

## FEATURES

Terana, Albania — On the air!

Moscow, Russia — Amateurs' role during coup

Mt. Whitney, CA — Back-to-back rescues

Small world of Amateur Radio

Where will it be? — The last hamfest

Whose QTH — Are you a lid?



I got 'em!



## COLUMNS

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- County Hunter •Digital Bus •DX Prediction •DX World •FCC Highlights
- Hamfests •Mobile •New Products •Off the Air •Product review
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# 1991 ARRL National

Saginaw, Michigan — August 23-25



The new face of Amateur Radio — and a very poised young lady behind it! Shauna Richards, N7-NGT, formally accepted her 1989 Young Amateur of the Year Award. Right, Ed Addy, KEØEG, recipient of AEA's Amateur Ambassador Award for 1991, accepts congratulations from Mike Lamb, N7NL.



**COUNTRIES VISITED BY LLOYD & IRIS COLVIN (YASME)**

1 ALL 48 STATES	44 VATICAN CITY	58 MINNESOTA	116 GRENADA	181 LEBANON
1 AKL CAMBODIA HOV	45 SAUDI ARABIA	59 HONG KONG	117 ST. VINCENT	182 YUGAL
1 BERMUDA	46 ITALY	60 INDIA	118 ST. LUCIA	183 BANGLADESH
1 CHINA	47 JAPAN	61 MEXICO	119 DOMINICA	184 BAHAMA
1 CUBA	48 GUAM	62 NICARAGUA	120 MARIYU INDOE	185 BAHRAIN
1 DOMINIC	49 KOREA	63 SALVADOR	121 MARDELTAPE	186 INDONESIA
1 PORTUGUESE SUMER	50 KINAWA	64 VENEZUELA	122 MALACCA	187 TAIWAN
1 MACAO	51 BUNIN ISLANDS	65 GIBRALTAR	123 TOMALI	188 CHAD (BURUNDI)
1 PORTUGAL	52 CAROLINE ILE	66 THE GAMBIA	124 MAN. JEMEU	189 PALAU (BAUTIM)
1 GREECE	53 SWITZARLAND ILE	67 MONACO	125 JEMEN	190 MALTA
1 MADEIRA ISLANDS	54 GUANA	68 TUNISIA	126 JIBOUTI	191 ANGOLA
1 GERMANYS	55 MARSHALL ISLE	69 DEYDON	127 MADAG	192 BARBA
1 SE. GERMANY	56 ANTONIN ILE	70 LISYU	128 ARAB EMERITUS	193 ARABIAN REP
1 N. GERMANY	57 FRENCH IN AFRICA	71 NIGERIA	129 QATAR	194 ARABIAN REP
1 PHILIPPINE ILE	58 GOLD COAST	72 MAURITANIA	130 BHARIN	195 AZERBAIJAN SSR
1 SPAIN	59 MICHAM ILE	73 TOGO REP.	131 BLAH BL	196 BYELORUSSIAN SSR
1 BALEARIC ILE	60 PUERTO RICO	74 JENSEN REP.	132 KUNYUT	197 ESTONIAN SSR
1 CANARY ILE	61 AMERICAN ISLAND	75 JAMAICA	133 JORDAN	198 GEORGIAN SSR
1 RIO DE ORO	62 VIRGIN ILE	76 ALGERIA	134 SPAN ANDRES	199 GEORGIAN SSR
1 SOLOTA-MELLILA	63 MARSHALL ILE	77 BARBADOS	135 CUBADOR	200 KAZAKH SSR
1 LIBERIA	64 CANAL ZONE	78 GUYANA	136 CANTAGOS ILE	201 KAZAKH SSR
1 ISRAEL	65 NORWAY	79 PANAMA	137 PERU	202 KAZAKH SSR
1 ETHIOPIA	66 LUXEMBOURG	80 PARAGUAY	138 POLAND	203 KAZAKH SSR
1 FRANCE	67 AUSTRALIA	81 SA. MARINO	139 ARGENTINA	204 KAZAKH SSR
1 CONGO	68 FINLAND	82 SIERRA LEONE	140 CHINA	205 KAZAKH SSR
17 ANTARCTICA	69 ICELAND	83 MALAYSIA	141 KAZAKH SSR	206 KAZAKH SSR
18 ANTARCTICA	70 BELGIUM	84 MALAYSIA	142 KAZAKH SSR	207 KAZAKH SSR
19 ANTARCTICA	71 DENMARK	85 TRINIDAD	143 KAZAKH SSR	208 KAZAKH SSR
20 ANTARCTICA	72 BRAZIL	86 ATOL	144 KAZAKH SSR	209 KAZAKH SSR
21 ANTARCTICA	73 JAPAN	87 TAIWAN	145 KAZAKH SSR	210 KAZAKH SSR
22 ANTARCTICA	74 SWEDEN	88 REP. OF CHINA	146 KAZAKH SSR	211 KAZAKH SSR
23 ANTARCTICA	75 GUYANA	89 NEW ZEALAND	147 KAZAKH SSR	212 KAZAKH SSR
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178 ANTARCTICA				



# Worldradio

Year 21, Issue 5

November 1991 • \$1.25

## Albania at last!

A multinational group of 12 amateurs representing Finland, Germany, Italy, Japan and the United States are currently making history, operating from Tirana, Albania during a two week DXpedition from September 23 through October 7.

This extraordinary opportunity comes after two years of diligent plan-

ning which culminated with the signing of a detailed plan early in 1991 to establish Amateur Radio in Albania. On August 24 at the Tokyo Hamconvention the Secretary General of the Albanian Post Telephone and Telegraph, Mr. Agim Muco, announced the foundation of the Albanian Amateur Radio-transmitters

Society. He also announced that, as a result of support from the IARU, several of its member societies, and certain honored individuals, Amateur Radio transmissions would commence on September 15/16.

For the last 45 years Albanians have been unable to participate in the world community of Amateur Radio. In his Hamconvention address, Mr. Muco explained that the hard-line communist regime considered radio *(please turn to page 6)*

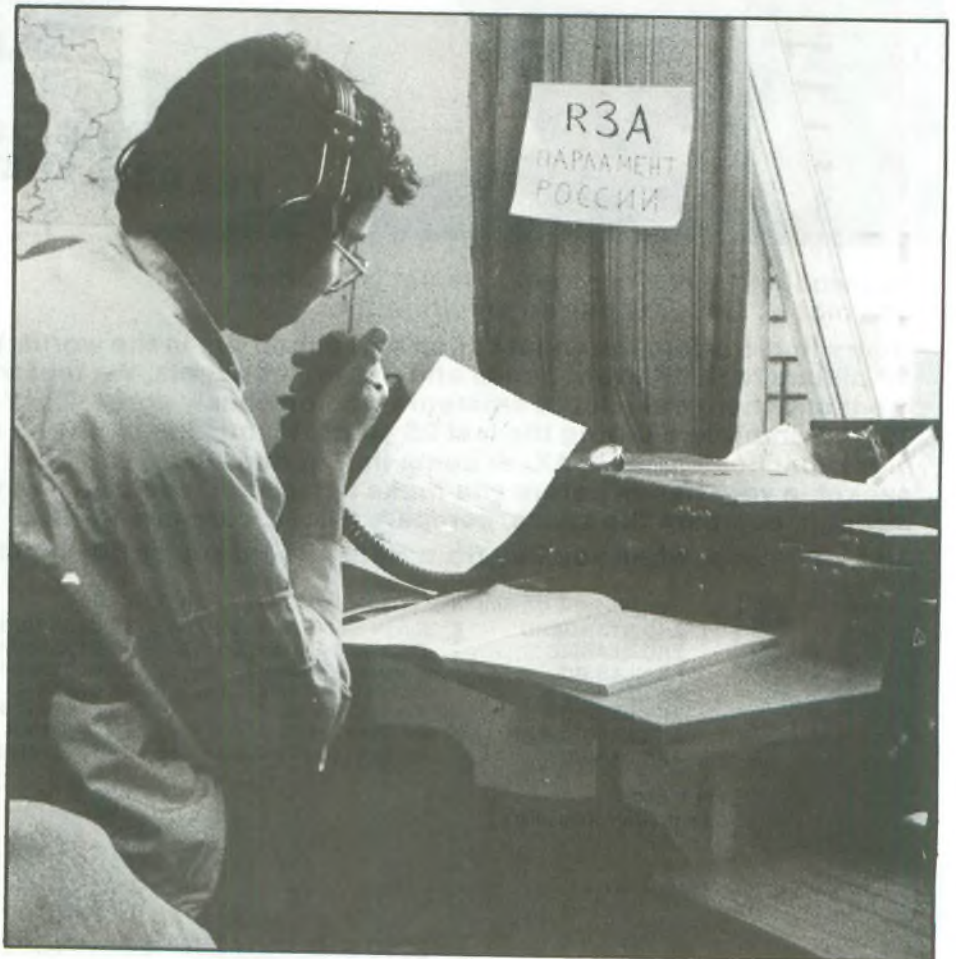
## Soviet amateurs aid Yeltsin during coup

When conspirators took over the Soviet government early on August 19 in an attempt to return the union to hard-line communist control, Soviet Amateur Radio operators were on the front lines at the Russian Parliament building, keeping the world informed. The building, often termed the "Russian White House," is the headquarters of Boris Yeltsin's government and was the focus of the coup resistance.

Peter Strezev, UA3AOC, ignored the nighttime curfew and took his hand-held into the Parliament building, where he and other Moscow amateurs communicated on 2M to keep Yeltsin's defense forces informed of tank and troop movements.

Immediately upon learning of the coup, Yuri Brajenko, president of Moscow Boston International Ltd., arranged to set up an emergency station in the Parliament building. He contacted Valeri Tugin, chairman of the Russian Supreme Soviet's information committee, who agreed to the offer and had a car sent within 20 minutes. Despite army and KGB troops and tanks outside, Brajenko and a small group of Soviet amateurs were able to get into the building with an HF transceiver and a roll of antenna wire. Within an hour, emergency station R3A was operating from the sixth floor.

Early attempts to transmit information from Yeltsin to the Russian people *(please turn to page 11)*



Signing "R3A Parliament Rossee" (Russian Parliament), unidentified operators on 2M and HF ask for public resistance to the coup.



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2K CLASSIC X	Domestic Console	5K CLASSIC	Export Console
2K CLASSIC X	Export Console	5K CLASSIC RF	RF Deck only
2K CLASSIC X RF	RF Deck only	3K PREMIER	Console Amp. with 160 meters
3KD CLASSIC	Single 3CX1200A7 Desk Amp	3KD PREMIER	Desk Amp. with 160 meters



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# The small world of Amateur Radio

WILLIAM G. SCHUCHMAN, W7YS

I have been fortunate enough to visit the USSR twice. In August of 1989, NN7A, NN7D, and I were invited to join a Radiosport Expedition to rare Oblast 100, deep in the Altai Mountains just north of Mongolia, using the call R9ZF. We also operated from the city of Barnaul using the call R9YA and club calls UZ9YXI and UZ9YWA. In August of 1990, NG7S and I were invited to participate in a Radiosport Expedition to rare Oblast 141 (Komi-Permyack). We operated from the small village of Leninsk near the city of Kudymkar using the call 4L9AG and our own calls preceded by UA9G and UA9F when we were in the city of Perm.

Going back to August of 1989, we met and enjoyed the hospitality of many Russian hams in Barnaul, which is some 1,200 miles east of Moscow. One of the local hams I met was a retired man who was the volunteer "station chief" of Radio Club UZ9YXI, which was located in School 87 in Barnaul (a school similar to our junior high schools). I had worked this station many times, never dreaming that some day I would personally visit the club and meet the young operators and their elmer, Mr. Alexandr Firsov, UA9YGV.

Several months after my return home, I received a letter from Firsov with a personal request. He wrote about the history of his family beginning with Ivan Firsov (1708), who arrived in the Altai area from the river of Kergenets in the northern part of the

Novgorod region of Russia. Ivan built the first small and secluded monasteries and carried the Christian faith to the Altai. Firsov's great-great-grandfather adopted a young man who

Firsov wrote, "his death is unknown, but he died in the USA, by supposition in the state of Wyoming, at his estate with the Russian name 'Churayevka,' near the foot of the Rocky Mountains." Firsov went on to say that GDG continued to write books and published a (please turn to page 12)



Richard Furguson, NN7D; Bill Schuchman, W7YS; and Arthur Phillips, NN7A, on Gold Lake, Oblast 100, USSR, in August, 1989.

became a fairly well known Siberian writer of Russian history, and who was also the editor of the newspaper in Barnaul. The adopted son was named G.D. Grebentshchikov.

"GDG" (as the Russians commonly abbreviate their names) was born in 1882 in the Nikolaevsky Mine and, as

Happy Thanksgiving!

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# Worldradio

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## PUBLISHER'S MICROPHONE

First we recognize the latest paragons of brilliance. The latest lifetime subscribers joining in the ranks of our **Worldradio Super Boosters** are:

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Dale McAtee, WB0VTQ, Sunnyvale, CA  
Phill Eschle, KG6XY, Santa Cruz, CA  
Marjorie Mitchell, AL7JW, Valdez, AK.

Hard to believe that some Field Day stations are still using those generators.

We've long heard, from various quarters, that dropping the CW requirement would result in a flood of amateurs. This in turn would lead to more technicians and engineers which would then vault the US electronics industry into world supremacy.

Let us instead look at page 18 of the September 16, 1991, issue of *US News & World Report*:

"A group of our high-school seniors, better than the national average, tested 13th among 13 nations in biology, 12th in chemistry and 10th in physics."

Must have been some sort of CW test in biology and chemistry that we're unaware of.

The Hmong are a hill people from the remote areas of Laos. Many fleeing the communist regime came to the US. They lacked formal education, but look at their children! Again quoting the article:

"Their grade scores are usually 40 percent higher than those of native-born Wisconsin students. Almost no one drops out. High school graduation rates are close to 100 percent and a

huge percentage of Hmong youngsters are heading on to college or technical school."

Alas, there may be factors other than the CW test responsible for this.

Some are commenting about the price of radio gear. It is perceived by many to be too high. One author even wrote a review saying the price of a particular transceiver should be lowered by \$500.

I talked to one of the executives from the manufacturer of the mentioned rig. His response was, "Why didn't he just ask us to ship out an envelope filled with 100-dollar bills with every transceiver?"

The truth of the matter is that no one in the radio manufacturing business is making a "killing" or laughing all the way to the bank. Hardly. If such were the case, you'd see a ton of competition in the field from those eager to get in on the gravy train. The actual truth of the matter is obvious to anyone with open eyes. Just what are we getting for our money these days?

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How much were you making in the early '50s? Was it \$50 a week? What could you get for that? A Hallicrafter S-38! The well-to-do, making \$100 a week then could buy an S-40B. A month's wages for an executive would buy a National NC-183D.

All of the above are receivers only! A Hallicrafter HT-20 100W transmitter was \$500. An HRO-60 receiver was about \$500. Remember, this is the dollar of 40 years ago.

Could one get on the air less expensively? Yes. An Eldico crystal-controlled transmitter with a 6L6 and an 807 was \$65. For a KIT! I doubt if anyone would pay \$65 of today's dollars for such a rig.

Yes, today's school teacher, police officer, nurse, etc., will get far finer equipment for a month's wages than they did "in the good old days."

Don't begrudge the retailers. If you want someone to stand around and answer your questions for half an hour, remember that they're not running a charity. Refer to your local radio club for sensible answers—you may even be able to answer someone else's questions too.

How long do you expect to keep that new rig? Well, if you divide that into the cost, look at it this way: If you could lease a station for, say, \$5 a week, would you do it?

All of a sudden, good gear doesn't look so expensive, does it?

—Armond, N6WR

Senator Megahertz says: November is the month to give thanks you're a "ham" and not a turkey.

—Hugh Glasgow, NR6S



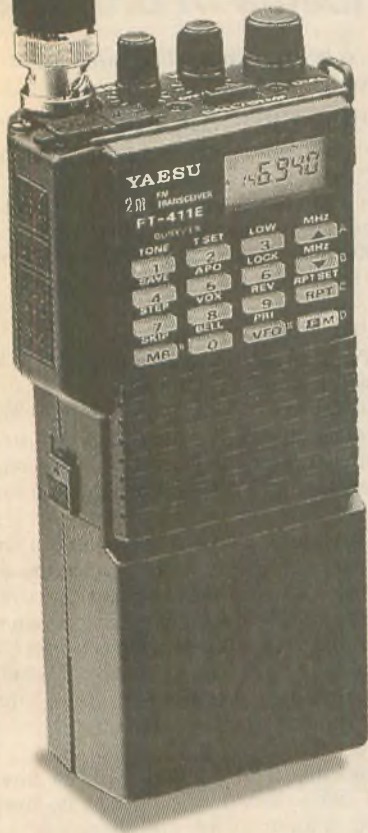


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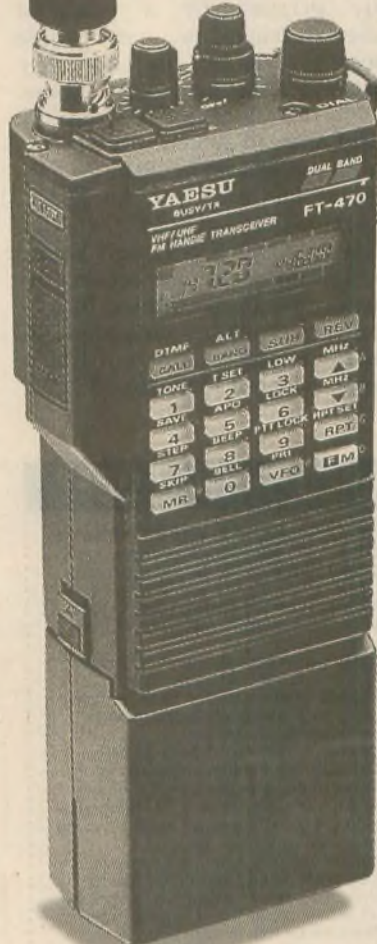
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- Accessories/Options: FNB-12S (5 Watts) Battery, MH-12A2B Speaker/Mic, MH-19A2B Mini Earpiece/Mic, MH-18A2B Label Speaker and LCC-27 Custom Leather Case.

### Specifications

**Frequency Range:** RX: 130-180 MHz, TX: 144-148 MHz (VHF); 430-450 MHz (UHF)

**Power Output:** W/FNB-17: 2.3 Watts (144 & 430 MHz) — W/FNB-12s: 5.0 Watts (144 & 430 MHz)

**Channel Steps:** 5, 10, 12.5, 20 & 25 kHz  
**Case Size:** 2.2 (W) x 6.0 (H) x 1.3 (D) in.  
**Weight (Approx.):** 14.8 oz.

# YAESU

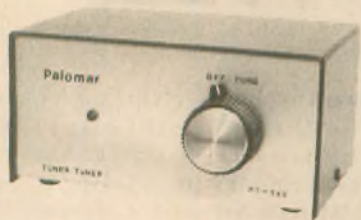
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## Albania

(continued from page 1)

transmitting a dangerous hobby because it was viewed as an aid to foreign spying. Consequently, it was prohibited by law for Albanians and especially for foreigners. Despite official requests from amateurs all over the world, permission was continually denied. Those operating radio transmitters were suspected of being spies, and Amateur Radio operating rights were given to only one small sport federation which exclusively used Morse code.

Mr. Muco happily announced, "Present day pluralism and the complete failure of communism has brought forth conditions which will not only allow the foundation of the Albanian Radio-transmitting Society, but also Amateur Radio transmitting to and from societies and individuals throughout the world."

Mr. Muco came to the conclusion of his address by stating that although "socially gripped by a powerful political-economic crisis . . . my people want to make up for the time they have lost under the dictatorial regime. That's why the doors of our country are widely open to sincere friends."

Under the sponsorship of the AIRU, and with assistance from the JARL (Japan), the ARRL (USA), the ARI (Italy), the NCDXF (USA), and Yaesu (Japan), a program of instruction and introduction has been adopted by the Albanian government, intended to form the beginning of Amateur Radio in Albania. Richard Baldwin, W1RU,

Seppo Sisato, OH1VR, Kan Mizoguchi, JA1BK, and Martti Laine, OH2BH, in his capacity as a consultant to the Albanian PTT, all were instrumental in the early phases of this project. Part of the overall program consists of training selected Albanian students as well as operation of amateur stations by a team of instructor/operators. This team comes from a number of different nations and has been granted special arrangements by the Albanian government to enter the country without visas.

A total of eight complete stations with several beams and amplifiers have been donated to the Albanians. Yaesu USA has furnished two FT-1000Ds and four FT-747GXs for DXpedition use, to be donated to the Albanian Amateur Radio Association at the conclusion of the DXpedition. Chip Margelli, K7JA, representing Yaesu, is one of the two Americans on the DXpedition team.

The opening ceremony was attended by 50 people and broadcast on Tirana television. Among those present were

## Albania in progress

(as Worldradio's November issue goes to press)

**NORM BROOKS, K6FO**

In the early stages of the Albania DXpedition, the observed operating times (at least as heard on the West Coast) have been 1900-0500 UTC and 1300-1500 UTC. The DXpeditioners are transmitting on 20M sideband at 14.145 and listening on 14.180 to 14.200; they are also transmitting at 14.214 and listening up a few kHz. CW transmission has been heard at 14.020 and they are listening up about 2 kHz. On 40M they have been transmitting at 7.020 and, a few days into the operation, at 7.035, listening up a few kHz.

The amateurs have been conducting themselves in a more gentlemanly manner during this operation than during the Bouvet DXpedition, when jamming was a big problem. Some US amateurs are still inadvertently transmitting outside the band, but they quickly realize their mistake and correct it.

The calls ZA1QA and ZA1HA have also been heard. ZA1QA has been heard transmitting and listening up inside the US phone band. Nighttime operation is reported to be good on 40M CW on the West Coast, depending on propagation; also, morning long path has been good on 20M phone.

As an added note of interest, the DXpeditioners are reportedly using rotatable dipoles on the WARC bands.

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high administrative officials from agencies including the Albanian Defense. During this opening day of Amateur Radio in Albania, the Albanian president was in Finland signing the treaty for European Security and Arms Reduction.

The call sign ZA1A is to be used throughout the operation. The ZA1A station is currently located in the PTT headquarters and it has been reported that access is limited and nighttime operation is nearly impossible. Frequencies being used are: CW—14.020, 21.020 and 28.020 MHz; and SSB—14.145, 21.245 and 28.345 MHz. Additional training frequencies designated are: 14.295, 21.395 and 28.695 MHz. Considering the huge demand for a ZA QSO, multiple contacts are strongly discouraged for the first two weeks to allow more first-ever Albania contacts. The goal of pro-

viding at least one initial contact with every DXer will be given priority over multi-band requests. More operating hours are being obtained every day, and a second station is to be operational near the end of September.

The first contact was to be between ITU headquarters in Geneva and the PTT building in Tirana. Training and on-the-air activity was to follow directly. The first contacts made by Albanian students were IN3CKK (CW) and IT9HZC (SSB). The Albanian student base is extremely qualified; the 11 participants include eight engineers representing several government and educational institutions.

This activity is being hosted by the newly established Albanian Amateur Radio Association (ZA1TL) and the Albanian PTT. The ZA1A roster of instructor/operators is: DF5UG, IK0FEW, I2KMG, I2MQP, JA1BK, JA1HQG, K7JA, N7NG, OH1RY,

OH1VR, OH2BAZ and OH2BH. Our most recent report assures that on the evening of September 17 the atmosphere was warm and friendly. All ministries were represented at the highest possible level.

Eager DXers are asked to wait until after the conclusion of the operation in mid-October to QSL. The DXpedition logs will be processed by computer and no QSLs will be issued until then. If you were lucky enough to have worked this history-making group, QSL to the Northern California DX Foundation, Inc., P.O. Box 1, Los Altos, CA 94123 (note the Post Office Box 1 is set up especially for the ZA1A operation; do not send cards to the NCDXF's regular Stanford, CA P.O. Box). To QSL via the bureau, send your cards c/o W6OAT (do not use the Callbook address).

We thank Chip Margelli, K7JA, for keeping us informed by FAX. □

## A matter of skill

LOU ANN KEOGH, KB6HP

Day one. Today I'm going to work Albania! So what if I'm operating barefoot and the tri-bander is at 47 feet. It takes skill, not just sheer power. There. The people on the DX repeater hear him on 20 so I'll go listen. Do I have his frequency right? It is 15 minutes later and I can copy him now. Good operator; and I can even copy him through the policemen. Hope propagation holds until he gets to 6-land. Threes. Fours. Fives. Sixes! Good grief, is everyone using the wrong VFO?

Try to spot the last call he worked—there! (bellow bellow bellow). Guess everyone else is using that spot too. I'll move some. He doesn't hear me there either. Oh no! He's calling sevens. (This goes on until the band shuts down.) But I'll get him long path in the morning!

Day two. This is the day I'll work Albania—probably. What's this? Some of the DX club haven't worked ZA yet? I feel better. Or do I? There is a lot of good gear and years of experience among them. Hmm. There—he's at 18070.9! Wait a minute; my DXCC is for phone. Do I want to send all those cards in to get a mixed DXCC at this point? Is my code speed up to par? I'd better wait . . .

Later. Hooray for Smitty! He just worked the ZA on 20. The last country he needed to work 'em all. Rats. I didn't get them on that go-around of area six, either. Still, it's a matter of skill . . . Maybe if I dropped in to visit my old pal Darryl. Just because he has a fine amplifier and monobanders on a 90 ft. tower . . . heck no! I'll work the ZA tomorrow. It's a matter of skill—sneak that call right in there—that's what I'll do. Besides, the big guns will all have worked him by then.

The next several days . . . Darned kids! Can't imagine why they're sick of hearing my call sign at regular intervals—I've explained that this is *Albania*, for heaven's sake. Funny, the pileup seems just as wild as it did two or three days ago . . . Hey, what is this? Only ten minutes for the sixth call area? Good grief. Maybe I should call Darryl. I could ask him how well

he's copying the ZA . . . (odd how many of those folks who hit the wrong VFO seem to be named Dummy). Sure wish I could hear the ZA better. Well I'd better get away from this computer. I have to make a telephone call. Hello, Darryl? □

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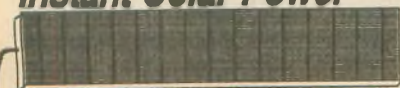
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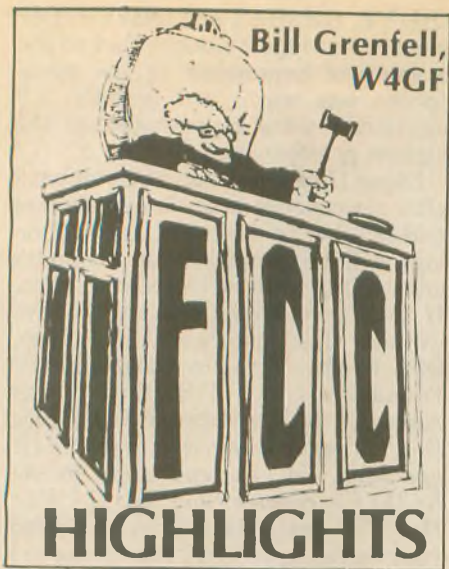


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No amateur station regulated by the FCC shall transmit messages for a third party to any amateur station located within the jurisdiction of any foreign government not listed above. This prohibition does not apply to a message for any third party who is eligible to be the control operator of the station. (*Westlink Report, 8/15/91*)

The FCC has again denied requests that amateur stations transmitting double sideband AM be allowed a maximum output two to four times greater than the output power allowed stations transmitting any other emission type.

The FCC revised the power measurement standard in 1983 to allow a maximum transmitter power output of 1.5 kW PEP (peak envelope power) instead of "... a power input not exceeding one kilowatt to the plate circuit of the final amplifier stage..." AM users said this represented a severe loss of privileges.

The Commission originally allowed a five year exemption for ham stations transmitting AM and then extended it to June, 1990. On October 24, 1990, the FCC denied two petitions that requested reconsideration of its position on double sideband AM. One was from SPAM, the Society for the Promotion of Amplitude Modulation. They said the FCC "... did not consider all the technical evidence it presented in its petition for rulemaking" and "... in-

creased interest in AM since 1983 could not have been anticipated" therefore reconsideration was warranted. The Commission disagreed.

Effective September 9, 1991, Part 97.313(b) is being revised to read: "No station may transmit with a transmitter power exceeding 1.5 kW PEP." All references to AM—shown in §97.313(b) as A3E—are ordered eliminated. (*Memorandum Opinion and Order, released 7/15/91.*)

All 2-by-1 W prefixed call signs have been assigned in every radio district except the 3rd call sign area. Two-by-two format call signs from the AA-AK blocks are assigned to Extra Class amateurs when 2-by-1's run out.

All Group A (2-by-1) format call signs have been assigned in Hawaii, Alaska and Puerto Rico. Group B (2-by-2) format call signs are assigned to Extra Class when Group A are depleted.

Group C (primarily 1-by-3) call signs have now run out in the 4th, 6th and Puerto Rico call districts. Alaska will be next! According to the rules (adopted by the Commission February 8, 1978, Docket No. 21135), Technician/General Class amateurs are next assigned Group D (2-by-3) format call signs when all Group C have been assigned. Upgrading Novices holding a 2-by-3 format call sign in the 4th, 6th and Puerto Rico call areas will no longer be able to request a Group C call and will be automatically assigned another more recent 2-by-3 format call

### Amateur Service International arrangements as of 7/21/91

The following countries have made the necessary arrangements with the US to permit an amateur station regulated by the FCC to exchange messages for a third party with amateur stations in: Antigua and Barbuda, Argentina, Australia, Belize, Bolivia, Brazil, Canada, Chile, Columbia, Federal Islamic Republic of Comoros, Costa Rica, Cuba, Guatemala, Guyana, Haiti, Honduras, Israel, Jamaica, Jordan, Liberia, Mexico, Federated States of Micronesia, Nicaragua, Panama, Paraguay, Peru, Philippines, St. Christopher and Nevis, St. Lucia, St. Vincent and the Grenadines, Sierra Leone, Swaziland, Trinidad and Tobago, United Kingdom (special event stations with callsign prefix GB followed by a number other than 3), Uruguay and Venezuela.

The United Nations also has arrangements with the US to permit an amateur station regulated by the FCC to exchange messages for a third party with amateur stations NU1TU in

## 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 September 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	Group B	Group C	Group D
0	Am. Extra	Advanced	Tech./Gen.	Novice
1	AA0FX	KF0TY	N0PHK	KB0JML
2	WV1Q	KD1DK	N1KBQ	KA1ZGQ
3	AA2GI	KF2DZ	N2NVS	KB2NOU
4	WR3D	KD3YN	N3KKO	KA3ZJJ
5	AC4JB	KO4IZ		KD4EMD
6	AB5AM	KI5TL	N5VZR	KB5QHU
7	AB6EX	KM6HY		KD6AKN
8	AA7JU	KG7TP	N7TSX	KB7OBU
9	AA8EU	KF8PI	N8QAN	KB8MZP
	AA9BV	KF9FL	N9MNQ	KB9HEZ
North Mariana Is.	AH0K	AH0AH	KH0AN	WH0AAQ
Guam	KH2S	AH2CN	KH2FK	WH2AMU
Johnston Is.	AH3D	AH3AD	KH3AG	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6LJ	WH6BO	WH6COG
Kure Is.			KH7AA	
American Samoa	AH8D	AH8AE	KH8A1	WH8ABA
Wake Wilkes Peale	AH9A	AH9AD	KH9AE	WH9AAH
Alaska		AL7NM	NL7ZA	WL7CCU
Virgin Is.	NP2S	KP2BZ	NP2EQ	WP2AHK
Puerto Rico		KP4SH		WP4KLD

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sign if they do! Contrary to the wishes of many amateurs, the FCC has said they will not be going back and reassigning unused K and W 1-by-3 format call signs. (FCC, Gettysburg, Pennsylvania)

The US Court of Appeals for the Ninth Circuit in San Francisco has ruled that the FCC grants no right to its licensees to erect antennas.

Vernon Howard, W6ERS, of Burlingame, California, filed suit against the city when he was denied permission to construct a 51 ft. radio antenna in his backyard. Burlingame requires a special permit for ham radio antennas over 25 feet in height. Citing PRB-1, Howard argued his right to erect an antenna was guaranteed by federal preemption.

The city initially declined to issue the required permit on the grounds of safety, aesthetic concerns and potential disruption of radio and television signals. The District Court, however, agreed that the FCC had partially preempted the city's zoning powers and ordered the city to reconsider the application.

The city eventually granted the permit, but denied Howard's claim for recovery of attorney's fees. The Appeals Court said that the Communica-

tions Act grants no right to radio station licensees to erect antennas.

The June 19, 1991 decree by the Appeals Court declared:

In PRB-1, the FCC declines to specify absolute height limitations and left a city free to deny an antenna permit as long as it considered the application, made factual findings and attempted to negotiate a satisfactory compromise with the applicant . . . the Communications Act nowhere mentions any right to erect antennas for ham radio transmissions, nor does it purport to create binding obligations on local governments to allow antennas of any particular height.

The FCC declaratory ruling entitled PRB-1 is the only regulation which addresses the conflict between ham operators' need for effective (i.e. tall) antennas and a municipality's enforcement of its local zoning ordinances. . . . The language of PRB-1 itself confers only a limited preemption, and promoted the federal interest in Amateur Radio operations rather than any individual operator's right to erect an antenna of his or her choice. Furthermore, it entitles the operation only to "a reasonable accommodation" between the desired antenna height and "the legitimate interests of local governments in regulating local zoning matters," not to an absolute preference.

The court declined the city's invitation to construct guidelines for handling future applications argued under PRB-1 and agreed with the FCC that municipalities must evaluate each application on its own merits. (W5YI Report, 8/1/91)

The Commission has rejected three petitions for reconsideration of last December's decision to exempt severely handicapped amateurs from the 13 and 20 wpm Morse code requirements. The FCC has not yet issued the full text of its decision. We have learned, however, that the FCC for the first time clarified the term "severe handicap" as a disability that extends for more than 365 days after the certification.

The announcement comes at a time when some amateurs are thought to

be asking for exemptions based on handicaps that do not interfere with telegraphy. The FCC does not make medical diagnoses; it will exempt disabled amateurs from the higher (13 and 20 wpm) speed telegraphy requirements if it receives the necessary doctor's documentation of the severe handicap.

The beginning 5 wpm Morse code requirement cannot be waived, however, since international requirements require telegraphy knowledge when the operation takes place under the 30 MHz level. VEs are required to "accommodate" severely handicapped examinees at the 5 wpm level—even to the point of accepting a sending test for code receiving, or just identifying all 43 characters.

Dennis C. Brown (call sign unknown) of Arlington, Virginia, found numerous faults with the exemption decision. His key argument was that if demonstration of code skill is necessary to protect the public interest, then it should not be waived for any applicant. On the other hand, he argued, if the public interest does not require that applicants demonstrate proficiency, then there is no valid reason to maintain the requirement for any applicant.

"Without considering, by fact and reason, whether the public interest would be served by permitting unqualified persons to share access to a certain congested portion of the public spectrum, the Commission determined that a person who cannot pass a necessary test need not do so," he said. He indicated that this is akin to exempting blind persons from the driver's license vision test because their blindness prevents them from passing the test.

He suggested that the FCC could have issued a higher class license to the disabled applicant, restricted to those bands not allocated for high speed Morse code. Brown also said the FCC failed to explain the changed facts or circumstances that would warrant reversal of its earlier, no-waiver policy. He said that ITU regulations require demonstration of ability to send and receive Morse code, but the FCC's position is merely that the examinee "know" the telegraphy characters.

"The Commission should either determine that protection of the public interest requires all applicants to demonstrate a certain level of Morse code proficiency, or it should prevail upon the ITU to allow the United States to withdraw the Morse code requirement for all," he said. Nevertheless, Brown's petition was denied. (W5YI Report, 9/1/91) □

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# Coup

(continued from page 1)

ple, however, were hindered by KGB jamming. Gene Shablygin, RA3AA, and Walt Gromov, UV3GM, solved the problem by getting their Alpha 76A amplifier through the barricades and up to the station.

Romeo Stepanenko, UB5JRR, helped organize the R3A station (14.175) and was its chief operator. He worked tirelessly with others from the Russian Amateur Radio Emergency Services (RARES) through the three-day siege of the "Russian White House." The RARES team continually transmitted information about developments in both Russian and English. Brajenko's wife, Helen, served as an interpreter and translator.

The station also collected vital information. Since the Soviet military had



severed Yeltsin's communications, he and the coup resistance would have remained isolated if it were not for the R3A station. Amateur Radio operators all over the Soviet Union kept Yeltsin informed of the coup's progress and the people's reaction to it.

The brave operators of the R3A station were nearly overwhelmed by the magnitude of that week's events. No one expected to see the crumbling of the communist regime in his lifetime.

"Everybody from Yeltsin to the people in the streets felt like one," Brajenko described later, "because they were defending democracy and the freedom of the Russian people and of all the people in our country."—*Information extracted from Ron Delvin's article in The Morning Call, August 25, 1991, submitted by Bill Goodman, K3ANS, and from an ETO Inc. press release, submitted by Richard Ehrhorn.* □

# Use beacons to learn code

## SI DUNN, K5JRN

Long after a no-code Technician license, American radio amateurs will continue to use Morse code in the high frequency bands below 30 MHz, as well as in the very high frequency (VHF), ultra-high frequency (UHF), and microwave segments where weak-signal, long-distance (DX) communications are desired.

Experienced operators can copy the dits and dahs of Morse code even when signals are so weak that they test the lowest limits of audibility.

Beginners who have learned Morse code from crystal clear audio tapes, however, often have difficulty at first making the transition to copying on-the-air signals. Suddenly, along with mentally translating the patterns of sounds into characters, they now have to contend with static crashes, heterodynes, interference from nearby stations, fading, widely varying sending speeds, and other distractions.

One kinder, gentler way to introduce beginners to copying on-the-air Morse code is to let them tune in to some of the navigation beacons that populate the low frequency (LF) spectrum between about 190 and 450 kHz.

These automatic beacon stations transmit their identifying call signs—usually two or three Morse

characters in length—over and over, 24 hours a day, seven days a week, at equivalent speeds of about eight to 12 words per minute. LF beacons are found in all parts of the world, and they have been used as navigation aides for decades by aircraft pilots, ships'

navigators, yacht owners, and others.

A few of the best-known and more widely heard beacon stations include: TUK, Nantucket, MA, 192 kHz; GLS, Galveston, TX, 206 kHz; AP, Denver, CO, 260 kHz; IN, Indianapolis, IN, 266 kHz; IGD, Los Angeles, CA, 332 kHz; (please turn to page 31)

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WORLD RADIO, November 1991 11



## Small world

(continued from page 3)

Russian magazine, *Farnitsa*, in the US, and until 1927 he corresponded with and sent money to his relatives in his home city. But later, Firsov wrote, "the times became troubled in Russia, and even the personal signature on the photo of GDG had to be erased much to the regret of the Firsov family."

Firsov closed his letter to me with a plea: "It is of great concern and unfairness that no one knows the date of the death of GDG or where he is buried," and he said he would be very thankful if I could tell him something about the fate of GDG!

It sounded like an impossible job. The single most important clue that I had was that GDG was a writer. I went to the public library in Flagstaff, and came up with nothing. The librarian suggested that I write to the State of Wyoming Reference Library. I never received an answer, so I returned to the library in Flagstaff and enlisted the help of one of the librarians whom I knew personally. As I watched over her shoulder, my friend Elma poked the author's name in her computer and found that, indeed, there had been an author by that name. She then said she would write to a friend in the Arizona

State Reference Library and inquire if there were any books by GDG in the Phoenix Library. We received a reply that surprised us. Although there were no GDG books there, the librarian in Phoenix advised us that he had a friend in a Connecticut Library who was a collector of Russian books and he would write to him to see if he knew of any books by GDG.

In a short time, we received the following from the librarian in Connecticut:

"Grebenshchikov did write this self-styled Siberian 'epic' called *The Churayev Brothers*. It was published in Russian, some of it at the Russian Village in Southbury, which he founded and which is also known locally in his honor as Churayevka." The librarian also stated that his secretary was living in GDG's house!

About the same time I received this information, another letter arrived from Firsov telling me that he had

made a mistake, and that his ancestor had not gone to Wyoming, but to Connecticut! Having the name of the lady who lived in GDG's house, I wrote to her, and received a very nice letter in return giving details about the life of GDG in the US. One of the interesting things he did was to build a small chapel in the period 1931 to '35 dedicated to St. Sergius to commemorate the destruction of the Moscow Cathedral. The village that he founded in Connecticut is now a Registered National Historic Site (settled by GDG in 1923). In the letter, the lady told me that in his later years, GDG and his wife, Tatania, journeyed to Florida for the winter and, in 1964, he died there. Only 10 to 15 days later his wife died and they were buried side by side in a cemetery in Lakeland.

By a strange coincidence, I have a very old friend who lives in Lakeland. Roger, W4PNK, and I have been friends since we lived in the small community of Brilyn Park in Falls Church, Virginia, back in 1948 when my call was W4JUY. I wrote to Roger, outlining my problem, and gave him the information on GDG. He drove out to the cemetery but found no record of GDG, but before leaving he spoke with the custodian who suggested that he try another nearby cemetery. Roger drove to the other cemetery and not only found the grave, but he photographed the headstone and sent the photos to me. In early June, my daughter and I were in New York visiting relatives, and we rented a car and drove up to find the Russian village. Unfortunately, we arrived on a Sunday morning and almost all of the villagers were away to attend church. We did manage to take a number of photos that I knew would interest Firsov. I sent all the information and pictures to him and you can imagine his return letter to me! He said that the story made the Barnaul newspaper, and that his friend Mark Gudalevich, a writer of Altai history, was delighted. As Firsov wrote, "I told Mark that our radio amateurs could not do—because they are splendid people."

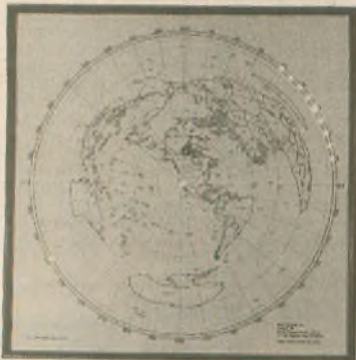
I thought about his kind words for a moment, and then I recalled a statement that my old friend, W4IG (a Silent Key), used to be fond of saying: "Ham radio triumphs again!"

*This story, after all its pieces finally came together, gained national television coverage this last spring. William Schuchman, W7YS, expects a visit from new Russian friends Vlad, UA9FAR, and Natalie, RA9FAL, San-nikov this fall. W7YS met the couple while operating as 4L9AG in Barnaul (their home is in Perm) on his August '90 DXpedition to Oblast 141, which he took with Michael Sharp, NG7S.* □



G.D. Grebentshchikov built the Chapel of St. Sergius in the early 1930s to commemorate the destruction of the Moscow Cathedral.

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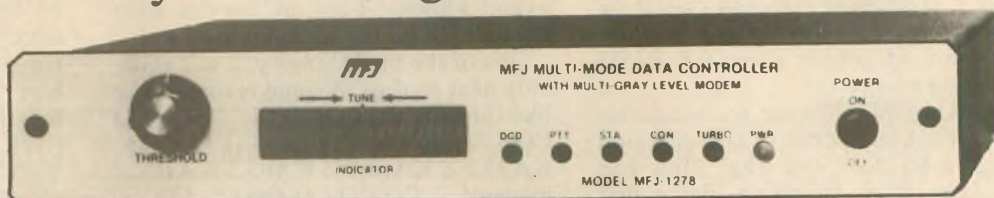
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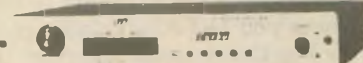
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# Talking dits and dahs

PHIL SCOVELL, AF0H

Over the past 10 years, synthesized speech devices have changed the way blind people live. From the first talking desktop calculators in the mid 1970s to the current nearly pocket-size talking computers, the blind are able to hear what others have taken for granted.

We can hear synthesized time with talking watches strapped to our wrists, balance our checkbooks, determine the outdoor and indoor temperatures, read our personal mail, check our own blood pressure, measure the size of a room, read the back of a cereal box or the washing instructions on the inside label of clothing, check our weight by standing on a bathroom scale, set a wake-up alarm to the exact time, check the current date, call computer bulletin boards, read information off CRTs, and even read books with the aid of synthesized speech.

The electronic speech was also once expensive. My first talking calculator was \$400. Now they are pocket-size and can be purchased for \$50 or less. Even talking computers, once bulky and financially beyond the ability of all but the very rich, are as small as a video cassette with Braille input keyboards and cost under \$1,000. Wrist watches speak the time, play a wake-up tune, and offer stopwatch features to the second, all for under \$50. Laptop computers house their own built-in voice synthesizers and, for a complete package, cost under \$1,500. High quality voice synthesizers, once valued at thousands, are now available for under \$500, some even under \$100. Even frequency readouts; once specially designed and sold for more than \$300, now are offered as digital transceiver options for less than \$50.

I have been a ham since early 1966. My first Novice station was a crystal controlled DX20 and a BC348 receiver. Times have changed! As much as ham radio has advanced for sighted operators over the past 25 years, however, it has expanded to even greater proportions for the blind ham. Blind operators are now able to check their frequency to a tenth of a Hertz, rotate to an exact beam reading, read their own

SWR, accurately measure voltage, resistance, and current, copy RTTY and ASCII, log, look up DX call sign prefixes, scan logs for previous contacts, and even use packet radio, all with the aid of talking devices.

The greatest advancements have been in the area of talking computers. Dictionaries, thesauruses, books and magazines, newspapers, manuals, tutorials, and other printed material are being made available in text format; affording the blind computer user textual freedom independent of sighted assistance. Additionally, what used to take yards of shelf space is now contained on tiny floppy disks. Perhaps the greatest blessing is the rapid retrieval of information. I used to have a file cabinet full of hundreds of 4x6 cards containing addresses and phone numbers. Sometimes finding a misplaced card took an hour, only to discover it had fallen behind the drawer, and sometimes, of course, it was never found. Even retrieving a simple address of a friend might take two or three minutes using my Braille cards. Now, with my talking computer, I can scan hundreds of addresses in seconds and locate the exact one without ever pulling a drawer. I can even locate a ham friend's address and phone number by simply typing in his call sign. Furthermore, I can store such things as old letters for later examination, proofread my own typing, check spelling (thank the Lord), and transfer information over phone lines quickly and efficiently without ever asking a sighted friend to help.

Talking computers, although now affordable, are still beyond the financial capabilities of most blind people. Sometimes state agencies help, but that assistance is generally limited to students or those in need of such for employment purposes. Although a talking system can be purchased for perhaps less than \$1,000, a standard talking IBM compatible computer setup, including special screen reading software and voice synthesizer, typically runs about \$2,500.

Next time you sit down at your station to call CQ, close your eyes and

think about the value of synthesized speech. Although an expensive component to complete a ham station, a talking computer is a wonderful tool that enhances a blind ham's dits and dahs.

Phil Scovell has recently launched *Sound of Sight, Inc.*, a nonprofit organization which operates a Christian cassette lending library as well as a program in which he attempts to obtain grants to provide talking computers and programs to blind people all over the country. Phil also operates a bulletin board (303/935-6323) which features handicapped users' as well as ham radio programs. □

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# PUBLIC SERVICE

## ARES exercise in Salt Lake County

ROBERT A. EDER, N7RLJ

I would like to share a valuable experience from a recent Salt Lake County ARES (Amateur Radio Emergency Services) exercise.

The exercise was held on a Saturday morning and lasted from 9 a.m. until noon. There were about 20 participating members who were required to have at least mobile 2M equipment. Participants were encouraged to use UHF and packet if possible. Everyone was mobile except for the emergency coordinator and base station.

The exercise required each participant to follow instructions in envelopes which were sealed until the emergency coordinator gave the go ahead to open them. Each envelope contained about 10 instructions, such as the following:

1. Find the location of a certain fire house in Salt Lake County and obtain information about the number of firefighters staffing it.

2. Transmit a certain message (found in the instructions) in the proper format to the correct station (also found in the instructions).

3. Receive a certain message (also found in the envelope instructions) and comply with its directions.

4. Assume that your microphone cable fails, report the problem and your solution to the exercise coordinator.

Besides being fun, this exercise built in many important lessons, including staying calm under pressure and following instructions in times of crisis.

Since most of the traffic handling involved formal messages, participants

had lots of practice in giving and copying formal traffic. Participants were asked to transmit messages which had to be summarized and restated in workable form. More than one participant tried to send messages before adequately summarizing, the result being a communications bottleneck. However hilarious and incongruous such misreading of formal traffic seemed at the time to other ARES participants, the mistakes taught valuable lessons of what not to do if and when the real emergency strikes in the future.

The exercise was written and prepared by John Parken, KA7GZH, the Salt Lake County ARES assistant emergency coordinator. Parken, a practicing attorney, said that the exercise had two main goals: to give every participant the opportunity to handle lots of traffic; and to see how each participant followed instructions in a simulated emergency. □

## One after the other— Mt. Whitney rescues

JAMES W. YOUNG, WB6FNI

As a radio amateur for 30 years and life member of the American Radio Relay League, I have been involved in numerous radio interests, but none as rewarding as the following circumstances. Meeting people via Amateur Radio has led to life-long friendships with hams all over the world for myself and my wife, Karen, N6PJJ. However, becoming more intimate with others in serious emergency situations, and using this medium of communications to aid them, has left us with a broader concept of a greater potential yet to be fully tapped. I am also involved with my church's emergency communica-

tions facilities, and I am a wireless operator of the W6RO station aboard the Queen Mary ship in Long Beach, California.

During the late afternoon of July 23, on the Mt. Whitney trail just above Trail Camp (12,000 ft. elevation), Eddy and Lynn Costello and hiker friend Allen, all from Watsonville, California, were descending the last of the switchbacks just above the camp. Lynn, age 29, twisted her right ankle severely, possibly breaking it. The weather was dark and cloudy with a light snowfall. Although I was unaware of the incident when it happened, I soon became involved when Eddy ran past me as I was standing outside my tent at Trail Camp. Asking if there was a problem—and his response in the affirmative—I pointed to my radio (ICOM IC-02AT) and he stopped. He explained what had happened and asked if I could help, using my radio. My son Bryan and I followed him up the trail to assess the situation. Eddy and his friend Allen slowly carried Lynn down the trail into camp.

Using the Mazurka Peak Amateur Radio repeater, I called my long-time friend Don Stansifer, N6RU, at Tom's Place northwest of Bishop. (Don and my family became very close friends during my 1987 ascent of Mt. Whitney, using radios for an added measure of safety.) I alerted Don of a potential

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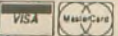


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emergency, and Eddy gave the okay for a 911 call. We relayed through a dispatcher to the Inyo Search and Rescue Team, and the wheels were put into motion for getting Lynn off the mountain.

Mike Levine, WA6MXR, another ham and personal friend of Don Stanifer, came on the repeater frequency. He is in charge of all the radio equipment for the Inyo National Forest and was in direct contact with the dispatcher for the Search and Rescue Team. I was able to talk directly to him about the poor weather at Trail Camp and we maintained frequent radio contact and continued to assess the weather conditions. During this, Karen and I helped set up the Costello's tent to get Lynn out of the snow, and possibly prevent her from going into shock.

Finally, after 7 p.m., the weather broke and through Mike the rescue helicopter was eventually sent aloft. With other members of my climbing group used as spotters and wind direction checkers, the chopper landed at Trail Camp. Lynn was transported to Southern Inyo Hospital in Lone Pine, and later released with a severely sprained ankle. I let Eddy know the moment Lynn was on the ground in Lone Pine. Much relieved, he and Allen broke camp and descended the trail to Whitney Portals, got a ride to Lone

Pine, and by the next afternoon were back home.

The very next day, shortly after noon, while I awaited the arrival of the rest of my group at the summit of Mt. Whitney in beautiful weather, I discovered a man just over the edge of the southeast face. Puzzled, I asked him if he was all right. He said there was a problem! He slowly climbed up the remaining rocks, pulling on a rope, helping his wife do the same. They had successfully climbed the east face of Whitney, but he had suffered a fall some two hours earlier during their six-hour ascent.

Terry Loboschefskey and his wife, Paula, of Park City, Utah, had left Iceberg Lake at 6 a.m. After four hours, Terry slipped and fell 20 feet, breaking two ribs as well as his glasses (fortunately he had a spare set). Unable to go back down, they kept climbing. Just like the evening before, I offered to be of assistance using my portable radio. He was frustrated at himself for the fall and didn't want the attention or fanfare of a rescue, but his wife and I were able to convince him otherwise.

I called Don, N6RU, once again. The previous night's emergency was still fresh in our minds. Once again the wheels were set into motion, 911 was called, and the Search and Rescue Team was alerted. Shortly afterwards, another group arrived at the summit including a registered nurse, Rebecca Hayes from Flagstaff, Arizona. She assessed Terry's injury, confirming his need to be transported off the mountain. Had he attempted to walk down he could have punctured his lung and seriously lessened his chances for survival. Terry and his wife were taken off the summit just before 2:30 p.m. by the Search and Rescue helicopter, allowed to pick up their camp supplies at Iceberg Lake and then transported to Southern Inyo Hospital where he was found to have four broken ribs and a bruised lung. The doctor told Terry that if the fall had been just a little more severe, it would have been fatal.

I remembered using the radio the previous evening and thinking nothing of it. Now I stared at it, realizing a man's life may have been spared by its tiny but life-giving signal. □

## SWR: The truth and the lies

### J. vanLOGGENBERG, ZS2LR

First of all, let us consider a few basic terms:

**Source Power** — the power a transmitter delivers at the input of the transmission line

**Incident Power** — power going up the transmission line toward the antenna

**Reflected Power** — power that flows in a separate wave down the transmission line toward the transmitter. It is not absorbed at the junction of the antenna and the mismatched line.

**Conjugate Match** — a system of resonance that establishes a unilateral

match between a transmitter and the transmission line, such as a matching unit, or as it is misnomerically called, Antenna Tuning Unit. The Pi-section output tank circuit also provides such a match.

The following is not intended to be a negation of all that is spoken concerning SWR readings, but the garden does need weeding from time to time. The beautiful blossoms need to be seen once again.

There are valid reasons for maintaining a low SWR in certain circumstances, but the reasons do not include:

a. "With a high SWR, you can't get out."

b. "This antenna is better than the other because the SWR is lower."

c. "Get your SWR down and your signal will be stronger."

d. "An SWR of more than 2:1 will reduce your signal strength."

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work into a load of from 30 to 100 ohms, can work just as efficiently at an SWR of 2:1 as it can at 1:1, when using a 50 ohm line. Solid state rigs having an optimistic output impedance rating of 53 ohms have a very limited antenna matching range and cannot obtain a conjugate match if the SWR is much greater than 2:1. In such a case a matching unit, between the transmitter and line, is required to obtain a conjugate match. The so-called "ATU" cannot tune the antenna, but it can provide a conjugate match and reduce harmonic radiation, depending on its basic circuit of course.

With a high SWR, solid state final amplifiers may be grossly under or overloaded, resulting in damage to the power stage. However, the damage is not due to reflected power.

Reflected power is not lost, imaginary or wattless. It is just as real as incident power. Current reversal at the antenna mismatch causes a 180 phase shift between current and voltage in the reflected wave, which sees only the resistive components of the line impedance. If reflected power were wattless, it would not be measurable on a meter connected to the output of a directional coupler, as it certainly is measurable.

Reflected power is not lost. It does not break the law of the conservation of energy. When the down-going reflected wave meets the conjugate match at the transmission end, it is again reflected, turned around by 180 once more to an angle of phase difference, with the incident power of 0, and travels up the line again. It can be said that it has been recycled.

Standing waves on a transmission line do not waste power. The loss is not nearly as much as is often believed. The actual loss depends on the type and length of line used. The loss in the line due to reflected power is caused by the reflected wave having to traverse the line length three times; up, down and back again. The better the quality of feeder, the less the loss will be.

On open wire balanced feeders, it can almost be neglected. Due to line-losses, less reflected power is recycled. However, both the SWR and line losses must be serious for the actual losses to be significant.

For example, a perfectly matched resonant antenna at 3.75 MHz, fed by 10 meters of RG8/U, would have a line loss of 0.32dB. At either 3.5 or 4.0 MHz, the SWR would rise to about 5:1 and the extra loss would be about 0.48dB. Thus, the total loss is 0.8dB.

Such a loss in power would be barely noticeable. 6dB power loss or gain is equivalent to one S unit on a meter calibrated for the operating frequency. Of course, the losses will increase if

coaxial cable, such as RG58/U, is used.

A balun transformer can be a useful device, but not for lowering SWR. A good balun eliminates current flowing on the outside of a coaxial cable, the result of feeding a balanced antenna with an unbalanced line, such as coaxial cable.

Such current can cause feedline radiation, BCI and TVI, as also current induced in the outside of the cable due to antenna radiation onto the feeder at an acute angle to the antenna. Voltage and currents due to standing waves flow on the inside of the cable and cannot be radiated. Currents flowing on the outside of the cable make it impossible to accurately measure the SWR.

Leakage between the forward and reflected circuits of an SWR meter also cause inaccurate readings. The use of an SWR bridge, not calibrated for the line impedance, also produces inaccurate readings. If any of these conditions exist, alone or together, the SWR reading will change as the position of the meter is moved along the line. With no current on the outside of the cable and an accurately calibrated meter, suited to the line impedance, will read the same along the line, except for a small change as it is moved away from the antenna due to line losses, which causes attenuation of the reflected wave.

A lower SWR does not mean a stronger radiated signal, although some of the things that happen may fool you into thinking so. A ferrite cored balun, being saturated by reactive currents, operating far off frequency, might show a LOWER SWR. The power used in heating the core is then subtracted from the radiated signal producing a weaker signal, while the SWR looks good.

A similar situation may be produced by using a multiple radial system for a ground plane antenna. This lowers the ground resistance, producing a HIGHER SWR. On the other hand, by

reducing the number of radials, the ground resistance is increased, producing a lower SWR. The effect on the signals in both cases is the opposite to what you might expect when considering the SWR reading. Again, a similar effect may be caused by a bad connection on the antenna system, having a high resistance in series with a low impedance antenna. The SWR may look good, but the signal is not going to look good.

A loading coil in the antenna may also produce the same effect. A high resistance coil may produce an SWR of 1.3:1, while a good low resistance coil may produce an SWR of 3:1. While a good SWR is indicated, power is wasted in heating the resistance.

In summary, many Amateurs are frustrated by unnecessary fears about misunderstood SWR readings. With a conjugate match obtained by the judicious use of a good matching unit (misnomer "ATU") the antenna can be made to radiate efficiently even if it is not exactly resonant. Higher SWR on open wire feeders does not cause appreciable losses. Mismatch does not produce TVI. Harmonic radiation, particularly spurious radiation, does. A good SWR does not mean a better signal. Reflected power does not flow backwards into the transmitter. —Radio ZS

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# The last hamfest

RICHARD STECK, W9RS

The last hamfest is coming and some of us will have the sad experience of attending it. It will not be much different from a funeral wake.

I'm not referring to mammoth hamfests like Dayton. Those will probably last for some time. I'm writing about the hundreds of local 'fests held across the country. The end of these is near!

I've attended hamfests for many years. I can remember going to my first about 25 years ago. After walking the first 100 feet into Santa Fe Park, once home to some of Chicago's best 'fests, I was hooked. It had to be paradise. I was destined to become another wandering hamfest junkie. I would look forward to each season of Chicago-area hamfests. I would stash my dollars and aging radio junk for the next 'fest on the calendar.

Today, hamfests have changed. In fact, they have changed so drastically that I don't expect hamfests as we know them to continue for more than a few years.

What are the changes, and what might have caused them?

Are there far fewer hams around to attend local hamfests? The statistics

wouldn't really support that explanation. Are hams less intensely interested in their hobby? I doubt it. This ham and tens of thousands of others travel to Dayton like some others travel to Mecca. So what's causing most local hamfests to atrophy?

Let's travel back in time and look at the enchantment offered by those early local 'fests.

In those days hamfests consisted of at least a dozen larger commercial dealers with tantalizing tables of new Icom, Kenwood, Drake and Yaesu gear, and endless rows of densely packed, yawning automobile trunks and tables displaying literally tons of used equipment of all ages and in all conditions. That was the simple ingredient for hamfest success—plenty of ham radio equipment. Given that ingredient, nature would take its course and equipment and money would flow freely in all directions. You could sense that people were having fun and nobody left early.

The anatomy of today's hamfest is distinctly different. You might see, at most, one or two commercial ham radio dealers who justifiably display a bare minimum of new equipment (after all, why should a dealer invest in an inven-

tory of ham gear he doesn't expect to sell, and then travel hundreds of miles to a hamfest where he expects to encounter dwindling attendance?). You will see a sparse number of sellers and less haggling than ever, and probably a few determined hams desperately trying to sell something they couldn't get rid of at the last two hamfests.

You might also see a motorcycle for sale, army surplus ammo cases, ski boots, plastic flowers and some double-breasted suits. Great stuff at a flea market, but who wants it at a real hamfest?

What is causing the extinction of the hamfests? I suspect there is a combination of causes all coming together to snuff out hamfests as we knew them.

My guess is that the primary cause is the devaluation of the United States dollar against the Japanese yen. The dollar converts into less yen, and consequently less Icom HTs, etc. Twenty-five years ago, most of the ham radio manufacturers were American. About 15 years later, it was the superior technology of the Japanese and the strong buying power of the dollar that caused first a trickle and then an avalanche of Japanese equipment to (please turn to page 22)

## Bank is stable

In this day of financial institutions failing at an alarming rate, it is comforting to know that at least one bank is stable in today's economy. That bank is operated by the Idaho Society of Radio Amateurs and its assets are in the value of its inventory of electronic tubes. The current inventory stands at 3,500 tubes with over 500

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The Idaho Amateur Radio Tubebank is operated solely for the benefit of those individuals who wish to keep some of that old tube type equipment in running condition. Since 1978 the tubebank has sent electronic tubes to many Amateur Radio operators in the US and Canada. The primary purpose of the tubebank is to centrally locate excess tubes in one location and make them available at minimal cost to those individuals who need them to restore and keep equipment operating.

For the most part, Idaho amateur operators have sent their excess tubes to the bank for distribution. Some donations of tubes have come from Utah and Florida. All donations to the bank are tax-deductible in accordance with current IRS regulations concerning donations to non-profit organizations. If you would like to "share the wealth" of your excess tube inventory, we would like to hear from you.

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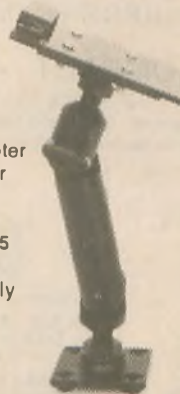
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# Hamfest

(continued from page 20)

squeeze American manufacturers out of the market. As long as the dollar was strong, hams benefited. When the dollar weakened, as it has in recent years, hams lost out.

A natural cascading effect follows devaluation. Far fewer buyers of new ham equipment, especially major pieces like HF transceivers and 2M handi-talkies, causes fewer sellers of used equipment (for example, 10-year-old HF transceivers), which causes fewer buyers and sellers of used equipment, etc., down the line.

Today, it's almost impossible to find a five-year-old 2M transceiver at a hamfest because most hams are justifiably clutching onto whatever they have, dreading the outlay for a new transceiver. A new piece of gear tends to carve out a bigger chunk of one's paycheck than ever before.

The second major cause of hamfest extinction is the increasing appearance of non-ham equipment at the 'fests, primarily computer equipment.

Don't get me wrong about computers. I'm writing this on a PC word

processor. I love computers—but I despise them at hamfests. Computer sellers and dealers have become so numerous at 'fests that they are clearly changing them to joint hamfests/computerfests. This has to be a turnoff to a large part of the ham attendance.

You don't see ham gear at a computer swapfest, why all the computer nonsense at hamfests? I can see computer equipment to the extent that it clearly supports ham radio, e.g. RTTY, packet, logging, etc. But when it reaches the proportions it has, it becomes a hamfest turn-off.

Other causes of hamfest demise, though minor, might include the longer lifetime of solid-state equipment. Equipment bought during the last ten years lasts longer than equipment bought during the previous ten. So why pay up big bucks for a few marginally useful new features? Who needs turning signals on a transceiver?

Can hamfests be saved? Maybe. We can't control the exchange rate between the dollar and the yen, except to wait for that pendulum to swing in a more favorable direction, so that avenue is probably out. Even if the dollar were to appreciate dramatically,

I doubt that you would see your friendly dealers rushing to lower their prices on the latest equipment. So what can we do to save the hamfests from extinction?

I'm not entirely certain that we can change the quality of local hamfests, but we should try.

Since clubs often derive significant revenue from hamfests, they should face the issue of the vanishing bread now, before that revenue stream is curtailed, by enforcing a "radio only" rule at their next 'fest. By that I mean if it isn't radio, or radio-related, it should be strongly discouraged.

If that seems too harsh, clubs should try to persuade sellers of all non-radio items to exhibit such items in a separate area, apart from the radio section of the hamfest. In that way, we can at least tell if the event is mainly a hamfest, a general flea-market or a computerfest.

If we can accomplish this, we might be spared the indignity of seeing my long-departed Collins 75S3B on a table in the midst of ski-boots, a bowling ball, old copies of *Playboy*, jewelry, plumbing supplies and surgical tools.—*Badger State Smoke Signals*, Baraboo, WI □

## Writing letters to the editor

Amateurs anywhere can be attacked at any time by unwarranted legislation and regulation. It is a shame when Amateur Radio operators fall victim to some half-baked ideas cooked up by politicians trying to make their futures by attacking rather than building. Amateurs must battle back.

Many of these battles are waged in the press with articles and editorials. Amateurs need to have their opinions showing up on these editorial pages. We must fight on this intellectual battlefield in addition to all else we do to combat ignorance.

Letters to the editor are important because they can indicate strong community support the media may not have known was there. The editors expect associations and clubs to ship a letter on the club stationery protesting a proposed antenna height restriction. Though that letter may represent several hundred hams in a community, it still is only one letter on his desk. If everyone writes, all of a sudden he has a pile on his desk.

First, you are getting his attention. Then when one of the letters gets published you have your point of view before the public. The facts are now where they belong. You can debunk some of the myths. It is a good feeling.

Here are some general guidelines for those willing to try. I realize that for many, writing goes back to high school composition classes and can be a source of discomfort. But remember,

we are still a democracy in which the pen is mightier than the sword.

These rules can also be applied to writing to your legislators and other regulating agencies. Keep in mind always, you are a citizen and a voter in this society and not only deserve to be listened to, but also have a responsibility to speak up if you see something wrong.

Here we go:

1. Have a clear goal in mind with your letter. Define your ideas and know exactly what you want to say. An outline may be helpful. At least make a list. Organize your thoughts so they can be easily followed.
2. Respond to a particular article or news item that is already in the paper when possible. If it hasn't been in the paper, the editor may have already decided his readers aren't interested. You need to be relevant.
3. Respond in a timely fashion. In the news business an item must be "hot" enough. Time is a critical factor.
4. Don't get hysterical. A bunch of wild claims, ranting with a flock of unsubstantiated rumors and name calling can present the editor with a piece that will show you as an ignorant, shouting rube. This kind of letter does more good for the opposition, if published, than for the side you want to help.
5. Be clean in your writing. Make sure grammar is correct, use a dic-

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tionary and use a typewriter double spaced. Don't use a bunch of attention getting gimmicks like capital letters and underlining. The editor doesn't want to do a lot of work on your letter. He wants to decide what to emphasize. Both are his job. Make it easy for him.

6. Be persistent. Only a few letters are published each day. The odds just from that perspective are formidable.

Writing puts one more letter in the editor's mailbag from your point of view. It lets the editor know there are lots of folks interested, thus enhancing the odds that someone with your point of view will be selected. He can't ignore a lot of letters that convey the same idea.

7. Keep it short. One page double spaced is almost an absolute max-

imum. If you can say what you want with a paragraph or two and a catch phrase, you will be remembered. No one quotes an entire novel to get an idea across. Try to say what you want in one page and make an attempt to shorten it from there. A shorter letter almost always will be picked over a long letter that says the same thing.

8. Be a real person. Give your name, address and telephone number to the editor. If you have a problem with publication of your name, tell him, but he deserves to know the source of material he is publishing. If you have particular qualifications and are somewhat of an authority on the subject you are writing about, so much the better, and this should be indicated. Anonymous letters don't go very far.

9. Get to know the editor's name, write to him directly and be respectful.

10. Remember there are those who want to stop what you want to do, or do what you want to stop. Keep in mind they are writing too. An editor can't publish what isn't on his desk. You must send your thoughts to him.

Now the hardest part: Do your writing, and get your opinion to the editor. Let him know there is at least one person with your point of view.

-ARRL Field Forum □

## Amateur Radio Week



In a ceremony on June 13, 1991, at Topeka, members of the Jayhawk Amateur Radio Society of Kansas City, Kansas received a proclamation from Kansas Governor Joan Finney, declaring the period June 17 through 23, 1991, to be Amateur Radio Week in the state of Kansas. Pictured at the state capitol in Topeka, Governor Joan Finney (seated); Bill Lefler, W00E; Shelly Lefler, KB0IDA; Allene Warren; Danielle Lefler; and Ed Warren, W0EUY.

Amateur Radio operators seldom get a chance to meet the governor of their state, but one group did! The Jayhawk Amateur Radio Society of Kansas City, Kansas created the opportunity in conjunction with Field Day 1991. How was it done? We did it through petition for an official proclamation by Governor Finney of Kansas.

The Governor received our Amateur Radio group in her private office on June 13 for a signing ceremony. Perhaps we had an advantage in securing this audience. Governor Finney stated that her father had been an Amateur Radio operator also.

Additional recognition of ham radio was gained when the chief executive of our city issued a similar proclamation. Mayor Joe E. Steiniger, Jr. also proclaimed the period June 17 through 23, 1991 as Amateur Radio Week.

This was a rare opportunity to gain publicity for the activities of people in

Amateur Radio. We felt honored that our governor and mayor would take time to publicly recognize the merits of our hobby and its benefits as a service to the public. □

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# Midwest ATV helium balloon flight

MICHAEL L. BOGARD, KD0FW

Why would an Amateur Radio operator want to spend his hard-earned money on a five foot helium balloon and the gas to fill it, then attach two transmitters worth about \$400, and let it go up into the sky, with the possibility of not getting it back? Because nobody said I couldn't and that was a good enough reason for me.

There have been about half a dozen test balloons sent up all over the United States, but nothing close enough for us here in Independence, MO, to receive video or audio.

Then there was a helium balloon launched from Champagne, IL, that I thought the Kansas City area might see, but the upper winds were at speeds of 130 mph to the east, and it didn't gain maximum height until it drifted east about 80 miles and was outside the maximum viewing range. Because a lot of the ATVers around this area spent so much time trying to see that flight and didn't even hear the 2M beacon, I said that I would launch one here so they could see it for sure.

The first thing I needed to do was call the master of ATV balloon flights, Bill Brown, WB8ELK, to find out all the

do's and don'ts. After a few long and very interesting telephone calls, I had the basic info that I needed.

I decided to send up a balloon after the football season was over, so I came up with Feb. 3 or 4. With a possibility of snow or ice, as we were in the middle of winter, I decided to add the 10th and 11th as alternate dates.

The next thing that had to be done was to go and watch the National Weather Service send up a balloon with a radiosonde. The NWS had a launch center in Topeka, KS, and sent up data balloons twice a day.

I got to the site early one day to see them send one up, and had plenty of time to ask a lot of questions. They use hydrogen to lift the balloon and they sure made the liftoff seem easy. They used a computer to track and recover data that the radiosonde sends back, and about one hour later I was able to get a copy of the upper wind data printed out for my launch.

At that time the balloon would travel about 120 miles to the east, so I wanted to find a launch site about 50 miles west of my QTH and try to keep it from coming down in the city. I found a high spot in the county and an outbuilding with a door opening of about 9 ft.

Now all I had to do was build the two transmitters with IDers, antennas and batteries, and try to keep the weight to no more than four pounds. The transmitter was an old P.C. Electronics TXA5-2 on 439.250, that produced about 80 milliwatts, to drive a Motorola brick amplifier to about 4W.

The antenna was a scaled down big wheel called a little wheel that was horizontally polarized and omnidirectional. The video IDer was an Elktronics VDG-1 that sent epromed computer generated high resolution color graphics, to produce four alternating color ID screens. The IDer used



This is a scaled-down version of the big wheel, appropriately called a little wheel, which is horizontally polarized and omni-directional on 439-250 MHz.

a thermistor to indicate the internal temperature that controlled the amount of time between pictures.

The audio beacon was on 144.340 and used an old Maxon commercial VHF slimline hand-held, with the receiver and power amp and case removed to supply about 50 milliwatts to a quarterwave vertical. The audio ider was an epromed ider made by WA4ADG, that had a male's voice saying, "This is the KD0FW helium balloon over Kansas and Missouri."

The audio ider also had a thermistor to indicate the outside temperature that controlled the time between IDs. Both transmitters and IDers were mounted to a piece of double-sided PC board. The Motorola brick amp used the PC board as a heat sink to save weight.

The current drain was about 1.3 amps at start-up and the batteries needed to last about five hours and needed to be lightweight. I found some special lithium-sulfur dioxide cells that are rated at 7.5 Ah at 3-volts per cell and only weigh 3 ounces.

Just in case I couldn't find the package after it came down and the batteries ran down, I added three separate cells and a relay to just run the beacon transmitter for another 50 hours if I needed more time to find it. This was all housed in a styrofoam box made with commercial radio packaging about one inch thick and taped up with duct tape.

Feb. 3, 1990, was launch day and we had ice and snow all over that would not melt in time to try for the 4th, so the launch was called off until the next Saturday. Feb. 10th came and it was sunny and calm in the morning, but there was a storm front scheduled to pass through the area later that day.

By the time I drove to the launch site, the wind had picked up a little and I also found out that the outbuilding didn't have the height I needed to fill the balloon.

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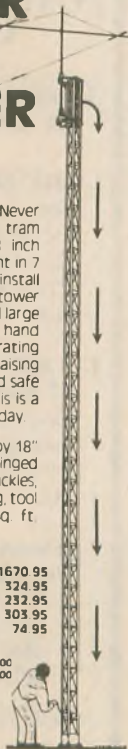
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Antenna: H20-4	Scale: None
Engineer: Onnigian, P	Revision:

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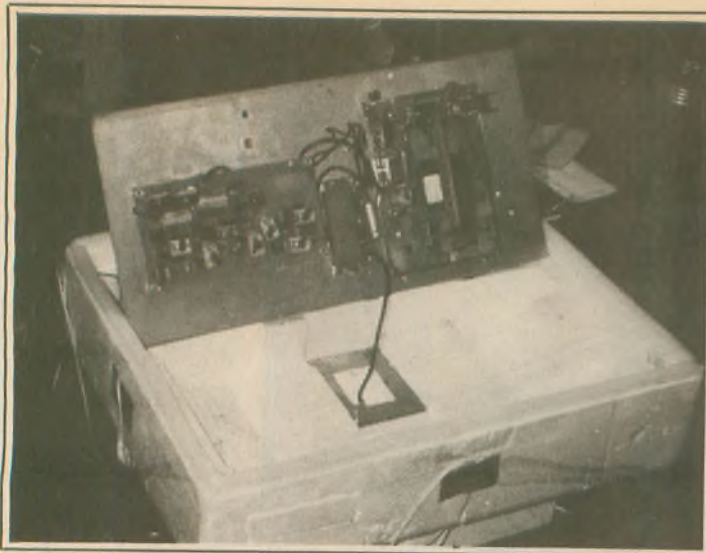
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Here is the ATV transmitter used on the flight. It consists of a PC Electronics TXA5-2, a Motorola brick amplifier MHW 710-2 and the Elkrionics VDG-1 video IDer.

in the corner of a large tractor repair shed with a 12 ft. ceiling and an 11 ft. door. The 5 ft. balloon was soon filled with 125 cubic ft. of helium to produce about 6.5 pounds of lift. The transmitter package was tested and tied to the parachute and that was tied to the balloon.

Per FAA rules, I needed to call them one week in advance and also the day of the launch, so that was done. Also for the FAA, we added about eight feet of tin foil to make a radar reflector.

I sent up a red one foot test balloon to see the wind direction and speed; it went due east about 12 knots. We then brought out the balloon package and carried it out to the field, away from the trees. It was then that I found out that the winds were gusting from 15 to 20 knots, blowing the balloon horizontal and almost touching the ground.

I held on for four minutes and was watching the balloon getting stretched farther and farther and knew that I had to let go soon or it could burst. So I let go at what seemed to be a calm time

and the balloon package went right on up, without hitting the ground.

Just as quickly as my helpers could announce the successful launch, signal reports were coming in on the HF net frequency of 7.155, with W0ZMR in Kansas City, MO, as net control.

Early that morning, we called the NWS in Topeka to find out the wind data and sent it to WB8ELK, and with the great tracking program that he has, the computer said that it would travel about 61 miles at a beam heading of 116 degrees. I got out the maps and plotted it out to be just south of Peculiar, MO, so I loaded up and headed to the possible landing site.

By now the balloon was ascending at the rate of 894 ft. per minute and signal reports were coming in from Arkansas, Iowa, Oklahoma, Nebraska and Kansas.

The launch took place at 10:22 a.m. and the maximum altitude was reached at 12:09, when the balloon had reached a diameter of 24 feet and burst. The package was then descending at the rate of 2,000 ft. per minute and was seen with binoculars just a few minutes before the crash landing at 12:51 p.m.

The crash landing site was about three miles south of Peculiar, and the balloon was first found by one of three teams that had driven that morning all the way from Indianapolis. The second one there was a guy from Springfield, MO, and then I showed up about 10 minutes later.

You could see the parachute from the road, so I walked back into the woods about 1/4 mile and saw that the package was hanging from the limb of a tree, about 45 ft. up. There was no way to climb to it. We used a chainsaw to cut the limb down, but only dropped the package to 30 to 35 ft.

We tried many times with rocks tied to a rope to get it down, but were not successful until someone suggested a shotgun. Two farmers went and got their guns and fired at it 12 times, but this still was not good enough to break the string. I tried the old rock and rope again and hooked it and pulled it down and even after it hit the ground, it was still transmitting video and audio.

I cut the wires to the batteries at 2:33 p.m. to shut it off, after a great flight. There were about 13 or 14 teams chasing the balloon package with all different kinds of direction finding gear, from loops to quads to 5-element beams. That poor farmer's driveway had more cars and antennas than you could shake a stick at.

The furthest station reporting seeing the video was at Mt. Sunflower, KS, at the Colorado/Kansas border line, at a distance of 394 miles. The furthest station to hear the 2M audio was in Indiana, at a distance of 423 miles.

There were at least 40 to 60 stations checking into the net on HF, which ran for about six hours.

I had one heck of a good time and want to thank all of those who helped in some way, and yes, there will be another flight, as it was just a great experience. □

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# Over the meadow and through the woods

CHUCK WINTER, N7AAG

Clear Lake Grace Brethren Camp is located in the Cascade Mountains, 50 miles west of Yakima, Washington. We have electric service from a feeder line that creeps through some of the most rugged, mountainous terrain in our country. When the snow flies, the camp is given notice by the postal services that pick-up and delivery is limited to the mailbox four and a half miles away on State Highway 12.

For years, getting to the nearest telephone has meant a drive of 13 miles to White Pass or 12 miles the other way to the Rimrock grocery store. We could only hope and pray emergency situations would not arise.

One winter, when the camp was closed because of heavy snow, the caretaker's only access to civilization was a long, arduous trip out on snowshoes. Some type of communication system was a must if the camp was to operate safely and year-round as planned.

Inquiries to several area telephone companies brought the response that the White Pass area of the camp was in a "no man's land" where no franchise had ever been made available. Even if permission was granted, we were told the cost of running a line into the camp could cost as much as \$1,500 a mile with a 12-mile run. Simple mathematics not only put that solution on the back burner, but off the stove completely.

What about radio? That was a possibility, so a commercial two-way radio company was approached. "Sorry . . . bad location." The camp is located on the south edge of Clear Lake with its back almost against a high-barrier mountain ridge, and we were told that radio signals just couldn't penetrate that mountain fastness. We were told simplex certainly wouldn't work, and a repeater wasn't close enough to do any good.

Camp use was growing, and plans were in the works for expansion. "Lord, you've got an answer for this problem" became a daily prayer. The importance of all this was underlined in our thinking by several accidents and severe sicknesses that occurred during

that time of "communication isolation."

I need to add a footnote to the statement about "two-way radio." Because I am an Amateur Radio operator, when we were told radio would not work, it came across as a challenge and not a final pronouncement. So began a series of experiments from the camp to the Yakima Valley using Amateur Radio frequencies.

We soon made the happy discovery that there were several "hot spots" at the camp where we could communicate on 2M with Harrah, Washington, 50 miles away, where our CLGBC Valley Office was located. Relatively low wattage was used for a solid contact with fellow ham, John, N7AAE, in Harrah. "Praise the Lord . . . we're on to something here!"

Further testing led to an application for an FCC license at a frequency of 157.68 MHz. A 50 ft. mast and vertical antenna were erected at the camp in a "hot spot" close to the caretaker's cabin. A business band radio and amplifier were installed in the cabin. A similar system was installed at the Harrah Grace Brethren Church which I pastor in Harrah. (The church roof was already festooned with Amateur Radio antennas, so one more Yagi didn't make that much difference.)

We now had good, solid two-way radio communications. One problem surfaced that first winter when the electrical power to the camp was lost for several days. With the lights went the radio! That led to the installation of heavy-duty batteries and a charger. We now had a dependable set-up. Now we're even thinking about using solar panels to power the system.

We have added a phone patch that allows phone calls to be made from the camp to the "outside world." The Valley base station is located in my church study. But we have an extension line to our home so that we may field emergencies and provide 24-hour coverage for the caretakers, camp staff and campers.

A daily schedule is met each morning to check on the caretakers. Emergency calls have dispatched ambulances and patched medical personnel via the radio to advise on medical emergencies. Search and rescue units have been alerted, law enforcement agencies have been called . . . and the list goes on, all because an efficient radio system is in place.

Oh, one other thing. We're experimenting now with a data system to transfer medical records, inventories, letters, store orders, etc. over the same radio system with hard copies available at either end of the line. Yes, that's a spin-off from our Amateur Radio involvement.

Several area hams offered suggestions and encouragement along the way. We now have dependable means of communication, thanks to "hamstick-to-it-ive-ness." Every day the radio messages travel back and forth "over the meadow and through the woods . . ."

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## A.H. MILLER, VE7KC

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Much has been written about HF mobiling and in view of the multitude of problems there will probably be much more. Having dabbled with trying to achieve a successful operation over the past several years I have just about reached the point of satisfaction. Of course nothing is perfect, but to gain those last few percentage points it could take considerable time and expense.

It is presumed you have a modern state-of-the-art transceiver suitable for the type of installation that will permit operation when you are behind the wheel or in a co-pilot's seat. Hopefully it will have a good noise blanker that will take out that last little bit of ignition noise not eliminated by other means. If you have this kind of set then you really have only two potential major problems: antenna and electrical ignition noise. Of course every installation has its own peculiarities but many of these can be approached in a general manner.

Look at the ignition interference first, as it is probably the most difficult; there are a few items that should receive priority consideration. Each of these may produce a slight

reduction which collectively should be additive. Dependency on the noise blanker is okay to a point; past that you may find with some sets that you may also reduce the signal. With this in mind, leave the noise blanker off and strive for as much noise reduction as possible. When you reach that point and switch the noise blanker on there should be an absolute minimum of ignition noise with no reduction of incoming signal.

Most articles stress bonding, and this is a good place to begin. Before you start this procedure it is suggested you fix up a smaller speaker with a long shielded lead. With this plugged into the transceiver auxiliary speaker output you can monitor your noise reduction progress with the engine running. If you can obtain a good supply of heavy copper braid, excellent. I settled for some easy to obtain and inexpensive copper clad pipe strap. This is available from almost all hardware and plumbing supply shops. When you do your bonding leave some slack in the strapping to permit a little give, or movement, where it is needed.

As you are probably aware, the engine and exhaust systems are quite well insulated from the rest of the vehicle. This is due to the rubber engine mounts and the support hangers holding the muffler and tail pipe. Even the radiator may be insulated by rubber bushings and become a potential problem. With all this in mind, start bonding everything suspect to the frame or body in several places. The engine alone may well be strapped at all four corners.

Very important on some vehicles and not to be overlooked is the exhaust system. Make sure you give this item adequate attention. The whole muffler and tailpipe unit can be a wonderful antenna for radiating igni-

tion noise. It is suggested that you bond the whole assembly to the frame and/or body in three or four places.


The importance of exhaust bonding was drawn to my attention early in the game with a no noise blanker SB 101. In a hurry I set off across Canada with no suppression of any kind and it was a very unhappy mobile situation. In my progress eastward I installed suppressor plugs with little success. Every time I was able to contact another station I would ask for suggestions on how to reduce the horrible racket. On the way home I contacted another mobile whom I could read well because he was running a kilowatt. In reply to my usual question he came right back with "Have you grounded your tail pipe?"

With a quick "Negative," I pulled off to the side of the road, grabbed a clip lead out of the tool box and connected the end of the exhaust to the bumper. Presto! The noise level dropped by at least 50 percent. A word of caution: make sure all connections are clean and the contact is to bare metal.

Getting to the ignition system, the first thing to do is to be sure all the high voltage cables are in good condition. Some of the spark plug leads have a bad reputation for developing an open circuit in the inner conductor. Also be sure the insulation is not leaking. If the wiring is old, it may be a good idea to put in a whole new set of leads. Bad leads may not only create noise problems but could also reduce your engine efficiency.

One of the possible aids in the reduction of ignition noise is the installation of a distributor suppressor. These are usually available wherever automotive parts are sold, and even Radio Shack has them in stock. Just pull the wire from the coil out of the center of the distributor top, plug in the suppressor, then plug the wire from the coil into the suppressor unit. It's worth a try.

If the noise is still above the acceptable level, this is probably the time to buy a GOOD set of suppressor plugs. The "good" cannot be over-emphasized. In my first experience I bought cheap, bargain plugs and not only did they not cure the noise, I was misled into thinking I had other problems.



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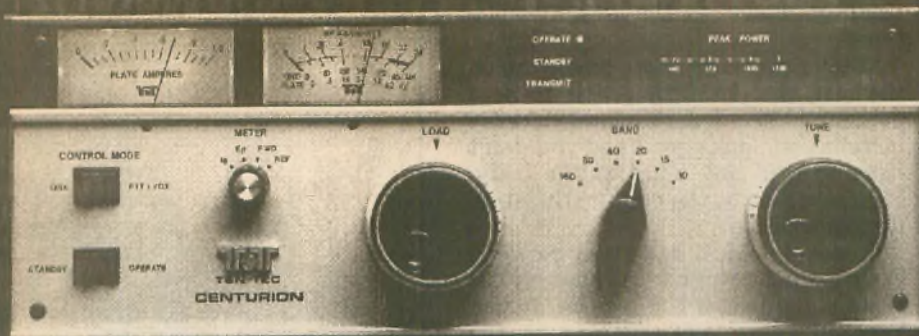
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A tube-axial fan is used for forced air cooling. Air flow is routed through the power supply as well as the upper and lower sections of the RF compartment. Air inlets and outlets are in the sides and top of the cabinet to optimize low pressure, low noise, air movement.

A dedicated meter for plate current, a multi-meter for plate voltage, grid current and forward or reflected power. A full time 10 element LED bargraph instantly displays peak power output.

The Centurion operates on all bands from 1.8 to 21.5 MHz. 21.5 to 29.7 MHz is enabled with the installation of an expansion board, supplied no-charge upon proof of licensed authority.

A tough, easy to handle, amplifier that doesn't really mind a little abuse. The Centurion is a great value.

## SPECIFICATIONS

**Band Coverage:** 1.8-2.0, 3.2-4.7, 6.5-10.3, 13.4-19.6, 17.6-21.5 MHz. 21.5-29.7 MHz after authorized modification.

**Input Power:** 2000 watts, maximum.

**Power Output:** 1300 watts ssb, 1000 watts cw. RTTY and SSTV 650 watts, 50% duty cycle.

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**Efficiency:** 50-65%, depending on frequency and load impedance.

**Input/Output Impedances:** 50 Ohms, unbalanced. SWR <2:1.

**Distortion:** -35 dB from 1 kw rf output level.

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**Primary Power:** 220-250 Vac @ 15 A. 110-125 Vac @ 30 A, 50/60 Hz. For full power operation. 220-250 Vac is strongly recommended.

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**Front Panel Controls:** Power on/off, standby/operate, control mode select (QSK-PTT/VOX), plate TUNE and LOAD, band switch, meter switch.

**Tune and Load Controls:** 6:1 vernier drives with calibrated dial skirts.

**Construction:** Aluminum chassis, front and rear panels, interior partitions and top and bottom covers.

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**Weight:** 47 lbs (21.3 kg).



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The Hercules II is attractively styled to match our HF base station transceivers and will interface nicely with virtually all transceivers. The front panel includes an analog multi-meter for collector current, voltage, forward power and SWR. A ten element LED bargraph instantaneously displays peak power output. Band selection is either with the front panel switch or remotely via a rear panel connector. A front panel speaker is built in.

The internal heat sinks are air cooled by a temperature controlled tube axial fan. Whisper quiet in ssb operation, yet enough air capacity for cool operation in the key-down modes. The Hercules II is compact, good looking and generates a signal that is within one S-unit of the mighty Titan.

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Top to bottom: SWR meter, Yaesu 230R and TS 430R stacked on a swivel plate on the mounting platform. There is a foam rubber cushion between the platform and the van engine cover.

Good suppressor plugs are probably one of the best investments I ever made with respect to successful mobiling.

In my Dodge camper van conversion the TS 430 sits right on top of the engine cover, not four inches from the ignition system and there is hardly a tick. When you can drive down the highway with the noise blanker off and hear the ignition of the other cars passing, you've really got it beat.

The next big item for success is the antenna. Most commercial whips work well, some better than others. Some are more adaptable to a good installation. Let's hope you have the kind that adapts effectively. The one in use on the van camper is a standard Hustler. You may have the same kind and can

visualize some of the recommendations.

Many articles promote mounting on the rear bumper. This seems to be a popular location as it makes an easy installation, looks good and you don't have to drill any holes in the body. This seems to be the only justification for the location.

It seems logical and from personal experience, the higher the base off the ground the better the results. If you have to make modifications to the antenna mast section, the changes may be warranted. Although not very practical, the ideal location is right in the center of the vehicle roof. With a standard car you don't have many options to consider. Maybe if you look the situation over you may come up with a solution that will let you get the base as high as possible.

My friend with a station wagon found a place for a mounting bracket above the rear tail gate door right at the end of the roof. If you have a van, there is a good spot right above the rear opening doors where the roof starts to curve. On my camperized van this is right behind the fiberglass roof. Any installation where the antenna parallels the body should be avoided if at all possible.

One of the things you will immediately visualize about installing the antenna with a high base location is the height of the top of the whip and the whole thing swaying around, out of control. Maybe you are wondering how many gas station fluorescent tubes you are going to knock out, or trees and wires you will be hitting. Well, you can get around most of this problem in a way you may consider a little unorthodox, but nevertheless quite practical. It is suggested you consider reducing the length of the (Hustler) mast between the base spring and the resonator coil.

You may disagree by questioning the effect on the tuning and radiation. First, the tuning effect is minimal. Length changes made below the resonator are much less drastic than those made above it. Secondly, the shortened mast on 10, 15 and 20M which permits a higher base mount above ground seems to justify the



Optimal antenna location on the van: above resonator spring is 15M resonator with extended whip for 20M operation.

modification. Of course on 40 and 80M the results may be a compromise.

As mentioned previously the antenna uses standard Hustler resonators, but for 15 and 20M the arrangement is definitely not standard. The following suggestion may be better known than I think, but so far I haven't run across it in print. Contacts indicate it is not generally known or used in this part of the world. Actually, the idea came to my attention when I started working an unusually large number of ZS mobiles. It turned out that most of them were using standard Hustlers with the exception that they were using the 15M resonator on 20M. Further inquiry disclosed that the 15M resonator would tune very nicely on 20M by installing a 48 in. upper tuning rod adjusted down a few inches. I must say the results are outstanding with a low and flat SWR across the whole 20M band. There is less heating in the coil because there is less coil, and consequently less loss. In my case the final measurement of the upper rod was approximately 40 inches above the adjusting nut.

The same arrangement was applied to 15M by using the 10M resonator with about a 26 in. upper whip. Again, these measurements can be variable. In both cases the SWR came down to

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almost zero and practically flat across the whole band.

It may take a little hunting but some of the ham outlets may have a 2M, 5/8 whip that will do the trick. Note this arrangement will not work with the Hustler Jumbo coils, only the standard resonators.

Since most run-of-the-mill SWR meters are not power linear, it is suggested that you tune your whip as follows: set the meter to max forward sensitivity and, with the transmitter on tune or CW, bring the power up slowly until the needle is on the set mark. Now take your SWR reading.

## Beacons

(continued from page 11)

DDP, San Juan, PR, 361 kHz; and ZBB, Bahamas, 396 kHz. The locations and frequencies of many other beacons are published in magazines such as *Popular Communications* and *Monitoring Times* and in a variety of books.

Some Amateur Radio transceivers now on the market include the ability to receive low-frequency signals down to around 100 or 150 kHz, so they are well-suited for beacon listening. A number of multiband receivers sold by mail-order outlets and Radio Shack's Realistic DX-360 and DX-440 also offer this capability. And military surplus receivers such as the BC-348, homemade receivers, and converters such as the Heathkit HD-1420 provide other ways to receive LF beacon signals. Palomar Engineers sells both a low-frequency converter and a loop antenna that are well-suited for receiving navigation beacons.

Evenings and early mornings are the best times to listen for LF radio signals on an appropriate receiver. Beacons up to several hundred miles or even a few thousand miles distant can be copied. DXing beacons as far away as possible is a pastime enjoyed by hundreds of radio listening hobbyists worldwide, and it can be a helpful pursuit for beginners learning Morse code as well.

During daylight, atmospheric absorption of LF radio waves sharply reduces the range of beacon transmissions. Static levels also are higher during the day, particularly during thunderstorm seasons. However, if you live within a few miles of an airport or a seaport, you may be able to hear one or more strong beacon signals at any time.

It may seem a bit strange at first, using longwave radio to help you get into a shortwave hobby. But experiencing the capabilities and limitations of LF radio and copying navigation beacons for code practice can help you become a better Amateur Radio operator. □

You will find your transmitter loading is minimal and your SWR reading is more accurate.

A good set of quick disconnects are a good investment. They not only save time and trouble when changing bands but also make it easy to remove the antenna at car washes and to avoid theft. Don't forget a resonator spring to protect your coils.

If you experience a high SWR, especially on 75M, try using a coax line between the transmitter and antenna cut to 21 feet, 6 inches. It is understood that the impedance at the base of a mobile whip can be quite low and this length probably improves the




match. If it is too long, just coil up the surplus.

Depending on the location of the antenna, a mobile installation can be quite directive. It has been noticed that, with the antenna near the center of the rear of the vehicle, the best signal is in line and straight ahead. This seems to be more apparent on transmission, as receiving stations will sometimes report a 2 to 3 S-point difference.

So far I have worked several dozen countries on all continents. I've especially had fun during this sunspot cycle, just driving along and easily working DX. □

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## QSLs from Ecuador

If you'd like to add a rare QSL card to your collection, then be sure to take part in HCJB's Amateur Radio special event this December. Operators who make contact with hams from HCJB in Quito, Ecuador, will receive a one-of-a-kind QSL card, issued to coincide with HCJB's 60th anniversary. The pioneer missionary radio broadcaster has been on the air since Christmas Day, 1931.

Ham operators in Quito will be on the air, making contacts worldwide for 30 hours from 4 p.m. EST (2100 UTC) Friday, Dec. 6 to 10 p.m. Saturday, Dec. 7 (0300 UTC Sunday, Dec. 8). The special

call sign for this event is expected to be HC60JB, and HCJB will be transmitting on 14.225, 21.300 and 28.500 kHz (plus or minus a few kilohertz for receiving). To obtain your special QSL card, send a reception report to HCJB, Casilla 17-01-00691, Quito, Ecuador.

One of the most unusual aspects of the event is that HCJB hams will have access to some of the world's most powerful shortwave antennas, located at HCJB's international transmission site in nearby Pifo.

Keith Clukey, KC6SMW/HC1, an HCJB machinist and ham operator

will then be beamed 18 miles to Pifo for broadcast around the world via our Siemens SSB transmitters.

"The reason for this elaborate system is that we can't actually receive other stations in Pifo due to interference from all the transmissions there. We have 12 high-power transmitters operating at different times and frequencies.

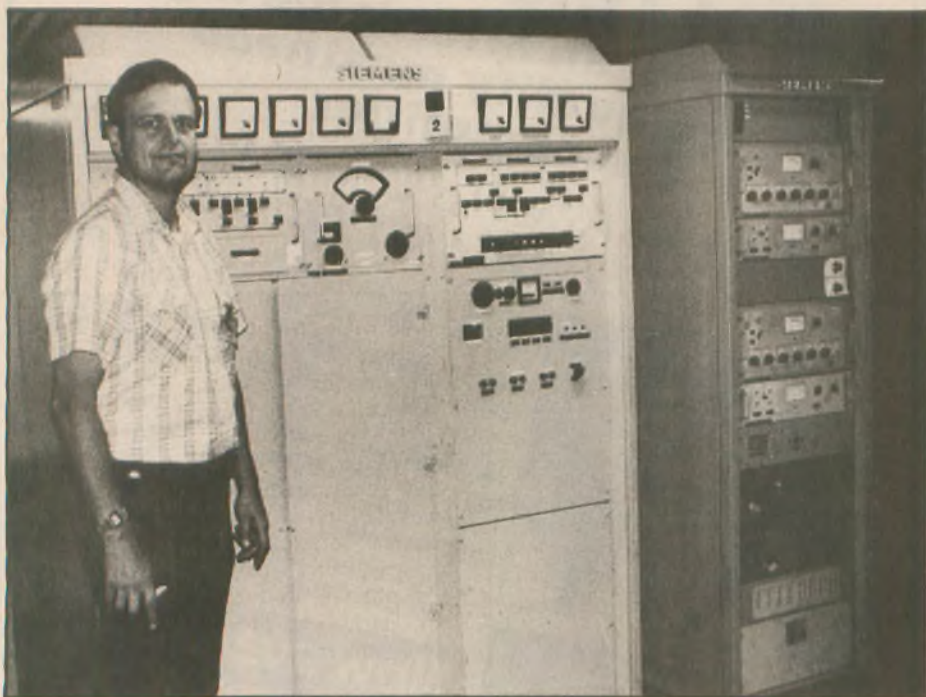
"The Siemens transmitters, which first went on the air in the summer of 1990, are capable of putting out 30 kW, but they will be detuned to amateur limits (1.5 kW)," Clukey continues. "However, our antennas will boost the signal strength considerably. The amount of gain will range from 18 to 25 dBi, depending on which frequency and antenna we're using at the time."

HCJB engineers have 31 antennas in Pifo at their disposal, making this one of the largest radio transmission sites in the world, and the biggest facility of its kind among religious broadcasters.

Antennas to be used for the event range from a large rhombic unit (8 to 13 dBi) to 30-story-high curtain antennas with eight parallel-fed dipoles. HCJB's unique steerable antenna, capable of carrying 500 kW transmissions, will also be utilized during the event. But perhaps the most interesting antenna to be used is the cubical quad. This popular antenna design was invented by former HCJB engineer Clarence Moore in 1939. Moore came up with the innovative design to overcome problems with high-power broadcasting in the rarefied air of Quito—9,300 feet high in the Andes. HCJB's quad antenna has 24 elements with four parallel-fed arrays, each six elements deep.

"I think there will be a good response to this special event," Clukey says. "The main thrust of the event is that ham radio operators are helping to celebrate HCJB's 60th anniversary. But we'd also like to encourage ham operators to listen to HCJB and increase their interest in the station. Many ham radio operators first got interested in Amateur Radio by listening to distant shortwave radio stations such as HCJB."

HCJB international radio director John Beck, HC1QH, says the event provides "yet another opportunity to make personal contact with people who are interested in our station."



Keith Clukey, KC6SMW/HC1, stands next to HCJB's Siemens SSB transmitters.

coordinating the event, explains:

"We plan to have two hams working simultaneously on two different bands, depending on conditions. They will receive contacts in their homes in Quito and use the telephone to tap into HCJB's microwave system. The signal

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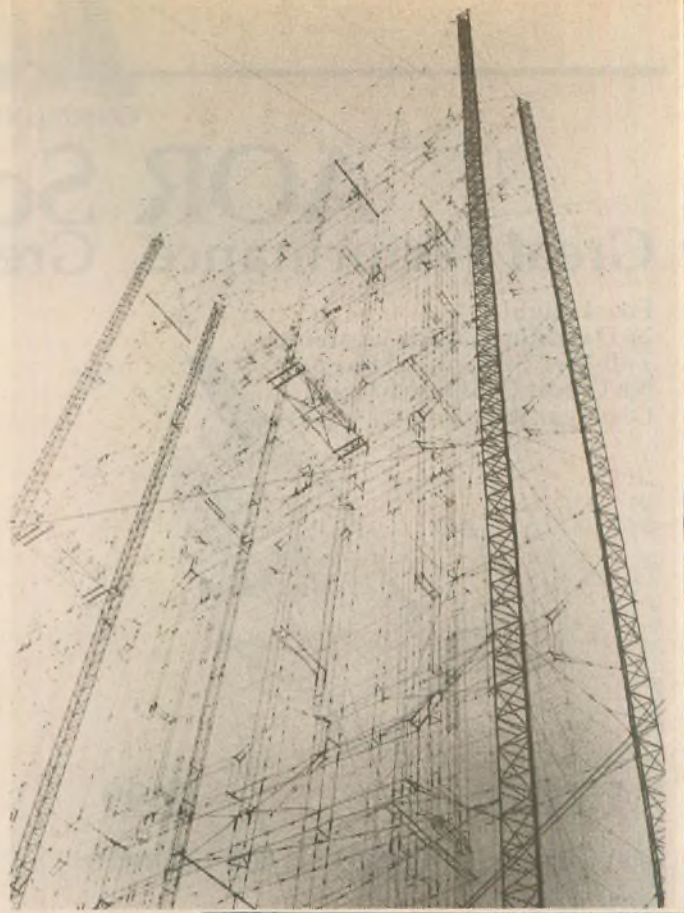
He adds that numerous hams have written the station, asking how they can get into contact with ham operators at HCJB. This event answers their requests as more than 18 HCJB hams are expected to take part in the special event at different times.

This will only be the second Amateur Radio event to be held during HCJB's 60-year history. The first took place June 11 and 12, 1983, during World Radio Communication Year.

Clukey adds that although HCJB's primary purpose is to spread the gospel of Jesus Christ, non-Christians are also attracted to the station's unusual programming. "We're a religious broadcaster, but we have a lot of DX programs as well as news and cultural information of general interest to all our listeners."

HCJB is a ministry of World Radio Missionary Fellowship, Inc., an evangelical, interdenominational organiza-

**HCJB's bidirectional antenna sends shortwave signals to Europe and the South Pacific.**



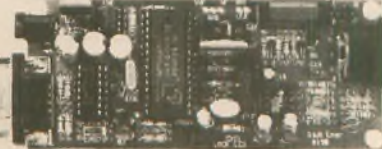
The 24-element cubical quad antenna dwarfs a pair of llamas at HCJB's international transmission site in Pifo.

tion involved primarily in broadcasting. HCJB broadcasts the gospel around the world in more than 18 languages and 22 dialects.

The mission also operates two hospitals in Ecuador and helps serve the rural areas through community development and mobile medical clinics. In addition, HCJB is involved in producing television programs and training Ecuadorians for leadership positions in medicine, radio, TV, evangelism and music. The mission has offices in more than 20 countries with local radio ministries in Texas, Panama, Ecuador, Argentina and Europe. □

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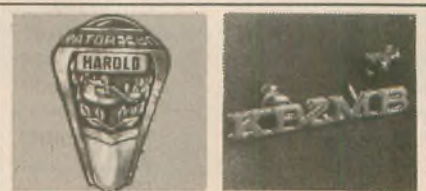
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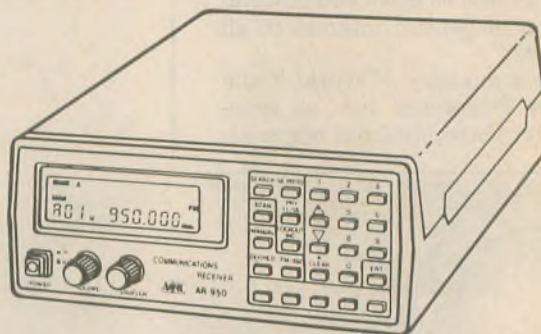
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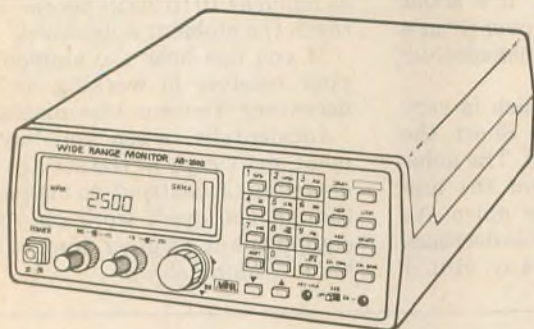
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Sensitivity:	.35uV NFM, 1.0uV WFM, 1.0AM/SSB/CW
Speed:	38 ch/sec. scan. 38 ch/sec. search
IF:	750.00, 45.0275, 5.5MHz 455KHz
Increments:	5,12,5,25 KHz
Audio:	1.2 Watts at 4 ohms
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# DXential

The single most important unit to a DXer (and to other Amateurs) is the receiver. After all, if you don't hear them, you can't work them. And, since DXing often involves listening for rare ones on an apparently dead band, we get to a nice little problem — how do you know the receiver is working?

There's a check that everyone ought to use daily. Simply check the strength of the nearest crystal calibrator signal. When you get that new receiver or transceiver, record the strength of one or more calibration points on each band. If you haven't done this, do it now.

Make a permanent record: The instruction book is best, but a log book will do. Determine if changing antennas changes the reading. Usually changing from one 50 ohm antenna to another has no effect.

If you don't have a crystal calibrator,

## Zero watts

I am amused when I hear people say that CW is outmoded, or that with all the computers and digital modes we no longer need CW. Most all of those persons have lived rather sheltered ham radio lives.

Morse code is not just limited to radio as a communications medium. Sure, sure, I have heard the military doesn't use Morse code in their radio communications; however, Navy signalmen do use Morse code with "flashing light" communications. This communication is very hard to in-

build one. Shunt two 7040 gates with 470 ohm resistors (input to output). Connect the output of one gate to a 30pF trimmer, and this to a 100 kHz crystal. Connect the crystal to the input of a second gate. Connect the output of this second gate to the input of a third gate, and also to the input of the first gate through a 0.001mF fixed capacitor. Take output from the output of the third gate.

With a 5-volt supply the output of this is about 1.2 volts rms at the fundamental. It decreases 6dB each time the frequency is doubled. It's about one millivolt, or over 40dB over S9 at 4 MHz. Vary the coupling to the receiver as needed.

There is another test which is very useful in a relative way. Short the antenna terminal to ground. The noise level should decrease, from the ambient noise, to the receiver noise. As long as there is an appreciable decrease in noise, your receiver is okay. But if

there is no change, something is wrong. Find out why.

For a real checkout, instruments are needed. Or build and calibrate a relative noise generator per the handbook. Several absolute calibration noise generators have been described in *QST* and *Ham Radio*.

For really top performance, SSB receiver sensitivity should exceed 1 microvolt at 7 MHz, 1/2 microvolt at 14 MHz, etc. This ultimate sensitivity can only be used on very quiet winter nights. At other times a receiver can be as much as 10 to 20dB poorer, and still reach the ambient noise level.

If you can hear the ambient noise, your receiver is working as well as necessary. You won't be missing them.

Incidentally, when you buy equipment, get a copy of the service manual as well as the instruction manual. Even though you don't work on your own equipment, it's a good thing to have on hand. — *Florida Skip* □

tercept and requires no electronics. The small boats from larger ships do have radio on board but also have a signalman with his trusty "flasher."

On one of my ship's visits to Hong Kong, as the ship was anchored in the harbor, the crew went to and from the ship on "liberty launches." Late one afternoon as the "launch" was returning with a load of sailors, the engine died and refused to restart. We had no radio, were too far from the ship to be seen, and we were drifting out to sea. Using a flashlight and knowing a few signaling procedures I was able to call

the ship and explain our situation. A small boat from the ship was dispatched to tow us back.

Many amateurs may never need to know code, most would rather do without it, but are we not supposed to be communicators? Who knows during an emergency whether your radio will survive or not, but with a WORKING KNOWLEDGE of Morse code you will still be able to communicate! (I define "working knowledge" as the ability to understand Morse code *without* having to write down dits and dahs.) — *Dupage ARC, Clarendon Hills, IL* □

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# Silent Keys

## Wallace T. Lynch, WA4FTF

Wallace Lynch, WA4FTF, became a Silent Key May 4, 1991, after a long battle with cancer.

Wallace had lived in Cochran, Georgia, for the last 28 years and became an amateur in 1962. Since 1966, he was chief engineer at the Educational Television Station in Cochran; he retired in December of 1990. He was also a member of the ARRL.

Wallace is survived by his XYL, Carrie, WA4BVD, as well as two brothers and several nieces and nephews.—*Information submitted by Carrie Lynch, WA4BVD.* □

## Lester W. Burket, W3HQJ

Dr. Lester William Burket, former dean of the University of Pennsylvania School of Dental Medicine, died on June 29, 1991, after a lengthy illness. He and his wife, Grace, celebrated their 57th wedding anniversary May 5.

Burket aided the emergence of oral medicine by combining medicine and dentistry. His textbook *Oral Medicine* established him as one of the founders of modern oral medicine. He is credited with raising the standards of education and practice in his field, and with guiding the establishment of federal policy concerning education, research, and patient care.

Burket became a ham in 1938. He belonged to the Phil-Mont Mobile Radio Club, the Gold Coast Radio Group and The Frogs. During and

after World War II, he aided many service people in foreign countries by connecting them by way of telephone and radio to their families.

In 1949, he helped members of the Haverford Township Emergency Radio Net with the installation of the Amateur Radio station W3TKQ at The Franklin Institute.

In about 1956, the Phil-Mont Mobile Radio Club took over the sponsorship of the station. "Doc" Burket, becoming a member of Phil-Mont, continued his interest in W3TKQ and, for many years, was the net control operator, calling the net members to an "on the air" meeting at 10 a.m. each Sunday from his home station, W3HQJ, in Bryn Mawr.

In 1983, Doc and his XYL, Grace, retired to The Moravian Home, in Lititz, PA.—*Information submitted by Claude Haring, Jr., W3IIM.* □

## Robert C. Moore, N3CKD

Bob Moore, N3CKD, died of a sudden heart attack July 31 at the age of only 49.

Bob had been a prime mover of the Foundation for Amateur Radio from the day he came onto the board of directors in 1982. He promptly became assistant treasurer that same year. In 1983 he became co-chairman of the Gaithersburg Hamfest and continued on as chairman until the day of his death. He also held the office of FAR first vice-president in 1986 and then served as president from April of 1987 to April 1990.

First licensed in 1955, Bob quickly became active in public service (including traffic handling) and did a good deal of instructing in training classes. He was also an active member of the Laurel Amateur Radio Club and participated in the volunteer examiner program. He held an Advanced Class license.

Professionally, Bob held a doctorate in pharmacy/pharmacology from the University of Tennessee. After several years of teaching, he became a senior clinical research associate at Abbott Laboratories in Chicago. He came to Laurel in 1979 as a program analyst at the Health Care Financing Administration in Baltimore. Two years later, he directed a pharmaceutical reporting system and chemical safety program at the US Pharmacopeial Convention, Inc. (a pharmaceutical "think tank") in Rockville. He left there in 1988 to return to HCFA, where he helped implement the Medicare Catastrophic Coverage Act, passed that year. In 1990 he went to the NIH National Cancer Institute as a cancer researcher.

Bob is survived by his wife, Elizabeth, who only recently received her General Class license, N3JSZ. Elizabeth is also a pharmacist at the National Institutes of Health, working in the Drug Regulatory Affairs Branch of the cancer therapy evaluation program. Bob also leaves a five and a half-year-old son, John Robert, who has been his constant companion at all amateur activities. Bob will be sorely missed by his family and the entire amateur foundation.

The FAR is hoping to set up, or contribute to, a scholarship program in Bob's memory. Donations may be sent in care of the Foundation.—*Information submitted by Ethel Smith, K4LMB.* □

## Correction

There was an error in our September issue's Silent Keys; Thomas Banks' call was W5HJ, not W5HI. This was brought to our attention by Lee Roy Scott, W5DL, who had known Mr. Banks for many years. □

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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.

My philosophy has always been to have a neat and attractive layout. Most of what you see has been home-built and assembled except, of course, for the commercial items.

The upper console section contains the home-built linear amplifier—built some 30 years ago but with many modifications, still very much state of the art—with massive external power



Most of Bill's, W7ZZ, station is home-built.

supply. The center area contains control items: UTC clock, local clock, SWR meter, voltage meters and illuminated push-buttons controlling relay function switching. The right panel contains 2M complex. Under upper console is a small antenna tuner, phone patch, SWR/wattmeter, SuperScaf and Curtis keyer.

The lower desk level contains a TV

set, antenna rotator controls, monitor scope, TS-940S and speaker, hand-built combination bug and hand key. Off right desk edge is an Info-Tech CW keyboard.

Operating practices: mostly DX, SSB and CW—approximately 300 countries. I was first licensed in 1933 as W7DET and have been very active all the while. □

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## Amateur "Hi"



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consideration in our monthly AMATEUR "HI" contest. You could win a free year's subscription to *Worldradio*!

*Charles Gunther, N2KTH, of Wayne, NJ, takes this month's subscription prize with this amusing story.*

Shortly after receiving my Novice ticket in March, 1990, a new rig was delivered. I had no elmer and struggled for three days before I was able to make my first contact to "Jim," a VE2 station on 80M.

After both fumbling around and signing off, I unknowingly logged the contact as a Virginia station. (I was lucky that "What are the four US call sign prefixes?" was not on my Novice exam!) A while later I realized that my first QSO was actually DX, and that "Jim" was from Canada.

Wanting to commemorate the contact, I forwarded a QSL to Jim, who indicated via return QSL that, coincidentally, he was also a new ham, and I had been *his* first QSO on HF.

So, by a strange stroke of fate, two new hams from different countries were able to experience their first QSOs together. □

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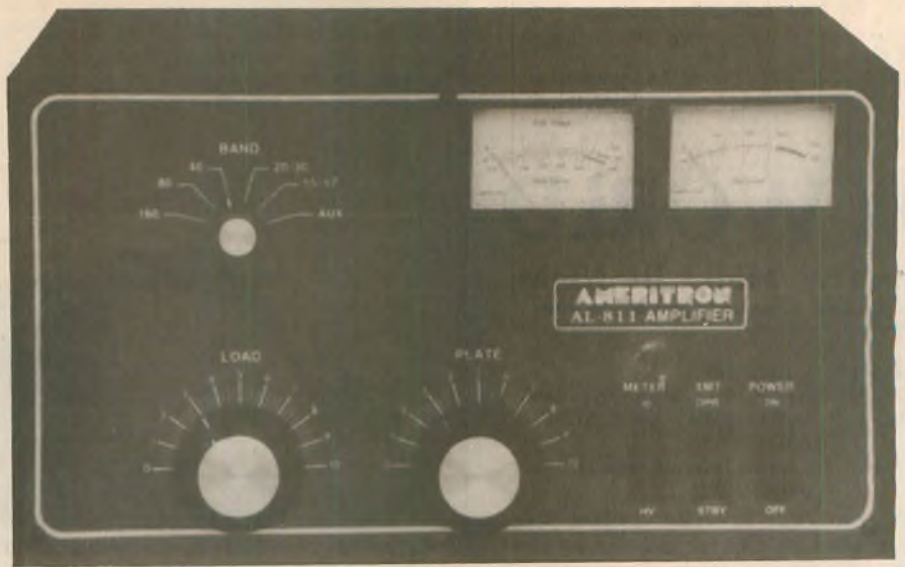
**Second**, they use a directly heated thoriated tungsten filament cathode that prevents the electron emitting layer from instantly stripping off — even if mistuning causes a sudden, severe current overload.

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Wire wound, 7 watt, 50 K ohm equalizing resistors safely protect each filter capacitor — not 2 watt, 100 K ohm carbon composition resistors that can open and cause your filter capacitors to explode or fail.

The Ameritron AL-811 power supply is built tough so you get peak performance year after year.

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# DX WORLD

John F.W. Minke III, N6JM

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## Activities Calendar

19-20 Oct. Worked All Germany Contest

26-27 Oct. CQ World Wide DX Contest (SSB)

8-10 Nov. 59 Japan International DX Contest (SSB)

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

## W100N

The following DXers qualified for *Worldradio's* Worked 100 Nations Award on the date indicated:

412) Byong-Joo Cho, HL5AP; Sept. 5, 1991.

We received two other applications for this period. Unfortunately, the contacts submitted were based on DXCC countries and the number valid fell below the necessary 100 nations. A list of the valid nations was in our column in the April, 1991 issue.

## Myanmar (Burma) (XYØRR)

Romeo Stepanenko and company made history by putting Burma on the air after many years of silence. There has been, however, activity from there, but none of it valid for DXCC purposes. Here on the West Coast signals were initially weak and often we couldn't hear them at all. But they were heard, with many of the deserving DXers working them on more than one band and mode.

The team members consisted of Roman, 4K2OT; Gene, UA9MA; Harry, RA3AUU; Larry, RA4HA; and Romeo, 3W3RR. The DXpedition was fully equipped by Yaesu with three FT-990 transceivers and three FL7000 linear amplifiers. The antennas were provided by DX Engineering.

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Pointed in your direction (Photos courtesy of Frank, DJ9ZB).

please include some support for the team for their efforts. DXpeditions are usually very expensive. If you hesitate in sending funds abroad, then send your contribution c/o NT2X.

## Botswana (A22)

A22AA has been reported on several bands recently and is the most active from Botswana. Look for this one between 14.225 and 14.231 MHz, 21.231 and 21.340 MHz, and 28.466 to 28.482 MHz. His operating times seem to be from about 1500 to 1930 UTC. He has also been reported on 17M near 18.080 MHz around 1900 UTC. However, the bulk of his contacts are on 15M. Other calls from Botswana include the following:

A22BW	21.086 MHz	1630 UTC
A22CU	21.173 MHz	1800 UTC
A22FN	21.321 MHz	1800 UTC
A22GH	21.020 MHz	1230 UTC
A22JP	28.480 MHz	1330 UTC
A22MH	21.320 MHz	1745 UTC
A22SG	28.011 MHz	1415 UTC
A24KH	21.345 MHz	2030 UTC

## Albania (ZA)

Many of us were disappointed that the Hungarians returned home without the chance to operate from Albania. But, all is not lost! According to *QRZ DX* and other DX newsletters, Amateur Radio was to officially begin in Albania on September 15 or 16, 1991.

See the cover story in this issue for more information on this exciting operation.

The above photos should give you an idea of what DXpeditioners can find in accommodations. This was the recent St. Peter and St. Paul Rocks DXpedition last May. The team, which included PP5JD, PS7KM, DF9TF, DJ9ZB and PY4VB, made at least 20,654 contacts in spite of the conditions. Frank, DJ9ZB, who provided the photos, didn't give much description, except the photo without the beam was identified as the operation side. A photo of the team was also provided, but was too dark to reproduce.

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The operation side of the PY0SR/PY0SK DXpedition at St. Peter and St. Paul Rocks.

### Egypt (SU)

Present officers of the Egypt Amateur Radio Society (EARS) include SU1ER as President, SU1AH as Vice President, SU1HN as Secretary, and SU1FN as Treasurer. The newsletter, *Egyptian Echos*, published in English, was being issued bi-monthly in 1990 with SU1HN as editor. The address for EARS is c/o Mr. Ezzat S. Ramadan, SU1ER, P.O. Box 78, Heliopolis, Cairo 11341, Egypt.

At the present time only Egyptian nationals are allowed licenses, which brought up some problems within the local circles. Those particular calls, SU1EE and SU1EK, used by Charles Signor and John Reika, respectively, were the ones in question. Therefore, the editor contacted the Egyptian licensing authority, which in turn sent a list of the present calls, a total of 29. Neither SU1EE or SU1EK were on the list. The editor's comments: "It can be easily seen that there is no such call as SU1EE or SU1EK. For those of you who can read Arabic, the names of Charles and John are not there either. I hope this slams the lid on this story! And to amateur publications I say: Please care for your credibility." We wonder what he means? Did Sig (former *Worldradio* DX editor) or John operate illegally? We seriously doubt that.

Checking on the DX reports we found only two calls reported. The first was SU1ER on 14.240 MHz working Europeans at 1700 UTC one Thursday afternoon and SU1HV, who had been reported quite often during the summer. Listen for this one between 14.002 and 14.020 MHz, or 21.014 and 21.048 MHz. His operating times varied; try around 0100 to 0300

UTC and 1900 to 2200 UTC. As a matter of interest, SU1HV is not on the official list of Egyptian calls. Could this one be illegal too?

### Iceland (TF)

There has been a fair amount of activity from Iceland this summer, including vacationers such as TF4/DL2SCQ and TF9/DL1SCQ. DL1SCQ and DL2SCQ had also operated from Westman Island (EU-071) as portable TF7. Permanent calls included the following:

TF3AEN	21.031 MHz	0015 UTC
TF3CW	18.078 MHz	1715 UTC
TF3DX	14.008 MHz	2245 UTC
TF3EJ	14.017 MHz	0015 UTC
TF5BW	14.227 MHz	2300 UTC

### Corsica (TK)

This one is really part of France, but does count separately for DXCC purposes. Not much has been reported from this island as you can see from the following:

TK5EP	7.008 MHz	0415 UTC
TK/DL7HZ	7.001 MHz	0400 UTC
TK/DL7HZ	10.100 MHz	0430 UTC
TK5MH	14.084 MHz	1945 UTC
TK/14FYF	14.206 MHz	1145 UTC
TK5CW	21.333 MHz	2045 UTC
TK5EP	21.013 MHz	2200 UTC
TK5MH	21.089 MHz	1930 UTC

There should be enough there for the CW, SSB and RTTY types alike.

### Maldiv Islands (8Q7)

Active from the Maldives recently is 8Q7CO, who was reported on several bands. Try 3.794 MHz if you need this one on 75M where he was working Europeans at 2030 UTC.

On the WARC bands he has also been worked on 17M between 18.138 and 18.143 MHz between 1700 and 2130 UTC, and on 12M near 24.940 MHz at 2000 UTC.

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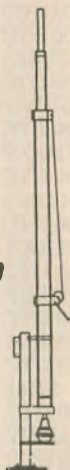
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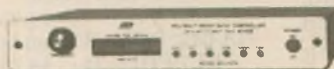
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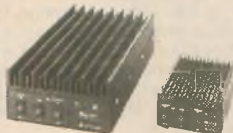


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In early August he was found near 21.234 MHz between 1800 and 1930 UTC.

The only other call we found in the DX listings for the Maldives was 8Q7LA. This one was reported the latter part of July working into the Texas area on 20M CW on 14.010 MHz at 0425 UTC.

### Sierra Leone (9L1)

The DX Bulletin reports that Dave, 9L1US, will soon be dismantling his station. However, he plans to make one last fling in the CQ World Wide DX Contest the end of October. And, according to the DX reports, he has been very active on many of the bands. Look for 9L1US near the following:

7.095 MHz	2345 UTC
10.102 Mhz	0030 UTC
14.219 MHz	0100 UTC
18.068 MHz	0130 UTC
21.253 MHz	1500 UTC
28.481 MHz	1530 UTC

We also have reports of activity of two other calls that included 9L1BM on 21.316 MHz at 0915 UTC working Europeans on a Saturday morning in mid-August, and 9L3BM on the same band between 21.227 and 21.233 MHz after 1900 UTC. Perhaps the 9L1BM is a misprint and should read 9L3BM.

### IOTA

Approximately mid-October Vadim Valentinovich, along with UA9JO and UA9KT, will operate from Oleny Island (AS-083) as 4K4/ followed by their respective calls.

VI4HBW was originally to operate from Frazer Island (OC-142), but operated from the mainland instead. Look for them from the island November 1 through 7 signing VK4CHB.

George Johannsen, WB0ZQN, reports that PJ4/KB0KI is active from Bonaire Island; he is often

working into his hometown in Minnesota on Fridays at 0130 UTC near 14.200 MHz. This is SA-006 on the IOTA list and counts as Netherlands Antilles for DXCC and W100N. QSL via K0FTB.

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

EU-024 San Pietro Island	IM0/DJ8QP	14.197 MHz	1145 UTC
EU-034 Vormsi Island	ES7R/0	14.031 MHz	0400 UTC
EU-061 Asmaloy Island	LA1VFA/P	14.263 MHz	0530 UTC
EU-066 Solovetskiye Islands	RZ1OK/A	14.260 MHz	1500 UTC
EU-070 Hyeres Island	TX1XX	21.258 MHz	0700 UTC
EU-071 Vestman Island	DL2SCQ/TF7	14.260 MHz	0430 UTC
EU-077 Coellelira Island	ED1IC	14.260 MHz	0900 UTC
EU-089 Flores Island	CU8AI	21.236 MHz	1800 UTC
EU-106 St Tudwal's Island	GW6UW/P	14.260 MHz	1800 UTC
EU-128 Fehmarn Island	DJ1QQ/P	14.260 MHz	1300 UTC
EU-135 Holmon Island	SK3IK/2	21.262 MHz	1800 UTC
EU-149 Aegna Island	ES1RA/1	14.258 MHz	0745 UTC
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AS-059 Spafar'yeva Island	EK0I	14.261 MHz	0530 UTC
AS-060 Sorok Island	HL4KZW	21.205 MHz	1445 UTC
AS-090 Tokchok Island	HL0HQ/2	14.214 MHz	1830 UTC
NA-006 Victoria Island	VE8CB	14.260 MHz	0500 UTC
NA-019 Kodiak Island	NL7IY	14.257 MHz	0545 UTC
NA-042 Prince William Sound group	KL7/FD1JYD	14.260 MHz	0400 UTC
NA-045 Cancun Island	XF3RGS	14.232 MHz	0530 UTC
NA-050 Barter Island	K6NA/KL7	14.260 MHz	0600 UTC

NA-059 Fox Islands	AL7BX	14.260 MHz	0630 UTC
NA-134 Disco Island	OX3KM	14.260 MHz	0300 UTC
NA-140 Kent Island	W3YN	14.260 MHz	0600 UTC
OC-006 Tasmania	VK7HC	14.030 MHz	1130 UTC
OC-118 Futuna Island	FW/FO5IW	14.198 MHz	0600 UTC
OC-130 Mindanao Island	DU8USK	21.311 MHz	1515 UTC
OC-137 Lamb Island	VK4CY	14.222 MHz	0600 UTC

As you can see, 14.260 MHz is the gathering place for IOTA types and the activity is increasing. Also, check 21.260 MHz when the band is open.

Those of you who have been collecting QSL cards for several years might want to check them over. You may have IOTA credits in your collection. How about a card for CR7IZ from the 1960 era? That one counts for IOTA AF-061, Cabo Delgado District group. He had operated from Ibo Island, one of Mozambique's coastal islands.

### Oblasts

There always seems to be a DXpedition to some oblast. If you have ever considered working on the Soviet's W-100-O (Work 100 Oblasts), listen up for these calls—usually a Soviet prefix appended by their call. Attempting to work all the oblasts can be quite a challenge. There are approximately 193 of them, plus or minus a few due to administrative changes.

In October, Vlad Zaytsev, UA4FDS, and Paul Bogachev, UA4FEG, had planned a DXpedition to UH8W (Oblast 045), UH8Y (Oblast 046) and UI8U (Oblast 055).

During the September All Asia Contest RH9Y was active from Oblast 046, and UA4LEW and UA4HTT were also to have operated from there as UH5Y/UA4LEW and RH5Y/UA4HTT, respectively.

Also active in the AA Contest was UL1K/UZ9SWO, operating from Oblast 024.

### Anguilla (VP2E)

Anguilla stations can now sign with the special prefix VP25E through May, 1992 to commemorate the 25th anniversary of Anguilla's separation. There will be a special certificate for working these stations. Details are available from John Rouse, KA3DBN, 2703 Bartlett Road, Bowie, MD 20715.

A newly formed Anguilla Amateur Radio Society has been established. All former and current holders of VP2E licenses are invited to become founding members. The new officers include Dave Mann, VP2EHF, President; Dorothea Mann, VP2EE, Secretary; Jim Hendricks, VP2EJH, Treasurer; and Larry Scott, VP2EL,

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

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Social Secretary. John Rouse, VP2EBN/KA3DBN, is the US liaison. For additional information on the society write to P.O. Box DX, The Valley, Anguilla, BWI.

### Book reviews

We had an opportunity to examine *QSL Routes*, edited by Fritz-Ullrich Schneider, Y41VM, and Norbert Wenzel, Y58ZA. This is the first edition with the next edition to be updated this February. The little volume contains about 38,000 QSL routes plus about 4,000 manager addresses.

Part I, consisting of 154 pages, contains the QSL routes. Part II contains 50 pages of addresses of the QSL managers. If a manager had become a Silent Key, that is so indicated.

There is an added feature in Part III, which includes the top 100 of the more important managers. All the calls that each manager handles are listed.

To obtain your copy write to Theuberger Verlag, Oberwasserstrasse 12, 0-1080 Berlin, Germany. Include a payment of \$15 US or 20 IRCs. No checks please.

The second book is still under review (N6JM reads slowly). So far I find this one very interesting and feel that it should be in every DXer's library. The book, *Don C. Wallace, W6AM—Amateur Radio's Pioneer*, describes the history of Amateur Radio as experienced by Don. No doubt most of you don't want to wait for me to finish reading this fascinating volume. Written by Jan D. Perkins, N6AW, the book is hard-bound and contains 320 pages with 200 photographs (24 in color). You may order your copy now from Wallace & Wallace, 11823 E. Slauson Avenue, Suite 38, Santa Fe Springs, CA 90670. Include \$29.95, plus \$3 for shipping and handling (\$5 outside the US) for each copy. California residents add seven percent sales tax.

### Soviet publication

We received a copy of the first issue of *Soviet Ham Press Digest*, a new, comprehensive, English language publication. The paper covers all aspects of Amateur Radio in the Soviet Union and includes DXpeditions, clubs, awards, contests, etc.

Published by Prometheus Amateur Association, *Soviet Ham Press Digest* is edited by Alex Ulyanich, RB5IJ, P.O. Box 195, Donetsk, 340000 USSR. For stateside DXers subscriptions are \$12 and available from George Yankopolus, NA3O, 13 Glen Meadow Drive, Glen Mills, PA 19342.

### Correction

We goofed when we said that VP8SGB of the South Sandwich Islands was to become a regular

visitor to the Family Hour DX Net. This station is located in the South Georgia Islands.

### RTTY

Frank, HB9NL, informs us that he will be active on RTTY from Liechtenstein, signing HB0/HB9NL through October 20. He was to be active in the RTTY Contest in September.

### Antique QSLs

The following KT1UX QSL card was provided by Joe, K3JGJ. This particular card was from the collection of Clarence Fry, W3KFQ, who worked KT1UX back on February 27, 1955 on 40M CW. The operator was Carlton

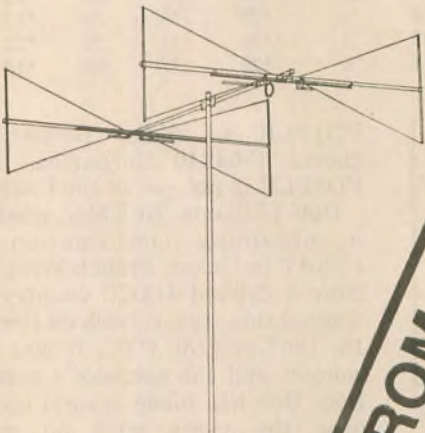


W. Cleveland, W2UUX. This station was located at Tangier, Morocco. We ran this very card almost 13 years ago in our column.

The next card was submitted by Joshua Logan, WX7K, who was on the East Coast signing K2MMS when he worked VS9AAC of Aden back on

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# DX Prediction — November 1991

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

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

## WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	(16)	*17	*21	(13)	20
12	(15)	*16	*20	(13)	19
14	(27)	*16	*19	22	*38
16	33	*17	*27	21	*45
18	35	16	(24)	16	*47
20	35	21	33	(14)	*47
22	30	*33	39	(14)	*46
24	*26	*36	44	*13	*39
2	*20	*30	40	*13	*27
4	*18	21	28	*13	*24
6	(17)	19	25	*13	*22
8	(16)	*18	*22	(13)	*21

## CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	(20)	*13	*20	(13)	*20
10	(19)	*13	*20	(13)	19
12	35	*13	*19	22	*37
14	42	*17	*32	25	*42
16	45	(16)	28	22	*45
18	*45	(16)	(25)	16	*47
20	*37	(19)	34	15	*46
22	*31	28	40	*14	*40
24	*25	(23)	39	*13	*28
2	*23	16	26	*13	*25
4	*21	(15)	23	*13	*23
6	20	(14)	22	*13	*21

## EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	20	*13	(20)	*13	*20
9	19	*13	*20	13	*20
11	36	*13	*19	22	*34
13	*43	*14	*35	*27	*40
15	*46	(13)	30	*25	*44
17	*46	(13)	(24)	21	*46
19	*41	(13)	(30)	16	*47
21	*34	(23)	38	*14	*41
23	*25	(23)	38	*14	*30
1	*23	(16)	26	*13	*26
3	*21	(15)	23	*13	*23
5	*20	(14)	(22)	*13	*22

South Yemen. The DXCC desk could probably answer this one better than I can.

Lou Berry, WA6WHQ, responded to our request for help in obtaining a QSL from KH6ABH. This station was located on French Frigate Shoals and is no longer in the *Callbook*. Lou worked this station in 1977 and had sent his card via USCG LORSTA French Frigate Shoals, Box 48, San Francisco, CA 96610. We doubt that this address is valid any longer. He also suggested QSL manager WA6TTS. Others who responded to my call for help included Don Borden, NC6A, and Steve Massey, N7AHN. Steve worked KH6ABH in 1977, which was manned by his brother.

We also received a note from Bob Ferguson, WB5PWF. Bob was an operator there in 1976 whom we wrote to see if he could help. He suggested writing to the Commander, 14th Coast Guard District, Honolulu, HI. He also suggested WA6TTS. Bob said that he operated from Tern Island, which is about the size of an aircraft carrier. The LORAN station there has since shut down.

## QSL Routes

A35DT	-JA30IN	OY2VO	-OZ9DP
A35EA	-ZL1AMO	R1ADA	-RW9WA
A35MK	-JA30IN	RB3JA	-UB4JR
A35TX	-JA30IN	RB8BI	-RB5HT
A35XJ	-KE6XJ	RF6RP	-UF6DZ
C53GB	-FD1MXH	RH9Y	-UH8YP
C9RZZ	-SM7DZZ	RL0L	-UL7PI
CR8UW	-CT4UW	RX3M/UZ9SWO	-RA9SB
CS5A	-CT1AUO	RY1R	-UB4RWW
CT0A	-CT1DVV	RY7B	-RB5RB
D68JM	-WV4F	RY8DI	-RB5HT
D68RH	-KE3A	RZ1OK/A	-UA1OFT
DL1SCQ/TF4	-DL6DK	SN0WYD	-SP5GDB
DL2SQC/TF7	-DL6DK	T20AA	-N4FJL
DUBUSK	-DUIELT	T26VV	-N0BLD
EA6/AA5UK	-AA5UK	T190Y	-T12SAH
ED11CO	-EA1AUI	TM6ISL	-FD1OWK
ED21ZO	-EA2LZ	TX1XX	-FFINZH
ED7TI	-EA4KK	UA70XWV	-UA9XC
EJ4GRC	-E14GRC	UB6G/UA3DQH	-RB4GA
EJ7FRL	-E12BB	UC8WAZ	-UC2WAZ
EK3DNJ	-RA9SB	UH8EA	-W5BWA
EO50PQ	-RA10A	UIJK	-UJ8JQC
EX8V	-UF6FFF	UL8AWL	-UL7ACI
FM4WN	-WA4JTK	UR8G	-RB0GG
FM5FE	-F1HVT	UY7U	-RT4UF
FR5FA	-F6DET	V27T	-YU1RL
FT4WC	-F6GVH	V51JM	-NK2T
FW/F051W	-F051W	V63AR	-JA2NVY
GH4WKS	-G0GNF	V63AX	-J12UIY
HB0/Y24AO	-DJ0XC	V63CJ	-KA3DBN
HC1MD/HC0	-K8LJG	V63DJ	-KA3DBN
HC1MD/HD4	-K8LJG	V63WP	-WB6TU
HG3ZJP	-HA3RD	V63WW	-JA2NQG
HG0ZJP	-HA0HG	V8500	-N200
HL9TK	-KK4TK	V85XYL	-N200
HL0HQ/2	-HL1XP	VE1DE/P	-VE1KE
HP1XHB	-W4YC	VE8/VE2BPD	-VE2UI
HS1/JH8YDY	-JA2KTP	VP2EBN	-KA3DBN
HS0E	-HB9AMZ	VP25EQ	-KC8JE
IK2HTW/IA5	-IK2HTW	VP2E/N2HNQ	-JH4IFF
JWL8HA	-L8LHA	VP8CFM	-GM4KLO
KC4CXV/6Y5	-N4BSN	WG31/PJ4	-G4FRE
KH2N	-KC5TA	XU1NQ	-OK1NQ
KK6NE/T4	-K6ELX	ZK1AL	-I4ALU
KP2A/KP5	-WA2NHA	3C0CW	-EA3CUU
KP2/VS6CT	-KA6V	3DA0BX	-NS5HZ
LY91BM	-LY3BM	3D2RW	-ZL1AMO
LY91BS	-LY3BS	3D2WE	-LA6VM
LY91ZZ	-LY2ZZ	4K1B	-UV6AAP
OE1NBW/5B4	-OE1NBW	4K2BCA	-NS5HZ
OH3MIG/P	-OH3GZ	4K2BDU	-UA9YA
OH2BT	-DL4DBR	4K2PGO	-RA9LA
OM5SNP	-OK3YAK	4K4I	-UY5XE
OX3KM	-F6FNU	4K4QQ/UNO	-RA1QQ

FD1PLR as Didier Boisset, Hasquette, F-64240 Hasparren, France. FD1PLR is not yet in the *Callbook*.

Bob Williams, K6EMN, needs help in obtaining confirmation from FF8AP in Dakar, French West Africa (now a deleted DXCC country). Bob worked this station back on December 16, 1957 at 2135 UTC. It was a 10M contact and the operator's name was Lou. Bob has made several attempts over the years with no success. Anyone who has information on the whereabouts of the logs can call Bob collect at 415/591-6678. We would appreciate the information also, as we are sure there are others interested in this one.

Al Schwartz, W1WU, reports that EA3CW, QSL manager for 3C0CW, is not in his *Callbook*. This call is in the summer 1991 Supplement and is the same as EA3CUU in recent *Callbooks*. Al wants to know if 701AA counts as the old Yemen or the new united North and South Yemens. From what we can remember, it counts for the old

## ADEN

Royal Air Force *Mohammed*

# VS9AAC

Date GMT Confirming QSO RST Mc Mode

Apr-13, 1962 1931 X 2 M M B 5-8-9 14 A-1

QSL via W1KVQ 73. Thanks for contact J/T A.R.W. Calc  
MP4BDF MP4MAJ MP4TAL VS9KAC ex-G3MOJ

April 13, 1962. This was for a 20M CW contact.

## QSL help

Rich Wagner, K4MZE, is looking for help in obtaining a QSL card from 5N0DOG, whom he worked back in November, 1980. We checked our QSL files and found a card from this one. The operator was David Guthrie, K4QX, whose QSL manager was W4FRU. When QSLing via a manager be sure to include an SASE.

Dave Van Der Weele, WA3L, cannot find an address for FD1PLR, QSL manager for FO4NS. The latest issue of *The W6GO/K6HHD List* gives

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4 .. NO-TRAP DIPOLE - 160, 80, 40M	113 ft long	\$79.00
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please turn to page 57





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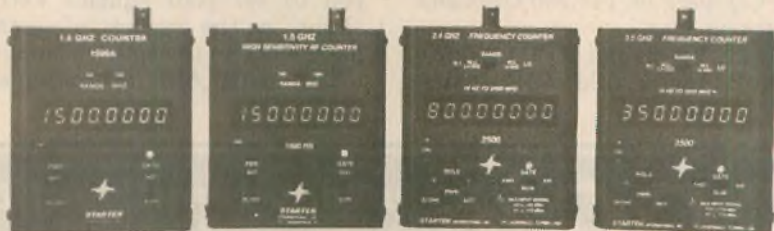
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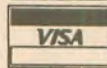
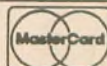
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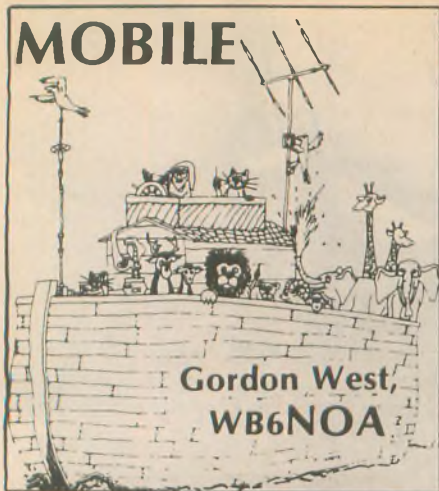
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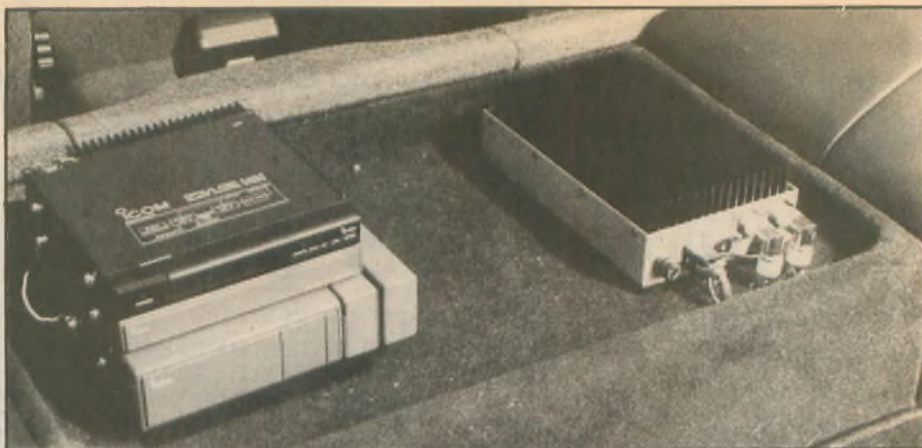


## Mobile 2M SSB

Did you ever wonder what happens down on the bottom end of the 2M band? 144.000 through 144.100 is reserved exclusively for CW. It's down here that high-speed CW is run by base station operators for moon bounce, meteor scatter, back scatter, and long-haul CW tropo contacts.

From 144.100 through 144.250 is an area reserved in the band plan for "weak signal work," generally meaning CW and single sideband. The single sideband 2M calling frequency is 144.200, using upper sideband. Once contact is established, stations QSY up or down the band by at least 10 kHz off of the calling frequency. When you are waiting for a contact or looking for a distant CQ, park on 144.200 USB and see what you hear.

Kenwood, Yaesu and ICOM all produce multi-mode, 2M SSB trans-



The TE Systems 2M SSB amplifier (right) boosts 30W output to 160W.

mitters. Some of you may already have a mobile 2M rig that "is multi-mode" but never thought you would ever hear anything down on 144.200 on single sideband. In fact, when you switch over from FM to SSB, chances are you may think that there's something wrong with your radio because it gets very quiet.

This makes sense; on FM, your band width is between 10 and 15 kHz, and this brings in plenty of noise in between FM signals. But down on sideband, your band width is about 2.8 kHz, and this gives you plenty of quiet.

So, just switching from FM to SSB in your mobile unit will dramatically decrease the amount of background noise. Most mobile SSB rigs also use squelch on sideband, and this allows you to set your squelch extremely "light" so the weakest of signals out there will trip the squelch circuit.

Two-meter SSB operators employ

horizontal polarization. This alone dramatically improves noise reduction—most roadside noises are vertically polarized, so a horizontal polarized antenna really gets the hash out.

But you're not going to get horizontal polarization out of a vertical mobile whip. Forget about turning the whip on its side—that rarely works either. Getting a horizontally polarized, omnidirectional mobile signal requires a special 2M SSB horizontal antenna, available from M<sup>2</sup> Enterprises in Fresno, California; 209/432-8873. These antennas are designed and built by Mike Staal, K6MYC, well-known VHF/UHF DXer, and he offers several varieties of horizontal, square-loop, mobile antennas. One antenna by itself is unity gain—about the same amount of signal you would expect from an 18-in. spike. But, you could stack a pair of loops and double your gain capabilities and have an omnidirectional horizontal signal that would outperform most vertical mobile whip antennas. Are there many stations to talk to on 2M SSB from your mobile? Sure are! Thousands of stations throughout the country monitor 144.200 for band openings; if you really want the thrill of DXing while mobile, imagine the excitement of communicating over a couple hundred miles from mobile to base running just 25W or 45W from your 2M mobile multi-mode rig. Two-meter SSB is less immune to fading, too, so expect a dramatic improvement in mobile-to-mobile range if you're both operating SSB and both running a horizontally polarized, omnidirectional antenna. And occasionally, the MUF will climb so high that you might even get a 2M mobile SSB skywave signal in the summer months!

You can also tune into orbiting OSCAR satellites, around 145.8 to 146.0 MHz. They downlink using SSB, and you'll be able to tune into their characteristic up-and-down signals as the birds are passing overhead. If you

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**The M<sup>2</sup> horizontal mobile/base omnidirectional "halo" antenna.**

have a companion transceiver on UHF or on 10M, you might also try your hand at uplinking via the satellites, and listening to your downlink on a separate receiver. Again, this happens on the 2M SSB transceiver and a horizontally polarized antenna system.

You can also buy power amplifiers for your 2M mobile SSB system, but be sure the amps are rated for SSB. Some

older amps only operate FM, and you will need a higher class of amplifier operation in order to reproduce your SSB signal with a dramatic increase in power. You can also flip on the pre-amplifier built into some 2M SSB power amps, and this will dramatically improve SSB reception. Chances are you may already have one of these amps, but haven't noticed any change on FM—that's normal. But on SSB, you'll notice a big improvement when you switch the pre-amp on.

So if you're looking for some new excitement while driving around on the 2M band, consider a multi-mode rig, a horizontal omnidirectional antenna, and the excitement of 2M mobile and base single sideband operation.

If you're looking for a good organization to join, check out the Sidewinders on Two ARC (1407 Glenn Dr., Fort Worth, TX 76131; 817/232-1506). Call or write to Len Hoops, KC5IJ, for a copy of their bulletin. □

MHz	Use
144.00-144.05	EME (CW)
144.05-144.06	Propagation beacons (old band plan)
144.06-144.10	General CW and weak signals
144.10-144.20	EME and weak-signal SSB
144.200	National SSB calling frequency
144.20-144.30	General SSB operation, upper sideband
144.275-144.300	New beacon band
144.30-144.50	New OSCAR subband plus simplex
144.50-144.60	Linear translator inputs
144.60-144.90	FM repeater inputs
144.90-145.10	Weak signal and FM simplex
145.10-145.20	Linear translator outputs plus packet
145.20-145.50	FM repeater outputs
145.50-145.80	Miscellaneous and experimental modes
145.80-146.00	OSCAR subband—satellite use only!
146.01-146.37	Repeater inputs
146.40-146.58	Simplex
146.61-146.97	Repeater outputs
147.00-147.39	Repeater outputs
147.42-147.57	Simplex
147.60-147.99	Repeater inputs

Two-meter weak signal SSB from 144.100 to 144.300 (southern California band plan varies from this slightly).

## Foreign language

*'Hammin'*

- Seique, seique, seique*
- Seedoubaue*
- Queartee*
- Kuarzed*
- Quesex*
- Kuteeache*
- Quearem*
- Kuesel*
- Wyel*
- Exwyel*
- Oem*

—Kayelsevenvee-el, Anchorage, AK

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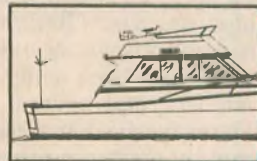
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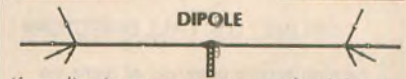


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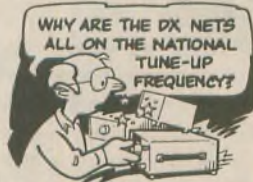


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- requires 12 VDC—usually available from the accessory jack on your rig.



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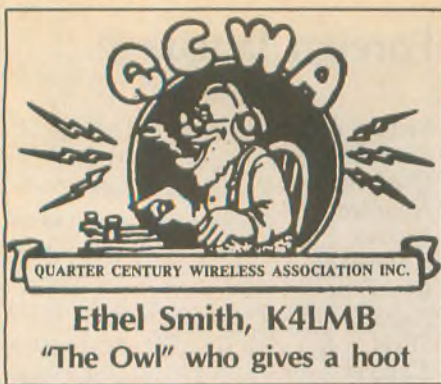


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### QCWA scholarship winners

Announcement of the winners of QCWA scholarships has just been released. There were seven awards made this year, each in the amount of \$750. Four awards were made from the QCWA Memorial Scholarship Fund, which has been established in memory of all our Silent Keys. Winners were:

Jerry S. Hensley, N8HUT, of New Paris, OH; Jerry A. Hart, N7FYS, of Bellingham, WA; Evan Caplan, KA3NED, of Richboro, PA; and Thomas R. Knoll, KB4KRC, of Staunton, VA.

The Leo Meyerson Family Living Memorial Scholarship was awarded to Robert M. Popella, KA3HIE, of Tidioute, PA.

The QCWA Robert S. Cresap Memorial Scholarship was awarded to Rebecca Knoll, N4JST, of Staunton, Virginia.

The QCWA Cresson F. Donbar Scholarship was awarded to Jonathan Fournier, KA1MPG, of Webster, MA.

QCWA scholarships are administered by the Washington DC Foundation For Amateur Radio (FAR) as part of a program which offered 38 scholarships this year. Roughly one-third of the applications received by the foundation had been endorsed by QCWA members and several of those candidates received awards which were offered by sponsors other than QCWA. All of the candidates for FAR administered scholarships are considered for any of the 38 scholarships for which they can qualify. As a result, 13 QCWA sponsored candidates actually ended up receiving awards this year. This is a very worthwhile program. Help us seek out good candidates for next year's scholarships.

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### Spring QSO parties

The spring QSO parties will be coming up in February and March. These parties (CW/digital in February and phone in March) are a lot of fun and we encourage you to take part. We would also like to encourage members to review their chapter affiliation status. In the QSO parties you will exchange chapter affiliation numbers. If you belong to more than one chapter, you will have to pick one chapter number to use throughout the contest. If you don't belong to a chapter, you should indicate "at large" (AL on CW). It is lots more fun when you can help your chapter make a good showing, so if you don't belong to a chapter now, shop around for one before party time. If you can't find one within a reasonable commuting distance, then start your own! It only takes 10 national QCWA members to start a chapter, and brand new members will count in qualifying for a charter. Just send in their applications along with your request for charter. It is as easy as that. We will be looking forward to exchanging chapter numbers with you in the parties.

### We got another letter!

News from the Council of North-eastern Chapters of QCWA (CONEX) was sent by President Harry Moore, W2JQS. The council is a very active and productive group and it has adopted a very appropriate slogan: "The best of the past of a better tomorrow through QCWA." The slogan was proposed by member Walt Schleiker, WM2Z, who felt that the lengthy Amateur Radio experience represented within the council should be devoted to the future growth and progress of QCWA in particular and Amateur Radio in general. We hope to hear more from CONEX. The council includes six QCWA chapters: Delaware Valley, Founders, Long Island, Nutmeg, Penn-Jersey and Yankee. They were looking forward to a big QCWA picnic hosted by Long Island Chapter 81. Here is another example of the success of joint efforts.

## HUGE 88 PAGE CATALOG

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### Donation to the WARC Fund

QCWA is keeping a wary eye on preparations for the World Administrative Radio Conference (WARC) which is scheduled to be held in Spain in early February. The general feeling is that the greatest threat to Amateur frequencies will be to the 2390-2420 MHz band, but there are still other potential problems, including HF broadcasting's continuing interest in the 7 MHz area. After considerable discussion about what QCWA could do toward protecting amateurs' interests, the QCWA board of directors decided the best way we could participate would be to make a donation to the ARRL WARC Fund. A check in the amount of \$1,000 was forwarded to the ARRL to support its efforts in protecting our frequency spectrum.

### H.R. 73 receiving good support

At the time of this writing, there is considerable optimism with regard to passage of the House Resolution 73 which is designed to protect the Amateur Radio spectrum within the United States; 131 House Members have signed on as cosponsors of the bill and a companion bill is being prepared for consideration in the Senate. Arthur Kay, W5APX, who has been championing the bill, has received a number of very encouraging letters.

The Owl has been persuaded to drop the nom de plume after a full year as "Guest Editor" of this column. A 55-year ham, she has been active in QCWA for 30 years and says she picked the name of "The Owl" as depicting a noisy old bird—not the wise old one! Anyhow, the column is now being signed by K4LMB. □

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## HAWAII

**Big Island Amateur Radio Club.** P.O. Box 1938, Hilo, HI 96721-1938. Meets: 2nd Tue./monthly, 7:00 p.m., Helco Auditorium, 1200 Kilauea Ave., Hilo. Talk-in on 146.760(-), 146.880(-) and 147.040(+).

## ILLINOIS

**Amateur Cross Link Repeater Club.** 29.680, 52.825, 147.225, 224.480, 921.225, 1292.10 and ATV on 916.25. Meets 1st Sat./monthly, 7:30 p.m. For info call (312) 594-1628. KD9FA Repeater/Chicago.

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

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

**Fox River Radio League.** Old Bank Bldg., 900 No. Lake St., lower level, Northgate Shopping Ctr. & Rt. 31, Aurora, IL. Meets 2nd Tue./monthly, 7:30 p.m. VEC Xams 3rd Tue./monthly, 7:30 p.m.

**Hamfesters Radio Club, W9AA.** P.O. Box 42792, Chicago, IL 60642. Meets 1st Fri./monthly, 8 p.m. Crestwood Civ. Ctr., 139th & Kostner, Crestwood, IL. Nets: Sun. (local) 0100 UTC, 28.410 MHz; Mon. 9 p.m. 146.43 S.; Packet Mailbox 145.07. Info: (708) 535-3496.

**Schaumburg ARC (SARC).** Meets: 3rd Thurs./monthly, 7:30 p.m., Schaumburg Park Dist. Community Rec. Cntr. at Bode & Springinguth Rds., Schaumburg, IL. Net 145.23, 8 p.m. Thurs. Info (708) 213-0910.

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

**Wheaton Community Radio Amateurs, (WCRA),** P.O. Box QSL, Wheaton, IL 60189. Meets 7:30 p.m., 1st Fri./monthly, College of DuPage, Glen Elynn, IL. Nets Sun. & Tue. 8:00 p.m., 145.39 MHz.

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

## LOUISIANA

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

## MARYLAND

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

## MASSACHUSETTS

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

## MICHIGAN

**Hazel Park Amateur Radio Club.** Hoover Elementary School-Hazel Park, P.O. Box 368, Hazel Park, MI 48030. 2nd Wed./monthly, 7:30 p.m. Sept. thru May. 147.51 Simplex Call-in. W8JXU Club Call.

## MINNESOTA

**Minneapolis Radio Club.** P.O. Box 25167, Minneapolis, MN 55458. Meets 3rd Fri. (exc. June, July, Aug.), Mpls. Red Cross, 11 Dell Place, Mpls, 7:30 p.m. Making waves since 1916.

## MISSOURI

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

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

## NEBRASKA

**The Ak-Sar-Ben ARC of Omaha, NE.** Meets 2nd Fri., 7:30 p.m. at Omaha Red Cross near 38th and Dewey Streets. Main 2M Net Sunday night 0200Z on 146.94R.

## NEVADA

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

**Sierra Intermountain Emergency Radio Assoc. (SIERA).** P.O. Box 2348, Minden, NV 89423. (702) 882-0451. Meets: 2nd Tue./monthly, 7:30 p.m., Douglas County Lib., Minden, NV. Talk-in: 147.330.

## NEW HAMPSHIRE

**Great Bay Radio Assn., WBTICAG.** P.O. Box 911, Dover NH 03820. (603) 332-9137/332-7343. Meets 2nd Sun./monthly, 7 p.m., Rochester Court House/City Hall. Talk-in 147.57.

## NEW JERSEY

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

**Garden State Amateur Radio Assoc., W2GSA.** Meets 1st & 3rd Wed./monthly, 8 p.m. at Bicentennial Hall, Fair Haven, NJ. All are welcome.

**South Jersey Radio Assoc. (SJRA).** Pennsauken Sr. Hi Sch. at Hylton Rd. & Remington Ave., Pennsauken, NJ 08109. Jan.-Oct. 4th Wed./monthly, 7:30 p.m. Nov.-Dec. 3rd Wed. due to Thanksgiving and Christmas. Talk-in 145.290 rptr. Club call K2AA.

## NEW YORK

**Communications Club of New Rochelle,** NY. Harrison Street Firehouse. Richard Sandell, WK6R, (914) 834-2322. Meets: 1st Mon./monthly, 8 p.m.

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

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

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

**Orleans County Amateur Radio Club (WA2DQL).** Meets: Office of Disaster Preparedness (CD), West County House Rd., Albion, NY 14411, 4th Wed./monthly, 7:30 p.m., 145.270 — WA2DQL.

**PROS, Pioneer Radio Operators Society.** Meets: 1st Wed./monthly (except July/Aug.) 7 p.m., Masonic Temple, Rt. 78, Java Village, NY. Other Wed., 8 p.m. 145.170/144.57- Repeater KC2JY.

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

**Suffolk County Radio Club.** 3rd Tue./monthly, 8 p.m. Bohemia Rec. Ctr., Ruzicka Wy. W2DQR/ 144.610/145.210, 223.080/224.680 rptr. Info call Jim Heacock (516) 473-7529.

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

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

## NORTH CAROLINA

**North Carolina Chapter TSARC.** Meets: Mondays, 28.350 on the air, 8:30 p.m. local time, Sat. 10 a.m. on 7240 and Wed. 9 p.m. on 7259. "The Alligators" — all mouth, no ears.

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

## OHIO

**Ashtabula County ARC.** Ken Stenback, AIBS (964-7316). County Justice Center, Jefferson, OH. 3rd Tue./monthly, 7:30 p.m. County Rptr., 146.715.

**Clyde Amateur Radio Society (C.A.R.S.)** Meets 2nd Tue./monthly, 7:30 p.m., Municipal Bldg., Clyde, OH 44811. NF8E Rptr. 144.75/145.35. 444.60 (+5 MHz). Net Sun. 9 p.m.

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

**Firelands Area Repeater Assoc.** Meets 3rd Sat./monthly at First Federal Savings of Toledo, Huron, OH. Freq. of Rptr. 146.805/205. Info: Eugene Hutchins, AA8DL, 45 Welton Ave., Norwalk, OH 44857.

**Lancaster & Fairfield County A.R.C.** Meets 1st Thur./monthly, 7:30 p.m., City Hall, Basement Club Rm., Broad & Main. Info Net every Mon., 8 p.m. K8QIK/R 147.63/03 Rptr.

**North Coast A.R.C.** P.O. Box 30529, Cleveland, OH 44130. Meets 2nd Thurs./monthly, 7:30 p.m. at North Olmsted Middle Sch. cafeteria, 27351 Butternut Ridge Rd., North Olmsted, OH.

**Northern Ohio Amateur Radio Society (NOARS).** Meets 3rd Mon./monthly, 7:30 p.m., Gargus Hall, Rt. 254, Lorain, OH. Info: Rptr. K8KRG 146.70, DX Alert Rptr. 145.15. "Ohio's Largest General Interest Club"

**Silvercreek Amateur Radio Assn. (SARA)** Meets 3rd Thur./monthly, 7:30 p.m., Doylestown Village Hall, Doylestown OH. WD8PNF/R 147.99/39 rptr. For info call (216) 745-2573.

**Toledo Mobile Radio Association.** P.O. Box 273, Toledo, OH 43697. Meets 2nd Wed./monthly, 7:30 p.m., Luke's Barn, Lucas County Rec. Ctr., 2901 Key St., Maumee, OH. W8HHF 147.87/27 Rptr. Rptr. info/swap & shop, Sundays, wkly — 8:30 p.m.

**Triple States Radio Amateur Club.** Meets Wed./weekly on 28.480 at 8:30 p.m.; 7260 at 9 p.m. Rpters. 146.31/91 and 146.115/715. P.O. Box 240, Rd. #1, Adena, OH 43901. (614) 546-3930.

## OREGON

**Central Oregon Radio Amateurs, (CORA).** P.O. Box 723, Bend, OR 97709. Meets last Thur./monthly, 7 p.m., Bend Senior Cntr., 1036 NE 5th, Bend, OR. Net Sun. 7:30 p.m. 147.06 + MHz. Info call: (503) 382-1685.

**Keno Amateur Radio Club.** P.O. Box 678, Keno, OR 97627. Meets 3rd Thur./monthly, 7 p.m., Keno Fire Station. Rptr. 147.32 + W7UFM. Info: Tom Hamilton, WD6EAV, (503) 883-2736.

**Umpqua Valley Amateur Radio Club.** Meets 3rd Thurs./monthly 7:30 p.m., Douglas County Courthouse, Rm. 311, Douglas St., Roseburg, OR. Info W5P11/R 146.90/30.

## PENNSYLVANIA

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

**Merco County Amateur Radio Club W3LIF.** P.O. Box 996, Sharon, PA 16146. Meets 4th Tue./monthly at 7:30 p.m., Shenango Valley Med. Center, Farrell, PA. Net, Thur. 9 p.m. on 147.75/15 W3LIF, Digi. 145.010.

**RF Hill Amateur Radio Club.** Meets last Thurs./monthly, 7:30 p.m. at First Federal Savings & Loan of Perkasie, 600 Market St., Perkasie, PA. Nets: Wed. & Sun., 8 p.m. on 144.71 — 147.310.

**Warminster Amateur Radio Club, WA3DFU.** P.O. Box 113, Warminster, PA 18974. (215) 443-5428. Meets 1st Thurs./monthly, 7:30 p.m., Neshaminy-Warwick Presbyterian Church, Warminster, PA. Net on 147.690/147.090 Wed. 8:30 p.m.

## TEXAS

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

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

**Brazos Valley Amateur Radio Club (B-VARC).** P.O. Box 1630, Missouri City, TX 77459. Meets 2nd Thur./monthly, 7:30 p.m., Sugar Land Community Cntr., 226 Mallage Wy., 3 bks SW of Imperial Sugar Co. at HWY US-90A & Brooks St. (HWY 58) in Sugar Land, TX. Talk-in 145.47, 442.5 rptrs.

**Sun City Amateur Radio Club.** Meets 1st and 3rd Fri./monthly, 7:30 p.m., 3709 Wickham Ave., El Paso, TX. K5WPH 147.240, 443.4 with remote operation on 6M and 10M.

## VIRGINIA

**Southern Peninsula Amateur Radio Klub (SPARK).** Meets: 1st and 3rd Tue., Salvation Army Community Bldg., Hampton, VA. Rpters: 146.13/73 & 449.55/(-5) T. VE Exam info: (804) 898-8031, WARTZ.

**Virginia Beach Amateur Radio Club (VBARC).** Open Door Chapel, 3177 Virginia Beach Blvd., Va. Beach, VA. Meets First Thur./monthly, 7:30 p.m. Info on WA4KXV rptr, 146.97/37.

## WASHINGTON

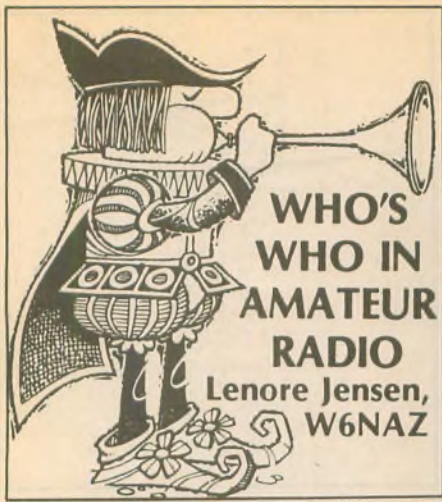
**The Mike & Key Amateur Radio Club.** Meets 3rd Sat./monthly, 10 a.m. United Good Neighbors Cntr., 305 S. 43rd, Renton, WA. Talk-in on 146.82 rptr.

## WEST VIRGINIA

**Jackson County Amateur Radio Club.** Robert D. Morris, WA8CTO, Sec.-Treas. 308 Edgewood Circle, Ripley, WV 25271. Meets 1st Thur./monthly, 7:30 p.m., United National Bank of Ripley. Net Mon. 9 p.m. on 146.67/07 WD8JNU/R.

**Tri-state Amateur Radio Assn.** Meets: 3rd Tue./monthly, 7 p.m., Green Valley Vol. Fire Dept., Norwood Rd. & 16th Street Rd., Huntington, WV. ARES net Thur. 9 p.m. on 146.76(-) W8VA/R. Info KB8EHJ (304) 824-5958.





"When does the man find time to sleep?" is the way many wonder about movie maker and repeater owner Forrest ("Frosty") Oden, N6ENV. It's a fair question.

In addition to his full-time position as a CBS-TV technical director in video tape editing, Frosty is not only producing, but serving as executive producer on a multi-million dollar theatrical feature for his own four year old Forrest Communications Company. (He'll smile and say, "We call it our FCC.")

The film should be released a year from now; it's being shot in San Francisco and Canada, with interiors filmed in a Hollywood studio. But in addition, Frosty's been turning out a prime time TV series to air next year as well as various industrial and sales tapes!

For years, he's been finding many ways to promote Amateur Radio, "to pay something back for the great pleasure gained from it." In 1984, when Bill Pasternak, WA6ITF, and Roy Neal, K6DUE, were planning the half-hour ARRL tape *Amateur Radio's Newest Frontier* featuring the upcoming shuttle flight by Owen Garriott, W5LFL, Frosty was glad to offer his editing and producing experience; Alan Kaul, W6RCL, joined in, too. Then they also did the post-flight version.

"I particularly enjoyed putting together *SAREX*, the program about the Space Amateur Radio Experiment. The next one of the ARRL series, *The New World of Amateur Radio*, also earned a fine response. We had a simple-to-use video C-Cam camera, modified for broadcast quality and nicknamed the "Sea-Cam" because it was taken so many places to shoot Amateur Radio activities. Thanks to Irv Emig, W6GC, for taking charge of shipping it around the world. Dave Bell, W6AQ, as you know, visited King Hussein, JY1, in his shack for some rare footage."

All involved with this tape program

are due congratulations for the gold medal honor from the TV and Film Institute in New York; the tape won first place over more than 31,000 entries in the Science and Technology category! A plaque attesting this now hangs at ARRL headquarters.

Proud as Frosty is of the professional quality of the programs, he hopes more of the general public will see them.

"The already-converted-to-Amateur Radio borrow the tapes and they are hits at ham clubs, but they should be seen in even more schools and other organizations. Help from amateurs everywhere is greatly needed. Of course, I realize it's tough to find volunteers to do the leg work, also to persuade TV stations to air nonprofit half-hour shows."

So they moved on to various "PSAs," short public service announcements, which stations often will run providing they are of professional quality.

"Bill, Alan, and I were happy that ICOM America would provide funding for producing three. We all are most grateful to Evelyn Garrison, WS7A, for her help. Formerly with ICOM, she now has a company of her own."

The first PSA features Barry Goldwater, K7UGA, recommending the Amateur Service to all ages. The second (produced by Alan) is called "Birthday" and shows how Amateur Radio serves many purposes. Frosty produced "Shapes and Sizes," showing how our service ties together the world. "A friend of Alan came up with the slogan, 'Amateur Radio—Now You're Talking!' which tags each spot."

The expensive distribution problem (tape duplication, mailing, etc.) was solved through the generosity of Don Stoner, W6TNS, and his National Amateur Radio Association, headquartered in Washington state and encouraging newcomers (phone: 1-800-GOT2HAM).

These color video PSAs are available free-of-charge if a request comes on a TV station's letterhead indicating a true effort will be made to air them. Specify 1 in. C or 3/4 in. U-Matic, and address to Forrest Oden, N6ENV, P.O. Box 70, Agoura Hills, CA 91376. (Frosty offers the ARRL half-hour programs to any group at \$20 each.)

To Frosty, the technical challenges of Amateur Radio are paramount.

"I enjoy modifying or building repeater equipment and may even add

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



Frosty Oden, N6ENV

that knack to my business. My three N6ENV repeaters on 220 MHz in Southern California are strictly open and enjoy very wide coverage. We have a loosely knit group which gathers for pizza every couple of months."

Frosty earned his First Class Radiotelephone license at age 18. After receiving his degree in Telecommunications and Film from University of San Diego he went into TV; he's in his 15th year with CBS at Television City, Hollywood. Finally, his amateur call showed up in 1979. (Oh yes, he's also a licensed pilot in case he runs out of things to do.)

Frosty and his wife, Marlene, who is a vice president of a bank, have two small sons, Grant and Troy. The family is thrilled with the success of "Frosty's FCC." And Amateur Radio will continue to benefit from its effects! □

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## Product Review

### The Butternut HF5B "Butterfly" beam

RICHARD ARLAND, K7YHA

The incident occurred in Austin, Texas, in 1985 and is a story best related over long-necked Lone Stars and Texas BBQ with good friends in attendance. Suffice to say, the prime movers were Fred Bonavita, W5QJM, and Leo Delaney, KC5EV. After a trip to the Iron Works BBQ I found myself (at 11 p.m.) on the roof with the vice president of Butternut Electronics, looking over the entire line of Butternut products. I was thoroughly impressed with the Butternut product line to the extent that I have used two of their vertical antennas for several years with outstanding results.

With the move to the new QTH in Wilkes-Barre, Pennsylvania, I was in need of a small HF beam antenna to erect on the flat dining room roof. Low profile and small size were prime considerations in this antenna installation. Since moving into the city, I was hard pressed to put up a decent HF antenna installation that would perform at QRP output levels. Wire antennas over 70 feet in length were definitely out. Tower erection was a hassle due to zoning and permit requirements. I needed something small that would perform well on 20 through 10M. A quick call to Don Newcomb of Butternut Electronics, and a new HF5B "Butternut" beam was on a UPS truck headed my direction.

The package was deceptively small. Measuring about six feet long and about 4 x 4 inches, this innocuous box contained all the hardware needed to construct a rather unusual small HF beam antenna. Don cautioned that I should read the entire instruction manual through at least once. I am here to tell you that if you buy one of these antennas, you better pull the instructions out and read them through at least *three* times. No joke, this antenna is extremely complicated. A once-over of the instructions will not adequately prepare you to assemble the antenna. Another tip: get a permanent marker and go through the instructions and mark all metal parts corresponding to their respective drawings in the manual. This will greatly speed identification of the major parts of the antenna and aid dramatically in construction.

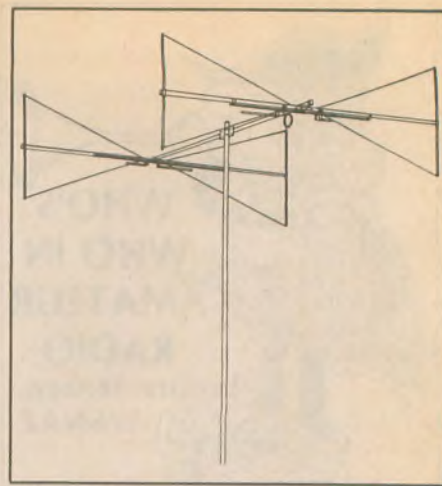
One problem with the instruction set is the need to show a three dimensional object in two dimensions. Try as they might, the Butternut people were

unable to come up with a real accurate way to depict this three-dimensional dilemma. If you have a background in drafting, you will be ahead of the game. My best advice is to read and re-read the instructions and try to visualize the antenna elements in their three-dimensional form before beginning construction.

The "Butterfly" beam is a very complex antenna mechanically. There are lots of parts. Double-check the instructions to ensure that you are working with the right parts and take your time to assemble the antenna. Work in an area that has plenty of room. *Do not* try to assemble this antenna in your basement or garage. It simply won't work (unless you have an extremely large garage).

The driven element is assembled first and the reflector is assembled last. All parts are extremely high-quality and are pre-drilled so that they all fit together well. All hardware is plated and rust-resistant. Tuning (as outlined in the manual) is done with the director mounted about 10 feet off the ground. The tuning procedure is extremely tedious and you must take your time to do the job properly. Once tuned, the antenna is assembled and placed into position. Then it is retuned again to complete the procedure.

I tried tuning the antenna the way the manual instructed and then I took my MFJ 204B antenna bridge and Opto-Electronics HA-1300 counter combo and did it my way. The entire antenna was assembled and placed on a portable tripod about 10 feet off the ground. Coax was connected from the driven element to the 204B/counter. Each band was tuned using the bridge/counter set-up to ensure the proper frequency was selected. This method was more than satisfactory and no retuning was done once the antenna was placed on the roof. Either method will work; I just like my method better. Not only is it faster, it tunes the entire antenna system at one time with little or no ad-



justment once the antenna is mounted in position.

The HF5B was mounted on my flat dining room roof (about 20 feet above ground) using a tall (5 ft.) Radio Shack tripod securely lag-bolted into the roof. Don't forget to put plenty of sealant around the tripod feet and lag bolts to ensure that no water will enter the roof. One 5 ft. section of masting was secured to the tripod with a second 5 ft. section above it, upon which the rotor was mounted. A third 5 ft. section of masting was placed above the rotor. The "Butterfly" beam was mounted on this top section. The two 5 ft. sections, rotor and antenna were lifted into place atop the tripod. A guy ring was in place just below the rotor and four guy wires were run to each corner of the roof to secure the antenna installation. The entire installation is extremely stable and will not twist or wobble. A small self-tapping screw was used to join the two bottom sections of 5 ft. masting to ensure that these two sections would not twist under wind torque or rotor backlash and cause the beam to come off correct heading.

Mini RG-8X was used as feedline from the driven element down to the shack. While a balun is recommended, it is not a must. I made a balun using 10 turns of RG-8X, 10 inches in diameter, at the feed point. This decouples the feedline from the driven element by acting as an RF choke.

How does it work? Well, it performs marginally on 20M; not being a full-size antenna for 20, the HF5B is a compromise at best on this band. The spacing is too close for good 20M performance. Element length is folded back upon itself so there is no gain and very little front-to-back ratio. There is, however, very good front-to-side ratio, enabling one to rotate the HF5B and reduce interference. On 15M performance starts to pick up. Good front-to-back and front-to-side ratio on 15 makes this antenna a good performer on this band. On 12 and 10M, perfor-

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mance is much improved over 20M. The antenna is now the proper length and the spacing is right for excellent performance. The antenna works well on 17, but only as a rotatable dipole. On all bands I use a tuner. This enables me to drop the VSWR on the feedline to nil and provides excellent match for the transmitter.

I have used the HF5B for over six months now and feel that this antenna is a good performer, especially for anyone who needs a low profile antenna system that will cover the popular HF

DX bands, and who does not have the room to erect a full-size HF beam. The HF5B is an excellent trade-off in size versus performance. Twenty-meter performance is only adequate, but on all other bands the antenna performs very well for its small size. The turning radius is only seven feet and its total weight is only 19 pounds. It can be turned by a TV rotor or something heavier and has a wind load of about 3½ square feet. Currently, my HF5B is mounted about 35 feet above ground and, with the Pennsylvania winter

upon us, we'll see how it weathers over the next several months. My thanks to Don Newcomb of Butternut Electronics Co. (405 East Market, Lockhart, TX 78644) for providing the antenna for this review.

Write to Don and get the latest prices and a full catalog of the latest Butternut antenna products. Tell him you saw it in *Worldradio*. □

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TS-690S HF Plus 6m Xcvr	1549.95	Call \$
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TS-711A All Mode Base 25w	1059.95	Call \$
TR-751A All Mode Mobile 25w	669.95	Call \$
TM-241A 50w Mobile FM	469.95	Call \$
TH-27A Compact, 2m, HT	419.95	Call \$
TM-731A 2m/70cm, FM, Mobile	749.95	Call \$
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TM-941A 2M/440/1.2 GHz	1199.95	Call \$
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TH-55 AT 1.2 GHz HT	524.95	Call \$
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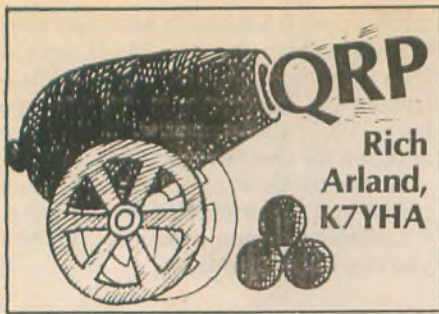
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Hello and welcome back. Last column I spoke of the new Ten-Tec Argonaut II transceiver which was sitting on my bench for product review. Well, the new Argonaut II, Hank, KC3UQ, Fran, KA3WTF, and I went off to Field Day in support of the Endless Mountains ARC. Officially we called ourselves the Endless Mountains QRP Expeditionary Force (EM-QRP-XF) which brought more than one chuckle from the rest of the club members. We all had a chance to operate this new rig quite a bit over the contest weekend and for several weeks afterward. The consensus was that this new Argonaut is quite a rig. It is very user-friendly (once we figured out how to work the Pass Band Tuning and the IF Shift controls). The receiver section performance was great. The continuously variable IF bandwidth (2.5 kHz to 500 Hz via the PBT control) coupled with the IF shift and the notch filter allowed us to dig the signals out of the mud. Even with the heavy RF environment encountered at the FD site, the Argo II performed very well. Some vicious RF overloading was initially encountered; however, by reorienting the antennas, the problem was reduced to acceptable levels. The EM-QRP-XF racked up over 200 QSOs for the Endless Mountains Club effort, all using 5W or less and a solar charged RV battery. Lew, WB3IWZ, the EMARC president wanted to give us a 400W station for next year, but we have declined!

Jim Thompson, W4THU, of the Radio Works in Portsmouth, Virginia, furnished the antennas for Field Day. A full-sized Carolina Windom was erected for the QRP 40M CW station. A half-sized Carolina Beam was installed for the HF packet station, oriented with the main lobes in an east-west direction. A 40M extended loop was converted into a full-sized 80M dipole for the 80M station. Results were *outstanding*. There were some converts to The Radio Works product line that weekend, for sure.

MFJ furnished our antenna tuner, one of their new MFJ-941E units. This new tuner features a small, crossed-needle SWR/power back-lit meter that is very easy to read. Gone are the days

of switching back and forth between FWD and REV to get the SWR under control. The meter responds very well to QRP output power levels giving accurate SWR readouts at the 1W level. The 941E provides connection and switching for two coaxial antennas, one end-fed wire or a balanced feedline antenna and a dummy load. Power handling capability is 300W. Its fairly compact size allows the 941E to nest atop my Argonaut 509 very nicely.

My trusty slingshot fishing reel (QST, June '91) was a hit. Normally it took only one shot at a tree to get the lead sinker over the selected limb and to pull up the cord for the antenna. Having used all sorts of systems in the past to get wires into trees, this slingshot fishing reel combo is by far the cheapest, easiest to use and most reliable method tried to date. Someone should start marketing these devices!

Field Day '91 was a new experience for Fran and only the second outing for the newly formed EMARC group. Lots of lessons were learned and some new operators got "christened" under fire (just ask "Ms. 20M DXer" Sue Sills, KA3YZS). Sue was thrown to the lions on the 20M SSB station and, with some help from Judy, KA3UXW, learned how to work the pileups like a pro. Matter of fact, she was still calling "CQ Field Day" 10 minutes after the generators had been shut down at the end of the contest . . . guess it was an adrenaline high! Field Day is a great time to hit the bush and try out your communications equipment and skills. If you didn't go this year, shame on you. Try to make it in '92.

Meanwhile back at the K7YHA shack . . . the A&A Engineering QRP transceiver kit (patterned after Gary Breed's, K9AY, design featured in the Dec. '90 and Jan '91 QST) turns out to be a real winner. Stas Andrzejewski, W6UCM, president of A&A Engineering sent me a review kit. This was a 40M version and went together in about three days. Tune-up was relatively simple and the little rig plays just fine. Forty meters has always been

my favorite QRP band. This small (6 × 7¼ × 3 in.) transceiver, which weighs only 27 ounces, fills the bill when a compact transceiver is needed for an outing, camping trip or business trip away from home. The little rig features a main VFO with a fine-tuned control, audio-derived AGC, semi-QSK with adjustable T/R time delay, sidetone generator with adjustable volume, and CW crystal filtering. In short, the 180-K40 transceiver kit from A&A Engineering is well worth the price of \$159.95. And it's an easy kit to assemble, even for the relatively inexperienced. Once assembled, you will experience the gratification and pride associated with using some homebrew gear to practice the craft of QRP.

Deals come and deals go, but I have just got to share this one with you. Several months ago, I was contacted by a local amateur who was trying to help a friend sell a Ten-Tec Argonaut 509. Of course, I asked him the price and he replied somewhere in the vicinity of \$175. Well, this is not a bad price for a 509 so I contacted the gentleman with the radio. He hadn't used the rig for several years. I arrived at the gentleman's home and was escorted to the basement. There sat the 509, looking sad and somewhat dirty. I asked him the price again, preparing to do some haggling. He replied \$175 for the transceiver *and* the matching 405 50W linear amp! I almost broke my hand trying to get my checkbook out. After taking the Argo and the amp home and thoroughly cleaning both, they now sit in the place of prominence on the shack table. Both work very well. I did spring for a new set of knobs (from Radio Shack), a new main tuning knob and dial skirt (from Ten-Tec), and a new dial pointer and dial cord assembly (also from Ten-Tec). One thing about Ten-Tec products—the good folks at Sevierville will bend over backward to help you find parts, repair and align your rig.

Luke Dodds, W5HKA, recently contacted me regarding the wording I used in one of the mods for the Argo series of transceivers (July QRP column). He pointed out (and rightly so) that the mod for the replacement of the crystal filter is not a "drop-in" mod. Actually you have to do some wiring and install the new filter (which is somewhat larger than the stock filter) using double-sided sticky tape. The instructions that accompany the new filter will outline the process for you; just be aware that what I considered a drop-in mod may not be perceived so by everyone.

There are some upcoming contests that should interest QRPers: The Fall QRP QSO Party (CW) sponsored by

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the QRP ARCI is Oct. 19, 1200Z to Oct. 20, 2400Z, 1991. The Holiday Spirits Sprint (CW)—also a QRP ARCI event—is on Dec. 1 from 2000 to 2400Z, 1991. Information, log and dupe sheets for these and other QRP ARCI events can be obtained by sending a legal size SASE to Red Reynolds, K5VOL, 835 Surryse, Lake Zurich, IL 60047. Don't miss the G-QRP-Club's Winter Sports. This contest is always fun and starts on Boxing Day (the day after Christmas) and lasts 'till New Year's Day. Don't forget the two CQ DX World Wide contests sponsored by CQ magazine. The SSB test is Oct. 26 to 27 and the CW test is Nov. 23 to 24. Both of these are big events and can

really increase your DXCC score.

Interested in joining the oldest and largest QRP organization in the world? Drop an SASE and \$2 to Mike Bryce, WB8VGE, 2225 Mayflower, NW, Massillon, OH 44647 for an information packet on the QRP Amateur Radio Club, International. Speaking of Mike Bryce . . . Mike still has a very limited quantity of the *HW-8 Handbook* for sale at \$8.95 per copy. According to Mike, this will be the one and only time that this version is printed. Escalating printing and postage costs have made the current version quite costly. If you want one, get it now. When they're gone, they're gone. 73 for now. CU on the air. □

## DX World

(continued from page 46)

4K4/UA9KW	—UA4KI	8P9AP	—WG5J
4K5Z1	—K4RK1	8P9BZ	—W5LNL
4U1UN	—W8CZLN	8Q7CO	—IX1BZO
5H30H	—OH2BAA	9H3CU	—G4TUP
5H3RA	—JA3PAU	9H3OZ	—DL1SBR
5R8AL	—F6HUJ	9H8F	—HA4XH
5V7JG	—F6AJA	9J2BO	—W6ORD
5W1JU	—WA6ZEF	9J2HS	—J14MTI
7Q7QD	—K7UW	9L3DX	—OZ1JKK
CN12DKH	—Arram, P.O. Box 299, Rabat, MOROCCO		
DU9CJV	—P.O. Box 148, General Santos City, PHILIPPINES		
HL0BDU/4	—Yoon Seong Wook, P.O. Box 559, Pusan 600, KOREA		
J45KOS	—Kos Amateur Radio Union, P.O. Box 199, Kos, GR-85300, GREECE		
KA8FTP/HZ	—Ron Henderson, P.O. Box 20281, El Cajon, CA 92021		
KB5NIV/DU4	—D. Johnstone, P.O. Box 159, Legazpi City, 4500, PHILIPPINES		
P29NCS	—P.O. Box 556, Goroka, PAPUA NEW GUINEA		
T40PAN	—P.O. Box 1, Havana, CUBA		
TR31GL	—P.O. Box 177, Libreville, GABON		
UA4FDS	—Vlad Zaytsev, P.O. Box 555, Penza, 440061 USSR		
UA4FEG	—Paul Bogachev, P.O. Box 222, Penza, 440011 USSR		
UA9JO	—P.O. Box 1, Antipaeta, 626731 USSR		
UA9MCM	—P.O. Box 2914, Omsk, 644066 USSR		
V2/G0AZT	—Eddie Schneider, P.O. Box 5194, Richmond, CA 94805		
V63YL	—P.O. Box 687, Yap Island, Federated States of Micronesia 96943, via Hawaii		
VP8CGL	—P.O. Box 260, MPA, Port Stanley, Falkland Islands		
VQ9AP	—David Parsons, Box 55, FPO Pacific, CA 96464		
XY0RR	—Romeo Stepanenko, P.O. Box 812, Sofia 1000, BULGARIA		
YB0AWU/YB2	—Cliff Gieseke, OMADP Box 2, DLIELC, APO AP 96520-5000		
YL1WW	—c/o Igor Kuzhev, P.O. Box 418, Riga 226001, LATVIA		
5N0ETP	—Keith Appleton, Chevron Overseas, Box 5046 RM A3325, San Ramon, CA 94583		
7P8CW	—Dieter Thelen, Am-Ginstrberg, D-5110 Alsdorf, GERMANY		
8P9AP	—Don Divinia, Rt. 6, Box 269, Greenville, TX 75401		
8P9BZ	—Darin Divinia, Rt. 6, Box 269, Greenville, TX 75401		
9L3DX	—Jan Meindert, Powerstation BO, SIERRA LEONE		

Many thanks to the following contributors: HB9NL, SU1ER, UA1NDR, UA4FDS, UA9MCM, UB4IYU, UG2GJR, Y24HO, YB0AWU, W1WU, K3ANS, KA3DBN, K3JGJ, WA3L, K4MZE, KI5JS, W5KNE, WB5PWF, NC6A, N6AW, K6EMN, WA6KUI, W6TUR, WA6WHQ, N7AHN, WX7K, WB0ZQN, International DX Associa-

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We sure hope the propagation improves in time for the big World Wide DX Contest the end of the month. This is the biggest DX event of the year and often brings out many that the deserving DXer needs for his DXCC count. The best of DX to you, de John N6JM. □



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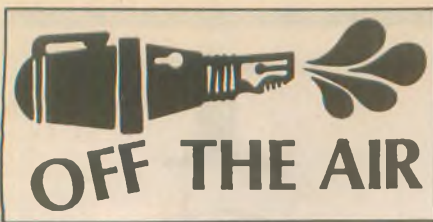
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#### Worldradio:

Thanks for the free copy of Worldradio.

Though I have been a reader of Worldradio about since its inception and a long-time subscriber, I did not let the extra copy go to waste, as I passed it on to a "would be ham" about 13 years old who has in turn been passing it around to several others in his Jr. High School class.—73, Vern, Kankakee, Ill.

### DX mess

I have been a ham for 51 years—same location, same call. I operate in the DX nets on 20 and 15M.

I'm not proud to be a ham when I hear some of the so-called "operators" who try to make a contact with a DX station. Net control has *no* control over them. They create a real mess, not just a "little pileup," and many times the DX station moves off frequency.

In addition, those operators have a habit of tuning up on the DX frequency so that no one can hear anything but their carriers, rather than tuning up or down 5 kHz and then back on the DX net frequency.

OLIVER SMITH, W8TLC  
Oregon, OH

### Rise and fall of Amateur Radio

*This article, written by Al Sziriski, AI4U, and published in The Listening Post (Orlando ARC), was submitted to Worldradio by John July, KA2VWW, of Altamonte Springs, FL.*

In 1928, Paul Segal, W9EEA, wrote the Amateur's Code, a set of lofty ideas to which amateurs loyally subscribed: "The radio amateur is considerate . . . never knowingly operates in such a way as to lessen the pleasures of others. The amateur is friendly . . . patient . . . operating when requested . . . provides advice and counsel to the beginner . . . has cooperation and consideration for the interest of others. These are the hallmarks of the amateur spirit."

I recall the spirit when my interest in ham radio was first sparked some 40 years ago. Dave Crossley, W8BCO, and Tommy Tabler, W8WZH, invited me to their homes, let me talk on their

rigs, taught me the theory, answered my questions, helped me with my code, welcomed me to the airwaves when I finally got my license. Here were grown-ups taking the time to encourage a kid to realize his dreams. I was an apprentice; they were my mentors. To them I am eternally grateful.

For many years I have carried the torch, helping others into the magical world of radio communications. But now ham stores sell high-tech imported radios, not parts. Radio Shack has discontinued their code practice oscillators and keys, and their stores are staffed by non-technical salespersons. Mail order parts houses are run by vendors, not service-oriented hobbyists.

Even the cohesion of the American Radio Relay League has disintegrated. Years of self-indulgent opposition to a code-free license has taken its toll. Even after the League finally capitulated when non-members were well on their way to establish such a license, ARRL representatives at a recent hamfest openly confronted newcomers by wearing buttons reading "SHUT UP AND LEARN THE CODE!"

It is tempting to point the finger of Amateur Radio's demise at the League, at competitive technology, at the code requirement and on and on. But there is one bit of introspection that hams seem to ignore: our image.

One weekend I happened to tune to 14313 kHz, home of the International Maritime Mobile Service Net, for nearly three years now a ham war zone between old-guard territorialists.

During those few minutes of listening I was ashamed to be a ham. I have never heard such a trash bin of jeering and catcalls, physical threats, profanity and obscenity, ethnic slurs, name calling, jamming, whistling, belching and bathroom sounds, infantile chanting and other degenerate outbursts.

Other hams who happened to stumble across the festering pustule were equally disgusted. One commented, "This sounds like CB!" No; CB has never sounded this bad. Another ham reflected, "Now I know why they call this 'Amateur' Radio!" Right on target.

I envisioned at that moment a young boy or girl, inspired by the lofty portrayal of amateurs as a benevolent, international fraternity of friendship accidentally tuning across that frequency. What a dreadful thought! I felt guilty by association, fearful that by possessing an Amateur Radio license, I might be equated with these dregs.

The FCC is aware of the problem. Since Amateur Radio is required by law to be self regulating, the Commission has ordered the adversaries to

meet and sort out their differences. But this group will never arbitrate; compromise is not part of their vulgar vocabulary.

Amateurs around the country shrug their shoulders, incredulous as to why our numbers are shrinking and our frequencies are being taken away for use by other services. But instead of blaming some uncontrollable, external forces for killing Amateur Radio, we should look much closer. Perhaps, like a cancer, ham radio is dying from within.

AL SZIRISKI, AI4U  
Orlando, FL

### Simple signal reports

I believe the RST (readability, signal strength, tone) system is of little value as used today. Has your contact ever seemed insulated by the report you sent? (That is, if you are conscientious about sending an *accurate* report!)

In my opinion, only a report on readability (R) should be used. The S and T report could be sent as well if requested or needed.

The R report could also be simplified dramatically: "R1" could indicate that readability is insufficient for a QSO; "R2" could communicate that readability is sufficient but not clear enough for solid copy; and "R3" could mean sufficient readability for solid copy, regardless of signal strength.

I think a system like this would make signal reports fast, easy, readily understood and accurate. Isn't readability the most important ingredient of communications? Just think how quickly we could report changing conditions, especially on CW, and perhaps eliminate a lost contact.

GROVER CORDELL, WB5FSP  
Springdale, Arizona

### Why uproot?

Amateur Radio operators are a special breed. Amateur Radio is a breeding ground for an abundance of electronic and electrical engineers. We have special skills, training and talents, and thousands who have a special love and dedication toward helping people. Yes, we do invest a lot of time, expense and energy into our equipment. Much of that equipment is to help other people. I believe that our many years of dedicated service warrant us the right to keep the spectrum space that we presently have. For those who would take it away from us for their own profit, I would simply remind them that there is a lot of expense and time in relocating. There is a lot of spectrum space available elsewhere.



Perhaps it could be a loved one or friend of theirs that we would be out there protecting and helping.

It seems illogical to have us uproot when there is so much unused spectrum in the television area and many other areas. Please help us retain our little bit of spectrum space. Please do not forget us when the parade is past and the shouting is over. Remember the good job that we have done. In return, we ask only to be able to help our fellow man another day.—*From a letter written to Hon. Robert Andrews in support of HR73.*

JEAN PRIESTLEY, KA2YKN  
Pennsauken, New Jersey

## Back on the air

I have been a member of three radio clubs over a period of 34 years. I am the founder, organizer and first president of the SIRARC Amateur Club. I organized it 17 years ago and today we have 245 active members all over central and northern California. To be a member of SIRARC you must be retired and a member of the parent organization of Sons In Retirement of California. This parent organization has over 160 branches, with a total membership of over 35,000. All SIRARC members range between 55 and 90 years of age, with many, many years on the air.

My concern for some time has been the number of our oldest members who are gradually either checking into our various nets only once in a while or just dropping by the wayside and remaining inactive. I am sure that many other radio clubs across the nation are facing the same situation.

It amazes me that this situation has not been acknowledged by the ARRL and research conducted to find out what problems are facing these older, experienced hams, and what solutions are available. Is it because it is too interested in the young prospects to offer help and encouragement to the older group to continue their life-long hobby? I am aware of some of the problems facing many of these old-timers because I was in the same situation myself at one time.

My first real problem developed in 1986 when, over a period of a few months, I lost so much of my hearing that I could no longer work SSB voice or use the telephone. With a hearing aid in each ear I could get along—with face-to-face conversation. I did go back to CW for a period of time, but this was never a mode I preferred.

I was still able to enjoy golf and bowl-

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ing—until 1987 and '88 when, due to arthritis, I had surgery and replacement of both hips. In February of 1989 the final and most devastating blow came with the loss of my wife after 64 years of marriage. At the age of 85, I found myself facing an entirely new world; my hobbies were gone and I had little contact with the outside world. I found it difficult to go on.

Then a very dear friend came to my rescue. He is an expert in electronics and an individual who is always at hand to help someone in need.

He came to me and said, "Let's get you back on the air with RTTY!" The first step was the dismantling of my old SSB station, antennas and all. Then we renovated my shack, installing a new operating bench, shelving, carpeting, heat and cooling, and assembled a complete new station for RTTY: ICOM 735 transceiver, 100W out; ICOM AT-150 automatic tuner; ROBOT 800-C keyboard-mini computer; NEC 12 in. green screen monitor; Heathkit SB-610 tuning scope; three homebrew dipoles, roof-mounted at 30 feet, giving me access to eight bands; and a Citizen 120-D printer. With a lot of patience and four weeks of many "ups" and "downs" on the roof making adjustment after adjustment,

together with the automatic tuner, I have a flat SWR on all bands and frequencies.

My station is not an elaborate and expensive one, but it's most efficient and is taking me all over the world on 100W or less at times. In 1990, I had the most enjoyable year of all in my 34 years on the air, contacting over 1,000 new RTTY stations all over the world and completing over 1,900 QSOs in over 70 countries. I worked all states and confirmed for my all-RTTY WAS. I am doing a little experimenting this year with QRP—5W or less. So far, in about five weeks, I have worked 16 states from coast to coast, including Alaska and Hawaii. On DX I have worked Japan, Russia, Chile, Puerto Rico and all over Canada, a very interesting project!

The only problem I have left is trying to find a way to thank my fine friend for his dedicated help and encouragement in getting me back on the air. I feel that amateurs everywhere should not only be willing to elmer young hams, but they should keep in mind that old-timers often need help too. Don't be afraid to lend a hand and help someone become active again!

MILLARD C. GEORGE, K6ZRY  
El Cerrito, CA

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## County Hunter

**Ace Jansen, N3AHA**

51 Kenbrook Circle, San Jose, CA 95111

Over the past six months, I've introduced you to county hunting and discussed the USA-CA Award, county hunter net operations, and QSLing using the Mobile QSL Bureau. I've also mentioned that an information packet is available from the Mobile Amateur Radio Awards Club (MARAC) by sending an SASE. This time, I'll discuss the information packet and MARAC in more detail. First I decided I should send for the info packet myself and see what it's all about. Then I asked Jerry, W0NNH (he sends out the packet), if he noticed an increase in requests for the packet. He told me the last 15 requests

for the packet were from people who mentioned reading about it in this column. That really made my day and it encourages me to keep writing columns.

Remember that being a county hunter doesn't require you to be a member of any net or club. If you like nets, you can count county contacts from other nets as well as the county hunter's net. If you dislike nets, county hunting can be done on any frequency you desire excluding 2M repeater contacts. The county hunter's nets (14.336 MHz and 14.0565 MHz) and MARAC are available to assist the county hunter but are not mandatory by any means.

My first three columns followed the info packet very closely. The packet is labeled "An introduction to County Hunting, April 1989" and is basically a guide to the fundamentals of county hunting. The first page is a who, what and where of county hunting and county hunters. The second page is an application for MARAC which indicates \$16 per year for dues and monthly newsletter subscription sent via first class mail (\$13 per year for third class mail). Dues are \$25 for members outside North America. Pages 3 through 7 discuss the following topics: the USA-CA Award, US counties, the nets, net

operation, signal reports, relays, confirmations, the Mobile QSL Bureau, and starting up. If you are a regular reader of this column you have been exposed to all of these topics. (There is a typo on page 4—the CW County Hunter's Net is on 14.0565 MHz.) The remainder of the packet contains information on MARAC and addresses for CQ magazine, the MARAC awards program, the Mobile QSL Bureau, and the B&B Shop. The B&B Shop sells county hunter operational aids including record books, MRCs, handbooks, and directories. Bill Nash, W0OWY, operates the B&B Shop as a business and volunteers as the MARAC awards program custodian, so the address is the same: P.O. Box 83043, Phoenix, AZ 85071. In summary, the county hunting info packet has a wealth of information for the county hunting beginner and offers the opportunity to join MARAC, the county hunter's club.

The MARAC is the primary support group for county hunters but is not affiliated with CQ magazine or any of the county hunting nets. MARAC was organized in 1970 with the following objectives: 1) Aid and promote mobile operation; 2) Provide incentives to keep those who have worked all the counties active in our midst; 3) Publish a monthly newsletter for the county hunter; and 4) Offer a series of awards related to mobiling and county hunting.

The MARAC accomplishes three of these objectives through its extensive awards program featuring both certificates and plaques. The awards are for fixed stations working counties as well as mobile achievement awards for operating mobile from various counties. The ultimate county hunter challenge is the Five Band Counties Awards (FBCA). One county hunter has contacted all counties on 20M and 75M, but no one yet has achieved all counties on all five bands. The awards vary from working counties with YLs to working DXCC while operating mobile. The MARAC awards will be discussed more thoroughly in the January column. The last of MARAC's objectives is accomplished by publishing a monthly newsletter, called *Roadrunner*, for all members with county hunting news, address info, advance notice of mobile trips, and upcoming conventions. Monthly features in *Roadrunner* include 1) Net Operating Tips—to help sharpen the operating skill of net participants; 2) For CW Ops—a column dedicated to the CW county hunter; 3) The Awards Board—a listing of all the major MARAC awards accomplished over the past month; 4) Members Speak—articles

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from the members ranging from expressing opinions to offering tips for mobile radio installation; and 5) Counties Needed to Finish a State of All USA-CA—a listing by call sign of counties needed to finish a state or all counties, which alerts the mobile operator to run counties to help that person finish up.

MARAC holds a national convention annually, usually the second weekend in July, in a different location each year, providing members an opportunity to get together and socialize. There is a general membership meeting, a Saturday night banquet and usually a trip planned to a local attraction. The national convention was held in Denver, Colorado, in 1987; Indianapolis, Indiana, in 1988; Abilene, Texas, in 1989; Valley Forge, Pennsylvania, in 1990; and St. Paul, Minnesota, this year. At the convention, individuals who have been selected by the membership are honored as Mobile, Net Control, and County Hunter of the Year. At this year's convention there were 325 total attendees and 255 attendees at the Saturday night banquet. Joyce Booth, WB9NUL, was awarded the County Hunter of the Year for 1991. Joyce has finished contacting all the counties, is very active as a mobile operator and net control, and she's also involved in MARAC affairs. Already, many county hunters are making plans for next year's national convention in Virginia.

During the rest of the year, a number of areas in the country have mini-conventions, providing informal get-togethers for people residing in those areas and members who might not be able to make it to the national convention. There are mini-conventions in the Northeast, Northwest, Southwest and Midwest. The most popular mini-convention, by far, was in the Southeast, in Murfreesboro, Tennessee, in

November. Often times this mini-convention generates a larger attendance than the national convention and is considered by many to be the most fun of the MARAC conventions.

Since 1970, 2,400 people have joined MARAC. I say "people" because not all members are amateurs—a few are short wave listeners (SWLs). Most county hunter awards are available for SWLs on a heard basis, including the USA-CA and some MARAC awards. There are amateur members from all 50 states and several DX countries. Currently of the 2,400 members in MARAC's history, there are 933 active members, representing the highest number of active members for the club. Like any amateur club, MARAC loses members due to inactivity and it's a challenge to keep members active in county hunting once they've completed USA-CA. There are now over 720 people who have accomplished USA-CA, and many continue to hunt counties and work toward the MARAC awards.

Next time, in January, I'll describe all the MARAC awards and provide you a list of the 1992 state QSO parties and national county hunter contests. If you haven't already sent for the county hunter information packet, send an SASE to MARAC, P.O. Box 64, Newport, MN 55055. If you are in Europe, the "Introduction to County Hunting" info packet is available from Eddie, G4KHG.

Eddie is one of the amateurs who not only worked all the counties for USA-CA, but he started again and accomplished contacting all USA counties a second time (MARAC award). When you consider the fact that Eddie is in Europe and has a smaller propagation window than stateside amateurs, you begin to appreciate the difficulty of his grand accomplishment. Until January, happy hunting! □

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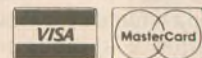
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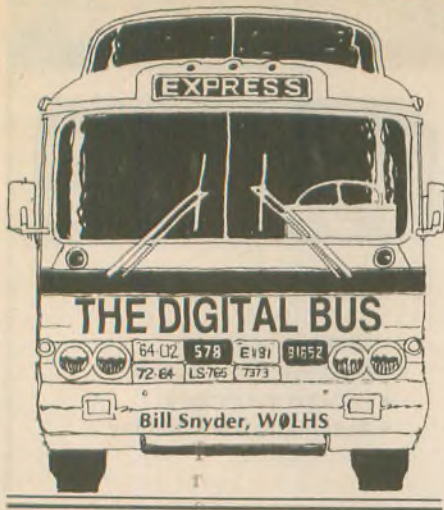


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Life is full of high points that stick in your memory like crazy glue can stick to fingers. Moments during my African adventures, soloing an airplane, getting married, and the first night's broadcast of WDAY-TV hang in my brain tenaciously. There is no erasing these events.

In 1952 I joined Fargo radio station WDAY to help put together a new local TV station, the first in the area. Because my background was in photography and motion picture work, the station management had offered me the job.

WDAY radio dated back to 1922 and was the leading 5,000W outlet in the Red River Valley of the north. We didn't have a construction permit for the TV station, and the application was on file with the FCC. This was during the period of the freeze on issuance of new TV station licenses. During the waiting period for the CP, the company sent me to RCA school in Camden, New Jersey, to learn the fundamentals of TV operation. At that time I held First Phone and Second Telegraph licenses and I was eager to learn about the new broadcast medium.

WDAY-TV was issued the construction permit while I was on a short period of active duty with the US Army. When I finished my tour at Fort Eustice, Virginia, I drove up to New York and visited a friend who owned a 5 in. TV set on which we watched President Eisenhower's inauguration of 1953. If I recall correctly, the microwave network only extended between Washington and New York; the rest of

the country was blank. All networking was done by motion picture film kinescopes which were air expressed to the stations.

When I returned to North Dakota we began to build the first TV station in the Fargo area. Our startup target was June 1, but we had a problem. Due to a severe rain storm the previous year, the studio building we were in the process of erecting had suffered flood damage that caused a basement wall to collapse. So the partially constructed studio building sat quietly through the winter until spring came to the prairie again. If we were going to make our startup deadline we had to make some temporary facility arrangements.

We had purchased a defunct FM station tower and transmitter building so we decided to add a large three-car garage to the XMTR building and use it as a temporary studio. The film, photo and business operations were conducted from temporary downtown offices.

In those days finding TV technical people was tough. There were schools that were cranking out quick-study cameramen and engineers, but the job market was so good they were all finding jobs.

Equipment for the station had been optioned before the license grant was made, so we were in good shape to get the TV transmitter and studio gear. However, certain objects were in short supply and therefore we had to make adjustments for the shortages. But all-in-all we managed to get the test pattern on the air in May, and WDAY was ready to broadcast its first program on June 1.

The sign-on broadcast was scheduled for 6:45 p.m. that day. The general manager thought everyone would be through with dinner and therefore we would blast off with a full audience glued to their sets.

At that time WDAY radio was the leading station in the North Dakota area. We had 23 live musicians and entertainers on staff. Frank Scott, later a piano player and arranger for the *Lawrence Welk Show*, was the musical director. Our entertainers pro-

duced two popular weekly road shows that were broadcast from small town locations in the area. So it was a natural to feature our live talent on the opening show.

The first 15 minutes was film I had previously shot of the mayor, the governor, and a few other dignitaries making short congratulatory speeches. Then we went live into the three-car garage studio where the lights hung about eight feet above the floor and the air conditioning was nil. Not all the 23 musicians and singers were on the first show, but you can be certain that most of them performed. The talent ranged from cowboy singers Hank and Thelma to Frank Scott and the big studio band. And all were jammed into that little garage with the two cameras.

The lighting level was about 250 foot candles, and so during the hour show the temperature began to rise like an inflating hot air balloon. The sweat began to pour off the entertainers.

Our country western singers whanged their guitars, yodeled and happily did their stuff. The dance band played the hits of the day, the singers crooned and jitter bugged, and the temperature rose.

The first commercial spot arrived after the big orchestral opening. Nobody had bothered to rehearse the commercial which was for a retail store that sold band instruments. The store had brought saxophones, trombones, cornets, sousaphones and displayed them neatly on a table that could be rolled out under the lights. The audio was to be supplied by a booth announcer while the camera panned around on the pile of shiny horns. It looked great on paper.

Because of space shortage, the instrument display was rolled in front of the cameras at the last possible moment. The director called for a camera to "pan around on the horns" as written in the script. Camera one moved over and zeroed in on the horns.

Now you must understand that the image orthicon tubes in the camera of that day were super-sensitive to specular highlights. Unlike the color pickups used today, the black and white camera tubes of 1953 "bloomed" a black halo around every specular highlight. The brighter the highlight the bigger the bloom! Nobody at WDAY had ever heard of dulling spray, a waxy substance used to dull reflections—I can't remember if it had been invented at that point in time.

You can imagine what happened to that myriad of highlights bouncing off those shiny horns; every light in the studio was reflected in the rounded brass and silver plated objects. The screen on the control monitor became

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hundreds of bright specks surrounded by a sea of black. Absolutely nothing was discernible in the picture.

"Do something," the director screamed at the video control engineer.

The poor technician was twisting every knob on the console trying to rectify the problem, but nothing worked. It was a one-minute disaster in specks and blooms.

"Pan over to the logo card," the director yelled over the intercom. "Get off that shiny junk."

During all this commotion the booth announcer was calmly reading the copy like good booth announcers should do. But the announcer's booth was a temporary box about the size of a phone booth and the walls were not quite sound proof. So, the yelling back and forth by the technical guys was audible to the folks at home. It was a great way to start off a brand new TV operation.

When the camera reached the logo card on an easel, the video was all out of adjustment due to the frantic knob twisting, so it took a bit of time to get it back to a presentable picture. In the meantime, the temperature in the studio climbed and climbed.

The next few commercials were on film, so there was no problem. But when we had another live commercial, the announcer calmly pulled the ad copy out of his coat pocket and read it to the camera. It was exactly like he would do on radio. The thought never occurred to him that TV required visuals in addition to the announcer reading the script.

I would like to report that all the rest of the show went without difficulty, but I cannot. The master of ceremonies, who was also the program director, had to cross over from one side of the set to the other. Instead of walking around the two cameras, he took a shortcut by dropping to his

knees and crawling across the back of the set. Just as he reached the middle of the set, the director switched cameras to full shot of the group playing. Yup, there, on camera, was the MC making like Fido.

We had a cat roaming around in the studio to keep the mice out of the transmitter. There is nothing quite like having a mouse invade your high voltage supply and commit suicide. Well, the cat managed to make an appearance during the show also, but only in a minor role.

And so WDAY-TV entered the life of the Fargo, North Dakota area. It's now a fixture.

### Eavesdroppings

"LITTLE THINGS CAN MEAN A LOT, ESPECIALLY IF THEY ARE BULLETS ... I WENT TO THE 50TH REUNION OF MY HIGH SCHOOL CLASS, BUT THERE WERE NOTHING BUT OLD FOLKS THERE ... THE GIRL I WAS SECRETLY IN LOVE WITH IN SCHOOL TURNED OUT TO LOOK LIKE PRUNE FACE IN THE FUNNY PAPERS YEARS AGO ... WHEN I WAS IN HIGH SCHOOL I BOUGHT A MODEL T FORD FOR SIX BUCKS AND SOLD IT FOR 7 DOLLARS A YEAR LATER ... I WENT TO STATE COLLEGE IN 1937 AND THE TUITION WAS A HUGE \$15.50 A QUARTER INCLUDING THE YEAR BOOK AND A SEASON SPORTS TICKET ... AND THE CHEMISTRY BREAKAGE FEE WAS \$1.50 AND IF YOU DIDN'T BREAK ANYTHING YOU GOT 90 CENTS BACK AT THE END OF THE QUARTER ... THEY CHARGED FIVE BUCKS FOR A DIPLOMA WHEN YOU GRADUATED AND SO I HAD TO BORROW THE MONEY TO GET IT ... I

WORKED MY WAY THROUGH COLLEGE DOING DISHES IN A CAFE FOR TWO BITS AN HOUR ... THE SUN SPOT ACTIVITY HAS BEEN VERY SPOTTY LATELY ... WHATEVER HAPPENED TO NEW COUNTRY DXING ... I HAVE 282 COUNTRIES ON RTTY NOW, BUT JA1ACB IS WAY OVER 310 ... I DIDN'T KNOW THAT AN ECDYSI-AST WAS A FEMALE STRIPPER, I THOUGHT IT WAS SOME NEW ECOLOGY FAN OR SOMETHING ..."

Thanks to W0HAH, WA4ZKZ, K6WZ, and Old Sol for help this month. It was generally a lousy month for eavesdropping. The RTTY bands were quiet in our town. Write me: 1514 South 12th Street, Fargo, ND 58103 or W0LHS @ W0LHS.ND.USA.NA. 73 DEBILL, W0LHS. DIT DIT. □



QST's plastic mailing cover can be used as heat-shrink material. Cut a ribbon of the stuff, wrap it around whatever you wish to seal, and apply heat. A thread will serve as a temporary tie. Matches produce enough heat but tend to darken the plastic; a cigarette lighter works very well. —QST, April 1988 □

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How would I ever get by without my computer? Once stuff of science fiction, computers now do it all (or so the local sales force would have you believe). We're in love with technology. As Amateur Radio operators, technology is what makes us tick. Just listen to almost any QSO—besides the weather, the hottest topic is "testing my new rig!"

Egad. There must be more to talk about than what rig, antenna, microphone, computer or TNC I'm using. I don't expect a change soon because we're dazzled by techno-stuff. A recent issue of *SunWorld* told of a University of Michigan study where several groups of MBA students created mock businesses. Some teams were given computers and electronic spreadsheets and other teams were given pencil and paper.

Professor Jeffrey E. Kottmann reported that students using computers consistently under-performed, under-produced, and under-staffed their ventures as compared to teams using pencil and paper. The professor reported that computerized teams were "significantly more confident in their performance than the unaided group." When the results were presented, the teams using computers refused to believe that their computers led them astray.

Technology is great. It allows us to move data at superhuman speeds. We can sort, print, collect and crunch data

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quicker than most of us can read, let alone comprehend it. Remember that technology is a tool. *Communication* is a multi-faceted skill that *employs* technology. Basic people-and-communication skills are still learned, molded and adopted through long hours of practice, evaluation and study.

**Helicopter request**

Every once in a while you'll handle a request for a helicopter, either for medical evacuation or for a search. Sometimes the request will provide little or no information. Just in case you're in the situation of handling or making a request, you should be aware of important information which the chopper crew will need.

First, find out who's requesting the chopper (name, organization and title). Then get a situation report; what happened, names of people, ages, injuries, and a *field assessment* of medical urgency. (Are victims in stable or critical condition?) Also be sure to determine the location—rendezvous point, location of the person to be evacuated, and landing site location. Example: "Contact the field team on channel one as you pass Bald Mountain. The victim is 20 miles west in a ravine and the landing site is a field near US 40."

Weather is very important. You'll need on-scene weather, enroute weather and a forecast. Even an on-scene observation is better than going in blind. Communicate as much information as possible. It's better for the chopper crew to know there are mountain winds and building clouds with

light rain than to fly over a peak and be surprised.

Terrain conditions are also critical. Such things as elevation, topography, ground cover, landing area description and wind direction need to be communicated. A crew coming from 5,000 feet to 10,000 feet may need to bring less equipment to compensate for reduced lift in the thinner atmosphere.

Other considerations include special equipment needed (such as hypothermia equipment). Also, it's crucial that the chopper crew have a *radio* contact and know what other search craft are in the area.

Recently a medical chopper was summoned to a Boy Scout camp. The chopper left a 5,000 ft. base and headed to a 10,200 ft. site to pick up a hypothermic scout. The chopper was told to land at Pass Lake and to contact "someone" on the state law enforcement coordinating channel.

The crew got no on-scene weather. They suspected it was mountainous (it was) with lots of trees (there were) but most maps do not show Pass Lake, and the camp did not have the state radio frequency. Fortunately a scout leader (also active in SAR and Amateur Radio) spotted the chopper circling, contacted the chopper on his SAR radio and directed them to the right lake. There was no traffic control so the leader grabbed a scout to assist with that task as well. The chopper crew was appreciative of the help (it was a busy highway where they landed) and the victim was appreciative of the scout leader who just happened to be at the camp at the right time.

Once a chopper is requested, the

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operation's not over until the chopper and the victim are safely back at the hospital. What if the chopper's crew were forced to return to base because they couldn't contact anyone on the ground and didn't know which lake (among about 30) was the landing point? As an Amateur Radio operator your job is to pass along the traffic. If you know what might be needed at the other end you can demonstrate communications professionalism by coaching the person sending the message. Blindly accepting traffic is okay sometimes, but if you can contribute to system efficiency, by all means do it. On a SAR operation, lives depend on good information.

### The need for need

One of the most powerful forces within a group is the feeling of being needed. When you're needed, you're part of the group and you feel worthwhile. Your self-esteem skyrockets and you feel good. If you're needed until just after you pay your dues, however, you don't feel so good. If you're needed to do all the things no one else wants to do, you won't feel so good either.

Making people feel needed is a skill fast disappearing in volunteer groups. One way to make people feel needed is

to ask their opinion, listen to their views and communicate with them. Avoid putting off personal contact ("Send me a letter," "Put it on the bulletin board," or "You didn't need to know anyway").

One of your team leader's (or commander's) most important job is making people feel needed. The commander can't fix all the broken repeaters, radios or airplanes, or put all the packet TNCs on the air, but he can make members feel needed enough that they will volunteer their time to push the effort forward. You'd be amazed at what a group of "needed" people can do when they feel that what they're doing is worthwhile and has forward momentum.

### Regulating talent

I had a wonderful chat with a former Civil Air Patrol wing commander (a CAP wing encompasses a whole state). He was quite colorful and pointed out the fallacy of regulating skills. For example, if you have a lot of inexperienced members who have accidents landing with 40-degree flaps, you install locks preventing anything over 30-degree flap settings. That solves the problem until you get accidents at 30-degree settings. Pretty soon you just outlaw that type of

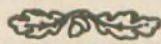
plane because all the experienced talent (those who could safely use 40-degree flaps) have quit.

Work to attract and train talent qualified to handle what you want done. If you keep limiting your competent and experienced talent through regulation or restriction, the only people you will attract are those without the experience you need.

As this former commander pointed out, you need experience and you need talent. A group needs structure (i.e., regulations) in order to operate effectively. Just don't overdo it to the point of chasing away the very talent your group needs to be effective.

### Use your talents

I'd like to encourage you to go beyond Amateur Radio talents and check out the many public service groups that exist. Amateur Radio will help you get involved, but explore other ways to be of service as well. You could teach first aid, you could fly as a search observer or you could train as a mission coordinator. There's lots you can do. You're talented people! □

  
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— See page 9

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and good DXing;" and "You have cards awaiting your SASE at . . ."

The Field Services staff for the ARRL, in Newington, Connecticut (under the leadership of Rick Palm) has demonstrated an interest in assisting us with our problems in the field. Rick would have to work out an agreement with the people who supervise QSL cards.

### Delivering traffic

Some messages are easier to deliver than others. Most people like getting a birthday message, even if it's from someone they don't know. It takes a certain technique to deliver a message to a stranger. Much roster traffic is of this sort. Ted's, K6UYK, messages are generally easy to deliver because even though the person being called doesn't know Ted, they do love soaring, and they generally enjoy hearing from a fellow soarer.

Delivering traffic gives you a chance to do some PR and explain Amateur Radio. Often you can offer to take a message back to the originator and/or leave your phone number for a future message. You might warm a stranger up with an Amateur Radio traffic explanation before you tell him you have a message from a stranger who wishes him world peace. Sometimes you help resolve problems. I recently delivered a QCWA message locally and found a disgruntled person who needed to have a local QCWA person work with him. The important thing to remember is that you must have some enthusiasm when you deliver a message. Just because you have reached five answering machines and several disgruntled people in a row doesn't mean that your next call won't make it all worthwhile.

### School

Our local celebrity, Luke Ward, started a ham club in his school last year. The club now has 16 amateurs (children and their parents). Their project this year is to set up a message

center in their school. This will allow them to be very active in handling traffic on packet and nets. What a perfect venture for a school. Teachers can incorporate message writing into almost any classroom activity, from language arts and reading to geography. As messages start flowing back to the children, not only will their interest peak in reading what is being said, but they will become interested in studying science and learning more about Amateur Radio. Conceptual understanding will also increase as vocabulary is developed. I wonder how many other schools are utilizing this resource?

### Why handle traffic?

Handling traffic not only brings hours of pleasure in knowing that you are doing something meaningful for others, but it's an all-around fun and entertaining activity. It's a very enjoyable way to increase your CW speed, whether you're checking into a net several times a week or on a daily basis. It gives you real time question-and-answer sessions on the air. Becoming a liaison just once a week increases 100-fold your opportunity to practice.

When you take that first message, the pressure builds. Can you arrange on your piece of paper an exact duplicate of the words on the sender's piece of paper? Not only must you copy the message exactly, but you may have to know how to ask for or give "fills." All this helps to build mental discipline. Over time you are expected to become precise and not "ramble on." A foundation is being laid toward the time when you may become part of an emergency net. In the meantime, you are enjoying working with other amateurs and making many friends. After working these friends for years, you may get a chance to actually meet them at a hamfest or while on a trip. You will probably spend more time with your traffic friends than with many of your other friends. An example of how lasting these friendships can be is illustrated by the Canadian custom of hams calling a net for a Silent Key. The NCS calls the net from the Silent Key's station and after all his friends have had a chance to speak of their camaraderie, the Silent Key's station is secured for the final time.

Thus, handling traffic is a way to

### QSL with a traffic message?

Why not exchange QSLs with a traffic message? This is now possible with the rewrite of Part 97 making amateur-to-amateur traffic authorized anywhere. Although many enjoy the exchange of a QSL card and wouldn't be interested, some amateurs might find it advantageous. This method of exchanging QSO information could save both money and time. It would need the approval and guidance of the DX bureau, as many use their QSLs as proof of their DX activities. A new ARL message number could be established for information where forwarding stations could add their call signs.

A packet QSL would have its path attached. This approach would make a nice add-on to the current method of QSLing. Currently, many stations send such messages as: "Thanks for the QSO," "QSL card received but have not worked you, sorry," "Received your QSL for V47RF and will reply as soon as his logs arrive, X 73

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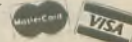
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help others and have fun while building discipline and making lasting friends. You may think that most of this traffic could be sent just as well on the telephone or not at all. That's just the point. During an emergency, phones may not work. We are supposed to be practicing with nonessential messages. Fair and roster traffic fits into the picture very nicely.

All amateur activities are rewarded with various certificates by the ARRL. The pinnacle of traffic handling is a brass medallion with your call sign engraved on the back, called the BPL (Brass Pounder League). It's earned by gaining either 500 points total, or 100 points for originating and/or delivering messages in three different months. Each month that you reach this goal, your section traffic manager will send you a BPL card. When you gain three cards, you can claim your BPL medallion. One BPL card equates to passing approximately 250 messages in one month (one point to receive the message and one point to send it, equaling 500 points—or originating and/or delivering 100 messages). This may take years to accomplish, or with concentrated effort in a few holiday months (like Christmas, Thanksgiving and Valentine's Day) it could happen more quickly. Between November 25

and December 25, the amount of traffic increases. Additional liaison stations are often needed on local, regional and area nets.

The following example shows how interest in traffic handling pulls in all the above factors. For several years, a few traffic handlers in Virginia Beach, Virginia (with a large military contingent) have been setting up a traffic booth at a local mall. They have handled thousands of Christmas messages. This year, the mall asked if they could set up a traffic booth for "Desert Storm." They did this each Saturday and Sunday until the war ended. As Easter approached, Easter messages were taken. Several of the hams were Moose members and thus interested in other Moose members who weren't hams. This interest led to setting up a radio station at the Moose Lodge. Their goals include: 1) Having an emergency station available; 2) Amateur study and code practice for anyone interested (other Moose members are studying); 3) Experimentation with antennas (they hope to add a tower and beam soon); 4) Giving Amateur Radio exams (they already have three VEs); 5) Helping the community (709 hours of community service have been earned by the group so far); 6) Handling traffic (446 messages

on Easter and 123 on Father's Day—they have added to the basic message form a section which includes complete information on who is sending the message in case it needs to be serviced back; 7) Enjoying Amateur Radio together as friends; 8) Earning the BPL medallion; Jane, KA6UXX, one of the group's initiators, is thrilled to have met the requirements for the BPL and looks forward to wearing hers. This group calls itself LOMARS (Loyal Order of the Moose Amateur Radio Service). It includes: KD4CKK, K4DOR, K4FUF, KC4QAF, KC4UFN, N4VTT, N4YYK, KC4YZX, KA6UXX, KC4UXY, WA8AHV, and WX9P.

It only takes one person to begin such a program. It could take place at a senior citizens home or recreation area, a school, a community agency (such as the Salvation Army), or just about anywhere. The way to get people interested in handling traffic is to just expose them to it. Amateurs who teach radio classes should take some class time to explain such uses for their radio and not assume that the students will discover traffic on their own. If teachers aren't experienced in traffic handling, they should invite someone to come in and speak a few minutes about it. □

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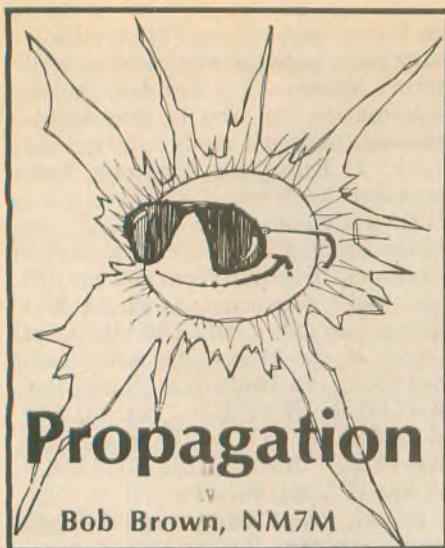
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Friends and neighbors in radioland: there's an idea abroad that troubles me—"one-way propagation." That's right, signals going one way are different enough from signals going the other direction so that one can hear DX and not work it, the ionosphere being sort of a "DX-diode." As one who prides himself on being of an analytical persuasion, I find myself in the curious position of defending conventional wisdom: "If you can hear 'em, you can work 'em!" Indeed, I'm really not happy about the alternative so I want to take the time to discuss it with you.

The idea of one-way DXing surfaced again recently when Jerry Hall, K1TD, one of the associate technical editors of *QST*, revealed some technical correspondence about NOAA's IONCAP propagation program in the December '90 issue of *QST*. Thus, commenting on the MUF data in the "How's DX" column, he said that curves designated as "West Coast to ..." were really calculated the other way around and then put in the "How's DX" column. He went on to say that can make a "notable difference for some paths," and concluded, "One-way propagation is not a myth, as DXers will attest!"

Now, I fancy myself as something of a DXer and this troubles me, as in all my time chasing DX I never thought that one-way propagation was in effect. True, I've had a good share of disappointments on the bands, but I

never thought the ionosphere was at fault in that fashion.

For example, I've responded to hundreds of "CQ DX" calls on the higher bands only to have the station go back to that CQ DX routine perhaps a millisecond after I've completed my call. Clearly, he heard me but had a belly full of 7s for that day and was out for bigger game. That's part of the sociology of DXing. And I have to admit there have been times when I've heard someone calling me but didn't come back; I'm sure you've done the same.

And there's the matter of QRM. Thus, you know as well as I do that we don't always hear the QRM on our own signals. Dozens of times I've been working DX on what seemed to be a clear frequency only to hear the DX contact suddenly burst through my QSK saying "QRL, PSE QSY." So local QRM is a factor to be reckoned with and could lead to the false impression that propagation is one-way at times.

Aside from those special aspects of DXing, there's no question that noise is a problem, varying not only with the seasons but with areas, rural or industrial. I can attest to that as I live on a small island, a true low-noise site. I can hear things better than some of my DXing friends in more urban settings nearby. So that's another side of the coin, being able to "hear 'em" better than others. But are they experiencing "one-way DXing"? No way! We're talking about noise, not signal propagation.

Then there's antennas. I went on a DX spree using just 5W output and worked a ton of DX in '87, just when solar activity was starting to pick up. From the exchanges in those contacts, I learned that QRPers are really parasites, working their DX thanks to the FB antennas at the other end of their DX QSOs. Indeed, about 85 percent of the DXers I contacted then had

beam antennas, say 2-element quads, 3-element yagis or better. So I take it that folks with good antennas can hear poor signals but it's not always the other way around. Is that one-way propagation? Hardly!

And how about receiver sensitivity? Just because one hears a strong signal from a big rig does not guarantee that the receiver at the DX end is on a par with the transmitter. So when I work a UM8N and then can't raise a UM8P, I think I have a pretty good idea of what's going on.

Okay, having said all that, taking care of the practical aspects, I think you can agree that there are plenty of possibilities when it comes to feeling paranoid about DXing, even coming up with the idea of "one-way propagation." All those reasons had to do with signal strength and noise, things not being equal at both ends of a contact. But it was a discussion of MUF predictions that got me steamed up; there, all things are supposed to be equal at both ends.

Before going on about that, let me tell you what's floating around in the literature on the subject. For starters, I found nothing about it in British publications—G6XN's *Antenna Book* or the *RSGB Communication Handbook*. In the American literature, it first surfaced in my library collection as "one-way skip" in the '74 *ARRL Antenna Book*. There, a "lack of reciprocity" was noted but investigations of its origins were said to be inconclusive. As for possible causes, at that date ionospheric tilts were mentioned as well as the possibility of different MUF conditions, such as an E-layer or D-region absorption at one end of the path as compared to the other.

In the '82 *ARRL Antenna Book*, the phenomenon was defined as "one-way propagation" and all the reasons cited above had disappeared, only to be replaced by the possibility of the effects from reflection off the top of an E-

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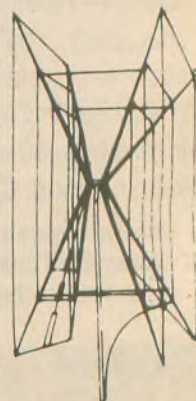
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layer along the path. And instead of a full propagation failure, the effect was mentioned as more often a difference in signal strengths, say going and coming. That's where the matter stands in the present '91 *ARRL Antenna Book*. But the remarks of Jerry Hall, K1TD, about critical frequency calculations have raised the ante, as we say when playing poker.

So what can we say to that? Well, first I'd have to ask just what we're talking about—short-term, anecdotal observations or long-term situations on the bands? For my part, I fully recognize that HF propagation is not a static matter. Clearly, we have to put up with fading due to short-term changes in ionospheric conditions. The most common type of fading is from interference effects due to irregularities in the ionosphere. And then there's polarization fading at the lower frequencies and skip fading when we operate close to the maximum useable frequency. But if one is to cry wolf with "One-way propagation!" it's going to require more than short-term disruptions, perhaps something more like a steady 30dB difference in signals. At least that's the way I think about it.

Regarding calculations of long-term averages, say the median values of critical frequencies to be expected on a path, Jerry Hall was quite right about the predictions of IONCAP, but in a troubling way. As I've worked with IONCAP, I've always found the median (50 percent) value or MUF on a path to be the same in both directions, A to B or vice versa. But the optimum frequency (FOT or 90 percent value) or highest possible frequency (HPF or 10 percent value) can be different. So, you ask, what's troubling about that? Well, let me explain.

In ionospheric calculations, we're really talking "statistics," observations of critical frequencies over a period of time and the statistical distributions of the results. To get the same monthly median MUF value in either direction yet find different results for the lesser FOT value and the higher HPF value tells me that something odd is going on here. So what cooks?

As best I can tell, the MUF calculations are done in a different manner than those other ones. After all, if the low, 27-day and high, three-day ends of a monthly distribution of critical frequencies are going to be different time and again, you have to admit that it's a bit odd to always get equal median, 15-day values in going from point A to point B or vice versa.

Well, that turns out to be the case, NOAA adding some empirical "system performance" considerations to the IONCAP predictions for FOT and

HPF frequencies. Now I'm troubled by that, as there's no technical manual for IONCAP to explain just what they've been doing. Strictly speaking, "system performance" should refer to an overall evaluation for a path given by critical frequency, signal strength and noise calculations, not something inserted out of its natural context.

Don't mistake me for a curmudgeon; I'm all for the full-scale evaluation of ionospheric propagation. Indeed, "MUF is not ENUF" was invented here. But I don't like to hear people hollering, "One-way propagation!" when the odds are against them observing it or, more importantly, even proving it. To my way of thinking, one-way propagation has to involve a 30dB difference in signal strength when all

other things are equal. Moreover, it should be observed during the same hour on 15 days of the month. If that were the case, we'd really have something statistically significant to talk about. Anything less makes a good story but that's about it!

Finally, for those who might say, "Yeah, but I heard a guy, S9 here, calling CQ DX and he didn't come back to me no matter how long I called him!" there's always the sensitive subject of operating practices at the other end. Now, I'd never raise that question up front, always limiting myself strictly to technical matters. But a back-channel explanation did reach me via a friend in W4-land who got it from another DXer: "All mouth, no ears!" Think about it! □

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# 10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ  
10-10 19636

## 10-10's scholarship winners

Each year 10-10 sponsors two \$750 scholarship awards, and the 1991 award winners have just been announced. They are Daniel C. Lawrey, KA1PNE, of Claremont, NH, and Jason G. Lovett, N1EJD, of Kennebunk, ME.

Daniel has completed two years as an honor student at Clarkson University where he is studying Electrical Engineering. He has held several radio club offices, participates as a Volunteer Examiner and indicates a variety of outside activities. He was recommended by 10-10 member Joseph Tardiff, KA1WCG, 10-10 #53395.

Jason has completed one year at the University of Maine where he is pursuing a course in Civil Engineering. Besides his Amateur Radio activities, he shows an excellent record of community and extra-curricular involvement. He was recommended by Kenneth Walker, W1FAB, 10-10 #28153.

The 10-10 Scholarship Awards are administered by The Foundation for Amateur Radio (FAR), which administers a total of 38 scholarship awards to a number of Amateur Radio clubs and individuals. The 1992 10-10 Scholarship Awards will be announced in April or May of 1992 in this column and in the *10-10 International News*. Watch for the announcement—as a 10-10 member, you can submit candidates for next year's awards.

Anyone can contribute to the 10-10 Scholarship Fund; send donations c/o Gerry Gross, WA6POZ, 10-10 #21274, 643 N. 98th #142, Omaha, NE 68114. The program is under the direction of Morrie Goldman, W6EHM, 10-10 #4189, and any amount you feel you can donate will help.

## New 9th district manager

Jim Williams, N9HHU, 10-10 #42712, has replaced Berniece Tielemann, N9CDO, as 10-10's 9th District Manager. Berniece, 10-10 #20025, took over the 9th District as manager in 1983 and has spent many, many hours keeping the 9th district records current and accurate. In the Summer 1983 issue of the *10-10 International News*, Berniece was introduced as the new 9th

district manager, and her picture appeared on the cover with the cover story congratulating her in becoming the first 10-10 member to work and confirm 100 or more 10-10 countries. In fact, she had 105 10-10 countries confirmed at the time. We thank Berniece for her many years of help to 10-10.

All 9th district members should send all dues, renewals and correspondence to Jim Williams, N9HHU, at 240 Park Road, Creve Coeur, IL 61611.

## Peach State Chapter

A new chapter has joined the ever-growing list of 10-10 chapters. It is the Peach State Chapter with Bob, N5SGC, 10-10 #57471, as chapter head. They have come up with some unique ideas, one being that there will be one instant qualifier in each state. Points will be awarded based on age and number of years licensed. There are a number of other ways to obtain point upgrades. Bars will be awarded for 500 points, and working a member in each state and each state capital will qualify for the final certificate.

Look for the Peach State Chapter on Sundays at 0000Z on 28.420. For a complete set of the rules, point values, awards and certificates available, send a #10 SASE to Peach State Chapter, PO Box 52, Loganville, GA 30249.

## 10-10 county hunting has caught on!

A note from Alice, NR4R, 10-10 #31223, 10-10's county award manager, states that she has issued over 160 10-10 County Hunter Basic Certificates for making 10-10 contacts in at least 100 counties. Twenty-two have

made it to the 500-county level and K1WQU has received the 1000 seal.

County hunting on 10M is fun. A simple way to keep track of your counties worked is with the 10-10 county hunter record book. This book lists all 3,076 counties and has space for the call, 10-10 number, date and award number. In addition, the rules and application for the basic certificate and up-grade seals are included. The record book is available from Alice Jenkins, NR4R, One Mitchel Lane, Rossville, GA 30741. The cost is \$5 US, or \$7 foreign, post-paid.

If you are going mobile on 10M, announce the county you are in and give out some of those hard-to-get counties. It is suggested that mobiles use the frequency of 28.336 to announce their county and establish initial contact, then move off that frequency if they want to ragchew. The frequency of 28.336 is used by MARAC (Mobile Amateur Radio Club) as a county hunting frequency also. Many MARAC members are also 10-10 members.

If you have a mobile trip planned and can let me know at least 12 weeks in advance, I will list your trip in this column along with the states and counties you plan to mobile through. You can do the same for any special event activity.

If you are not a 10-10 member and are interested in finding out more about 10-10, send a "green stamp" (\$1) and two first class stamps (with an address label but no SASE) to me at 18130 Bromley St., Tarzana, CA 91304-1701. You will receive our information package and a copy of the latest issue of the *10-10 International News*.

73, es cu next month. □

## Just dial '311'

Bob Ward, K0SVZ, has suggested that his club establish a "club frequency" on each band for use "by people out of town on vacation or traveling ... anytime day or night."

As a means of remembering the frequency, Bob offered the use of "311" ... much like the use of easily remembered "911" for emergency telephone dialing. Suggested frequencies cover all of the major Amateur Radio bands, to accommodate varying band conditions and characteristics.

10M—28.311 MHz  
20M—14.311 MHz  
80M— 3.8311 MHz  
15M—21.311 MHz  
40M— 7.211 MHz

Bob also suggests monitoring these various frequencies when available, especially "in the evening at 7, 8 or 9." — Davenport Radio Amateur Club, Davenport, IA □

## ESTABLISH A HAM TESTING CENTER IN YOUR AREA

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

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# CONSTRUCTION

## Shortened antennas

DALE HUNT, WB6BYU

Lack of space for an antenna is perhaps the most common reason many hams aren't on the lower HF bands (or on HF at all!). An 80M dipole, for example, barely fits diagonally across a quarter acre lot. But that needn't stop us if we use shortened antennas.

There are four basic approaches to shortening a dipole:

- Bend the ends around as necessary to make it fit.
- Add capacitance at the end ("capacity hats").
- Add series inductance (loading coils").
- Use whatever length dipole will fit with an antenna tuner.

A few general principles: Shortening an antenna will reduce the radiation resistance, so "minimum SWR" may still be high. (A shunt coil across the feedpoint can be used for matching.) The lower resistance (and added reactance if loading coils are used) increases the "Q" of the antenna, which reduces the usable bandwidth. Often the efficiency also suffers (though high losses will *improve* both the bandwidth and the SWR). These effects are greatest with inductive loading at the feedpoint and are least with capacitive end loading. But don't let this scare you off.

Let's assume that you have enough room for a 40M inverted "V" and want to work 80M. (These comments can be scaled to any band.) The first approach is often the simplest: just run the antenna out to the tie-off points, make a bend in the wire and continue in any convenient direction. The extra wire will run under the eaves around the house, along the fence, over to another tree, or just let it hang if there is room. Don't double the wire back on itself too much or the radiation resistance will drop way down. A "Z" shape often works well. If you already have a 40M inverted "V," cut two wires about 35 feet each and put an alligator clip on one end. Clip the wire to the end of the 40M antenna and adjust the length of the added wire for 80M. Then just unclip the wire when you want to operate on 40. (A pair of traps would be more convenient for quick band changing, but they take more work.)

Capacity hats can be considered a variation, using multiple wires instead of a single bent end. Two 25 ft. wires running in different directions would give roughly the same loading as the single 35 ft. extension. They can also be used in conjunction with loading coils.

Loading coils are the traditional method of shortening antennas. They can be used for very large reductions in length (such as for mobile antennas). The size of the coil depends both on the antenna length and where along the wire the coil is placed. In this case we could insert coils of about 20 uH in each leg at the feedpoint, or 40 uH if we put them in the middle of each leg. In the former case, the feedpoint impedance would be about 15 ohms (SWR over 3:1). Moving the coil toward the ends improves the match: if we put the coil at the very end we'd see about 36 ohms at the feed point, which is an acceptable match to 50 ohm cable. This would theoretically require an infinite coil, but adding a few feet of wire beyond the coil brings it down to merely "large," and provides for adjust-

ment. The large coil has an added benefit: it looks like a big choke at the higher frequencies, acting like a trap.

Here is a practical design: Take a big pink hair curler (1 1/2 in. diameter) that's not otherwise in use and wind 60 turns of #20 wire on it, leaving eight feet of extra wire on one end and one foot on the other. (Actually you'll need one curler for each end of the antenna.) Connect the short wire to the end of your 40M antenna and adjust it to bring the 40M antenna back where it should be. Trim the long end for resonance at your favorite 80M frequency. The frequency changes quickly, so only take off a couple inches at a time once you get close. A dip meter will save a lot of trial and error. This will allow you to work both bands, although the bandwidth on 80 may be 200 kHz or less. (For high power or better efficiency you could make the coil larger with bigger wire).

The antenna tuner is handy, if you already have a higher frequency antenna installed, or for multiband operation. In the case of a half-sized antenna, the SWR would be over 10:1, so the tuner and the feedline should be conservatively rated to handle the peak currents and voltages on the line. The additional feedline loss won't be too bad if the matched feedline loss is under 1 dB. — Santa Barbara ARC, Key Klix, April 1991

## HAM RADIO CLASSIFIEDS

the bi-weekly classified  
newsletter for ham radio operators



The image shows several pages from the 'HAM RADIO CLASSIFIEDS' newsletter. One page is titled 'CLASSIFIED' and contains various advertisements for ham radio equipment and services. Another page is titled 'MADISON SHOPPER' and lists local businesses and services. The newsletter is dated 'VOLUME 1 NUMBER 2 MARCH 16, 1991'.

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# AERIALS

## KURT N. STERBA

A letter came in to *Worldradio* which said that I was repeating myself. First, I looked where the letter was from—a county where they named the airport after a moving picture actor. Ha! Look after whom Chicago and Milwaukee named their airports.

Yes, I do repeat myself because I keep hearing and reading the same dumb stuff over and over again. It's an uphill fight. I keep trying to save hams from the goomba that is spreading.

I've never claimed this column was

for the transducer theoreticians. It's for Ned Novice. After a few years and after he or she has memorized every word in the *ARRL Antenna Book*, there will no longer be a need for me.

By then Gerry General won't need my warning of, as I saw this month, an ad for a groundplane antenna promising a 5 dB gain.

Another letter forwarded to me (from some town named after a fish) contained a lot of moaning about the Max-com. The ham never said he had one—he just moaned about it.

Would you like a terminated rhombic? How 'bout the terminated V-beam? How 'bout the terminated Z folded dipole? You may know it as the T2FD.

You know what that "terminated" means—yup, a big fat resistor! How 'bout that ad which talks about—3.5 to 30 MHz, SWR less than 2:1. Just how do you think they do that with a coax-fed dipole? Does anyone write in to Hartford, Connecticut and complain about that?

I've been writing this column for so long that some kid who joined me as Teddy Technician is now a PhD at some hi-tech outfit. So, what do I tell another whole new generation of young (and some not-so-young) hams?

You may hear, from the snorters and wheezers on 75 phone: "A vertical is an antenna that radiates equally poor in all directions."

While truly non-directional, for the small expense, simplicity and low visual profile, the vertical is not bad potatoes at all.

Should you not have the room to run radials all the way out as described in the books, don't despair; run a bunch of short ones. A piece of scrap copper or aluminum at the base won't hurt. DX performance will be better than up close.

'Tis baffling to me why more isn't written about ground-mounted vertical beams. The regular vertical is the

driven element. The director is another vertical—about five percent shorter and 10 percent of a wavelength from the DE. The reflector is about five percent longer and spaced .15 WL from the DE. There are no phasing lines as in the usual directional verticals. Just feed the vertical as usual.

How much gain will this give you? Twenty-two dB. Hey, I'm not foolin'. Twenty-two dB gain over three 12-ounce coffee cans spaced the same as the verticals. And, the coffee cans are a measured 22 dB over three bottle caps in the same configuration.

You may end up needing a capacitor of about 500pF (picofarad) between the DE and the center of the feedline. But if you just use a tuner in the shack, there shouldn't be much difference between optimum and the tuner in the shack.

While the ham magazines don't talk much about this antenna, it has been used with great success in the commercial service by a pal of mine.

For those who haven't yet moved from their no-antennas snooty neighborhood: Have you tried a horizontal loop hidden in the rafters of the garage? No doubt it is a large garage, at least four-car capacity.

New subject: Some are using the mobile antennas in their back yards. Try getting the antenna up off the ground. Every foot will make a difference.

For tinkerers: take an eight-foot dowel, wire taped to the pole and cut in the center. Feed with open-wire, and support vertically. Switch back and forth between this and what you usually use on 20M and send in the results.

(KNS who practiced his craft at a place named after an aviation pioneer stays hidden so as not to be met at the radio club with, "Well, Bub, just what does 'terminated' mean," and the like. And, Lil says hello to all.) □

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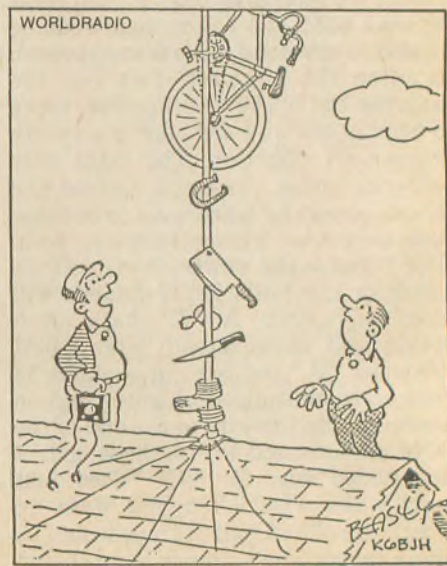
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## ALARA Contest

The Australian Ladies' ARA Contest will be held Saturday, November 9, from 0001 to 2359 UTC. All licensed operators throughout the world are invited to participate. Also open to SWLs.

**Object: Participation**—YLs work everyone, OMs work YLs only. One contest (combined phone and CW) run over 24 hours.

**Suggested frequencies:** Bands to be used are 3.5, 7, 14, 21 and 28 MHz only. The following are suggested frequencies for easier location of contacts: 28.380-28.410, 21.190-21.200, 21.380-21.410, 14.250-14.280, 7.070-7.100 and 3.560-3.590.

**Operation:** Phone and CW. Each station may be counted twice for credit—once on phone and once on CW. All contacts must be made in accordance with operator and station license regulations. No net or list operation, no crossmode.

**Procedure: Phone**—Call "CQ ALARA CONTEST." CW—YLs call "CQ TEST ALARA." OMs call "CQ YL."

**Exchanges: ALARA Member**—RS or RST, serial number starting at 001, ALARA member, name. YL non-member or OM—RS or RST, serial number starting at 001, name.

**Scoring: Phone**—5 pts. for ALARA member contacted, 4 pts. for YL non-member contacted and 3 pts. for OM contacted. CW—count double points for contacts where at least one operator is Novice. SWL—5 pts. for ALARA member logged, 4 pts. for YL non-member logged.

**Logs:** Single log entry (but Australian YL Novices entering for the Mrs. Florence McKenzie CW trophy should indicate their CW score separately also). Logs must show date/time UTC, band, mode, call sign worked, report and serial number sent, report and serial number received, name of operator of station worked and points claimed.

**Logs must be signed.** Logs are also to show full name, call sign and address of operator and show final score (points claimed). Logs must be legible. No carbon copies. No logs will be returned. Decision of the Contest Manager will be final. Logs must be received by the Contest Manager by Dec. 31. Contest Manager: Mrs. Marilyn Syme, VK3DMS, P.O. Box 91, Irymple, 3498, Vic. Australia.

**Awards: Mrs. Florence McKenzie CW Trophy**—This will be awarded to the Australian YL Novice operator with the highest CW score (not necessarily an ALARA member). Minimum score 50 pts. The actual trophy, because of the size and weight, will not be forwarded to the winner, but a certificate bearing a photo depicting the trophy will be sent to the winner each year.

**Certificates** will be awarded for the following: Top score overall, top score phone only, top score Australian YL Novice CW (Mrs. F. McKenzie certificate), top score ALARA

member in each country and VK call area, top score YL non-member in each continent, top score OM in each continent, top score SWL in each continent, top score VK Novice and top score overseas YL Novice CW. □

## Telephone Pioneer QSO Party

The George S. Ladd and John I. Sabin Chapters invite all Telephone Pioneer Radio Amateurs to participate in the 27th Annual Telephone Pioneer QSO Party. The contest will take place from Saturday, December 7 at 1900Z until Sunday, December 8, 2100 Z.

**Rules:** Fifteen bands are defined for use in the QSO party. They are:

1.8: 1.800-2.000	14.0: 14.000-14.150	28.3: 28.3-29.7
3.5: 3.500-3.750	14.2: 14.150-14.350	50.0: 50.0-54.0
3.9: 3.750-4.000	21.0: 21.000-21.200	144.0: 144.0-148.0
7.0: 7.000-7.150	21.2: 21.200-21.450	220.0: 220.0-225.0
7.2: 7.150-7.300	28.0: 28.000-28.300	UHF above 420 MHz

Any station representing a different chapter from the contestant may be contacted on any or all of the 15 bands for a maximum of 15 QSOs per station, with no more than one QSO per station. This contact can be on any band. Only one transmitter can be on the air at a time. Club stations may have multiple operators.

**Procedure:** phone user call "CQ Telephone Pioneers." CW and RTTY user call "CQ TP." Please observe good sportsmanship; share frequencies with low power stations and give way to established nets. Contacts via simplex or repeater are valid.

**Frequencies: phone (MHz)**—1.855-1.930; 3.905-3.950; 7.228-7.260; 14.260-14.305; 21.360-21.405; 28.305-28.350; 50.1-50.5; 144.1-148.0; 222.1-225.0; CW (MHz)—1.855-1.930; 3.540-3.560; 7.040-7.060; 14.040-14.060; 21.040-21.060; 28.040-28.060; 50.0-50.1; 144.0-144.1; 222.-225.0; Novice/Technician CW—3.705; 7.125; 21.125; 28.125; RTTY—3.630; 7.085; 14.085; 21.085.

**Scoring:** Each phone QSO is worth one contact point. Each CW QSO is worth two contact points. Total score equals contact points times chapters worked. Only one multiplier may be taken for each chapter worked. The maximum multiplier is 120 (all TPA chapters plus a maximum of 15 USTPA groups).

**Exchange:** Signal report and chapter number. (USTPA: club or chapter name and number.)

**Reporting:** If possible, return log sheets via your Pioneer Amateur Radio Coordinator. Please use the summary sheet. Send logs showing date, time station worked, band, mode, signal reports, chapter number, and summary sheet, postmarked no later than Jan. 17 to George S. Besley c/o John I Sabin, Rm. 3200, 2700 Watt Ave., P.O. Box 15038, Sacramento, CA 95851. □

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\$1, and tailgate spaces are \$3 each. Talk-in on 147.72/12. Contact Chuck Kruppenbacher, KB7ICP, 602/986-3060. □

## California

LIVERMORE ARC will be holding monthly Amateur Radio swap meets on the first Sunday of each month beginning November 3, from 7 a.m. to 12 noon, rain or shine, at Las Positas College in Livermore. Covered spaces are available at no extra charge. Admission is free, and sell spaces are \$10 each. Talk-in on 147.045(+) from the west, and 145.350 (-100 Hz) from the east. Contact Gil Gray, WU7R, 510/462-5055. □

JET PROPULSION LABORATORY ARC is one of the hosts of this year's AMSAT-NA annual meeting and symposium, November 8, 9, and 10 at the Los Angeles Airport Holiday Inn. The event begins on Friday afternoon, and weekend highlights include presentation of selected papers, multi-media lectures, AMSAT educational projects, displays, formal and informal meetings, and many family activities. Special hotel rates for symposium attendees have been negotiated, so please register with the hotel early by calling

800/465-4329 and ask for the special AMSAT rate. The AMSAT registration fee is expected to be between \$15 and \$18. Contact the symposium committee c/o Talisman, 7217 Melrose Ave., Los Angeles, CA 90046; 213/937-7942, 11 a.m. to 6 p.m. PST. □

## Connecticut

SOUTH CENTRAL CONNECTICUT ARA will hold an indoor ham radio and computer flea market on November 10 from 9 a.m. to 3 p.m. at the North Haven Park and Recreation Center. Admission is \$3 per person. Vendor spaces are \$15 in advance, \$20 at the door. Table reservations must be received with a check by November 1, and may not be made by phone. Vendor set-up is at 7 a.m. Talk-in on 146.01/61. Contact SCARA Flea Market, P.O. Box 81, North Haven, CT 06473; or call Brad, WAITAS, between 7 p.m. and 10 p.m. at 203/265-6478. □

## Illinois

CHICAGO ARC will hold a ham auction on November 17 from 12 noon until all is sold, at the DeVry Institute of Technology in Chicago. Seller set-up is at 11 a.m. Contact CARC, 5631 W. Irving Park Rd., Chicago, IL 60634; 312/545-3622. □

## Maryland

MASON-DIXON Computer and Hamfest will be held on November 3 from 8 a.m. at the Carroll County AG Center in Westminster. Limited overnight camping sites are available, and VE exams will be held. Admission is \$5. Inside table spaces are \$10, and tailgate spaces are \$5. Vendor set-up begins at 6 a.m. Contact Mason-Dixon Computer and Hamfest, P.O. Box 2099, Westminster, MD 21158; or call Dennis Baldwin, KA3IXG, 301/239-3878. □

The GODDARD ARC in conjunction with the Tri-County ARC will be holding their Holidayfest '91 on Sunday, December 8, from 8 a.m. to 4 p.m. at the Prince George's Community College student activities building in Largo. There will be free VE exams by the Laurel VEs, door prizes, a CW speed contest, symposiums including packet radio, antennas, Skywarn, ARES, AMSAT, and ARRL, and shopping assistance for holiday gifts for your favorite hams. Admission is \$4 at the door. Unlicensed spouses and children under 12 are free. Vendor tables are \$18 until November 23 and \$22 from November 24 to the day of the hamfest. Tailgating will be \$5. Talk-in will be on 147.180(+) and 444.65(+). For more details, call 301/572-2326. □

## Massachusetts

MAYFLOWER ARC will host a flea market on November 16 from 9 a.m. to 4 p.m. at the Plymouth Memorial Hall Building in Plymouth Center. There will be a Microwave/ATV demonstration, and refreshments. Admission is a \$2 donation, and children under 12 will be admitted free. Tables are \$10 in advance, and \$12 at the door, if available. Vendors will be admitted to set up at 8 a.m. Talk-in on 446.625 and 146.55 simplex. For table reservation, mail checks to MARC, P.O. Box 766, Plymouth, MA 02360; for more information, call Jon, WS1K, 508/746-0162, or Jim, NM1F, 508/747-2224 (evenings). □

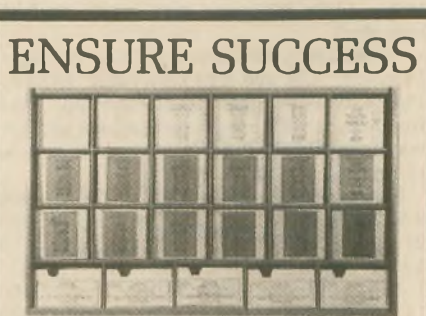
## Alabama

MONTGOMERY ARC will host the 14th annual Montgomery Hamfest on November 16 from 8 a.m. to 3 p.m. in the Garrett Coliseum at the South Alabama State Fairgrounds in Montgomery. FCC exams will be held at 8 a.m. Parking and admission are free. Vendor set-up begins at 6 a.m. Talk-in on 146.24/84, call W4AP. Contact Hamfest Committee, c/o 2141 Edinburgh Dr., Montgomery, AL 36116; or call Phil at 205/272-7980. □

WIREGRASS ARC will hold a hamfest on December 7 from 8 a.m. to 3 p.m. at the Wiregrass Memorial Park in Dothan. ATNM and packet forums will be held, and concessions will be available at the site. VEC exams will be held; contact WA4MZL. Admission is free. Tables are \$7.50 with power, \$5 without power, and tailgate space is \$2.50. Vendor set-up is from 7 a.m. to 8 a.m. Talk-in on 147.340/940. Contact N4RNU, 1811 W. Main St., Dothan, AL 36301. □

## Arizona

SUPERSTITION ARC will hold its annual hamfest on November 30 from 7 a.m. to 3 p.m. at the P & M Rodeo Grounds. This year's hamfest is being held one week earlier than in previous years. There will be overnight parking, but no hook-ups. Admission is



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## Michigan

The HOLLAND ARC is sponsoring the 1991 Westshore Hamfest on November 23 at the Holland Civic Center. Set-up is at 6 a.m. and general admission is at 8 a.m. Tables are \$4 each and admission is \$3.50. For more information and/or reservations, please contact Jack Tiggelman, KA8FQS, 2782 Floral Drive, Zeeland, MI 49464; 616/772-1846 from 5 p.m. to 10 p.m. (except Sunday). □

HAZEL PARK ARC will hold its 26th Annual Swap and Shop on December 1 from 8 a.m. to 2 p.m. at the Hazel Park High School. Plenty of free parking is available. Admission is \$3 in advance or at the door. Table spaces are \$12, and reservations must be received with a check, not made by phone. Talk-in on 146.64(-). Contact HPARC, P.O. Box 368, Hazel Park, MI 48030. □

## Minnesota

COURAGE CENTER HANDI-HAM Winter Hamfest will be held December 7 from 8:30 a.m. at the Eagle's Club in Faribault. There will be a Handi-Ham equipment auction, license exams, dinner at noon, and program. Talk-in on 19/79. Contact Don Franz, W0FIT, 1114 Frank Ave., Albert Lea, MN 56007. □

## New York

RADIO CENTRAL ARC, Inc. is sponsoring HAMEXPO, November 10 from 9 a.m. to 4 p.m. at Suffolk County Community College. Features will include a 40,000 sq. ft., all-indoor flea market, with ham dealers and a computer show, and cafeteria service. VE exams, seminars and forums will be held, and parking is free. Admission is \$5 at the door. Tables are \$20 each, in advance. Vendor set-up is at 7 a.m. Talk-in on 144.55/145.15-4Z, or 444.525/449.525-2A. Contact Radio Central ARC, P.O. Box 680, Miller Place, NY 11764; or call John Mark, KB2QQ, 516/689-6336, or Jo Ann Coletti, N2IME, 516/399-1877. □

## Ohio

ENID ARC is sponsoring a hamfest on November 2 in the Hoover Building at the Garfield County Fairgrounds. VE exams will be held at 10 a.m. Parking will be free, and RV hook-ups are available. Admission is \$1, and table space is free. Talk-in on 145.29/144.69, or 444.40/449.40. Contact Tom, N5LWT, 405/233-8473, evenings. □

## Tennessee

TVARN will be holding an indoor hamfest on November 9 from 7 a.m. to 3 p.m. Admission is \$2, and table spaces are \$5. Set-up will begin at 5:30 a.m. The location will be announced on talk-in 145.43(-). Contact Bill Ferrell, N4SSB, 615/452-3962. □

## Wisconsin

FOX CITIES ARC presents Fox Cities Hamfest '91, November 3 from 8 a.m. at the Starlite Club, corner of State Hwy. 55 and Cty. JJ. Quality vendors featured include Tower Electronics, Burke Electronics Ham Radio Toy Store, and more. Coffee and donuts will be available, and lunch will be served. VE exams will be held at 9 a.m. sharp,

with check-in beginning at 8:15 a.m. Admission is \$3. Eight-foot tables are \$5. Vendor set-up begins at 6 a.m. Talk-in on 146.760 repeater. For exams, contact Larry Siebers, KD9IA, N2781 Weyers Rd., Kaukauna, WI 54130; 414/788-3823. For table reservations, contact Don Baker, NB9J, 621 W. 7th St., Kaukauna, WI 54130; please send SASE for a receipt. □

MILWAUKEE REPEATER CLUB is proud to sponsor the 7th annual "6.91 Friendly

Fest" on November 9 from 8 a.m. to 1 p.m. at Serb Hall in Milwaukee. The selling halls are located entirely on the ground floor with easy access, so rain or shine, gather up your swapfest bargains and enjoy the Milwaukee hospitality. VE exams will be held on site. Talk-in on 146.91(-), and 146.52. Admission is \$4, and 4 ft. tables are \$5, but to save \$1 per ticket or table, send SASE with advance payment by November 3 to The Milwaukee Repeater Club, P.O. Box 2123, Milwaukee, WI 53201. □

## Repeater trustee responsible

Often times, we hear some repeater trustee say, "The repeater belongs to xxxx, he is taking care of things, I just have my call on it."

Repeater owners, especially trustees (the person who has the call sign on the repeater), are reminded that the call sign of the person on the repeater is solely responsible for the operation of the machine. This includes quality of transmission, any spurious radiation, overdeviation or any other thing that may be wrong with the machine which is classified as illegal by the FCC. Repeater control responsibility is also placed on the trustee.

The owner of the call sign on the

repeater is also responsible for what is broadcast over the repeater by other persons, legal or otherwise. He is held accountable for any interference that the repeater may cause if the time ever occurs that the repeater is faulted with interfering with other Amateur repeaters or operations.

Lending your call to a club to put on their repeater just for convenience is putting you in the driver's seat. You are responsible, not the club. Your call on the repeater makes you the official trustee and the trustee is responsible for the operation of the repeater.

Anyone having their call sign on a distant repeater, even if they live in a nearby city and cannot even work the repeater, is still totally responsible for its operation. — *RepeaterJournal* □

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antennas with 10 BASIC programs; design and build RF amplifier and preselector circuits; build a digital frequency counter module . . . and much more! Readers will also learn the basics of receiver operation, the proper use and repair of components in RF circuits, and the principles of radio signal propagation from low frequencies to microwave.

Joseph J. Carr is the author of more than 25 books for TAB, including the *Practical Antenna Handbook* and *Old Time Radios! Restoration and Repair*. He is an electrical engineer and avid ham radio operator whose articles appear regularly in *Radio Electronics*, *Popular Electronics* and other magazines.

For further information or to order, contact TAB Books, Blue Ridge Summit, PA 17294-0850; 1-800/822-8138. □

## The antenna book

An updated edition of *The ARRL Antenna Book* is now available. Since it was first published in 1939, *The Antenna Book* has proven to be the first place ham radio operators turn for both theoretical and practical information about antennas, towers, transmission lines and propagation.

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to follow the text, which was written by the ARRL HQ staff and an impressive list of outside antenna experts. Photos, tables and bibliographies for further reading make the 28 chapters in this book an essential part of any amateur's library.

*The ARRL Antenna Book* is available from dealers who sell ARRL publications, or from ARRL Publication Sales, 225 Main St., Newington CT 06111; 203/666-1541 (FAX 203/665-1166). Soft cover, 756 pages, copyright 1991. Retail price: \$20 (add \$3 shipping and handling, \$4 UPS). □

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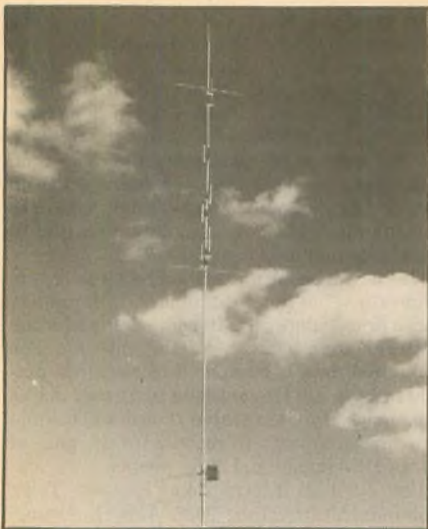
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## HamStuff

GAI Systems Press has announced the publication of a new product directory and

buying guide for Amateur Radio. Called *HamStuff*, the new directory contains information about more than 1,000 vendors of ham radio products and services, and contains descriptions of more than 5,000 products.

Subtitled "The Who-What-Where of Amateur Radio," the book includes radios, antennas, power supplies, accessory items, personal and gift items, and other categories of ham-related equipment and services.

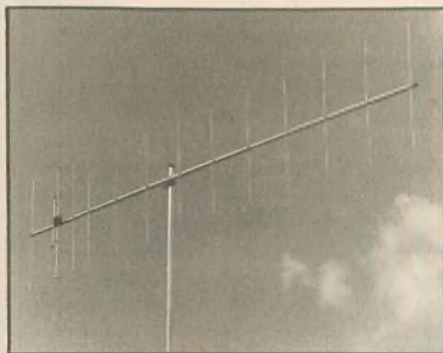
The editor and publisher of *HamStuff* is Walt Garrett, N0MAL. "Response to the book has been fantastic," says Garrett. "We're gratified by the encouragement and support we've received from the amateur community." Garrett says he intends to issue annual revisions to the directory, and to make it available in personal computer versions. "We hope to establish a position for this book similar to what the *Callbook* and *Handbook* have now," explains Garrett. "Hams buy those publications either every year, or perhaps every two to three years so they can stay informed about the hobby. The type of information contained in *HamStuff* is equally valuable, but it's not found in any other single publication. By revising the book every year, we'll be able to provide hams with timely information about equipment and services and the people who sell them." □

*HamStuff* is available through local ham retail stores or by mail order from the publisher at \$19.95 per copy plus \$3 shipping and handling. For additional information, contact Walt Garrett at 314/831-6464 or 314/831-6918, or write to GAI Systems Group, P.O. Box 5832, St. Louis, MO 63134. □

## Two meter boomer

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## New No-Code

The new FCC rule changes have created great interest and excitement for new ham radio license candidates because of the no-code test requirements.

Gordon West's 232-page Technician Class *New No-Code FCC license preparation* book has all the latest question pool's 372 element-2 questions and 326 element-3A questions. Every question and the four possible answers are listed along with the actual FCC question number.



Gordon West has included information and charts describing the Amateur Radio Service and the privileges allowed for this new Technician Class. He also tells the student how to study and prepare for the examination, how to and where to take the examination, and how to fill out FCC form 610 (application for Amateur Radio station/operator license) which is bound in the back of the book.

This Technician Class *New No-Code* theory test preparation is just the answer for those wishing to get into ham radio without taking the traditional code test. Published by Master Publishing, this book is available in Radio Shack stores and leading Amateur Radio dealers for \$9.95, or contact Master Publishing, Inc. at 14 Canyon Creek Village MS 31, Richardson, TX 75080; 214/907-8938. □

## Hy-Gain redesigns monoband Yagis

Hy-Gain announced that it has redesigned two of its most popular single band Yagi antennas. Using one of the latest computer modeling programs, the older models 205 BA-S and 155 BA-S were redesigned and now offer major improvements in front-to-back ratios and minor changes in gain. The improved models were renamed 205CA and 155CA respectively.

The new model 205CA features a new adjustable beta-match with stainless steel hardware and also a new setting for the 17M band.

The redesigned model 155CA features three standard settings for CW, MID and phone,

plus optional settings of 155 max for 40dB F/B and 125CA for the 12M band.

Gain figures for both antennas show an apparent change when compared to the older models. However, mostly this reflects a change in the method of measuring. Previously, the method of calculating directive gain was based on the half-power beam width in two orthogonal planes and did not take into consideration the power radiation wasted in backlobes and in other planes.

The new measuring method relies on highly accurate "method-of-moment" computer codes to calculate directive gain and radiation patterns from a model of the antenna. The computed data is compared to radiation patterns of the full size antenna to further define the model. Hy-Gain stated that it will use the new measurements to recompute the gain of all its HF single band Yagi beams.

For further information, contact Telex Communications, Inc., 9600 Aldrich Avenue South, Minneapolis, MN 55420; 612/884-4051. □

## New location

Ham Radio Outlet announces the move of their Burlingame, California, store to a new location in the heart of Silicon Valley. Ham Radio Outlet, Sunnyvale, is located at 510 Lawrence Expressway, No. 102, Sunnyvale, California 94086.

The doors opened on August 12. The manager, Tom Server, KB6LUC, and his staff are QRV to assist you! For additional information simply call 408/736-9496. □

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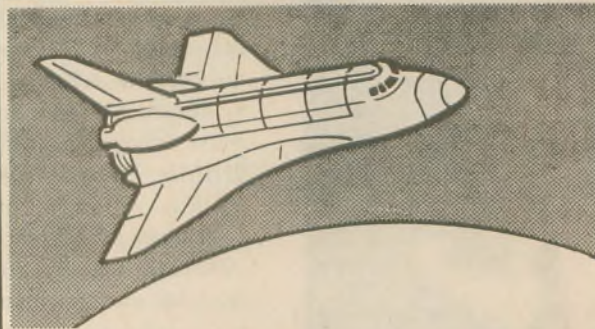
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MaryAnn (WB6YSS)



# 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>Minnesota</b>			
Dec. 7	Tucson	K7OPX (602) 886-7217	w/i only	Dec. 14	Alexandria	WD0FET (612) 763-4479	w/i
<b>Arkansas</b>				Dec. 14	Bloomington	KD0CL (612) 881-7181	p/r pref.
Dec. 14	Little Rock	Chuck, 501/888-7517	w/i OK	Dec. 7	St. Paul	K0QBE (612) 222-7253	p/r pref
<b>California</b>				Dec. 21	St. Paul Park	N0IPN (612) 459-1647	p/r pref.
Dec. 7	Bakersfield	K8GR (805) 861-6743 24-hr. voicemail	w/i OK	<b>Mississippi</b>			
Dec. 7	Burbank	KE6AR (818) 349-0927	w/i	Nov. 30	Gulfport	AA5SP (601) 875-9341 days; (601) 875-0222 eves	p/r requested
Dec. 14	Camarillo	N6SR (805) 484-4461	p/r pref; w/i OK	<b>Missouri</b>			
Dec. 1	Chico	W6YKU (916) 342-1180	w/i pref.	Dec. 7	Antonia	Jim, WD0GDY (314) 671-4243	no w/i
Dec. 7	Concord	Gene, WW6H (415) 254-5090	w/i	Dec. 12	Granite City	Larry, NZ0P (314) 524-3254	w/i OK
Dec. 7	Cupertino	(408) 243-8349	w/i OK	Dec. 7	Kimberling City	NQ0G (417) 739-2888	w/i
Dec. 28	Escondido	KB6WB (619) 465-EXAM	p/r by 12/18	<b>Nevada</b>			
Dec. 16	Glendora	Lee Rising, K6THQ (714) 596-9383	p/r one week prior	Dec. 21	Reno	K7HRW (702) 827-8450 day, or 702/972-3933 night	p/r 30 days prior, w/i OK
Dec. 19	Long Beach	KA6HOQ (714) 897-6331	w/i OK	<b>New Jersey</b>			
Dec. 7	Los Angeles	Ali Hassan, AA6WC (213) 778-6226	w/i	Dec. 21	Bayonne	WA2QYX (201) 451-9471	w/i OK
Dec. 7	Modesto	W6XK (209) 883-2968	w/i	Dec. 19	Bellmawr	WA2VQG (609) 546-7710	w/i
Dec. 7	Novato	(415) 897-8950	w/i OK	Dec. 14	Cranford	24-hr. hotline: (201) 377-4790	
Dec. 14	Oakhurst	(209) 683-8430	w/i OK	<b>New Mexico</b>			
Dec. 21	Redwood City	Dudley, WB6WAU (408) 245-4801	w/i only	Dec. 7	Alamogordo	WA5IPS (505) 437-5896	w/i
Dec. 12	San Carlos	(415) 367-7197	p/r only	<b>New York</b>			
Dec. 21	San Diego	KB6WB (619) 465-EXAM	p/r by 12/11	Dec. 14	Greenvale	WA2BGE (516) 921-0085	w/i OK
Dec. 14	San Marcos	(619) 465-EXAM	p/r by 12/4	Dec. 23	North Babylon	KA2RGI (516) 957-0218	w/i OK
Dec. 14	Santa Maria	K16XG (805) 922-8509	w/i OK	Dec. 1	Yonkers	AC2V (914) 237-5589	w/i OK
Dec. 28	Stockton	Vern, K6DOP (209) 887-3297	w/i	<b>Ohio</b>			
Dec. 28	Vacaville	Irene McClure, KK6XB (707) 451-2924	w/i only	Dec. 7	Cincinnati	Herb, WA8PBW (513) 891-7556	p/r pref; w/i OK
Dec. 14	Ventura	KC6JLW (805) 486-7619	w/i OK	Dec. 7	North Olmstead	Dan, KB8A (216) 267-5083	
<b>Colorado</b>				Dec. 14	Ravenna	Joanne, KJ3O (216) 274-8240	
Dec. 9	Boulder	Barbara, N0BWS (303) 530-2903	p/r pref; w/i OK	<b>Pennsylvania</b>			
Dec. 14	Denver	Glenn Schultz, W0IJR (303) 366-9689	w/i OK	Dec. 7	Erie	W3CG (814) 665-9124	w/i
Dec. 22	Westminster	N0CFM (303) 451-1231; N0HNR (303) 278-4280	p/r or w/i	Dec. 28	McKeesport	KQ3W (413) 466-5204	p/r 2 days prior
<b>Connecticut</b>				Dec. 5	Philadelphia	ND3Q (215) 482-0386 or (215) 879-0505	w/i
Dec. 15	Milford	NB1M (203) 933-5125; WA1YQE (203) 874-1014	w/i	<b>South Dakota</b>			
Dec. 18	Shelton	WJ1T (203) 736-0488	w/i pref.	Dec. 14	Rapid City	KA0SEZ (605) 394-1298	p/r 30 days prior; w/i OK
Dec. 15	West Hartford	Larry, K11ED, (203) 644-2356	p/r pref	<b>Tennessee</b>			
<b>Florida</b>				Dec. 7	Memphis	Harry, W4MI (901) 357-8148	p/r by 12/5/91
Dec. 21	Melbourne	WB9IVR (407) 724-6183	w/i OK	<b>Texas</b>			
<b>Idaho</b>				Dec. 21	DFW Airport	KF5BL (214) 252-8015	w/i
Dec. 14	Boise	W7JMH (208) 343-9153	w/i	Dec. 10	Houston	ND5F (713) 464-9044	p/r pref; w/i OK
<b>Illinois</b>				Dec. 28	San Antonio	K5JWK (512) 657-1549	w/i
Dec. 17	Aurora	N9AKE (708) 892-1252	w/i pref	<b>Virginia</b>			
Dec. 21	Loves Park	W9SS (815) 877-6768	p/r; w/i	Dec. 14	Harrisonburg	Marshall, N4ZKH (703) 856-8012	
Dec. 21	Morton	NT9C (309) 266-6756	w/i OK	Dec. 7	Virginia Beach	Ed, WD4GOY (804) 468-0866	w/i OK
Dec. 14	Oak Forest	KA9HDN (312) 247-0650	w/i	<b>Washington</b>			
<b>Indiana</b>				Dec. 21	Renton	WA7UVJ (206) 854-4031	w/i only
Dec. 20	South Bend	NY9A (219) 232-6883	w/i OK	<b>West Virginia</b>			
Dec. 1	Terre Haute	K9EBK (812) 466-2122	w/i OK	Dec. 14	Huntington	K8KVX (304) 736-6542	w/i OK
<b>Iowa</b>				<b>Wisconsin</b>			
Dec. 14	Council Bluffs	AA0BS (712) 322-1454	w/i OK	Dec. 7	Racine	NW9P (414) 658-8390	w/i
Dec. 27	Sioux City	NF0N (402) 494-6070	w/i OK	Dec. 7	Stevens Point	Joe, N9JW (715) 344-1182	p/r pref.; w/i OK
<b>Maryland</b>							
Dec. 14	Laurel	NT3Z (301) 761-7115; or WC3I (301) 262-5083	w/i				
Dec. 7	Rockville	Walt Lafferty (301) 942-2923	p/r pref; w/i OK				
Dec. 14	Salisbury	KB3MT (302) 436-8360	w/i				

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