/96

Cochise Amateur Radio Assn., (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. WA7KYT/R 146.76(-) rptr. 5/97

Old Pueblo Radio Club, (OPRC). P.O. Box 42601, Tucson, AZ 85733. Meets 2nd Wed./monthly, 7:15 p.m., Northwest Neighborhood Center, 2160 N. 6th Ave. (South of Grant). 2/97

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. Meets 2nd Sat./monthly, 7:15 p.m., Dept. of Emergency Mgmt., 130 W. Congress. Net Thurs. 7:30 p.m. 146.82(-), 146.88(-), 147.08(+), 448.550(-) & 145.15 Packet. 3/97

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(-). 5/97

Amateur Radio Club of Anderson, (ARCA). Meets 2nd Thurs./monthly, 7:30 p.m. Amer. Legion Post #746, 1709 Bruce Dr., Anderson, CA. Net every Tue., 7:30 p.m. on 146.64. 4/97

Clovis Amateur Radio Pioneers, (CARP). P.O. Box 514, Clovis, CA 93613. Meets 1st Fri./monthly, 7:30 p.m., Clovis Sr. Cntr., 840 4th St. Info: (209) 298-7707, KE6TCY 147.675(-) PL 141.3 net Thur. 7 p.m. ARRL SSC 3/97

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. 1/97

Downey Amateur Radio Club Inc., W6TOI. Meets 1st Thurs./monthly, 7:30 p.m., So. Middle Sch. cafetorium, 12500 S. Birchdale, Downey, CA. (Summer exception: contact Doug, N6WZI, (310) 929-1441). VHF net W6GNS rptr. 146.175(+) Thurs., 7:30 p.m. 5/96

East Bay Amateur Radio Club, Inc. Meets 2nd Fri./monthly, 7:30 p.m., Albany Sr. Cntr., 846 Masonic Ave., Albany, CA. Info: S. Primbsch, (510) 741-8227. 145.110 MHz. 6/96

Fresno Amateur Radio Club. Meets 2nd Fri./monthly, 7:30 p.m., Ernie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-). 11/96

Fullerton Radio Club, Inc., W6ULI. P.O. Box 545, Fullerton, CA 92632. Meets: 3rd Wed./monthly, 7:30 p.m., Sr. Citizens Ctr., 340 W. Commonwealth, Fullerton. Net ea. Tue., 8 p.m. 147.975(-). Info: Bob Hastings, K6PHE (714) 990-9203. 6/96

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.85(-). Meets: 3rd Fri./monthly, 8 p.m. at 1528 Esplanade, Rm. 110B, Chico. 9/96

Golden Triangle ARC, (GTARC). Meets 4th Mon./monthly, 7:30 p.m., Sharp Health Care Activities Rm., 25500 Med. Ctr. Dr., Murrieta, CA 92562. 6/96

Livermore Amateur Radio Klub, (LARK). Meets 3rd Sat./monthly, 9:30 a.m., City Council Chamber, 3575 Pacific Ave., Livermore, CA. Net Mon. 1900 on 147.12(+). For info: LARK Secretary, P.O. Box 3190, Livermore, CA 94551-3190. (510) 846-6513. 12/96

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. 8/96

Motorcycling Amateur Radio Club. Meets 2nd Sat./monthly, 8 a.m., Lake View Cafe, 2099 E. Orangethorpe, Placentia, CA, at 91 Fwy/Lakeview. Info: Ray Davis, KD6FHN, (714) 551-2010 or (714) 551-1036. 2/97

Mount Diablo Amateur Radio Club. P.O. Box 23222, Pleasant Hill, CA 94523. Meets 3rd Fri./monthly, 8 p.m., Our Savior's Lutheran Church, 1035 Carol Ln., Lafayette, CA. Net Thurs. 7:30 p.m. on 147.06(+) 100Hz PL. Info: (510) 932-6125. 6/96

North Hills Radio Club. P.O. Box 41635, Sacramento, CA 95841-0635. Meets 3rd Tue./monthly, 7:30 p.m., Carmichael Elks Lodge, 5631 Cypress, Carmichael, CA. Nets Tue., Wed., Thur., 145.190(-)(162.2) and 224.400(-). Poc. Tim Lewis, KD6FWD, (916) 722-7037. 3/97

North Shores ARC. Meets 1st Tues./monthly, 7:30 p.m., So. Clairemont Rec. Cntr., 3605 Clairemont Dr., San Diego, CA. Info: (619) 274-8468. 9/96

Orange County Amateur Radio Club. Meets 3rd Fri./monthly, 7:30 p.m., Orange County Red Cross, 601 N. Golden Circle, Santa Ana, CA. 146.550. Contact Bob Buss, KD6BWH, (714) 534-2995. 1/97

Palos Verdes ARC. Meets 3rd Wed./monthly, 7:30 p.m., Community Rm., "Shops at Palos Verdes," 550 Deep Valley Dr., Rolling Hills Estates, CA. Info. Herb Clarkson, KM6DD, (310) 377-6342. Rptr. 145.38(-) PL 100. 11/96

River City A.R.C.S. Meets 1st Tues./monthly, 7 p.m., SMUD Bldg., Don Julio at Elkhorn, Sacramento, CA. License classes offered. For info contact Lyle, AA6DJ, (916) 483-3293. 9/96

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. & Stockton Blvd., Sacramento, CA. Info net at noon on rptr. W6AKR 146.91(-). Steve Cates, KC6TEV, (916) 391-7341 or Les Ballinger, WA6EQQ, (916) 393-4775. 10/96

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. 10/96

San Gabriel Valley Radio Club, Inc. P.O. Box 88, Monrovia, CA 91017-0088. Meets 1st Tue./monthly, 7:00 p.m., Arcadia County Park, 405 So. Santa Anita Ave., Arcadia, CA. 147.765(-) PL 131.8. Info: (818) 285-9281. 12/96

Shasta Cascade Amateur Radio Society, (SCARS). 2124 Airstrip Rd., Redding, CA 96003. Meets: 3rd Wed./monthly, 7 p.m. at the C.D.F. Conf. Rm. Grape St., near Parkview Ave., Redding, CA. Net 146.64, Wed., 8 p.m. 7/96

Sierra Foothills ARC. P.O. 3262, Auburn, CA 95604. Meets 2nd Fri./monthly, 7:30 p.m., Firehouse, 226 Sacramento St. Auburn. 28.415, 2/220m, Thurs. 7:30 p.m., 145.430(-) (PL 94.8) & 223.86(-). 3/97

Simi Settlers Amateur Radio Club (SSARC). P.O. Box 3035, Simi Valley, CA 93093. Meets 2nd Thurs./monthly (except Dec.), 7:30 p.m., Seventh Day Adventist Church Hospitality Rm., 1636 Sinaloa St., Simi Valley. Contact Ron, KD6VLM, (805) 584-6737, 147.930(-) (PL 127.3). 11/96

Siskiyou County Amateur Radio Assoc. Meets 1st Sat./monthly, 10 a.m., rotates between Bob's Ranch House in Etna, CA and The Tree House in Mt. Shasta. For info: Al, WA6IHK, (916) 467-3255. 10/96

So. Sierra ARS. Meets 2nd Thurs./monthly, 7:30 p.m., Veteran's Hall, 125 East F St., Tehachapi, CA. Contact: Caroline, KD6KMN, (805) 822-5995. 147.06/224.42. 12/96

South Bay ARC. P.O. Box 536, Torrance, CA 90508. Meets 3rd Thurs./monthly, 7:30 p.m., Torrance Memorial Hosp., 3330 Lomita Blvd., Torrance, CA. Talk-in on WB6MYD rpt. 244.38(-). Info: (310) 328-0817. 7/96

Southern California Six Meter Club. P.O. Box 10441, Fullerton, CA 92635. USB Net Tue., 8 p.m., 50.150. FM Rpt. Net Thurs., 8 p.m., 52.86/52.36 tx. FM Smplx, call freq. 50.300. Net Sun., 10 a.m. 50.40. 4/97

Southern Humbolt ARC, (SHARC). Meets 4th Tues./monthly, 7 p.m., Best Western Humboldt House Inn, Garberville, CA. Talk-in on 146.19/.79 4/97

Stanislaus Amateur Radio Assoc., Inc. (SARA). P.O. Box 4601, Modesto, CA 95352. Meets 3rd Tues./monthly, 7:30 p.m., Stanislaus Co. Admin Bldg. 145.39(-) (PL 136.5), 224.14, 440.225 (PL 136.5). 3/97

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. 11/96

Trinity Country ARC. P.O. Box 2283, Weaverville, CA 96093. Meets 2nd Wed./monthly, CD Hall in Weaverville, 7:30 p.m., Rptrs: WA6BXN 146.73(-) PL 85.4, W6HOR 146.925(-) PL 85.4. 10/96

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. 6/96

Vaca Valley Radio Club. Meets 2nd Wed./monthly, 7 p.m., Vaca Fire Dist. Stn., Vine St. in Vacaville, CA. Rptr. WD6BUS 145.47(-) PL 127.3. Dan Bissell (707) 446-7411. 5/96

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets 2nd Tues./monthly, 7:00 p.m., Victor Valley Museum, 11873 Apple Valley Rd., Apple Valley, CA. Talk-in 146.94(-), PL 91.5. Net Sun. 7 p.m. 146.94(-). 12/96

West Coast Amateur Radio Club, (WCARC). P.O. Box 2617, Costa Mesa, CA 92628. Meets 3rd Thurs./monthly, 7 p.m., Fountain Valley Sch. Dist. office, 17210 Oak St., Fountain Valley, CA. 145.440(-) PL 136.5. For info: Joe, KA6LPZ, (714) 963-4426. 9/96

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. 5/96

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(-). 10/96

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. 7/96

Yolo Amateur Radio Society. Meets 1st Tues./monthly, 7:30 p.m., Training Rm. of the Davis PD, 226 F St., Davis, CA. Contact Dave Nishikawa, KC6YFG, (916) 756-6375/Talk-in 144.430. 10/96

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. 12/96

CONNECTICUT

Middlesex A.R.S., (W1EDH). Meets Tuesdays, 7 p.m., Adult Day Care Cntr., 32 Miner St., Middletown, CT. VE classes/exams; ARRL Service Club. Ctc: M. Harper, W1FYM (860) 633-6295, P.O. Box 5, S. Glastonbury, CT 06073. 3/97

FLORIDA

Gulf Coast ARC. P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., 3852 Prime Place, New Port Richey. WA4GDN rptrs. 146.67(-) & 145.33(-), serving all of Pasco County. 8/96

Indian River ARC, Inc., (IRARC). 597 Capri Rd., Cocoa Beach, FL 32931-3011. Meets 1st Thurs./monthly, 7:30 p.m., Community Church of the Nazarene, 400 Crockett Blvd., Merritt Island, FL. 3/97

Port St. Lucie ARA. Meets 1st Fri./monthly, 7:30 p.m., St. Andrews Church, Prima Vista Blvd., Port St. Lucie, FL. Contact: Roy Cox, KE4QJG, (407) 340-4319. Call in 146.955(-). 9/96

Saint Petersburg Amateur Radio Club. Meets 1st Fri./monthly, 7:30 p.m., Red Cross Bldg., 818 Fourth St. North, St. Petersburg, FL. Nightly net 6:30 p.m., 147.06(+). Rptrs. 147.06(+), 224.66(-), 444.475(+). Info: C. Wagner, KE4EYI, (813) 894-2393. 1/97

South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tue./monthly, 7 p.m., Public Library, 540 Fee Ave., Melbourne, FL. 6/97

Vero Beach ARC, W4OT. P.O. Box 2082, Vero Beach, FL 32961. Meets 2nd Thurs./monthly, 8 p.m., Emerg. Mgmt., Indian River County Adm. Bldg., 1840 25th St. Net Mon., 7:30 p.m. 146.64. 12/96

GEORGIA

Dalton Amateur Radio Club, Inc., (DARC). P.O. Box 143, Dalton, GA 30722-0143. Meets 4th Mon./monthly, 7:30 p.m., Magistrate Court Bldg., corner of Waugh St. & Thornton Ave., Dalton, GA. Info: Harold Jones, N4OTC, 706/673-2291. 3/97

HAWAII

Emergency Amateur Radio Club, (EARC). P.O. Box 30315, Honolulu, HI 96820-0315. Meets 4th Thurs./monthly, 7 p.m., Lincoln Elem. Sch., 615 Auwaiolimu, Honolulu. Nets: nightly 7:30 p.m., 146.88 & 146.80. Rptrs: 146.76(-), 146.80(-), 146.88, 146.98(-), 146.94(-). Info: (808) 595-6245. 7/96

Koolau Amateur Radio Club, (KARC). 45-145 Mikihilina St., Kaneohe, HI 96744. Meets 2nd Sat./monthly, 9:30 a.m., Hoomaluhia Pk., Kaneohe, HI 4/97

ILLINOIS

Chicago FM Club Inc., (CFMC). P.O. Box 1532, Evanston, IL 60204. 146.76(-)(PL 107.2)/224.10/224.18/443.75 (PL 114.8). Ham help line: (312) 262-6773. Info net Tues., 9 p.m. on 146.76(-). Meets 3rd Wed./monthly, 8 p.m. 6/96

CHI-NET Amateur Radio Club. North & Northwest Chicagoland & Suburbs. Specializing in PACKET Radio and 220 Phone to further the fulfillment of Amateur Radio. Meets last Thurs./even mos. Info: (708) 307-8198 or Packet on 144.99 MHz or Voice on 224.24 MHz. 11/96

Dupage Amateur Radio Club. (DARC). P.O. Box 71, Clarendon Hills, IL 60514. Meets 4th Mon./monthly, 7:30 p.m., Holy Trinity Church, SE corner of Cass & Richmond, Westmont, IL. Net Sun., 9 p.m. on 145.25. W9DUP repeaters 145.25(-) (107.2PL), 442.55(+)(114.8PL), 224.68(-). 11/96

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. 6/96

Hamfesters Radio Club, W9AA. P.O. Box 42792, Evergreen Park, IL 60805. Meets 1st Fri./monthly, 8 p.m., Crestwood Civ. Ctr., 139th & Kostner, Crestwood, IL. Nets: Sun. (local) 0100 UTC, 28.410 MHz; Mon. 9 p.m. 146.43 S., Packet Mailbox 145.65 MHz. Info: (312) 974-3291. 1/97

Peoria Area Amateur Radio Club, (PAARC). Meets 2nd Fri./monthly, 7 p.m., 1401 N. Knoxville Ave. Info: (309) 685-6698. Rptrs: 146.85(-) & 147.075(+). 5/96

The Starved Rock Radio Club, W9MKS. P.O. Box 198, Tabor St., Leonore, IL 61332. Meets 1st Mon./monthly, 7:30 p.m. Rptr. net 7 p.m. Wed./wkly., 147.12(+). 11/96

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(-). 6/96

IOWA

Sooland Amateur Radio Assoc., (SARA). Meets 3rd Tues./monthly, 7:30 p.m., American Red Cross Bldg., 1512 Pierce St., Sioux City, IA. Contact: Glenn Holder, KØTFT. (712) 239-1749. Call-in 146.97(-). 11/96

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7:00 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME. 11/96

MASSACHUSETTS

Quannapowitt Radio Assoc., Inc. 6 Savin St., Burlington, MA 01803. Meets 4th Fr./monthly, 8:00 p.m., (May & Nov. meets 3rd Fr.), at Lynnfield-Wakefield Methodist Church, Wakefield. Info: Jim Chamberlain, N1AKG, (617) 944-5098. 1/97

Wellesley Amateur Radio Soc., & Babson Wireless Club. Meets 1st & 3rd Thurs./monthly, 7:30 p.m., Tomasso Hall, Babson College Forest St., Wellesley, MA (Sept.- June) Talk-in 147.03(+). Info: J. Driscoll, NV1T, (617)444-2686. 12/96

MICHIGAN

Adrian Amateur Radio Club, W8TQE. Box 26, Adrian, MI 49221. Meets 1st Fri./monthly, 8 p.m., Civil Air Patrol Bldg., Lenawee Co. Airport, Cadmus Rd., Adrian. ARES net Sun., 9 p.m. 145.37(-). Info: Tom Parsons, N8QEW, (517) 263-5568. 3/97

Chelsea Amateur Radio Club, Inc. Meets 4th Tue./monthly, 7 p.m., Society Bank, 1478 Chelsea-Manchester Rd., Chelsea, MI 48118. 12/96

Eastern Michigan Amateur Radio Club, (EMARC). Meets 1st Tue./monthly, 8:30 p.m., Woodland Developmental Cntr., Kimball Township (Range @ Smiths Creek Rd.). Contact Frank Forsyth, N8XTO, (810) 987-3540. Talk-in: 147.30(+). 9/96

Edison Radio Amateurs Assoc. Meets 2nd Fri./monthly (Sept.-June), 7 p.m., Edison Western Wayne Div. HQ, 8001 Haggerty, Belleville, MI (So. of Ecorse Rd.). Net each Thurs., 8 p.m. on 145.33(-) and 442.80(+) rptrs. 3/97

Genesee County Radio Club, Inc. Meets 3rd Tues./monthly, 7:30 p.m., Genesee Area Skill Center, Torrey Rd., Flint, MI. (810) 634-6077. 2/97

MISSISSIPPI

Jackson Amateur Radio Club, Inc. Meets 3rd Thurs./monthly, 7 p.m., Am. Red Cross Bldg., Riverside Dr., Jackson, MS 39202. 10/96

MISSOURI

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. 2/97

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 2nd Sat./monthly, bkfst. 8 a.m. & mtg. 8:30 a.m., Country Inn, SE cor. W. Sunset, Valley Verde. Club info: Jim Frye, NW7O, (702) 456-5396 or Leona Wallace, WA6OHB, (702) 247-6450. 7/96

Wide Area Data Group, Inc. P.O. Box 3132, Sparks, NV 89432. Meets 1st Sat./monthly, 9 a.m., Jack's of Reno, 5485 Equity Ave., Reno. Info: (702) 356-8200. Call in on 147.30(+) MHz. 5/96

Sierra Intermountain Emergency Radio Assoc., (SIERA). Meets 2nd Tues./monthly, 7:30 p.m., Douglas County Lib., Minden. Contact: George Uebele, WW7E, (702) 265-4278, 147.330. 11/96

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. 11/96

NEW JERSEY

10-70 Repeater Assn., Inc. 235 Van Emburgh Ave., Ridgewood, NJ 07450. Meets 1st Wed./monthly (except July & Aug.), 8 p.m., VFW, Valley Rd., Clifton, NJ. Rptrs.: 146.70(-), 224.84(-), 444.15(+). 10/96

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. 5/96

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. 8/96

NEW YORK

Amateur Radio Assoc. of the Tonawandas, (ARATS). P.O. Box 430, No. Tonawanda, NY 14120. Meets 3rd Tues./monthly (except July & Aug.), 7:30 p.m., Sweeney Hose Co., 499 Zimmerman St., No. Tonawanda, NY. Talk-in: 146.955(-)rptr. W2PVL. 10/96

Genesee Radio Amateurs, (GRAM). N.Y.S. Civil Defense Ctr., State St., Batavia, NY 14020. Meets 3rd Fri./monthly, 7:30 p.m. 147.285(+) W2RCX. 12/96

Hall of Science Amateur Radio Club. P.O. Box 131, Jamaica, NY 11415. HOSARC, 2nd Tue./monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park, 7:30 p.m. Info: Arnie, WB2YXB, (718) 343-0172. 2/97

Orleans County Amateur Radio Club, (WA2DQL). Meets at Emergency Management Office, West County House Rd., Albion, NY 14411, 2nd Mon./monthly, 7:30 p.m. 145.27(-) — WA2DQL. 12/96

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. 3/97

The Radio Club of J.H.S. 22, N.Y.C., Inc. WB2JKJ. P.O. Box 1052, New York, NY 10002. 24-hr. hotline: (516) 674-4072. Fax: (516) 674-9600. Non-profit org. using Ham Radio to enhance the education of youngsters, nationwide. Join us — "Classroom Net", 7.238 MHz, 7 a.m. E.S.T. PSE QSL! 9/96

Suffolk County Radio Club, (SCRC). Meets 3rd Tues./monthly, 8 p.m., Bohemia Rec. Ctr., Ruzicka Way, Bohemia, NY. Talk-in: 145.21(-) rpt. Morten Eriksen, KA2UIU, (516) 929-6911. 4/97

Westchester Amateur Radio Assoc., (WARA). Meets 1st Wed./monthly, 7:30 p.m., Am. Red Cross Bldg., 106 N. Bway, White Plains, NY. Club net: 145.495(-) rpt. Tues., 7:30 p.m. Info: Dan Grabel, N2FLR, (914) 723-8625. 2/97

Westchester Emergency Comm. Assoc., (WECA). Meets 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains, NY. Contact WB2VUK (914) 631-7424 or WECA INFO LINE (914) 741-6606 for details. Talk-in WB2ZII/R 147.06(+) PL 114.8/2A. 10/96

Yonkers Amateur Radio Club, (YARC). Meets 2nd Sun./monthly, 10 a.m., 1st Pct., Yonkers Police Station, E. Grassy Sprain Rd., Yonkers, NY. Info: P.O. Box 378, Centuck Sta., Yonkers, NY 10710. (914) 963-1021. 146.865(-), 440.15(+). 10/96

NORTH CAROLINA

Stanly County Amateur Radio Club. P.O. Box 188, Stanfield, N.C. 28163. Meets 4th Thurs./monthly, 7 p.m. at Stanly Community College, Albemarle, NC. 5/96

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(-). 9/96

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly, 7 p.m., Municipal Bldg., Clyde, OH 43410. NF8E rptr. 145.35(-) and 442.625(+) MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS. 3/97

Firelands Area Rptr. Assn., (FARA). Meets 4th Tue./monthly, 7 p.m., Erie County Admin. Bldg., Sandusky, OH. WB8LLY rptr. 146.805(-). Net Sundays, 8 p.m. Info: FARA, P.O. Box 442, Huron, OH 44839. 11/96

Greater Cincinnati Amateur Radio Assn., (GCARA). Meets 4th Wed./monthly, 7:45 p.m., Cincinnati Museum of Nat. History, 1720 Gilbert Ave. Amateur Radio Station W8DZ. Info: WA8STX or (513) 563-7373. 11/96

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 147.03(+) rptr. BBS 145.53. 8/96

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. 10/96

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: Brenda, KB8IUP, 866-5928. 11/96

Van Wert Amateur Radio Club, Inc. P.O. Box 602, 1220 Lincoln Hwy., Van Wert, OH 45891. Meets 1st & 3rd Sat./monthly, 8 p.m. Call-in: 146.85(-). 2/97

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. 6/96

Keno Amateur Radio Club. P.O. Box 653, Keno, OR 97627. Meets 3rd Thurs./monthly, 7 p.m., Keno Fire Stn. Rptr. 147.32(+) W7UFM. Info: Tom Hamilton, WD6EAW, (503) 883-2736. 11/96

Central Oregon Coast ARC. 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 997-4074. 1/97

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Courthouse, Rm. 310, Roseburg, OR. Info: W5PII/R 146.90(-) or (503) 673-1310. 6/96

Valley Radio Club of Oregon. Meets 1st Fri./monthly, 7:00 p.m., Lane County Red Cross chapter house in Eugene. Info: (541) 683-0987 or write: VRC, c/o 159 E. 16th Ave., Eugene, OR 97401. 12/96

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787, Butler, PA 16001-1787. Meets 1st Tues./monthly, 7:30 p.m., Boy Scout Cntr., 830 Morton Rd., Butler, PA. Call-in W3UDX/R 147.36(+). Net 10:10 p.m. nightly. 10/96

Mercer County Amateur Radio Club, W3LIF. P.O. Box 996, Sharon, PA 16146. Meets 4th Tue./monthly, 7:30 p.m., Shenango Valley Med. Ctr, Farrell, PA. Net, Thurs. 9 p.m. on 145.35(-) W3LIF, Digi. 145.01. 3/97

Mid-Atlantic ARC. Box 352, Villanova, PA 19085. Meets 3rd Thurs./monthly, 8:00 p.m., Radnor Mem. Libraray, Wayne, PA. Call Bob Haase, W3SA, (610) 293-1919. 147.06(+) WB3JOE PBBS 145.09. 1/97

RHODE ISLAND

South Coast Wireless Society. P.O. Box 1516, Westerly, RI 02891. Meets 4th Tue./monthly, 7:00 p.m., Pawcatuck Neighborhood Center. Info: Dean, N1SXL, (401) 539-0775. 6/96

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. 7/96

Brownsville ARC (CHARRO). Meets 2nd Tue./monthly, 7:00 p.m., Confederate Air Force Hangar, Brownsville Airport in TX. Talk-in on 147.040(+). 12/96

VIRGINIA

Southern Peninsula Amateur Radio Klub, (SPARK). Meets 1st Tue./monthly Salvation Army Community Bldg., Hampton, VA. Repeaters 146.73(-), 449.55(-). VE Exam Info: (804) 898-8031, W4RTZ. 2/97

Virginia Beach ARC. Meets 1st Thurs./monthly (except July), 7:30 p.m., St. Andrews United Methodist Church, Tucson & Princess Anne Rds., Virginia Beach, VA 23462. 2/97

WASHINGTON

The Mike & Key Amateur Radio Club. Meets 3rd Sat./monthly, 10 a.m., Salvation Army Renton HQ., 720 Tobin St., Renton, WA. Talk-in on 146.82(-) rptr. Doors open at 9:30 a.m. 5/96

Skyvalley Amateur Radio Club, KC7LOC. Meets 3rd Sat./monthly, 8 a.m., Dutch Cup restaurant off Rt. 2 in Sultan, WA. Info: (360) 793-3433. 4/97

WEST VIRGINIA

Jackson County Amateur Radio Club. Meets 1st Thurs./monthly, 7:30 p.m., United Nat'l Bank of Ripley. Net Mon. 9 p.m. on 146.67(-) WD8JNU/R. For info: D. Tenant, N8ZYB, Rt. 1, Box 317, Cottageville, WV 25239. 6/96

Tri-State Amateur Radio Assn. Meets 3rd Tues./monthly, 7 p.m., The American Red Cross, 111 Veteran's Memorial Blvd., Huntington, WV. 5/96

WYOMING

Sheridan Radio Amateur League, 146.82. P.O. Box 7042, 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. 7/96

The Youth Forum

Sammy Garrett, AAØCR
#8 Willow Ct., Florissant, MO 63031

In 1993 when former "Youth Forum" columnist Travis Wise, KB8FOU, called me and told me of his plans to leave ***Worldradio*** for other activities, I was surprised, to say the least. When former editor Robin Wortley called to ask if I would be interested in taking over the column, I was somewhere between surprised and elated. I'd been trying to get a column in a major magazine for over two years, and I could hardly believe that my opportunity had finally arrived.

The last three years have been a wonderful time for me. Writing "The Youth Forum" has probably taught me more about writing (and Amateur Radio) than any other experience. I've also learned a lot about myself. As I near the end of high school, however, I am forced, (not really against my own will) to prepare to move on to new experiences and opportunities. With some regret, some relief, and countless good memories, ***Worldradio*** editor Lou Ann Keogh, KB6HP, and I have agreed that it is best for me not to be "tied down" with "The Youth Forum" when I begin college at American University in the fall.

Although this was in some ways a difficult decision for me, I know it is the best decision for the magazine, the readers, and most of all for me.

Fortunately, I'll still be around for a few more issues. However, KB6HP and I have begun to seriously put our heads together in search of a new columnist. To that end, we look to you.

Before volunteering for this illustrious assignment, there are a few things which should be kept in mind. First and foremost, "The Youth Forum" is a column for young amateurs (and prospective young amateurs) and should be written by a young amateur — not his/her parents. Although there is no specific age requirement, a teenager willing to devote a year or more would probably be best suited for the job.

While writing "The Youth Forum" is an outstanding opportunity, it is also a serious responsibility.

Obviously, a fairly broad knowledge of the amateur service and the interests of young people are prerequisites. This does not mean that one has to attend all the hamfests or know the "insiders." In fact, many of my columns consist of anecdotes and opinion. However, reporting current happenings and providing a forum for news is always important. Above all, an aspiring columnist must have an open mind and be willing to learn. Basically, with some imagination and insight, "The Youth Forum" can become what the columnist and the readers wish it to be.

One does not need to be an outstanding writer, but a strong knowledge of English and some experience in writing and access to a computer is necessary. Again, a willingness to practice, improve, and receive occasional criticism and to accept some editing is also necessary.

While writing "The Youth Forum" is an outstanding opportunity, it is also a serious responsibility. "The Youth Forum" runs bi-monthly. Column lengths vary, but should be at least several hundred words. Most of my columns average between 1,000 and 2,000 words. Observing deadlines and submitting timely information is essential. Bear in mind, writing a column such as this every other month is no small task. For me, writing and editing each column usually takes at least a few hours.

The real work, however, is finding fresh information and story ideas every few weeks. Phone calls must be made, interviews conducted, mail read, criticism received — not to mention hours of wracking my brain trying to figure out how to finish a feature story or news item, or even what to write about. In short, every hour of writing truly requires at least two hours of background work, thought, and preparation.

All this undoubtedly sounds like a massive undertaking, which it probably will be the first time. However, the process quickly gets easier, and yes, even enjoyable. So if you're interested in continuing "The Youth Forum," let us know. Letters describing your background in Amateur Radio and writing, along with any writing samples you wish to include should be sent to me at the address above or to Lou Ann Keogh, KB6HP at ***Worldradio*** (or both). In your letter, please note any future commitments which would limit your availability, as well as any ideas for improving the column. Please submit your materials as soon as possible! Questions may also be directed to these addresses. Remember, expressing an interest will not create an obligation on your part.

The success of this column depends on its readers. The enjoyment of the readers depends on a good author. "The Youth Forum" will continue to provide a valuable service the Amateur Radio community, but only of the right person gets involved. That person just might be you. **WR**

County Hunter

Ace Jansen, N3AHA
42857 Hollywood Park Place • Ashburn, VA 22011
e-mail or internet: sjansen@aol.com

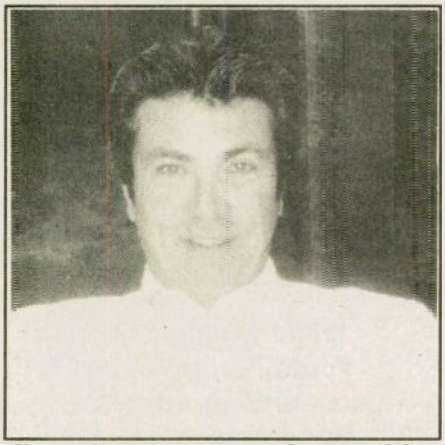
Five years!

Cliché #1: Time flies when you're having fun! Cliché #2: It's dé jà vu all over again! You pick the cliché . . . this column has endured five years of time, love and tenderness (not necessarily in that order). Of course, I couldn't do it without loyal readers like you . . . thanks Dad! Which brings me to the point of all this — I'm kinda in a quandary. I can't decide what I should expect from ***Worldradio*** Headquarters for this column's fifth year anniversary. Door number one — the traditional five year anniversary gift, wood, or shall it be door number two — the more modern five year anniversary gift, silverware. Please don't ask what's behind door number three . . . that's a whole 'nother column. Phone in your vote, wood or silverware . . . operators are standing by . . . of course, Internet e-mail accepted too! If you vote, please tell me how I can use the gift for county hunting.

So, I've written a column for five years. "Big Deal," you might say. Okay, take this. My first guest in today's column is James Grandinetti, KZ2P, and he has made radio contact with all 3,076 USA counties FIVE TIMES. It's not like I needed the emphasis, but just in case you missed it, that's FIVE times. Here's . . .

KZ2P's story

James Grandinetti, Jim to you and me, was born December 17, 1942 . . . that makes him 53 by my math. Tune in 14.336 MHz and I promise you will hear KZ2P as the net control of the County Hunter's Net. Actually, he may not be there the day you listen, but it sure seems like he's the net control on 14.336 continuously. This doesn't go unnoticed as he was selected by the Mobile Amateur Radio Awards Club (MARAC) membership as the 1994 and 1995 SSB Net Control of the Year. Well deserved, I might add! Jim typically spends six hours on the net a day with three of those hours as net control.



Jim, KZ2P, 1994 and 1995 SSB Net Control of the Year, relaxing in his NJ home.

Professionally, Jim received his B.A. in Banking and Finance in 1964 from Rutgers University and his Master's in Banking and Finance in 1969 from Farleigh Dickinson University. He also completed all necessary course requirements for his doctorate, but couldn't take a year sabbatical to complete a thesis. He started working at the Peoples National Bank in Lakewood, New Jersey after he received his bachelors degree. Jim started as a note teller and retired in 1983 as President and Chairman of the Board of Directors. Let's review; Jim was born in 1942 and retired in 1983 . . . that's 41 years old!!! [Mental note: Sunday, I'm reviewing the classifieds for a bank teller position!]

Jim started county hunting in 1978 (his previous call was WA2SRM) after working all the DX he could find and was looking for his next big challenge. It took him six years to finish all counties and receive USA-CA # 482, dated 25 August, 1984. Over the next 11 years, he contacted all 3076 counties four more times. Here are those stats: 2nd time #75, dated 24 March '89; 3rd time #50, dated 27 June 92; 4th time #30, dated 5 May 94; and 5th time #21, dated 1 September 95. He also collected the required contacts to receive the Master County Hunter award (Bingo) date 12 December '92. Does it stop here? No way Jose! He's currently in hot pursuit of the Five Star and Master's Gold Awards . . . *and* he's working on his 6th Time Award using only contacts he makes while he's net control on 20 Meters.

Jim started operating mobile and "running" counties after his retirement in 1983. He has never kept track of the number of counties or states he's run, but it's a good bet you'll have a chance working him mobile between Jersey and Florida. Jim and his wife Pat, N2FPM travel between NJ and FL when they feel like it! One particular adventure Jim remembers is when he ran De Soto County, FL in 1983 or 1984. He stopped on a secondary dirt road and was busy running the county when he heard tapping on his window. He looked up and saw the barrel of a shotgun (gives a whole new meaning to running counties shotgun style, eh!). He opened the window and explained what he was doing, but the "gentleman" explained what he would do with his shotgun if Jim didn't move IMMEDIATELY. One has to imagine that Jim heard a few of those standard "expletives deleted" words also. Needless to say, Jim moved. The moral of the story, according to Jim, is never operate close to someone's still or whatever it was.

On another memorable trip to Florida in 1994, his Mercedes' engine died just outside of Daytona Beach. He tried several times to obtain assis-

tance on the local VHF repeaters, but no one would answer his distress call. A quick break to Bill, N7OTR, on the 20M county hunter's net, and there was a tow truck in route in 15 minutes. Jim believes that's what the county hunter nets are all about. On many occasions, Jim and other members have called local police and emergency facilities to assist mobile operators in need.

Jim has accumulated more than 4000 hours as net control over the past 18 years. His only net control goals are to assist both the folk running the counties and those collecting them. The county hunters are the only group he knows who do not compete with each other. He says if you don't believe that statement, listen to 14.195 when there is a DXpedition operating. It's Jim's opinion that most county hunters try to help everyone obtain their USA-CA number. "By and large, most of the county hunters are

Jim's QSL card — KZ2P

courteous and helpful," he said. He only wishes that the small minority of the group (those who have been involved in county hunting for quite some time) would join with the rest and give something back to the net instead of just taking. Good advice Jim!

Jim's other ham radio accomplishments are 5-Band DXCC, 5-Band WAS, WAZ and #1 ARRL DXCC Honor Roll with 334 countries.

In 1987, Jim went to the People's Republic of China and operated and trained several operators at BY1PK, BY8AA, and BY8AC. He is an honorary member of the China Radio Sport Association.

Robert Maziarski, WB2HUV, Jean Douthwright, N2HVH, and Jim own and maintain a 2-meter repeater which serves the Lakewood area. Jim was treasurer (a fitting role) of the 1995 MARAC Convention in Hamburg, New York and has attended a couple of national and mini-county hunter conventions.

He and his wife, Pat, have a daughter, Christine, NN2Q. Christine recently received her M.S. in psychology from the University of Charleston. Jim's other hobbies include golf and travel with Pat. Thanks Jim for the opportunity to write your story.

Free county hunting Information

Often, I get e-mail or snail-mail deliveries with requests for county hunter information. A great packet of information is available from MARAC, almost free. All you have to do is provide a self-addressed stamped envelope. The information includes net frequencies, net operations, mobile operations, net control operations, record keeping, and MARAC information. It also explains how to get started collecting USA counties, how to use Mobile Reply Cards (MRC — the County Hunter's QSL), and a list of county hunting software. Lastly, the information packet has addresses for other organizations for county hunting supplies and MRC exchange services. To receive this excellent information packet, send a business-sized SASE to MARAC, Inc., Don Magers, KE5WL, 406 Cherry Park Drive, Sherman, TX, 75090-6709.

County name origin

Disney would be proud of this month's county . . . Pocahontas County, Iowa and West Virginia. Maybe you know the story of Pocahontas already. Pocahontas was the daughter of a Powhatan Indian Chief. She married colonist John Rolfe in 1614, and interceded with her father to save the life of Capt. John Smith. She died at the age of 22 (1595-1617). The West Virginia County was established in 1821 and Iowa's county in 1851.

Hope you enjoyed this column as much as I enjoyed researching and writing it. Until July, have a wonderful summer solstice (June 21). Happy Hunting and 73, Ace, N3 aha! WR

2M ransom

If you were watching CBS' 60 Minutes 14 January, you may have seen something of special interest to hams. One scene showed 2-meter FM ham gear being used by the family of an American businessman kidnapped in Colombia. That radio was being used to keep in touch with the kidnappers. The readout on the dial clearly showed a frequency of 147.200 MHz. News reports say the kidnappers supplied the radio gear to negotiate ransom terms. The terms were eventually met and the man was released after nine months in captivity. The kidnappers have not been found.

QUARTER CENTURY WIRELESS ASSOCIATION INC.

John G. Troster, W6ISQ

Honors

QCWAers have recently received awards from The Radio Club of America. Former Director Arch Doty, K8CFU, a native of Yonkers, New York, was recognized for "intensive study of Amateur Radio antenna systems" with the Barry M. Goldwater Award. Max C. deHenseler, HB9RS, was given the Ralph Batcher Memorial Award "for his dedication to worldwide radio and television history." Max is the person responsible for establishing the Amateur Radio station, 4U1UN, at the United Nations, New York, and is currently trying to activate a QCWA chapter in Switzerland. Congratulations to both on behalf of this column and QCWA.

JB Beadle Society

In the February column, we asked what any of you might know about a Mr. JB Beadle (written with one pen stroke without periods) who signed FCC amateur licenses for many years in the 1930s and early 1940s. We received several good replies: Julian Hirsch, W2KFB, New Rochelle, NY, (close to Yonkers) sent copies of three licenses signed by JBB, 1936, '39 and 1942. The first two signatures look similar, but the 1942 signature is totally different. For this reason Julian suspects JB Beadle might have been a "house name," at least for awhile.

Bill Snow, W6UUD, sent copies of JB Beadle's signatures of 1938, '41, '42, '46, '47. I am certainly no handwriting expert, but the 1941 signature doesn't look like the others. Strange. There was another FCC license for 1948, but this was not signed by JBB.

Wilson Martin, W7HOT, (in the hot Arizona desert) sent copies of two licenses from 1932 and '33, neither of which were signed by JB. So, we can bracket JBB at the FCC somewhere between 1933 and 1948, with a hiatus (Ivy League word) in '41 and '42. We'd like more information; what was his position in the FCC, when was he there, etc.? Was he a "he" or was this just, as has been suggested, a house name? Perhaps others of you among the 37 readers of this column can recall something about this mysterious JBB puzzle. Thanks.

It was a pleasure to hear that bit of nostalgia from Walt Schlager, KE6BPN, when he spoke of the good ole days of the '30s and '40s. He and high school buddies made weekly trips on the subway into Radio Row in New York City and the ultimate dream was of getting a job as a stock boy in a radio parts store on Liberty Street. Thanks, Walt.

Wesley Randles, W4COW, QCWA Treasurer

Wes will retire this September after 15 years as Treasurer of QCWA. Any of you who have held a similar position for a long period, knows what time and dedication it takes, so you can appreciate exactly what Wes has put into this post.

Wes is a native of Kent, Ohio, but grew up in Gulfport, Florida. He was an Eagle Scout in High School, but didn't earn the Radio Merit Badge, often the route by which young fellas move into Amateur Radio. Instead, Wes volunteered to do menial tasks for free at St. Petersburg radio station WSUN ("We Stay Up Nights") and became an expert in the operation of public address systems which were used for band concerts in the city park on summer evenings.

The man in charge of this PA system was Chief Engineer of WSUN, Louis Link, W4ATB. He took a liking to eager, young Wes and asked if he would like to work in the radio station. Thus Wes learned the controls, and all other functions, of a radio station engineer. It was at that point, Wes heard about Amateur Radio from Louis, and Louis became Wes' Elmer. In 1933, Wes got his license. He went on 40 Meters with a 45 TPTG transmitter feeding an end-fed zepp and a two-tube regenerative homebrew receiver.

Wes stayed at WSUN from '29 to '41, and then made two important moves. First, he married Blanche, a young lady he had known since they rode the school bus together in grade school. Then they moved to Miami where Wes began work for radio station WIOD ("Wonderful Isle of Dreams"). When the war came along, Henry Geist, W1AOH, a friend who headed Raytheon Field Engineering service, asked Wes to go to work for Raytheon as a Field Engineer. Wes was excited to do so, and as part of his training was sent to the Harvard Radar Engineering program.

Upon completion, he was assigned as a civilian maintenance and training engineer for a PT boat squadron in Brisbane, Australia, and thence to the northern coast of New Guinea. Incidentally, he was up the coast from QCWA GM Manager BJ Walsh, W7LVN, who was stationed as a Navy corpsman with a Dumbo outfit (that's a PBY flying machine outfit for you landlubbers). As the action moved north, Wes' PTs moved to the Philippines.

QCWA Treasurer Wes Randles, W4COW *—photo by W7LVN*

One day while Wes was passing the time of day on a Philippine beach, a Landing Craft, Vehicles and Personnel (LCVP) hove to, dropped the ramp, and out marched General Douglas MacArthur onto the beach, clean and dry. A few minutes later, he walked back up the ramp, the ramp closed behind him and backed out into the surf. The LCVP went back toward shore again, but stopped short of the sandy beach. The ramp dropped again, and once more Gen. MacArthur "returned to the Philippines," this time wading through the water, properly drenched from knees down, as befits a returnee who made promises. What the famous General didn't know was that Wes was watching and would report the incident with high glee to later generations. There were, however, a few cameramen who also reported the incidents for posterity, both of 'em.

Wes returned to Brooklyn Navy Yard in early '45, assigned to install and maintain Raytheon radio/radar equipment on Navy ships being repaired and built there. After WWII, he was transferred to the Commercial Group in New York where he installed radar and sonar in the U.S. Line's fleet of ships.

During the Korean War in '51, Wes

went back into military work and he and Blanche moved to the Raytheon laboratory in Sudbury, Massachusetts where Wes evaluated field equipment for the Marine Corps and then began a series of moves comparable to two-year hitches in the Navy.

First he went to Port Hueneme, CA, for a missile system program. Then to Greenbank, West Virginia, for an evaluation of the VLA radio telescopes. Next, he was on loan to Bell Laboratories to head a Raytheon group working across Alaska and Canada on the Dew Line Program.

One of Raytheon's concerns for their employees living in the harsh conditions in the arctic, was to keep morale high. Wes was instructed to get on the air with his Amateur Radio and provide phone patches for the men to their families. This was doubly great for Wes because it boosted his own morale to keep in close touch with Blanche, who had been licensed as W4GXZ in 1953. She also handled nearby patches for Wes.

After Alaska, Wes was assigned to work on, and install, the prototype of the "in route" air-traffic control system for the FAA. This network of 20 stations controls all flights in the U.S.A. Next time you fly, you might reflect that our retiring QCWA Treasurer was part of our country's first electronic system which now controls and protects all flights.

At this point, a true expert in the FAA system, Wes had the pleasure of writing installation and instruction books, and manuals, for each of the 20 FAA control locations. Each location being different, Wes had to visit and study each installation to develop a manual for each particular station. In all, Wes wrote 96 of these manuals, detailing how big a square hole should be cut here and how many wires should go from there to here, etc. With all that experience, I should let Wes write this column!

Wes next took a crew to the Marine Corps Base at Parris Island, SC to install 75 miles of closed-circuit TV cable linking barracks and classrooms covering 13 channels. Then back to Sudbury to develop a radar display system to be used as a backup to the FAA control system he had previously installed across the country.

One last long-distance assignment took him to Sacramento, CA to revamp a blind landing system for the Air Force. When he got back to Sudbury in 1980, he decided it was time to retire. Now he and Blanche still move, but only twice a year — back and forth from their summer New Hampshire home, acquired during the Sudbury years, and a winter residence in Tampa. They enjoy New England summers being able to visit daughter Diane, who is married to a professor at nearby University of Massachusetts. Of course, there are still the travels on behalf of QCWA to BOD meetings and conventions, but then that's pure pleasure!

Wes and Blanche stay completely busy. He joined QCWA back in 1961 and Blanche joined in '78; they belong to 12 or 15 chapters of QCWA — they lost count — in New England and Florida. Wes served as QCWA Activities Chairman for three years before he was elected Treasurer in '81. Blanche has handled the Amateur Radio audio tapes recorded by Father Tom Carten, K1PZU, for QCWA since 1975 (See QCWA Column in ***Worldradio***, March 1994).

At their Tampa location, they're very active hams, mostly phone on 20- and 75- with some 40-meter work. They use a TS-830, TL-922 feeding a TH5DX antenna, and, of course, 2 Meters. They have almost the same equipment in New Hampshire. In their car, they have 2-meters and also HF for the long drive between New Hampshire and Florida. (Wes, you should check into the County Hunters Net on those drives!). They're both to be found in the annual QCWA QSO Party, and Wes likes to slip into the CW mode now and then with Leland Smith, W5KL. You'll also find Wes on the Sunday 20M QCWA net where he is often Net Control.

Wes has been a "travelin' man" for many years and we were happy that when he chose to "retire," he chose to devote his energy to QCWA matters.

We thank you, Wes and Blanche, for many years of service to QCWA which has earned you both the thanks and respect of members who have worked with you, and resulted in many close and enjoyable friendships. It will be hard to let 'em just walk away; so, don't be surprised if someone finds a way to have them, like the above mentioned General, wade into other QCWA activity.

Until the next one, 73 + 25, Jack, W6ISQ WR

The deadline for news releases and special announcements is the 1st of the month, two months prior to issue date. Example: Deadline for the June issue, which is mailed in early May, is 1 April. Please keep this in mind when submitting these items to ***Worldradio***.

TRAFFIC

Geri Sweeney, N4GHI

New ARRL Radiogram?

John, W4HDW, who helps with the annual Virginia Beach Christmas message center at a local mall (passing thousands of messages each holiday season), suggests that we create a new radiogram. It would read: "Reference your number____, reply follows._____." It should be noted that all outgoing messages are logged, so that any returning messages can be delivered. As I relay messages, I do see numerous messages beginning, 'Ref your Number.' So, perhaps this would be a useful ARRL numbered radiogram. I will forward this request to ARRL Headquarters. If you feel this would make a good new addition to our NTS ARRL numbered radiograms, please send a note to Rick Palm at 225 Main St., Newington, CT 06111-1494. You might also consider whether the ARRL numbered radiograms should be reviewed as to deletions, revisions, additions. Have you ever wondered how these radiograms got numbered? They are divided into two groups: 'Relief Emergency' and 'Routine.' They start off strong with a message for numbers one through twenty-six. Then, no thirties and only one forty (ARL forty-six — happy birthday). All the fifties and sixties now have a message. Anyone else curious?

Newsletter

The Carolina Slow Net has an excellent newsletter. New checkins are welcome, news, procedures and tips are given. A newsletter is very important on a slow CW net as a training supplement and to build fellowship. Keep up the good work Ed, AE4EC.

Thanks to all the clubs who do send me their newsletters. For example, it's interesting to read in *Sparkgap* (the newsletter for the Southern Peninsula ARC here in Virginia) about plans for a wide coverage satellite gateway station to unite local clubs. Discussion is now underway. And, the Suffolk County Radio Club in New York includes a page each issue on the National Traffic System (local net stats, with Section and Region net times and frequencies). While I don't always include particular items in this column, they provide a balance on what's happening in the field to guide my thoughts. Keep them coming.

Mobile traffic handlers

I must admit defeat for the time being. Having taken three extended RV trips (Canada, California, and Florida) in the past five months, I haven't faired very well in what I thought would hold much promise, i.e., passing traffic for fellow travelers. Most of the blame is mine. We just weren't around the RV park during daylight hours long enough to solicit traffic.

My attention turned to alerting a local campground on the benefits of the traffic system. I gave the manager written information on the system and suggested handing out a paper with this information, including my phone number. No one called. True it was winter and most campgrounds in this area are closed. The open one was mostly a trailer park; but, hey they also could benefit.

Paul, WB8TTQ, in Palmetto, Florida, wishes to remind travelers of the 'Good Sam' net times and frequencies. He says the last count for membership is 820 members. I'm not sure if he meant members of the radio network, or 'Good Sam' members. For those not acquainted with 'Good Sam,' it's a road club for campers (mainly RVs). I am, in fact, a member. Paul says the RV radio newwork's motto is, "Friends keeping in touch via Amateur Radio and RVs." The question I have is, do they keep in touch with each other and discuss common concerns, or do they actually pass third party traffic? Or, maybe they do both.

M-F	7.284	8 p.m. CST
T/Th	14.308	3 p.m. CST
M/Th	7.123	8 a.m. CST

Tips

I work a few stations who send T for zero. I can see why they do it and understand it's probably an old habit, but, boy is it ever confusing to copy a number. As I write a message down, I read it — partly to see if it makes sense and partly getting ready to ask for fills, as needed. (Underline anything you want to check on so you can find it again quickly.) Traffic handling procedures were set up so that we would all expect the same thing. We come to expect a phone number will be made up of numbers and not Ts.

New traffic handlers (on SSB) often have the urge to read the entire message back to be sure they have it right. While comforting, it does take a lot of time. They need to learn to trust themselves. Someone should remind them that when the number of words in the text matches the check in the preamble, and, the message makes sense, expect it to be correct. When fills are needed, ask for them one at a time. Use accepted procedures: Word After ___ (WA__ in CW), Word Before ___ (WB__), or Between ___ & __ (BN__es*__). If you chose the word wisely, it's a cinch to find the fill quickly. Try not to choose the, and, or any word of which there might be multiples in the message. Being able to choose WA or WB gives you the flexibility to choose the more distinctive word. When you need more than one word, use BN.

*In CW, 'es' is accepted as 'and' (don't know how that came into being). While it should not be used in the body of a message, it's commonly used when discussing the message, i.e., asking for a fill. The same holds true for other commonly used word substitutes: ur (your), tnx (thanks), etc. They should not be in the body of a message. Several exceptions are: ref (reference) nr (number); as in, ref your nr 8.

Recruiting new traffic handlers

Some ideas from W7GHT's, always great, "Idaho Montana Net Newsletter." Each net member could give information about their net to Novice students in his/her area. The students could be encouraged to listen to the net, and a copy of the net newsletter could be sent to them for 6 months. I add one innovation to this idea. Make it a challenge by asking the students

a question about the net — homework. EX: How many pieces of traffic were listed on Sunday? Which station was Net Control on Tuesday?

Bill's excellent newsletter (September, '95) also discussed whether traffic handlers should use the Internet as a mode for relaying traffic. It seems ARRL published a list of packet Internet Gateways on page 114, in September *QST*. On the other hand, Bill says WØRLI, who runs HF and VHF BBSs near Portland, OR, is probably leading the opposition.

And speaking of Internet, Marshall, N7PIP, in Puget Sound, WA inquires if I have an e-mail address. I do not. Why? I don't need it for anything at this time. My interest is in radio and it takes up enormous amounts of my time. I understand what Internet is about. (I ran a bulletin board for the American Institute of Architects, using the Source, for several years. When my husband and I brought home our first computer years ago (an Apple II+), he programmed, and I ran a phone BBS for our radio club.

Packet

KA4AFI@WD4ROJ, in Alabama, agreed that it would be a good idea to 'op note' traffic sent via packet requesting a reply from the station removing it from a packet board. The reply need be no longer than, "I removed your nr 8. (The packet heading will furnish the identification.) More information (it was delivered, it couldn't be delivered — ARL sixty seven) would always be welcomed; but, at least we would know it made it past the bit-bucket and into a human's hands.

Ron, AKØN, in Iowa, wrote to encourage "getting a handle (packet) on what is happening at the grass roots." Perhaps one reason ARRL lost interest in pursuing a packet policy is that the few stations undertaking this mission couldn't agree on it. Why not sample PBBSs themselves. They won't agree either, but with a large sampling, trends could be used as agreement. Get a questionnaire together, and send it to 'all USA.' From the sys ops, and/or packet traffic handlers replying, a grass roots data base could be established to: 1) establish a policy; 2) find and hopefully fix common problems; 3) define procedures necessary for a PBBS to handle traffic (send a monthly traffic report to the STM, be aware that traffic must keep moving); and, 4) perhaps writing some public domain software to resolve any problems. This requires a moderator who could write the questionnaire, sort through the numerous replies, and set up the data base for further discussion. NZ2T, Section Manager of North Texas, is interested in a digital policy.

Perhaps he will take the needed leadership.

KA1RFD@K1RQG, in Maine, made some thoughtful comments via packet. Parenthetical comments are mine. "It has great potential but seldom achieved. It could be (and has been) of enormous use in large volume health and welfare traffic. Shelters could utilize it to great advantage. In emergency exercises I have seen NTS messages left for days on BBSs here and suspect it happens elsewhere. (Whenever a message is dated over a day or two, it's commonly assumed by 'net' stations that it's been sitting on a PBBS. We don't ever bother to ask anymore.) . . . I have used several computer programs for packet traffic, and have often been disappointed because they were difficult, incomplete, or otherwise unusable. This summer I started using NTS written by Bill, VE4UB. It is an FB program and is the greatest. He can be reached at VE4BBS. Rod, KA1RFD, is currently the President of the Augusta Rotary Club which sends anniversary greetings to other clubs throughout the world.

What's happening?

Don, W7GB, STM for Eastern Washington, sent a letter detailing what's happening in his Section. It is long enough that I will save it for the next column. Thanks Don. Keep your letters coming. What you are doing in the field is what is it all about.

Oldest traffic net?

What is it? Jay, W6QHD, in Tehachapi, CA, thinks it may be the 'Mission Trail Net,' an independent net (3856 kHz at 0300Z). Independent means it's not sponsored by the ARRL. Jay says it began in 1937, has operated nonstop (except for WWII), and is still going strong. After reading this letter, I immediately thought of our own East Coast independent net, 'Hit and Bounce' (7039 at 0830Z). I looked at their fine newsletter and noted it was founded in 1938. So, without further input, the 'Mission Trail Net' gets the title. Jay reports that Ted Sharp, K6UYK, is a member and while most of the members are in California, many do check in from Oregon, Washington, Idaho, and Arizona.

CW slow speed traffic nets

FSN (FL)	8:00 p.m.	3715
MSN (MD)	7:30 p.m.	3717
MSSN (ME)	6/10 p.m.	3685
CSN (NC/SC)	6:00 p.m.	3715
ESSN (NY)	6:00 p.m.	3590
PTTN (PA)	6:30 p.m.	3610

Let me know of any *slow* traffic nets in your area. WR

KX4V named *ARRL Letter* Editor

Rick Lindquist, KX4V, has been selected to edit Happenings and *The ARRL Letter*, following the departure of Jim Cain, K1TN. Lindquist moves up from the post of Assistant Technical Editor. He joined the League staff in September, 1995.

Richard Fisher, KI6SN

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e-mail: KI6SN@aol.com

A Forty-9er fan

At first it's hard not to think of the new Forty-9er 40-meter CW transceiver as anything but a sideshow novelty act. After all, the whole thing's on a PC board smaller than a credit card. It can easily be built in an hour or so. Two chips and three transistors are surrounded by a sprinkle of parts that can be comfortably clutched in one hand. There are no toroids to wind. It's even suggested that the radio be tried as a "handheld," using a cabinet-mounted push button as a Morse key.

On paper the Forty-9er has the trappings of something from Mattel. Spend a few minutes with it on the air, though, and you'll quickly find this radio is no toy.

Designed by Wayne Burdick, N6KR, of Belmont, California, the Forty-9er is a direct conversion VXO-controlled milliwatt 40-meter rig that can be operated nicely from a drugstore-variety 9V battery. Thus the name Forty-9er.

Fun to operate? Is it ever. The weekend the radio was built and tested here at KI6SN, five western states were picked off in short order. Several of the contacts were protracted ragchews lasting 45 minutes or more. Power output: 500 milliwatts.

On the same weekend, the Forty-9er was called into service for the Colorado QRP Club's Winter QSO Party and valiantly held its own at a half-watt during raucous, 40-meter hit-and-run competition.

All contacts have been made using a droopy G5RV antenna, lest anyone think there's some magic being worked beyond the antenna connector.

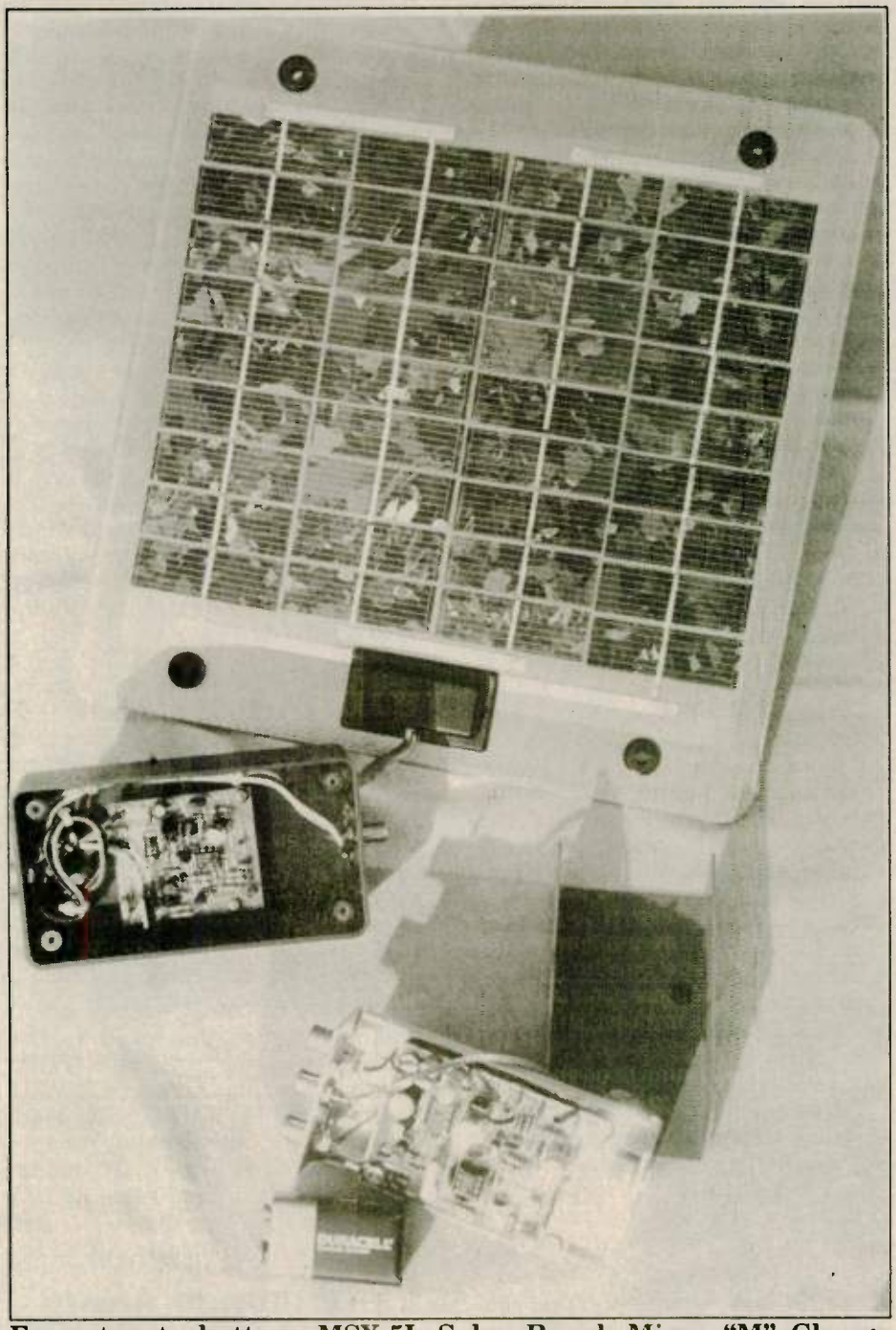
Signal strength reports have ranged from "in the noise" to 599. And never was heard a discouraging word: Comments on keying, stability and tone have all been quite complimentary.

If you've never heard the clarity of a direct conversion receiver, try this radio. Its purity is a joy.

Not coincidentally, the Forty-9er is the object of a homebrew contest by the QRP contingent at this month's Dayton Hamvention. The brainchild of NorCal QRP Club's Doug Hendricks, KI6DS, builders could order circuit boards from the organization in advance of the Hamvention, or etch their own, gather the parts, build/modify/personalize the radio and bring it to the QRP Hospitality Suite in Dayton for judging.

From early reports, the competition is drawing a crowd. Many of the PC boards are destined for homes in small metal off-the-shelf Altoids mint boxes. A tasty twist, indeed.

Burdick is no stranger to innovative QRP circuit design. In recent years his CW transceivers, dubbed the NorCal-40 (reviewed in the February '94 ***Worldradio*** QRP column) and Sierra (reviewed Feb. '95) have performed to rave reviews around the world.



From top to bottom: MSX-5L Solar Panel; Micro "M" Charge Controller and Forty-9er QRP Transceiver. ***—photo by KI6SN***

While I'd hesitate to recommend the Forty-9er as a QRP station's main, or only transceiver, it's certainly a great back-up; or backpack radio that can provide a ton of enjoyable operation at

very lightweight power levels. It will also work well in just about any operating environment.

As a beginning homebrewer's kit, there's nothing on today's market that better combines economy, simplicity and utility.

The circuit features an NE602 double balanced mixer as both product detector and VXO. A tuned circuit ahead of it holds AM broadcast interference at bay — a common problem with many direct conversion designs.

Next, a J310 transistor is implemented as a mute switch, also providing full QSK. It is followed by a low pass filter and an LM-380 audio amplifier, dishing out plenty of volume for headphones and enough to drive a small speaker when loud signals are on the band.

The Forty-9er is crystal controlled, but the VXO's trimmer capacitor and small inductance can combine to swing the operating frequency about 5 kHz. With a 7.040 MHz crystal, coverage is approximately 7.037 to 7.042 MHz.

The transmit chain consists of a 2N3904 driving a 2N3866 final in Class C. A three-pole output filter greets the 50 ohm load of the antenna.

At 12 volts, the rig puts out a solid 500 milliwatts. Using a fresh 9-volt Duracell® battery it provides a respectable 250 milliwatts.

The receiver works great at either voltage, drawing only about 10 milliamperes of current.

Transceiver tuning (VXO adjustment) is through a 50 picofarad onboard trimmer capacitor, designated C6. In the KI6SN version, a hole was drilled in the Forty-9er's top cover directly above the trimmer's board location. A tuning tool was fashioned from PC board material. By poking the adjustment tool through the Forty-9er's roof to C6's adjustment screw-head, a full 5 kHz coverage is possible — without having to take off the radio's cover.

Be forewarned, however, that most trimmer capacitors are not built to withstand the rigors of constant turning. I wore one out during the Colorado QRP Club contest in just one afternoon. Much longer trimmer life is possible, no doubt, by confining the Forty-9er to non-contest, casual operation.

The next version of the Forty-9er at KI6SN will feature an off-board air variable capacitor to do tuning duty.

Just how unabashedly frill-less is the Forty-9er? Well, a soft, high-pitched whine during keying is touted as the transceiver's sidetone.

NorCal's Hendricks, and Jim Cates, WA6GER, have announced the club is now offering a Forty-9er kit for $25 (DX orders add $5 for shipping), complete with the PC board, 40-meter crystal, and all board-mounted parts. Builders provide their own enclosure and other hardware. Quantities may be limited. To order, write: Jim Cates, WA6GER, 3241 Eastwood Rd., Sacramento, CA 95821. Checks should be made out to Jim Cates.

For builders who prefer to scrounge and etch, a parts list, PC board pattern, schematic and full documentation are available from Hendricks by sending an SASE and $1 to: 862 Frank Ave., Dos Palos, CA 93620.

There's nothing to prevent the QRP traveler, though, from slipping the panel into a backpack and hitting the trail.

QRP Field Day solar array

That commotion you hear in the distance is the sound of QRPers scurrying to get ready for Field Day. It is next month, you know.

If you've been wondering how you are going to keep those batteries charged through the contest weekend, here's a relatively inexpensive long-term solution to the dilemma: Go solar.

Mike Bryce, WB8VGE, veteran QRPer and owner of SunLight Energy Systems of Massillon, OH, is recommending a tidy solar panel and photovoltaic charge controller package that's small and light enough for portable use, yet packs enough punch to keep a QRPer's batteries nicely topped off.

The MSX-Lite series of solar panels, manufactured by the Frederick, Maryland-based Solarex and sold by SunLight, features a 5-watt, 12-volt array measuring 27-inches square. Designated the MSX-5L, it's a rigid panel complete with grommet mounting holes for permanent home installation. There's nothing to prevent the QRP traveler, though, from slipping the panel into a backpack and hitting the trail. There is a bit of flex in the panel, but Solarex warns not to bend its MSX-Lite series arrays more than one inch per foot. Output wiring is permanently affixed to the front of the panel. It's certainly sturdy enough to meet the demands of portable use.

Behind every good solar panel is a charge controller — or at least there should be. The SunLogic Micro "M" is a nice sidekick to the MSX-5L, featuring a single MOSFET circuit on a tiny PC board that can be configured in series with the MSX-5L.

When your battery's voltage is low, the Micro "M" senses the deficiency and allows current to flow from the solar panel. When your battery is back to full charge, the Micro "M" shuts the current flow down.

A board-mounted LED serves as a current flow and battery charge condition indicator.

Bryce says that the Micro "M's" low side switching arrangement eliminates any RFI from the solar installation. That's good news for operators fighting to hear weak signals.

The MSX-5L is available from SunLight for $105. It also offers the Micro "M," wired and ready to use, for $25. The panel and controller can be purchased in combination for $120. The buyer will need to provide a housing for the Micro "M."

For more information, write: SunLight Energy Systems, 2225 Mayflower NW, Massillon, OH 44647.

Results: QRP ARCI election

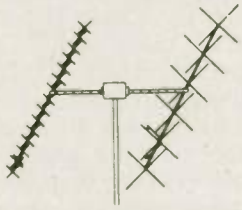
Buck Switzer, N8CQA, president of QRP Amateur Radio Club International, has announced the election of six radio amateurs to the organization's board of directors.

Named area representatives were Doug Hendricks, KI6DS, (4-year term, Western); Hank Kohl, K8DD, (2-year term, Central); and Bob Gobrick, VO1DRB, (2-year term, Eastern Canada).

Elected to 4-year board terms were Danny Gingell, K3TKS; and Jim Stafford, W4QO. Cameron Bailey, KT3A, was elected to a 2-year term.

Named as board alternates were: Bob Schnick, KA3YJG; Byron Johnson, WA8LCZ; and Dave Johnson, WA4NID. WR

AMATEUR SATELLITES



TERRY DOUDS WB8CKI

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Hello everyone. Though April showers may come your way, we hope they will be long gone by mid-May, when all amateurs who can make it find their way to Dayton, Ohio. It's one of my favorite times of year, and I consider myself very lucky to live just over an hour's drive from Hara Arena. As always, it's a wonderful time to visit all the exhibitors to do research on various pieces of gear, not to mention the excitement of the Flea Market. I hope that you will be able to make it — and if so, say "Hello" when you pass the AMSAT booth — I'll be the short portly guy with the glasses and beard.

With the DX birds down due to our favorite winter eclipse season, it has been a time to really expand on the Low Earth Satellite operating. FO-20 is still hanging on strong, and AO-27 may be operating at its best ever. One notable change to the LEO scene is the change of operating characteristics on RS-12/13. RS-12 is the HF satellite, uses 15 Meters for the uplink and 10 Meters for the downlink — known to the satellite operator as Mode K. However, this has recently changed. It is now in Mode KT, which means it is still in 15-meter uplink mode, but it now has downlinks on *both* 10 *and* 2 Meters!

The 2-meter transmitter sounds fabulous, and many are actually finding they have better QSOs by being able to hear the downlink on 2. For those using the 10-meter downlink, it has been very difficult to monitor it without severe overload problems from the uplink transmitter. It has been a welcome and unexpected change, and is encouraging many operators to try something a bit different. As a reminder, the satellite's frequency passband is 21.210-21.250 up, 29.410-29.450 / 145.910-145.950 down, and the beacons are at 29.412, 145.912, 29.450, and 145.950 MHz.

I have not written a great deal about the pacsats (Packet Satellites) over the past year, but they do make up a significant number of the birds in the sky. They are basically two types of satellites — either "store and forward" BBSs, or Orbiting Packet Repeaters.

The most easily found and printed is MIR. MIR, the Russian Space Station, has a PacComm Pico Packet TNC with the Personal Mailbox connected to a 2-meter rig on 145.550 MHz. It uses standard 1200 bps AX.25 Packet on FM, just as your local packet BBS does. The primary difference is that you can only use it for about 15 minutes per pass. If you want to begin experimenting with it, just put your rig on 145.55 and set up your packet software so that all packets will be printed. A great time for this is overnight. When you wake up, you'll see all the MIR packets as it went over or near your QTH. The big thing to remember when working MIR is *not to attempt to connect to it until you see a CQ packet*. When you see it, hit your return button (following the "C RØMIR-1" command).

You're up and running. It's really the luck of the draw as to who gets into the bird. You will probably find that any passes that happen overnight or early in the morning are usually your best bet.

Another standard FM pacsat is known as Dove, or DO-17. You cannot transmit through it — it only transmits telemetry and messages for reception-only via standard 1200 bps packet, on the same frequency as MIR. Set up your rig and get two for one. It's very easy to copy, and it's very exciting to see it print and realize it's coming from a satellite.

The other satellites that I will mention here do not use standard FM — they use a specialized modulation technique known as PSK, or Phase Shift Keying. To operate using them, you need to get a PSK modem for your TNC. Those with TAPR-2 style TNCs (commercially known as the MFJ-1270 series or the PacComm TNCs) have a standard disconnect header, which allows you to attach a PSK modem there. TAPR has a PSK kit, and PacComm makes a commercially built version to allow you to try these birds.

Recently WEBERSAT, or WO-18, known primarily for its digital imaging systems on board ("cameras" for you non-satops) has recently begun operating as an orbital digipeater, according to *Spacenews*, the weekly newsletter on space (which you can find on packet or on all the major online services — or look for it on the World Wide Web at http://www.njin.net/~magliaco). The satellite's uplink is on 145.900 MHz. Using a terminal program connected to your TNC/PSK modem, try connecting to yourself using the following TNC command: cmd: c yourcall via weber-1. If you're successful, try a few CQs and see who is listening — it can be a lot of fun.

The other 1200 bps satellites are PACSAT (AO-16) and LUSAT (LU-19). These three, along with DOVE (DO-17), were the first group of microsats released into orbit. They are called microsats because they are physically 9 inch cubes with antennas coming from all 6 sides. They have been popular with the universities that sponsor satellite construction as senior projects, and have helped to establish the microsat as a standard throughout the commercial satellite industry.

The 9600 baud pacsats (KO-23, KO-25) utilize a slightly different system than the 1200 bps satellites. The 9600 bps birds employ regular FM modulation up and down, but they need a special 9600 bps modem. As with all the satellites, you need a dual-band

rig to do this kind of work. The uplink is on 2 Meters, and the downlink on 436 MHz (70 cm). You would need a 9600 bps packet modem, and either a modified rig or one that is "9600 bps ready," because at the higher speeds the TNC must be connected directly to the modulator/demodulator of the radio. It is not a difficult modification to make to a rig, but if you are not comfortable doing surgery on your radio(s), call someone to help you. We'll continue on the pacsats more in the next column.

"Squeak" Porray, AD7K, who is the manager of Amateur Electronic Supply/Las Vegas dropped me some e-mail concerning my discussion of Grid Square info on the Buckmaster CD-ROMS. He noted a caveat that I felt you may want to know about. Apparently there is one flaw in the Buckmaster CD-ROM on grid squares . . . if the person you are looking up (yourself or someone else) does NOT have the full nine-digit ZIP code (five digits, four digit extension), the grid square will not be correct (it will be half-way around the world!). Squeak gave me an example: "Look my call sign up (AD7K), and you will find it with the proper grid square . . . if you look up my assistant manager, N7GBJ, you will find that his grid square, as reported, is thousands of miles away — even though Tom only lives about seven miles south of me!"

Buckmaster is aware of the problem . . . it lies in the lat/long/ZIP conversion program that they used returning a negative number for the longitude if there is not a full extension on the ZIP code. They say that only a small portion of the database did not fully convert to nine-digit ZIP codes . . . in the case cited above, Tom has been living in this house for over ten years. I wonder why the Post Office can't figure it out! (The ZIP conversion that we use for catalog mailing does not recognize his address, either!) Buckmaster says that the problem should be cured with the next issue (April, 1996) of the disk. Good information to be aware of, especially if you are chasing VUCC.

Before I close this month, remember that AO-13 returns to ALON/ALAT 180/0 on 1 April, so get active while you can — this may be the last "good" positioning we have for the bird before it re-enters the atmosphere at the end of the year. As usual, keep thinking those good thoughts about P3D — and if you have any extra money you would like to donate to the AMSAT-NA P3D Fund, please send it to AMSAT, P.O.Box 27, Washington, DC 20044. If they go "over the budget," there is a possibility of purchasing flight insurance, which would be a nice thing! Have fun in Dayton, and see you in July. WR

Battery alert

Using alkaline and carbon zinc batteries in combination can create a pressure explosion great enough to split and blow the end cap off an explosion-proof flashlight!

Of seven different styles inspected, the Eveready Alkaline Energizer was the only battery that incorporated a warning label concerning the hazards of mixing battery types. This is especially disconcerting since major manufacturers are reportedly converting from carbon zinc to alkaline. Be particularly careful with the green-jacketed Military batteries which contain no warning labels or chemical descriptions.

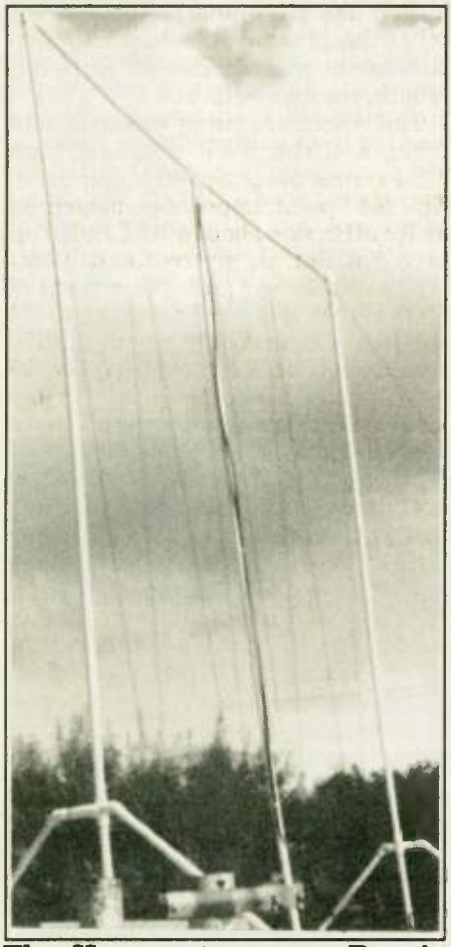
Play it safe. When you use more than one battery in combination, have them all from the same manufacturer.

—SMARK *SPARKS*

The Harp antenna — 75-meter dipole

Dave Evison, N6GKC

Living on a small city lot doesn't provide much potential for an antenna farm, so one must make the best of the situation. In my own case there are three tall palm trees on the property and, of course, they were soon serving a dual function: producing



The Harp antenna on Dave's rooftop. ***—photo by Tom Adler, AB6RG***

fronds and supporting dipoles. But unfortunately, they are too closely spaced to accommodate even a normal 40-meter dipole, let alone one for 75 Meters. Therefore, the biggest challenge in antenna experimentation appeared to be getting on 75 and 80M with a homebrew antenna on a postage stamp-size city lot (while also sitting on a very thin billfold). While reading *The ARRL Antenna Book*, I came upon the following paragraph (which was a compelling pump-primer). I've added the italics.

An alternative to inductive loading is linear loading. *This little-understood method of shortening radiators can be applied to almost any antenna configuration* . . . Although commercial antenna manufacturers make use of linear loading in their HF antennas, *relatively few hams have used it in their own designs.* Linear loading can be used to our advantage in many antennas because *it introduces very little*

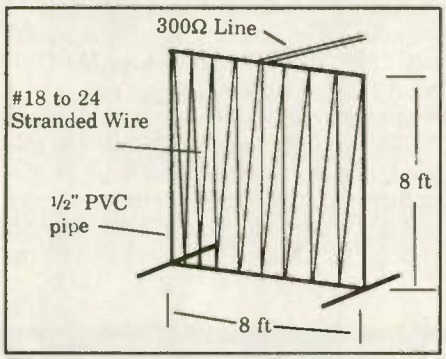


Figure 1. 75 Meter Continuously Loaded Linear Dipole.

loss, does not degrade directivity patterns, and has low enough Q to allow reasonably good bandwidth. Page 6-7, *The ARRL Antenna Book*, 1991.

As a retired engineer, one of the most appealing aspects of ham radio to me is uninhibited experimentation. Therefore, fortified with the paragraph above I set forth to produce a linear-loaded, 75-meter dipole, based upon the following design criteria:

1) Keep it cheap
2) Make it versatile
3) Have fun

After some reflection, the form of the antenna began to take shape. It would be a square framework made from ½ inch PVC pipe and 8 feet on each side (8 feet being a factor of 128

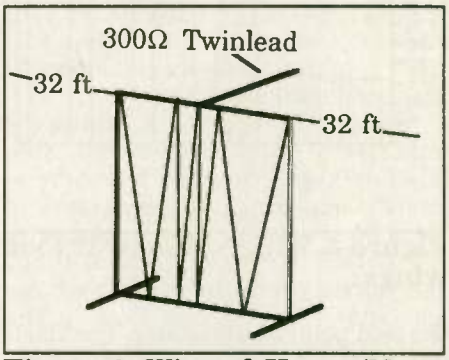


Figure 2. Winged Harp. (Note: Length of wings vary depending upon number of loading transitions removed.)

feet — the approximate electrical length of a 3.7 MHz dipole). The square shape would allow linear loading either vertically or horizontally. This configuration would provide an inexpensive, compact platform from which to experiment, and it would be light enough to be easily moved about.

After making some primitive sketches of the antenna, I began to fondly

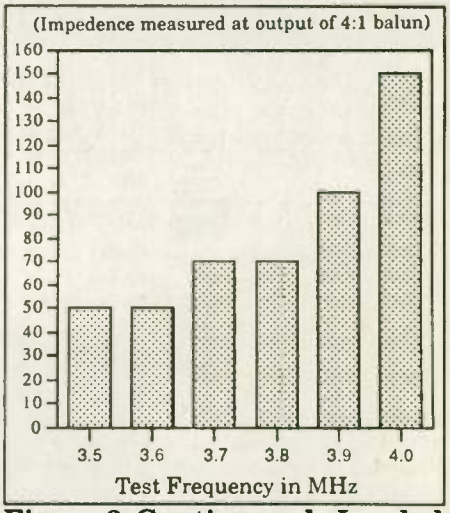


Figure 3. Continuously Loaded Linear Harp.

refer to the antenna as the Harp — after all it looked like a stringed instrument. The first version of the Harp is shown in Figure 1. It is a continuously loaded linear dipole consisting of 8 linear loading transitions. A vertical orientation was selected with

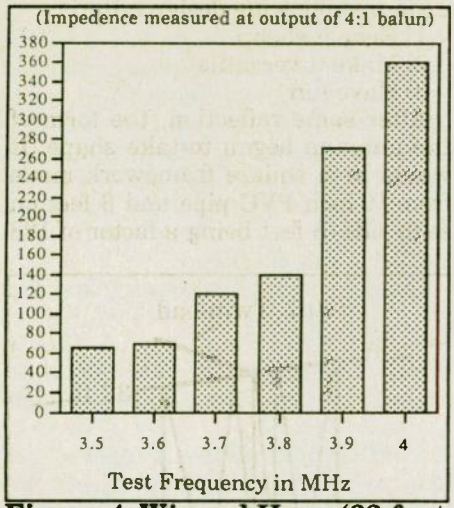


Figure 4. Winged Harp (32 foot wings)

the feed point at top center. The Harp was installed on the roof. Fortunately, the house has two stories and a flat roof, but unfortunately there were three metal-framed skylights, and two of them were right next to the base of the antenna.

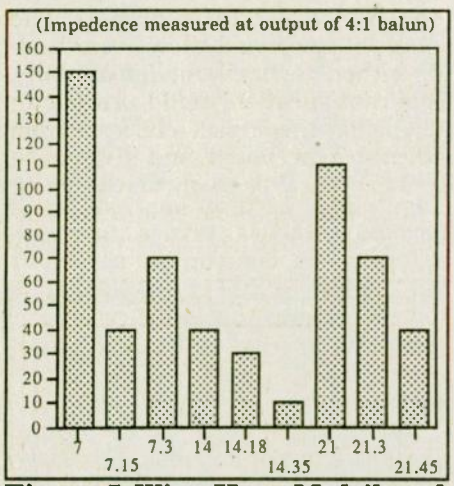
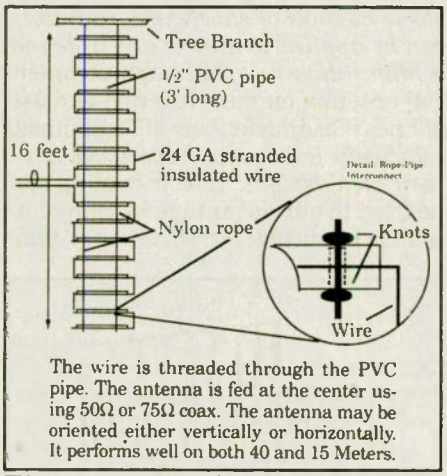


Figure 5. Wing Harp Multiband (32 foot wings).

The feed point measured approximately 325 ohms, so heavy-duty 300 ohm feed line was selected, and a 4:1 balun was installed at the transmitter end. The antenna loaded fine on 75 using a tuner, and I made a number of contacts running 50 watts on SSB. I received excellent signal reports. When I described the antenna, the response was a delightful combination of mirth and "you gotta be kidding!," and one Idaho ham referred to the Harp as the "bedspring antenna."

The second series of tests involved removing 2 linear loading transitions from each end and extending the wire outward while maintaining approximately the same height and in the same plane as the Harp framework. This version was dubbed the Winged Harp (see Figure 2). As anticipated, the performance of the Harp increased significantly as the "wings" were extended. I was limited to 32 feet, and then only because a "street tree" was called into service. This configuration proved to be an exceptionally good performer. Within the first few minutes of testing on 75



The wire is threaded through the PVC pipe. The antenna is fed at the center using 50Ω or 75Ω coax. The antenna may be oriented either vertically or horizontally. It performs well on both 40 and 15 Meters.

Figure 6. Jacob's Ladder Linear Loaded Portable Antenna

Meters, while running only 50 watts, I raised N7ML in Bozeman, Montana. Mike gave me a 10 over 9, and this was about 7:45 p.m. Without exception every contact I've made with the Winged Harp on 75 Meters has garnered excellent signal reports while running 50 watts on SSB.

Several QRP CW tests on 40 Meters running 1 watt and the Winged Harp produced excellent results. The 75-meter version of the Winged Harp on 40 Meters appears to perform slightly better than the 40-meter dipole reference antenna (the reference antenna, due to the small city lot, is shaped like a horizontal vee with the angle at 90 degrees).

Figures 3, 4, and 5 are some simple graphs of the impedance (measured at the output of the 4:1 balun) of the two basic Harp configurations described in this article. These measurements were made with very primitive, ham-grade test equipment. They do, however, reveal the need for a tuner when using the Harp. The Winged Harp performs great on all bands from 80 Meters through 10 Meters.

The wire on the original Harp was fastened to the frame using nylon ties providing loose loops through which the wire was threaded. This allowed the linear loading transitions to be compressed or spread apart, and also allowed the wire to be removed or reinstalled easily during experiments.

The Harp, or some derivative thereof, can provide the city dweller with a short but effective antenna for 80 Meters through 10 Meters for both QRP and general amateur service — at very low cost.

Figure 6 illustrates an additional linear loaded design I've conjured up and dubbed the Jacob's Ladder.

The Jacob's Ladder has produced some amazing results. While I originally designed it for vertical operation (hanging from a tree limb, etc.) I just couldn't find any place to suspend it here on my small city lot. I checked it out by hanging it horizontally (it looked like a hammock) about 4 feet off of the ground. All electrical measurements were "textbook" for a full length, resonant dipole.

The resonance curve was deep and wide, and the SWR was less than 1.5:1 across the entire 40 Meter band. The feed-point impedance measured at 7.2 MHz was about 40Ω. I ended up laying it flat on my roof and KZ6O (400 miles away) gave me reports of S9 to S9 + 10. It blew me away, and I think it was probably just favorable conditions, but even then, for 50 watts to a 40-meter dipole only 16 feet long (and lying flat on the roof) that's not too shabby.

The purpose of this short article has been to encourage others to continue this wild-eyed exploration of linear loading to produce inexpensive, short and efficient HF antennas — and have a lot of fun in the process. In this regard, the Harp is a good start. The Harp has a myriad of possible configurations, limited only by one's imagination, and the materials are readily available and inexpensive. WR

When I hear somebody sigh, "Life is hard," I am always tempted to ask, "Compared to what?" —Sydney J. Harris

AERIALS

Kurt N. Sterba

And a grand time was had by all! The ARRL DX Phone Contest was its usual fun and games. Comically there were U.S. stations that brushed aside calls from KL7 stations with brusque "I'm only looking for DX." Some KL7 stations would inform them that Alaska was DX, others cleverly, and laughing up their sleeve, would move onward and instead reward those who can read the rules and remember them.

Observed were some quite different operating styles. The exchange from the DX stations consisted of Signal Report (5-9) and the amount of power they were running. Some would say "One Kilowatt," another would say "Kilowatt," you would hear "Kilo" and some just said "K." In contesting, when time is truly "money" saving a second or so here and there will add up quite quickly into more contacts.

It's odd to hear stations (with a massive pileup after them) giving their calls twice on every QRZed. Why even waste the time with "QRZed Contest" when a hundred stations are all shouting their call sign? And why take the time giving the call phonetically on every exchange when all hundred stations calling seem to know it already?

Some operators who had thought out the whole procedure ahead of time didn't waste their time (and the time of the calling stations) by unnecessarily running off at the mouth. They realized that when they "QSL" and then shut up that it's time for the U.S./Canadian stations to start calling, which is exactly what occurs. Everything goes by much swifter.

There were some really great operators to be heard. PJ9G outstanding! V31DX superb! True "musicians," indeed. The absolute best was TD9IGI. That may have been a multi-op, with one of the operators there being the smoothest ever heard in, lo, these many years of contesting.

Through the mail I heard from a number of my fellow "two-letter call" holders. Yep, the gang that's been around awhile (and seen the same things coming round and round over again) were mailing in an advertisement (NOT appearing in *QST* nor ***Worldradio***) for an antenna that has an "innovative new design concept."

Featured in the ad is a testimonial by an amateur who states that this new antenna beats his Log-periodic by 3 to 4 S-units. He also goes on to say "unbelievable."

We'll take a look at that in a moment. But first, in recognition of this great technical feat and the heartfelt desire that the design engineer receive the due rewards, I have a suggestion. Instead of selling antennas, far more money will be made from university lecture fees around the world. The great centers of higher learning will be in a frenzied bidding contest raising the honorarium to rock star concert type of fees. Will he be flying first class to the capitals of the world? No, charter jets!

The engineer will certainly be the guest of honor at black-tie banquets at the world's finest restaurants. His walls will be filled with honorary doctorate sheepskins. Just think of the massive book royalties! All the previous antenna engineering textbooks will be tossed into the bonfires at homecoming weekend.

I have absolutely no doubt that this new antenna did beat the equivalent of a 3L Yagi by the claimed 4 S-units. I truly believe that the amateur making the statement told the exact truth as he saw it.

And I would not even suggest that there was possibly something not quite up to snuff about the comparison antenna. Let us examine "4 S-units." To some that would translate to a 24dB gain. Added to the 6dB gain of a 3L Yagi over a dipole we are now at 30dBd which is far more gain than those VOA gigantic arrays give.

There are those who eschew the 6dB per S-unit idea and say it is closer to 4dB. OK. Four S-units now translates to 16dB.

So we now have a 2L antenna that beats a 3L antenna by 16dB, and, it's on a 7-ft. boom and can be yours for $300. No doubt that the BBC has already ordered four of them, trimmed them to their frequency, stacked them and thus were able to sell off all the hundreds of acres of land previously devoted to their antennas. Amateurs following the same procedure will invest a mere $1,200 and sweep to victory occupying the top rung in contests and leaving in the dust those merely using "Dinah And Her Dozen" antennas.

But let's now move to the "S-unit" and howsomever so many dBs. Many amateurs would prefer that one S-unit equals 6dB, and there are some receivers that come quite close over most of the scale. Other receivers don't quite live up to the idea, and some receivers don't even seem to care what the marks mean.

But, if enough amateurs decided that an S-unit is a six-dB-increment change that it would be so whether or not the receiver manufacturers went along with it.

An amateur we'll call The Little Pig has gone on record as favoring 4dB to an S-unit. I fail to see the relevance of this as 4dB is not "connected" to anything. For example, 3dB is a doubling of power, 6dB is a quadrupling of power (at the transmitter). Three dB would be far too small a change to base a whole S-unit on and thusly so would four be too small.

Going from a dipole to a 3L Yagi is about 6dB and is significant. Doubling the signal voltage results in a 6dB increase and is significant. As before mentioned, a power increase of 4 is 6dB, and is significant.

Here's an analogy. When I first met Lil she had an ancient Rolleiflex with which she would take photographs of her garden from year to year. She taught me about photography. The ASA speeds are 25; 50; 100; 200; 400. The time increments are like 1/25; 1/60; 1/125; 1/250; 1/500, 1/1000 of a second. Each change lets in either twice as much or half as much light. All the F-stops either let in half as much or twice as much light. Open up one stop and give one click more light and you have 6dB! Changing the film speed one level up or down is the same as an F-stop or a time change. The orderliness of it all appeals to my Scandinavian soul.

Here's another argument for the six dB as an S-unit standard: If a station goes from the basic 100W output transceiver up to the full-bore legal limit 1500W output the change would be 12 dB and, it seems that a two S-unit change would be appropriate for that particular rise in power.

I will now demonstrate (contrary to popular opinion) that I am indeed a warm-hearted and sensitive human being. At about this moment some of my critics are reaching for a sheet of paper to send off a letter. I'm going to save them the 32 cents. Yes, I already know that going from 100W to 1500W is not exactly 12dB. It is actually, 11.761dB. So there, don't write.

For those of the younger set who would like a guided tour of how we got there, here it is:

100W to 200W (+3dB)
200W to 400W (+3dB) Total=6dB
400W to 800W (+3dB) Total=9dB
800W to 1600W (+3dB) Total=12dB

With the accuracy of meters and circuitry today, being ¼ of a dB off (1600W/1500W) would read close enough to 2 S-units to be 2 S-units.

Now a message for the Kurt critics who block print (in microscopic size letters) on half of the back of a picture postcard. Save your 20 cents. Don't call me "stupid" because I said that quadrupling power is 6dB and you are going to tell me that it is really 6.0206dB.

Other thoughts: The "Wirebook III" from The Wireman, Inc. is really quite interesting, valuable and well worth the small fee charged.

GAAAA!!!! Thanks to an eagle-eyed Kurt pal in Georgia I was made aware of (it pains me to even report this) a very well-known amateur writing this in a magazine of national circulation; "By adjusting the tuner's controls, you can 'trick' your radio into putting out full power (and be 'happy' in the process)."

As I have said dozens of times, in no real book is the scientific principle of impedance matching referred to as a "trick" or that other gem "fools the radio." I also wonder who it is that is "happy" in the above-mentioned process. The operator? The radio? I think the above-mentioned writer deserves a lash of the Newington Noodle.

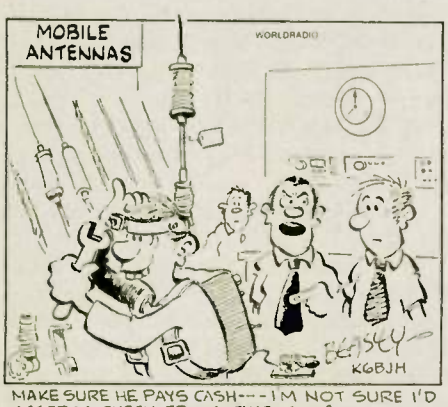
Thankfully, in the old days nobody ever wrote that the pi-network in a transmitter output stage "tricked" the plates. "Say, we sure done 'fooled' those tubes didn't we?"

A friendly physician wrote in to report that he was on the air with someone who argued that the signal transmitted from a vertical would be better than a dipole (in the dipole's favored direction).

The good doctor said, "Sometime when you are feeling particularly curmudgeonly would you explain to the throng that the only way one gets 'gain' is to swipe it from somewhere in the radiation pattern and scrunch it towards the desired direction? And that verticals exhibit no 'gain' at all in the usual sense? Keep it up OM. 73 es 88 to Lil Paddle."

Which returns us to the spectacular 2L antenna mentioned above. Just think about what a narrow, narrow pattern must be exhibited to get the gain figures claimed. It's a pity that all the now-obvious bumblers at Granger, TCI and Harris couldn't come up with such a breakthrough. Probably all those post-graduate degrees got in the way of true thinking. Just wait until the big bosses wave that advertisement in the engineers' faces. "How come some guy in a garage is the wizard of HF?"

(KNS whose contest SOP is two Bird wattmeters in series, [attached by a connector] one with the 2,500W slug to measure forward power [1500W] and the second with a 5W slug to measure reflected, goes by his disguise name in order to avoid the riff-raff who not only don't own two Bird wattmeters but don't even own one.) **WR**



MAKE SURE HE PAYS CASH---I'M NOT SURE I'D ACCEPT A CHECK FROM THIS GUY!

Humble pie

During the recent 160 and ARRL DX contests I noticed a really good effort by U.S. and VE stations to observe the DX Window concept. Congrats to all including the few who politely explained the concept to the uninformed.

In a previous column I commented about the poor acceptance of the 80-meter DX window and the 160-meter DX window. These are areas of the 160-meter and 80-meter bands where U.S./VE stations should listen for DX. The DX station will tell you to call him/her either on their transmitting frequency or that they are listening for your call on another frequency outside the window. This necessitates use of your split frequency capabilities. *Please do not call CQ in the DX window.*

If you want to be really helpful, I suggest not using 2 kHz above or below the window when using high power or high gain antennas.

The suggested frequencies are 3.790-3.800 and 1.830-1.835 although I believe the 160 window should be 1.830-1.840.

Ron, AB5KD, the contest manager for *Digital Journal* dropped me a nice e-mail and says he will try to get us info on upcoming Digital Derbies.

Please remember this May column is set up for printing at the beginning of March so please send your contest announcements in early.

Most contests require separate logs per band, check sheets for over 200 Qs, a summary sheet, and a signed and dated affidavit attesting to observance of the rules of both the contest and your local regulating authority. A statement wherein you agree to be bound by the decisions of the contest committee is also needed. All times are in UTC.

Late April 'tests

(see April *Worldradio* for details)

•HB9 SSB/CW Helvetia 22 'test

27 April 13:00-28 April 13:00

(RS(T)+number or Canton for HB9 stns)

•NEB All modes QSO party

27 April 17:00-28 April 16:59

(RS(T) + st/prov/country or for NE stns, county<93>)

May 'tests

•ARRL VHF Sprints

50 MHz-18 May 23:00-19 May 03:00

Local time for 432-2304 MHz BELOW:

432 MHz	— 1 May	19:00-23:00
902 MHz	— 11 May	06:00-13:00
1296 MHz	— 11 May	06:00-13:00
2304 MHz	— 11 May	06:00-13:00

ARRL for details.

•FISTS CW Spring Sprint 'test

11 May 17:00-21:00

CW only. Wk stns once per band. Exchange name/st/prov/DXCC country/FISTS nbr (if member) or pwr output (for non-FISTS). Pts - 5 per FISTS contact, 2 per non-FISTS. Mult — st/prov count once only, DXCC countries x1 each time wkd. Final score is QSO pts x mults. Calling freqs, low end of 80-, 40-, 15-, and 10-meter Novice bands and 3.558, 7.058, 14.058, 21.058, and 28.058 MHz. Send logs w/in 30 days to: Peter Kozup, K8OUA, 5115 N. Park Ave., Warren, OH 44481.

•ARI Italian SSB/CW/RTTY 'test

4 May 20:00-5 May 20:00

(RS(T) +number or for I stns, 103 provinces provided.

Q all stns, not just Italian stations. SSB/CW-160 -10; RTTY-80-10. 1x per mode on each band — 3 QSOs per stn ok (1 ea for CW/RTTY/SSB) per band for pts but only 1 mult.10 min rule for band/mode change. Score-Pts (10 for ea Italian stn; 3 for diff continent; 0 for own country; 1 for own continent, diff country) x mults (DXCC <excluding I and ISØ> + provinces per band). Single op CW; single op SSB; single op RTTY; single op mixed; Multi op 1 Tx mixed.

Provs: I1- AL, AT, BI, CN, GE, IM, NO SP, SV, TO, VB, VC; IX1-AO; I2-BG, BS, CO, CR, LC, LO, MI, MN, PV, SO, VA; I3-BL, PD, RO, TV, VE, VR, VI; IN3-BZ, TN, IV3-GO, PN, TS, UD; I4-BO, FE, FO, MO, PR, PC, RA, RE, RN;I5-AR, FI, GR, LI, LU, MS, PI, PO, PT, SI; I6-AN, AP, AQ, CH, MC, PS, PE, TE; I7-BA, BR, FG, LE, MT, TA; I8- AV, BN, CB, CE, CZ, CS, IS, KR, NA, PZ, RC, SA, VV;I0-FR, LT, PG, RI, RM, TR, VT; IT9-CL, CT, EN, ME, PA, RG, SR, TP, AG; IS0-CA, NU, SS, OR.

Awards — Plaques and in the past ARI T-shirts, ARI calculators! Special plaque to best score under age 21. Contest software (MSDOS) for $5 available from contest committee. ASCII/N6TR/CT ok, I2UIY.

•10/10 Int'l CW 'test

4 May-5 May

Call/ write KØPVI for details.

•OZ Danish SSTV 'test

4 May 00:00-5 May 2400

Q 1 time only. 80-2M. Pls use region 1 SSTV recommended fqs. Score-Pts (2 for 1st w/ARRL DXCC, 1 for ea additional point; 1 pt bonus for ea Q w/ OZ stn).

Certs. Carl Emkjer, Soborghus Park 8, DK 2860, Soborg, Denmark.

•MASS QSO Party SSB/CW/Digital/Video

4 May 18:00-5 May 04:00 then 11:00 to 2100 5 May (RS(T)+st/prov/DXCC or county for MA stns) Q 1x per mode per band 160-10.

CW-1.810 and +50kHz other bands; SSB-1.850, 3.890, 7.290, 14.270, 21 and 28.390. Novice- 3.705, 7.130, 21 and 28.130. Score: Pts (1 for SSB; 2 for CW/ Digital/ Voice.) x mults (counties (14) per band or st/prov/DXCC per band for MA stns). Outside MA; MA single op; MA multi op; MA portable; MA team (5 MA single ops) MA Nov/Tech; MA Club. FARA, P.O. Box 3005, Framingham, MA 01701

•CT CW/SSB/RTTY QSO Party

4 May 20:00-5 May 04:00 then 12:00 to 20:00 5 May

(RS(T)+ st/prov/DXCC or county for CT stns)

Q 1x per mode per band, 160-2 M. CT stns ok to Q other CT stns for pts and mults. Q Mobiles 1x per county. Score- Pts (1 SSB/RTTY; 2 CW; bonus of 5 pts for W1AW and W1QI) x mults (CT counties (8) for non CT stns; st/

prov/county and only 1 mult for DX for CT stns). CW +40 kHz; Novice +25 kHz; SSB-1.860, 3.915, 7.0 and 14.280; 21 and 28.380. VHF 50.150, 144.200, 146.850. Single op fixed, single op mobile, Novice, QRP(5W), multi single, multi multi and club. CARA, P.O. Box 3441, Danbury, CT 06813-3441.

•Nevada SSB/CW/RTTY QSO Party

11 May 00:00-12 May 06:00

(RS(T)+st/prov/DXCC or county for NV stns)

Q 1x per mode per band. Six thru 160M. CW + 15kHz from bottom of General band; SSB +25 kHz from bottom of General band; N/T+25 kHz from bottom of band. Score- Pts(2 CW; SSB 1; ck w/ NW7O re RTTY points) x mults (NEV counties or st/prov/DXCC for NEV stns). Certs. NW7O.

•EU CW Sprint

18 May 15:00-18:59

(Both calls + number) NO RS(T).

QSY Rule — if you initiate a Q via CQ or QRZ etc., you can work only 1 station on that freq and your next QSO or CQ, QRZ, etc., must be at least 2 kHz away. Single op only. Frqs. — 14.250; 7.050; 3.730. No suggestion from sponsors about how U.S. stns can work split. Free EU Sprint contest software is available from DL2NBU and or IK4EWK. I suggest you send some$$ for postage and packaging, $5 seems to be apropos. TR by N6TR is easily adapted. Contact I2UIY pcortese@mbox.vol.it or above. Logs in 15 days via mail to G4BUO or in ASCII to eusprint @dl6rai.muc.de

•CQ WPX CW 'test

25 May 00:00-26 May 2400

(RST+number)

Q1x/band.1.8 — 28 MHz (No WARC Bands). Single ops only allowed 30 of 48 hrs. Multis allowed 48 hrs. Off periods at least 60 mins and clearly marked in log. Points North America-Qs outside NA 3 pts on 28, 21,14 MHz; 6 pts on 7, 3.5, 1.8 MHz.

Qs w/other NA countries 2 pts on 21, 28, 14 MHz; 4 pts on 7, 3.5, 1.8 MHz Qs w/ own country no pts but ok for prefix multipliers. EU/AS/AF/OC/SA -Qs outside own continent 3 pts on 28, 1, 14MHz; 6 pts on 7, 3.5 and 1.8.

Qs w/other countries on own continent 1pt on 28, 21, 14 MHz; 2 pts on 7, 3.5 and 1.8 MHz. Qs w/own country no pts but ok for prefix multiplier. Multipliers okay to score same station on each different band for QSO pts but prefix credit may be taken only once no matter how many times you work the same station or other stations with the same prefix. Prefix = the 3 letter or number combination of the first part of the call. YZ1, 3W8, AA1, AA2, etc. Stations operating from a different call area than their call sign must sign portable indicating the correct geography and country of operation. e.g. KB6HP/1 = KB1; KA1DWX/6 = KA6; K2UYC/LX = LX.

Single op — all band/single band; Multi op — all band only, single xmtr/multi xmtr. Multis use separate numbers for each band. Club competition. QRP<5w, state max pwr output used in log. Include prefix list w/log. Trophies, plaques. *CQ* **WR**

SAREX conference

The ARRL has made arrangements with two Amateur Radio volunteers to represent the Shuttle Amateur Radio Experiment at the Technology and Learning Conference in Dallas, in October.

The conference will be attended by school administrators. NASA, which approached the ARRL about the conference feels that SAREX should be included because it helps reinforce the U.S. government's heightened emphasis on telecommunications. The presentation will also cover NASA Spacelink, a telephone and Internet-accessible information system for school teachers, and NASA TV.

hamfests May

Arizona

The COCHISE ARA will hold a hamfest on 4 May at the club's South Moson Road site, 5 miles east of Sierra Vista on Rt. 90, from 7 a.m. Tailgaters pay $5 space fee (includes door-prize ticket). Contact John or Leatha Braden, 2200 South Sonoita Dr., Sierra Vista, AZ 85635; 520/459-7960. Talk-in on 146.76(-).

California

The LIVERMORE AMATEUR RADIO KLUB (LARK) will sponsor the East Bay area Amateur Radio/Electronics/computer Swap Meet on 5 May from 7 a.m. to 12 noon. Swap held in open parking lot, rain or shine. No setup until 7 a.m. at Las Positas College in Livermore, north of I-580 at the Airway Blvd. Admission and parking are free. Sellers pay $10 space fee. Refreshments are available. Contact Noel Anklam, KC6QZK, at 510/447-3857 eves or leave message days at 510/783-2803. Talk-in on 147.045(+) (PL 94.8) from the west and 145.350(-) (PL 100 receive and send) from the east.

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The FRESNO ARC will hold a hamfest on 4 May from 7 a.m. at the Riverland RV Park. Festivities will last all day. Admission and parking is free. An inexpensive steak lunch will be served. Parking is available Friday night (the 3rd) for those with campers, motor homes and trailers. Additional nights available for a small cost. Everyone, licensed or not, is welcome to attend. For information, listen to the Club's Sunday night net at 7 p.m. on 146.94(-) repeater or call John Pritchett, WA6JWK at 209/222-6793.

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The NORTH HILLS RADIO CLUB will hold a radio swap and electronics fair on 19 May from 7 a.m. to noon at the Carmichael Elks Lodge, 5631 Cypress Ave., Carmichael, located at the corner of Cypress and Hackberry. Sellers $10, buyers free. Lots of double outdoor spaces but limited indoor spaces available. For information/reservations, contact Tim Lewis, KD6FWD, at 916/722-7037 or write to NHRC Swap, P.O. Box 41635, Sacramento, CA 95841; Internet http://www.ns.net/~NHRC. Talk-in on 145.19(-) and 224.40(-).

Colorado

The WESTERN COLORADO ARC will hold a hamfest 4 May, from 9 a.m. (vendors 7 a.m.) at the Moose Lodge, 573 25 ½ Road in Grand Junction, CO. VE exams will be held at 10 a.m. Food and drink is available on location. Admission is $3.50; vendors $10 for the first table and $7 for each additional table (includes admission). For information, send an SASE to: Richard Carnett, N5PEN, 581 Eastwood St., Grand Junction, CO 81504; 970/244-8713, or Fred Hatten, N5LKO, 2819 U.S. Highway 50, Grand Junction, CO 81503; 970/241-1051. Talk-in on WCARC repeater 146.94(-).

Illinois

The KISHWAUKEE ARC will hold a hamfest on 5 May from 8 a.m. (setup 6 a.m.) at the Sandwich Fairgrounds in Sandwich. Food will be available. Admission is $5/advance, $6/door. Tables $10, tailgating is free with admission. Send SASE to Howard, WA9TXW, Attn: Hamfest, P.O. Box 264, Sycamore, IL 60178. Make check payable to: KARC. Talk-in on 146.73(-) or repeater 146.52(S).

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The STARVED ROCK RADIO CLUB will hold a hamfest on 2 June from 6 a.m. at the Bureau County Fairgrounds in Princeton. Admission is $5/(double stub)/advance (before 20 May) or $5 (single stub)/door. Camping and outdoor flea market area is free. Eight-foot tables are $10. Contact Bruce, KU9A, or Debbie Burton, N9DRU, 1153 Union St., Marseilles, IL 61341; 815/795-2201. Talk-in on 146.35(+).

The CHICAGO ARC will hold a hamfest on 26 May from 8 a.m. to 3 p.m. (setup 6 a.m.) at DeVry Institute of Technology, 3300 N. Campbell, Chicago. Tickets $4/advance, $5/door. Indoor tables $1.50/ft. Outdoor swapfest space and parking free. Prizes and refreshments. For information and reservations, write to CARC, 5631 W. Irving Park Rd., Chicago, IL 60634; 312/545-3622 or 312/486-6823. Talk-in on 147.25(+).

Michigan

The WEXAUKEE ARC will hold a hamfest on 4 May from 8 a.m. to 2 p.m. (setup 6 a.m.) at the Cadillac Middle School in Cadillac. Drawings and refreshments available. VE exams for all classes at 1 p.m. Admission is $5, 8' table $6. For information, contact Dan, KE8KU, Wexaukee ARC, P.O. Box 163, Cadillac, MI 49601 616/775-0998 Talk-in on 146.98(-).

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The PAUL BUNYAN ARC will hold a hamfest on 5 May, 8 a.m. to 2 p.m. at the NorthWest Technical College. Dealers, exams, and flea market. Preregistration required for VEs with Gurnee Bridgeman, 218/243-2002. For information, contact Roben Beyer, P.O. Box 524, Bemidji, MN 56601; 218/751-4801 or by e-mail: emilee@northernnet.com Talk-in on 146.73(-).

North Carolina

The DURHAM FM ASSOCIATION will hold an electronic flea market on 5 May, 9 a.m. to 3 p.m. (setup 7 a.m.) at Lincoln High School on Kneeland Ave. in Yonkers. Features include new and used equipment for Amateur Radio operators, commercial two-way radios, computers, stereo buffs, TVs, telephones, electronic parts and kits, etc. Unlimited free coffee will be served, and food-to-go will be for sale. Door prizes will be drawn hourly with grand prize at 1 p.m. Admission is $6 for adults (children under 12 accompanied by an adult are free). Limited

vendor space. For information or to register as a vendor, call 914/969-1053. Talk-in on 449.425 PL 156.7.

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The DURHAM FM ASSOCIATION will hold its 22nd annual Hamfest and Computer Show on 25 May from 8 a.m. to 3 p.m. (setup at 6:30 a.m.) at the South Square Shopping Mall, Highway 15-501 South and Chapel Hill Blvd. VE exams at 10 a.m. Preregistation requested. Limited number of walk-ins will be accepted. For exam information, contact Dave Snyder, N2MLU, 600 S. Churton St., #64, Hillsborough, NC 27278; 919/644-8681. For dealer, flea market, or general hamfest information, contact Rodney Draughon, AE4JW, 794 Harris Mill Rd., Rougemont, NC 27572; 910/364-7420. Talk-in on 147.22(+) and 145.45(-).

Oregon

The KENO ARC will hold its annual hamfest on 4 May, 9 a.m. to 3 p.m. (setup 7 a.m.) at the Assembly of God Church, 235 S. Laguna St., Klamath Falls. Features include dealers, ARRL forum, ARES seminar, demonstrations and more. Free parking and free overnight space for self-contained vehicles. Admission $4/advance, $5/door. Vendor tables $10, additional tables $5 each. For information, contact Keno ARC, P.O. Box 653, Keno, OR 97627; 541/883-2736 or 541/882-1300. Talk-in on 147.32(-).

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The WARMINSTER ARC will hold a hamfest on 5 May, from 7 a.m. (vendors 6 a.m.) at the Middletown Grange Fairgrounds, Penns Park Road, Wrightstown. Indoor spaces with 8' table $12, unlimited outdoor tailgating spaces for $9 each. Admission $6 (non-ham spouses and children under 12 free). VE exams 11 a.m. (prereg. at 10:30 a.m.). Due to the large number of examinees, we will not be able to conduct exam retakes at the test session. For information, contact George Brechmann, N3HBT, at 215/443-5656 between 9 a.m. and 9 p.m. Talk-in on 147.69(-) repeater and 146.52(S).

Rhode Island

The RHODE ISLAND AMATEUR FM REPEATER SERVICE, INC. will hold a spring auction and flea market on 18 May from 8 a.m. at the VFW Post 6342, Main Street, Forestdale (North Smithfield). Spaces are $5 each, on a first-come first-served basis. Auction begins at 11 a.m. and runs until 3 p.m. Coffee, donuts, food and beverages are all available. For information, contact Rick Fairweather, K1KYI, 144 Parkview Drive, Pawtucket, RI 02861; 401/725-7595. Talk-in on 146.76(-).

Texas

The KEY CITY ARC will sponsor the ARRL West Texas Section Convention and Hamfest on 4 May, 8 a.m. to 5 p.m and 5 May, 9 a.m. to 2 p.m. at the Abilene Civic Center. Free parking; VE exams; wheelchair accessible. Admission is $7/advance (before 30 April), $8/door. For reservations and info, contact Peg Richard, KA4UPA, 1442 Lakeside Dr., Abilene, TX 79602; 915/672-8889. Talk-in on 146.76(-).

Wisconsin

The OZAUKEE RADIO CLUB will hold a swapfest 4 May, 8 a.m. to 1 p.m. (setup 6:30 a.m.) at the Circle-B Recreation Center, Highway 60 and County I (located 20 miles north of Milwaukee, west of Grafton). Admission is $3. Tables are $3 for 4' (limited power available on request). Food and refreshments are available. License exams start at 9 a.m. For admission tickets, table reservations, maps, or additional information, send an SASE to ORC Swapfest Chairman, W58 N985 Essex Dr., Cedarburg, WI 53012; 414/377-2784 or 414/377-3271 . Talk-in on 146.97(-) and 146.52(S).

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The MANCORAD RADIO CLUB will hold a hamfest and swapfest on 11 May from 8 a.m. (Friday setup until 10 p.m. and early the 12th). Features include flea market (amateur, computer, electronic), VE exams, refreshments, camping (414/683-4378). Admission is $3/advance, $4/door. Reserved 8' tables, $6 each; electrical outlets $11. For information, write Mancorad RC, P.O. Box 204, Manitowoc, WI 54221 (SASE please). Call Red 414/684-9097 or Glenn, 414/684-7096. Talk-in on 146.61(-). WR

Testing cooperation

The FCC has told the nation's VECs to stop bickering and to cooperate in all aspects of testing. The American Radio Relay League has asked that the Commission declare the current VEC mechanism to be null and void. The League believes that a decision by most of the nation's VECs to incorporate leaves those who do not want to join the new organization out in the cold in maintaining the test question pool.

It now looks as if the FCC is not going to heed the League's call to create a new mechanism. But the FCC does appear to sympathize with the League's position. In the notice announcing the testing rules changes reported elsewhere, the regulatory agency took pains to point out that Section 97.523 requires VECs to cooperate in maintaining a single question pool for each examination element. As a result, all exam materials and manuals must draw from that same standard question pool, which is widely available to the public.

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

Speaker with ALC

C & S Electronics introduces a new addition to their Automatic Audio Level Controller line, the ALC247. The

ALC247 Extension speaker/amplifier with built-in audio level controller provides a nearly constant output level whether the input signal is a whisper or a scream.

A 3-band equalizer is provided to further reduce the unwanted noise and tailor the audio to meet individual requirements. The loud signals are attenuated and the low levels are amplified while reducing the ambient and low noise levels. The unit is powered from the included power module or external 12V power source. The ALC247 is ideal for radio amateurs, commercial radio, SWL, and TV applications when a constant audio level is desirable for comfort and safety.

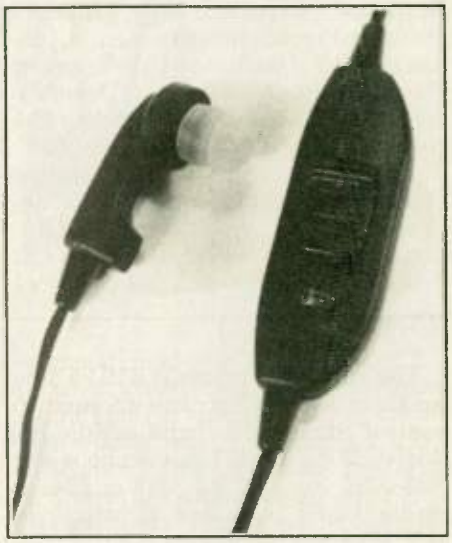
Dimensions are 4" x 6" x 3" and the price is $49.95.

Please contact C & S Electronics, P.O. Box 2142, Norwalk, CT 06852-2142; 203/866-3208, fax 203/854-5036.

EARTALK Mark II

GENESYS Products Group announces its next generation EARTALK specialty microphone: the EARTALK Mark II, model #ET-Mark II. This unique little product provides the means for nearly hands-free two-way radio communications.

The EARTALK Mark II combines a microphone and earphone built into an ergonomically designed earpiece or EARMIC. The unit attaches via the mic-jack on hand-held transceivers. During two-way radio transmissions, transmit audio is picked up from the inner-ear and passed via the EARMIC. Receive audio is provided by the internal earphone. Voice transmissions are activated by a push-to-talk (PTT) control assembly.



The EARMIC earpiece is light, has a snug fit, and substantially reduces background noise. A new circuit design improves transmit audio without any user internal gain adjustments and volume control now comes exclusively from the user's radio.

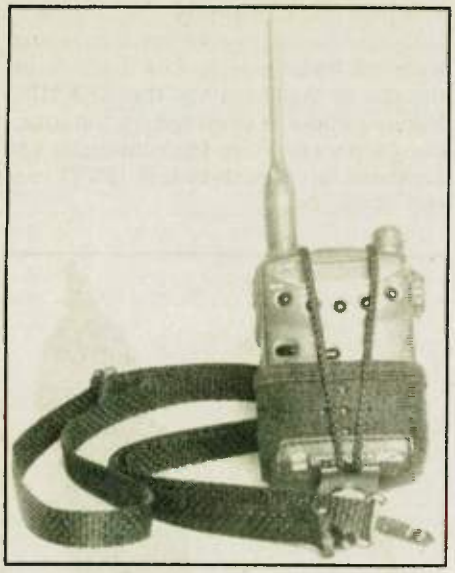
The ET-Mark II also features a PTT lock and comes standard with split plugs and an adjustable belt/shirt clip. It also fits most Amateur Radio and many Commercial land-mobile handheld radios: Models ET-Mark II (ICOM), etc.), ET-MarkII-K (Kenwood), and ET-MarkII-M (Motorola). Suggested retail price is $84.95.

For more information about the EARTALK Mark II or other quality radio accessories, contact: GENESYS Products Group, Ltd., 10815 Gulfdale, San Antonio, TX 78216; telephone 800/847-4745, fax 210/349-4300. E-mail: genesys@connecti.com or visit their Internet Web site: http://www.connecti.com/~genesys.

CLC503 carrying case

Standard® Amateur Radio Products, Inc., introduces a Cordura padded nylon carrying case for the C508A and C108A handhelds.

The CLC503 carrying case is constructed of Cordura padded nylon with nylon cord retainers that secures the radio in place and a loose weave nylon adjustable shoulder strap. The carrying case fits on a belt, over the shoulder or neck, and even stands up on a desk.



The suggested prices is $19.95 from amateur dealers. For more information, contact Standard® Radio at P.O. Box 48480, Niles, IL 60714; telephone 312/763-0081, fax 312/763-3377 or visit us on the World Wide Web at http:/www.stdradio.com

DR-605T Dual band 2 Meter/440 Mobile

Alinco Electronics introduces a new addition to its line of Amateur Radios, the DR-605T Dual Band (2 Meter/440 MHz) mobile/base transceiver.

Features include:

- Control layout incorporates a large display, large controls and a user-friendly design that facilitates intuitive operation.
- Extended receive capabilities, VHF 136-173.995 MHz, UHF 420-470 MHz.
- A transceiver equipped with 100 memories, CTCSS tone encode, cross-band repeater and cross-band memory capabilities. Can be modified for MARS/CAP use (permits required). Maximum output is 50 watts VHF 35 watts UHF.
- Three different European repeater tone bursts (1450, 1750 and 2100 Hz); ideal for travelers.
- "Time-out" timer
- Cloning capability
- 9600 bps packet ready, with dedicated ports on the rear panel of the radio.
- Optional EJ-24U CTCSS Tone Decoder Unit which allows the DR-605T not only to operate in "tone squelch" receive mode but can search (tone-scan) for a specific CTCSS tone in a received signal.

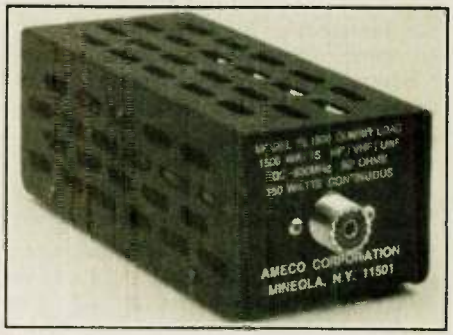
The buyer saves in another way; there's no need to purchase an antenna duplexer, one is built into the radio, anticipating the use of a dual-band antenna and eliminating the need for a second run of coax.

Anticipating that the FCC grants type-approval within normal timelines, dealers should have the DR-605T available for customers in May, 1996.

For more information, contact Alinco Electronics, Inc., 438 Amapola Ave., Ste. #130, Torrance, CA 90501; telephone 310/618-8616 or fax 310/618-8758.

High-performance RF dry loads, DL1500 and DL500-F

Ameco Corporation introduces two high-performance broadband RF loads covering the range from DC to 650 MHz. The 1,500 watt dummy load is available in two versions. Model DL 1500 (pictured) is an air-cooled unit that will handle an average of 1,500 watts for up to 15 seconds and 150 watts continuously from DC to 650 MHz.



Model DL1500-F is a forced-air-cooled dummy load. It will handle an average of 1,500W for a full 30 seconds and 300 watts, continuously. The A low-noise fan helps keep the non-inductive load element cool for longer life. The SWR for both the DL1500 and DL1500-F is 1.1:1 for 160 to 2 meters, 1.5:1 to 70 cm.

Both units come in a strong, lightweight case perforated to enhance cooling.

For more information, please call, write or fax: Donna L. Bates, Customer Service, Ameco Corporation, 224 E. Second St., Mineola, NY 11501; 516/741-5030, fax 516/741-5031. WR

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AUTO-CALL MAGAZINE, official journal of the Foundation For Amateur Radio, a federation of over 80 clubs in the greater Baltimore/Washington DC area. Great coverage of FCC, ARRL, VEC, Public Service and club activities in the area. A must for those even passing through the area. For a sample copy write FOUNDATION FOR AMATEUR RADIO, P.O. Box 7612, Falls Church, VA 22046-7612. F896

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WANTED FOR MUSEUM: Apple-1 and other pre-1980 micro-computers, also early micro-computer journals, newsletters and advertising literature. KK4WW, P.O. Box 341, Floyd, VA 24091, 703/231-6478 or 703/763-2321. 196-197

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R-390A SALES AND SERVICE. Info SASE MILTRONIX, P.O. Box 80041, Toledo, OH 43608. R-390 power input cables $25; antenna connectors $12.50; external AGC mod $20; prepaid. Mon-Fri 9 a.m. to 6 p.m. EST; 419/255-6220. 1295-696

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FOR SALE: MOBILE RADIO Yaesu FT890, antenna — Mosley. 2-meter radio antenna tuner. CHARLES STAFFORD, P.O. Box 857, Virginia City, NV 89440. 5-696

FOR SALE: Kenwood TS520S, CW filter, excellent condition; Kenwood desk mic MC-50, MFJ tuner 941-B, manuals $400. BILL, 13 Kennedy Rd., Foster, RI 02825; 401/397-5917. 595

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ADVERTISERS' INDEX

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 August, please have the information to us by mid-May.

p/r pref. = pre-register preferred but w/i OK
p/r = pre-register only — no w/i

Worldradio, 2120 28th St., Sacramento, CA 95818. Please mark the envelope "VE Exams."

List the location (City), any information examinees should have (advance registration, etc.) and the name and telephone number of a person to contact for further information.

w/i pref. = w/i preferred to p/r
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Date	City	Contact	Notes
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6/15/96	Gassville	Phil, AB5ZU 501/425-7406	p/r pref.
California			
6/02/96	Chico	Jackie, W6YKU 916/342-1180	p/r pref.
6/27/96	Colton	Harold, AB6RN 909/825-7136 days or 909/685-6073 eves	
6/02/96	Concord	Gene, WW6H 510/254-5090	w/i only
6/29/96	Culver City	Scott, K6PYP 310/459-0337 or Dave N3BKV 818/559-2572	p/r pref.
6/15/96	Cupertino	Emmett, AE6Z 408/243-8349	p/r
6/29/96	Escondido	Harry, WA6YOO 619/743-4212	p/r
6/29/96	Fairfield	Dick, AB6EY 916/791-0268	w/i pref.
6/04/96	Fremont (TP)	Greg, KJ6EP 510/791-6818	w/i only
6/05/96	Lake Isabella	Tom, KN6TS 619/379-2947 or KD6YNX 619/379-5236	p/r pref.
6/15/96	Oakhurst	Ken, K6LFR 209/683-8245	
6/22/96	Pomona	Don, WA6HNC 909/949-0059	p/r
6/15/96	Porterville	Phil, WA6WRS 209/535-4288	w/i only
6/15/96	Redwood City	Joe, KB6OWG 408/255-9000	w/i only
6/15/96	Sacramento	Lyle, AA6DJ 916/483-3293 or Phil, N6ZVA 916/338-3223	w/i
6/05/96	Sacramento	Jim, AB6OP 916/334-4887 or Larry, KD6OLN 916/361-2476	p/r pref.
6/08/96	San Pedro	Elvin, N6DYZ 310/325-2965	p/r pref.
6/12/96	Santa Ana	Red Cross, 714/835-5381 x140	w/i
6/15/96	Stockton	Mark, W6DKI 209/465-7496	w/i
6/08/96	Sunnyvale	John, KG6XF 408/255-9000	w/i only
6/15/96	Tehachapi	Bill, N6GLO 805/822-1473	
6/08/96	Torrance	Joe, WB6MYD 310/328-0817	p/r pref.
Colorado			
6/08/96	Denver	Glenn, WØIJR 303/366-9689	p/r pref.
	All Colorado	24-hour recording 303/360-7293	
6/01/96	Sterling	Blaine, WAØJTB 970/522-5787	p/r pref.
Florida			
6/15/96	Melbourne	Bill, WB9IVR 407/724-6183	p/r pref.
Georgia			
6/15/96	Marietta	Joanne, AC4JQ 770/955-3171	w/i
6/03/96	Marietta	Delaine, KM4FV 770/993-9758	w/i
Idaho			
6/05/96	Athol	Bob, N7GHV 208/683-2094	p/r
6/08/96	Boise	Lem, W7JMH 208/343-9153	p/r pref.
6/08/96	Priest River	Russ, AA7XM or Chris, AA7XN 208/264-4534	p/r
Illinois			
6/18/96	Aurora	James, N9UZC 708/879-3042	w/i
6/15/96	Loves Park	Dennis, W9SS 815/877-6768	p/r pref.
6/15/96	Morton	James, NT9C 309/266-6756	p/r pref.
6/08/96	Oak Forest	David, NF9N 708/448-0580	p/r pref.
6/27/96	Villa Park	Lyle, WB7EED 708/325-5694	w/i pref.
Indiana			
6/02/96	Terre Haute	Fred, K9EBK 812/466-2122	p/r pref.
Iowa			
6/29/96	Council Bluffs	Lorraine, AAØBS 712/322-1454	p/r pref.
Maryland			
6/11/96	Annapolis	Lois, KA3VVQ 410/647-4178	p/r pref.
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6/28/96	Holyoke	Dave, N1MHP 413/592-4978	w/i
6/15/96	Melrose	Scott, WB1F 617/665-7654	p/r pref.
Minnesota			
6/01/96	St. Paul	Jay, KØQBE 612/222-7253	p/r pref.
Missouri			
6/01/96	Kimberling	Jim, NQØG 417/739-2888	p/r pref.
Nebraska			
6/01/96	So. Sioux City	Donna, NRØZ 402/494-2673	p/r pref.
New Jersey			
6/08/96	Cranford	24 hour hot-line 201/377-4790	w/i pref.
6/20/96	Bellmawr	Bill, NT2N 609/933-1500	w/i pref.
6/12/96	Ft. Monmouth	Gerry, WB2GYS 908/532-5354	p/r pref.
New Mexico			
6/29/96	Las Cruces	Gunnar, AE4W 505/525-2159 or Dean, WA7EPU 525-1962	p/r pref.
New York			
6/15/96	Long Island	Les, AA2FJ 516/364-0030 or 516/922-0947	p/r pref.
6/11/96	Long Island	Bob, W2ILP 516/499-2214	w/i pref.
6/02/96	Yonkers	Emily, AC2V 914/237-5589	p/r pref.
6/09/96	N. Lindenhurst	Walter, KA2RGI 516/957-0218	p/r pref.
Ohio			
6/01/96	Cincinnati	Herb, WA8PBW 513/891-7556	p/r pref.
6/08/96	Van Wert	Robert, KA8IAF 419/795-5763	p/r pref.
Oregon			
6/14/96	Grants Pass	Clyde, AA7WC 541/474-0205 or Gary, KB7CFI 541/474-7974	p/r pref.
6/15/96	Medford	Paul, KE7VO 541/878-3433 or Rick, KG7PX 541/779-3404	p/r pref.
6/12/96	Roseburg	Dick, AA7GC 541/672-7564	p/r pref.
Pennsylvania			
6/10/96	Erie	Norma, W3CG 814/665-9124	p/r pref.
6/15/96	Mercer	Dennis, WM3H 412/347-5960	w/i
Rhode Island			
6/13/96	Providence	Al, NN1U 401/231-9156 or Judy 401/454-6848	w/i pref.
South Dakota			
6/29/96	Rapid City	Frank, NUØF 605/348-6564	p/r pref.
Texas			
6/15/96	Austin	Jim, AB5EK 512/327-6184	w/i pref.
6/11/96	Houston	Harold, ND5F 713/464-9044	p/r pref.
Virginia			
6/29/96	Glouster	Harry, N4THN 804/642-3517	p/r pref.
6/08/96	Virg. Beach	Judy, KD4JMA 804/468-9166	p/r pref.
Wisconsin			
6/01/96	Racine	Bob, WØWLN 414/886-8551	p/r pref.

PHASE 3-D shock tests successful

AMSAT North America says a series of qualification shock tests have been successfully completed for the Phase 3-D specific bearing structure.

That's the structure which will be used to carry the Phase 3-D spacecraft into orbit during launch. The tests held in late January and early February exposed the structure to the shock environment expected to be encountered on the Ariane 5 vehicle during lift-off. Tests also successfully demonstrated the operational performance of the spacecraft's separation system.

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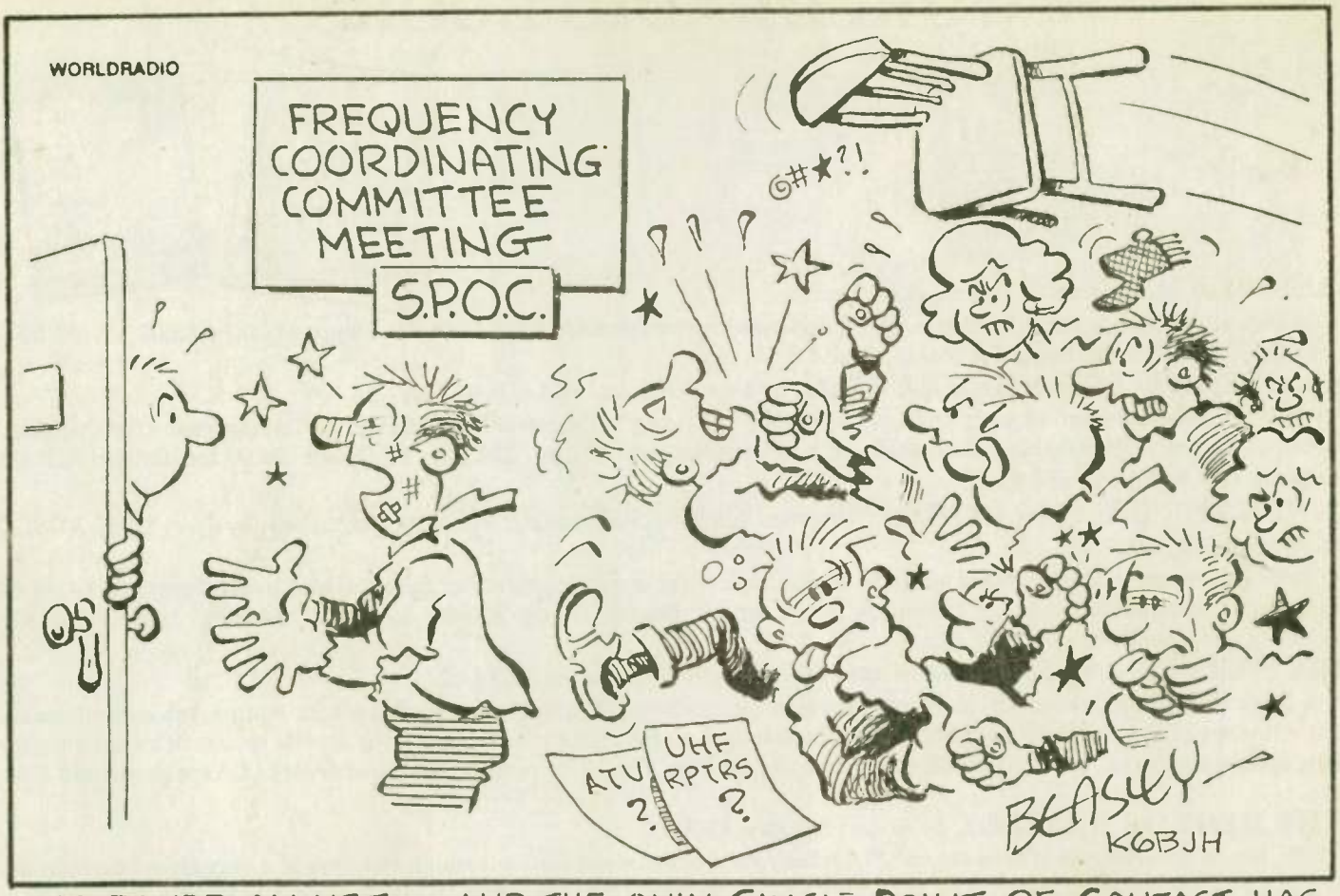

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