

# Worldradio

Year 20, Issue 12

June 1991 • \$1.25

## FEATURES

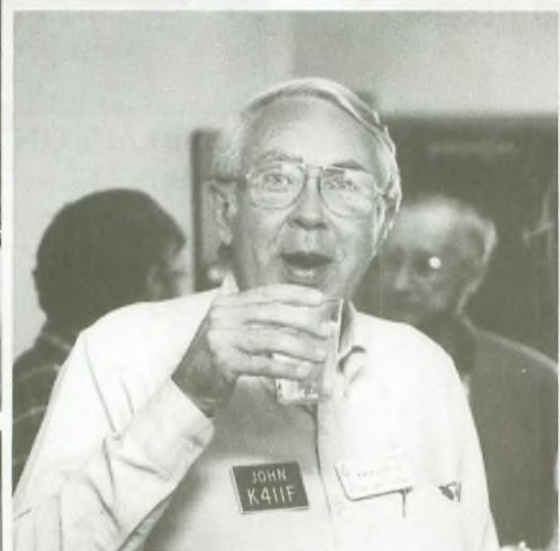
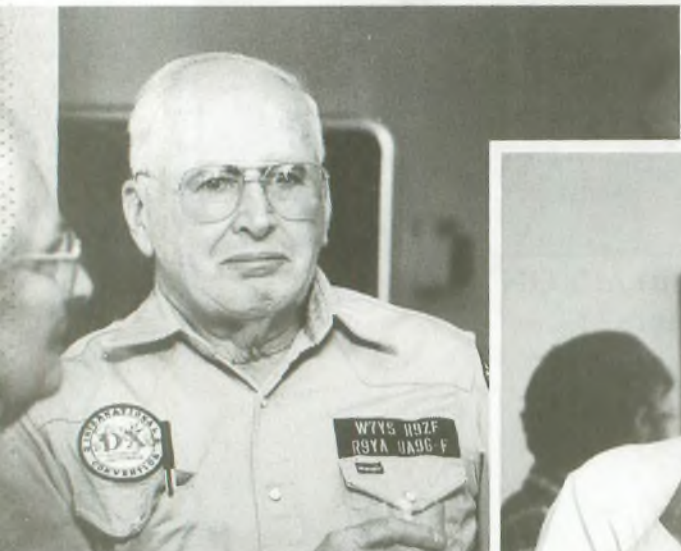
42nd International  
DX Convention  
1990 Worldradio  
DXathon results  
Amateur exam license  
map  
Field Day reflections



*Albania's ON?? Only on Six  
Meters??*

## COLUMNS

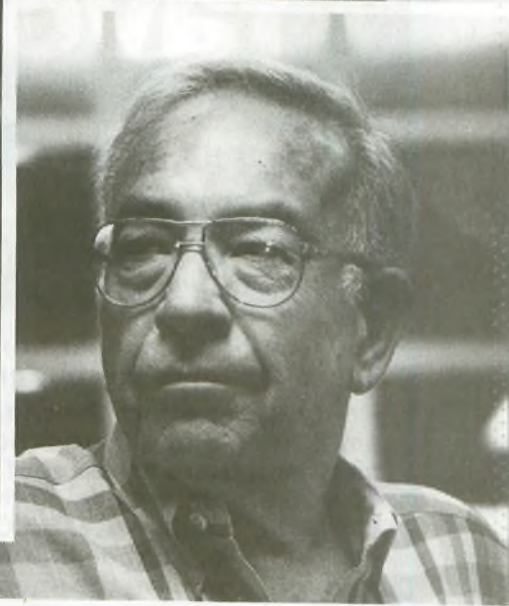
- Aerials •Amateur Hi •Amateur Satellites •Amsat-Oscar schedule
- Awards •Contests •Continuous Wave •Digital Bus •DX Prediction
- DX World •FCC Highlights •Hamfests •MARS •Mobile
- New Products •Off the Air •Product review •Propagation
- Publisher's Microphone •QCWA •Search & Rescue
- Special Events •Station Appearance •10-10 International News
- VE Exams •With the Handihams •YL Roundup



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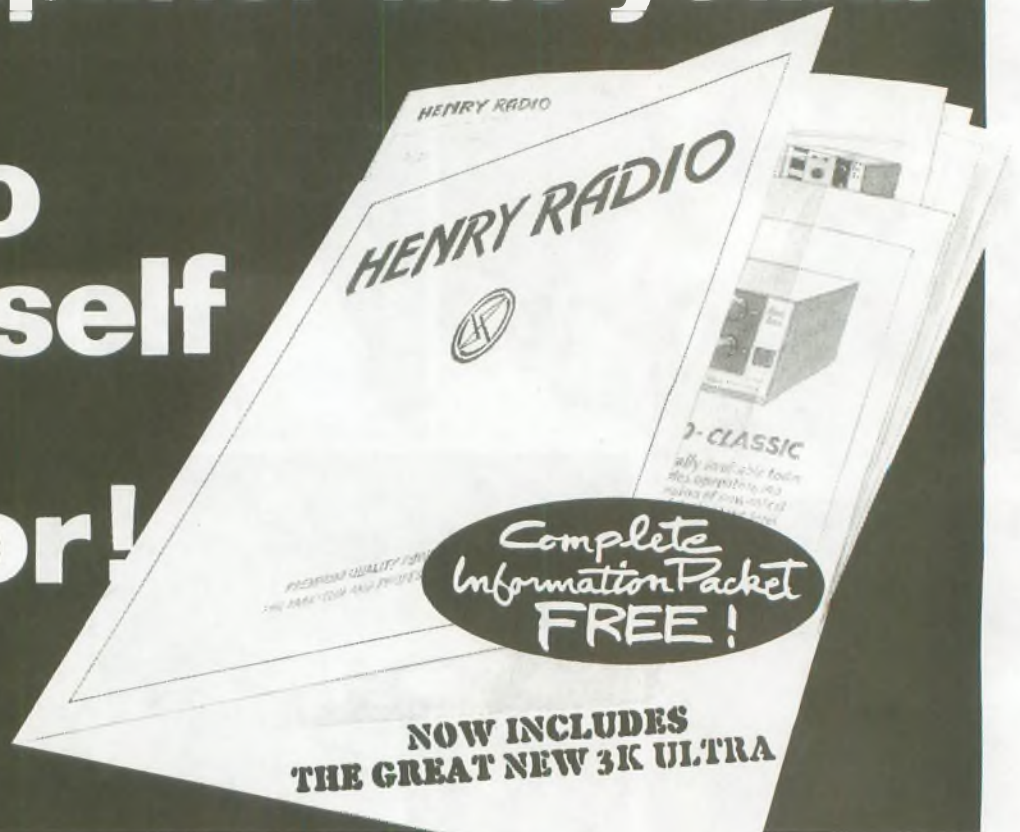


The swirl of activity seen at the International DX Convention — Visalia, CA, 12-14 April 1991.



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# 42nd International DX Convention

JOHN F.W. MINKE, N6JM

## Where Do We Go Next?

The DXer's good friend, Martti Laine, OH2BH, was in attendance at the DX Convention in Visalia (he rarely misses this annual event). Martti was autographing copies of his new book, *Where Do We Go Next?* He was busy signing the inside covers as they were sold, and the 200 or so copies were quickly sold out in a matter of a few short hours. N6JM did not procrastinate and bought one right away. We are presently reading the book and will discuss it at a later date.

The benefit of the computer age was obvious at the convention. All contacts made with the Penguin Island DXpedition (ZS9Z/1), the Namibia en-

try in the CQ World Wide CW test (V51Z) and Martti's entry in the October test (CT3BH) were all preprinted on labels. All one needed to do was give them your call and the labels were peeled off and affixed to the appropriate QSL card. The system was even set up so that they could tell you that you had worked the other calls when applying for the ZS9Z/1 cards. Incidentally, the Penguin Island DXpedition is covered in Martti's new book, which is available for \$22.95 (does not include tax and shipping) from KTE Publications, 2301 Canehill Avenue, Long Beach, CA 90815.

## Sunday breakfast buffet

The Sunday morning buffet break-

fast, from the first appearance, looked as if it would be disaster. The line stretched way out of the convention area into the hotel lobby; it seemed to run on forever. When it opened, however, it moved very fast, to the relief of us all.

At the beginning of the program Frank, AA7FM, made an announcement concerning the Scandinavian Activities Contest this summer. The person who works the most OH calls will receive first class airfare via SAS to Helsinki in the summer of 1992, which is worth about \$2,000. This is something similar to that of the Bermuda Contest.

The results of the F&F Contest were announced. Winning the Fanny division was W7SW, and W6PN won the Fist division. Each received a \$100 gift certificate. This contest was introduced by Jim Maxwell, W6CF, and Jack Troster, W6ISQ. The Fanny division made use of an oversized key which was operated by one's posterior. It wasn't easy to do.

Phil, N6ZZ, announced the winners of the CW Copying Contest that was given at the end of the contest forum (please turn to page 6)

## Field Day days

We have, to our embarrassment, been reminded of what nearly every Amateur eventually learns the hard way.

The annual ARRL-sponsored Field Day is not the last full weekend of June; it's the fourth full weekend of June.

So . . . this year's Field Day will be held on June 22 and 23, not June 29 and 30, as we had announced in our May issue.



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June 1991  
Vol. 20, No. 12

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You readers are participants — an alliance of active radio amateurs concerned with reality, using radio as a communications tool to develop the skill, quality and full potential of Amateur Radio.

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

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## PUBLISHER'S MICROPHONE

This issue is our 20th Anniversary issue. Through the next 12 issues we'll be recognizing those who made it all possible. You'll see some of the great things Amateur Radio did for people during the years we've been documenting the good deeds.

Once again we recognize the latest to join the highest level of **Worldradio** Musketeers, moving up the chairs to five-star rank, the Super-Boosters (lifetime subscribers): John Antes, KB1EB, Wayland, MA; David Johnstone, WB1COB, Torrington, CT; Richard Wonson, N7IID, Milton, FL; Dwaine Modock, WA8MEM, North Olmstead, OH; Davy Simon, Yale, MI; Jim Nelson, KE9QF, Lindenhurst, IL; Paul Lemson, W9PL, Ballwin, MO; Donna Parrish, Fair Grove, MO—a gift from Harold Gibson, Fair Grove, MO; Joe Oden, N0EKW, Wichita, KS; Edward Grim, N5RXE, San Antonio, TX; Richard Kennedy, WA5QCP, El Paso, TX; Bill Horger, KC0IO, Pine, CO; Audie Kaufman, K5IC, Albuquerque, NM; Dr. Arnold Kalan, WB6OJB, Pacific Palisades, CA; Lillian Hyla, KC6NWK, Lucerne Valley, CA; Ken Keeler, N6RO, Oakley, CA; Larry Benze, W6EEG, Loch Lomand, CA; Robert Cann, KG7HZ, Grants Pass, OR; and Cam Coe, N7GGM, Seattle, WA, who wrote:

"After a few years of very carefully assessing the value and survivability of your premiere rag, I did decide on March 16, 1991 to join the often heralded, loyal and similarly impressed legion of converts commonly referred to as 'the Lifers'!

"May our unlimited association in the future continue to provide me and others in our chosen *fraternity* with the same quality of entertainment and enlightenment which has grown from a ray of hope to become a bright and shining beacon in the field of Amateur

Radio periodicals.

"Thanks to all in your organization for a job well done!"

There have been some letters to **Worldradio** (and conversations on the air) about the expense of equipment today. While on the surface the cost may seem to be getting higher, there are some other ways to look at it.

First, what we are all doing for each other is paying for each other's medical insurance. When you buy some paint at the paint store, and the employees of the paint store patronize your hot dog stand for lunch, included in the price of the paint and the hot dogs is the cost of medical insurance.

If you are the average Amateur, in your mid-50s, go to the personnel department where you work and ask them what the monthly outlay for your health insurance is. I'll bet you'll be surprised.

Most likely you work for a company that promises you a pension. If you are entitled to a decent retirement, so are the employees at the widget company. People are living much longer, and pension benefits are a big expense.

You go down to the local radio store—nice guys there. They deserve a decent life, too. And they have to pay rent for that store.

Taxes! Much higher today. The new highway is reflected in the cost of your transceiver.

I've heard the stories from "old timers." Bread was a nickel a loaf, milk was a dime a gallon and all that. They forget the other half of the equation—that they were only making a dollar a day.

Look in the ham magazines of the past. Compare the prices to what people were making in those days. Then plug in the fact that you needed a transmitter and a receiver. Painful.

Ask yourself this: would you rather have today's 2M hand-held or the Gonset Communicator of 1961? If I remember correctly, the price of the Gonset was the same as today's hand-held, in 1961 dollars. Anguish.

In HF gear, just think about the technical difference in today's gear and that of yesteryear. Go back and price an NC-183D and a Johnson Viking II. (The VFO was extra.)

You're looking at many months' total wages for even the well-heeled of that day. And, hopefully, you could borrow some surplus crystals from your pal.

In the past, one tube, maybe 5W output, cost a week's wages. When Amateurs blew one of those, they sat down and cried. Those were the Good Old Days???

Into the mailbag: "Please have more CW stuff. Real hams still use CW at least part time." (I would mention the name and the call but someone lost the other page of the notes.) N4VC wants **Worldradio** to have a VHF column, with 2M SSB and above news.

Bill, W0PPG, says we should have news on slow scan.

OK, everybody, send in all those articles and news items.

—Armond, N6WR

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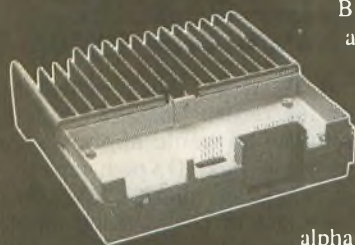
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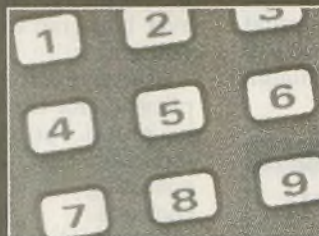
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## DX Convention

(continued from page 3)

the day before. There were 32 participants, with Bill McConnell, N9US winning with 18 calls correctly copied. Second place was Dick Norton, N6AA, who correctly copied 16 calls, followed by Fred Laun, K3ZO, who copied 15 calls. Who says CW is dead?!

Our distinguished visitor, Martti Laine, OH2BH, was the guest speaker. Martti is always a pleasure to listen to, especially his wit. Although

Martti was to speak about his recent Penguin Island DXpedition, his words of wisdom were not limited to that. Indeed he is a gracious man and does not bask in the glory of a successful DXer alone. Martti was touched by a note that was sent to Pete Grillo, AH3C, a member of last year's DXpedition to Jarvis Island, thanking him for a new one. Pete didn't want to read the note, so Martti had Reinhard, DL1UF, read it instead. The note was from a DXer in Germany. How many of us have ever bothered to send a special thank you note?

Martti reported that the original application for this operation was not by his group, but by a German group. He reported that in the six days of operating they had made 35,000 contacts.

Martti commented on some of the measures being taken by certain DX-pedition types. They claim extreme penalties, such as deletion from the log, will be made with those seeking insurance contacts. Martti didn't feel that this was fair and suggested a less drastic penalty (such as sitting five minutes in a corner).

He also commented on the East Coast DXer who had collected 16 cards for contacts made during the operation (different bands and modes). He said the fellow came back later and



The man who, all by himself, keeps the international airlines in business, Martti Laine, OH2BH

requested his dollar back (which he had sent for return postage). Martti told the fellow he would apply it as a donation to the next DXpedition.

Martti concluded his talk by saying that 53 percent of the contacts made with Penguin Island were from the United States, about 16,600 contacts. Of that there were about 7,000 different calls. Of that, those calls included 971 different W6s making 2,242 contacts. He then introduced Wayne Mills, N7NG, who continued the talk on the Penguin Island DXpedition and presented a selection of slides.

The DXpedition actually began with the CQ World Wide DX Contest entry from V51Z at Windhoek. Over 8,000 contacts were made by five DXers; Wayne, N7NG; Martti, OH2BH; Pertti Turunen, OH2RF; Ian Sutherland, ZS9A; and Derek Moore, V51DM, their host. From there they set off to Walvis Bay, which is desert all the way to the sea.

The normal way to get to Walvis Bay from Windhoek is to fly. However, the equipment was brought in from South Africa by Chris Burger, ZS6BCR, who drove his 4-wheel drive vehicle. Murphy struck and a gasket was blown. They had brought along a considerable amount of water for the desert crossing, and they finally limped into Walvis Bay at about 40 miles per hour. He was about a day late, but it could have been worse. The team also visited Lloyd and Iris Colvin, which was quite an unexpected

### ATTENTION: WWII ETG (ELECTRONICS TRAINING GROUPS)

U.S. Army Signal Corps organization comprised of electrical engineers, Amateur Radio operators, and physicists who were sent to England for training in secret radar equipment and techniques being used by the RAF and British Army, is having its first reunion in Arlington, Texas, 7-9 June, 1991 at the La Quinta Inn. Portions of the reunion schedule include Ham-Comm Convention activities, which are being held nearby.

For registration details and complete information, contact Col. Harry Moore ETG #5, W2TQS 260 Millard Ave. N. Tarrytown, NY 10592 914/631-3683

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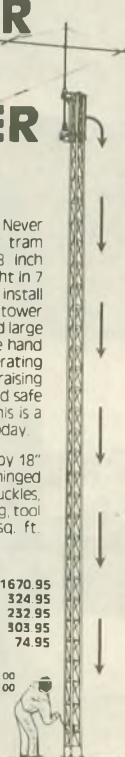
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surprise to them. The Colvins were in Walvis Bay finishing up on their ZS9/W6KG operation during their African tour.

### DX forum

Jim Maxwell, W6CF, the Pacific Division representative of the DX Advisory Committee, was chairman for this year's DX forum. The panel included Jim, Chuck Hutchison, K8CH, representing the DXCC desk in Newington, Ted Pauck, K8NA, the chairman of the DXAC, Bill Mautey, W6RT, representing the Southwest Division, San Hutson, K5YY, West Gulf Division representative, and Wayne Mills, N7NG, DXpeditioner extraordinaire.

Chuck, K8CH, reported on the current activities on the DXCC checking. Starting last May all new applications have been going into the computer. One of the benefits of this is that all information will be recorded and the need for resubmission of cards will no longer be required. For example, if the DXCC application was for a CW mode and included 75 cards made on the 80M band, only 25 additional cards would be needed for a future 80M DXCC. The 75 cards would have already been credited and would not have to be sent in again. Later this year, they will begin doing the same for endorsements.

The system will also be able to recognize former prefixes. An example would be ZS9, which is the present prefix for Walvis Bay. Prior to 1967 this would have been Bechuanaland, now known as Botswana, A2.

The backlog at the DXCC is presently around 3,000. However, half of the endorsements received last month only had a few cards each. Chuck said that they had just finished with the September submissions. They even had people coming in on overtime. Thanks guys!

As for the field checking, he said that there will still be some random auditing on applications. At the end of



The Fist and Fanny CW test showed that some had a very distinctive fist and some had a very distinctive ...

his presentation Chuck gave us a few interesting facts on the past 2,400 plus applications. Who was on top? It wasn't the United States, Canada or Japan. Italy led the pack as the most used in applications. The United States ranked eighth. Conway Reef was way down as 300th.

The latest activities of the DX Advisory Committee were given by Ted, K8NA, the chairman. Incidentally, the DXAC is made up of one DXer from each division, including VE3HO of the CRRL. The board of directors liaison is Chuck McConnell, W6DPD, the Pacific Division director.

Fourteen items acted on or to be acted on were outlined for us by Ted.

The first one was the addition of 12 and 17M endorsements to the popular 5-band DXCC. These are endorsements and you must have the award prior to applying them. This had been voted 15 to one in favor.

Item two was the 30M endorsement to the 5-band DXCC and this was (please turn to page 11)

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G5RV	80-10	102'	\$34.95 PPD
	(no xfmr or cable, with 31' bal. feedline)		
G5RV-JR	40-10	51'	\$29.95 PPD
	(no xfmr or cable, with 26' bal. feedline)		

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The voice of International Amateur Radio Network Net Manager Glenn Baxter, K1MAN, has been banned from a major Chicago area repeater, according to Hap Holly, KC9RP, who produces the Radio Information Network dial-up service. (*Westlink Report* 3/1/91). See also *Worldradio's* February FCC Highlights regarding FCC fines (\$3,400!) and citations issued to Baxter for his violative operations. A March 4 letter to Baxter from FCC's Special Services Division Chief, Robert McNamara, referred to correspondence with Baxter and his attorney, G. Robert Greensburg, and said: "I can only conclude that the dispute is no longer a significant problem and that potentially restrictive rule making can be avoided at this time." (*Westlink Report*, 3/15/91)

Licensed Amateurs in several metropolitan areas recently have been greeted by badge-carrying FCC inspectors on their doorsteps. If the Amateur is active they ask that he make a contact at low power rather than at high power, saying they want to see the difference in signal strength. After an

80/50W test, Detroit Office Inspectors thanked the Amateur and left, leaving only their FCC business cards. An FCC Official advises that this is not a case of the Amateur Service being singled out and cites surveys of other services including cable TV leakage, AM broadcasting and land mobile systems licensing. (*ARRL Letter*, 3/21/91)

The FCC appears to be in the middle of a nationwide investigation to see if overall power limits in the United States Amateur Service should be lowered. According to one high ranking official at the Commission, its Field Operations Bureau may once again be conducting what the FCC terms as "power level audits." On the surface, these are nothing more than inspections of various Amateur stations to determine, if possible, the absolute minimum power that radio Amateurs operating on their high frequency bands do require for reliable communications. (*Westlink Report*, 3/15/91)

The FCC has accepted a request for rule making that asks a modification of Part 97 of the Amateur Rules to place primary responsibility for the content of all automatically re-transmitted signals in the Amateur Service with the originating station. Authored by N5GAR, the petition was designated RM-7649 with public notice given on March 6 with a 30-day open commen-

tary period. This was to be followed by a 15-day period for reply comments. (*Westlink Report*, 3/15/91)

A bill to safeguard Amateur allocations gains support. Largely as a result of letters from constituents, 23 members of the US House of Representatives have signed as co-sponsors of HR 73, the Amateur Radio Spectrum Act of 1991. The March *QST*, page 42, gives a sample letter.

The FCC has amended its rules to relocate Novice and Technician Class control operator frequency privileges in the 80M Amateur Service band from the 50 kHz segment at 3700-3750 to 3675-3725 kHz. Commission rules authorize Amateur stations with a control operator holding a Novice or Technician Class operator license to transmit telegraphy in the 80M Novice segment. This segment is designed so that beginning Amateur Radio telegraphers can gain actual experience in sending and receiving telegraphy messages. (*W5YI Report*, 1/15/91)

The FCC on Dec. 13, 1990 removed the 5 wpm Morse code requirement from the existing Technician Class Amateur operator license. Implementation of the new rules took place on February 14, 1991. Applicants who already passed the Novice and Technician written requirements during the past year were immediately eligible for the new Technician Class. The new

If you're not subscribing to *Worldradio*, you're missing a lot of Amateur Radio news.

## 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 April 1, 1991.

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

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
0	AA0DZ	KF0QM	N0NFL	KB0IRM
1	WQ1U	KD1AI	N1IQY	KA1YMD
2	AA2DV	KF2AS	N2LYE	KB2MON
3	WM3K	KD3WH	N3JAU	KA3YRO
4	AC4EI	KN4YZ		KC4YHH
5	AA5XN	KI5OU	N5SMM	KB5PGE
6	AB6BS	KK6YI		KC6TCJ
7	AA7HZ	KG7OH	N7QQJ	KB7NBP
8	AA8DJ	KF8MD	N8NSH	KB8MBU
9	WZ9W	KF9CL	N9KWE	KB9GLC
N. Mariana Is.	AH0AH	AH0AH	KH0AN	WH0AAP
Guam	KH2R	AH2CI	KH2FA	WH2AMU
Johnston Is.	AH3D	AH3AD	KH3AF	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6LC	NH6YS	WH6CMG
Kure			KH7AA	
American Samoa	AH8D	AH8AE	KH8AI	WH8ABA
Wake Wilkes Peale	AH9A	AH9AD	KH9AE	WH9AAH
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Virgin Is.	NP2M	KP2BW	NP2ED	WP2AHI
Puerto Rico		KP4RR		WP4JYJ

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Worldradio is a two-way communication. Send in Amateur Radio information and news. Share your knowledge with your fellow amateur and Worldradio reader. We are most interested in your comments and suggestions. We would appreciate being placed on the mailing lists of amateur club bulletins.

Technician exam will consist of 55 questions from the current Novice and Technician elements 2 and 3A. (1/15/91 *W5YI Report*)

A reciprocal operating agreement has been finalized between the United States and Thailand. The agreement became effective Dec. 15, 1990, after more than two years of negotiations. Information on applying for an operating permit in Thailand is available from ARRL Headquarters. (*Westlink Report*, 2/15/91)

The FCC Private Radio Bureau hosted a presentation on the Radio Amateur Satellite Service, given by several AMSAT-NA leaders on Janu-

ary 11 in Washington, D.C. The presentation, lead by AMSAT officers Loughmiller and King, featured Amateur satellite history, details on current projects and goals, the current state of the Radio Satellite Service and the role of the Service in such areas as public service, scientific research, education, disaster and emergency preparedness and technology development.

Under the title, "Will FCC Kill Packet?" the *Westlink Report* raised the matter of censorship in packet activity in Amateur Radio, in part, as follows: "The question of whether a

SYSOP should censor messages posted on his BBS has been a hot topic for the past year. Banning or modifying the rhetoric of messages has been recommended. This action is not sitting well with the packet radio community that from all indications appears to be ready to do battle with the FCC over the issue of immunity from prosecution of PBBS operators for forwarding the postings of other hams. Already, at least one Petition for Rule-making has been filed with the Commission." (by W9WI of Nashville, *Westlink Report*, 2/15/91) □

## Batteries

Our study of batteries must be limited because there are volumes of information on the subject. We will address the differences in "SLI" and "deep cycle" lead acid batteries. SLI (starting, lighting and ignition) is more commonly called a car battery. Deep cycle is also known as a station battery and used to supply emergency power to telephone or electronic equipment in many applications. There is also a lead acid battery known as a "gel cell."

*Modern Batteries* by Colin A. Vincent, published in 1982 says almost a hundred million SLI batteries are manufactured annually using one third of the total world output of lead. Such batteries are called upon to supply up to 200 amps starting current for short periods of time. Their capacity is generally about 100 amp hours depending upon the discharge rate. They work best when promptly recharged at a fairly high rate. The *ARRL Handbook* says if a car battery is allowed to discharge from its normal 2V per cell to 1.75V per cell only 50 cycles charge and discharge can be expected.

Deep cycle batteries can be expected to last 200 cycles or more. In most "battery back up" situations the battery is "float charged" at a low rate. The plates are wider spaced and the internal resistance is higher, so high rate

discharges are not good for them. Deep cycle batteries work best if they are recharged at a slow rate.

The gelled-electrolyte lead acid battery cannot tolerate overcharging, even at very low rates. Voltage is monitored and charging is terminated when a full charge is reached.

Here are some rules for best results in handling any type of lead acid battery.

1. Use caution! These batteries contain acid and sparks have been known to set off explosions of escaping hydrogen gas. Use protective clothing and glasses.

2. Handle carefully! Should you get sprayed, wash right away with plenty of water and neutralize the acid with a base such as baking soda. (I always keep baking soda near when working with batteries.) Use distilled water to fill batteries. (Rain water is better than tap water but distilled is best.) Don't move or pick up batteries by their terminals. It will cause small cracks by the posts and acid will "creep" through and mess up the connections. Ventilate any area where lead acid batteries are used to prevent a build up of hydrogen gas. Don't let a battery get too hot or too cold. There are probably other safety rules but the best is ALWAYS BE CAREFUL AND BE ALERT!—Big Island ARC, Hilo, HI □

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# DX Convention

(continued from page 7)

voted 14 to two in favor. However, this was never presented to the board of directors for various reasons, one of them being that this band is a shared band with other services.

Item three: Walvis Bay was added to the DXCC countries list, which was a clear example of point 3A. This was voted in favor, 16 to zero.

Item four dealt with the disqualification criteria, which was brought up last year. They are still attempting to develop guidelines for this one. Six of the members are working on it.

Item five was the Puyallup Tribe of Indians (PTI) addition to the countries list. The vote on this one was 16 to zero not to include PTI.

Item six was the two Yemens. 4W and 70 were deleted effective May 22, with the addition of a brand new Yemen.

Item seven: Penguin Islands. This island group consists of 13 islands, and it is claimed by the Republic of South Africa and is historically known for large amounts of bird dung (guano). The vote on this one is scheduled for April 29 following the Dayton Hamvention.

Item eight, Grosse-Ile Island, met the same fate as PTI. The basis for adding this one was "separate administration," which is no longer valid.

The deletion of East Germany was item nine. This was noted 13 to one in favor, with one abstaining and the other not voting.

Item 10 was concerning a new basis and purpose section to the rule. The vote was 12 to four not to add a new section at this time.

Item 11 dealt with establishing the start date for Banaba (T33). Originally the start date was 1945, but there seems to be some controversy on this. Six chose 1988, the date when the rules were rewritten, four chose the date of 1979, when Kiribati independence was given, and five wanted to leave it at 1945, the DXCC start date.

To add North Korea to the DXCC countries list was Item 12. This one is to be voted on May 27.

Also scheduled for vote on May 27 is the addition of Tatar Republic. This was Item 13 and was petitioned by UA4RZ and the Zilan DX Club in the USSR who claim Tatar is a new separate republic.

The final item was item 14, regarding point 3, which needs revision. This will be acted upon at the end of April.

To end the forum, Wayne Mills, N7NG, asked for opinions from the floor regarding pileup behavior during the recent DXpeditions. Several

DXers responded with Tom Orr, W6HT, of the Southern California DX Club, stating the cause as many DXers forgetfully leaving their VFO switches in the wrong position. Jay O'Brien, W6GO, of the Northern Club, suggested that some of the problems were caused by members—some of the DXpedition team members themselves—who set the rules and then broke them. Other ideas to reduce the unacceptable behavior included the choice of frequencies operated on, no advance notice of the DXpedition or where they will be operating on, better education during VE exams, keeping listening segments on the bands to a narrower group of frequencies and bet-


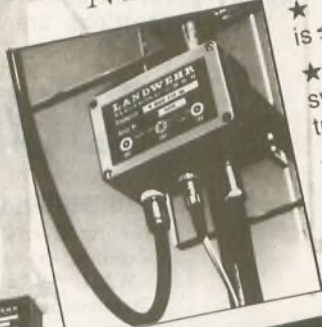
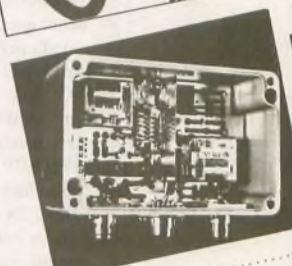
ter control at the DX end. It seemed that the good suggestions were given in the beginning. However, someone at the end suggested that the DXpeditions be more selective as to propagation to certain areas.

There was one who thought some of the problems were caused by hearing impairment. Maybe so; there are some of us who do have hearing difficulties. But remember that some of the more common "hearing difficulties" are truly overcome by those who take the time and make the effort to *really* listen.

More details on the International DX Convention will be covered in next month's issue. □

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# 1990 Worldradio DXathon

## DXathon results

		SSB	CW	RTTY	SSTV	Sat	Total	Nations	Notes
<b>1990 DXathon Champion</b>									
WB2DIN	Bob Reed, NJ	179	116	60	-	-	355	187	
<b>North America, second place</b>									
N0AFW	Peter D. Meyer, CA	192	128	-	-	-	320	193	
<b>Europe, first place</b>									
HA3NU	Laslo Weisz, Hungary	157	140	8	6	-	311	173	'89 1st in Europe
<b>North America, third place</b>									
W5AWT	Mel Boatman, TX	63	103	-	-	-	166	121	
KC6EYZ	Art Wallace, CA	96	61	-	-	-	157	107	Fine first year in Amateur Radio!
WA2VZQ	Kenneth Sties, NY	55	93	-	-	-	148	99	
KF7RU	Jerry Goetsch, OR	141	-	-	-	-	141	141	
W6TKV	Fred Roberts, CA	132	8	-	-	-	140	132	
K6FO	Norm Brooks, CA	41	48	1	-	25	115	70	
KI6PG	Bill Kling, CA	95	11	-	-	-	106	96	First entry received
NQ7Q	Wayne Sutherland, WY	105	-	-	-	-	105	105	

The entries for the 1990 Worldradio DXathon are in, tallied, and here are the long-awaited results.

Two significant rule changes in the 1990 contest were: 1) Contacts made during contests could be included; and 2) To make the tallying easier, we asked that entries be submitted on DXathon entry forms. We found it necessary to disqualify some entries because of non-compliance with the entry form regulation.

The scores were generally higher this year, and there were more entries from within the US than last year. However, we did not receive the number of entries from outside the US that we did last year. Two entrants did make contacts via four of the five modes.

Thanks to all of you who did make the effort to send in your entries. Your comments indicate that you are indeed

reflecting the spirit of the DXathon through meaningful conversations with Amateurs from other nations, rather than just making the quick signal reports one gets from a contest.

Your suggestions are appreciated,

and our hearty congratulations to all the entrants, especially the plaque and medal winners.

We'll be shipping the awards to the winners as soon as the engravers can finish them. □



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The keyer mounts on a Bencher paddle to form a small (4-1/8 x 2-5/8 x 5 1/2 inches) attractive combination that is a pleasure to look at and use.

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MFJ-1024

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**\$59<sup>95</sup>** MFJ-1704

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**MFJ-1704**, \$59.95. 4 position cavity switch with lightning/surge protection device. Center ground. 2.5 KW PEP, 1 KW CW. Low SWR. Isolation better than 50 dB at 500 MHz. Negligible loss. 50 ohm. 6 1/4 x 4 1/4 x 1 1/4 in.

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**\$64<sup>95</sup>** MFJ-264

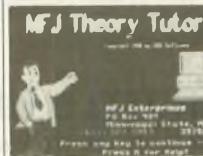
MFJ has a full line of dummy loads to suit your needs. Use a dummy load for tuning to reduce needless (and illegal) QRM and save your finals.

**MFJ-260B**, \$28.95. VHF/HF. Air cooled, non-inductive 50 ohm resistor. SO-239 connector. Handles 300 Watts. Run full load for 30 seconds, derating curve to 5 minutes. SWR less than 1.3:1 to 30 MHz, 1.5:1 to 150 MHz. 2 1/2 x 2 1/2 x 7 in.

**MFJ-262**, \$69.95. HF. 1 KW. SWR less than 1.5:1 to 30 MHz. 3x3x13 in.

**MFJ-264**, \$64.95. Versatile UHF/VHF/HF 1.5 KW load. Low SWR to 650 MHz. Run 100 watts for 10 minutes, 1500 watts for 10 seconds. SWR is 1.1:1 to 30 MHz, below 1.3:1 to 650 MHz. 3x3x7 inches.

## MFJ Ham License Upgrade Theory Tutor



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## 12/24 Hour LCD Clocks



**\$19<sup>95</sup>** MFJ-108B **\$9<sup>95</sup>** MFJ-107B

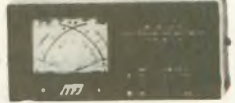
Huge 5/8 inch bold LCD digits let you see the time from anywhere in your shack. Choose from the dual clock that has separate UTC/local time display or the single 24 hour ham clock.

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### NO CODE ENTRY WITH-CODE ENTRY

ELEMENT 2 Novice written  
ELEMENT 2 Novice written

ELEMENT 3A Tech. written  
ELEMENT 1A 5 wpm

TECHNICIAN (> 30 MHz)  
NOVICE

ELEMENT 1A 5 wpm  
ELEMENT 3A Tech. written

TECHNICIAN (full freq.)

ELEMENT 3B General written

ELEMENT 1B 13 wpm

GENERAL

ELEMENT 4A Advanced written

ADVANCED

ELEMENT 4B Extra written

ELEMENT 1C 20 wpm

EXTRA

— Alan Bloom, N1AL,  
Sonoma County Radio  
Amateurs Inc., Short Skip

# Field Day!

## A reflection of le grand weekend, as gleaned from various club bulletins

Field Day was a great success ... yours truly went into it a bit exhausted and emerged refreshed.

Field Day is one of the major events for the club, and is definitely the most exciting. This event turned out to be a super day for all those who participated.

Well, what could be better than spending the weekend under the bleachers at Meridian High School blowing up radio equipment, playing in the wind and rain trying to make Field Day contacts?

I have been asked a number of times if I would still volunteer, now knowing how much work it takes to coordinate Field Day; well, if I had known how rewarding an experience this was going to be I would have volunteered sooner.

I have been a victim of Field Day fever ever since those golden days of yesteryear when KC5JH (then

WA5BBS) and I trucked in enough AM equipment to put Harrisburg, Arkansas on the Field Day map. Then W5DTR invited us up to the W5YM operation in Fayetteville and I was permanently HOOKED.

Field Day is a multifaceted adventure for any club or group.

I have to admit that nothing compares to the feeling of sitting at a Field Day rig and pulling in contact after contact.

Despite a few problems, we really had fun on our Field Day adventure. After all, that is what Field Day is about; overcoming difficult situations and operating in emergency locations. We can hardly wait 'til next year!

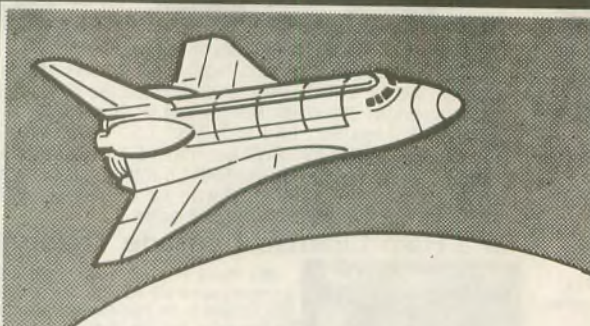
My oldest son's wedding will be Field Day weekend. I will miss Field Day; I'm having withdrawal symptoms already, since I've participated in every Field Day since 1972.

I hope all of you are ready for Field Day. The event gives each of us a workout, 24 hours of Amateur Radio operation that tests our skills in contacting as many other Amateurs in the USA as well as the rest of the world.

We will be competing, experiencing, and in general just plain having fun.

Those who have never been to a Field Day operation will find that it is

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more than just operating the ham bands from a field. The Amateur community comes out in force, works together, and has one heck of a good time.

I didn't think I would like contesting; now I'm hooked!

The food is going to be great. Bill, KA2ZNL, is our Chief Chef. He's already started to cook up his secret recipes of goodies for the Field Day Crew. DON'T MISS IT.

Considering that it was my first Field Day and that it rained and drizzled most of the time, I enjoyed it immensely. I learned a lot about the art of Amateur Radio, and I do have to say that I was very impressed with the expertise and willingness to help among all of the participants.

Gary, N9JTM, reported that Cable News Network (CNN) wanted to do a Field Day story comparing club activities in both Atlanta and Chicago.

Everything considered, we won't impress anyone contact-wise or point-wise, but what the heck. We'll do better next year.

Field Day is great, the premier ham event of the year. . . this is the fourth Field Day I have attended. My first one was mainly to attend the picnic, but I have been an active participant the other three times. This was the first FD that I have spent at the site. I can say that it is quite an experience! Those who do not participate miss a very good opportunity for fun and fellowship.

All hands who were there are unanimous in saying that was an outstanding Field Day.

Get your rigs and antennas ready for Field Day . . . the fellowship is great and you can learn a great deal that will assist you tremendously in your own personal hamming . . . This year's Field Day will be a fun-level event, so plan to enjoy ham radio's biggest operating event of the year.

The week after Field Day is the time to start thinking about what to do next year.

The media coverage of the event went beyond our expectations; all three television stations were there and gave excellent coverage in their broadcasts, plus a very nice writeup in the Tulsa Tribune.

Well, folks, we did a pretty good job on Field Day this year. Any thoughts on what we could improve on for next year?

Thanks to everyone who helped make this an enjoyable Field Day — was this the warm up for a really serious event next year?

I could write a book about how much I enjoy Field Day and the things that have happened over the years. There is something to be said about

working with friends side by side.

We had many, many visitors on Field Day who were interested in and curious about ham radio. They asked questions about qualifying for a license and, in general, what Amateur Radio was all about. We answered their questions and took the opportunity to inform them about the next MDARC radio school, and invited them to attend; I think we made some new friends for Amateur Radio.

The high point for me was convincing the pizza place that I really wanted five pizzas delivered to a parking lot. There were five stations plus plenty of spare equipment. Yes, that was our Jack Bolton you saw on CNN, as well as a nice piece of WGNX.

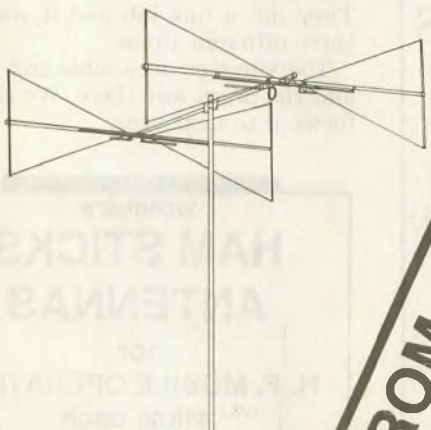
Everyone has his and her own memories of Field Day. Take a moment and relive yours. To create memories, you must first take part. I urge everyone to come to Field Day and create, not only for yourself but for others, the memories of the future. Don't let this opportunity pass you by!

What is Field Day? Field Day is many things to many people. It surely is a competition against Murphy's Law. It's a competition against ourselves to test our limits and raise our ability to perform under adversity. And it's a competition for our club to find new ways to cooperate, help each other and learn together.

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
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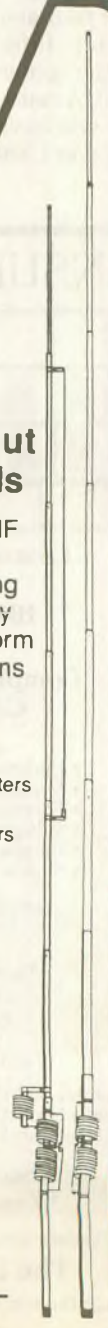
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Amateur Radio operators each year throughout our country. We all have the opportunity to come together as a team to use our varied skills in communications.

I hope you are proud of the time you put in—did a great job . . . It is a long standing tradition that the club will participate in Field Day. There will be a Field Day workshop on the preceding Saturday. Come by to find out more info on how to operate Field Day.

A lot of club members are making an all-out effort to make this year's Field Day as fun and rewarding as it was last year.

We saw lots of friends there, some old and some even older than that. It was a fun thing, as usual.

Field Day was moved into town this year to make it easier for the public to attend. Information will be available to the general public that describes what Amateur Radio is about.

If you have never been to Field Day, you don't know what you're missing.

Once again it is time for all good folk to come to the aid of die-hard hams who brave the elements (heat, mosquitos, rain and cold coffee) to run Field Day!

Field Day—a great opportunity to have a lot of radio fun. Yes, it is a competition, and we want to take first place if we can, but it is also a lot of fun and a great opportunity to sharpen our skills. Good training.

We demonstrated the club's ability to react and perform in an emergency situation and have fun.

The public interest is great with a number of visitors being given a tour and explanation of Amateur Radio.

The club enjoyed another successful Field Day. This year we used simple wire antennas in the trees as opposed to elaborate towers and beams, more in keeping with the spirit of true emergency conditions. Results were almost as good as last year with our beams, the Novice station actually did better!

KOLR, channel 10, sent their news reporter, David Wayne, and his pretty assistant out to cover the exercise. They did a fine job and it was aired three different times.

The site was accessible and visible, and the press was there. We can look forward to next year.

We were all tired but happy. An extremely important exercise.

From start to finish, this year's Field Day was fun-filled, exciting and simply fantastic. Frank, WB8OFR, generated an outstanding pileup. He worked the mike with his right hand and brailled the log with his left. As Craig, N4EFJ, commented, "Although the score may not be the highest in the country, we had more fun this year than any other Field Day I can remember."

Other benefits of Field Day include exposing the public to ham radio and improving our CW, phone, and contest operating skills. You'll also have the opportunity to get to know each other better.

Bring your family and friends along, especially to our potluck dinner Saturday evening. Your guests will see that there really are other people who get a kick out of conversing in CW or staying up late to make just one more contact. Best of all, can you think of a better excuse to enjoy your hobby for hours on end during the weekend?

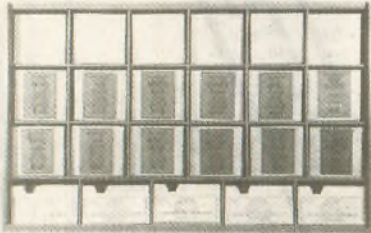
Let's all get out and work for the good of the club and set an example for others . . . An emergency-preparedness exercise that's full of fun and excitement. A get-together with a place for everyone . . . come on out; we're going to have a blast.

The Field Day site this year will be fantastic. You have to make it there or you'll really be missing a great experience.

Beginner or seasoned contester: we want to see you Saturday. We will have food, drinks, and most of all, FUN. □

The RCA AR-77 was a top of the line, widely used receiver in the 1940s and during World War II. An ad in the July 1940 *QST* lauds its unmatched stability with a drift of only 3 KHz during one hour at 30 MHz. Wow! —*The MAEC Newsletter, March 1990.* □

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- \*Illuminated DTMF Keypad**

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EME-10:Headset with PTT/VOX

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- \*Triple Stage Selective Power Output**
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- \*One Touch Squelch De-Activation Function**

- \*8 Scan Modes**

- \*Wide Band Receiving Range**

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- \*Automatic Dialer Function**

- \*Many Optional Accessories Available**

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**Frequency Range:**

DJ-F1T/S1T

TX:144-148MHz

RX:140-170MHz (AM Mode

118-136MHz after Modification)

DJ-F4T/S4T

TX:440-450MHz

RX:430-460MHz

**Output Power:**

- \*with Battery Pack EBP-16N (Standard for F1T/F4T)**

Hi:2W(F1T/S1T) 1.5W(F4T/S4T)

Mid:1W Low:0.1W

- \*with Optional Battery Pack EBP-18N**

Hi:5W Mid:1W Low:0.1W

\* at 9V

Hi:2.5W(F1T/S1T) 2W(F4T/S4T)

Mid:1W Low:0.1W

**Weight:**

DJ-F1T/F4T Approx.:13.2 oz.:

with Standard Battery Pack

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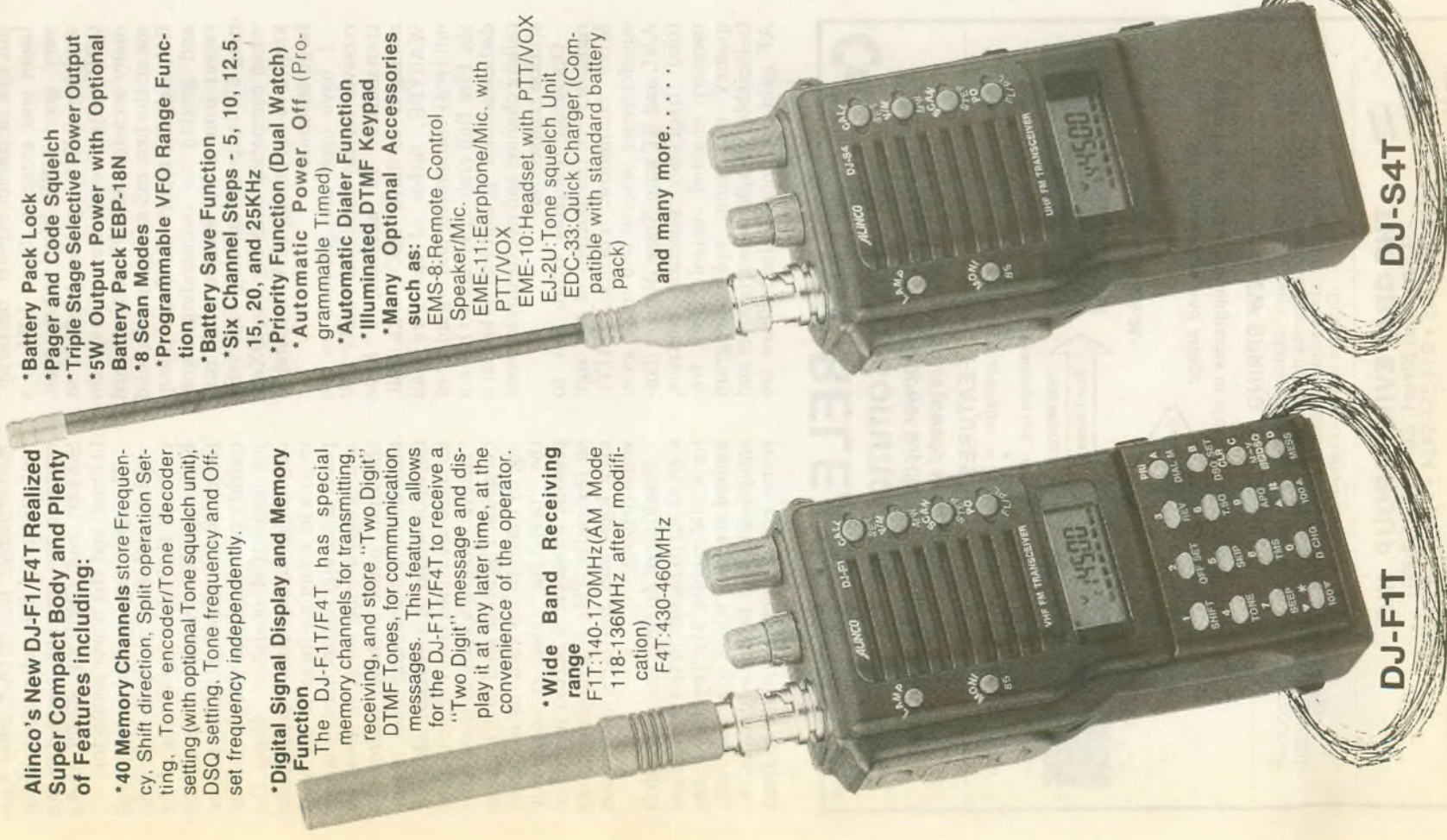
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# Product Review

Ranger AR-3500 multi-mode 10M transceiver.

**RICH ARLAND, K7YHA**

Ten meters is hot and so is the Ranger AR-3500 multi-mode 10M transceiver, imported by Clear Channel Corp. of Issaquah, Washington. Sold by various distributors throughout the US, the AR-3500 is a very versatile rig that is a real performer.

My review radio (a 30W unit) came directly from CCC in Issaquah complete with the scanning microphone, QRP module (more on this a little later) and service manual. The 30W AR-3500 is 2 3/8 x 7 3/4 x 11 inches and weighs three pounds. The 100W unit is also available and differs only in an added two inches in length and two pounds in weight.

The package also included a sturdy mounting bracket, mounting hardware, mike hanger and operating manual. As mentioned earlier, my unit came equipped with the up/down scanning microphone (great for changing frequencies on the fly) and a QRP module which allows the power output on all modes *except* CW to be varied from just a few milliwatts to full power. This module also controls the ALC of the transmitter so proper relationship of ALC to power output is maintained throughout the full range of power settings.

The Ranger AR-3500 can be used as a mobile or a base station rig. Features include full coverage of the 10M ham band (28.0 to 29.999 MHz), tuning in 100 Hz, 1, 10, 100 kHz and 1 MHz steps, emission on upper/lower SSB, AM, FM and CW, five user programmable memory channels, scanning between two preset frequencies in various steps and memory scanning, just to name a few. In all, the AR-3500 is a very flexible radio that provides the operator with a lot of features in a small package.

Over the last three months I have used the AR-3500 in a number of roles. For a long time it was set next to my HW-9 QRP rig and served as the 10M phone station at K7YHA. Ten meters has been in fairly good shape for awhile and the DX worked with this little rig running from 5 to 30W output to a Butternut HF-5B "butterfly" beam was amazing. Since 10M is a very good QRP band when open, working DX using the AR-3500 at QRP output levels was a snap. On many occasions the DX station heard me on the first call and gave me a solid five and nine report. Busting a pileup and getting an outstanding signal report from a DX station while running 5W output is exciting, especially when competing with big gun DXers known to be running 1kW (or more) to large antennas.

I have used the AR-3500 as the receiver for my Fire Ball 10mW CW transmitter. In addition, I have managed to have QSOs with Bill, WA6YPE, father of the Fire Ball milliwatt transmitter and organizer of the Fire Ball club. It is nice to have a dedicated 10M rig that can be left on a calling channel and not tie up the main station transceiver.

Operating controls (from left to right across the bottom of the rig): Mike connector, clarifier (RIT), squelch/reset (above) and mike gain/ANL and RF gain/Noise Blanker (bottom), frequency selection controls, memory channel controls, split frequency operation, split program (selectable),  $\pm$  split select (above) and AF gain and mode select. There are

dual LED meters, one for RF power output (top), and one for S-meter (bottom) on the top left-hand portion of the front panel. A six-digit frequency display (allowing readout to nearest 100 Hz) is dead center on the top portion of the front panel. On the far right of the panel are the various mode/channel LEDs that show current status of the radio. Back panel contains the antenna connector (an SO-239) and CW/EXT SPKR jacks (3.5mm) and the power connector.

The operating manual is very well written and easy to read and comprehend. Full operating details of the basic AR-3500 transceiver are a snap to implement, allowing the new user to quickly put the rig on the air and enjoy some 10M operation. About the only design change that I would make is to add a tuning knob to the front panel of the rig. All frequency changes and programming must be done by the front panel switches and/or the buttons on the scanning mike. A tuning knob would be a welcome addition, as there are times that it is just more "natural" to use a knob to change frequencies. The other mod that I am going to make to my radio is to defeat the "beep-tone" that is constantly present whenever a button is pushed on the radio. This is annoying at the very least and can be a distraction while driving.

Speaking of driving, the AR-3500 is a great rig to mount in the car and use for a 10M mobile. My Toyota van has limited areas on which to mount radio equipment. The favorite place is the center console between the two front

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seats. By mounting the AR-3500 on the console and then using heavy duty plastic fasteners (from Radio Shack) I was also able to mount my Alinco DR-110T 2M FM radio to the top of the AR-3500. This makes for a very compact stack of equipment and the best use of limited space.

In testing the AR-3500 in the mobile environment I was able to use three different types of HF antennas. First was a modified coil loaded CB antenna, second was the standard 102-inch

CB whip and finally an Outbacker 8-band HF mobile antenna system. All antennas worked well with the AR-3500 on 10M. The 102-inch whip tended to yield the best receive signal levels of the three antennas, while the shorter coil loaded CB antenna did not perform nearly as well, which was predictable. The Outbacker 8-band HF system worked out very well and yielded a very wide bandwidth (useful over the entire range of the AR-3500) without resorting to an antenna tun-

ing unit. This is something to be considered if you want to use both SSB and FM modes while mobile.

It never ceases to amaze people (non-hams) who occasionally ride with me when I turn on the AR-3500, quickly tune around, and answer a DX station calling CQ. After a short QSO I spend the remainder of the ride describing the hobby of Amateur Radio to my driving companion. It should be noted that 10M mobiling is not the same game as running the AR-3500 at the home QTH using a rotatable antenna. Signal strengths will be lower (much of the time) and signal fluctuations will be more pronounced. Therefore, you will have to alter your operating habits a bit to really become successful using the AR-3500 mobile. For instance, instead of calling CQ, listen around and find a solid signal who is calling CQ and answer him (her). Don't try busting any pileups, unless the DX station is standing by for mobiles and/or QRP stations, in which case, go for it!!

Bottom line on the Ranger AR-3500: good value for money, easy to use, works well both as a base station and a mobile, loads of fun and should work well on 10M packet (although I have not tried it). The price is about \$320 (retail cost) and it's available from many ham distributors across the US.

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# SPECIAL EVENTS

## Ohio Wine Month

The Wireless Institute of Northern Ohio (WINO), an organization sponsored by the Lake County Amateur Radio Association, will be on the air with a special event station to commemorate Ohio Wine Month on Saturday, June 1 and again on Sunday, June 2.

On Saturday evening we will be operating between 7:30 and 11 p.m. EST (2330Z to 0300Z) on 7.235 and 21.315 MHz. On Sunday we will be operating between 11 a.m. and 3 p.m. EST (1500Z to 1900Z) on 21.315 and 28.490 MHz. The station will be located at a winery in Madison, Ohio and will use the call KO8O.

A special 8½ × 11 QSL certificate will be available from KO8O, WINO Weekend, 10418 Briar Hill, Kirtland, OH 44094. Include a legal sized SASE. □

## 75th Anniversary

K2AA will celebrate the 75th year of continuous Amateur Radio meetings and activities of the South Jersey Radio Association on June 8, 9 and 15, 16, 1500 to 2400Z in the General portion of the 15, 20, 40 and 80 and Novice portion of 10M. There will also be random operation between June 9 and 15.

For a special commemorative K2AA QSL, send your QSL and SASE to SJRA, P.O. Box 1026, Haddonfield, NJ 08033. □

## Strawberry Festival

W8FW in Troy, Ohio will operate as a special event station from 1400Z to 2200Z on June 1 and 2 to commemorate the Strawberry Festival.

Operation is 25 kHz up from the General, 40M band and 10M Novice band.

For certificate, send QSL and SASE to KS8Z, 1408 Cornish Rd., Troy, OH 45373-1212. □

## Mammoth Cave

The Mammoth Cave Amateur Radio Club, Inc. will operate special event station KD4SS to celebrate the 50th anniversary of Mammoth Cave National Park on June 29 and 30 in the lower portion of General sub-bands and 28.475 MHz from 1500Z Saturday to 1900Z Sunday.

For QSL card, send an SASE to MCARC, Special Events, P.O. Box 858, Glasgow, KY 42142-0858. □

## Keesler AFB anniversary

The Keesler Amateur Radio Club will operate military recreation station K5TYP from 1400Z to 2400Z on June 8 and 9 to celebrate the 50th anniversary of Keesler Air Force Base, the computer and electronics training center of the US Air Force, in Biloxi, Mississippi.

Operation will be on (CW): 28.160, 21.160, 18.080, 14.040, 7.040; and (phone): 28.460, 21.360, 18.160, 14.260, 7.265.

For QSL, send QSL and SASE to KARC, 3380 ABG/SS/Amateur Radio, Keesler AFB, MS 39534-5000. □

## Auburn, Washington centennial

The Academy Amateur Radio Club will be operating special event station K7AC during the week of June 9 through 16, 1991 to commemorate Auburn's centennial. Operation will be in the lower 25 kHz of the General bands as well as the 10M Novice phone band.

There will be an informal net of US Auburns (there are about 22 of them) held on June 16 at 2200 UTC on 14.240 MHz.

QSL via WA7QCC, 3513 Orchard Place SE, Auburn, WA 98002. □

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## Lum and Abner

The Ouachita ARA will operation special event station KG5QO from 1300 to 2400Z on June 6 through 8 in conjunction with the annual Lum and Abner Days celebration in Mena, Arkansas honoring Chet Lauck and Norris Goff, "Lum" and "Abner" of early broadcast radio fame and Polk County natives.

Operation will be in the lower 25 kHz of the 40, 20 and 15M General phone bands and 28.350-400 MHz.

For certificate, send QSL and 9×12 inch SASE to: Jack Brewer, KG5QO, Rt. 1, Box 137, Hatfield, AR 71945. □

## Cutter Citris Commemoration

The Coos County Radio Club will operate special event station WA7WET to honor the United States Coast Guard and commemorate the decommissioning of the US Coast Guard Cutter Citris.

Operations will be from 1700Z June 15 to 0100Z June 16 and 1700Z June 16 to 0100Z June 17. Look for the station on about 28.385MHz and around 50 kHz below the top of the General segments of 75, 40, 20, 17 and 15M.

For colorful commemorative certificate, QSL and a handsome booklet about the ship, send QSL and an SASE to WA7WET c/o Coos County Radic Club; P.O. Box 3494; Coos Bay, OR 97420. □

## Balloon launch

On June 29, 1991, the DARA Club will be launching an HF/VHF/UHF weather balloon at 0930 hrs. local Dayton time (1330 UTC). The expected maximum altitude of the balloon should reach 100,000 + feet. Two hours prior to launch, an HF balloon net will begin on 7.232 MHz and check-ins are welcome. The payload will contain the following transmitters:

1) 70 cm ATV transmitter on 439.250 MHz. Live camera video will be transmitted, along with a video interface showing altitude and outside temperature. Antenna polarization will be horizontal. Power output of the ATV transmitter will be 1W.

2) 2M FM transmitter with digitized voice ID. Operating frequency will be 144.340 MHz. Antenna polarization will be vertical, and power output will be 100 mW.

3) 20M CW beacon transmitter operating on 14.035 MHz. Power output will be 1W, and antenna polarization will be vertical.

This special event launch will occur within the greater Dayton area. Answers to further questions should be addressed to Dave Pelaez, AH2AR, 4872 Trailside Ct., Huber Heights, OH 45424; 513/233-1641 (or via packet in care of the W8BI BBS, Dayton OH); or Gerry Stephens, W8LLW, 1003 Marcellus, Vandalia, OH 45424; 513/890-5920.

Special certificates will be given for furthest reception reports on the three frequencies utilized. All reception reports will be QSLed. QSL via W8BI (Dayton Amateur Radio Association). □

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## H.R. 73 cosponsor

The following letter, composed and mailed by Julius J. Altman, W2DX, is a fine example of a request by a citizen, an Amateur, requesting support of a bill whose purpose is to insure that Amateur Radio remains a living, healthy avocation dedicated to the public interest. Julius sent them to his representatives, and will do so to his Senators at the proper time.

To: Your Representative(s), US Congress

"On January 31, 1991, Congressman Jim Cooper of Tennessee introduced the Amateur Radio Spectrum Protection Act of 1991. The proposed legislation, designated H.R. 73, would protect the Amateur Radio Service from further loss of radio spectrum, our most valuable asset.

Almost 491,000 radio Amateurs in the U.S.A., licensed by the FCC to assure compliance with regulations, have been subject to erosion of those frequencies assigned to them. Without doubt, you are familiar with the voluntary services provided to our country by these dedicated citizens: non-commercial radio communication services in floods, hurricanes, tornadoes, forest fires, earthquakes, blizzards, train wrecks, aircraft accidents, chemical spills and, not to be overlooked, assistance to local law enforcement agencies, particularly in areas of traffic control and transportation. The list goes on and on.

Recently, the FCC has taken actions which resulted in loss of frequency spectrum as-

signed to radio Amateurs. H.R. 73 would prevent further losses and, if frequency re-allocation is indeed found necessary, then the FCC would provide equivalent replacement frequencies to enable continuation of the Amateur Radio Service without impediment.

Your support of H.R. 73 will acknowledge the "zero-cost" service rendered by Amateur (meaning not-for-pay) Radio operators to our country, coast-to-coast.

Our average age is 50 years, at a time in life when we wish that our volunteer efforts will be meaningful. This has been our tradition for the past 75 years of experimentation, research, scientific investigation, etc., from which has evolved the highly sophisticated technology so evident these days in every human endeavor. We need our frequencies to continue the work and maintain worldwide contact with people of other countries similarly and harmoniously engaged.

Thank you for all the work you have put into being our Representative. We urge that you co-sponsor and/or support H.R. 73.

It is always desirable for you to write your own words and feelings. This letter is being offered only as a guide. Prepared letters requiring only your address and signature are available. If you choose to write to your representative, please make a copy of your letter and send it to me (104 Hampshire, Shelbyville, TN 37160).

It is important and you can make a difference!

ART KAY, W5APX  
Shelbyville, TN

## More than our frequencies are in danger

Malicious interference; potential frequency loss at WARC 92; the loss of 220-222 MHz; "death threats" over the air; the exhaustion of repeater pairs in certain areas of the country. These are problems which we've seen discussed in the press and which concern us all. But while the loss of frequencies or privileges is most hams' greatest

fear, a bigger problem looms which could make any of the above mentioned seem trivial.

This "silent killer" doesn't get too much press and even less financial support. Yet it's so potentially devastating that the FCC thought it was necessary to take action on their own. This problem, which I believe has the potential for destroying Amateur Radio, is antenna-restriction ordinances and deed restrictions (covenants and CC&Rs). After all, without antennas, how can there be Amateur Radio? Even though the FCC's forward-thinking PRB-1 essentially makes it illegal for local governments to make blanket antenna restrictions, most cities continue to have such laws on their books, and they continue to attempt to enforce them. Worse are the CC&Rs. CC&Rs are exempt from PRB-1 because they are not laws but rather agreements which homeowners enter into by their own free-will... or so it seems.

There have been a few instances in which the Amateur Radio press described city ordinances which were contested. But for the most part, Amateurs fight alone (not because they have to, but probably because they are unaware of the voluntary help which is available). Some ordinances are just plain ridiculous and are being used by neighbors who somehow think that their idea of "aesthetics" should be dictated to everyone else. The most recent case I've seen was reported over the packet network. In the Seattle area, one Amateur's neighbor managed to convince the zoning board that the tree supporting the dipole comes under the same laws as man-made "antenna support structures." The city bought the argument and gave the Amateur 48-hour notice to remove his dipole! According to the law, a tree can only be used if it meets easement restrictions.

In the case of CC&Rs, the Amateur apparently has no recourse, reason being that he decided to live in a particular area without any coercion and therefore signed the documents under his own free will. However, this is often not the whole story. When we went house hunting in Colorado Springs a few years ago, the first thing I told my realtor was that my chief priority was to be able to erect at least a 60 ft. tower

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on any property I was willing to look at; she laughed at first . . . until she discovered that there was but one neighborhood in Colorado Springs (in the oldest section of town) that did not have CC&Rs preventing *any* outside antennas! How can you enter into a covenant by your own free will if the covenant exists everywhere within the city?

### What is the solution?

Many hams have fought ordinances in and out of court. While many have won their cases, all have shared one thing in common: they've spent a great deal of money during their fight. In most of those cases, every party involved harbors a certain degree of bitterness and hard feelings. I recently saw a message on the packet network which described an elegant solution. Unfortunately, I didn't make note of the author to give proper credit, but if he's reading this, thank you! I'll describe the solution here:

Rather than take a defensive, "reactive" posture, a much better way of swaying local governments is through a "pro-active" stance. Much of the city government's and zoning commission's concern is with real estate. It's only natural that these governing bodies have members who are closely

tied to real estate. So, the best tactic is to "step into their shoes" and try to think as they do.

Fences, guard shack, walls and gates around security neighborhoods and apartments are certainly as "ugly" as Amateur Radio antennas, yet they are allowed under even the most restrictive ordinances and covenants. Why? Because they satisfy a need for *security*. And, that is the key; sell Amateur Radio as security.

Many of us have tried to justify towers with public service and disaster communication capabilities. However, the one aspect we often fail to emphasize is the *security* that an Amateur Radio station provides during such times. There is indeed a great deal of security for parade participants when we help out with communication; there's security for your neighbors when a natural disaster makes your station the only method of communication to the outside world where help is; there's security when you can autopatch to the police from your car upon seeing a prowler in your neighborhood.

To take this pro-active approach, start with people you know who have contacts with your local board of realtors, city council, zoning commission and other important local governmental agencies. Don't begin by grip-

ing about the horrible restrictions on antennas; instead, demonstrate the many positive aspects of ham radio. Show them clippings from local newspapers and from Amateur Radio magazines showing how ham radio helps the community. Get them on your side, because an enthusiastic "insider" will pull much more weight than a vocal "outsider." Try to get your new-found advocates to be your liaison to the actual governmental and real-estate agencies. But most of all, always be positive and never attack the current laws.

Once you've made the necessary inroads, then convince the city council and the board of realtors to ensure that Amateur Radio antennas should be exempt from restrictive ordinances and CC&Rs. If you've sold yourself and Amateur Radio well enough, who could possibly be against added security in your town or neighborhood?

Finally, begin the process immediately. A week seldom goes by when Amateurs are not faced with the problems of antenna restrictions. Don't gripe about the restrictions; convince your local government that Amateurs are indispensable!

MARK FORBES, KC9C  
Rocklin, CA

□

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# AWARDS

## Calgary Stampede

The rules for the Calgary Stampede Award (announced in the November '90 issue) have changed slightly: VE6AO, VE6NQ club stations and life members of the CARA count two points each. Calgary Stations require 10 points. Send only log information. The cost after March 31, 1991 will be \$3.

New, redesigned certificates are being processed; they will be worth waiting for. Applications can be sent to VE6VK or via CARA, P.O. Box 592 Stn. "M," Calgary Alta, Canada T2E5M5. □

## Scottish awards

The Scottish Tourist Board (radio Amateur) Expedition Group aims to:

- 1) Set up worldwide communications stations that are unique, scenic, cultural, historic or in any other way relating to Scotland.
- 2) Make the public more aware of Amateur Radio through a public relations display at each event. All events are open to the public.

**Awards:** The Thistle Award and the Supreme Tartan Banner Award are issued by the group on a continuous basis; both are in color. Awards are also issued for some "single" events during the year. These are applicable only for the duration of that event.

**Frequencies:** (plus or minus QRM) are: CW 3.510, 7.010, 10.120, 14.010, 21.010, 24.905 and 28.010 MHz; SSB 3.7, 7.065, 14.140, 14.240, 18.130, 21.250, 24.950 and 28.400 to 28.600. Depending on activity, operation also on RTTY and packet.

Time of the events will be Saturday from 0800 to 2200 GMT and Sundays from 0900 to 1400 GMT. Times and operation are subject to change. Please check bands for any activity.

Claims for all Scottish Tourist Board Awards should be sent to Robbie, GM4UQG, Awards Manager.

A full list of events for the year, awards and detailed information, can

be had on application to GM3MTH, Paddy, QTHR (Co-ordinator/QSL Manager), 9 Ramsay Pl., Coatbridge, Strathclyde, Scotland (enclose two second class stamps for UK; others return postage for 100 grams). □

## Maryland awards

The Chesapeake DX Club of Maryland is offering three regional Amateur Radio operating awards to qualified US and overseas Amateurs.

The Maryland Award is issued for contacts with at least 10 Maryland hams. There are no band, mode or time requirements.

The Delmarva Award is issued in two classes: Class 1 requires 10 contacts with Maryland Amateurs, 10 contacts with Virginia Amateurs, one contact with a Delaware station and one contact with a Washington, D.C. station (this station must be located within the borders of Washington, D.C.). The US Senate station, W3USS, the Smithsonian station, NN3SI, and the Department of State station, W3DOS, are all easily workable. Class 2 is offered for five contacts, each with Maryland and Virginia Amateurs, and one contact with either a D.C. or Delaware station. DX stations need five contacts with Maryland and Virginia stations and one with either D.C. or Delaware. There are no band, mode or time restrictions.

The Maryland Counties Award is issued to Amateurs who have verified all Maryland counties. Again, there are no band, mode or time restrictions. QSLs need not be sent.

The awards are \$2 each plus a large (8 × 10 or so) SASE (two units of postage). DX stations should submit five IRCs for each award. If air mail is desired, another three IRCs should be submitted. GCR is acceptable for all awards. Send applications to John L. Rouse, KA3DBN, 2703 Bartlett Lane, Bowie, MD 20715. □

## US Auburns Award

To celebrate Auburn, Washington's centennial year, the Academy Amateur Radio Club is sponsoring an award for working at least five United States Auburns.

To qualify, work Amateur stations in at least five different United States cities with the name Auburn as part of the official city name (Auburn, Auburndale, Auburndale, Auburn Hills etc.; there are about 22 of them). One of these must be from Auburn, Washington. QSOs can be on any band or mode and must be made during the year 1991.

Send a log extract showing the call, date, time, frequency and mode along with \$1 to WA7QCC, 3513 Orchard Place SE, Auburn, WA 98002. QSLs are not required. An informal net of US Auburns will be held on June 16, 1991, at 2200 UTC on 14.240 MHz. For more information or a list of US Auburns, send an SASE to the above address or to WA7QCC @ N7ENT.WA.USA on packet. □

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Around this QTH we have what is affectionately known as "Brown's Rule": "Whatever can go wrong will go wrong, *now!*" And there's a corollary to that: "Given two choices, you always make the wrong one!" Now I submit that when it comes to interpreting propagation conditions on the HF bands, say as perceived from a quick scan of your usual operating frequencies, the corollary is not always correct. Indeed, if propagation seems on the puny side, there are at least four possible interpretations, but in this instance, three of them may contribute to an underestimate of actual band conditions.

First, you could underestimate conditions by having the wrong antenna on the rig, say a 40M dipole when you want the 20M beam, or you may have failed to change the transmatch tuning to the antenna coax, say 40M settings when the 20M beam is on-line.

Second, the band may really be alive in some directions but you've left the beam at the wrong heading, getting weak signals as a result of your F/B ratio. That happened to me during a recent NA CW sprint and resulted in a QSO deficit I never could recover from, no matter how hard I tried.

Third, the band really may be alive but nevertheless seems in poor shape, the victim of sociological factors which may never have occurred to you.

Finally, the band may actually be dead, having fallen prey to a strong disturbance of solar or geomagnetic origin. Thus, depending on how carefully you weigh the possibilities, there's at least a 25 percent chance that your judgement that the band is dead is really correct.

Now having said all that, let's look at the third possibility, sociological factors. This is an interesting concept, at least to those hardy souls who have a physical science background and ply

the HF bands in pursuit of DX. They invariably look for discussions of propagation in terms of physical factors or variables—say, sunspot number, solar flux, X-ray bursts, magnetic storms, solar proton events—you name it.

With that sort of built-in bias, human factors are the last thing they'd think about in trying to explain puny propagation conditions. And those of us who practice the propagation game in a serious manner try to accommodate them, giving learned discussions based on the latest solar events; we even look into our murky crystal balls to offer predictions of things now and well into the future.

True, we have a way of hedging our bets, pointing out that we're trying to get a handle on a rather complicated situation by just using a few coarse variables. In addition, we seem to hide behind the fact that there are statistical variations between the variables we know about and those which really control the situation, the 10 cm solar flux and the solar UV and X-ray fluxes being a case in point.

However, there are factors such as industrial or seasonal QRN at the DX end or even cultural events which can affect our view of propagation conditions and even the rationalization of the "daily numbers" from WWV. When discussing such factors, we must recognize that they might be rather specific to regions, countries or even sporting events, radio or otherwise.

For me, the surprise is always when dead bands suddenly seem to come alive. That is often the case when there's a DX contest, ARRL or CQ, in the offing. First, on 14 MHz one hears those hardy souls on DXpeditions who announce that they're "on station," maybe a few days in advance of the contest. They casually check out their rigs and antennas, dabble in DXing and make a few people happy before the event. But come contest time, right on 0000 UTC, the bands often just *roar* to life, signals coming from directions you wouldn't expect. All of that out of a situation where "the numbers" might not be all that promising.

While on that subject, there's also some "upward mobility," not in the usual economic or social sense, but with regard to operating frequencies. Thus, the 14 MHz band may be in

reasonable condition but the 21 and 28 MHz bands seem "blah" when monitored before a contest. But then come 0000 UTC, they suddenly brighten up and stations appear there in hordes. There's one subtlety, and I wonder if you've noticed it: if there's a decent opening on 28 MHz, the "action" will be there and the DX contestors will leap-frog over 21 MHz. Now *that's* interesting!

And there are many national contests that show the same feature, say Is suddenly showing up all over the bands during an Italian DX Contest or those famous East Bloc installations, "50W into a GP," suddenly booming in on the bands during the CQ-M Contest. The list goes on and on, each giving a special boost to the bands once the magic hour arrives. Come the hour to QRT, the bands slip back to their former condition and someone just tuning in would wonder why the propagation is so poor, just a few weak signals coming through after the party is over.

Then there's the inverse of the above, the bands sounding quite good but some country you'd expect to work is just not to be heard, say for hours or days. The one I'd point to first is Sweden. Like many countries in Europe, they have a tremendous number of national holidays and the folks take advantage of them to go on vacation. Religious holidays can play a similar role. There, the Swedes usually celebrate Easter on the ski slopes, bringing the pastor of their church along to preside at their services. In both instances, the holidays can last for several days.

There are also brief disruptions in Amateur Radio activity such as Super Bowl Sunday and the Indy 500; people turn off their HF radios and switch on the TV. In Australia, there's the Melbourne Cup in October which brings the nation almost to a halt. I would think that even an experienced VK operator would find it difficult to listen to the account of that race with one ear and still tune around the bands in search of DX with the other. Those social factors can affect the bands, sometimes briefly and sometimes for days.

One also has to think of political events. In the US the national nominating convention of the Democrats and Republicans draw a crowd, at least every four years. The recent turmoil in the Eastern Bloc is a case in point, with the familiar HAs, OKs and YOs disappearing from the bands for some time. We all knew what was going on then and were delighted when things stabilized, their calls showing up on the bands again.

These are other factors which affect what we hear or don't hear on HF radio.

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I'm sure you could add some to that brief list. As I said in the beginning, however, if you're a student of "the numbers," you'll look there first, especially at the magnetic index. If that's on the high side, say A above 25, the higher bands might not seem all that shiny. If A is lower than that and conditions don't seem all that good, you can start thinking about other factors. Don't throw rocks at people like me who provide information primarily in physical terms. I think you can see that it takes a bit of time and study, but it's important to look at all the factors, including sociological, before making a judgement on propagation. □

## Adding an Extra

### STEVE HUTCHENS, N4DEY

Focusing on youth in Amateur Radio, 13-year-old Nathan Shores, KN4TG, upgraded to Extra on Nov. 11, 1990, only two years after his Novice exam. Nathan had upgraded to Technician in the spring of 1989, and in August 1990 he decided to go for it all! His dad Steve, N4DEY, promised a Kenwood 140 if he passed his General. Nathan surprised everyone in three weeks! Dad played it cool for his Advanced, but the Extra paid Nathan \$100.

What kept Nathan busy when he wasn't working on his upgrades? He played baseball, basketball and advanced to the rank of Life Scout in the Boy Scouts, where he is also active in the Order of the Arrow. Nathan also maintained an A average at Fall Creek School, where he is in the eighth grade.

Nathan fights for the mike near Boonville, North Carolina because his mom, Sarah, KC4MIM, also has a license. His seven-year-old sister, Amanda, is presently enrolled in a Novice class. Lots of folks in Northwest, North Carolina are proud of this young man! □

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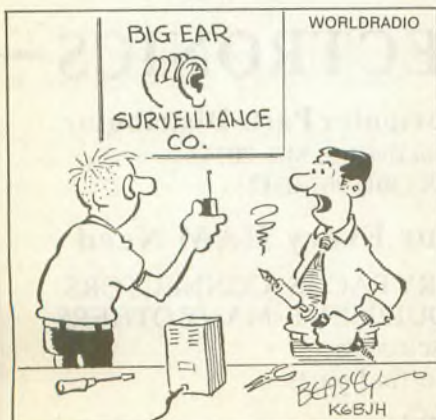
## SOFTWARE

**MPJ, 1288 Grayline Advantage Software** - For IBM and compatibles, 5.25". This software package is an advanced DX tool which predicts DX propagation for all time zones and locations. It gives an accurate grayline display and shows the overhead position of the sun. A detailed world map tracks the movement of the earth with night areas shaded. It displays UTC time in all 24 time zones. This software is very easy to use ..... 24.95

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# STATION APPEARANCE

## Bill Hamm, K4KAM

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

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



**Bill Hamm, K4KAM, of Thorsby, AL, takes this month's winnings with his impressive station.**

His shack was designed and laid out himself with the help of Dewayne, KC4ILQ, from pictures in past issues of Worldradio, which he has received from the start. Together, they studied pictures from about 25 to 30 different stations and got ideas from all.

Bill has been licensed since 1957 with his first call being KN4KAM—then he was issued the call K4KAM.

He works packet, RTTY, DX hunting, contests, and local FM.

Bill's equipment includes (from left to right): Commodore 64 computer (mounted in desk); Commodore MPS 1000 printer; 1541 disk drive; 1702 Commodore color monitor; MFJ 1278 TNC (sitting on desk); Alliance rotor control; Sears roadtalker 40 CB; Ken-

wood TR-7625 FM rig; Kenwood DC 7 power supply; Realistic DX 100 general coverage receiver; Kantronics Field Day CW and RTTY reader; Kenwood 530S; CDR rotor control; MFJ 941C Turner; Macaw DPM-1 power and SWR meter; Hitachi V151B oscilloscope; Autex QF1A SSB and CW filter; Wawasee antenna selector switch; second Commodore 64; Emer-

son home entertainment center; Gonset 6M rig; two stereo solid state receivers; and a Heath 5010 keyer. The antennas are a tribander A-3 and an HQ mini quad. With this array of equipment and a General Class license, Bill has won 131 awards and certificates and has 169 DX countries confirmed. □



## 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!

*This month's winner is Tom Carten, K1PZU, of Wilkes-Barre, PA.*

I'm always on the lookout for Amateur license plates, and when a GR8 went by me—on a Pennsylvania car—I spent some time wondering

just where in the United Kingdom that was and why it was on an American registration.

Then I realized what GR8MOM was really indicating. Some days it just takes me a little longer. □

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The AL-80A covers 160-15 meters (10 meters with license), including MARS and WARC. You could spend over twice the money for a legal limit amplifier twice the size -- and all you'll get is an additional 1/3 S-unit -- a difference you won't ever notice.

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You get the Eimac® 3-500Z transmitting tube with an estimated life of 20,000 hours ICAS. The AL-80A is built on a rugged steel chassis. It has a separate RF compartment that's fully shielded to keep RF from leaking out. This keeps RFI and TVI to a minimum.

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result is a clean signal without flat-topping.

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The guts of the AL-80A is its heavy duty power supply. A 22 pound transformer using a high silicone steel core, computer grade capacitors, heavy duty bleeder and ten 3 amp, 1000 V power rectifiers give you a stiff 2700 volts fully loaded. Some amplifiers using two 3-500Zs use a light power supply so they can't give much more power output than the AL-80A.

### Step-Start Inrush Protection™

The AL-80A special Step-Start Inrush Protection stops damaging inrush current with a start up sequence that's easy on your tube and power supply components.

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

The Multi-Voltage Primary in the AL-80A lets you compensate for too high or too low line voltage so you get the longest component life and peak operating efficiency -- regardless of line voltage.

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Grid current of the 3-500Z is monitored continuously by one meter. Grid current gives the best indication of overall performance.

Multi-meter measures plate voltage, plate current, peak RF output power and drive power/ALC detector voltage.

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A tough low cost linear with REAL transmitting tubes!

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A whisper quiet internal fan draws in cool air over the power supply components and the Eimac® 3-500Z tube to remove heat for longer tube life.

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Call your dealer for your best price today! Bust through QRM with a full kilowatt -- right out of the box. Call your dealer for your best price and order today. Two year limited warranty.

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These 3 rugged linears all use a super heavy duty hipersil® power supply capable of 2500 watts!

### Ameritron's most powerful amplifier

AL-1500  
**\$2625**  
Suggested Retail



Ameritron super power amplifier uses the herculean 8877 ceramic tube.

It's so powerful that 65 watts drive gives you full legal output -- and it's just loafing because the power supply is capable of 2500 watts PEP.

### Ameritron's Dual 3-500Z linear

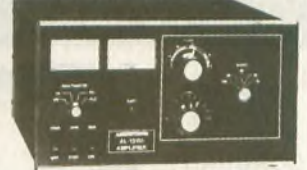
AL-82  
**\$1995**  
Suggested Retail



This linear gives you full legal output using a pair of Eimac® 3-500Zs. Some competing linears using dual 3-500Zs don't give you 1500 watts because their lightweight power supplies can't use the tubes to their full potential.

### Ameritron's 3CX1200A7 linear

AL-1200  
**\$2045**  
Suggested Retail



Get ham radio's toughest tube with the Ameritron AL-1200 -- the Eimac® 3CX1200A7. It has a 50 watt control grid dissipation -- 12 times tougher than the 4 watt rating of the 3CX800A7 -- yet you get the same full legal output as you get from a pair of 3CX800A7s.

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RCS-8V  
**\$149**  
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#### RCS-8V, DC-UHF 5 KW Coax Switch.

Replace 5 coax feedlines with one with this Ameritron Coax switch. Weatherproof box mounts outdoors on your tower or mast. Attractive control unit sits on your operating desk. Low SWR to 450 MHz. Low loss. Rated at 5 KW to 30 MHz. 1 KW at 150 MHz.



#### RCS-4, \$134.50, 4 position HF switch.

Similar to RCS-8V. Requires no control cable. Handles 2500 watts PEP.

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Oil cooled so you can run the maximum legal limit of 1500 watts for 5 minutes. High quality industrial grade transformer oil included (no PCB). 50 ohms. SWR under 1.2:1 to 30 MHz. Low SWR to 400 MHz. 7 1/2" H x 6-5/8" Diameter.



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# DX WORLD

**John F.W. Minke III, N6JM**

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## Activities Calendar

- 18-19 May LABRE World Telecommunications Day Contest
- 25-26 May CQ World Wide WPX Contest (CW)
- 09 June REP Portugal Day Contest (CW)
- 15-16 June JARL All Asian Contest (SSB)
- 01 July Canada Day Contest
- 06-07 July Venezuelan DX Contest (SSB)
- 13-14 July IARU HF Championship Contest
- 07-08 Sept. JARL All Asian DX Contest (SSB)

Refer to your favorite contest section for details on contest activities. Notice the change of month for the All Asian DX Contest. JARL says, "the fourth Saturday of September to 2400 UTC next day (September 7-8, 1991)." We figure that to be the first Saturday. The CW portion used to be in August.

## W100N

The following DXers were awarded

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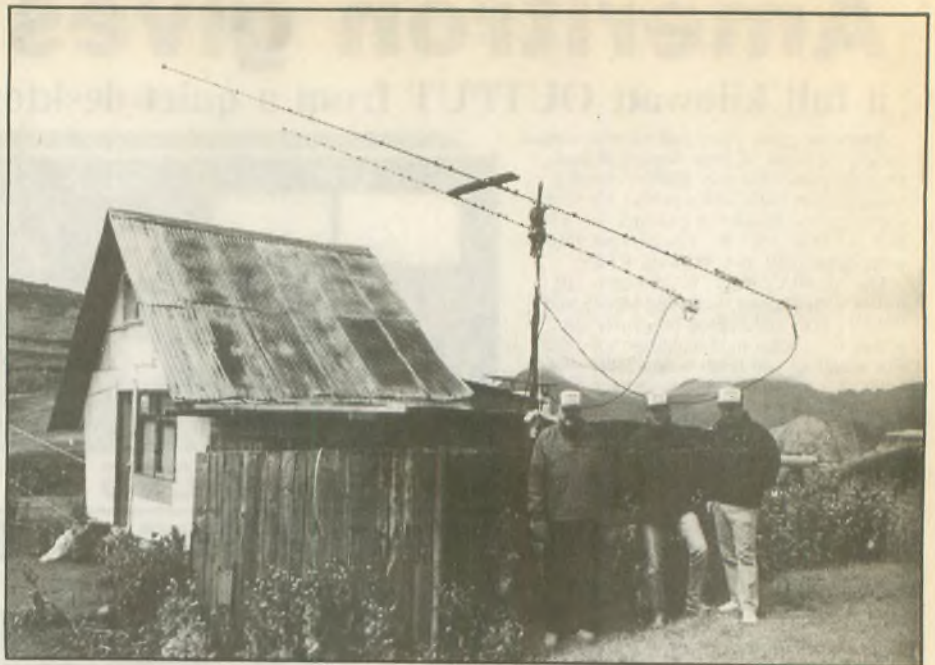
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The Juan Fernandez Island crew with their satellite antennas.

Worldradio's Worked 100 Nations certificates as dated:

- 392) David A. Fisher, N3CYD (All 10M SSB), Apr. 4, 1991.
- 393) Barry D. Bevan, KA3KWH (All CW), Apr. 4, 1991.
- 394) Mario Iberkleid, CP1FF, Apr. 4, 1991
- 395) Igor Zdorov, KU0J (All CW), Apr. 4, 1991.

Here's the crew at CE0ZZZ on Juan Fernandez Island showing the satellite antennas. From left to right, John Fail, KL7GRF; Gerard, F2JD; and Pedro, CE3BFZ. IOTA fans might recognize Gerard's call, as he has activated several South American islands recently. Many thanks to Norm Brooks, K6FO, for lending us this photo.

## Tromelin and Glorioso (FR/T and FR/G)

The *DX News Sheet* says that FR5ZU will be visiting Tromelin and

Glorioso islands twice during the coming year. However, his workload may limit the amount of activity spent on the bands.

*QRZ DX* reports that Yoland, FR5AI, was to have operated from Tromelin for one month, beginning May 5, signing FR5AI/T. That should bring it through early June.

## South Georgia Islands (VP8)

According to *QRZ DX*, VP8CDJ is expected to be active again from Bird Island this spring. Check 14.256 MHz after 2100 UTC.

## South Sandwich Islands (VP8)

Recently a station signing 4K1ZI has been very active. However, there seems to be some doubt on this one. Some say he is for real and others call it a hoax. Some report that he is in the South Shetlands and others say he is in South Sandwich. If he is for real, most likely it is the South Shetlands. Anyway, if you hear him, work him and worry about it later. We did.

## Malawi (7Q7)

If you missed the chance to work Lloyd or Iris as 7Q7KG, don't despair, as there are others presently active. *DX News Sheet* reports that Jean-Louis, FE1MAW, will be in Malawi for at least one year operating as 7Q7MS.

And the DX newsletters have reported much activity from other stations, such as the following:

7Q7AR	21.017 MHz	1130 UTC
7Q7JA	14.017 MHz	0445 UTC
7Q7LA	14.160 MHz	0230 UTC
7Q7RM	21.298 MHz	1730 UTC
7Q7WW	14.005 MHz	1515 UTC

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Need a contact on one of the WARC bands? On 30M 7Q7JA has been found near 10.106 MHz around 0400 UTC with 7Q7LA on 12M on 24.904 MHz around 1430 UTC.

There has even been some 6M activity by 7Q7JA on 50.189 MHz at 1545 UTC and 7Q7RM on 50.110 MHz at 1530 UTC.

### Kuwait (9K2)

Shortly after the people of Kuwait got their country back, there were several calls reported active. However, we don't know if they had proper authorization for operating and during the early part of April, and these calls ceased to appear in the reports. Those reported included:

9K2AL	21.306 MHz	1830 UTC
9K2CS	14.240 MHz	2230 UTC
9K2EC	14.244 MHz	2315 UTC
9K2FF	21.020 MHz	0530 UTC
9K2FR	3.503 MHz	2245 UTC
9K2KD	14.206 MHz	2130 UTC
9K2KW	14.222 MHz	0215 UTC
9K2SH	14.255 MHz	2130 UTC
9K2TX	21.315 MHz	2230 UTC
9K2/		
HB9CVN	21.268 MHz	1500 UTC
9K2/NE2X	14.160 MHz	0030 UTC

Again, we do not know if any of the above will be acceptable for DXCC. And congratulations to the deserving DXer who worked 9K2FR on 80M.

### IOTA

Here is some more reported activity of islands that have been chased by the island hunters recently:

AS-18	Sakhalin Island	UA0FDX
	28.505 MHz	0145 UTC
AS-36	Tsushima Island	JH6KFY
	21.278 MHz	1645 UTC
AS-71	Arakamchuchen Island	UA0KAP/A
	21.022 MHz	0745 UTC
AS-72	Pangkor Island	9M2QQ
	14.260 MHz	2000 UTC
EU-16	Yugoslav islands	YU2GF
	14.258 MHz	0530 UTC
EU-25	Sicily Island	IT9MUO
	14.235 MHz	0730 UTC
EU-034	Hiiu-maa Island	ES0NW
	14.034	0300 UTC
NA-39	Andreanof Islands	KL7ELO
	21.330 MHz	0430 UTC
NA-65	Camano Island	WA7HRR
	21.260 MHz	1930 UTC
NA-112	North Carolina group (south)	KA1FOW
SA-09	Tobago Island	9Y4EEP
	28.480 MHz	1930 UTC

Several islands or island groups that presently have no reference number are being activated. One in particular is Sept Iles Archipelago in the Gulf of St. Lawrence. The archipelago is off shore near the city of the same name. You won't find the island group on many maps except those of the local area. This probably accounts for the reason they were never listed in the



IOTA directory. A couple of years ago we worked at least two stations in Sept Iles (CQ zone 2) during one of the World Wide DX contests. We wonder why they never thought of going out there as the archipelago is in their own backyard! Martin, G3ZAY, was to have activated this group the latter part of April.

### DXCC project activity reports

The weekly progress reports from the DXCC desk continue. These figures have been continued from our last issue, with new applications and endorsements combined:

Week ending	R	P	B
Mar. 17, 1991	260	189	2670
Mar. 24, 1991	382	229	2823
Mar. 31, 1991	560	137	3246

As expected, the March mail brought in many endorsements which exceeded the amount of applications being processed. That is the month for Honor Roll updates. Most of those received recently are for endorsements. Fortunately, many of them contain only a few cards.

### Where do we go next?

World traveler Martti Laine, OH2BH, writes that his new book, *Where Do We Go Next?* was to be released during the International DX Convention in Visalia. The book has 19 chapters and includes about 150 photos.

Martti is assisted by several well-known DXers who include: Hugh

Cassidy, WA6AUD; Dave Heil, 9L1US; Chip Margelli, K7JA; Pete Grillo, AH3C, and others. The pre-publication price of \$22.95 has been extended. However, personally signed copies will not be available after the Dayton Hamvention, as Martti will have returned to Finland. You may order your copy from KTE Publications, 2301 Candehill Avenue, Long Beach, CA 90815. For postage and handling, include \$3 for US, \$5 for

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BP-5	10.8v	500mah	\$21.00
BP-7	13.2v	500mah	\$23.00
BP-8	8.4v	800mah	\$21.00
BP-22	8.4v	270mah	\$22.00
BP-23	8.4v	600mah	\$22.00
BP-24	10.8v	600mah	\$26.00

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PB-21H	7.2v	600mah	\$15.00
PB24 Tabs	9.6v	600mah	\$15.00
PB-25/26	8.4v	500mah	\$18.00

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FNB-10	7.2v	600mah	\$15.00
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FNB-12	12v	500mah	\$30.00

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2 ..	80, 40M	40 ft .. \$39 ..
3 ..	NO-TRAP DIPOLE - 160, 80, 40M	110 ft long \$79 ..
2 ..	80, 40M	85 ft .. \$62 ..
3 BAND SPACE SAVER DIPOLE - 160 thru 10M*	46 ft long	\$93 ..

\* Requires wide-range tuner (80, 40, 20, 15M without tuner)

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# 1 ANTENNA - 9 HF BANDS - NO TUNER

If you want just one HF antenna to handle up to nine bands, the GARANT WINDOM ANTENNA should be your choice. Our almost famous Garant Windom Antennas come in three lengths: 67 ft. for up to 5 bands; 137 ft. for up to 8 bands; 255 ft. for up to 9 bands. Yes, one antenna with only one coax feedline can handle all 9 HF bands, i.e. 160-80-40-30-20-17-15-12-10M

## No Tuner Needed

That's right. If you install our Garant Windom Antennas properly, you'll not need a tuner. Our customers and independent testers have confirmed this fact. The secret is in our special balun. It matches the low-impedance coax cable to the high-impedance windom-type antenna. Our Garant Windom Antennas are available with either a 500W PEP or a 2KW PEP balun.

## WARNING

Don't be fooled by antennas that are also sold with a windom label. Most of them use a 1:4 balun. That balun will never work. You'll always need a tuner with those fake windoms. The laws of physics make sure that it doesn't work, despite what the manufacturer promises you. Honestly, why buy an antenna that needs a tuner to operate?

## Here's Proof

Read what our satisfied customers wrote us about their genuine Garant Windom Antennas. All originals are on file for your inspection, as the FTC requires it. **Ered\_WBYEK**: "I purchased one of your GD-9/2KW antennas. It works great. Nine bands, no external tuner. Who could ask for anything more?" **Howard\_W3HM**: on his GD-9/2KW: "Service was fast. The antenna is first class. It does all it was advertised to do. Now, I have one antenna, one feedline and all (9) HF amateur bands for the first time in 27 years of hamming. The xyl likes that too." **John\_KA3SDQ** on his GD-8/500W: "Prompt delivery, helpful phone ordering and information, combined with a quality product. Garant truly has an unbeatable combination." **Don\_N01GE**: "I am very pleased with the shipping speed, service and the GD-8/500W antenna. This is my only antenna for 10 to 80 meters. What a great performing antenna. I am very pleased." **John\_W0HBE**: "I was extremely anxious to put my new GD-8/500W on the air. The instructions make the assembly fast and simple. I was impressed by the low SWR on all bands and comparison tests have proved to me that the Garant GD-8 windom is far superior to any other wire antenna." **Paul\_N1PL**, on his GD-8/500W: "The antenna is dynamite on 20 meters." **Charles\_W9JLZ**: "Garant GD-8/500W antenna performs very well on all bands. Great antenna. Get great signal reports." **Michael\_N8BED**: "Order received promptly as promised. GD-8/500W works as promised, using your measurements. No trimming required." **Herbert\_WD9GBH**: "My GD-9/500W works fine. Great multi-band antenna." For more letters with genuine call signs see our free data report.

## Free Data Report

Write, phone or fax for our complete data report on all our Garant Windom Antennas. It contains more technical data, actual SWR curves, customer comments and our low mail order prices. We ship worldwide. All our genuine Garant Windom Antennas are sold with a 10-day money-back guarantee. They come also with a 3-Year Limited Warranty.

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## Antique QSL Department

This month's antique QSL is provided by Mac McNally, K6WX, who is retired from the US Navy. Back on July 6, 1939, Mac worked LY1AH in Lithuania. The LY prefix was used by this country prior to the war and the Soviet annexation in 1940. Now the calls are being reissued.

Mac worked LY1AH using one of his former calls, KA1MN. The KA1 prefix was not one of those assigned to our New England states. That was the Philippine Islands, then a territory of the US.

Mac also comments on the recent story on George Tweed, KB6GJX, (Antique QSL department, January 1991): "At that time I was a Navy radioman. One of my roommates was captured on Guam but the other one, KB6ILT, was evacuated in time. The best man at my wedding in the Philippines was captured. Chuck Woodin, KA1CW, built a radio while he was in the prison camp at Los Banos and was able to get all of the war news from the BBS and San Francisco. The story of how he scrounged parts such as electric razors to build this radio is a fascinating tale."

## QSL information

If you worked any of those JT750 calls recently, the calls are the same as JT1; JT750BE is JT1BE, JT750BG is JT1BG, etc.

Brian Smith, WO9I, passes on information regarding Valery Metaxa, UO5ODA, who is the QSL manager for Moldavia. If you need help in obtaining a long-overdue QSL card, perhaps Valery can help. He can be reached at P.O. Box 6633, Kishinev 277050, Moldavia, USSR.

## QSL routes

A35DJ	—DL3MDJ	RB5QV	—W2PD
A35EM	—JR1FYS	RB8M	—RB4MF
A42A	(See Note 1)	RH0E	—W5BWA
A92FN	—K13V	R16B	—UA3TT
BV2AL	—OZ1LGF	RK9C	—UZ9CWA
C31LL	—C31LBB	RO6/RB5FF	—UO5WU
C40R	—5B4ES	T22XX	—DL2GBT
CE0ZVS	—CE3PVS	T22YL	—DL5UF
CK7C	—VE7SZ	T30CT	—DL9JG
CN8EL	—W2PD	T30DS	—DJ9ZB
CO1HJ	—KA2YEG	T30NAD	—JO1CRA
CR5A	—CT1AHU	T32PG	—NH6UY
CR5BY	—CT1BY	TA5/N0FYR	—N0FYR
CR8CQK	—CT1CQK	TE2M	—TI2OY
CR8UW	—WA3HUP	TE5J	—N2AU
CS7N	—CT4NH	TH7DX	—FF1NZH
CT3M	—CT3EE	TH8X	—F61SM
CU2DX	—CU2AA	TK7A	—TK5EP
CU0WPX	—KB3RG	TL8IM	—AC3D
D68KN	—JL3UIX	TM1K	—F1MXH
D68YD	—JL3UIX	TO6REF	—F1DBT
D68YH	—JL3UIX	TO7C	—FF6KRC
D73A	—HL1IE	TP5OK	(See Note 4)
ED8URL	—EA8ZX	TR8JWH	—G4TWT
E12VBV	—W3JGM	TV6M	—F6EEM
E17M	—E15FT	TW1C	—F6CTT
EL2SM	—SM3HLL	TW3M	—FE1JCG
EX1FFF	—UF6FFF	UA0KAP/A	—KL7HBC
EX9FB	—UF6FB	UB5QMO	—W2PD
F1B	—F6CQU	UB6Q	—RB5QW
F19R	—F9RM	UF7Q/UL7LS	—UL7LS
FG5R	—W7EJ	V29A	—W4FRU
FL2X	—F2VX	V29M	—K02M
FL6YL	—F1MVT	V47KJ1	—W2BJ1
FL0P	—FD1JOT	VA100U	—VE31PR
FO0IGS	—F6EEM	VA6JY	—VE6JY
FO0SIX	—AE6H	VAB8	—VE3DCX
FRJG3KUT	—JA3EGE	VC2A	—VY2AC
FT4YD	—FD1NZO	V16LW	—VK6LW
	(See Note 2)	VK9AG	—JA0GPT
FV6OST	—F91E	VK9LM	—DJ5CQ
FW0BX	—ZL1AMO	VK9YJ	—VK3AWY
FX0U	—F6DZU	VO7SO	—V01SO
FY5YE	—W5JLU	VP2EC	—N5AU
FZ5A	—FB1MUX	VP2EY	—HB9SL
GB8FX	—G3FXB	VP5E	—N6ZJM
GX5YC	—G5YC	VP5R	—WB9HRO
H2A	—5B4SA	VP5VDV	—W04JNS
H44VA	—DL4YAH	VP5VDY	—WB9HRO
H5AW	—ZS6AW	VP8CDJ	—GM4KLO
H61T	—SM0KCR	VQ9AY	—G4RFV
HC8K	—HC2K	VSGCT	—KA6V
HG5C	—HA5KKC	WB5LBJ/DU6	—W7HP1
H1500A	—H18A	XE3AAF	—KD8IW
HU0WDX	—I0WDX	XK4VV	—VE4VV
14ALU/IA5	—14ALU	XQ0X	—CE3ESS
I13B	—IN3BHR	XV5KA	—JA1AH
IQ2A	—I2UIY	XZ9A	—JAB1XM
IT8A	—IK8VHV	Y1M1AZ	—TA1AZ
IU4K	—I4ABF	YS1DRF	—W2PD
J43A	—SV3AQR	YW1A	—YV1AVO
J8/LA3FL	—LA3FL	YW3A	—YV3AZC
JU1T	—JT1KAA	YW7A	—YV7QP
JY9WF	—HB9ARP	YY1C	—YV1CP
KB5LRO/KH9	—WA2NHA	YZ1E	—YU1EXY
KC6VW	—JA6VZB	YZ4Z	—YU4EXA
KH2N	—KC5TA	Z21HQ	—F6PNU
KH0/J13XRZ	—JF3KOZ	ZF2NE/ZF8	—W5ASP
LZ5W	—LZ1YE	ZP50Y	—ZP5JCY
	(See Note 3)	ZV4B	—PY4BHB
N3JT/HK0	—W2GHK	ZW5B	—PY5EG
OH0AM	—OH2BAD	ZW8AM	—PS8AK
OK8ANE	—YU3BM	ZW0JR	—PP5ATO
ON9CRJ	—JP1TRJ	ZY0NS	—PP5SZ
OY/DK9FE	—DK9FE	ZZ1CZ	—PP1CZ
P29AC	—VK8AC	3A/DK6AS	—DJ8MT
P29DK	—KE4EW	3A/WD9JLU	—WD9JLU
P40V	—A16V	3D2QJ	—SM3CER
P43DO	—W4WSZ	3D2XV	—VK2BCH
PA6WPX	—P14COM		(See Note 3)
PJ4/K2NG	—WA2NHA	3X1AU	—ON6BV
PJ5/N4XO	—N4XO	4B2A	—N7BSA
PJ7/K2KTT	—K2KTT	4D9RG	—DU9RG
PJ9X	—OH6QU	4D0P	—DU1KT
PT2ZDR	—W2PD	4F1BAA	—NR8Y
PT5T	—PY5TT	4K1A	—UZ1PWA
		4K1ADQ	—UA1ADQ
		4K1F	—UA1AFM

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# DX Prediction — June 1991

4K0F	—UA0QBO	6Y0I	—JL1BLW
4K0G	—UA0QBO	7Q7MS	—FD1LRQ
4L0DXC	(See Note 5)	7X5ST/3V8	—7X5ST
4M5KWS	—YV5KWS	7Z1IS	—OE6EEG
4M8X	—YV5ARV	8P9FF	—WB2UYM
4U6ITU	(See Note 6)	8P9X	—K4FJ
5K1R	—HK1LDG	9H0DX	—9H1FG
5V7RF	—NC6A	9J2HN	—JK1UWY
5W1IU	—JA1WHG	9J2HS	—J14MTI
5W1JC	—W9GW	9M2NA	—VE3CHZ
5Y4FO	—KB4EKY	9M2QQ	—DF5UG
612A	—XE2KB	9Y4EEP	—VE3NLO

BV2AV	—P.O. Box 516, Panchiu, Taipei, TAIWAN
BV2DJ	—P.O. Box 91, Yunggho, Taipei, TAIWAN
BV5AF	—P.O. Box 39, Changhua 50099, TAIWAN
CO4QH	—P.O. Box 1529, Isle of Pines, CUBA
EK0TAX	—P.O. Box 318, Nizhny-Novogorod 603 006, USSR
JT1BG	—P.O. Box 157, Ulaanbaator 13, MONGOLIA
JT1BS	—P.O. Box 677, Ulaanbaator 13, MONGOLIA
JT1KAI	—P.O. Box 677, Ulaanbaator 13, MONGOLIA
JT8KAA	—P.O. Box 639, Ulaanbaator 13, MONGOLIA
JU1DX	—P.O. Box 677, Ulaanbaator 13, MONGOLIA
JV1S	—P.O. Box 677, Ulaanbaator 13, MONGOLIA
KH4AF	—P.O. Box 43, APO San Francisco, CA 96610 USA
NH6YG/KH3	—P.O. Box 976, APO San Francisco, CA 96305 USA
TY2FG	—P.O. Box 40, Pesaro, ITALY
UT8U/RB5AA	—P.O. Box 8, Sumy 244014, USSR
V51TX	—Giel Swart, P.O. Box 61, Gobabius 9000, NAMIBIA
V85FC	—P.O. Box 1311, BSB 1915, BRUNEI
XV2A	—Nguyen Hoai Thanh, 11 Nguyen Dinh Chieu, Ho Chi Minh City, VIETNAM
4J0Q	—P.O. Box 50, Riga 226010, Latvia, USSR
4K40X	—P.O. Box 26, Dickson 663241, USSR
5K1R	—P.O. Box 6060, Barranquilla, COLUMBIA
9L9DXG	—P.O. Box 10, Freetown, SIERRA LEONE

## Notes

1. This operation was by operators A41JT and A41JV, mainly during the recent WPX contest the end of March. QSL contacts go via A42RS and CW via KJ4GK.
2. FD1NZO may not be in your Callbook. Try Didier Brunriard, Le Bourg, F-71140 Vitry Sur Loire, France.
3. QSL direct only.
4. For contacts made on SSB please QSL via F6FQK; CW contacts to F6FSO.
5. Two routes were given, probably depended on the operator. Try RB5MF or RB1RR.
6. All contacts will be confirmed through the bureaus. For a direct reply you may QSL via OE2XEL.

Many thanks to the following contributors: W2PD, K6FO, W6TUR, K6WX, NQ7Q, KD8IW, W09I, JT1BY, OH2BH, American Radio Relay League (ARRL), Japanese Amateur Radio League (JARL), Liga de Amadores Brasileiros de Radio Emissao (LABRE), Salt Lake City DX Association (KB2G), Northern Arizona DX Association (W7YS), Western Washington DX Club (K7WA), *The DX Magazine* (VP2ML), *Long Skip* (VE3IPR), *DX News Sheet* (G4DYO), *The Long Island DX Bulletin* (W2IYX), *Inside DX* (N2AU), *QRZ DX* (W5KNE) and *The DX Bulletin* (VP2ML).

Oh, the frustration of it all. You work the DX and wait until the cows come home for a QSL card. It makes no difference if you QSL direct or via the bureau. Even DX editors have to wait. Right now we are still sitting on 299, with four still out there. Just one of those would have us at the 300 mark.

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

The numbers listed in each section are the average Maximum 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.

## JUNE 1991 WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	(21)	*25	*20	(17)	*24
12	(23)	*20	*18	(18)	(22)
14	(27)	*22	*17	22	28
16	30	*23	(17)	24	33
18	32	19	(16)	26	*37
20	33	24	31	23	*39
22	28	*28	38	20	35
24	24	*31	40	17	*31
2	(21)	*33	40	15	*26
4	*22	*34	38	19	*22
6	30	*32	*32	24	*20
8	25	*30	*22	*23	*18

## CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	(24)	20	*22	(17)	*18
10	27	*17	*20	18	*20
12	33	19	*18	22	25
14	37	23	(17)	24	*31
16	39	23	(17)	26	*35
18	*41	(20)	(16)	26	*38
20	*33	25	31	24	*39
22	28	28	37	*22	*35
24	24	28	40	19	*29
2	*21	27	40	16	*25
4	*22	26	*38	*19	*22
6	30	25	*32	*23	*19

## EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	23	21	*24	17	*19
9	25	(18)	*20	19	*20
11	31	(20)	*19	*23	24
13	36	23	(18)	*25	*30
15	*39	20	(17)	*27	*34
17	*40	(17)	(16)	*27	*37
19	*36	(19)	(21)	*26	*39
21	*30	22	34	*24	*37
23	25	25	39	*22	*33
1	*22	27	40	*18	*27
3	*18	25	39	*16	*24
5	27	25	34	*20	*21

We have often thought about listing DX stations which are not responsive to QSL requests. It might be suggested that this is a negative approach and would not be suitable for as fine a publication as *Worldradio*. However, it could be a service to those of us who would save our postage on the non-QSLers and go work another. Any thoughts on this? Hope you had a good month of DXing, and may your mailbox runneth over! 76 de John N6JM. □

*Old hams never die—they just QSY.*

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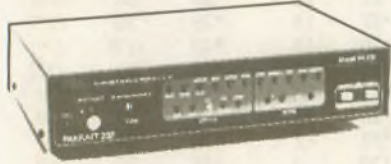
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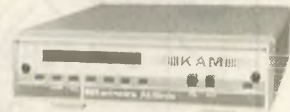
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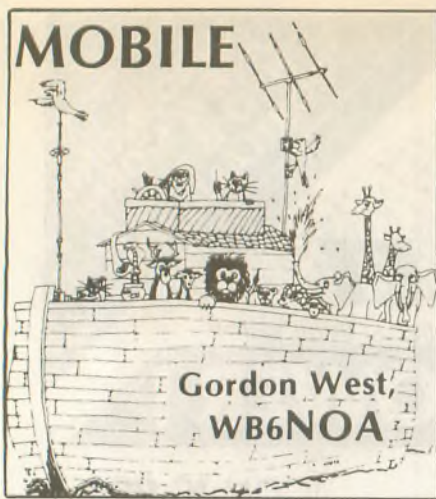
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## Mobile net etiquette and explanations

A mobile net is a gathering spot for mobile operators throughout the country—and throughout the world. Nets meet once a day, usually last about an hour and a half, and serve as the central meeting spot for those on the move on land, in the air, or at sea.

Daily nets for mobile stations are extremely important because many mobile stations are literally out of touch with any solid connection back to a US base station. Whether you are an RVer tucked away by a little stream in the Ozarks, hundreds of miles away from anyone around, or a mobile marine station at sea a thousand miles off of Panama, nets are a welcome daily ritual to stay in touch.

It takes a very special ham to volunteer his time and equipment to be a net controller. It takes a big base station and a lot of patience to endure the one and a half hours of running a daily net. And the net controller is the absolute boss once the frequency is clear and the net starts up. The net controller directs all of the communications going in and out, and there is plenty that you can do to help out the YL or OM of a net control station. Here are some pointers and terms to remember.

1) Most nets are held daily on a regular frequency. Do what you can to assist in making this frequency available prior to the start-up of that particular net. Be as courteous as possible in asking any ongoing communications to possibly QSY up or down. Remember, just because a net is on a certain frequency does not mean that particular net has exclusive rights to that frequency at a particular time of day.

2) Most nets begin with a call for emergency or priority traffic. Do your part in listening carefully to insure any mobile station who might have a distress call is picked out of the back-

ground noise. Distress calls have highest priority, as they relate to people's safety or the protection of property.

3) Health and welfare messages as well as important weather warnings usually have the next priority. Relay any extraordinary weather conditions that you might observe which could effect the safe passage of any mobile station in your area.

4) Some net controllers will take a special standby for overseas check-ins from deployed military. Do your part by listening to see if you might relay any weak signals heard.

5) When the net control station opens up the net for check-ins, listen to see whether or not they do it by a geographic area. Don't jump in until you know exactly what area they are taking. Also, listen to the pattern. Are they answering each call, or are they writing down a series of calls, to respond after approximately 60 seconds? If that's the pattern, wait about 30 seconds, and then check in with your complete call sign, or if appropriate with big nets, just the last two phonetic letters of your call sign. For instance, I would check into a very popular net by simply saying "Oscar Alpha," the last two letters of WB6NOA.

6) Use the word "relay" if you hear a station trying to check in that a net does not hear. I normally use this word, coupled with the last two letters of my call sign.

7) Any station checking in "with traffic" may have a message for the net, or may be specifically trying to reach another station that is part of the net to handle some sort of message.

8) With the phrase "send your traffic," the net controller is asking you to state what type of traffic you have without necessarily giving all the details. You might indicate that you are looking for a phone patch into a specific area. If there is another station in the area, they will respond to you on the net.

9) When instructed to "go to," go to 255, and down. If you're on the 20M, 14 MHz band, this means go to 14.255; and if that frequency is occupied, tune down for an open spot—making sure not to tune below the limits of your privileges.

10) "I'll call you" this means that one station will specifically call another station when they QSY. Knowing this prevents doubling.

11) When you hear "phone patch traffic," a station is wishing to have another station make a phone call for them. "One way" means simply the other station dialing the number, and leaving a message. "Two way" means a complete phone patch set of transmissions, and "making a haul" illustrates making a long distance phone call, usually calling collect and using the mobile's name as the person placing the collect call.

It's important when considering phone patch traffic that the traffic have absolutely no hidden or obvious business communications contained. The only types of phone patch traffic allowed are non-consequential communications which would not require the resources of regular telephone land lines. Even vessels far out at sea are prohibited from placing business-type phone calls for the ordering of parts or supplies. If they need to handle this type of traffic, they should do it on marine single sideband public correspondence channels.

12) When a station transmits the word "contact," this means they wish to make communications with another ham station just heard on the net frequency. As soon as the net control authorizes the two stations to go ahead, they should immediately switch off and go to an alternate frequency at least 15 kHz away from the net frequency.

13) "Checking in" with the net puts you on the list, and you are usually asked your name, mobile position, and possibly local weather conditions. "Checking out" of a net means you are signing off for the day.

14) Stating "break break" means you have urgent or priority traffic for the net or a particular station. Never use these words unless it's an extremely urgent call.

15) "Break break break" is an emergency signal, just as "Mayday," and should only be used when there is a life-and-death situation at hand.

16) The single word "break" is a formal way of entering a net with some sort of traffic. If you are just checking into a net to take part, with no specific traffic, enter it with your call sign or the last two letters of your call sign, rather than the word "break." "Break" means you have something important and are requesting everyone to stand by immediately.

17) This term "re-enter" is usually spoken when you have gone off frequency with another operator to handle traffic, and are now returning back to the net frequency to handle addi-

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Maritime net control station WA6QWU, "Hagar's Net."

tional traffic. I usually use this word, along with the last two letters of my call sign.

If you are new to Amateur Radio, spend a week listening to a specific net before attempting to check into it. This lets you get the feel for the net; and when you do check in, you will probably sound like a pro. Stumbling on a net for the first time, and checking in immediately, usually makes you stand out like a sore thumb! Don't do this unless you have some sort of priority traffic.

Net control stations and base stations participating in a net to handle traffic are more than a telephone booth. Don't check into a net, just to use these operators as free phone calls back to home. Do your part in supporting the net by relaying other calls in your area, handling weather traffic, handling outgoing traffic into your area, and doing your part to add to the net. Don't just use the net as your "gofer."

And once again, absolutely no business traffic is permitted on the net or through a net traffic station off frequency. Not only are you putting your license in jeopardy from an FCC Notice of Violation, but the other station handling your phone call will also receive a similar notice. Once you try a business-type call, and word will soon spread, the next time you call out to make a phone call ashore, not a single soul will respond. You have just become silently banned from the net by trying to use it to, say, order parts or supplies that are not considered emergency necessities for your vessel or mobile unit.

Featured here is the Hagar Net, serving maritime mobile operators in Baja California.

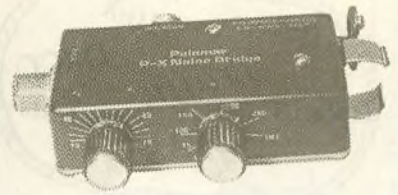
"The Hagar Net is on the air Monday through Friday, and sometimes on weekends, on 14.325, at 0800 Pacific Standard Time," comments Red Rowcliffe, "Hagar" and net control operator. "On a normal day, we will run eight to 10 non-business phone patches, some local, and some long distance. Quite often I give my number out to the stateside person so they can call me and we run the phone patch backwards, as I call it. It gives those left behind a lot of comfort when they realize they are not helpless to find their loved ones out there on the water. This helps me make the world somewhat smaller and hearts happier when a special day like Valentine's Day arrives," comments Hagar.

The Hagar Net has at least 33 boats checking into it for traffic, most in Baja or the coast of Mexico. "I realize how important nets are, and I'm happy to contribute my time in any way possible." Also serving Southern California mariners down in Mexico is the Baja Net, the Chubasco Net, the Manana Net, the Sonrisa Net and the Sandia Net. And there are probably twice as many as these that I don't have on my list, so please write me here at Worldradio.

On the East Coast and Gulf Coast serving maritime mobile stations are just as many maritime mobile nets. Tune them in, and take an active part. For an up-to-date US maritime mobile net list, send an SASE to W6SOT, 404 Oaklawn Avenue, Apartment C, Chula Vista, California 92010. □

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# YL Roundup



You don't have to be on the air to enjoy some of Amateur Radio's international adventures. YLs often engage in "eyelash QSOs"—face-to-face meetings with other YL Amateurs. That fun can be heightened when you get the chance to hold a long eyelash QSO with a YL from a country that many hams would consider "good DX."

My first DX eyelash QSO got started one recent Saturday morning while I was trying to sleep in. I was roused out of bed by a phone call from Judi Jaksa, N0IDR/5, who lives in the Dallas suburb of Garland about 50 miles from me—a short drive by Texas standards. She had just been awakened by a phone call from Mary Ketzler, WO9R, of Mondovi, Wisconsin, the DX chairperson of the Young Ladies Radio League (YLRL). Mary had called to announce that we would have a YL visitor from Finland in our area, and that she would only be in town for the weekend.

Judi learned that our Finnish friend would be available around lunch. So I drove to Judi's house, and we set out on our YL adventure. On the way, I asked her if the Finnish YL spoke English—something I had not considered until then. I know that hams who do not speak the same language often can communicate in Morse code. But I was relieved to learn that she did speak English, and fairly well.

We met Tuulikki (pronounced Too-leak-key) Hartikainen, OH7XX, at the home of Veikko (Keith) Ketola, W5WCP, and his XYL, Tita, in Dallas. The Ketolas had visited Finland and met Tuulikki and her OM, Pekka, OH7NNH, and the two couples had become friends.

"We became such good friends," Tuulikki explained in her good but sometimes abbreviated English,

"when we separated, they said if come to USA—Dallas—we have a home. Last July, they visited Finland and our home. They asked us again to visit here. We thought we'd come next year, but because of war, we came here. We were going to Morocco, but due to the war, our tickets were canceled. My husband is celebrating birthday."

The trip to the United States, in fact, was Pekka's 50th birthday present, and the Hartikainens had visited Florida and Oklahoma before arriving in Texas.



**Tuulikki Hartikainen, OH7XX, and her OM, Pekka, OH7NNH, visit the US from Finland.**

Tuulikki had greeted us wearing a pink sundress with a jacket, pink socks, white tennis shoes and a smile that warmed our hearts. Our Texas spring was just budding, but for Tuulikki, who had left winter snow in Finland, she could not have been more pleased if she were in the tropics. The sun was shining, the flowers were blooming, and it was about 75 degrees Fahrenheit. In Finland, she explained, summer is short, with temperatures up to about 20 to 25 degrees Celsius (about 68 to 77 degrees Fahrenheit). The Finnish winter ranges from about

0 to -30 degrees Celsius (about 32 to -22 degrees Fahrenheit).

Tuulikki and Pekka live in Kuopio, a city of about 75,000, situated some 400 kilometers north of Finland's capital, Helsinki. There are many lakes in the area and, at least part of the year, some of them are a key part of the local transportation scheme.

"The nearest town is 50 kilometers, but in winter is less. In summer, we have to go around lake. In winter, we drive on ice across the lake, so is shorter," she explained.

Tuulikki noted that the United States is about 30 times the size of Finland, so operating an Amateur Radio station in her country is a little different than operating one here. Most contacts are out of the country. So, being able to speak other languages is a must. Children in Finland learn English in school, she added, because English is spoken as a common language throughout Europe.

Tuulikki said that she has always had pen pals and that she enjoyed learning English. "I love the English language. When I heard about this hobby (Amateur Radio), I wanted to learn English more, so I could speak with another person and talk in English. When talk, you don't have to wait for letters to come back."

Tuulikki is fascinated with machines, a trait that serves her well in Amateur Radio. "I'm a button fool," she said. "I like to play with knobs and buttons. I like to operate machines." As the office manager of a small, independent bank, Tuulikki explained that she is considered the expert in computers and copy machines because she knows how to make them work.

Tuulikki is also interested in other countries and in their YLs. She is a member of the British YL Radio Association (BYLRA), as well as YLRL. And she was the first Finn to join the Japan Ladies Radio Society (JLRS). She also is active in Boy Scouts and Girl Guides.

Naturally, she also belongs to the Finnish YL group, called the OH-Young Ladies (OHYL). There are about 150 YLs in OHYL, Tuulikki says. Hams traveling to Finland can take part in their OH-YL summer camp and Field Day happening in June, or the YL meeting and happening at the SRAL (Finish Radio Amateur League) Summer Field Day in July. There is also a YL meeting in October. And each February, a YL meeting is held at the same time as the SRAL annual meeting. The Finns also stage two big contests: the International Women's Day Contest held in March, and the Black Cat Contest and

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award held in August. For more information, write SRAL RY, OH-YLS, PL 44, SF00441 Helsinki, Finland, or write to Tuulikki Hartikainen, OH7XX, Paavontie 6, 71310 Vehmersalmi (NR. Kuopio), Finland.

Tuulikki would like to work US YLs from her home QTH. One way for US YLs to work Finnish and other DX YLs is to get on 28.688 MHz at 1500 or 1600 UTC or 21.388 MHz at 1515 or 1615 UTC on Activity Day, the sixth day of each month. Tuulikki said that she enjoys talking with people, on the radio or in person. "I like to be an insider. I want to know what people do and why they do it," she explained.

### Youth update

Youth wanting to meet other young hams can check into the YAROC (Young Amateur Radio Operators Club) Net, which meets on Saturdays at 1700 UTC on 14.280 and at 1730 UTC on 28.375. Youth on packet can read the *Packet Racket*, a newsletter sent to YOUTH@ALLUS via packet by Travis A. Wise, KB8FOU, a 16-year-old from San Jose, California.

If you have suggestions or information about YL events, write to me at 1916 Parkside Dr., Denton, TX 76201. My packet address is KB5LES@N5LDD.NTX or KB5LES@76201.

### Sea duty

Tell Worldradio about your adventures at sea! There is still a critical shortage of marine radio officers. If you have a US radiotelegraph license, consider committing to sea duty. For information, contact Ed Morris, SIU, 800/732-2738; M. Karol, ARA, 201/795-5536; or Bill Eney, ROU, 904/233-6100. □



We are always delighted when we hear people say they are "counting the days" (or in some cases the years) before they will be eligible for QCWA. That is quite a compliment to our organization!

This expression of enthusiasm has also raised some questions about why these eager beavers can't be taken in as members of a local chapter. They obviously are interested and the chapter could, undoubtedly, benefit from their participation. Well, the quick and simple answer to this is, invite them to be visitors at your meetings. Visitors are always welcome at any QCWA meeting I know of, and we shouldn't pass up the opportunity to maintain the interest of these people. They just can't be "members" of QCWA or its chapters until they have their 25 years in. After all, this is the *Quarter Century Wireless Association*.

### Chapter activities

This matter of including visitors can be considered another possibility for increasing attendance at your meetings. Those who might be invited include not only the "young squirts" who aren't yet old enough for QCWA but also the "old goats" who didn't get around to getting a license until they

were up in years and have too many years to go now before they will be eligible for membership. Many of these older people had a sincere interest in radio 50 or 60 years ago (and probably "bootlegged" for some time during that period when licenses weren't considered all that important). They readily identify themselves with the QCWA group—and the group with them. Again, there is nothing to say they can't be regular visitors. And don't forget about the wives of members. Many of the most successful chapters have found that including members' spouses at their meetings makes for better attendance.

W8WG comments on working with other nearby chapters to share programs or perhaps arrange joint meetings which will bring a larger attendance and thereby make it possible to get speakers and programs that would not likely be available to the smaller groups. There are all kinds of possibilities. Every week members of Washington, DC Chapter #23 have lunch with members of the Rock Creek Amateur Radio Association and at least once every year Chapter #23 and Chapter #91 hold a joint meeting with the Society of Wireless Pioneers Chapter X. The Annual Spring Banquet which has been a QCWA tradition for the past 35 years has recently become a combined effort of the two chapters and the Washington DC Foundation for Amateur Radio. All of the organizations involved feel they have benefitted from these joint activities. QCWA members can still proudly maintain their QCWA identity and look forward with renewed enthusiasm to the less frequent chapter business meetings.

This year's Annual Spring Banquet in Washington was held on April 6.

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Featured speaker was Astronaut Ron Parise, WA4SIR, payload specialist on the space shuttle STS-35. (Coincidentally, shuttle STS-37 was launched just hours before the banquet.) Below is a photo of Ron showing the incredible slides and movies he took from space. He gave a most interesting talk. He also described the SAREX effort to



Astronaut Ron Parise, WA4SIR, delivering his presentation at the QCWA Annual Spring Banquet.

contact school children during the mission.

QCWA National President Harry Dannals, W2HD, presented the President's Award to Ambassador Armin Meyer, W3ACE, in recognition of his many years of dedication to QCWA and his accomplishments as a true international ambassador of Amateur Radio. Meyer has held a number of ambassadorial assignments throughout the world.



Armin Meyer, W3ACE, received the President's Award from QCWA President Harry Dannals, W2HD



Scholarship Chairman Hugh Turnbull, W3ABC, received plaque from FAR President Phil Russo, N3GDD

Several other recognition awards were made at the dinner. The Foundation for Amateur Radio recognized the outstanding effort of Hugh Turnbull, W3ABC, and his committee in connection with administering the FAR scholarship effort for a number of years.

### The Owl

There is no deep dark secret about the identity of The Owl, but the writer has just been filling in as a guest editor for an indefinite period and felt it better to avoid any personal publicity. We would like to get your input for the column, though, as well as suggestions on what you would like to see included in the future and any comments you might like to make on what has been written recently. You can contact Publicity Chairman Bob Rickey, NF6P, in Rancho Cucamonga, California, or write to The Owl at 2012 Rockingham Street, McLean, VA 22101. Do let us hear from you. □

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— Orleans County ARC*

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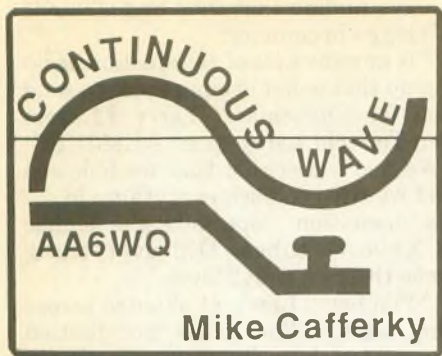
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Ask 10 licensed Amateurs why they do *not* want to work CW and you will hear five of them say, "It takes too long to have a conversation." Others will say they just don't enjoy it while some will ask "Why use code when you can just talk normal?"

### Speed not the central issue

As far as speed goes, let's be honest. They're absolutely right. Where else does it take 30 minutes to exchange names, locations and weather reports except in the Novice frequencies?

Speed is not the central issue in CW, but Amateurs see it as a challenge and have worked on making CW "faster" by one or more of the following means:

1. Through practice, operators are able to gradually adjust the spacing between their letters and words as well as the length of their dits and dahs.

2. Less formal ways are used to pass the dialogue back and forth by using QSK, by dropping the formal identifications at the end of each transmission and simply sending "K."

3. Error correction methods get shorter and to the point. For instance, instead of spelling out the fact that they missed a question, some operators simply send: "agn?" (meaning "send it again please"). This takes a lot less time than lettering it out the long way even if you are only going five words per minute. If QRN or QRM is heavy enough to cause too many errors, the operators usually decide quickly to put each other out of their misery and end the QSO promptly or move to a clear frequency.

4. Some operators don't send each word twice unless they know the other operator is having difficulty copying. Repeating words to emphasize a point takes a long time.

5. Some operators tend to leave words out which are "understood" in the context. For example, one operator may say "my name name here is John John" while a space-saver will simply say "name John John." Or a phrase such as "by the way," can be shortened to "by way." If you haven't learned abbreviations yet, practice them. As you learn them, operating

will become much more enjoyable, and your speed will increase.

6. Some operators have discontinued the use of punctuation marks, except where necessary, because of the amount of time it takes.

7. When it is all counted, of course, any extra characters make a longer QSO at slower speeds than at faster speeds. Newer operators may tend to make more mistakes and need more time for corrections. Only practice can remedy this. Also, being wordy at five wpm takes a lot longer than being wordy at 20 wpm. Keeping it simple solves this problem.

### The social interest in CW

Even with all the "tricks" of making the conversation go faster, CW may always be a little slower than other modes. This doesn't mean, however, that CW QSOs are less socially interesting than QSOs in other modes. The large group of CW operators who spike the band with "hi hi" and "very nice to hear you again" are a continuing reminder that CW is interesting and socially rewarding.

What CW leaves us with is a unique form of dialogue. Where else in society, for example, is it acceptable to laugh at your own joke first to let the other person know that what you said was supposed to be funny? Where else can you tease someone with a couple of dits? Where else can you have the time to thoroughly think through what you say and what you hear before getting on to your next points of conversation?

Amateurs have traditionally been exposed to Morse code as part of the entrance examination for licensing. Even with the new FCC ruling CW skill will continue to be necessary for upgrading. The experience of learning code, practicing for the test and taking the test is radically different from the experience of getting on the air with another operator.

Preparing for upgrade tests is usually not a socially interesting experience,

unless you are getting on the air regularly to practice your CW. The biggest difference between the examination process and operating is that learning the code and taking code tests are essentially void of the social element of CW.

This is not meant to be a criticism of the standard CW learning tools. When you learn a new language you have to spend time with the raw basics before you can use it to social advantage. However, if learning tools and exams were created to include more of the social element, Amateurs may find it more interesting from the first.

The heart of CW is a social interaction between two or more people. While the style of interaction is structured a bit differently than with voice mode, packet or TV, it is social by nature. In my opinion it is this social interaction which makes the experience enjoyable. In other words, it potentially carries with it the same inherent reward which other social interactions provide.

Yet some Amateurs just don't find it interesting. Their goals in radio are different. CW may be viewed as simply an entry barrier. Let's be honest again. There are many modes of operation to choose from these days. Each successive generation of Amateur operators has developed more varieties. While CW will remain an important mode, there are several other competing modes, each offering a slightly different social experience.

Some CW enthusiasts point to the rhythm and the tones which are enjoyable. Others may continue their involvement because of nostalgia. Still others stay with it because of their hunt for DX confirmations. The reasons why many still like it are many. In my view, it's not one aspect or another which makes CW still popular, it is the whole social experience.

### What is "normal"?

Finally, what is considered normal? In part we are dealing with cultural perceptions that some forms of communication are normal while others are not. Talking on the telephone is considered normal. Writing letters for someone else to read silently is also considered normal. Amateur TV is becoming normal, as is packet radio. Who is to say what will be "normal" in the year 2020? For CW enthusiasts, communicating in Morse code is normal, too.

CW is something other than "normal" unless you do it enough to dream in CW or you catch yourself thinking in CW when you're off the air. For a more experienced CW operator, however, *this* is as "normal" as voice communication. □

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Paul A. Scipione, AA2AV  
MARS call AAA9PR

### A Tale of two Larrys

Wednesday, March 20. I sat in despair at the Collins rigs in Studio 3 at AAR2USI, Fort Monmouth, New Jersey. I had been working a net of 21 AEM3 stations from Operation Desert Storm on one of our frequencies up near the 15M band. Then there was a solar flare and propagation took a sudden nosedive. Some of those stations in the Persian Gulf had more than 50 GIs lined up waiting for a precious call home!

No use crying about bad conditions on the band. I shut down the rigs and stepped down the hallway to grab a cup of coffee. After my break, I went into Studio 4 and tuned up the rigs and 30S1 linear on one of our MARS frequencies above the 20M ham band. This frequency usually gives us good propagation starting in the afternoon and into the evening. I put my feet up on the console and leaned back in my chair and opened my Wall Street Journal. Might as well get some reading in during the long wait for the AEM3 stations to start coming up on the frequency. Every few minutes I called for the AEM3s. Half an hour later I could hear a couple of them, but they were so weak (2x2 minimum) that it would probably be an hour or more before they would be of phone patch quality.

"AAR2USI, this is AEM3USG. Standing by on frequency until we're

strong enough for phone patches. Out." USG was so strong (about 20 over 5x9 dB) that I nearly fell out of my desk chair!

"AEM3USG, your signal is very Lima Charlie. You're the only AEM3 station that I am copying at the moment. Why don't you give me some figures and we'll dial out for you."

Roger, figures are 1-615-428-0364. How copy? Over."

"I copied your figures Lima Charlie. But please give me the name of who is being called and of the calling party. Over."

I'm the calling party and my name is Larry. And I am calling Larry Wood, the service manager at Ten-Tec in Tennessee. Over."

My ears perked up. Why would Larry #1 in the Persian Gulf be calling Larry #2 at Ten-Tec? The suspense was killing me, but I didn't have to wait long.

"Hi, Larry, this is Larry over at AEM3USG in Operation Desert Storm. Just wanted to give you a short call to say thanks for this fantastic Ten-Tec equipment that you guys sent over for us before Christmas. The Paragon rig is doin' great and so is the Titan linear." He wasn't kidding! The needle on my S-meter was pinned at 30 over with no more room to move. "Right now we've got the net all to ourselves 'cause no other station is crankin' out like us."

What followed was a fascinating 15-minute phone patch between the two Larrys, separated by more than 6,000 miles. Distance became irrelevant as the MARS stations bounced signals off the ionosphere, the two

Larrys finding that they had all kinds of things in common.

"It gave us a lot of satisfaction packing up that pallet of equipment to send you for Christmas," Larry #2 from Ten-Tec told Larry #1 at AEM3USG. "We had a checklist that we followed and we tried to pack everything in extra insulation, especially the Eimac 3CX800A7 tubes. Did everything come through okay? Over."

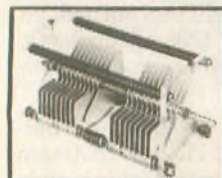
"You bet!" Larry #1 shouted across the miles. "The pallet got jostled around over here, but no sweat, all your gear came through without a scratch. We had everything unpacked and were on the air within an hour. It was a good thing, too, as the GIs were lined up a hundred deep to call home for the holidays."

"Well, it was all our pleasure. Made us feel extra special that we could do something for you guys during the holidays. Say, did you see all the names? Over."

"Yeah, the names!" Larry #1 suddenly remembered how all the folks at Ten-Tec had signed a holiday greeting to the MARS ops on the shipping crates. "Please thank all of your employees for all of us over here. Merry Christmas—three months late."

"Merry Christmas to you folks, too. Out."

Right now there is a Larry over in the Persian Gulf who is sure making a lot of GIs happy by helping them call much worried loved ones back home. Right now there is another Larry, in Sevierville, Tennessee who sure feels good because he and his fellow employees at Ten-Tec sent some very special Christmas presents over to



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AEM3USG in Saudi. And here in New Jersey, I am just glad that I could be a small part of helping the two Larrys pat each other on the back. Nice going, guys!

Dr. Paul Scipione is National Director of Public Relations for Army MARS. If you are interested in joining the 12,000 operators in the three MARS systems, refer to the information presented at the conclusion of Paul's MARS column in the March 91 issue of Worldradio or call 1-800-633-1128. □

## What is Field Day?

ED SHEPPARD, KC4SGO

Field Day is an ARRL annual event when Amateurs get together to show their combined skills by setting up and operating their equipment in an emergency environment.

To simulate an emergency environment we are required to set up stations within a circular area of 500 feet radius at an outdoor site. Locally generated power is used which may come from

motor driven generators, batteries, solar cells, or any source other than commercial power mains. Extra credit is given for the more exotic methods such as solar power.

An important aspect of Field Day is education of the general public in our community. We demonstrate that Amateur Radio does exist. We show our ability to set up emergency communications and move traffic in an orderly and controlled fashion.

—Keyed Up, March 1991, Lake Monroe Amateur Radio Society □



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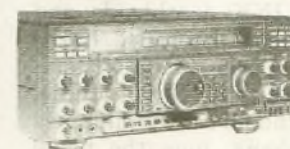
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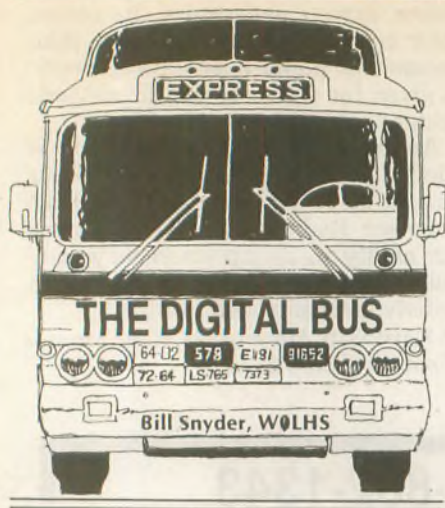


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## APLINK AMTOR

When I get up early in the morning I check into the Australian APLINK bulletin board, VK2AGE. I think AMTOR is the greatest and APLINK is a wonderful addition to the system. Every now and then I download the WA8DRZ APLINK worldwide and the North American directories. In the last DX list there were APLINK stations listed in Rwanda, Egypt, India, Ivory Coast, Indonesia, Philippines and New Caledonia, plus the usual European operators. The network is growing.

I swap messages with East Coast hams through VK2AGE. The nicest feature about APLINK-AMTOR is the small amount of power it takes to do the job. When I have my linear on, which isn't too often, I have the drive of the ICOM-765 set to about 7W output. So, quite often I accidentally check into VK2AGE with only 7W booming into my 4-element beam. If conditions are good it works as well as when the transceiver is cranked up to full power. When conditions are poor, it works but the throughput slows down and I have to turn it up full bore. I never run AMTOR with the linear on—no need to.

If our local area is any indication, there are a lot of hams out there with AMTOR capabilities who are afraid to tackle the APLINK and AMTOR system. Get your feet wet with the "chirpy" mode. Try 14.075 (mark carrier) for starters. Many of the APLINK stations scan other frequencies, so listen around and join in on the fun.

## Marty's messages

If you have been following or participating in the overseas message experiment with Marty Mullican, G0NJJN (the "displaced Nebraska Cornhusker," N0KRO), here is a bit more on what has happened. Marty's packet station was dark for some time due to his BBS link to the outside world deciding to quit the BBS operation. I'm sure that a large number of messages to Marty went into the bit bucket during that time.

Marty is now back on the packet stream with the following address: G0NJJN @ GB7DDX.GBR.EU; and he will answer any messages you wish to send to him. His message to me telling me of his new address took nearly a month to make the trip from England to North Dakota. It was delayed for 20 days here in the US when one of the key high frequency stations in the route to me was forced to stop running a BBS in Canada. The HF relay station here in the States had to find a new routing to the Red River Valley of the North, and it took time.

Since Marty has returned to the packet network, I have been getting hard copies of his return messages from around the country. Marty requested the recipients of his message to mail a printout to me. I appreciate all the efforts made by the US hams in doing that for me.

When you print out the audit trail heading list on a message by using the H command, you can see just how well the system works. Here are a few of the things I learned by reading the messages mailed to me:

Marty's reply to N4OYJ, Al Moreno in Miami, took only one day to make the trip from 35 miles north of London, England, to the Florida mailbox of KP4OO. Sometimes a message would fly over to the States and then hang-up in a BBS for a week or so before moving on. This was the case in Marty's reply to Norbert Kilsdonk, W9SBY, in Little Chute, Wisconsin. Marc McFadden, KB7LPR, in Glendale, Arizona, had two exchanges with Marty and the last one took only four days for the reply. David Schultheis, WB6KHP, sent his message to Marty on the 27th of February and received his answer on the 16th of the following month, a turnaround time of 17 days.

Bruce Strong, AH2AK, of Sacramento, California, writes that he received Marty's reply twice. From examination of the headers one can see that the message was sent twice, eight hours apart, from a station on the East Coast. Each message went a different way to California.

One of the two messages was garbled and the subject titles were different. One said "Hello from (rainy) England!" while the other (the ungarbled version) read "This is N6EEG Mailbox in Berkeley, CA."

Bruce adds: "This garbling is, in my experience, not uncommon. However, a complete re-transmission of the correct message is. So, there is a problem in that a garbled message was forwarded, but the system tried again and sent a complete, correct message—except that the complete, correct message was sent 14 hours before the garbled message was sent."

So the packet mail system is still a mysterious mail delivery arrangement. The way messages are routed to travel around the world is at best a random dice toss in each BBS that handles the traffic. I'll bet that lots of the messages aimed at Marty never made it to England and, if they did, many of the answers were lost on the return trip. As fine as the system works, it still needs help. Oh, well, it's just a hobby, so they say. By the way, Bruce, AH2AK, was once an SOL computer owner, so I know he's a man of distinction!

## Old age blues

The older you get, the faster the months fly by. At least it must seem that way to most old guys, because whenever I ragchew with people my age, the subject of time going faster usually comes up. It's part of the "old age blues" syndrome, I guess. This subject is particularly popular at funerals. I think I have figured out why a person thinks time goes faster; it's because each year that you live becomes a smaller percentage of your

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total life. So it must go faster. Don't think about that one too long!

The subject came up at the church lunch after the funeral of W0PCI, Merle Hazeldahl, who has been on and off the ham bands for 55 years. As usual when a ham passes, a group of old-timers with the same hobby gather to pay respects to the deceased. All of the pallbearers at Merle's ceremony were old-time hams, so the talk on the ride to the cemetery shifted to a review of the changes in ham radio that happened during Merle's lifetime.

Merle and I started the first grade together 'way back in 1922. As kids we began many years of experimenting with radio by trying to communicate half a city block using spark coils out of a Ford Model T. We both built galena crystal sets and DXed by being broadcast band SWLs. Then we both learned the code at the same time, got our licenses within a year or so of each other, and over the years we have remained good friends. I got him interested in RTTY, gave him an old Teletype machine and helped him start pounding the "green keys."

The talk continued in the same vein when we pallbearers gathered in the church for a post-funeral lunch. We decided that we really lived in a great technological era. Although we missed the spark gap days, Merle and I watched the development of ham radio from CW on home-built equipment to computer-to-computer ragchews via orbiting satellites. One of the elder pallbearers remarked, "Wonder what our brainy inventors are going to come up with next? Haven't they done it all?"

As I type this column into a 386 computer with a 120 meg hard drive, VGA monitor, modem, hand-held picture scanner, plus a CD-ROM loaded with 660 megs of dictionary, style book, Thesaurus, and Zip Code directory all available at my finger tips, it seems like it has always been here. I even set the computer clock by using the AMSAT "InstantTrack" satellite program. By pushing one key, the computer dials the phone to the National Bureau of Standards, sets the computer clock to within a few milliseconds, tells me how far off the computer clock was and shuts itself off. Costs about 12 cents on my phone bill. Yup, Merle and I certainly lived in the great days of radio development. Wonder what's gonna happen down the pike? I'm sure the inventors haven't done it all.

### Eavesdroppings

METEMPSYCHOSIS HAS NOTHING TO DO WITH PSYCHOSIS, IT HAS SOMETHING TO DO WITH TRANSMIGRATION OF

THE SOUL, WHATEVER THAT IS ... I THINK THAT HE HAS BEEN LOOKING FOR SUN SPOTS TOO LONG; HE'S SEEING THINGS HE SHOULDN'T ... IT DIDN'T RAIN ENOUGH TO SPOIL OUR DROUGHT ... HE WAS ABOUT A MONTH LATE IN CHANGING FROM STANDARD TO DAY-LIGHT TIME ... MY NEXT COMPUTER WILL HAVE A BIGGER LARD DRIVE ... THEY TELL ME SONY IS AN ACRONYM FOR SOON OWN NEW YORK ... I LIKE TO WORK HAM RADIO CONTESTS, BUT I HATE TO FIGURE OUT THE SCORE, SO I DON'T ... I HAVE ONE SON IN COLLEGE AND I THINK HE IS MAJORING IN POOL AND SNOOKER—EVERY TIME I ASK HIM WHAT HE IS STUDYING HE SAYS SOMETHING LIKE EIGHT BALL IN THE SIDE POCKET ... A JERK-WATER TOWN IS AN OLD STEAM RAILROAD TERM FOR A DINKY TOWN WHERE THE ENGINE COULD BE WATERED BY "JERKING" THE WATER PIPE OVER THE TENDER ... WHAT EVER HAPPENED TO JERRY FALWELL, HE ISN'T ON MY BOOB TUBE ANYMORE ... I GRADUATED TO A TRASH EIGHTY COMPUTER FROM COCO JOB ... WE HAVE HAD MORE WET RAIN THAN USUAL THIS YEAR ... I HAD TO DRAIN A FULL CUP OF COFFEE OUT OF MY KEYBOARD YESTERDAY ... THE RIG HERE IS A HEAVY DUTY HUNDRED WATTS ... I SMOKE TESTED MY ANTENNA WITH ALL THE POWER I COULD MUSTER AND IT DIDN'T SMOKE ... I JUST DISCOVERED THE FINE ART OF RTTY—I'VE BEEN MAINLY ON SIDEBAND, BY GOLLY ... SEMP-TY TREES TO YOU AS MY NORWEGIAN COUSIN USED TO SAY."

My thanks to all those who sent messages from Marty to me by postal mail, and also to W0HAH, W7VFR, W7NSU, KA0LXH and the host of others who helped soothe my itching ears with bon mot stuff. Write me: Bill Snyder, W0LHS, 1514 South 12th St., Fargo, ND 58103. My packet address for those who would like to exchange packet messages is W0LHS @ W0LHS.ND.USA.NA. 73, and as we end a QSO on CW: DIT DIT. □

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Maybe you've seen a search mission organizational chart. It's the one that has about 50 jobs that need doing, organized under major categories such as air operations, ground operations, administration, etc. Have you ever been on a real search? Most of the time it's a couple of people doing everything and collapsing after the mission.

Quite possibly you're new to Amateur Radio or have participated in a drill or actual emergency and wondered how it all happens, so let's review what needs to happen on a search or during an emergency.

Someone gets lost, a plane crashes, someone is trapped in a cave, a bus crashes or maybe a tornado or hurricane hits. Any event or combination of events that causes human suffering can trigger an emergency response. After the event is reported a response decision is made. An ambulance may be what's needed or perhaps a specialized cave rescue team is summoned. These decisions can be attributed to a responsible person we'll call the coordinator.

This person isn't necessarily your technical rescue specialist, communications expert or even a pilot. The coordinator's best skill is looking at the

overall situation and starting the initial alert and immediate response phase. The initial alert could go to a single person, search team or hundreds of people with skills and equipment. The immediate response command could be "stand by" for further assignment or it could be "hit the road now."

The coordinator knows the first call will bring limited resources to play that must be used for optimum results. (What is the optimum result? Saving the lives of those involved without risking additional lives unnecessarily.) The initial response is based on all the information the coordinator has gathered and is designed to quickly cover as much area as possible.

### Six staff functions

Once the alert and response begins, it's time to gather more information and assemble your response experts. There are six critical staff experts for coordination, data gathering and evaluation, communications, operations, briefing and public information. The coordinator cannot make decisions without information, nor can operations be conducted without communications. Without good information briefing, operations and public information cannot be achieved.

The best people for these jobs are qualified coordinators who have experience, and a specialty such as data gathering and evaluation. As information is sought, the person must have a "gut feeling" for what's important and what questions need to be answered. Is the information relevant? Is it timely? Is the source reliable and is the data complete? Then, what does it all mean? Assembling pages and pages of data and piling them on the coordinator's desk isn't the answer. Your data gathering person, while not discarding information, must quickly organize it and present it to the emergency staff.

While the staff and response is being formed and organized, the communications person is establishing a network

that will support the response. The effective communications leader must be aware of the many modes, routes, repeaters and resources available. It is critical that a network be established quickly and the coordinator and operators made aware of its capabilities.

While planning the response is the coordinator's function, responding is in the hands of your operations person, who makes on-scene decisions such as who responds to what areas. The operations person is a people person who must know how to evaluate the responders, putting people in the areas which they are most capable to handle.

Once the assignments have been made, your briefing people give the responders all the information there is and ensure questions are answered. Responders must know everything about the situation—they're on the "front line" and will make life saving decisions that affect them and possibly the victim. Anything less than a complete briefing risks lives.

### A curious audience

Running a good search means getting the word out. Whoever is in charge of public information handles this task. Initiating calls to radio, TV and newspaper, this person lets a curious audience know what's happening, what resources might be needed and what information is sought. By keeping the public informed, he also helps to keep morale high. Information should be a shared resource. Get the word out!

The best responses are team efforts. Lives may be saved with a maverick, one-person operation, but teams learn and become effective when they're allowed to work together and gain experience. Involve your people.

Remember, time is important. When you're notified, the crisis has already happened and your response time is critical to the survivor. Don't delay your response any further than necessary.

### Keeping secrets

A sure-fire way to incite me to a soapbox is to shake my hand, tell me how much you want to improve emergency response and then, a week or month or so later, tell people your system is "private" or ask for my BBS files but be unwilling to share yours. If you're

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really in Amateur Radio for public service, fellowship and fun, then share the wealth.

The Local Area Wireless Network (LAWN) should meet the needs of local users. Networks clog up when you hop across three nodes and download a few 5,000-word files. It's fun to visit with BBS sysops from other areas and discover that it's only a few that seem to feel they're in a contest to have the most ports, most files and most users on the fastest system. I'm glad most of you feel the BBS is an open service and not an ego hub for the sysop. Share the wealth! Promote Amateur Radio.

A local Amateur Radio operator spent months researching and compiling a listing of frequencies in use for Utah. It was shared with landline and packet BBS in the area, but when he made a similar request, this operator was told that "many hours went into my file collection and I really don't want to share." Hey folks, let's not foster fiefdom. Isn't one of our purposes to foster good will?

If you're the operator of a system (packet BBS or a repeater network) consider promoting Amateur Radio. It doesn't hurt to share information. When the search starts at 2 a.m. it's nice to know the codes to bring up a repeater network and not have to waste time trying to find someone who has the guarded secrets. Let's work on our response network and make contacts and share information with Amateur Radio operators involved with public service groups.

I've often thought that it would be neat if frequency coordinators could get the OK from trustees to send information to key players in public service. Most of the coordination forms include control codes and capabilities, and it would be neat if this information were in the hands of the less-than-active-on-rag-chew-nets emergency operator. Now we're talking cooperation and emergency network improvement!

### Kudos

There are some who have really gone beyond what's "normal" and have shared their expertise. Steve Wilson, KA6S, Santa Clara Valley section manager, shared a disk of response training and emergency information. They've done a super job—my thanks for the information!

Rick Morgan, KD7PB, has designed and built a UHF repeater network in Utah/Nevada. This network is reliable and he's been real supportive of having "his" machines in use for public service.

Mike Pechura, WA8BXH, author of *MSYS Bulletin Board* software, has a super program, great documentation and is willing to answer questions. He

has put a lot of work into making it run well and in getting copies into the field.

Bruce Lerner, WB6CDN, is another who has made available to public service a repeater/remote base network. He's taken great pains to keep it running well, get documentation out to anyone needing it and kindly help users through the complexities.

I've been made aware of a network in Wyoming that's linking vast areas together in the interest of public service and promoting Amateur Radio.

There are others—you know who you are (and my thanks to you). You're the people who openly embrace Amateur Radio without wanting to make a buck

or be reimbursed for your hobby. Your systems work well and aren't "down" every time you get offended because you're not personally thanked by each user.

Keep up the good work. Let's keep Amateur Radio fun! I'll make you a deal . . . gather up your packet BBS files or emergency training stuff, send them here on a disk and I'll send you all I've collected so far. If it takes more disks I'll donate them to the cause and pay the return postage. (Heck, I'll even include all the Worldradio SAR columns for the past 14 months.) Thanks for your letters and most of all, enjoy Amateur Radio! □

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On February 15, Bruce Humphrys, KØHR, director of the Courage Handi-Ham System, resigned after seventeen years of outstanding leadership.

Attempting to describe in written form the ways in which this one individual made his mark on the growth and development of the Handi-Ham System is difficult at best. How does one relate a quality of leadership which was never indecisive yet gentle? Or how does one describe someone who, in two sentences, could make

anyone feel instantly encouraged? In his own words Bruce saw himself as being rather "abrupt with people." But Handi-Ham participants saw Bruce as the king of ham radio, rajah of radio camp, someone who brought the classroom to life, an individual who was always optimistic without shirking life's realities.

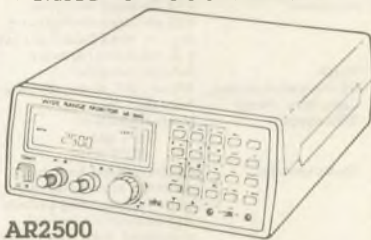
Bruce's time was spent largely in administrative tasks. He was responsible for fund raising, handling the budget, editing the *Handi-Ham World* and dealing with a mountain of correspondence. But, though brilliant in all these areas, this is not where he was most visible to Handi-Ham members. It was at the radio camps where his insatiable love for Amateur Radio and caring for disabled individuals was paramount. It's memories like the following which were his trademark.

- Making Ohm's law into a story about an eagle, an Indian, and a rabbit. (Search your Worldradio archives for details in a previous column.)
- Describing schematic symbols to a group of 20 blind people in such a way that each person knew exactly what was being pictured.
- Not just reciting rules and regulations to a group of students, but putting each rule to the test by bringing up real life situations in which each operator could find himself and asking, "What would you do?"
- Driving from the radio camp into the airport at 4 a.m. to pick up a camper whose plane was delayed.
- Single-handedly taking a group of 15 handicapped people into the woods to set up a mobile station running off the battery from a camper's electric wheelchair.
- Being able to take a joke in fine form and enjoy it as much as the perpetrators. I will never forget the time when several teenage campers, all blind individuals, came at him with water balloons filled to capacity. Two other instructors thoroughly doused him with water from a full garbage can and tossed a whipped cream pie his way, all at once.

The Handi-Ham System and Amateur Radio have been enriched by the gift of this one man. □

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# 10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ  
10-10 19636

## Monday alternate net

In an effort to satisfy as many as possible of the membership restricted to operation below 28.500 MHz, there is now a 10-10 net on Mondays at 28.380 MHz. The net operates at 1800 UTC with Dusty, K6MPN, as Net Control. Dusty is located in the San Francisco area. Please check in to this alternate Monday Net.

If you would be interested in being a net control for an alternate net on another day of the week, contact Sherm Sherman, K6PTF, the International Net Manager, for details. Remember, as a net control station, you are responsible for calling the net to order each week. If you are retired or have a certain day each week when you could devote about an hour or so to 10-10, here is an opportunity for you to get involved.

## 10-10 Convention

The Republic of Texas Chapter is working very hard to put the final touches on the arrangements for the upcoming 10-10 Convention on June 7, 8 and 9, 1991 to be held in Arlington, Texas. This year's convention will be held in conjunction with the ARRL Ham-Com. 10-10 has been given a large meeting room inside the Ham-Com center and there will be special 10-10 activities throughout the weekend. In addition to the special 10-10 activities, all 10-10ers will have access to the Ham-Com activities. For more information, send an SASE to 10-10 Convention, P.O. Box 29721, Dallas, TX 75229.

## Counties Award

The new 10-10 Counties Award has proven to be one of the most popular new awards issued by 10-10. In the first six weeks after the award was announced, 68 basic certificates for contacting 100 counties were issued. In addition, the following upgrades were

also issued; 27 for 200 counties; eight for 300 counties; five for 400 counties; three for 500 counties and one to K8DHK for 600 counties.

If you are interested in 10-10 county hunting, send a #10 SASE to the 10-10 County Award Manager, Alice Jenkins, NR4R, One Mitchell Lane, Rossville, GA 30741. If you would like a 10-10 County Hunters Record Book, send Alice \$5 for a copy. This book makes record keeping of your county contacts easy!

## More new awards?

It seems like 10-10ers want awards to work for. There have been several additional new awards suggested: one for Worked all State Capitols; one for Worked all Counties in a State (this would require 50 awards, a separate one for each state, so we would need 50 volunteers just for this award alone); and another for Worked All Call Prefixes. Any more ideas? Send them to me and let me know if you would like to be a volunteer. Maybe we can add a few more awards, but someone must be willing to carry on the everyday task of keeping the records and issuing the certificates.

## Mobile on 10M

If you are a 10M mobile operator,

listen on and around 28.336MHz. This frequency has been used as the unofficial 10M mobile calling and working frequency. With so many 10-10ers now county hunting, mobiles are a great way for county hunters to add those counties that have little or no Amateur population.

## Finally

If you have lost your 10-10 number, send me a list of *all* of your calls, current and previous, and I will check the computer for your number. Remember, 10-10 numbers are issued only once and are never re-issued. If you ever had one it should be in our computer data base. Please include an SASE.

If you are not a 10-10 member and would like information about how you can receive your own 10-10 number, send me a "green stamp" (\$1) plus two first class stamps, and you will receive our 24 page Information Manual and a copy of the latest issue of the *10-10 International News*, 10-10's quarterly magazine. Please, no SASE, but an address label would be appreciated. Send your request to Chuck Imsande, W6YLJ, 18130 Bromley Street, Tarzana, CA 91356-1701. 73, es cu next month. □

# HTs, HTs, HTs ...



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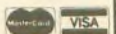
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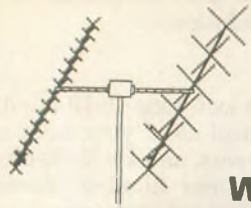
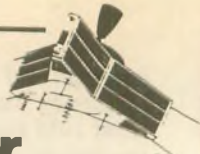
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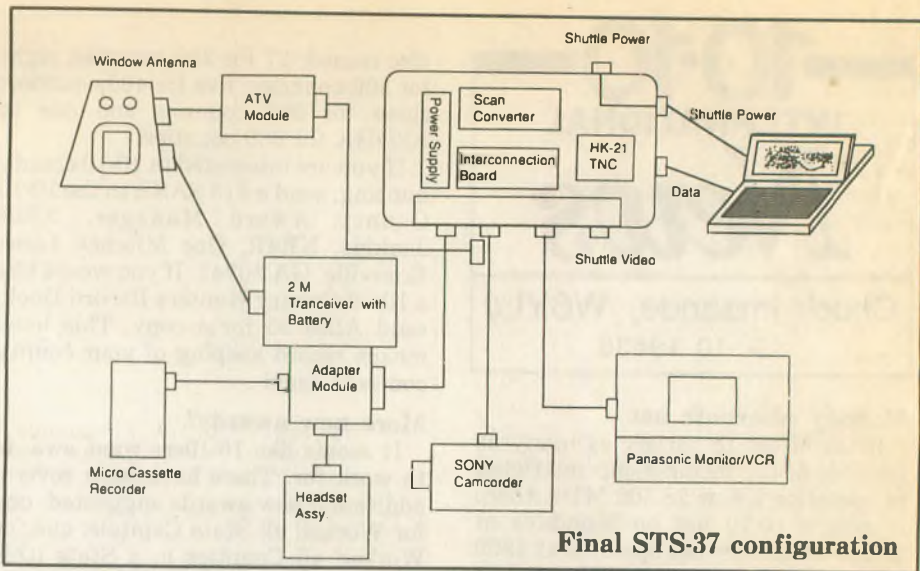


**WB5ZDP**  
**Keith Berglund**

This month's column is guest-written by Mr. Bill Tynan, W3XO. Bill is *the* man when it comes to manned Amateur Radio activity from the space shuttle. He is AMSAT's VP of manned space programs and is on AMSAT's board of directors. He serves on the ARRL's SAREX committee, which is a committee created by the ARRL's board of directors to further manned space activities. In addition, he is also a fellow Amateur magazine columnist, writing for the World Above 50 MHz column for *QST*.

## STS-37

We have had one, and even two hams in space aboard a shuttle, but when



**Final STS-37 configuration**

Atlantis streaked into space in April, not one or two but *five* licensed radio Amateurs—the entire crew—were aboard. The roster reads like a mini-hamfest: Mission Commander Steve Nagel, N5RAW; Pilot Ken Cameron, KB5AWP; and Mission Specialists Linda Godwin, N5RAX; Jay Apt, N5QWL; and Jerry Ross, N5SCW. No, NASA wasn't trying to see how many hams they could launch at once. The primary purpose of the STS-37 mission was to deploy the Gamma Ray Observatory (GRO) spacecraft and conduct extra vehicular activities (EVAs) aimed at developing techniques for building a space station. But we were particularly interested in what else these hams were up to in space. When they could spare the time, they spent some of their off-duty minutes operating the Shuttle Amateur Radio Experiment (SAREX) equipment.

STS-37 represents the fourth shuttle mission on which NASA has authorized licensed Amateurs, who were already picked as crew members, to operate Amateur Radio equipment during the flights. Most of us remember when Owen Garriott, W5LFL, blazed a new trail for Amateur Radio in 1983 when his Columbia vehicle was launched on Mission STS-9 and he

became the first "ham in space." Since then, Tony England, W0ORE, and most recently, Ron Parise, WA4SIR, have obtained NASA approval to operate from the shuttle. In this case, slow scan TV joined voice as a capability of the SAREX equipment. The most recent SAREX mission, STS-35 in December 1990 with Ron Parise, WA4SIR, included packet radio operation. This flight featured two-way voice conversations between Ron and US school children as he passed over places such as Australia and Brazil. This was accomplished through a combination of Amateur stations in these countries and overseas and domestic telephone lines feeding into a teleconferencing center run by the Darome Connection, which donated the lines and other facilities.

For the STS-37 mission, Amateur facilities for two-way voice, two-way exchange of slow scan pictures and packet radio—all using 2M FM plus one-way (uplink) fast scan color television experiment on 70 cm—were included in the equipment package. The fact that five licensed Amateurs were aboard facilitated scheduling Amateur operation. That was the good news. The bad news was that STS-37 was a relatively short mission (five days versus 10 days for STS-35). The other negative was that, unlike most shuttle missions, the highest intensity of workload occurred late in the timeline rather than early. Since getting accustomed to the space environment generally requires a day or so, Amateur Radio operation during that time



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presented somewhat of a problem.

Despite these limitations, plans were made to gain as much benefit as possible for Amateur Radio. As on STS-51F and STS-35, emphasis was placed on communication with young people. As on STS-35, a system of relays through designated Amateur stations in conjunction with a telephone bridge was employed to obtain the greatest coverage, both in terms of length of the communication sessions and number of students who could participate. But, unlike STS-35, the STS-37 timeline called for the shuttle to be over the US during the daylight hours so that relay stations in this country could be used. Additional schedules were supported by using South American stations. The slow scan television system was used both with individual stations and with stations set up at schools. Despite the fact that the capability existed for two-way SSTV, emphasis was placed on one-way transmissions from the shuttle to ground stations.

There were two reasons for this. First, it was felt that young people would be more interested in pictures sent to them from space in essentially real time, rather than sending theirs up. In addition, many one-way (listen only) sites were involved. Students at these places were able to see the SSTV space pictures just as well as those who were at sites selected for two-way participation.

The packet robot system, first tried on STS-35, was used again with some adjustments in an attempt to maximize the number of successful QSOs. A "complete" QSO consisted of a serial number followed by a disconnect. However, just as for STS-35, many received numbers but got no disconnect. This was because of QRM from other stations trying to connect or the spacecraft going over the horizon before the disconnect could be received. Those who experienced such "incomplete" QSOs can still receive a QSL card by submitting to ARRL a printout showing the number received.

As previously stated, the 70 cm fast scan television experiment carried on STS-37 was strictly an uplink-only

Table I

Frequencies Used for Communication to and from SAREX for STS-37

Voice & SSTV	Shuttle to Earth (Downlink)	Earth to Shuttle (Uplink)
	145.55 MHz	144.91 MHz 144.95* (600 kHz down) 144.97
Packet	145.51	144.91 (600 kHz down)
FSTV	None	436 MHz (A few selected stations)

\* = Primary Uplink Frequency. Others to be used at the discretion of the astronauts

proposition. The amount of shuttle power available for SAREX is insufficient to provide usable downlink fast scan TV pictures. Even for uplink-only, the picture (no pun intended) is quite bleak. It requires very high effective radiated power to achieve acceptable television pictures at the shuttle. Therefore, a few selected stations were assembled to try to achieve a successful demonstration of the feasibility and value of having TV reception available on manned spacecraft. It is believed that this is the first time that standard TV has been sent to a manned spacecraft by either the Soviets or ourselves. A more detailed article concerning the results of the fast scan TV experiment will appear in a future column.

### Frequency plan

The frequency plan shown in Table I was used for Amateur Radio operations on STS-37. Note that 144.95 MHz was the primary voice uplink frequency. This is in line with having Earth stations use a different frequency than that being used by the shuttle station, and maximizing the number of people who can manage split frequency operation by employing the same offset as repeaters do. As for all Amateur shuttle missions, stations were asked to transmit only at the time the space-

craft was approaching their location. Actually, it is best to transmit only when the downlink has been heard. SAREX may be in a different mode. Calling "blind," which was particularly evident during STS-35, merely causes QRM to terrestrial users of the frequencies involved. As always, the best way to know the location of the shuttle was through the use of a tracking program run on a personal computer. Besides, it's fun and educational to see where the astronauts are in real time. AMSAT has programs available for most popular computers, which will be valuable for future shuttle Amateur missions. Call 1-301/589-6062 for information. □

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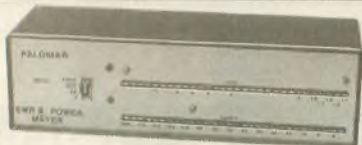
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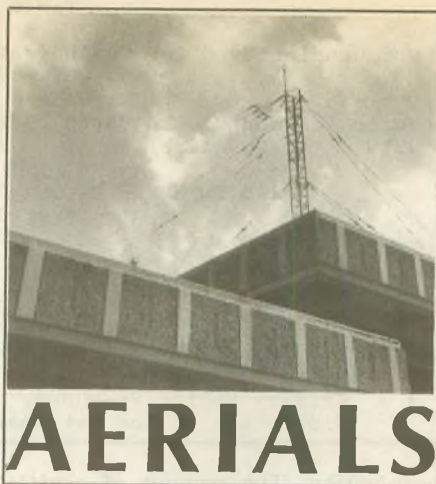
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## AERIALS

### Lil Paddle

As you've heard, Kurt is away. He asked that I chair the proceedings in his stead.

Prior to his departure, our back yard contained a large garbage can. Was this going to be a cavity, I queried him. No, I learned, it was to be a continuation of his antennas of the absurd.

He eventually cut the bottom out and sliced it open vertically. Alligator clips hung at various places as he attempted to match. A trashy transducer was in the offing. I leave it to him to continue the research.

A definite serious problem is that certain elegant neighborhoods care not to have the infernal hams in their lofty presence. Obviously, an antenna of decent proportions would bring on the wrath of the uppity neighbors. Such a greivous situation calls for the surreptitious. One can survive by use of one's WITS (Wire In Tree, Silly).

QRPer's have indeed spanned great distances with but a few watts, even deciwatts, centiwatts and milliwatts. Often, on holiday, they will set their minipower equipment on a picnic table and toss an end-fed wire into a tree.

Frankly, I prefer not to do this. There is (as Kurt calls it) a big blob of RF sitting right there. Back into the rig, into

you, into your camper.

Instead, and far preferable, get the high current (I) point away and as high as possible (taking into consideration, of course, the particular circumstances. First, some coax from the rig to a small tuner. From the tuner again some coax. This goes to a center connector such as the Budwig, Van Gorden, etc. On the shield side of the connector, solder a quarterwavelength of wire cut properly for the band(s) you wish to use. It matters not if the wire(s) lay along the ground.

You could, of course, cut three wires at about 16 ft., 11 ft., and 8 ft. to cover 20, 15 and 10M. Those go on the side of the connector mating with the central conductor of the feedline.

Attach a fishing sinker, a metal washer or some other weight to a long length of cord and tie the other end of the cord to the antenna wire. A slingshot propels the weight (plus the cord and antenna) upward into the tree.

What I did, though, was cut a random length, not for any band and actually unmeasured, in order to test my premise.

Let the games begin. ARRL's DX Contest. Stations, my worthy adversaries, have antennas rivaling commercial stations. All I have is my WITS. All bands, with the tuner.

The excitement of the fray. The adrenaline of the first hour. Ten metres is sensational. Fifteen metres is glorious. Twenty metres is: hello to Hans in Hamburg. WITS brings WAC, sans amplifier. Barely enough power to light a decent sized light bulb.

Some of the finer stations utilizing outstanding contest procedures were: PJ0B, EI7M, and with a star on the dressing room door, HP9X.

I lived by my WITS. If necessary, you could too.

*Lil Paddle (Mrs. Kurt N. Sterba) must also wear the cloak of anonymity or the secrecy would be breached. We can report, however, that descending from the cloak are a pretty good-looking pair of legs.* □

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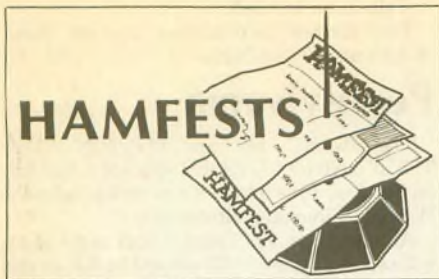
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## California

The **SATELLITE AMATEUR RADIO CLUB** will hold its annual Santa Maria Radio Swapfest and Barbecue at the Union Oil Company Newlove picnic grounds (south of Santa Maria, California) from 9:00 a.m. to 4:00 p.m. on Father's Day, June 16, 1991.

Tables are available at 7 a.m. for \$5. There will be a top sirloin barbecue at 1 p.m. Admission is \$8 for adults and \$4 for children, and there will be lots of free parking and refreshments.

Talk-in on the 146.34/94 repeater.

For more information contact Esther Miller, P.O. Box 2067, Orcutt, CA 93457-2067, or call 805/937-8878. □

## Connecticut

The **NEWINGTON AMATEUR RADIO LEAGUE** will hold its annual Amateur Radio and computer flea market from 9 a.m. to 2 p.m. on Sunday, June 2 at Newington High School.

There will be tailgating (weather permitting), refreshments and guided tours of ARRL HQ and W1AW.

Talk-in on 144.85/145.45; 223.24/224.84; and 146.52.

Admission is \$3. Tables are \$12.

For table reservations and general information, contact Les Andrew, KA1KRP, c/o NARL, 68 Wildermere Ave., Waterbury, CT 06705; 203/523-0453. □

## Illinois

The **SIX METER CLUB OF CHICAGO, Inc.** is pleased to announce its 34th annual hamfest which will be held on Sunday, June 9 at Santa Fe Park in Willow Springs.

Admission is \$3 with advanced registration or \$4 at the gate. Gates open at 6 a.m. Features will include a large swapper's row, picnic grounds, displays in the pavillion, refreshments and lots of free parking.

Talk-in on K9ONA 146.52 or K9ONA/R 37-97.

For advance tickets or further information, contact Mike Corbett, K9ENZ, 606 South Fenton Ave., Romeoville, IL 60441 or any club member. □

## Maryland

The **FREDERICK AMATEUR RADIO CLUB** will hold its annual hamfest on Father's Day, June 16, at the Frederick County Fairgrounds.

Doors will be open from 8 a.m. to 4 p.m. Admission is \$4; tailgaters must pay \$5 for each 10 ft. space. Wives and children enter free with one paid admission. Exhibitor indoor tables are \$10.

For additional information write to Frederick Hamfest, P.O. Box 589, Mt. Airy, MD 21771. □

## Michigan

The **INDEPENDENT REPEATER ASSOCIATION** will hold its annual Hamfestival on Saturday, June 1 at the Wyoming National Guard Armory on 44th St. in Wyoming.

Tables are \$4; reservations will be held until 8 a.m.

Admission is \$3 in advance or \$4 at the door. Set-up for dealers will start at 6 a.m. Doors will be open from 8 a.m. to 3 p.m.

VE exams start at 9 a.m.; don't forget a picture ID, Form 610 and a check. Walk-ins welcome.

Talk-in on 147.16/76.

For reservations, send SASE to The Independent Repeater Assoc., 562 92nd St., Byron Center, MI 49315 or call Tom, KA8YSM, at 616/698-6627. □

The **CHELSEA AMATEUR RADIO CLUB, Inc.** will hold their 14th annual Swap 'n Shop on June 2 at the Chelsea Fair Grounds in Chelsea.

Gates will open at 6 a.m. for sellers. Table spaces will sell for \$9 per 8 ft.; trunk sale space will sell for \$3 each.

Donation at the gate is \$3; YLs, XYLs and kids under 12 enter free. Food will be available in the service center. There will be plenty of parking, including special handicap parking.

Talk-in on 146.980 Chelsea repeater.

For more information send an SASE to (or call) Robert Schantz, 416 Wilkinson St., Chelsea, MI 48118; 313/475-1795. □

## Minnesota

The Amateur Fair '91 will be held on July 12 and 13 at the Aldrich Arena in Maplewood, a suburb of the greater Minneapolis and St. Paul Minnesota area. An outside flea market and commercial exhibits will be featured both days. There will be a grand prize drawing on Saturday.

Admission is \$5 at the door. Children under six may enter free when accompanied by an adult. Food and free parking will be available. Ticket holders may sell from the giant outdoor flea market at no additional cost.

Free non-selling space is available to your computer and radio non-profit club by advance written request only.

For information, including commercial booth and club exhibit info, contact Amateur Fair at P.O. Box 26331, St. Paul MN 55126; 612/653-9999. Computer users can call HAM-LINK at 612/426-0000 (300-2400 baud). □

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## Missouri

The **CENTRAL MISSOURI RADIO ASSOCIATION** will sponsor the 16th annual Columbia Hamfest and Computer Expo on Saturday, June 1, from 8 a.m. to 4 p.m. at the Midway Expo Center two miles west of Columbia.

General admission is \$3 for all 14 years and older. Flea market spaces are (in addition to admission) \$3 for open areas or \$5 for covered or indoor areas. Tables (8 x 3 feet) are available for rental at \$5 each. Parking is free. All areas are wheelchair accessible.

The hamfest will feature exams, forums, commercial exhibitors, food concessions and non-ham activities. For information on exams, contact John, ND0N, at 314/657-2391.

Talk-in will be on the 146.16/76 WD0DVG repeater.

For further information, write to Jesse Bowen, WM0Y, 1915 Blue Ridge, Columbia, MO or call 314/474-7674 evenings. □

The **GATEWAY REPEATER GROUP** will sponsor the St. Louis Hamfest on Sunday, June 2 at the South County Recreation Complex in St. Louis. This hamfest will feature 20,000 square feet of air conditioned, indoor space for the exhibits of commercial dealers of Amateur Radio and computer equipment.

Flea market spaces will sell for \$10 each (with table). Saturday set-up will be from 6:30 to 9 p.m.

Admission is \$3; children under 12 enter free. Doors open to the public at 9 a.m. There will be family activities at nearby Suson Park. Lodging is available, and parking is free.

Talk-in on 147.225+ and 442.500+.

For reservations or further information contact Jim Belmar, N0FLC at 314/296-1175 or Irv, KE0PE at 314/296-2971. □

## Montana


The **YELLOWSTONE RADIO CLUB** of Billings, Montana, will hold its YRC Hamfair on June 15 and 16 at the Yellowstone Metra Park Turf Club from 8 a.m. to 8 p.m. on Saturday and from 8 a.m. to 12 p.m. on Sunday.

Talk-in frequencies will be 146.16/76 K7PO rpt., 147.960/360 K7EFA rpt. and 3900 kHz, K7EFA.

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RV parking with electricity will be available on the grounds at \$9.50/day or \$22.50/three days. Tables are \$20; one-half table, \$10; tailgating, \$15. The Saturday night Barbecue will include door prizes.

A pre-registration special (June 8 deadline) of two admissions (with barbecue) is available for \$25. Please send SASE.

On-site admission is \$6 and barbecue cost is \$8.50. Phone (daytime) 406/245-7266 or 406/245-3930; (evening and weekends) 406/252-2045 or write to Eileen Jones, K7BFJ, 1116 Parkhill Drive, Billings, MT 59102. □

The LOWER YELLOWSTONE AMATEUR RADIO SYSTEM will host the 32nd Annual Regional Father's Day Hamfest Picnic on June 15 and 16 in Glendive.

Features will include door prizes, 2M rabbit hunt, annual junk auction, VE exams (on Saturday at 1 p.m.), hosted breakfast on Sunday and Sunday pot-luck dinner (at 1 p.m.).

Admission is \$6, and kids enter free. There are three motels located within two blocks. Camper hookups will be available on site.

For further information contact Gene Huskinson, K7CDN at 406/365-3749. □

## New Hampshire

The CONN VALLEY FM ASSOCIATION will sponsor a hamfest on June 22 from 7 a.m. to 2 p.m. at the Goshen-Lempster Co-op School gym in Lempster.

Features will include an indoor flea market

with more than 45 tables and spaces, an auction, commercial vendors, gears table, packet demo, hourly raffles, food concession, Field Day operation, picnic and free parking.

Admission is \$1; tables and spaces will sell for \$5 each (includes admission).

Talk-in on 146.16/76.

For further information contact Conrad Ekstrom, WB1GXM, P.O. Box 1076, Claremont, NH 03743-1076; 603/543-1389. □

## New York

The LANCASTER AMATEUR RADIO CLUB will sponsor the Lancaster, New York Hamfest on June 9 at the Elks Club Hall in Lancaster.

Admission is \$4 per person and includes an 8 ft. outdoor flea market space.

Talk-in on 146.550 simplex or 224.640 repeater.

For further information contact: Luke Calianno, N2GDU, 1105 Ransom Rd., Lancaster, NY 14086; 716/683-8880; Nick, WA2CJJ, 5645 Genesee St., Lancaster, NY 14086; 716/681-6410; or George Ebert, 716/894-0343. □

## Ohio

The MILFORD AMATEUR RADIO CLUB will sponsor a hamfest on June 15 from 8 a.m. to 4 p.m. at the Live Oaks Vocational School.

Admission is \$3. Tables are free indoors and out—first come, first served. Tailgating will be permitted. Free parking is also available.

There will be a VE test session; pre-registration is preferred but walk-ins will be accepted (subject to available materials).

Talk-in on 147.345.

For further information contact Russ, WA5Y at 513/683-7528. □

## Pennsylvania

The SVARC, Inc. and MILTON AMATEUR RADIO CLUB will sponsor a hamfest on Sunday, June 9 from 8 a.m. to 4 p.m. at the Winfield Fireman's Grounds.

Admission is \$4. Tailgate and table space will sell at \$1 per 6 ft. There will be VE exams (by pre-registration), refreshments and free parking.

Talk-in on 145.18/78 and 146.82/22.

For further information contact SVARC, Inc., Box 73, Hummels Wharf, PA 17831; 717/473-7050; packet: KD3KR @ NR3U. □

## Wisconsin

The CENTRAL WISCONSIN RADIO AMATEURS, Ltd. (CWRA), is holding its 14th annual Swapfest on Father's Day, June 16, at the University Center on the University of Wisconsin-Stevens Point campus in Stevens Point.

Features include educational seminars, VE testing and free parking.

Tables and electrical power will be available for commercial vendors. Groups and clubs dedicated to Amateur Radio are invited to request space for meetings, reunions, educational seminars, demonstrations, or other ham-related activities. Facilities will be assigned on a first-come, first-served basis.

To register (or to receive additional information), please contact Art Wysocki, N9BCA, CWRA Swapfest Chairman, 3356 April Lane, Stevens Point, WI 54481; 715/344-2984. □

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## The 32nd All Asian DX Contest - 1991

Supported by the Ministry of Posts and Telecommunications of Japan, the purpose of this contest is to enhance the activity of radio Amateurs in Asia and to establish as many contacts as possible during the contest periods between Asian and non-Asian stations.

**Contest period:** CW—48 hours from 0000UTC, the third Saturday of June to 2400 UTC next day (June 15-16, 1991); *Phone*—48 hours from 0000UTC, the fourth Saturday of September to 2400UTC next day (September 7-8, 1991).

**Bands:** Amateur bands below 30 MHz (except 10, 18 and 24 MHz).

**Classes:** single operator, 1.9 MHz band (CW only); single operator, 3.5 MHz band (including 3.8 MHz band); single operator, 7 MHz band; single operator, 14 MHz band; single operator, 21 MHz band; single operator, 28 MHz band; single operator, multi band; multioperator, multi band.

**Frequencies:** Each operator must remain within the limits of his own station license.

**Contest call:** 1) for Asian stations, "CQ test" (CW); "CQ contest" (phone) and 2) for non-Asian stations, "CQAA" (CW) and "CQ Asia" (phone).

**Exchange:** for OM stations, RS(T) report plus two figures denoting operator's age, for YL stations, RS(T) report plus two figures "00 (zero zero)."

**Restrictions:** 1) No contact on cross band; 2) For participants of single operator's entry, transmitting two signals or more at the same time including cases of different bands is not permitted; 3) For participants of multioperator's entry, transmitting two signals or more at the same time within the same band is not permitted, except in case of different bands.

**Points and multipliers:** Contacts among Asian stations and among non-Asian stations will neither count as a point nor a multiplier. For Asian stations: (a) Points (perfect contact with non-Asian stations) will be scored as follows: 1.9 MHz band—three points; 3.5 MHz band—two points; other bands—one point. (b) Multipliers will be the number of different countries in the world worked on each band, according to the DXCC countries list. For non-Asian stations: (a) Points (perfect contact with Asian stations excluding US auxiliary military radio stations in the Far East, Japan) will be counted as follows: 1.9 MHz band—three points; 3.5 MHz band—two points; other bands—one point. (b) Multipliers: the number of different Asian

prefixes worked on each band, according to the WPX Contest rules. Example: JS0ABC/7 will count for prefix JS7. JD1 stations: (a) JD1 stations on Ogasawara (Bonin and Volcano) Islands belong to Asia. (b) JD1 stations on Minamitori Shima (Marcus) Island belong to Oceania.

**Scoring:** The total of the contact points on each band  $\times$  the total of the multipliers on each band.

**Summary and log sheet:** It is recommended to use JARL AA contest logs and summaries which are available from HQ for one IRC and an SASE. Each summary sheet must include your DXCC country, call used, entry class, multipliers by band, points by band and total score. It should also include a signed declaration indicating that you have observed the rules and regulations of the contest. Log sheets must contain band, date, time in UTC, call of station worked, exchange sent, exchange received, multipliers and QSO points. Use a separate sheet for each band. Multipliers should be clearly marked by countries or Asian prefixes, first time worked on each band.

**Awards:** For both phone and CW, certificates will be awarded to those having the highest score in each entry in proportion to the number of participants from each country and also those from each call area in the United States. The highest scorer in each continent of the single operator multi band entry will receive a medal from JARL and certificate from the Ministry of Posts and Telecommunications of Japan. The highest scorer of the multi operator multi band entry in each continent will receive a medal from JARL.

**Reporting:** Submit a summary sheet and logs of only one classification. The log and summary should be *postmarked* by the following dates and addressed to JARL, All Asia DX Contest, P.O. Box 377, Tokyo Central, Japan. Indicate Phone or CW on the envelope.

(a) CW—July 30, 1991.

(b) Phone—September 30, 1991.

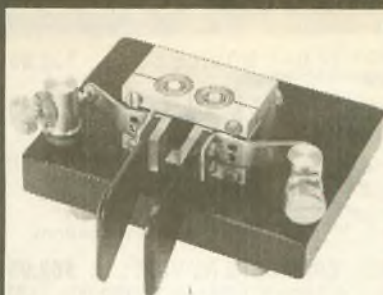
**Disqualifications:** Violation of the contest rules; false statement in the report; taking points from duplicate contact on the same band in excess of 2% of total.

**Announcement of results:** CW, about February, 1992; *phone*, about April, 1992. You may receive contest results by enclosing one IRC and SASE with your log.

### Countries list of Asia:

A4	TA2-8	XZ
A5	UA9,0	YA
A6	UD	YI
A7	UF	YK
A9	UG	ZC4
AP	UH	1S
BV	UI	(Spratly Is.)
BY	UJ	3W, XV
EP	UL	4S
HL	UM	4W
HS	VS6	4X, 4Z
HZ	VU	5B
JA	VU	70
JD1	(Andaman &	8Q
(Ogasawara	Nicobar Is.)	9K
Is.)	VU	9M2
JT	(Laccadive Is.)	9N
JY	XU	9V
OD	XW	J2/A(Abu
S2	XX9	Ail, Jabal at
		Tair)

## KEY



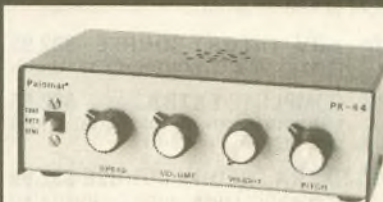
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- #27 13 wpm Test Preparation
- #28 13 wpm Car Code
- #29 13-15 wpm Speed Builder
- #30 15-17 wpm Speed Builder
- #31 17-19 wpm Speed Builder
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# CANADA and US HF Grid Square Roundup

The Huron Amateur Radio Association announces sponsorship of the Canada and US Grid Square Roundup. This is a week-long activity to see who can make contact with the largest number of world grid squares. It is intended to spread the grid square concept to HF operation and is designed to encourage participation by everyone from beginner to "big gun" contestors. See the *ARRL World Grid Locator Atlas* for more information about grid squares.

Call "CQ grids" on 160 through 10M excluding the 30, 17 and 12M WARC bands. We suggest the lower 10 kHz of the Novice/Tech portions of the bands and lower 10 kHz of the General portions of bands without Novice/Tech privileges. All entries are multi-mode, multi-band single operator. Begin rounding up grids at 0000Z June 29, and operate no more than 48 hours until 2400Z July 7.

Categories: 1) Single-op: General Class or higher; 2) Single-op: Novice, Technician or Canadian 5 wpm and a) 5W or less (QRP), b) 200W or less, c) over 200W (not eligible for awards).

Exchange: a QSO number, a two-character category code, call, name and a four-character grid square.

Scoring: count one point per phone QSO, two points per CW QSO and four points per

QSO on CW with a Novice, a Technician or a Canadian 5 wpm signing with /N /T or /C. Each new grid worked is a multiplier of one, regardless of band.

Final score: QSO points times total multipliers. Novice, Technician and Canadian 5 wpm entrants (/N /T /C) may multiply their final score by two to obtain their final score. All entries require a dupe sheet. There is a bonus of 50 QSO points for a contact with a sponsor station who will identify by /HARA on CW or "HARA club station" on phone on all bands 160 through 10M during the roundup. All participants will receive a certificate if sent with \$2 to cover shipping and handling.

The HARA is also sponsoring a Worldwide Grid Square Awards Program. Any Amateur who shows logbook evidence of contacts with 250 grid squares (all contacts must be made after January 1, 1991) shall be eligible for a colorful certificate. Thereafter, endorsement stickers will be available for 500, 750, 1000, 1500, 2000, 2500, 3000 etc. up to the 32,400 grids on Earth. Special plaques will be available at 5000 and 10000 grids. Contacts made during the Grid Square Roundup qualify for this award. All other contacts claimed for this award must have an exchange which includes as a minimum the date, time, band, mode, call, name, and grid square of each station worked. WARC band contacts can be included for the awards program. Most other rules and conditions of the Roundup also apply to the Awards Program.

For a detailed copy of the rules and a set of entry forms, log sheets, tally sheets, and dupe sheets for the Roundup and the companion Awards Program please send a large SASE with two units of postage to: Huron Amateur Radio Association, Grid Square Roundup, P.O. Box 73, Jeddo, MI 48032. □

## Respect your repeater trustee

LORETTA SAWYER, WQ9D

Repeater trustees donate their time and money to develop a system to be used by fellow Amateur Radio operators. Without a repeater our signals would be confined to simplex range, and those long distance QSOs would never exist, especially with the repeater linking systems that are available today. With the expertise of cross-linking we are able to talk around the world by using an HT.

A repeater trustee puts his call sign on the line. He monitors the system to ensure proper operations. When a system breaks down and repairs are

needed, it is usually the trustee who is responsible for getting it up and running again. Sometimes this does not happen immediately, and a system may be down for a while. Remember, Amateur Radio is a hobby. Repeater trustees have jobs and personal lives too, just like the repeater members and users. So when a system is down, have faith in your trustee. It will be repaired as soon as possible; just be patient. Behind every trustee is a good technical crew who are often unnoticed. When not repairing, the technical crew is usually experimenting to find new ways of communication. Where would we be today if it wasn't for these people who are willing to take a risk and try something new?

Repeater trustees have a lot of responsibility and they should have the respect of repeater members and users. □

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Worry grows lushly in the soil of indecision. —Arrowhead RAC, Duluth, MN

**Information in "New Products" is supplied by the manufacturers to acquaint Worldradio readers with new products on the market.**

## High SWR balun

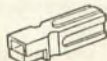
Palomar Engineers has announced a new addition to their high power balun line. Model SB-4 is specially designed to operate at high SWR so it can be used in antenna tuners, at the feedpoint of multi-band dipoles and to convert from ladder line to coaxial line outside the ham shack.

Model SB-4 has 1:4 impedance ratio and operates efficiently from 1.8 to 30 MHz. Power capability is 2000W continuous power at up to 10:1 SWR. The balun is weatherproof, epoxy filled and sealed with teflon insulated SO-239 connector and wire leads for the antenna or ladder line. A stainless eyebolt is provided for mounting. It measures 4 x 4 inches high and is priced at \$74.95.

To order or for further information, contact Palomar Engineers, P.O. Box 455, Escondido, CA 92033; 619/747-3343; FAX 619/747-3346.



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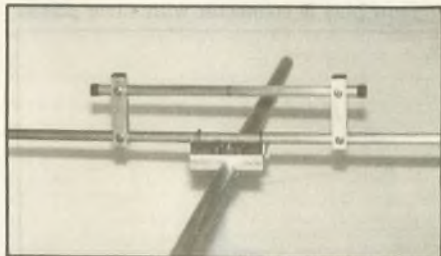
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## Antenna feed system

The first major improvement in feeding a Yagi antenna in more than 50 years has been announced by Ham-Pro Antennas. Called the Balanced Double Gamma Feed, it produces high gain and a perfect radiation pattern together with excellent impedance matching. The patent-pending mechanism is used in the firm's line of HF and VHF monobanders.

"All currently used Yagi feed methods are now obsolete," says Ham-Pro's Peter Onnigan, W6QEJ, because they are inefficient and reduce the full gain potential of the beam. "Inefficiency comes from moderate to high VSWR, plus random radiation in directions that do not contribute to the forward gain," he added.

All present matching schemes like the common unbalanced gamma, outboard baluns with wires to strip elements, hair pins, T, and other forms of matching radiate randomly, thereby reducing the antenna's forward gain, which also spoils the F/B and F/S ratios. "Not so with the new balanced double gamma, which radiates only the classic cosine figure eight pattern," says Onnigan.



The balanced double gamma's natural balun supplies both sides of a grounded driven element through a rectangular loop at its mechanical and electrical center, with equal power, regardless of frequency. This makes the driven element highly balanced. With reactance cancellation in the loop, the resulting VSWR bandwidth is very low across the entire band, since the gamma loop reactance runs opposite that of the driven element.

Extremely quiet reception is assured since the grounded double gamma only responds to the dipole currents. RFI and TVI are greatly reduced. Harmonics are attenuated by more than 30 dB, all contributing to a very quiet antenna on receive.

"We make the only antennas which currently meet all the tough electrical and mechanical RS-409 standards set forth by the

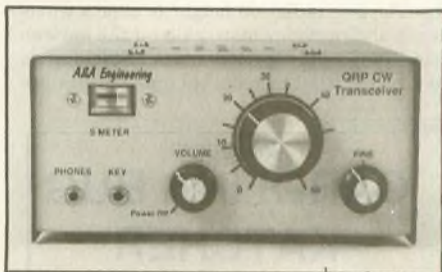
Electronic Industries Association (EIA)," says Onnigan. This standard spells out the important parameters and how they are measured, assuring the Amateur a superior antenna. For example, advertised Ham-Pro gains have been measured by an independent commercial range facility and certified.

Complete data sheets on these monobanders which utilize this new feed system are available; contact Ham-Pro Antennas (a division of Kopps Corporation) at 1-800/879-7569 or write to them at 6199 Warehouse Way, Sacramento, CA 95826. □

## QRP transceiver

This portable QRP transceiver was designed by Gary Breed, K9AY, and appeared in the Dec. '90 and Jan. '91 issues of *QST*. Two versions are now available, one for 40M and the original unit which covers 20M. We are working on a 30M version.

Features include: single-signal receiver with narrow CW crystal filter; VFO main and fine tuning which can be set to cover any 50 kHz of the band; audio derived AGC and two stages of audio filtering for listening comfort; 5W output when powered from a +13.8V source; semi-QSK TR switching with adjustable delay; and CW sidetone generator with adjustable volume. Add a battery, key and antenna and you're on the air—perfect for backpacking or just plain QRP CW fun from any QTH.



The receiver board is 5 x 3 inches. The transmitter board is 5 x 2½ inches. Both boards are character screened to aid in assembly. The completed transceiver measures 6 x 7¼ x 3 inches and weighs only 27 ounces.

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## HIGH-PERFORMANCE ANTENNA SOFTWARE

**MN 3.5** is the fastest, most powerful MININEC antenna analysis program available. MN provides 3-D views of antenna geometry and wire currents, generates presentation-quality polar and rectangular plots of all linear and circular polarization components, handles complex antennas with up to 254 pulses, calculates near-fields for TVI and RF hazard analysis, has current feed for phased arrays, does automatic frequency sweep, and provides for simple definition of sources and loads. MN 3.5, \$95. 500-pulse option, \$25. MNC 3.5 (1.6-2.4 times faster, copr req'd), \$110. MNjr 1.5 (same speed and capacity as MN, fewer features), \$35.

**YO 4.0** automatically optimizes Yagi antennas for maximum forward gain, best pattern, and minimum SWR. YO handles designs from HF to microwaves, and models Yagis over ground, stacked Yagis, Yagis with dual driven elements, and ohmic conductor losses. YO runs hundreds of times faster than MININEC. YO is calibrated to NEC for high accuracy, and has been extensively validated against real antennas. YO is intuitive, highly graphical, and simple to use. YO 4.0, \$100. YOC 4.0 (1.7-2.7 times faster, copr req'd), \$130.

**NEC For Yagis** provides high-accuracy verification of Yagi designs with the professional-standard Numerical Electromagnetics Code. NEC For Yagis 1.0, \$50. Coprocessor, hard disk, and 640K memory required.

MN and YO include both coprocessor and extra-fast no-coprocessor versions, and comprehensive antenna design libraries. All programs include extensive, easy-to-read documentation, and an easy-to-use, full-screen text editor. Add 6% CA, \$5 overseas. U.S. check, cash, or money order. For IBM PC, 3.5" or 5.25" disk. Brian Beazley, K6STI, 507-1/2 Taylor, Vista, CA 92084 (619) 945-9824, 0700-1800 Pacific Time

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We also accept orders for blank boards or partial kits. If you would like to order a partial kit, send a legal sized SASE with 2 oz. postage for an itemized price list. For a complete 20M kit, order #180-K20. For a complete 40M kit, order #180-K40. Both sell for \$159.95. Visa and Mastercard are accepted. Contact A&A Engineering, 2521 W. LaPalma #K, Anaheim, CA 92801; phone 714/952-2114; FAX 714/952-3280. □

## VHF-UHF Antenna

A new VHF-UHF antenna for the 140, 220 and 440 bands has been developed by Dave Riley, AA1A, a veteran commercial broadcast antenna engineer. Available in single band models from 144 to 440, these antennas offer very rugged construction, superior gain for their size and come completely ready to mount with all solid stainless steel elements and hardware. The antenna is an extended double zepp, center fed with a unique variable quarter wave transformer and is link-coupled not only to offer efficient power transfer but to reject out-of-band signals and emissions.

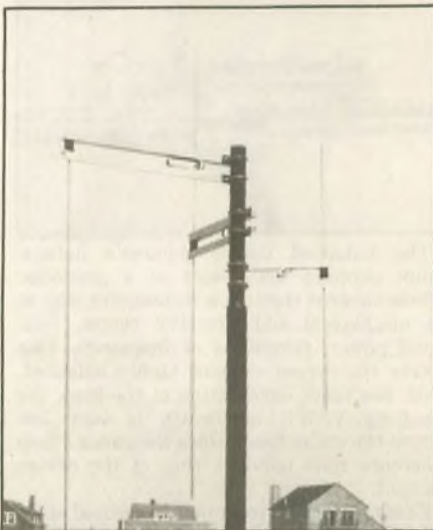
Mounting is accomplished easily on the top or side of a mast or tower and the antenna comes complete with all mounting hardware. The effective radiation height is over a wavelength and provides more gain on the horizon than comparably priced units. Stacking is easy using RG-11 coax, but most users are

happy with the gain of one unit. Broadbanding is accomplished through a new type feed and SWR is typically less than 1.4 to 1 across the band and less than 1.1 at center. Power handling is well in excess of 160 W.

Users thus far report superior performance and especially like the ruggedness and long lasting features. All that is required for use is a mounting location and a coax with either a UHF or type N connector (customer option). The U-bolts can even be discarded and the Sidekick mounted to a corner of the house with wood screws or on the beam rafters in attic space. The Sidekick has been used extensively on packet, repeaters, SSB, and point-to-point communications with outstanding results.

These antennas are professionally machined and are shipped pre-assembled and pre-tuned. They are also made so as to be tuned outside of band such as for use on commercial, MARS, CAP etc. For instance, the 144 model can be tuned from about 135 MHz up to about 160 MHz. The 440 Sidekick can be tuned easily from 420 to 480 MHz.

These Sidekick antennas are sold factory direct and shipped via UPS. Current prices are \$79.95 for the standard model and \$89.95 for same plus N connector with silver plated



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## Commodore rescue

Commodore popularity is slipping away and going to Amiga. As a result, 14 million Commodore C-64 computer owners now have a problem; they can't locate spare parts and upgrades, and they can't get the service they need.

As everyone knows, Commodore's "hot line" for customer service directs troubled "end users" to too few service centers in their area. More often than not, customers are directed to service centers that no longer handle Commodore (they have switched to Amiga) or are out of business.

This is where Grapevine comes to the rescue. Commodore users will no longer be tempted to chuck their entire system. To keep Commodore alive and well, our company has put together its first catalog after 10 years of operation. The premise of this catalog is not to sell new systems or software, but to maintain or upgrade the existing Commodore equipment that end users now have in their possession.

Two separate editions of our catalog are available: one for end users and one just for dealers. For further information, contact us at 3 Chestnut Street, Suffern, New York 10901; call 914/357-2424 or 1-800/292-7445 toll free; FAX 914/357-6243. □

## HF transceiver

The FT-650 HF transceiver features the latest in DDS (Direct Digital Synthesis) for superior receiver performance and is designed to operate on the 24/28/50MHz bands.

This transceiver packs 100W of power output in a stream-lined compact case. A flip-out handle makes it the perfect portable, while a built-in power supply (AC or DC) lets it function as a base station.



Features include: 99 channel memories; four programmable scan memories and two priority channels; all mode (SSB, CW, FM and AM) operation; RF preamp with 5 MHz bandwidth BPF, veractor tuned; extended receiver (24.5 to 56 MHz) coverage; automatic seeking IF Notch filter and 100 percent continuous operation duty cycle. Optional accessories available are DVS-2 Digital Voice Recording Module, MD-1B8 desk-top microphone and SP-5 external speaker with AF filter.

Yaesu offers a full one year parts and labor warranty on all Amateur Radio products purchased on or after July 1, 1990. For more information about this transceiver and other fine Yaesu radio products, contact your local Yaesu Amateur Radio dealer or contact Yaesu, USA, 17210 Edwards Rd., Cerritos, CA 90701; 213/404-2700. □

# When will AMSAT-OSCAR-13 be in range?

## ROSS FORBES, WB6GFJ

Those just starting out in the world of OSCAR communications would like to know when they can hear a satellite. The following charts are produced to give you a rough idea as to when OSCAR-13 will be within range of your location. The three charts as printed are centered on the following geographic locations: East = New York City; Mid = St. Louis, MO; West = Reno, NV.

As you read the chart nearest your location,

keep in mind the following details — all dates and times are given in UTC. The date is printed on the left hand column and the UTC hour along the top.

A dash mark indicates the satellite is out of range and therefore not able to be heard. The letter "B" indicates OSCAR-13 is audible at that location and signals should be heard between 145.810 and 145.880 MHz (SSB and CW). A letter "O" indicates the satellite is audible, but the only signal you will hear is the

telemetry beacon on 145.810 MHz. The letter "L" indicates the satellite is audible but you will hear signals between 435.650 and 436.000 MHz (SSB and CW).

Remember, if a letter is printed on the chart, you should be able to hear OSCAR-13.

For more information about OSCAR, please send a SASE to either of the following: Project OSCAR, P.O. Box 1136, Los Altos, CA 94023-1136; AMSAT-NA, P.O. Box 27, Washington, D.C. 20044.

### Station East

	HOUR - UTC																									
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
7/01	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/02	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/03	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/04	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/05	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/06	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/07	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/08	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/09	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/12	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/13	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/16	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/17	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/19	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/23	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/24	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/29	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/31	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

### Station Mid

	HOUR - UTC																									
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
7/01	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/02	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/03	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/04	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/05	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/06	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/07	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/08	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/09	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/12	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/13	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

### Station West

	HOUR - LOCAL																									
	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
7/01	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/02	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/03	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/04	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/05	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/06	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/07	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/08	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/09	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/12	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/13	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
7/14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7/15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

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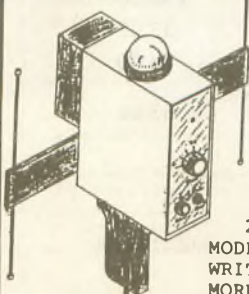
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# VE exam schedules

As a service to our readers, Worldradio presents a feature listing those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is three months in advance. For example, if your VE group is scheduling an exam for September, please have the information to us by mid June.

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

Please mark the envelope "VE Exams."

List the location, any information examinees should have (advance registration, etc.) and the name and telephone number of a person to contact for further information.

p/r=pre-register

w/i=walk-in

Date	City	Contact	Notes	Date	City	Contact	Notes
<b>Arizona</b>				<b>Maryland</b>			
July 27	Flagstaff	Robert Olson (602) 577-1050	w/i OK	July 28	Hagerstown	NC3X (717) 597-8231	p/r
July 6	Tucson	K7OPX (602) 886-7217	w/i only	July 13	Laurel	NT3Z (301) 761-7115	w/i
<b>California</b>				<b>Massachusetts</b>			
July 6	Burbank	KE6AR (818) 349-0927	w/i	July 1	Boston	WN1U (617) 268-0190	w/i
June 29	Carson	AA6TC (213) 830-0242	w/i OK	July 24	Cambridge	KA1MQX (617) 253-3776	w/i
July 27	Carson	AA6TC (213) 830-0242	w/i OK	July 20	Melrose	WB1F (617) 322-7654	w/i OK
July 7	Clearlake	Art (707) 994-0646	w/i only	<b>Minnesota</b>			
July 27	Escondido	KB6WB (619) 465-EXAM	p/r by 7/17	June 29	Duluth	KA0SYN (218) 879-4010	w/i OK
July 20	Fairfield	Jerry (916) 662-0801	w/i only	<b>Mississippi</b>			
July 18	Fountain Valley	KI6WK (714) 846-6984	p/r	July 9	Ocean Springs	AA5SP (601) 875-9341; AA5TX (601) 875-2142	p/r pref: w/i OK
July 14	Hanford	Carleton (209) 924-4221	w/i only	<b>Missouri</b>			
July 27	Hawthorne	WS6T (213) 600-4160	p/r	July 6	Antonia	Jim WD0GDY (314) 671-4243	no w/i
July 13	Hesperia	NF6I (619) 241-4732; K6BET (619) 244-6080	w/i OK	July 20	St. Louis	N0IS (314) 892-4434	w/i OK
July 13	Jackson	WZ6Y (209) 295-7947	p/r pref.;	July 14	Washington	NF0Q (314) 946-0948	w/i OK
July 25	Long Beach	KA6HOQ (714) 897-6331	w/i OK	<b>Nebraska</b>			
July 13	Redding	NT6E (916) 253-REVA	w/i	July 30	Omaha	AJ0A	w/i
July 20	Redwood City	Dudley (408) 245-4801	w/i only	<b>New Jersey</b>			
June 8	Ridgecrest	WA6KZV (619) 375-7245	w/i OK	July 20	Bayonne	WA2QYX (201) 451-9471	w/i OK
July 13	Ridgecrest	WA6KZV (619) 375-7245	w/i OK	July 18	Bellmawr	WA2VQG (609) 546-7710	w/i
July 20	San Diego	KB6WB (619) 465-EXAM	p/r by 7/10	July 13	Cranford	N2XJ (201) 635-7686	
July 16	San Dimas	K6THQ (714) 596-9383	p/r 1 week prior	July 10	Fort Monmouth	WB2GYS (908) 532-5353	w/i
July 20	San Dimas	K6THQ (714) 596-9383	p/r 1 week prior	July 1	Sayreville	K2FD (201) 442-9215	w/i
July 13	San Pedro	N6DYZ (213) 325-2965	w/i OK	<b>New York</b>			
July 13	Santa Barbara	KB5AH (805) 682-2665	w/i	July 28	North Babylon	KA2RGI (516) 957-0218	w/i OK
July 20	Signal Hill	NN6Q (213) 420-9480	p/r pref.; w/i	July 7	Yonkers	AC2V (914) 237-5589	w/i OK
July 6	Stockton	Vern K6DOP (209) 887-3297	w/i	<b>Ohio</b>			
July 14	Thousand Oaks	Cathi AA6KL (805) 484-3309	p/r pref.;	July 13	Columbus	William Tabor (614) 864-8370	w/i
				July 13	Toledo	NC8M (419) 825-3423	
				July 21	Van Wert	KA8IAF (419) 795-5763	
				July 13	Westerville	W. Tabor (614) 864-8370	w/i OK
<b>Colorado</b>				<b>Oregon</b>			
July 13	Denver	W0IJR (303) 366-9689	w/i OK	July 13	Eugene	Rick Smith (503) 689-7827	no w/i
July 20	Westminster	N0CFM (303) 451-1231; N0HNR (303) 278-4280	p/r or w/i	July 10	Roseburg	W6OFF (503) 673-0558; AA7GC (503) 673-7564	w/i OK
<b>Connecticut</b>				<b>Pennsylvania</b>			
July 28	Milford	NB1M (203) 933-5125; WA1YQE (203) 874-1014	w/i	July 6	Erie	W3CG (814) 665-9124	w/i
July 2	Portland	Ed Kerns (203) 342-4300	w/i OK	July 13	New Kensington	Donald McDaniel (412) 782-5130	w/i OK
July 24	Shelton	WJ1T (203) 736-0488	w/ pref	July 8	Pennsburg	K3ZXQ (215) 679-5764	
<b>Florida</b>				July 11	Philadelphia	ND3Q (215) 482-0386 or (215) 879-0505	w/i
July 13	Panama City	James McQuagge (904) 785-3547	w/i OK	<b>South Carolina</b>			
<b>Hawaii</b>				July 20	N. Charleston	AA4IX (803) 873-9465	w/i
July 20	Hilo	AH6P (808) 959-8893	w/i	<b>Texas</b>			
<b>Idaho</b>				July 20	DFW Airport	KF5BL (214) 252-8015	w/i
July 13	Boise	W7JMH (208) 343-9153	w/i	July 9	Houston	WB5IGG (713) 777-3345	p/r pref.;
<b>Illinois</b>				July 13	Midland	KT5G (915) 694-9450	w/i OK
July 13	Bloomington	NX9M (309) 662-3910	w/i OK	<b>Virginia</b>			
July 20	Bolingbrook	NW9K (815) 886-5135	w/ OK	July 13	Chesapeake	KC4YX 424-4764	
July 20	Loves Park	W9SS (815) 877-6768	p/r; w/i	<b>Washington</b>			
July 13	Oak Forest	KA9HDN (312) 247-0650	w/i	July 20	Renton	WA7UVJ (206) 854-4031	w/i only
<b>Indiana</b>							
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# SGC

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 PURCHASED FROM SGC  
 DATE PURCHASED 1 MAY 89 DATE INSTALLED 1 DEC 89  
 INSTALLED BY J. MARTINO (OPERATOR)  
CAPE TOWN DEPT OF STATE WASH DC 20521

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 (Good) + Fair Poor

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## Amateurs give communications assistance after Costa Rica earthquake

At 2155Z 22 April an earthquake measuring 7.5 on the Richter scale shook Puerto Limon on Costa Rica's east coast near the Panamanian border, causing a hospital and a three-story hotel to collapse, damaging another hotel and rendering bridges between Puerto Limon and San Jose impassable. Early counts estimate the death toll at 79. Patients from the damaged hospital were moved to tents, and a helicopter medivac system was put into action to transfer victims to San Jose hospitals.

Although overloaded, local phone lines in San Jose were still functioning. The IMRA net at 14.275 kHz was handling health and welfare inquiries in the early hours after the quake, with most of the Amateur traffic being handled by East Coast stations. Jettie Hill, W6RFF, of Roseville, California, the SCM for Sacramento Valley, reported he had assisted in passing one health and welfare inquiry from an Elk Grove, California parent of a Peace Corps volunteer stationed in the area. Jettie also reported hearing a station in Los Angeles assisting in the effort.

The earthquake occurred just before press time for *Worldradio's* June issue. We should have a more complete report in our July issue.