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A bolt out of the blue (part one)

JERRY KEISLER, KB7IMX

There's a phrase in Amateur Radio that I'm sure you've all heard at one time or another, "Real radios glow in the dark!" I won't say that I've been in Amateur Radio long enough to qualify as a "real operator," but I did glow in the dark recently! That's right, I got tangled up with a lightning strike.

Luckily, I'm still here to tell you about it, the good and bad sides of the experience. So, if you'll bear with me, I'll tell you how it happened and all that resulted from it.

It was late on Jan. 28, 1990, and you can well imagine that I'll never forget that date. I was home watching the late show on TV and heard the wind start to pick up. Before long, hail was coming down hard, but I just ignored the storm and continued watching TV.

At about 12:05 a.m. there was a loud clap of thunder and it must have been pretty close, as I recall seeing a flash of light through the window. That got me to thinking about the safety of all my radio gear, both Amateur and entertainment.

So I turned off the TV and got up, thinking that I'd go around to remove power from the various apparatus and disconnect the coax antenna cables. That idea occurred to me, as I had just moved into this location recently and had no lightning protection devices installed.

I began with my 2M rig, a handy-talkie and a docking amplifier that was connected to an isopole. Well, I got as far as disconnecting the coax from the amplifier when it happened! ZAP! POW! A loud report and a flash of light at essentially the same time. And there I was, standing by the 2M rig and holding the PL-259 connector in one hand. Luckily, my other hand was free, no longer holding the docking amplifier while I took off the PL-259 connector.

What happened then is still something of a blur in my memory, lights going out as the breakers were tripped, burning smells in the room and the feeling of electricity on the surface of my skin. But I can't forget the amazing, vivid recollection of seeing long sparks or streamers going off the tips of the fingers of my free hand. Maybe it wasn't a glow, but those sparks were giving off light and it was coming from me! Yes, ME!

It seemed to be over in a flash (no joke intended); the next thing I knew was that I felt like I had been hit by a ten-ton brick, flying backward and ramming into the wall of my shack. That was a real collision, stunning me and breaking the plaster board. I rolled onto the floor and lay there in something of a disoriented daze for about a half hour or so.

I never lost consciousness in that time, nor did I have the sensation of an electrical shock, the sort of thing I'd experienced several times in my career as a TV service man. Finally, I staggered up, found my flashlight, groped my way to the breaker panel and tried to survey the damage. However, still feeling quite groggy and hurting all over, I decided the better thing to do would be to get some immediate medical attention. So I decided to check into the local hospital.

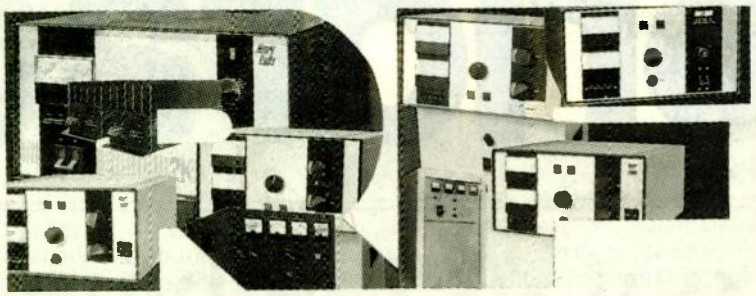
With that, I got in my car and drove slowly, carefully the short distance to

(please turn to page 18)

Steve Fletcher, NØJGN (l), and Mahlon Burson, NØJJG, operated at the command center that was set up at the Hesston City Hall following the twister that struck the town earlier this year. For the story turn to page 3. ***(NØJWV photo)***

World Radio History

At Henry Radio,



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World Radio History

Amateurs provide communications in tornado aftermath

BILL KIRTON, W0MLR

Radio Amateurs in south central Kansas were praised for the help they gave when a tornado struck the town of Hesston, KS (pop. 3,500), about 30 miles north of Wichita, on the afternoon of March 13, 1990. More than $22 million dollars damage was done by the tornado, but fortunately there were no fatalities and only a few injuries in Hesston.

Residents were alerted by civil defense sirens about five minutes before the tornado hit and were able to take cover.

Harvey County Civil Preparedness Director Lon Buller told the county Commission afterwards that Amateurs were "one of our biggest assets," and that they did a "tremendous job." Hesston City Administrator, Jay Wieland, said that "ham operators became our emergency link with the outside world. Without their assistance and continued support . . . we would not have been able to manage the many crises situations that we faced."

Garry Boldenow, K0SFU; Mahlon Burson, N0JJG; Dave Anderson, N0ALN; Charlie Dix, KA0RCK; Marion Ford, K0YWT; and Bob and Lorna Harder, WA7KSL and KA0KSL, were among the first to arrive on the scene. Joe Palmer, N0LQT, an off-duty Newton, KS, police officer, went to the Harvey County communications center in Newton to provide a link to there, and I went to the Newton hospital.

Carol Boldenow, WA0FYG, of Newton, provided a telephone link from her home to get assistance, and when the Associated Press and United Press International provided the telephone number in wire articles, she started receiving health and welfare queries. She and a neighbor, who volunteered to answer the telephone, handled about 250 of these.

For two days after the tornado hit, the Amateurs remained at the command center in Hesston, and helped organizations who were working to clean up the debris. K0SFU and N0LQT walked through the damaged area in order to make a map that was used for health and welfare information, by the cleanup crews in their work and by insurance adjusters.

For the most part, communications were carried on by using hand-held transceivers, the Newton repeater and the repeater of the Air Capital Amateur Repeater Association, located about 30 miles to the southwest.

The response to the disaster was spontaneous. The club had no disaster plan, but on the preceding Saturday they had conferred with Buller on the possibility of giving aid following such an occurance.

In all, about 35 Amateurs from the Hesston, Newton and Wichita areas took part in the effort. □

Goodwill Games station

CPT ROBERT T. GODLEWSKI, KA4SBE

The Fort Lewis Amateur Radio Activity, W2USA, has received permission from Turner Broadcasting to be the sanctioned special event Amateur Radio station for the Goodwill Games, to be held in Seattle. The games will begin in mid-July and continue into early August. The operators for the station will be soldiers from Fort Lewis and McChord Air Force Base, as well as local US Army MARS members.

The station has recently upgraded facilities and support has been solicited from Icom America, which will provide two complete stations for the operation.

Lt. Andrew Morkunas and I are coordinating for sites in close proximity to the Games, to obtain more public awareness of Amateur Radio's international capabilities during the games. A guest operator position will be available, as well as a mobile van to operate from remote sites in the greater Seattle/Tacoma area. □

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Our goal is to be a valuable resource of ideas and experiences beneficial to the Amateur Radio Community. We publicize and support the efforts of those who bring the flame of vitality to this avocation.

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

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STAFF

Editor and Publisher.....Armond Noble, N6WR
Managing Editor.....Marra McElroy, N6WLM
Associate Editor.....Norm Brooks, K6FO
Assistant Editor.....Kaye Schwartz
Consulting Editor.....Lou Ann Keogh, KB6HP
Advertising Director.....Helen Noble
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PUBLISHER'S MICROPHONE

Portent? At Dayton, during an industry meeting, a well-known figure in AR stood up and stated that while the no-code test was a good thing, we would now have people kept out of AR because the theory test was so difficult.

How far can we take this? Should we just drag everything down to a level at which everybody can pass every test in everything? People who keep flunking the bar exam would probably be in favor of that, but would you want to hire one of them when you needed a lawyer?

•

And a grand time was had by all. **Worldradio** was at the ARRL National Convention in Kansas City, MO, from June 8 to 10. There is indeed a great AR spirit in mid-America.

•

We now recognize the exceedingly bright, who have just joined the **Worldradio** Super-Boosters (Lifetime Subscribers): William Downes, N2KHP, Roosevelt, NY; Thomas Verachtert, WD9IWP, Wheeling, IL; Paul Dean, WB9HGZ, Loves Park, IL; John Wilder, Jr., WA5PFJ, Carthage, TX; George Csahanin, WB2DYB, Cedar Park, TX; Gary Gabbard, KA7BCP, Las Vegas, NV; Karl Fielder, KB6OZE, Hemet, CA; Thomas Diskin, N7TD, San Mateo, CA; Tom Galbreath, Yuba City, CA.

•

This month's issue marks the 19th anniversary of **Worldradio**. Hard to believe that it's been so long, but as they say, time passes quickly when you're having fun!

Among the very first subscribers were Dave Bell, W6AQ, who delivered the banquet speech at Kansas City; noted DXer Jules Wenglare, W6YO; Fr. Leonard Bose, W6BSO, who was also at Kansas City, and others who have since become good friends.

•

Patty Smith, WB6DRG, Torrance, CA, said, "**Worldradio**'s appeal is human interest." Right again!

•

David Boyd, K9MX, Stafford, VA, who is Dave on the air but Colonel to the people who work for him, sent me the petition to the FCC of the Pentagon Amateur Radio Club. In part it reads: "We are unconvinced that Morse code is, or ever was, a barrier to entry into the hobby. We challenge the assumption of many that removing the code requirement will result in a huge increase in numbers in the hobby. We believe this assumption is much akin to a similar feeling among avid skydivers; if only the public would try it once, they would discover they all enjoy falling freely through space. The reality is that, in any hobby, only a limited number of people will be interested; that is particularly true in a highly technically-oriented hobby. Even if licenses were simply handed out with radios, we do not believe greatly increased numbers would be interested. Finally, we do not believe growth alone is a valid, or even appropriate, measure of the success of a hobby."

To Col. Boyd: Should the Signal Corps decide they need 55-year-old E-4s and you'll be the unit commander, you can call on me.

•

Ethel Smith, K4LMB, McLean, VA, says: "5 wpm of code IS no-code."

•

Bruce Pfeiffer, N7CPP, Carson City, NV, relates that he's found a source for fiberglass poles 14 ft. long. Quad builders and others may wish to contact him for prices, shipping, etc.

•

Since the first 312 people whom they asked wouldn't get up that early, they got down to me and I consented to be the breakfast speaker at the ARRL Southwestern Division Convention on Saturday, Aug. 24, in San Diego. If anybody else but Sybil Allbright had asked, I wouldn't have done it.

•

The Denver Radio Club (CO) sent in the results of a member's survey of on-the-air activities and opinions on current issues facing Amateur Radio. It was most interesting.

This would be a good time and place to sincerely thank all who send in items of interest. Sadly, not all can be acknowledged due to limitations of space in the magazine and time.

We do get many deep and thoughtful letters. They deserve to be printed. If we could get a few more pages of advertising, we could afford to run more pages of text.

So next time you are at a convention at an exhibitor's booth, if you don't see their ads here in **Worldradio**, ask them, "How come? Maybe you don't like the people who read it, eh?"

—Armond, N6WR

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*Optional remote kit (RMK-747) shown.

World Radio History

Amateur Radio 'animals'

The San Benito Amateur Radio Club of San Benito, TX, operated a special event station from Feb. 9 to 18 at the Cameron County Fair and Livestock Show. Those Amateurs taking part were WA2VJL, N5LNS, N5NYK and K5RAV. Brenda V. Ryan, a non-Amateur, also lent a hand.

Operations were on 21.350, 28.328 and 146.060. The club members had received permission to use the call signs N5COW (SSB) and N5HOG (RTTY) to celebtate the 10th annual show.

The special event stations received some interesting visitors.

Loads of information on the hobby was offered for the perusal of passersby.

A display was set up at the show from Feb. 15 to 18, with ARRL materials readily available, as well as a station to allow fair-goers to talk on 10M. There was a lot of interest in the straight key and the keyer set up, and those who stopped by were able to send their name in code.

The club is quite active in the community, and this event received radio and newspaper coverage. The club was also noted in the *San Benito News* as offering a scholarship for a graduating senior of San Benito High School. *Information submitted by WA2VJL* □

Nostalgia and the challenge

BRIAN O. KASSEL, W5VBO

Since my Amateur career began in 1961, an amazingly brief 28 years ago, it might be fun to compare a typical station then to one now. The newcomer might be surprised and enlightened; the more experienced might just feel a twinge of nostalgia.

AM was still king and SSB experimentation was relegated to the very top 10 to 20 kHz of each band. Probably half of the rigs were still proudly homebrewed. The airwaves reverberated with such now defunct terms as "Heising modulation," "pair of 813s modulated by a pair of 811As," "Windom" and "end fed Zepp." A few rugged individuals even utilized crystal control exclusively, bellowing at any unsuspecting frequency agile newcomer that this was HIS frequency, and the upstart was somehow violating an unwritten FCC edict.

My meticulously assembled Heathkit DX-40 75W crystal controlled Novice transmitter and National NC-60 five tube receiver, which was my combination Christmas and birthday gift for that year, were all set for another 40M adventure. That was my favorite of the three Novice bands. I never was able to hear any signals on 15 and couldn't possibly fit an 80M antenna onto the urban eastern Pennsylvania rowhouse lot of my parents.

The choice was easy. Audio filters were virtually nonexistent, IF filtering was only available on the very expensive Collins radios. Twenty to 30 kHz of signals mixed together all at once. Since the 40M Novice band was only 50 kHz wide, it wasn't difficult to hear any other crystal controlled station who might be calling, and visa versa. This was very fortunate, as the Novice ticket only allowed crystal control with a maximum of 75W input.

I was running a Novice "kW." Most others ran considerably less. CW, the only mode allowed, was sent with a hand key; bugs were too expensive and electronic keyers were yet to be developed for a year or two. Too futuristic for me as the ticket was only valid for one year and then was NOT renewable.

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World Radio History

minimum wage was $.75/hour; the transistor cost $8.30. A 6146 went for $2.50. WW II surplus still abounded, and more than one fellow Novice could be worked in an afternoon using an ARC-5, BC-348 or the surplus, top of the line, luxurious Collins ART-13.

Today's scanning, memories, digital readout and 12-volt operating were only dreams that manifested themselves as so many doodles on a scrap piece of paper during a boring history or English lesson.

So how did we get from there to here? We met the challenge of developing, building, testing and buying each new generation of radio until yesterday's dream rigs became today's norm. Each of us is responsible for furthering the Amateur Radio tradition of pushing technology onward through utilizing any or all of these four stages in our day to day operating.

Just compare your present radio system with the 1961 version. The economic advantage of buying versus building has changed, so it may not be quite as obvious as in years past, but the challenge is still being met. □

— Originally printed in

Arizona Desert Airwaves

Course for developing nations

A course in Amateur Radio administration for telecommunications officials from developing nations was held at ARRL HQ on June 2-9. This year's students were Vincent Nathaniel Cumberbatch, 8P6AG, of Barbados; Mourad Ben Mehdi Chafiq, of Morocco; Edgar B. Usher, ZP5EU, of Paraguay; Auraphan Suwanratna, HS1BJ, of Thailand; Balchan Gunness, 9Y4BG, of Trinidad and Tobago; Pamphilius Elukut Amaitum, of Uganda; and Lotty Chitimbo Kakubo, of Zambia.

The primary objective of the course was to provide the participants with a greater understanding of how Amateur Radio can be used to further technical and scientific pursuits in their nations. International Amateur Radio Union President Richard L. Baldwin, W1RU, served as principal instructor with support from other IARU officials and ARRL staff.

ARRL has hosted the course, which is held under the auspices of the US Telecommunications Training Institute, since 1985.

On June 12-16 the participants continued their training, attending the course *Disaster Communications Management*, in Washington, DC. It was sponsored jointly by the Office of Foreign Disaster Assistance, US Agency for International Development, the Pan American Health Organization and the League.

Since 1983, when it began sponsoring tuition free courses for telecommunications and broadcast professionals from the developing world, USTTI has graduated more than 1,400 participants from 108 nations. —*The ARRL Letter* □

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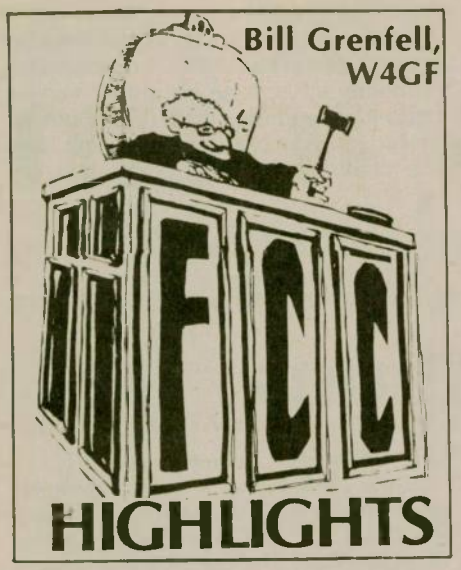
World Radio History



The FCC's John Johnston has advised all VECs that 49,992 new and upgraded Amateur Radio (Form 610) applications were processed by the FCC in fiscal year 1989. While VECs reported examining 51,992 persons, the number of persons examined under the Novice program is unknown.

Had the 20,047 passed Novice examinations been administered under the VEC system, the workload to the VEC system would have increased more than 67 percent. The 36,579 Novice and Technician license applications processed by Gettysburg represents 73.4 percent of the Gettysburg new/upgrade workload. (*W5YI Report*, 05/15/90)

•

In responding to his inquiry, FCC Private Radio Bureau Chief Ralph Haller wrote Senator Ted Stevens that the Commission has taken no action that would affect the ability of mariners or anyone else to use Amateur stations interconnected with the public telephone system (phone patching) to make telephone calls. In fact, he said, the rules concerning international third party traffic have recently been relaxed to permit messages to Amateurs in countries where third party traffic is normally not allowed. (*W5YI Report*, 05/15/90)

•

Robert Fizzell, W6UCB, of Beaty, OR, and Richard Young, W6UGH, of Los Angeles, were each fined $1,000 for willful interference with Amateur communications. The investigation was prompted by complaints about repeated jamming on 40M.

FCC monitors observed that Fizzell and Young "consistently operated adjacent to the operations of other Amateurs and within the bandpass of state-of-the-art receivers." Apparently, when the affected Amateurs changed frequency, Fizzell and Young followed to operate adjacent to them again. (*W5YI Report*, 05/15/90)

•

While noting that "various governmental agencies" still have fixed services in the 902 MHz band, the FCC polled those agencies and found that Amateur operations in certain portions of the band would not be detrimental. Thus, effective July 1, the FCC has waived Section 2.106 Footnote US267 and Section 97.303(g)(1) of its Rules, to permit Amateurs in the restricted area to transmit in the following segments: 902.0-902.4, 902.6-904.3, 904.7-925.3, 925.7-927.3 and 927.7-928.0 MHz. The order stipulates that Amateurs "must not cause harmful interference to, and will receive no protection from, any interference due to the operation of industrial, scientific and medical devices (ISM), automatic vehicle monitoring systems or government stations authorized to operate in this band."

Government users of 902-928 MHz will, according to the FCC Order, eventually move to new fixed service bands, at which time the Commission will "consider removing the area restriction on Amateur stations entirely."

•

There is some good news to report in the ARRL's effort to get the FCC to pre-empt local and state laws that prevent Amateurs from having radio receivers.

Harassment and arrest of Amateurs and confiscation of Amateur equipment in some states prompted the ARRL to file a Request for Declaratory Ruling. If granted, the ruling would likely declare that the FCC overrides any local laws that prohibit licensed Amateurs from having equipment capable of receiving some public safety frequencies (police, fire). The situation is similar to the 1985 PRB-1 case, in which the FCC granted an ARRL request for federal pre-emption of local and state regulation of Amateur antennas.

In a nutshell, local and state authorities may still enact some health, safety or aesthetic regulations on antennas, but they must not have the effect of prohibiting normal Amateur operation. They must also represent the "minimum" regulation necessary to achieve the local authority's purpose (See FCC's Amateur Rule Section 97.15[e]). (*W5YI Report*, 06/01/90) □

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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 June 1, 1990.

For more information about the call sign assignment in the Amateur Radio Service, see Section 97.51 of the FCC Rules, or write to the FCC, Consumer Assistance Branch, Gettysburg, PA 17326.

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
0	AA0BH	KF0LA	N0LZV	KB0HBC
1	WG1O	KC1VN	N1HRS	KA1WAI
2	WY2V	KE2UC	N2KTU	KB2KLJ
3	NZ3Y	KD3SQ	N3IFB	KA3WMT
4	AB4VZ	KN4JT	N4ZGN	KC4RIB
5	AA5SK	KI5GD	N5QPZ	KB5MZT
6	AA6WG	KK6LH	N6ZFD	KC6LUX
7	AA7EX	KG7FA	N7OYM	KB7LAQ
8	AA8BO	KF8HD	N8MLH	KB8KGG
9	WS9Q	KE9XG	N9JSZ	KB9FBL
North Mariana Is.	AH0H	AH0AG	KH0AM	WH0AAL
Guam	KH2N	AH2CG	KH2EJ	WH2AMM
Johnston Is.	AH3C	AH3AD	KH3AC	WH3AAG
Midway Is.		AH4AA	KH4AD	WH4AAH
Hawaii		AH6KL	NH6WU	WH6CIE
Kure Is.			KH7AA	
American Samoa	AH8D	AH8AD	KH8AI	WH8AAZ
Wake Wilkes Peale	AH9A	AH9AD	KH9AE	WH9AAH
Alaska		AL7MB	NL7TZ	WL7BYQ
Virgin Is.	NP2F	KP2BU	NP2DU	WP2AHC
Puerto Rico		KP4QS	WP4XV	WP4JBG

World Radio History

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World Radio History

We are the OTs

CLIFF HENDERSON, KB6MAA

We were here before SSB, FM, RTTY, packet, AMTOR or computers and moonbounce was what happened to us and our YLs in the rumble seat.

We were around before transistors, toroids and phase locked loops and a chip was something we used in a poker game.

Digital was a mathematical term and solid state was the condition of the "engineers" head.

Our "keyer" was a hand pump, sidewinder or bug and a filter was the two appendages on either side of our heads.

Our CQ was an invitation to a ragchew and we had never heard of the term "KN."

Our signals were not often stable or T9, but we managed many a QSO with one hand on the tuning knob following those self excited oscillators.

A coil was something we wound on a form or made with copper tubing and we left ample room to work on the rig.

We didn't need a monitor, as the 866s flashing in the corner and the transformer groaning did the job.

We were here before the bands were chopped up into little pieces, CB and TVI didn't exist and a woodpecker was a bird.

A repeater was a Winchester rifle, the term "hand-held" referred to a lover's tryst and a mixer was used to make malted milks.

We used wire antennas and a tribander was something our YLs wore around their heads.

A microwave was a ripple in the pond and 2M was 78.74 inches.

We were before VHF, UHF and SHF and a waveguide was a breakwater.

QRP was a condition forced on us by our meager pocket books and a hundred watter was a "big gun."

QST was a magazine for Amateurs, filled with useful information instead of full page ads and it would respond to your needs.

We were here before rice boxes, circuit boards, LEDs, S-meters, factory service, bells and whistles and appliance operators.

We are proud to be the OTs! □

Media covers club involvement

The San Benito (TX) Amateur Radio Club provided emergency communications after the California earthquake on Oct. 17, 1989, via the Texas Traffic Net, the 7290 net and 20M traffic nets. Three Amateurs took part — WA2VJL, KE5ZV and N5LNS.

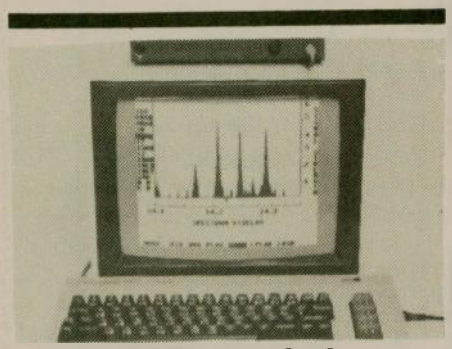
The local media — radio, TV and newspapers — publicized the club member's efforts. The newspapers published information on the ARRL and the traffic system. The ARRL's phone number was listed for those who wished to seek further information.

The *Valley Morning Star,* in Harlingen; *The Brownsville Herald* and the *San Benito News* all printed the club phone number so people interested in contacting someone in the affected areas could get in touch with club members. —*Information submitted by Fred Wasielewski, WA2VJL* □

A new generation

A group of students at J. O. Johnson High School in Huntsville, AL, are being introduced to a world they will likely enjoy for the rest of their lives: Amateur Radio. Members of the Huntsville ARC's Elmers Committee have donated equipment and time to help introduce students to ham radio.

The Johnson ARC was put on the air for the first time in March by Walt Wilson, KJ4VQ, and Ed Stluka, W4QAU, on 10M with a HW 101 and a Cushcraft AV5 Vertical antenna. Training materials and course details were provided by Bud Zimmerman, KJ4BH. Carol Peters, KC4FVT, the school's Social Science teacher, is teaching her second class of students. — *ARRL Alabama Section News* □



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

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World Radio History

Parasitic HF verticals: A poor man's beam?

DR. RICHARD C. NIEMTZOW, N5EV

During my last military move, the HF rig was dropped and the boards cracked. My tower was bent and several antennas twisted in a way never intended by the manufacturer.

Oh well, I was sure my insurance would pay, or would it? Nevertheless, I would straighten the ol' tower and have a new beam up in a few weeks. Hope the neighbors won't mind the antenna farm.

Yep, I'm sure it won't be too conspicuous. That's right, I'll place it there! I can keep an eye on it from next door. That's where the outdoor community swimming pool is.

"Hi new neighbor! Oh that? It's a ham radio antenna. No, it won't electrocute anybody if it falls into the pool!"

There must be another way to have a rock buster signal up to the east coast, without the beam. How am I going to keep my skeds with the ol'boys from South France? Have to talk to the family. Taught the kids myself and they passed their Extra class before they turned 12. The XYL never got the code. Hmmm . . . maybe that no-code entry will be the solution.

That new Cushcraft R-4 vertical doesn't need any radials on the ground and it's only 18 ft. tall. What? Me use a vertical? Imagine this . . .

"You say you can't hear me? But I'm running 1500W and if I scream any louder into the microphone, you'll hear me without the rig!"

Maybe I could get two of 'em and phase them for 10M. I could set up some pipes in the ground and just put 'em right in.

Sure miss not having a beam with those nice parasitic elements. PARASITIC ELEMENTS! Why not parasitic verticals? Let's see . . . low angle take-off and gain! That spells DX!

"Hey OM, got a book on parasitic verticals? No! Not phased verticals! Parasitic verticals!"

"What about modeling?"

("Got some of 'em strolling around over at the swimmin' pool.")

"No, you don't understand."

Can't find much on parasitic verticals. But what about that new vertical modeling program by Epsilon Company (POB 715, Trumbull, CT 06611; 203/261-7694) called "Vertical Pro?"

"Hello OM! Does our program model parasitic verticals? Super! WOW! Can I have it by tomorrow?"

OK, let's see what happens with this program. I'll simulate two R-4 verticals for 10M. I'll place 'em about 12 ft. apart and connect one of them to the rig with coax. Computer calculating . . . NEAT! Lots of gain going in one direction! Look at that low 10 degree take-off angle! Super!

"Hello? Send me a couple of R-4s red label. What! You don't ship plumbing pipe to hold 'em in the ground?!"

You know what I am thinking? What every good DX man thinks. If two are good, then three must be better. You automatically think of three of them lined up in a straight line, but guess what? Put 'em in a triangle pattern. You pick up a few dBs.

Go ahead, use the computer and do it yourself! Beats diggin' up the backyard until you know what you're doin'(?).

That was easy. Put three of them R-4s together.

"Sorry I'm holding up the 2M repeater. Didn't know we had rock two feet under the ground here. Yeah . . . gotta put them into the ground tonight. Should take some effort to get those pipes into the ground. Break! Try softening up the ground with water. Break! You must be kiddin'? Dynamite? Sorry neighbor, didn't mean to keep you up last night. What are those pipes doing in the ground? There're only 10 of 'em!"

Let's see . . . Got one reference R-4 vertical over at this end of the yard. I can compare it with the other two "parasitic" verticals when the time

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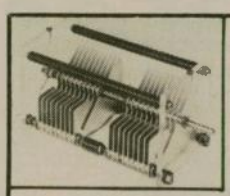

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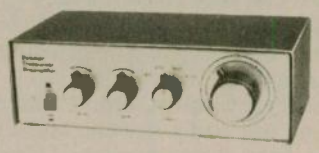

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World Radio History

comes. You know antenna number 1 (parasitic system) and antenna number 2 (single vertical). And goin' to put the other two verticals over at the other end of the yard. Don't want 'em to interact too much. The two of them are about 12 ft. apart in line pointing to the northeast.

"Sorry neighbor, didn't realize that one of my radials went through the fence onto your property. Yeah, I'm sorry ya tripped over it. Yeah! I see your knee, but you bent my radial. What's a radial?"

I'll feed one of them R-4s to the rig. Which one? The one closest to the direction you want to work.

"Yes dear, I know that Mike has to go to school today. But if he could just listen for me on 10M, I'll have it adjusted in a few minutes. Sorry to have gotten you up. Was it really 3 a.m.? How does it sound Mike? Antenna #1? Antenna #2, the reference? NM3T from N5EV."

I couldn't believe it! The parasitic system was working beautifully.

"Gee Dad, that parasitic array takes you right out of the noise level. Your booming in here! Break N5EV! Been listening to your experiment. Saw a big deflection on the S meter. By golly that's a vertical? What's a parasite? Break N5EV! Same thing here. Break N5EV. This is W6 . . . in California. You went down here when you switched to the parasitic and up on the reference. That's right OM, you're right behind the parasitic!"

I couldn't believe it. It actually worked! Not only was it working well, but the SWR was below 2:1. It seems to go up if ya bring 'em too close together.

"Hello. Send me another R-4 vertical. Red label! No! I'll drive right over to pick it up now!

"Hello Mike? I know you're at school . . . but can you leave early? OK Mike. Let's compare two parasitic verticals with three of 'em in a triangle configuration . . . Sorry for the delay Mike. I tripped over one of the poles. Yeah! You like the triangle combination better? It's a little stronger and has less QSB. Break N5EV! I'll roger that. Been listening to you for the last two hours! What's a parasite vertical? What're ya goin do with all them parasites in the back yard? How do ya feed them?

"Say Dad! Will it work on 20M? You know Mike, I tried it, but just wasn't as good as 10. That's right Mike! If you want to change direction on 10M, all you have to do is switch feedlines to the other parasitic. It is easier using two parasitic verticals and then adding another pipe 12 ft. away from one of the other pipes. You can steer the triangle by having three feedlines connected to each vertical to a relay box to select one vertical at a time. You don't want to ground 'em, but float them."

But what are you going to do for 20M? It's easy to phase them about a halfwave length apart. The computer program suggests about 40 ft. I've connected two equal length feed lines about 30 ft. long to a T-connector, and then a coax to the rig. Works like gangbusters broad-side.

I've got it pointing right toward Europe. If you arrange your pipes right, you can set them down either as parasitics for 10M at 12 ft. apart or as a 20M broad side-phased array in a matter of minutes. It's a poor man's beam!

That Epsilon computer program sure helped a lot, and provided a lot of insight to the parasitic design. It saved a lot of time and energy moving the verticals around the screen instead of doing it in the steaming hot back yard.

I know you are wondering about the other bands. Well, I've left that for you to figure out. I didn't want to hog all the DX.

Does it work almost as well as a beam? That's what you want to know. What about the low-angle of radiation? You know you can get into a lot of trouble when you're talking about beams, and even worse when you compare beams and quads.

Let me put it this way. The other day I was at the swimming pool relaxing after working two new countries through a massive pileup on 10 and 20M. Didn't even need the linear! I was right on their backs! As I looked over at my yard, the verticals seemed almost invisible. No TVI complaints! What a good life! And besides, the crowd wasn't interested in my back yard. Or were they? I overheard someone saying, "Gosh, look at all those poles in his back yard. Wonder what they're for?"

I couldn't help but answer with a slight smile, "Oh, I think they're called DX PARASITES." □

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The MFJ-949D gives you more precise control for minimum SWR than any tuner that uses two tapped inductors.

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This gives you precise control to get minimum SWR and maximum power into your antenna.

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The MFJ-949D uses a single high-Q airwound coil that takes up a minimum of space without mutual coupling problems.

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World Radio History

Perils of mobiling (conclusion)

C.K. "Skip" WALTER, AD0H

Part 1 appeared in last month's issue. As the title indicates, Skip related some problems he's had with mobile operation, including a small blunder in which he failed to notice a sign indicating a decrease in the speed limit. We all know how a police officer looks on that, and this one looked on AD0H $41 worth. He also told us of the difficulty one might encounter in attempting to remove antennas and cables from the car, that is if the garage door doesn't do it for you!

When we left Skip last month he had found out about the County Hunter's net on 14.336. While on a trip to Nebraska, he waited for a pause in the net and jumped in from Dawes County, assuming everyone needed it. No pileup, but net control asked if he wanted on the list. He said yes and still no one called. So he turned off the rig. A similar incident occurred the next day.

Impatience won out and again I didn't stick around. Months later I finally learned the net's system of making a list of mobile operators (the "huntees," not the hunters) and following that list is a precise and fair manner, allowing a 10 minute operating period to each, when his or her turn comes.

I'm sure they called me those two days when it was my turn; my only hope was that net control changed from one day to the next, or that he assumed the changing band conditions, rather than sheer stupidity, kept me from responding when called. Since I learned their system, I have given out midwest counties in thousands of QSOs; I bought a 20M resonator, too (actually more than one of them — the garage door has been hungry).

Another peril of mobiling is trying to write while driving. Even on a clear road this is a chore and I have felt the car headed for the shoulder or yellow line as I tried to move pen to paper in some discernable pattern. I transcribe my scribbles soon after arriving because there is still a slight chance that I will remember information that is illegible or completely unrecorded. My log book contains several QSOs with no times, QTH, signal reports, names, and even incomplete calls, but the percentages of these omissions are reasonably low.

Having a passenger to log is a real help, especially on the County Hunters net, as these QSOs are call sign and signal report only, like a contest or DX-er, and they can be handled about as fast as you can talk. My YL, Janet, quickly developed into a first-rate logger and I didn't have to repeat many calls or reports; she learned, too, that we don't all use the same phonetics (and wished that we would).

Janet still reminds me that comfort is necessary for loggers, if not operators, an amenity severely lacking one June day when a W2 county hunter asked if we were going to be near Ida County. A quick check of the map showed that Ida was only a few miles away, and that it bordered Sac County, another low ham population center. Off we set to find the elusive county line.

You should first be aware that Iowa farm land is divided, where the topography permits, into square sections. Like many rural county lines, the Sac and Ida joining is perfectly straight and marked by a road, unpaved and dusty. We found the stretch of dirt road and sat back to wait our turn in the net. And waited, and waited. With the outside termperature in the 90s, the inside of the non-airconditioned Chevy surpassed the century mark, not a comfortable level for anyone, including a dedicated ham.

When our turn came it seemed that the W2 wasn't the only one who wanted to work Sac and Ida; 19 other hunters were logged in quick order. Janet felt like she was working in a sauna and I have promised to inflict no more high temperature waiting on dusty roads again.

Then one day I had a passenger who needed a ride to Iowa City. Here was a potential logger, and I could simply drive and talk, without the awkward scribbling on the pad of paper that won't stay put; or so I thought.

I instructed her to write down the calls as I repeated them in one column, the two-digit signal report I gave in the next column and the signal report I received (and repeated aloud) in the third. When my turn came up, we started out with a clear signal from a W5, whose call she could copy from the speaker. No problem so far. I said "five by nine," into the mike. She wrote that down. The W5 game me a 5 by 7. I said, 'Thank you for the 5 by 7; QSL, QRZ." She wrote down "57" in the third column, "qslqr" back in the call sign column, and stopped.

"What is 'zed'?" she asked. Whoops — I forgot this isn't everyday English, and most people never heard of Q-signals to begin with. They do sound somewhat like call signs.

To make life simple for her, I immediately started giving everyone 5 by 9 reports, even if I had to ask for many repeats. The log for that day is still kept in pencil. When I receive QSL cards from anyone with even a remote combination of the same letters on my list, I reply.

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Field Day Antenna Installation System

World Radio History

Occasionally you find a credibility gap, in which someone at a distant microphone thinks they know where you are even better than you do. Like the day I was driving easy through Burlington, IA (in Des Moines County), and it was my turn on the net. I kept passing out the county even as I paid the bridge toll.

At the halfway point on the bridge, I said, "Net control, I've just left Des Moines County, IA, and have entered Henderson County, IL." Someone else broke in (no call — they never have a call sign) and said, "That's impossible."

Time for a geography lesson; I replied, "Point of information: The city of Des Moines is in the center of the state but Des Moines County is on the Mississippi River. I didn't draw the map; I just read it." I thought I heard roadmaps being unfolded throughout the net.

Maybe it was the skeptical geographer who taught me the lesson of always knowing the county whose roads you're occupying. One day during another mobile's run, I gave him a report and he asked, "What is your county?" I didn't know. I was near the junction of four counties and not watching the borders (obviously, I wasn't on the list this time).

I replied, "I'm not sure." The other mobile didn't hear me and asked for a relay from net control. "He doesn't know where he is!", came the reply.

While I did know where I was going, I had to admit he was right, but from then on I watched the county markers even when the rig wasn't in the car.

Keep on mobiling

There are other perils, like watching passengers trip over the disconnected cables when you're not operating and having to explain what they are for ("Yes, it's something like a CB, only much, much better!"). Or having a school bus full of students looking out the back to see what the problem is — there is a guy following us and he's talking on a microphone — must be a plainclothes cop. I'll bet the school bus driver wanted to thank me for giving him a few minutes peace and quiet. Or having other drivers slow to exactly your speed because they also assume you just might have a radar unit tracking them.

But there are the thousands of miles that have been made easier for having someone to talk to, the many good restaurant recommendations (more welcome to a stranger than you could imagine), the sense of accomplishment of handing out a new county to 30 hams in 10 minutes and the security that comes from keeping in contact with the rest of the world while driving through threatening weather. I only wish I'd started mobiling years earlier.

About the author: AD0H is Associate Professor of Transportation and Logistics at Iowa State University. He has logged over 10,000 mobile contacts.

A wooden mast

NORMAN M. WEED, W6CE

I have long been an advocate of wire antennas. A number of attractive choices are described in the older handbooks, but more recently the Full-wave Loops have been described in this publication.

A common deterrent for experimenting with wire antennas is the lack of support for the ends or corners. I claim no credit for the design of the wooden mast to be described herein. I have constructed a number of them since I made my first one in 1947, and the original article is long gone.

Your local lumber yard is the source of the materials. It is important to use good grained, properly cured, wood. Next, you have only to determine the desired size. Let's assume your choice is a square mast, approximately four inches on a side. For a mast 24 ft. high, you will need eight 12 ft. lengths of 1 x 4. Douglas Fir is fine — pick out the best ones you can find. Grab a pound of 3 inch galvanized nails.

Cut one 1 x 4 exactly in the middle. Cut two others into two pieces, 3 ft. and 9 ft. Set one of the 12 ft. pieces on edge, and nail to it the 9 ft. piece, making the two ends on the left side even.

Roll this assembly toward you so the 9 ft. piece is on edge. Nail a 6 ft. piece to it, after making the left ends equal. Roll the assembly toward you, so the 6 ft. piece is on edge, and nail the 3 ft. piece to it. Roll the assembly one more

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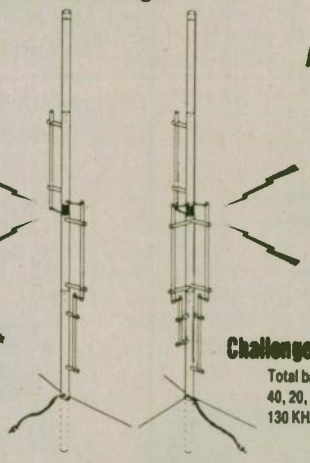

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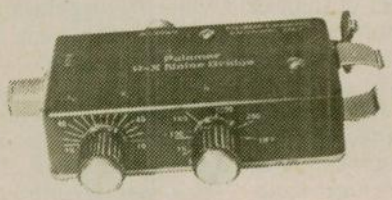

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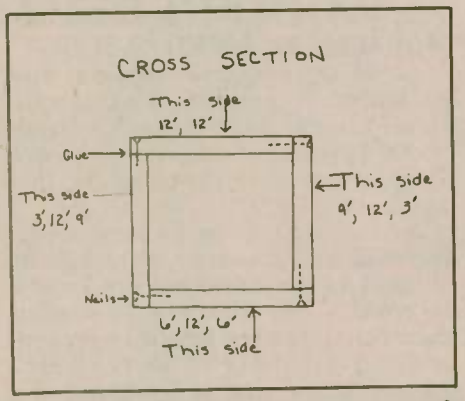
time and drive a couple of nails through the 12 ft. piece into the 3 footer. Your base section is now complete.

Butt a 12 ft. length against the 3 ft. piece in the base and nail in place. Butt another 12 ft. length against the 6, and another against the 9, nailing as you go. When you butt a 12 ft. length against the original 12 footer, you will have one side of your 24 ft. mast. Nail the remaining 9, 6 and 3 ft. pieces in their proper order, rotating as you go. All sides should come out even, and your mast is complete.



A better job will result from a coat of "water seal" before assembly, a bead of glue along the mating surfaces, and a couple of coats of paint. The finished product will be lighter, stronger and less expensive than the same length of 4 x 4.

It should be obvious how to make it 36 ft. long. The combinations are unlimited. One made from "economy" 2 x 4 studs supported a two element beam with a prop pitch motor for years. It was attached to the peak of my garage roof — no guys.

One of my favorites was made from 1 x 4s as described, with a telescoped section made from 1 x 3s obtained by ripping 1 x 6s. I rounded off the corners of the 4 inch section for a couple of feet where the 3 inch section would be telescoped, added strength at the junction with 4 inch hose clamps at the top and bottom of the overlap and fashioned a "water shed" at the top of the junction with a pair of tin snips.

I never cared much for guy wires. Whenever possible I would pull the insulator attached to the antenna tight against the pulley and run the rope from the pulley 180 degrees from the pull of the antenna. I'd tie this to anything convenient. Leave some slack in your antenna — the fellow you are working will never know. If a guy is necessary, a single wire in the proper direction will do the job.

Who needs "copper-weld"? Catch 250 ft. of #14 house wire and two conductor with ground, on sale. You'll have 750 ft. of wire for all kinds of antennas and open wire feeders. Plastic clothes hangers cut into proper lengths make ideal spreaders for your open wire feed lines. Will the soft copper stretch? Not enough that you will ever notice it!

A full-wave 40M loop takes less space than a dipole. It need not be very high. It is a quiet receiving antenna that works well on 20 and 10M. My 160M loop worked well on 80, 40, 20 and 10!

Editor's note: If you plan to implement the ideas put forth here, remember to put great emphasis on good wood selection and proper gluing and nailing. □

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Stolen radio recovery

In January John Burnson of Ramer, AL, received quite a surprise when a mobile transceiver that had been stolen five years ago unexpectedly reappeared. John, the chief engineer of WTSU Radio at Troy State University, had the long lost Icom IC-27A returned after it was turned into the campus motor pool by a campus janitor.

The radio was mud filled, but after washing it in alcohol and drying it under studio lights, he powered it and it came to life. To his amazement and to the surprise of the engineers at Icom who related the story, all were equally taken by the operational condition of the weather-ravaged piece of gear.

By the way, the only reason the stolen radio was found was because a new building was being constructed on the site. —*Westlink Report* □

Long forgotten item

In the 1930s the RME 69 was a first class receiver. An ad in a 1938 *QST* says RME will completely overhaul your RME 69 for $2! —*SK Skoop* □

A smile is contagious

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*Transmitting equipment sold only to licensed radio amateurs verified in the Callbook for legal purposes. If newly licensed or upgraded, send copy of license. Receiving downconv. available to all starting @$49 (TVC-2G).

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DX with TC70-1s and KLM 440-16X antennas line of sight and snow free is about 22 miles, 7 miles with the 440-6X normally used for portable uses like parades, races, search & rescue, damage accessment, etc. For greater DX or punching thru obstacles add either of the ATV compatible 15, 50 or 70 watt amplifiers listed below.

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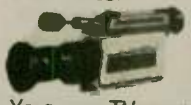

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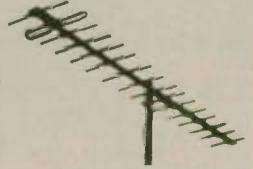

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Shocking experience

(continued from page 1)

United General Hospital. There, I first called a relative in Tacoma, saying what had happened and that I was going to check into the local hospital. Then, I went in and told the doctor in the Emergency Room just what had occurred and hearing that, they got me right into the Intensive Care Unit, put me on a heart monitor and kept a very watchful eye on me for about six hours. I lay there, tired and hurting, and I had plenty of time to think about how lucky I'd been to go through such an experience and still able to function at all.

When everything looked okay, at least from a medical standpoint, I was released from the hospital and at about 6:30 a.m. I went home, still a bit dazed and certainly aching.

Not really having rested much while on the heart monitor, I went to bed and slept until about 1 p.m. Then, after a bite of lunch, I got down to the painful process of assessing the damage that had been done and not done.

While it took me several days to feel that I had recovered physically from the experience, the important damage was not done to me; I survived. Electrically, that means I didn't take the full brunt of that lightning strike, thanks to having a free hand in the air and being well insulated by my shoes. But there's no doubt about it, I was charged up to a very high voltage when all that was taking place. Thus, charge spread all over my body and clothes, making them something like a conducting or equipotential surface, and electrical discharges took place at the end of my fingertips.

Be sure to catch the conclusion next month, when Jerry will explain more about the dynamics of what happened and discuss the extent of the damage done to his equipment. □

Net controversy response

RUTH HOFFMAN, N4LMC, Asst. Mgr. Intercontinent Traffic Net

This is the letter sent to Mr. McNamara, Chief of Special Services of the FCC, in response to his request. We of the Intercontinental Traffic Net feel that all Amateurs should be aware of our response.

Dear Mr. McNamara: Thank you for your letter of Dec. 21, 1989. Your suggestion that the various nets involved meet and formulate a resolution in an effort to conclude this anarchy on the ham bands has merit. It appears, however, that this is not practical.

The fact is, this problem stems from misinterpretation by our accusers of the rules and regulations as set forth in Part 97. They insist theirs alone is the correct interpretation, although we have correspondence from the FCC to the contrary.

We are under constant interruption and beset by deliberate, critical attacks and interference from KV4FZ, KA4MUJ, N5FX, WB4GDP, K3QAM, WA2EXQ and W4TAH, along with a few others of their group.

The enviable record of performance by the Intercon Net throughout these past 30 years will verify how a group of volunteer Amateurs can aid in the enhancement and value of beneficence, not only to his fellow Amateur, but to the public interest as well. In addition, we are often reminded of how important a part we play with the promotion of international good will.

Try as I might, I cannot think of any plan or of anything we can do to effectively bring these people to a correct interpretation of the applicable rules. This can only be done by the FCC.

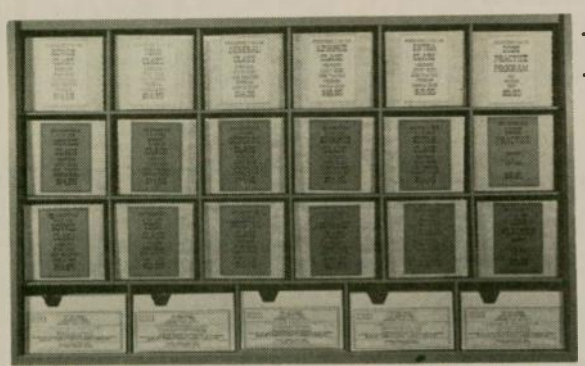
As volunteers, the manager, directors and net controls who guide the policy of the Net are well aware of their responsibility, and remain accountable for their actions in such capacity. We fail to recognize, and find it extremely difficult to understand, why our service should present any problem among the Amateur fraternity.

We will continue our policy of keeping our net controls informed as to illegal call signs and update them regarding the rules. We will continue to move frequency rather than engage in confrontation.

In light of the above, we wish to disassociate ourselves from this problem, as we do not feel it is ours.

Respectfully,
Ed Ricca, K4PT
Intercon. Net Mgr.

The holocaust on 20M needs to be dealt with, and I rather imagine this will happen soon. □



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World Radio History

Walk for a cure

JEAN PRIESTLEY, KA2YKN

After 2½ years of rehearsal, the Camden County ARES finally worked with a live audience. Although not really a production, it was our first event when we proudly presented "Walk for A Cure."

On October 22, 1989, at the Cooper River Park in Pennsauken, NJ, five public-spirited Amateur Radio operators walked onto the stage and gave a superb performance to the Juvenile Diabetes Foundation. Our purpose was to assure the health and welfare of the walkers.

These dedicated Amateurs were N2HQL, N2HQX, KB2FIX, KD3LA and myself. This was the fruit of a patient and diligent search for an event for which we could volunteer our services, and the organizers of the walk were quite elated when we did so.

The original script for "Walk for A Cure" was written 18 years ago by parents, family and friends of children who are diabetic, to raise money for the work done by the foundation. The course was three full loops around a section of the river, a distance of 12 miles.

For our roles we met briefly with the chairmen of the walk and then stationed ourselves at the intersections and checkpoints. KD3LA stayed at the start/finish line.

The walkers started at 9:15, and by 10:30 the walk was fully underway. There were about 200 walkers, including many children.

Other members of the cast were fraternity members from Trenton State College. One fellow was very impressed with the operation and many other aspects of radio.

With the morning session a success, hot dogs and sodas were delivered and we relaxed for a while. When everyone got back, we proceeded with the afternoon session.

There were fewer participants for the afternoon, and those who remained appeared to be walking a little slower. Finally, with everyone back to the tent, we relaxed and had a chance to talk to our new-found friends. They were very impressed with our capabilities and thanked us for our time.

I was recently talking to the co-chairman of the event, and he commented to me tha they can't imagine how they functioned without our services in past years. Well, as you guessed, we are already booked for next year. Just another success story for Amateur Radio. □

Canadian link

A group of British Columbia Amateurs are working to expand IPARN — the Inter-Provincial Amateur Radio Network — into a full time, Canada-wide hobby communications network.

IPARN is not a traffic net, but rather a trans-Canadian network of interlinked repeaters using traditional linking along with dedicated earth stations and commercial geosynchronous satellite changes. When completed IPARN will permit Amateurs in any major city in Canada to communicate with Amateurs in other such population centers using only a VHF handheld transceiver.

Currently IPARN is conducting a Canada wide membership campaign to garner funds with which to establish its first city to city link. Canadian hams wishing more information are invited to contact William Blake, VE7CQ, P.O. Box 3156, Langley, British Columbia V3A-4R5. □

If a foreign amateur visits your area, do a picture story for WORLDRADIO.

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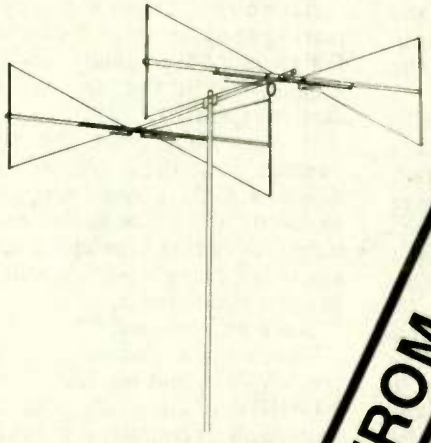

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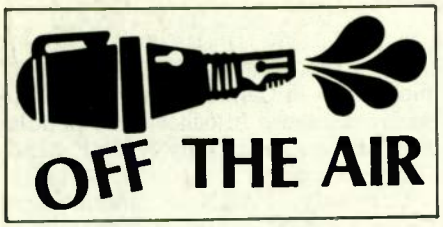
World Radio History



Attention VEs

Dear Volunteer Examiner,

We hope that when you and your group conduct test sessions you will use the Devry VE testing system.

You might be asking yourself, "Why use Devry?" That's a good question, considering that we are among seven active VECS throughout the country. Following, I have outlined several advantages of the Devry system, in respect to the others:

1.Less paper work. We at the Devry VEC office do all the paper work, leaving the teams free to make sure the examinations are administered properly. The main responsibility of the VE is to administer the examination, making sure that the applicant's form 610 is filled out properly. Mistakes on the 610, even minor, may delay the applicant's Amateur Radio license from the FCC.

The team leader's responsibility is to send the applicant's license, written test answer sheet, Morse code test results, hard copy and the answer sheet. Some VECs require team reports and other unnecessary paper work. Our staff is trained to do this type of tedious work.

2. Help when you need it. We currently have 30 groups working with us throughout the United States and in Europe. Other VEC groups may be too large and can't give their teams the individual support that may be required in a given situation. We have an 800 number for those of you who may be in the Midwest. For those who live elsewhere, you may call collect regarding testing difficulties.

3. Test generation software. We supply our VE teams with software which will generate both the written and Morse code examinations for all elements. Devry teams can generate random written examinations or they can hand-pick questions from each of the question pools using an IBM or compatible computer. The software is supplied to Devry VE teams at no charge.

We will be happy to answer any questions which you may have with respect to our program. Please call me at 800/327-2444, ext. 2221; 800/383-3879, ext. 2221; or 312/929-8500, ext. 2221.

JIM GEORGIAS, W9JUG
Chicago, IL □

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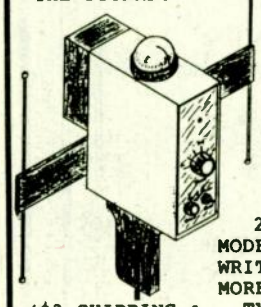

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One picture worth 1,000 words

Although I have enjoyed the privileges of Amateur Radio for only a few years, I have already received what I believe to be the most unique QSL card ever sent.

It was about twice the size of an average post card, but at least 200 times as thick. It took a couple of hours to "read," but it was so descriptive and informative that I could actually "see" the other party's rig, antenna, power supply, you name it.

Have you guessed it?

That's right. James "Murph" Murphy, WV4R, and his XYL Patty Lou, KC4HBV, of Rivo Alto, FL, sent me a videotape to confirm our 10M QSO of Nov. 10, 1988. And it was terrific!

After a great opening accompanied by "Don't Worry, Be Happy" playing in the background, Murph narrated a guided tour around his radio shack, which, by the way, would relegate most of us to the minor leagues of Ham Radio. During the tour, several on-the-air activities were demonstrated.

Then Murph took the tour outside his beautifully landscaped home to give a closeup view of his antenna "farm" — a dipole strung between two palm trees; a Mini Quad II, which he used for our QSO and a multitude of others, too numerous to mention here.

On to the homes of several local ham friends as the video continued. These hospitable Floridians were more than gracious to Murph and his roving camera.

George Kerley, WT4X: For me, his repeater station was the highlight of the visit. His guard dogs were impressive too.

Harold Altman, N4KWD: He explained the Dade County emergency net operations and demonstrated lots of other interesting systems as well.

Bill Sampson, N4SWN: only an Amateur for nine months, was doing some computer interfacing with his radio. During the taping, his XYL Charlotte and son Adam visited the shack. Was that nice red MARYLAND tee shirt for me, Adam? My QTH is Maryland.

Also visiting Bill's shack was another Bill (Roig), WB4ZZI, of Data Communications International. He was there to install a serial card and a level translator for N4SWN's Yaesu 767 for computer interface. Later, he demonstrated how it worked.

Then Murph's QSL video treated me to some excellent coverage of several hamfests. They were all packed with Amateur Radio enthusiasts!

Patty Lou did the finals with her own QSL, which included a tour of her own shack, and to the outside again to see her antenna array and an added treat of some gorgeous shots of her Asparagus Ferns and Ming Aurelia.

As you can see, a QSL like WV4R and KC4HBV sent is a real treasure, and I truly feel it may very well become a collector's item.

I would love to know if anyone else has ever received such an informative and interesting QSL?

BOB SMITH, KA3PEI
Lusby, MD □

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The West Texas Connection

Most Amateurs know how the "ZIA" link helps to shorten the miles across the lonely stretches of highways across Arizona and New Mexico. I have found that very few know about the "West Texas Connection!"

By the time the east bound traveler

(please turn to page 22)

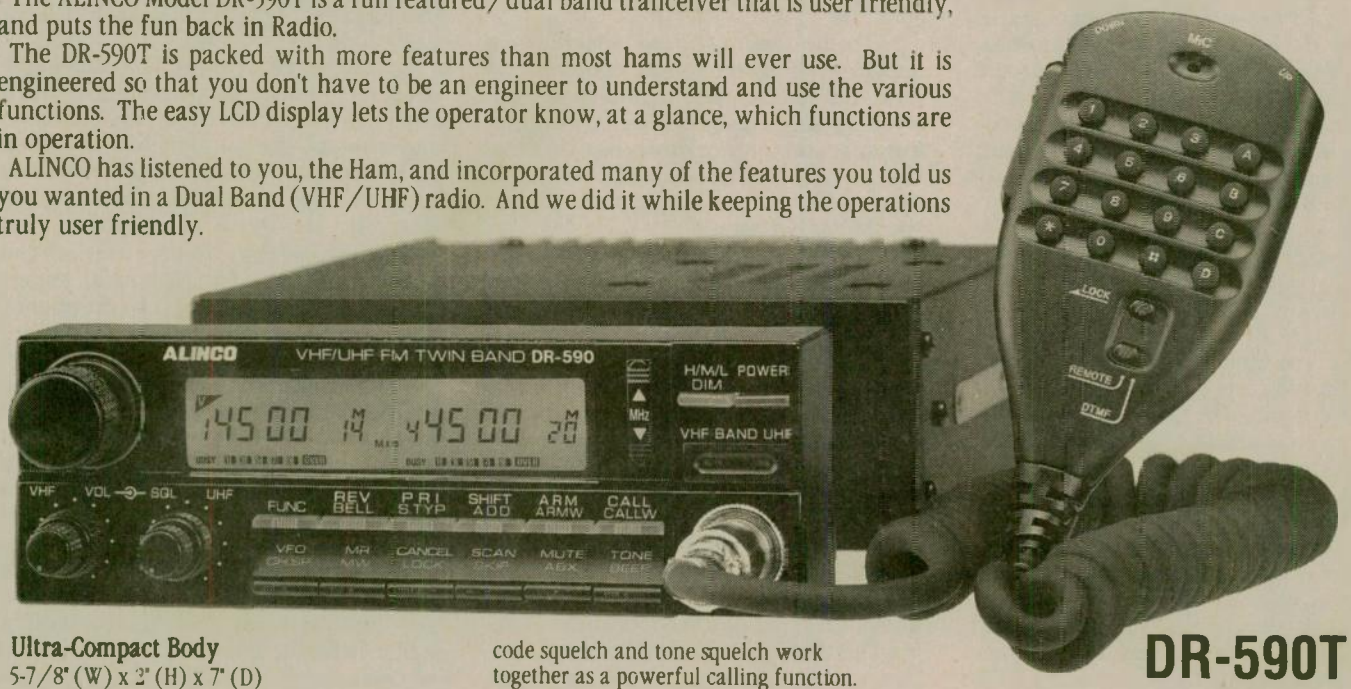
World Radio History

THE REMOTABLE TWIN BANDER

The ALINCO Model DR-590T is a full featured/dual band tranceiver that is user friendly, and puts the fun back in Radio.

The DR-590T is packed with more features than most hams will ever use. But it is engineered so that you don't have to be an engineer to understand and use the various functions. The easy LCD display lets the operator know, at a glance, which functions are in operation.

ALINCO has listened to you, the Ham, and incorporated many of the features you told us you wanted in a Dual Band (VHF/UHF) radio. And we did it while keeping the operations truly user friendly.



DR-590T

- **Ultra-Compact Body**
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- **High Power (Selectable)**
  High: 45W at VHF — High: 35W at UHF
  Middle: 10W — Middle: 8W
  Low: 5W — Low: 4W
- **Extended Receiver Range**
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  (Specification guaranteed on amateur bandsonly. Modifiable for MARS/CAP permits required)

FEATURES

- **Simultaneous**
  Receiving on both bands at the same time Scanning intermix scan model on both bands at the same time.
- **Independent VHF & UHF Controls**
- **Detachable**
  With the optional remoting kit, the front panel can be seperated from the main unit.
- **DSQ (DTMF Squelch) Function**
- **Code Squelch Function**
  You can program a 3 digit code that will open the squelch only when the same code signal is receive from another transceiver. This allows for selective receiving. Additionally, with the optional tone squelch unit, the code squelch and tone squelch work together as a powerful calling function.
- **Various Useful Paging Functions for Grouping Calling and Individual Calling**
- **Remote Control Microphone**
  With this microphone there are several functions that can be controlled remotely:
  1. Direct setting of frequencies in VFO mode
  2. Up/Down of memory channels in memory mode
  3. Shifting to call mode
  4. ARM (Automatic Repeater Mode)
  5. VHF/UHF Switching
  6. Up/Down by 1 Mhz steps
  7. Setting and Selecting DSQ codes
  8. Setting and Automatic Dialer
- **Scanning Features**
  Memory Scan, Program Scan, ARM Scan, Band Scan, and more Scan.
- **Memory Channels**
  The unit has 28 memory channels, one independent "Call" channel, and 10 ARM memory channels (40 channels in total). You can program set tones, shift frequences, shift directions, and channel steps in each of the 28 memory channels.
- **ARM (Automatic Repeater Memory) Function**
  10 repeater channels can be memorized automatically. While ARM mode is active, scanning stops at vacant channels and pauses, then starts again automatically. This function is useful to find vacant repeaters.
- **ABX (Automatic Band Exchange) Function**
- **Bell Function**
- **Dimmer Function**
  Selectable 2 different brightness of LCD light
- **Three Priority Functions**
  VFO Priority, Memory Priority and Call Priority.
- **Repeater Operation**
  The DR-590T can be used as a cross band repeater.
- **Full Duplex Cross band Operation**
- **Others**
  1. Auto Dialer Function
  2. 6 Channel Steps (5/10/12.5/15/20/25 Khz)
  3. DTMF Monitor Function
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  5. And Many Other Features

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World Radio History

Off The Air

(continued from page 20)

out of El Paso, TX, clears Van Horn, TX, he can key up the West Texas Connection on 145.43. This will bring up a total of 18 repeaters covering the area down I-10 to Ft. Stockton, Balmorhea, Alpine, most of the Big Bend National Park, and on past Ozona. It will also put him down I-20 with coverage of the entire area into Abilene, along with north and south coverage from Lubbock to San Antonio!

This system was the brainchild of Jim Jeffrey, WA5QMJ, of Odessa, TX. He was later joined by B.J. McDaniel, KE5PL, and Aubrey Price, WB5RXA, both of Midland. Needless to say, MANY Amateurs all across this area contributed time and money.

The system was utilized during the Saragosa tornado as part of the Skywarn system and gave advance warning of the tornado along with the first communication after the disaster from that area.

Several new repeaters are in the planning stage.

We are very proud of our system because we enjoy it and we welcome any Amateur to its use. For a FREE copy of a map of coverage and all repeater frequencies send a SASE to: Aubrey Price, WB5RXA, 4900 Foxboro, Midland, TX 79705.

GIL BROXSON
Midland, TX □

Keep the code!

No-code again! Amateur Radio has experienced some rough spots in its past. Some of these include the incentive licensing fiasco of the sixties, forcing upgrade testing down our throats; the previous no-code debates; and, most recently, the loss of a portion of the 220 MHz band.

We have been told that we need to increase our numbers. The reason is said to be that the average Amateur is too old and that the number of technical-minded individuals is dwindling. Several strategies have been tried to attract new Amateurs into the ranks, all of which have amounted to making it easier to obtain a license.

The first attempt involved throwing away the theory manuals in favor of a question pool. We not only gave the exact question which could be expected, we also gave the exact wording of all detractors for the answers, thus reducing the theory portion of the examination to nothing more than basic memorization.

It was at about this time that the grand idea of establishing a no-code license was presented. This created a great uproar within the Amateur community. When it failed, the present VEC testing system was instituted to make it easier for the individual to get to an examining point, as well as take a great load off of the FCC.

Through the Novice Enhancement program many Amateurs have been added. Unfortunately for the commercial interest the number has not been great enough. The logical choice was to resurrect the no-code licensing question. This time with a real push.

You see, it's the numbers that are the most important, not technical expertise or any other facade. The number of Amateurs equates directly to dollars and nothing else.

Could it be that the loss of part of the 220 MHz band was carefully timed and orchestrated? Take part of the 220 MHz band to demonstrate the possibility of future losses, then push for a no-code license as a hedge against those losses.

What is needed is quality, not quantity. The proof of quantity already exists. For a sample, tune into the bedlam which is found daily on the 10M Novice phone band. The foul language and unfriendly operating styles run rampant.

These standards can only be expected to be exported to the other bands. A person tends not to really appreciate something which is obtained too easily. The proof of this lies in the citizen's band.

Rubber stamping licenses is not the answer, as the only result will be chaos. Keep the Code!

PHIL HUNSBERGER, K9PNT
Altus, OK □

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World Radio History

Code is outdated

From what I'm reading about no-code, it seems that the only people who want to keep the Morse already have their General or Extra class license. They don't want to give up what we all know they have sweat blood to learn.

No problem, you do deserve accolades for this mental/digital accomplishment. However, the writing is already on the wall. What are we trying to accomplish for our future? Is code of any real use, or is it just being used as a filter?

Before radio we had smoke signals. Do you see a need to continue using these just because that is the way it used to be done?

I hope we can resolve this within a few months time and end all of the discussion. We know there has to be a filter, and CW worked well for as long as there was a need for CW operators. But what do we need now? What else can we pursue that will advance our country into the future?

Let's not make it easy to be an Amateur. Let's make it harder, only in an area that will have more use in today's world.

Japan is beating us in electronics, math and science. Why are we being forced to do Morse code to the point of being an expert when Samuel Morse has been dead for some time now. I thought technology was moving faster than that.

Can you hear the Japanese laughing at us right now? By golly I do!

So let's not carry this any further. . .no more talk. We could drag this out for years, until there are only a few thousand brass pounders left on the HF band. Let's push for more electronics, math and science.

Novices do not need to be on HF just to sell more HF rigs. Let's have a no-code Novice with a strong electronics base and allow them above 50 MHz in the Novice segment of each band with all modes. Imagine how many civil air people we'd get the first month.

The Technician test would also have more electronics and math, with some science. Also throw in some interpersonal relations, too. These licensees would be allowed above 50 MHz.

Advance would have to pass a 5 wpm code, again with more electronics, physics, math and interpersonal relations.

I read somewhere that someone had suggested changing Extra to "Master of Communications." That sure sounds good to me. Let the Extra be grandfathered unless he can pass the new Master of Communications written exam.

With this system everyone who likes to do code can still do it — 30, 40, 50 wpm. The sky's the limit. But one thing is for sure: We won't be holding other people back from trying to learn more electronics like we are now.

So let's ALL put it to a vote. I feel the FCC will approve something that is constructive *and* educational.

CHARLES BELL, KB4SBQ
Wheeling, WV □

Ham plates

If you have Amateur Radio call sign license plates and you plan to transfer them to a new vehicle, request a new registration "month" sticker for your rear plate, unless you happen to purchase the vehicle during the month in which the license plates were originally issued. If you have already transferred your plates to a new vehicle, check to see if the month sticker is correct. If you are stopped because you have the wrong month, there is no fine and no charge by the DMV for a new sticker, but who likes a red light in the rear view mirror?

PETER HATTON, N6JBV
Point Reyes Station, CA □

Emergency idea

Sometimes when I'm mobile outside our club's repeater area, I often wonder, "What if there were a sudden emergency? How could I quickly report it?"

If I had a cellular phone, I would just pick it up and dial 911. Why couldn't an Amateur use his expertise to do it just as quickly through any repeater in the United States he happened to be monitoring?

Why couldn't all repeaters in the United States be programmed so we could simply key up the repeater and dial 911? The repeater controller could switch the timer from its normal time to emergency time and dial 911 automatically. One button to clear would be desirable.

Normal non-emergency calls could be routed to the cognizant agencies through each repeater's normal operating procedure.

TED RAST, W6SMU
Citrus Heights, CA □

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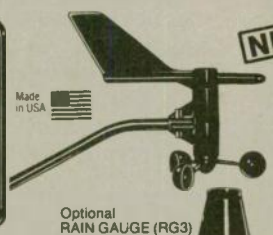

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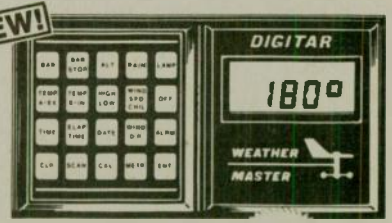

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WeatherStar Computer, Anemometer & Wind Vane, 40 ft. Shielded Cable & Connectors, Outside Temp Sensor (10') & Mounting Hardware.
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World Radio History

Product Review

Alinco 2M HT

RICH ARLAND, K7YHA

What started out as a request to review the latest Alinco 2M hand-held transceiver (the DJ-100T) ended up in a love-hate relationship with an HT. Love: I absolutely love this little 2M HT. Hate: I absolutely hate to give it back to Alinco!

Earlier this year, I had a chance to become involved with the local Red Cross chapter and US Army MARS members who run the emergency communications system for them. It seemed that EVERYONE had an HT capable of receiving the Penna Emergency Management Agency (PEMA) frequencies, except me. Since I had the DJ-100T already in hand for a product review, a quick call to Mark Murasato of Alinco, in Torrance, CA, brought the necessary modification paperwork to make the 100T talk and listen from 130 to 169.995 MHz!

First, let's take a quick look at the HT itself. The DJ-100T is a very compact synthesized 2M HT, which normally covers 144.00 to 147.995 MHz in 5 kHz steps. It's dual-conversion receiver is capable of .25uV sensitivity across the 2M band. There is not squelch control, as such. However, there is a squelch button that, when pushed, will un-squelch the receiver instantly.

I do not find the absence of a squelch control a threat to the free world. It makes for an uncluttered control panel.

With the supplied battery, EBP-7NAZ, the rig will put out 2.5W in the high power setting and 450mW in the low power setting. A MONSTER 12-volt 700mA/hr NiCad pack allows up to 7W of RF power output. Now that's some kinda power for an HT!

Size of the DJ-100T is 6⅝×2⅜×1 3/16 inches and (with the standard 7.2 volt 700mA/hr NiCad pack) weighs about .5 pounds. Using the battery save function extends battery life by seven to eight times, ideal for emergency communicators.

The HT has 10 memory channels which not only store the frequency and split, but also CTCSS tone encoding, if required. Odd splits are possible using the "call" channel as a transmit frequency coupled with one of the other memories. This enables MARS and CAP activity to be performed.

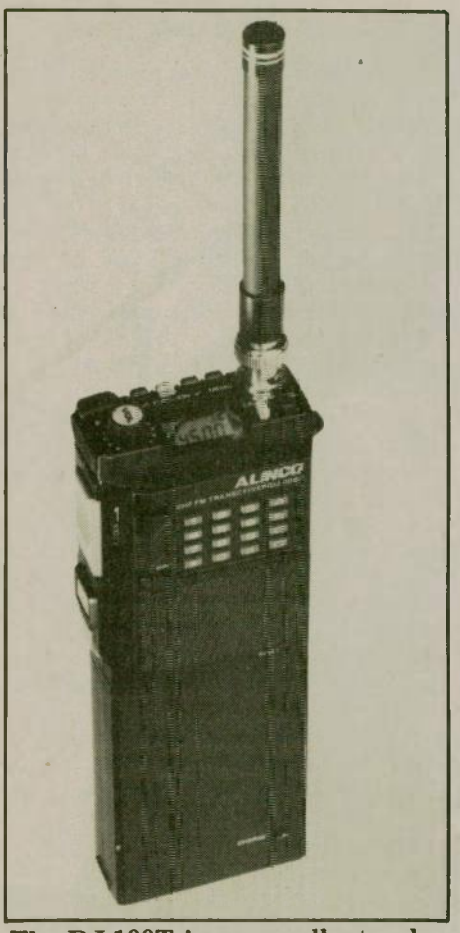
Three of the four battery packs have a DC-to-DC converter built in, so no more fiddling with DC adaptors for mobile use. Just run a line right from your car battery to the HT and stick it into the jack on the battery pack.

Optional accessories include an earphone/mic, speaker/mic, several cigarette lighter plug mobile adaptors and D-Cell battery case for extended operations.

The multi-function LCD display is a busy little bugger: Showing TX/RX frequencies, S/RF indicator, memory channel, function display, freq lock and memory lock. The display is backlit using two bright green LEDs and is VERY effective at night. The CTCSS tone encoding is performed by switches located on the back of the HT case. Also the HI/lo power switch is located on the back of the case.

Programming the 10 memories is a bit tedious, but once a little practice is gained, the chore goes quickly. Unfortunately, the 16 button DTMF pad does not function as a keypad for entering the frequencies.

One feature that I REALLY like (next to the 7W output) is the shift button located just below the F. Lock switch on the front of the HT. This button, when pushed, instantly lets you listen to the reverse of whatever split you have programmed into the memory channel. This is great for tracking repeater interference or comparing signal strengths and moving off to a simplex channel to free up a repeater.



The DJ-100T is an excellent value for the money.

One little snip of a wire on the main PC board and a reset of the synthesizer chip and my DJ-100T transmits and receives from 130 to 169.995 MHz in 5 kHz steps. There does not seem to be any detectable degradation of performance across the spread of frequencies, either.

Now, why would anyone want to transmit outside the Amateur bands?

(please turn to page 26)

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World Radio History

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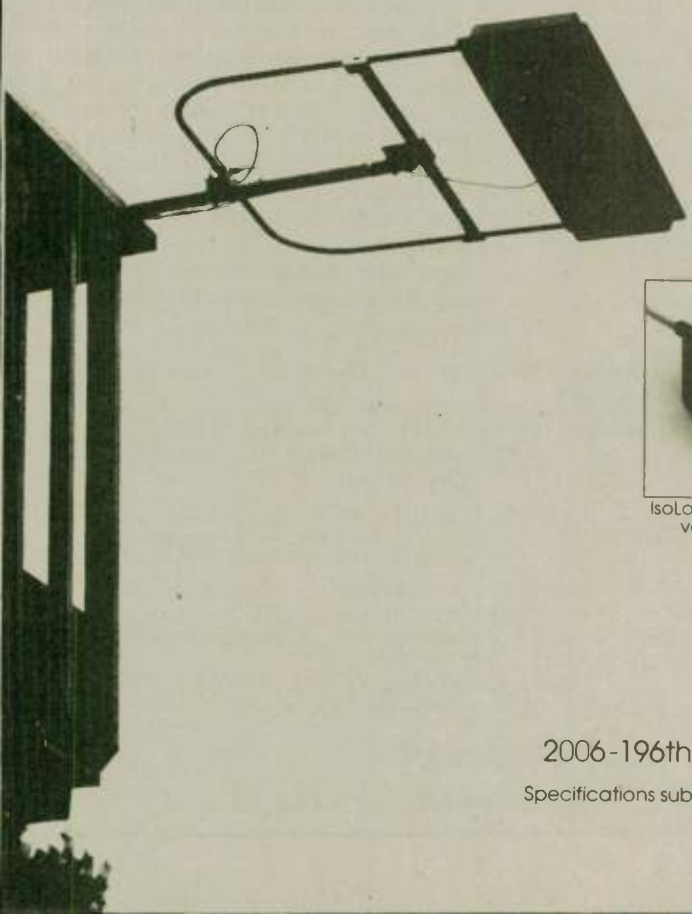
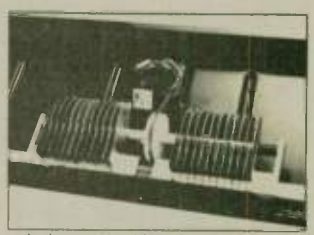
150 Watts. Rated up to 150 watts, the IsoLoop transmits and receives on any frequency between 14 to 30 MHz. When mounted with the loop in the horizontal plane, the radiation pattern is omni-directional and horizontally polarized, with about the gain of a dipole. Maximum radiation is at low angles which is ideal for DX operation. The IsoLoop may also be mounted with the loop in the vertical plane to provide a null in a desired direction. Tuning is provided by a precision stepper-motor and a small remote control box, the LC-1.

The IsoLoop does not need ground radials and its balanced, shielded feed-loop isolates the feedline from the antenna. The IsoLoop is well-isolated from the feedline. Like AEA's Isopole antennas, your signal is radiated by the antenna and not the feedline. With end-fed antennas, the outside of the coax becomes part of the antenna, resulting in noise and computer hash pickup and increased TVI problems.

High-Q Design. One of the unique features of the IsoLoop is its inherent High-Q. The IsoLoop can be considered a very sharp tunable filter that radiates. The narrow bandwidth suppresses harmonics from your transmitter reducing TVI problems. It also attenuates out-of-band signals from nearby transmitters that could overload your receiver.



Compact. The IsoLoop is square, with rounded corners, and measures 32 inches on a side and weighs only 12 pounds. Because of the IsoLoop's small size, it makes a perfect attic or balcony antenna. It's also excellent for portable operation, recreational vehicles or camp-site use. A rotator is not necessary when used in the omni-directional, horizontally polarized mode.



IsoLoop precision stepper motor provides accurate tuning

IsoLoop LC-1 control box with variable speed tuning

Revolutionary. The AEA IsoLoop antenna represents years of research and development. Others may try to imitate the IsoLoop, but none can match the patent-pending design.

AEA also provides technical support from the factory or through your personal computer and modem on CompuServe's HamNet. If you are already a CompuServe member, just type GO HAMNET at any CompuServe prompt. For a free introductory CompuServe membership, call 1-800-848-8199 and ask for representative #48.

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World Radio History

Product Review

(continued from page 24)

Well, outside of the obvious MARS and CAP operation, it is nice to be able to listen in on the NOAA weather radio transmissions on 162 MHz. In addition, PEMA freqs were calling me, and this was a very simple solution to the problem. Also, I have the local police and fire freqs loaded into a couple of the memories and the DJ-100T now functions as a hand-held scanner, eliminating the need to pack another radio when going on emergency calls.

There are two things about the 100T that I would change: 1. Provide a way to move both up and down the stored memories, instead of having to cycle completely through them to go from channel 8 to channel 7 and 2. Improve the receive audio, it sounds very tinny. (Mark Murasato told me that this problem is being corrected in later models.) Although the DTMF pad is a bit small for those of us with regulation-size fingers, I have used it many times without problems. It would be nice to see the pad spread out a bit, though.

This radio can be easily placed into packet operation. The 7W output and versatility of the 100T lend it quite well to the emergency communicator's bag of tricks. With a pocket full of spare NiCad packs and a solar panel, you could conceivably be on the air indefinitely using this little HT in an emergency.

Bottom line on the Alinco DJ-100T 2M HT: Outstanding unit, good value for the money and easy to use and extremely versatile.

My thanks to Mark Murasato of Alinco Electronics, 20705 S. Western Ave., Suite 104, Torrance, CA 90501, for providing the review radio. For more info write Alinco or call 213/618-8616 and ask for the full line of Amateur equipment. □

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It's a small world

Thirty years ago Jim Ayres, KØUWH, and Cecil Johnson, W5SRQ, were in the US Air Force. Jim was stationed at SAC HQ in Omaha, NE, and Cecil was at Cannon AFB in New Mexico, living in Portales.

On Sept. 9, 1959, 10M was open for a 50 minute ragchew, signals were 59 both ways on 28.950 MHz. Jim was using a DX40 and Cecil had a LYSCO transmitter. Both were on AM. Cecil already had his WAS, but Jim was still trying to complete his from his Omaha QTH, so they exchanged QSL cards — the postage being 3¢!

Both operators are today members of the Garland ARC. Jim is now better known as W5NHP and they have lived about five blocks apart for the last 20 years! They only discovered they had worked all those years ago quite recently, when Jim was convalescing and started digging around in some old QSLs. —*Garland ARC, Garland, TX* □

A radio first (and last)

Back in the pioneering days of radio broadcasting, programming was not so easy to come by.

In 1929 I was with a 100 watter in Central Indiana. The studios were located on the top floor (eighth) of a mid-town hotel. Next door was the most prodigious motion picture theater in town.

This was in the days of the movie musicals with the new sound tracks. The projectionist and I were good friends and one day I proposed that we broadcast the sound track direct from the projection room.

He thought it was a good idea but didn't think the theater manager would. But he agreed to let me try it anyway.

We ran a pair out the window from the studio floor and down into the production room and connected it directly to the sound amplifier. We were an instant success — until the theater owner learned about it.

Why we ever thought he wouldn't is a mystery. I guess I never thought he listened to radio. — *Excerpted from* A Radio Journal, *by Russ Rennaker, W9CRC. The entire book is contained in a publication entitled* Those Golden Years of Radio, *available from And Books 702 S. Michigan, South Bend, IN 46618.* □

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World Radio History

Mock disaster drill

DAVE SCHNEIDER, WD0ENR

The Mt. Pleasant (Iowa) Amateur Radio Club used a mock disaster drill and a public demonstration at a shopping area on Sept. 16, to show the public and local government officials what Amateur Radio can do.

The scenario of the drill involved a tornado striking the nearby community of Salem, hitting a church during a congregation event.

When the severe weather alert was announced, Henry County Amateur Radio Emergency Coordinator Bill Barber, NO0J, activated a net on Mt. Pleasant's 147.39 and 444.95 repeaters. Those responding were Gary McMeins, N0FIB; Ben Johnson, NY0O; Dave Ruby, KA0FBL; Don Campbell, W0SWY; Manford Therme, N0EFE; Dick Ward, KA0NSW; and myself.

Ten minutes later it was announced that a twister was on the ground southwest of Salem, and then moments later we learned that it had struck the town. Immediately Bill dispatched me and Ben to the Emergency Operations Center in Mt. Pleasant and KA0FBL and himself to Salem, while Gary and Don set up the public display at the shopping center. There, the public could hear the mock drill going on, plus see other facets of the hobby throughout the rest of the day.

After Bill and KA0FBL arrived in Salem, they set up a field communications station at the site command post, while I was directed to serve as net control at the EOC in Mt. Pleasant.

A total of 10 pieces of traffic were sent on 2M packet and the two repeaters. Test messages were sent to state agencies in Des Moines via packet.

Among the situations the 16 participating agencies had to face were missing persons, power and phone service disruptions and the usual storm damage. In one particular situation a volunteer victim was discovered after a special two-block search in a weedy brush area away from the tornado strike scene. Once discovered, law enforcement representatives uncovered the fact the victim had been "killed" after suffering a blow to the head during a robbery. The responders were faced with the criminal scene without having been informed they would be challenged by anything more than the tornado damage.

Ed Farley, Henry County director of the Office of Emergency Management, was pleased with the efforts of all involved, especially the response by the Amateur Radio community.

TVRO ordinance thrown out

A US district court in New Jersey has overturned a restrictive home satellite dish zoning ordinance by the town of Maplewood that would have unreasonably impaired the installation and use of home TVRO systems.

In its decision the court cited the 1986 FCC preemption that prohibits municipalities from unfairly restricting home dish installation and use. The Maplewood ordinance restricted antenna height to six feet and placed landscaping, setback and other restrictions on the homeowner as well.

The case, known as *Van Meter vs. the Township of Maplewood*, marks the first time that a federal court has used the FCC preemption to overturn a TVRO ordinance. — *Westlink Report*

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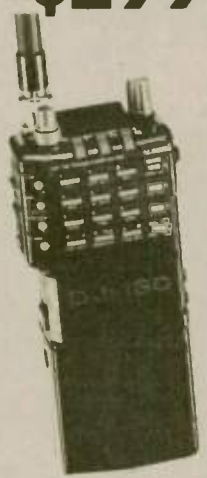

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World Radio History

SPECIAL EVENTS

Nice weather we're having

The San Benito Amateur Radio Club will operate special event station WA2VJL, to celebrate the 2nd annual "Dog Days of Summer," from Aug. 1 through 6. Exchange local weather conditions and general weather facts about your QTH!

Suggested frequencies are: *SSB* — 21.350 and 28.325; *CW* — 14.030 (CQ DOG), with operation from 1900 to 0300 UTC.

For a special certificate send an SASE (9½ x 11 unfolded, business size folded) and QSL card to: San Benito ARC, Attn: Brenda V. Ryan-QSL Mgr., POB 1382, San Benito, TX 78586. □

Maritime Week

The Mancorad Radio Club, of Manitowoc, WI, will operate special event station W9DK from 1400Z to 2400Z Aug. 3 through 5, from the WW II submarine *USS Cobia*, in celebration of Maritime Week. Suggested frequencies are 7.250, 14.250, 21.350 and 28.450.

For a certificate send a QSL and SASE to Mancorad RC, P.O. Box 204, Manitowoc, WI 54221-0204. □

Coast Guard celebration

The US Coast Guard Electronics Engineering Center, Wildwood, NJ, in cooperation with the Cape May County ARC, will operate special event station K2CGD to celebrate the 200th anniversary of the Coast Guard's founding. Times of operation will be 2000Z to 2359Z on Aug. 4.

Suggested frequencies are: *Phone* — 28.375, 21.375, 14.300, 7.235 and 3.875; *CW* — 21.175, 14.100, 7.110 and 3.710.

For a QSL and certificate send a 9 X 12 SASE and QSL to K2CGD, USCG EECEN, P.O. Box 60, Wildwood, NJ 08260. □

Lighthouse celebration

In commemoration of National Lighthouse Day, on Aug. 4 and 5 the Old Barney Amateur Radio Club will operate special event station W2OB from the Barnegat Lighthouse, otherwise known as Old Barney, located at Barnegat Inlet in Barnegat Light, NJ.

The original lighthouse was built in 1834, but was destroyed by a storm in 1855. The present day lighthouse, which stands 163 ft. above sea level and has 217 steps to the light, was built in 1858 by the Army Corps of Engineers, under the guidance of George Meade, who later became a famous general in the Civil War.

Special event station frequencies will be: *CW* — 3.540, 7.040, 14.040, 21.040 and 28.040; *SSB* — 3.900, 7.275, 14.290, 21.390 and 28.390; *FM* — 146.835 repeater and 146.52.

For a special QSL send an SASE to NU2F.

Train station

From the "birthplace of the Oil Industry," Titusville, PA, a special event station will be operated again this year. Sponsored by the Oil Creek Valley Radio Society, this event commemorates the fifth year of operation of the Oil Creek & Titusville Railroad.

Station N3GBH will be on the air Aug. 4 and 5, on site at the historic Perry Street railroad station, from 1300 UTC Saturday through 1900 UTC Sunday. Suggested modes and bands are: *CW* — Novice portion of 80, 40 and 15M; *SSB* — Novice portion of 10 and General portion of 15, 20, 40 and 80M.

For a special photo QSL cancelled from the only operating railway post office car in the country, send your QSL and a #10 SASE to Bill Lyons, Sr., N3GBH, 427 South Drake St., Titusville, PA 16354. □

Island station

For only the seventh time in history, Amateur Radio is going to Flat Hammock Island (Fishers Island Sound, NY). The Tri-City ARC will mount its sixth annual expedition on Sunday, Aug. 5, and will operate from this unique, uninhabited island from 1300Z to 2000Z.

Look for KA1BB in the lower 20 kHz of the General class phone and CW bands — 10, 15, 20 and 40M, the center of 10M Novice band and the 2M SSB band.

QSL with a letter sized SASE via Tri-City ARC, Box 686, Groton, CT 06340. □

Maccabi Youth Games

The Jewish Community Center Radio Club will operate special event station K8PBQ in Detroit, MI, during the 1990 North American Maccabi Youth Games, from Aug. 19 to 26. Times of operation will be from 1400 to 0100 UTC.

Suggested frequencies are: *CW* — +45 kHz from the bottom end of all bands; *Novices* — 3725, 7125 and 21.125 MHz; *Phone* — 3910, 7280, 14.335, 21.380 and 28.580 MHz.

Special QSLs and certificates will be available; certificates will be given for contacts on both CW and phone. Send a regular SASE for a QSL or a 9 X 12 SASE for a certificate to: JCCRC - K8PBQ, 6600 West Maple Rd., West Bloomfield, MI 48322. □

Convention station

San Diego County ARC and Inland Empire ARC Inc., of San Bernardino (CA) County, will be operating a jointly sponsored special event station from the floor of the 1990 ARRL SW Division Convention at the Towne & Country Convention Center in San Diego.

Operations will start Friday, Aug. 24, and run through Sunday, Aug. 26. Operating times will be 1600Z through 0400Z Friday and Saturday. Sunday operations will be 1700Z through 2100Z.

Suggested fequencies on the lower half of the General phone bands. CW operations will be on 28.200, 21.115 and 7.125 during operating times.

A multi-colored certificate will be offered for all contacts. For QSL info in the United States, send an SASE (#10 envelope), and for DX send an SAE (#10 envelope) plus two IRCs to WA6ZEF at P.O. Box 1433, Ontario, CA 91762. □

Hoover days

The Laurel Maryland ARC will operate special event station WA4AVU from the top of Skyline Drive in the Shenandoah National Park, in Virginia, from 1600Z Aug. 25 until 1600Z Aug. 26, to celebrate "Hoover Days" at the National Park established by President Hoover.

The main focus of the event will be on VHF/UHF. Frequencies include 50.125, 144.2, 146.52, .55 and 432.1 SSB. HF frequencies will be 3.940, 7.240 and 28.340.

For a special photo certificate, send a QSL and no. 10 SASE to Laurel ARC, Box 3039, Laurel, MD 20709. □

Old Threshers Reunion

The Mt. Pleasant, IA, Amateur Radio Club will operate special event station W0MME from 1200Z, Aug. 27, through 2000Z, Sept. 3, in conjunction with the 41st Midwest Old Threshers Reunion. Operation will be SSB, CW, packet and AMTOR in the lower portions of the General bands.

For those attending in person, talk-in and information will be provided on the club's 444.950 and 147.39 MHz repeaters. For a QSL card, send an SASE to Dave Schneider, WD0ENR, 507 Vine, Mt. Pleasant, IA 52641.

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World Radio History

STATION APPEARANCE

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Millard D. George
K6ZRY

This month's winner is Millard C. George, K6ZRY, of El Cerrito, CA. Read on as he describes his shack and Amateur career.

An impressive array!

I have been an Amateur for 34 years, working mostly SSB during that time. However, in mid 1989, I lost most of my hearing and can no longer work voice, so I cleaned out my station and purchased all new modern RTTY gear and revamped my entire shack.

The photo shows my new complete station. Starting from left to right it includes the following: A Robot 800 Keyboard, directly above is an NEC 13 inch green screen monitor and directly above that is a new 13 inch Toshiba color TV, which I can watch and enjoy my ball games and favorite programs as I work RTTY. To the right of the monitor is a Heathkit tuning scope, a most valuable addition to my station. Next is an Icom 735 transceiver, which is doing a remarkable job barefoot running 100W out to a roof-mounted dipole. Right next to the Icom is my control panel. This panel includes a volt meter; coax switch for three roof-mounted dipoles; switch control for an electric room heater and control switch for a room fan in hot weather; a transmitter control switch for the Icom and a Swan 300 transceiver not shown; power switch for the Swan 300 and last, at the bottom, an SWR meter. All wiring and Icom power supply is enclosed and out of sight in the cabinet, of which the control panel is a part.

The cabinet has a "grand piano" type hinged lid for easy access to all wiring if necessary. I operate from a most comfortable upholstered arm chair and all equipment, including the control panel switches, can be reached without moving in my chair.

I have a low-pass filter attached snug to the Icom and almost a flat line on all three dipoles, eliminating the necessity

of a tuner and I have no RF floating around in or out of the shack — not even a flicker on my TV set, sitting almost on top of the Icom. The world map is over my desk.

While I have made no particular effort for DX, I have, nevertheless, had a few choice contacts, such as Denmark, Japan, Chile, Argentina, Guatemala, etc. I am 86-years-old and spend hours daily at my station, listening and calling — always glad for any new contacts or long chats with old friends.

I founded the SIRARC Radio Club, an activity of Sons In Retirement of California, which has 156 branches and a membership of about 35,000 in central and northern California. SIRARC was founded in 1974 and now has an active membership of about 240. I am also a past president of the State Organization of Sons in Retirement. □

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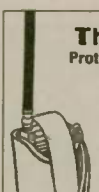

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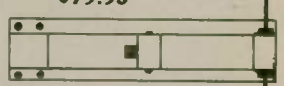

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World Radio History

Amateur "Hi"

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

This month's winner is John E. Gercken, KA9EPO, of Bellflower, IL. If all else fails go to the "man" in charge.

If you have ever ordered something from a company and they keep sending you catalogs and flyers forever after, try this method . . . it worked for me!

Until two weeks ago I belonged to a book club which specialized in books on electronics. When I first started my membership, I ordered a few books that looked interesting, but found no time to look at the pictures let alone read them, so I decided to inform the company that I wished to terminate my membership.

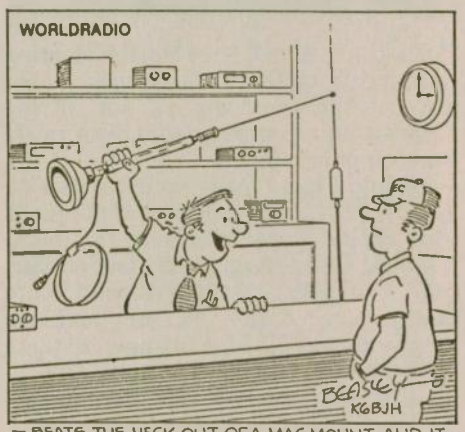
I wrote them a nice letter explaining why I would like to quit, and they kept right on sending flyers every month. I decided that if they could afford to send flyers every month, I could afford to send another computer copy of my original letter along with my response card, which I was required to mail in regardless, whether I ordered books or not. I even wrote on the response card "cancel membership" in big letters.

This cycle went on for four months, until I got an idea. If no one there can read, perhaps their computer can . . . so, I WROTE TO THE COMPUTER! It reads as follows:

"Dear Computer,

I wish to terminate my membership in the book club. My account number is 123456789-abc. Please delete my name from your files. I have neither the time to read, nor the desire to purchase anymore books. I have asked the humans to cancel my membership, but they keep ignoring my repeated requests. Perhaps you can help me."

I am happy to report that within 10 days of mailing that letter, I received a form letter from the office of the president of the company asking if I wished to continue on an "order only" basis, or quit altogether. I checked the "QUIT" box and mailed it back and have not heard from them again. □



— BEATS THE HECK OUT OF A MAG MOUNT, AND IT ALSO HAS ANOTHER USE!

What is a radio Amateur?

The next time a person asks you, "What is a radio Amateur?", you tell them:

A radio Amateur is a person who passes an exacting exam as an exacting expert on the strength of being able to turn out, with prolific aptitude, strings of incomprehensible devices built with micrometric precision, from extremely vague assumptions, based on debatable figures acquired from inconclusive tests and quite incomplete experiments performed with instrumentation accuracy by a person of doubtful reliability and rather dubious mentality with the particular anticipation of disconcerting and annoying everyone outside of his own fraternity. *The Ham Radio Guide, Portsmouth, VA* □

Letter from a troop. . .

In the last year I have become a "computer buff." I purchased a Commodore C64, as it has many programs for ham radio.

I fired up the computer and I discovered a rainbow of colors on the TV on Channels 2, 4 and 5. These are used in the Los Angeles area.

I tried an extension cord to get away from the common outlet for the TV, but I still had the rainbow on the channels.

In my junkbox I found a toroid from an old 16 inch B/W TV. The toroid is about 3 inches in diameter on the large end and about 2 inches on the small end, thus being a cone shape. I glued the two pieces with Super Glue and let it dry. I took the AC cord from the transformer to the computer and wrapped seven turns of cord in the core, close to the computer.

The seven turns was all the length I had to play with, as the transformer is on the floor and the computer is on the desk.

Bingo! No more rainbow in the TV. I can now work the computer in the early evening when the XYL is looking at the Boob Tube. I am sure a larger toroid from a color TV would work as well.

K.C. Jones, W6OB — *Lee DeForest Radio Club, Hemet/San Jacinto, CA* □

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World Radio History

QUARTER CENTURY WIRELESS ASSOCIATION INC.

Esther Given, W6BDE

Sixteen recipients of QCWA's Golden Anniversary Award represent 930 years of Amateur Radio.

FAR (Foundation for Amateur Radio) is made up of 56 Amateur Radio clubs, including four QCWA chapters, in the greater DC area and boasts many QCWA members. QCWA's president, Harry Dannals, W3HD, was kept busy all evening presenting awards, the major one of which was QCWA's Distinguished Service Award, sanctioned by its Board of Directors to be conferred upon Hugh Turnbull, W3ABC, for his outstanding

Hugh Turnbull, W3ABC, receives the Distinguished Service Award from QCWA president Harry Dannals, W3HD.

work with FAR's scholarship program. Under Hugh's able chairmanship, FAR handles the processing and granting of more than 30 Amateur scholarships each year for various donors, including the seven awarded by QCWA.

The 1990 event also honored sixteen QCWA members with longevity endorsements for their Golden Anniversary certificates. Recipients, whose combined time as Amateur Radio operators totaled 930 years, were: Tom McNulty, W3ZG, 70 years; two 65ers, Emerson Mehrling, W4NH, and Lee Dorsey, N3BHC; three 60 year holders, Bill Grenfell, W4GF, Armin Meyer, W3ACE, and Ed Speakman, W3AUR; 10 55 year licensees included Jack Bobbitt, W4HV, John Bennett, W4ZEI, Bruce Green, W3IR, Henry Herman, W3UJ, Elmer Jones, K4EUX, Stuart Meyer, W2GHK, Ed Morrison, W3RY, Camille Marie, W3EPR, Tom Smith, W3LOV, and Joe Ziglinski, W4DIN.

•

Results of QCWA's 1990 QSO Parties, held in the spring, have been announced by Onie Woodward, W1ZEN, Activities Manager. US winners of the CW section held in February are respectively Dave Fischer, W0MHS, who receives the 1990 plaque; Jim Villasana, K6NQ/7; W.H. Branche, K9CLO; Gary McClellan, KD7E; and John Zwaska, W4WKQ. Top CW scorers outside the United States were Tom Cunningham, VO1CA, North America; and Hans-Werner Liebig, DL6NB, Europe. The phone section, occuring a month later in March, found winners in W.P. Van Horn, K3CP; Hans-Werner Liebig, DL6NB; John Zwaska, W4WKQ; Ralph Cabanillas, Jr., W61L; and Bill Nagel, K6FE. By global regions outside the United States, top competitors were John Weber, VP2VD, North America; Dick Dorrance, PP2ZDD, South America; and DL6NB.

The Quarter Century Wireless Association is a unique organization. A prospective member, in addition to holding a *current* Amateur Radio operator's license, must have originally passed the test and been issued his/her first license 25 or more years ago. In many cases the license period has been continuous, but sometimes a license has been allowed to lapse, maybe for a long time.

QCWA's stipulation recognizes that important qualification of an applicant's having had the initial interest and achievement a quarter century ago. Many current Amateurs acquired their first licenses when they were teenagers, then let it lapse, in later years resumed interest, passed the test afresh and received a new ticket and rejoined the ranks of licensed Amateurs. Anyone who fits this category is eligible for QCWA membership.

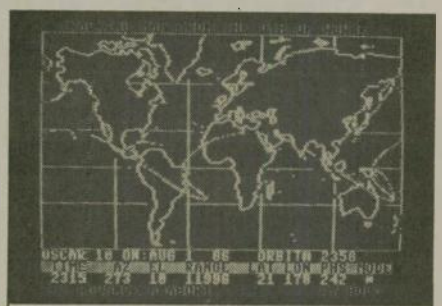
One need not wait for the actual anniversary date. Any currently licensed Amateur first licensed anytime in 1965 became eligible for QCWA on Jan. 1, 1990, and is invited to write to QCWA, 1409 Cooper Dr., Irving, TX 75061, for an application.

•

One of the prestigious and well attended Amateur celebrations is the FAR/QCWA Annual Spring Banquet, which recognizes achievements of Amateur Radio operators in the proximity of our national Capitol. □

•

Net controls please copy: One has never been hurt by anything he didn't say.



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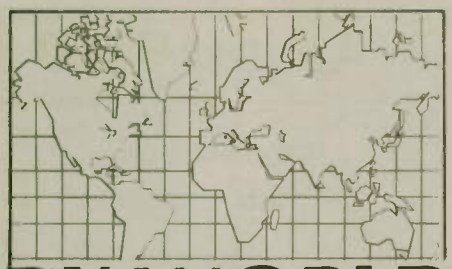
World Radio History



DX WORLD

John F.W. Minke III, N6JM
6230 Rio Bonito Drive Carmichael, CA 95608

Activities Calendar

04-05 Aug.	FRR Romanian DX Contest
11-12 Aug.	DARC European DX Contest (CW)
11-12 Aug.	WIA Remembrance Day
18-19 Aug.	MARTS SEANet Contest (SSB)
25-26 Aug.	JARL All Asia DX Contest (CW)

For details on contest activity, consult your favorite contest column. The rules for the World Radiosport Team Championship are listed elsewhere in this issue.

W-100-N

The following DXers recently completed the requirements for **Worldradio's** Worked 100 Nations Award:

376. IK4MFP Gilberto Gradari
377. OE6CLD Claus Stehlik
378. N6SYP Ken Swanson
379. W3FDU James R. Fournier

Armond's DXathon

We all hope you are busy with the 1990 DXathon. The rules this year have been simplified. Perhaps this will generate additional interest in this annual affair.

Incidentally, we did receive a couple of entries that claimed Lithuania as a separate nation — and they were from Soviet stations. Very interesting!

Solomon Islands (H44)

Very active from the Solomon Islands is H44AP. Check 20M SSB between 14.165 and 14.200 MHz from 1000 and 1200 UTC. You gotta get up early for this one.

Also active recently has been H44MB, who has been between 14.160 and 14.253 MHz around the same time.

Those of you who may have worked H44RW during the month of June had the privilege of meeting Ron Wright, ZL1AMO. Ron often gets the urge to mount a new DXpedition to help the deserving DXer. He works them contest style.

Jan Mayen (JX)

Inside DX reports that JX7DFA has been very active on 20M, both CW and SSB. He hopes to be able to make it to the west side of the island this summer, and if he does he will concentrate on 10M.

He plans 80M activity in October, prior to leaving the island. A later report has him leaving the island in July, which would obviously kill the chances for an 80M contact. Check 14.004 to 14.020 MHz around 2345 UTC for this one. Also check the 14.256 DX Net for SSB activity.

On 15M JX7DFA has been reported near 21.010 MHz around 2330 UTC.

Jordan (JY)

Several stations have been reported from Jordan recently. JY9SR has been reported several times, operating RTTY. Look for this one near 14.089 MHz around 0230 UTC. He was also reported on CW on 14.031 MHz at 0200 UTC in early May.

Ten meter activity, according to *Long Skip,* lists the following with good signals into eastern Canada:

JY5DK	28.520 MHz	1400 UTC
JY5DL	28.024 MHz	1530 UTC
JY5FA	28.459 MHz	1530 UTC

Also reported on this band was JY9VC, with a signal into Europe on 28.495 MHz around 1530 UTC.

On 15M SSB JY5IN was reported often near 21.315 MHz between 2300 and 0330 UTC. And on 20M SSB JY5RBM was found between 14.227 and 14.263 MHz from 0100 UTC.

Papua New Guinea (P29)

To work this one requires spending some time in the early hours of the morning. With toothpicks popping your eyes open, look for P29BT, who has been very active on 20M. A portion of his time has been in or the nets on 14.227 MHz from arc 1200 UTC.

Other stations reported on this b include the following:

P29CG	14.255 MHz	1345 UTC
P29JP	14.192 MHz	1200 UTC
P29LB	14.246 MHz	1130 UTC
P29MM	14.207 MHz	1330 UTC
P29MR	14.251 MHz	1145 UTC
P29PT	14.226 MHz	1130 UTC
P29RB	14.200 MHz	1830 UTC
P29SC	14.181 MHz	0930 UTC

Inside DX reports that P29LB r 150W into a TH7DXX. He must s down by 1145 UTC, as the local po is shut off. Also check the low enc 10M for a CW contact between 2 and 2300 UTC.

Seychelles (S79)

During the early part of M DL7FT put on a major effort, signi S79FT, to give many a deserving D er a new one. Almost all of the activ reported was on CW.

Then in June, according to *The I Bulletin,* Veikko Komppa, OH5V was to sign S79VD. He was to ha been on through June 17th.

The only other report we have the Seychelles is S79SC, on 14.1 MHz around 1200 UTC on June 3.

Egypt (SU)

The only call we have seen recent for this one is SU1HN. He seems enjoy RTTY, as he has been report many times. Look for him betwe 14.080 and 14.087 MHz from 2300 a as late as 0230 UTC. As for SSB, seems to prefer the net that meets 14.226 MHz after 0200 UTC.

Malawi (7Q7)

Inside DX reports that 7Q7JM now active and has been reporting int the 14.256 DX Net around 2100 UTC His operating time is limited, due to heavy work schedule. He has also bee reported on 21.333 MHz at 1600 UTC

Also active is a Japanese operato signing 7Q7JA on 10M. However, h has a weak signal, as he is runnin only 2W into a dipole. He should b there for more than a year. Check 28.500 to 28.550 MHz around 170 UTC.

The DX newsletters also report ac tivity by 7Q7LA, operated by Les An trobus, G3JCJ. He operates both SSE

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World Radio History

and CW. Try 14.010 MHz around 2130 UTC or 14.175 MHz at 1800 UTC.

The DX Bulletin reports activity of another station recently, signing 7Q7RM. He was reported on 14.187 MHz at 1230 on May 29 and again on 28.036 MHz at 1500 UTC on June 2.

Kuwait (9K2)

At least two calls from Kuwait have been reported on 17M. Check the band for 9K2EC, who has been reported between 18.140 and 18.46 MHz around 2300 UTC, and 9K2KS on 18.153 MHz at 1500 UTC.

On 20M 9K2YA has been reported often between 14.243 and 14.256 MHz. The times vary between 2230 and 0600 UTC. Other calls reported on this band include 9K2CS on the E.T. Net at 14.160 MHz around 2200 UTC, 9K2HA on 14.290 MHz at 1600 UTC, 9K2JM on 14.256 MHz at 2145 UTC, 9K2JS on 14.160 MHz at 2345 UTC, 9K2KD on 14.208 MHz at 0130 UTC and 9K2KS between 14.160 and 14.252 MHz around 0200 UTC. The sole CW report was by 9K2JW on 14.057 MHz at 1430 UTC.

Fifteen meters SSB is another band to check out. Between 21.312 and 21.324 MHz, 9K2HA has been worked from 2145 to 2300 UTC. Sharing the band was 9K2IC on 21.298 MHz around 0130 UTC on May 24, 9K2KS on 21.299 MHz around 1400 UTC in early May and 9K2RA on 21.333 MHz at 1830 UTC on May 13.

Soviet Activity

Alex Abramov, UA1NDR, of the Karelian DX Club, reports that there is a USSR Awards Directory available for a fee of $6 (or 12 IRCs). The volume contains over 50 awards and can be ordered from him at P.O. Box 225, Petrozavodsk 180 034, Karelia, USSR.

Alex also informs us that the Karelian DX Club will be using several special event calls, such as EV1AN in early May to commemorate the victory of WWII. Then in June the call RN7N was used to commemorate the 70th Anniversary of the Soviet Karelia. EK1NWB was used the latter part of July, when the club sponsored the First International DXpedition to the Isle of Kizhi. During the IARU HF Championship they will use the call US1N.

DX Prediction — August 1990

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

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

AUGUST 1990
WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	(18)	22	26	16	23
12	(23)	19	23	(16)	(20)
14	(29)	22	20	23	30
16	33	21	(19)	26	35
18	35	(17)	(18)	25	39
20	34	25	26	23	42
22	28	31	38	19	41
24	24	34	42	15	38
2	(21)	36	43	(18)	31
4	22	34	42	22	26
6	24	32	40	22	23
8	(21)	26	32	18	21

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	23	17	27	16	20
10	27	15	24	(16)	22
12	35	19	21	23	25
14	40	24	(19)	26	32
16	41	20	(18)	27	37
18	41	(17)	(17)	26	40
20	33	26	34	23	42
22	28	30	40	18	43
24	24	28	43	16	35
2	21	26	42	15	29
4	22	25	40	22	25
6	27	20	33	18	22

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	23	17	27	15	21
9	25	15	24	19	22
11	33	20	22	24	24
13	39	21	(20)	27	32
15	41	17	(18)	28	37
17	40	(15)	(18)	27	40
19	37	(19)	(27)	25	42
21	30	24	38	21	41
23	26	27	42	18	39
1	22	26	42	15	32
3	18	24	40	17	27
5	26	20	33	17	23

The QSL manager for these calls is Victor V. Sinhavin, UA1NEJ, P.O. Box 520, Petrozavodsk 26, 185 026 Karelia, USSR.

Ralph Bates, K1ZZI, informs us of a joint Soviet/American DXpedition to the Black Sea and Causasus Mountains (Oblast 013). The operation was organized by RW6AC and they signed UF7V the first 15 days in July. Operation was to be on both CW and SSB, 10 through 80M. Operators included K1ZZI, KP4DQ, WF2S, AA6PY and 12 Soviet operators.

Yemen merger

The DX Bulletin reported that on May 22 The People's Republic of Yemen (South Yemen) and the Yemen Arab Republic (North Yemen) merged to form the Republic of Yemen. The newsletter further stated that according to Point 1 of the DXCC rules, this will result in the deletion of the former two Yemens and the formation of a brand new DXCC country. The recent 701AA operation should count as the new country.

Feedback

Dick Farber, W2KXB, commented on the figures on the licensing status in the June column. After just returning from Indonesia and not seeing much of Amateur Radio activity there, Dick found it hard to believe that there were some 60,000 licensed Amateurs in that country.

Our figures come from the IARU. In turn, this information came from the country itself, a member of the IARU. This data was as of 1988, so there are probably more now.

(please turn to page 36)

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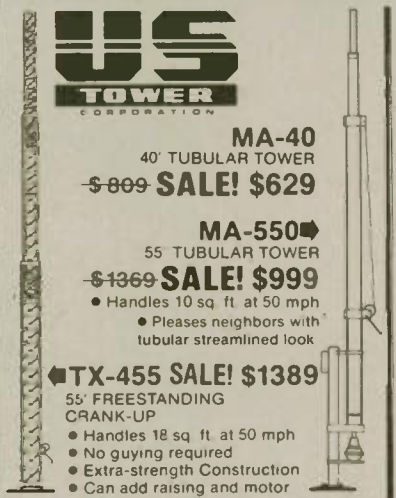

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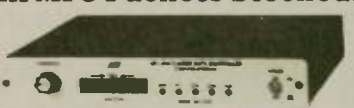

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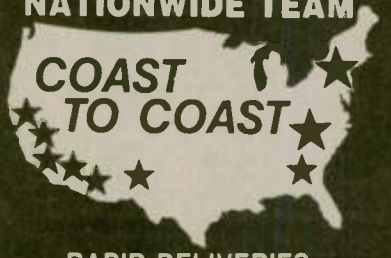

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World Radio History

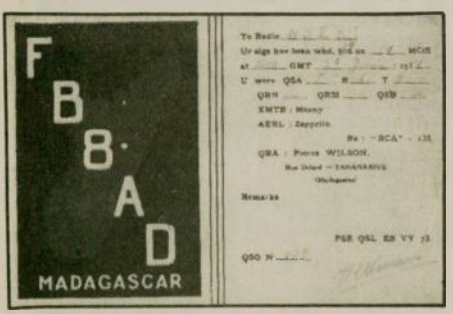
DX World

(continued from page 33)

Most likely the licensing structure is somewhat similar to Japan, with those no-code tickets restricted to VHF only. That's why you didn't see big beams.

Antique QSL department

Here is Pierre again! Only this is 55 years earlier back in 1935. Pierre Wilson, FR7BX, came on the air from Madagascar that year as FB8AD. Cam Marie, W3EPR, provided us with his old card from Pierre for a 1936 contact, when he worked him signing W3ERJ.



Cam also sent us a photo sent to him by FR7BX of the locals in Tananarive

on Madagascar in 1935. From left to right we have FB8AA, FB8AB, FB8AE, FB8AF, FB8AG, and our boy Pierre, FB8AD. Tune in next month for another episode of Madagascar.

QSL routes

A35KY	—WA3HUP	CR2UW	—CT4UW
A43KM/0	—A47RS	CT9B	—CT1CWT
AM5ØØA	—EA5BCX	DA1MF	—NW4Y
CN8GH	—K1SE	EA5ØØA	—EA5BCX
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Here is one old-timer many of you have probably worked. From Reunion Island we have Pierre Wilson, FR7BX. He has been active for 55 years, although not from Reunion Island. Be sure to check out the Antique QSL department in this issue for more on Pierre *(Photo courtesy of W3EPR).*

ED9FAS	—EA9KQ	ES4RZ	—UR2RZ	OK8AID	—YU3AI	VP8CDK	—G3VHE
EH9ICH	—EA9KQ	EU5O	—UO5ON	OM7JW	—OK3JW	VP8CDR	—G6ZAK
EI4VKH	—WB1EAZ	EU9A	—UC2ADX	OM7LO	—OK3LO	VQ9AN	—K1VJD
EI5EIS/HS	—K6FO	EUØCCB	—UC1CWB	OM7RM	—OK3RM	XX9KA	—JA2MNB
EK1NWB	—UA1NEJ	EUØYL	—UC2ABC	OMØTMO/		Y9ØAHC	—Y24AO
EL2CX	—N2AU	EV1AN	—UA1NEJ	MM	—K6FO	YM5KA	—HAØNNN
EL2WK	—G3OCA	EV4AU	—UA4UBC	OX3EW	—KB5LRO	YUØSRJ	—YU1FW
EM2C	—RC2AZ	EV4AW	—EA4WE	P29MM	—WB1GWB	ZC4CZ	—G4SSH
EM3AYV	—UZ3YWH	EV9AW	—RW9WJ	P29VMS	—DL2GAC	ZD7KM	—G3JKB
EM6AAK	—RW6AA	EV9AX	—UZ9XWV	P48A	—P43GR	ZD7VJ	—G4ZVJ
EM7BKR	—UB5KW	EW5T	—UT4UWV	PJ4CR	—WB2LCH	ZD8VJ	—G4ZVJ
EM7BRN	—UB4RWW	EW6AA	—UV6AA	PQ2DX	—PY5TT	ZD8Z	—W6CF
EN1AA	—UZ1AWA	EW6AAK	—RW6AA	R1ATM	—UZ1TWW	ZK1TB	—W7TB
EN1AM	—UA1ZX	EW8A	—UC2AHZ	RF6FO	—WA2NHA	ZB2/DK6AS	—DJ8MT
EN3AP	—UA3PPF	FG5BL	—F6AJA	RK3CH	—RW3AH	ZLØAIC	—HB9AAA
EN4AA	—UZ4AWB	FO5BI/P	—F6HSY	RK3Y	—RA3YF	ZV7AZ	—PT7AZ
EN8TJ	—UT5CF	FT5XA	—F6ITD	RK5CH	—UY5XE	ZW7AB	—PS7KM
EO1AAK	—UZ1AXN	FT5XH	—F6GYV	RN7N	—UA1NEJ	ZW7BX	—PS7KM
EO1AOA	—UZ1OWA	FV6PAX	—F8BO	RU3Y/UJ8JW	—RA3YF	ZY2IM	—PY2IM
EO1AZM	—UA1ZZ	GB2CCE	—GMØEFH	S79FT	—DL7FT	1AØKM	—IØIJ
EO2CWO	—UC2WO	GB2IMD	—GI4WRI	S79VD	—OH2MCN	3A3DL	—DL7TA
EO3ADS	—UZ3DXH	GB2RBC	—GM3MTH	T5RR	—I2JSB	3D2XV	—VK2BCH
EO3ADW	—UZ3DWA	GB2STB	—GM3MTH	TA5KA	—HAØNNN	3W1PZ	—RL8PZ
EO3AEO	—RA3EK	GUØLYQ	—AA6MV	TA5KB	—HAØNNN	3ZØA	—SP5PWK
EO3AIR	—UA3IIA	H44AP	—WA2NHA	TJ1BJ	—K4UTE	4K2YL	—UW3TW
EO3AVK	—UZ3VXV		*(See Note 1)*	TJ1PD	—N5DRV	4K4IA	—UAØIA
EO3AWK	—UZ3WWF	H44RW	—ZL1AMO	TK/DL7HZ	—DL7HZ	4NØJRT	—YU4ERT
EO4AHK	—UZ4HWA	H73A	—SMØKCR	TN1AT	—F6FNU	4U1ITU	—I1HAG
EO5BCK	—UB4CWK	HH2PK	—N1DRS	TU2UI	—WA8ZWR		*(See Note 2)*
EO5BGH	—UB4GWG	HI8LMO	—IK7AYE	TW2C	—F2CW	4U5ITU	*(See Note 3)*
EO5BIM	—UB5IJG	HSØAC	—WA4BCQ	TZØMAR	—DJ5RT	5W1KY	—WA3HUP
EO5BLH	—UB4LWB	I1A	—I1RBJ	TZ6BHV	—IK3GES	7J1AGW	—DL7LL
EO5O	—UO5OQ	I3THJ/IK3	—IK3ABY	US1A	—W1AF	7O1AA	—9K2CS
EO6AAS	—UZ6AZR	IG9W	—IT9JKY	US1N	—UA1NEJ	7Q7JA	—JL1IHE
EO6AHG	—UA6HSN	IH8ITU	—IK8DOI	V44KW	—WB2LCH	8Q7DL	—DL9BAF
EO6AHS	—UA6HRZ	IJ5ONU	—I5KKW	V51SW	—G1IOV	9K2IC	—9K2YA
EO9AAM	—UA9AQN	IK2GWY/IA5	—IK2GSR	V63AY	—NØJBQ	9K2YA	—OE6EEG
EO9ACS	—UZ9CWW	IK3ABY/IL3	—IK3ABY	VP2EOH	—K8BL	9Q5EE	—K1RH
EO9AMO	—UA9NN	IK3HAQ/IL3	—IK3ABY	VP2VCW	—N6CW	9Q5PL	—OE7MCJ
EO9AQK	—UA9QCQ	IR9ITU	—IT9TQH	VP2VDX	—KT6V	9T5E	—K1RH
EOØAAK	—UZØAWB	IX8A	—IK8HVJ	VP2VE	—WA2NHA	9V1YB	—OH1NYP
EOØBK	—UB5KF	IY4FGM	—I4IKW	VP5VKS	—WM2C	9Y4DG	—WA2NHA
ER2Q	—UQ1GQQ	IY8ITU	—IK8BYM				
ER3W	—UA3ACF	J49BDX	—DL7MAT				
ER4L	—UA4LCO	JT9C	—JT1CE				
ER4LYL	—UA4LYL	JW9VDA	—LA5M				
ER7L	—UL7GX	JW9ZV	—LA5M				
ER9J	—UJ8JCQ	JX9CAA	—LA5NM				
ERØG	—UG6GAW	KA2IJ	—WB2EXR				
ES2RR	—UR2RRR	KG4GD	—WD4GDQ				

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Notes

1. Applies for contacts made on or after May 12, 1990.

World Radio History

2. This route applies for the period June 9 and 10 only.

3. Three different routes for this one, depending upon the date in May 1990. For May 1 QSL via DK7UY, May 7 via HB9IIH and May 13 via K4IKM.

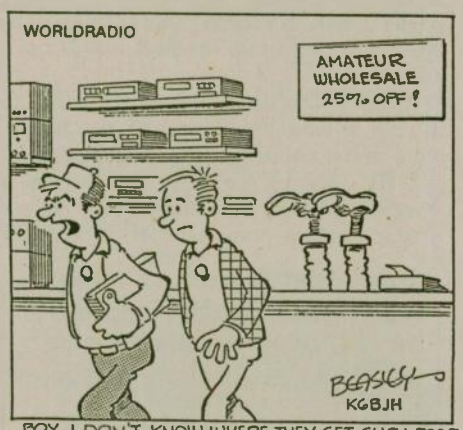
Many thanks to the following contributors: K1ZZI, W2KXB, W3EPR, W5CJZ, W6CF, N6WR, WA0GUD, UA1NDR, VK6NE, Salt City DX Association (KB6G), Western New York DX Association (KD2YP), Kansas City DX Club (AB0X), Northern California DX Club (K6ZX), Southern California DX Club (WB6PSY), *The DX Magazine* (VP2ML), *Long Skip* (VE3IPR), *DX News Sheet* (G4DYO), *The Long Island DX Bulletin* (W2IYX), *Inside DX* (N2AU), *QRZ DX* (W5KNE) and *The DX Bulletin* (VP2ML).

Mike Crabtree, AB0X, of the Kansas City DX Club, suggests good reading material in a book titled *Advice to New DXers,* by Les N. Moore. Too bad many of the multitude calling 3Y5X on Bouvet didn't read it. □

Off to the races

Over 60 Amateurs participated in operations at the Vintage Grand Prix Auto Races in Pittsburgh, PA, on July 22 and 23, 1989. Under the supervision of corner captains and the chief steward, the Amateurs were stationed at various corners to report via 2M simplex on wrecks, leaking oil, etc.

Pictured here is Communications Center W3YDF. ***(Photo and information courtesy of W3YDF)***



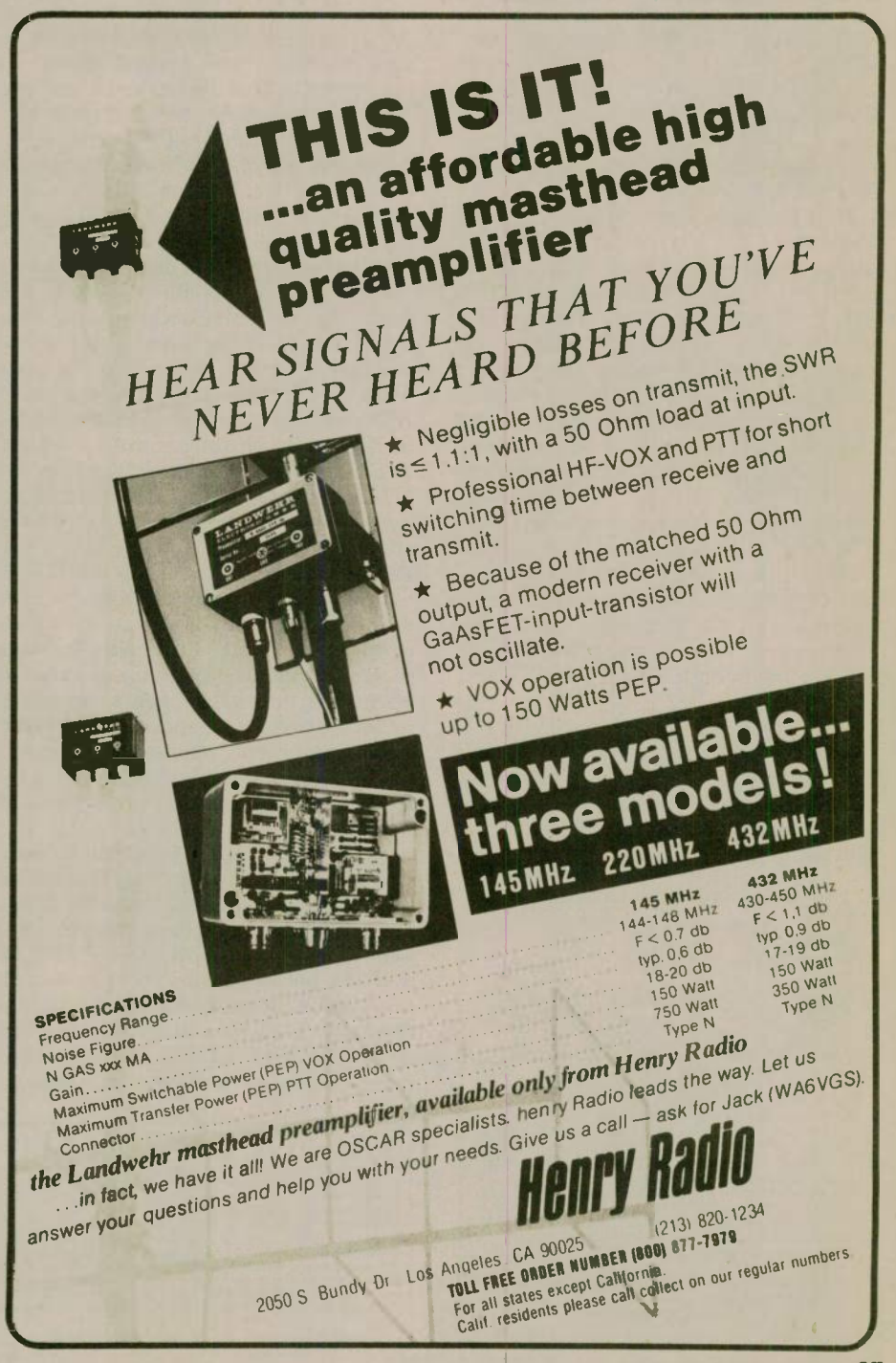
BOY, I DON'T KNOW WHERE THEY GET SUCH POOR COUNTER HELP---THAT GUY DOESN'T EVEN KNOW WHICH WAY IS UP!

Amateurs assist FCC field ops

In early June the FCC Field Operations Bureau needed some known "targets" to test new direction finding gear, they called the ARRL for help. The ARRL then provided a list of Amateurs living near selected major cities.

Ultimately, the FCC was able to pinpoint target stations quite accurately. Assisting were W6BF (Los Angeles), W5OVH (El Paso), W4MI (Memphis), KA0CDN and W0IJR (Denver), K0PCK (St. Louis) and K0GA (Minneapolis).

The tests were run on June 13, using state-of-the-art gear by Zeta, using correlative interferometry techniques. The equipment, which is transportable, is able, with options, to DF anywhere between 1.5 and 1000 MHz. A bearing taken by just one unit can give an indication of location. Previous direction finding apparatus usually requires at least two cross bearings. —*The ARRL Letter* □



World Radio History

HAM-TV

Mike Stone, WB0QCD

Greetings fellow **Worldradio** subscribing ATVers, soon to be ATVers or hobby TV SWL (watcher) enthusiasts. Great News! **Worldradio** has added a new "HAM-TV" technical information, operating and reporting column! Thanks Armond!

Hi, I am Mike Stone, WB0QCD from Clarence, IA. First, some background about myself as column editor: I still have my *Popular Electronics* WPE-9HIT Shortwave Listener's license certificate (how many know what I am talking about?), proudly hanging on the shack wall since 1964. I have been a licensed Amateur Radio operator for the past 15 years, now a General class; was the last in a line of editor/owners of *A5 ATV Magazine* (1967-1983) and am currently co-editor and co-publisher of *The SPEC-COM Journal* (the official publication for the United States ATV Society). I have spent the last 12 years operating primarily in specialized communication modes, such as RTTY, FAX, Slow-Scan and Fast Scan TV and packet radio.

Computers and the Amateur UHF television "image communications" modes intrigue my interest the most these days. Fast Scan TV in particular is presently expanding, with a lot of new interest and commercial manufacturers entering the marketplace. HAM-TV is one of the last "pioneering" modes for most of us to conquer.

It's a real challenge to build up an Amateur TV studio and to get it going. ATV is FUN, educational and very rewarding! I like it most I guess because not everyone is doing it.

Over the next few months, I shall be giving you the basics of HAM-TV (both Fast and Slow-Scan), how to get started, what gear to build or buy, how to organize an ATV club, how to build an ATV remote transmitter or repeater system, operating tips and techniques, etc. To make this column popular and successful, **Worldradio** and I need to hear from you! Please feel free to write and ask your questions, send in your ATV activity reports, projects, ATV studio photos and special events. I may not be able to answer each and every letter, but if I can't, I'll route it to someone who can, that's a promise!

What is ATV? ATV is a general term used to fit both Amateur Fast and Slow Scan Television. The FCC now prefers the terminology Image Communications as mode designators.

Fast Scan TV is "live" NTSC format, 525 line black/white and color television pictures with audio sound subcarrier,* just like your favorite local VHF and UHF TV channels. FSTV signals require a much wider bandwidth than normally heard VOICE or RTTY signals (usually 6-7 MHz), unless vestigial sideband filtering is used and it operates across the country, beginning with the UHF 420-440 MHz segment of the 70 cm band and above. The average distance of a local contact is 15 to 20 miles, according to USATVS data base records. When the band is enhanced or open, distances of several hundred miles are possible, dependent upon terrain, equipment, antennas, preamps and power used. My personal best FSTV-DX is 478 miles, from Iowa to Findlay, OH.

Slow Scan-TV is rewarding also. Unlike FSTV, slow scanned still-frame images can travel the world at about 1100 Hz bandwidth (less than SSB). I was very active on SSTV in the mid-70s, before the days of color and all the confusing multi-formatted screen displays. I started the original 10M SSTV NET at 28.680 MHz, worked many overseas stations on the last sunspot cycle and initiated the first idea of sending SSTV from a NASA Space Shuttle (verified by *Westlink*/WA6ITF). We use to hand-draw our cartoonish images before transmitting them in 128 dot pixel by 128 line, eight detectable shades of gray.

Today, SSTV is much more sophisticated, with beautiful, rich color and much higher resolution! The mode has made significant advancements and technological breakthroughs. We will cover all these changes in future columns.

HAM-TV publications and equipment suppliers

The best way to get started on FSTV is to get some on-hand, available material to read and study.

Amateur TV has only one specialty national organization looking out for its best interests. The United States ATV Society was founded in 1983. There are 74 State Section Manager and six Regional Director appointed positions. Support memberships are available without necessarily subscribing to the bi-monthly publication for just $1 (contact Mike Donovan, KA0JAW, at 319/557-8791 for details).

The USATVS' regular publication is *The SPEC-COM Journal*, published and distributed by The SPEC-COM Communications and Publishing Group LTD. (P.O. Box 1002) in Dubuque, IA 52004. Each issue is usually 48-56 pages loaded with the latest in Fast and Slow Scan TV, FAX, RTTY, OSCAR, packet and computer news, projects and activity reports. You can obtain a sample issue for just $3.50.

SPEC-COM printed over 200 specialized articles last year and looks to top that figure this year. It is judged by many in the ATV community to be the number one HAM-TV magazine here in the United States. It features a number of active and respected regular column writers/authors; KA0JAW, WB5KTL, N0IVN, W1BHD, WB7PVO, G3BVU, W9NTP, W9DNT, W8ASF, N5ITU, KA0ZRO, WB0CMC, K6RFK, N0IVN, N2WT, WA4UMU, K4NHN and others. Annual subscriptions are just $20 for six issues.

SPEC-COM also covers SSTV, FAX, RTTY and packet. Please mention that you heard about the magazine here.

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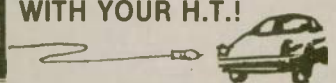

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of you with computers and telephone modems. The number in Iowa is 319/582-3235. The board accepts 300, 1200 and 2400 baud rates at 8-N-1.

Part of the board requires paid membership. The other part having to do with Amateur Radio and ATV information is free to callers. Messages can be left, files uploaded and downloaded. There are bulletins, hundreds of programs and other goodies. Dial up and check in.

Henry B. Ruhweidel, KB9FO, of Des Plaines, IL, prints a quarterly periodical that is limited to Fast Scan TV only. In it, he republishes a lot of foreign ATV and commercial broadcast media video technical articles, some of which may be of interest to US ATV Amateurs.

Tom, W6ORG, and Mary Ann, WB6YSS, O'Hara have been making and distributing Fast Scan TV gear and equipment for many years. Their company is P.C. Electronics (see his regular ad elsewhere in this issue). His latest catalog of goodies can be obtained by writing to: 2522 Paxson Lane, Arcadia, CA 91007. He is reachable by phone during normal business hours at 818/447-4565.

Don, W9NTP, and Sue, W9YL, Miller, of Wyman Research Inc., also make some sophisticated Fast Scan TV equipment with features not found on other similar products. Send an SASE for their latest catalog: RR #1 Box 95, Waldron, IN 46182. They can be reached at 317/525-6452.

Advanced Electronic Applications recently came out with some FSTV gear featuring much needed, vestigial sideband filtering. Their new FSTV-430 transceiver is the latest in high-tech state-of-art and at Dayton this year, they introduced a new line of amplifiers and antennas. AEA has unfortunately been getting some bad-mouth publicity from one of its chief competitors, which has hurt initial sales. The popular Seattle-based com-

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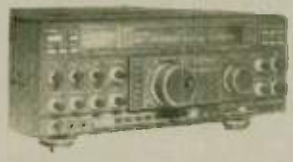

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pany has been attacked and criticized (mainly by one individual) about the questionable need for VSB filtering (a highly recommended suggestion from the FCC and ARRL) and some other features which admittedly adds cost to each unit, but offers some very attractive features as well.

I have been asked by publisher Armond Noble to give my personal comments on this situation. *In my opinion, it is very unprofessional to criticize others' obvious accomplishments with off the cuff comments against those who design and engineer proven, improved and proper TV transmit circuits. AEA has taken bold leadership in helping to clean up and protect the wideband video mode on an already very crowded 70 cm band. It is interesting to note that the chief complainer does not offer such circuitry in his own units. It is important that we do not lose AEA as a major manufacturer of HAM-TV gear. We need to support them more by buying and recommending their products. I am afraid a jealous few just might be selfishly blowing some pretty exciting future growth in new ATV interest.*

Get AEA's latest brochure catalog by writing to corporate headquarters at 2006-196th Street S.W., Lynnwood, WA 98036; or call 206/775-7373.

Steve Franklin, WB5KTL, is raising a few eyebrows in the ATV community with a vastly superior new Fast Scan TV system called the CU-125. A product review of this system was published in the May/June 1990 issue of *SPEC-COM* (by W9DNT) and in the September/October 1990 issue by N0UVB. Contact Steve at T.D. Systems, 2420 Superior Dr., Suite B, Tantego, TX 76013.

Henry Radio outlet locations handle a very good working high-gain, low-noise, mast-mounted preamp (Landwerr from Germany) used by many ATVers on 430 MHz. Contact them at 2050 South Bundy Dr., Los Angeles, CA 90025; 800/421-6631.

Harry Tootle, WB7PVO, at TV33 LPTV station in Tulsa, OK

Don Fuller, W2WHK, at Pauldon Associates 210 Utica St., Tonawanda, NY 14150, has a fine line of 900 MHz and above microwave circuits for preamps, amplifiers, switches, etc. Send two 25¢ stamps or 50¢ for their latest catalog sheets.

Mike Donovan, KA0JAW, at *SPEC-COM,* contacted me just before this column went to press and he has made a "special offer" to those Worldradio subscribers who have not yet been on ATV. He says he has a limited quantity of their 1988/89 North American ATV Directories left. I have one of these books and it is quite informative. It has 64 pages all about FSTV, including an ATV/Repeater and Club Directory. This would be great for you newcomers to find out who in your area is actually "on-the-air" on UHF FSTV.

They sold for $5.95 each. Orders received for the next month with "WR" printed boldly on the outside of the envelope will get these books for a discounted $3.95 each (please add 65¢ for postage)! YOU MUST HAVE "WR" PRINTED ON THE OUTSIDE OF YOUR ENVELOPE to get this special reduced price. Thanks Mike.

There are hundreds of ATV repeaters and remote transmitters now in operation around the country. Many feature direct NWS color radar video input feeds. Quite a few are experimenting with FM higher contrast TV signals. This August is yet another annual USA FSTV Contest sponsored by the USATVS (details available — send an SASE to *SPEC-COM*).

Does all this HAM-TV stuff sound interesting? All you need is an inexpensive down-converter to watch and get started (a built-up unit can be obtained for under $100, kits for under $50). Some cable ready and low end tuning (UHF) TV sets already have the capability of viewing local nearby FSTV signals without a down-converter.

Send me a legal sized SASE and I'll send you more information on just how to get started on Fast Scan TV! Let me hear from you and what is going on (or not going on) in your area. If you'll send me ATV club membership lists (names, call signs and addresses) and information about your ATV group, club and/or repeater, I'll get KA0JAW to bulk-mail some FREE sample issues of The USATVS Journal publication. More specifics about HAM-TV to come in your next issue of **Worldradio,** so don't touch that dial and "stay tuned!" de WB0QCD 73s. □

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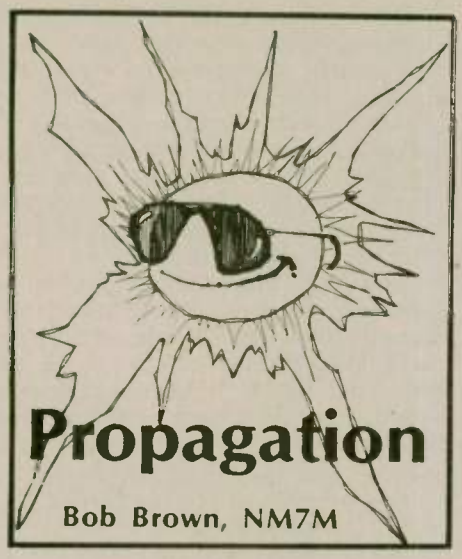

You have to admit there is a lot of discussion in the media these days concerning "conventional wisdom." The only trouble is that it seems to be in a state of continual flux, varying about as fast as the pace of political events.

For HF propagation, however, things are more settled, the word "conventional" being replaced by "common." Thus, WWV broadcasts frequently alert us about the possible effects of geomagnetic storms, satellite proton or polar cap absorption events which are in progress, and we just nod our heads in a knowing, even understanding way.

But there was a time, not too far back, when today's "common wisdom" was little known nor even understood. Polar cap absorption events are a case in point, so let's focus on them for a while.

PCAs, as they're called, make themselves known to us by the fact that DX signals coming over the polar caps, say from the Orient to the East Coast or from Europe to the West Coast, drop out for a period of time, say hours or days, due to large increases in D-region absorption at high latitudes. In the early days of HF radio, those events were termed "polar radio blackouts" and about all the operators could do at the time was just "sit them out," sometimes waiting days for the bands to recover.

When it comes to HF radio nowadays, we're in about the same condition; however, we can tolerate the inconvenience a bit better, as we have some understanding of the situation. In this case, I'm not saying that knowledge is power, but at least at the present time it provides some degree of comfort.

But going back to earlier times, say on occasions when life and limb were in peril at high latitudes or military fortunes depended on HF communication, it would have been an entirely different story.

So when did all this fall into place? When did polar radio blackouts become upgraded to present-day PCAs and take a place of their own in our "common wisdom"? To answer those questions, let me tell you something of the history of PCAs.

As we know now, polar cap absorption events result from the bombardment of the polar caps by solar protons, which are energized during a flare. Before I go any further, however, let me digress to clarify one important point: With PCAs we're talking about the GEOMAGNETIC polar regions, physically different and displaced from the polar caps defined by geographic coordinates. I say that as the arrival of solar protons and other charged particles at the Earth's ionosphere is governed by the Earth's field.

So moving ahead, not all solar flares produce proton events which are large enough in energy or numbers of particles to disrupt HF propagation, but it is not uncommon for that to happen with the larger flares.

Historically, to pull the pieces together and solve the puzzle, it was necessary to draw on several sources of information: Solar astronomy, HF propagation studies and cosmic ray physics. Now, as you know from the fact that we're into Solar Cycle 22, some aspects of solar physics, like sunspot counts, go back as far as the year 1750; however, systematic reporting or surveys of solar flares didn't get underway until about 1936. And, having just gone through the Golden Jubilee Year of DXCC, you know that radio Amateurs have been serious DXers for quite a while, certainly aware of changes or disruptions in propagation for more than 50 years. Others, working in one profession or another, have followed HF propagation as well.

While observational material has been available on a reasonably continuous basis in recent times from both astronomical and radio sources, the crucial factor in untangling the mystery of polar blackouts came from the field of cosmic ray physics. There, the problem was technological in nature, early cosmic ray observations being restricted to the earth's surface, under an absorbing layer equivalent in thickness to about 10M of water. Thus, the search for cosmic rays coming from the sun was limited to events where the radiation would be extremely energetic or penetrating.

The presence of cosmic rays of solar origin was not established until two such events were found in 1942, on Feb. 28 and March 7, in the records of sea-level instruments located in Maryland. Oddly enough, the observation of those two events, just seven days apart, was fortuitous in the extreme, as further studies over several decades have shown that the average time between events at sea level is more like seven years rather than seven days! Amazing!

As luck would have it, however, the solar flares at the times of those two cosmic ray events were clearly recorded, the first flare being observed by optical means. The second flare was noted through the magnetic "crochet," or signature, it placed on magnetograms on the sunlit side of the earth, the UV light and x-rays emitted at the time of the flare serving to enhance ionospheric currents and putting a "glitch" on the traces of magnetograms at the time of the flare.

As you can tell from the dates involved, the two solar flare events occurred during WW II, indeed at a time when the military fortunes of the Allies were near an all-time low. It's not clear at this point just how much effort the United States was putting into HF propagation at that time, having its hands full with matters of recovery from the Pearl Harbor attack and entry into the larger conflict.

In Britain, there were problems too, the British experiencing a strange new jamming of VHF fire-control radars for their anti-aircraft batteries, and that probably claimed more of their atten-

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tion than HF propagation problems. It's interesting to note, however, that the VHF problem proved to be of solar, not enemy, origin, with solar radio noise bursts being the cause of the "jamming."

But the Germans had an ionospheric and communication service at the time and after their occupation of Norway in 1940, it included radio links northward from Oslo (60 deg geomag lat). Anyway, on those paths, a long duration radio blackout was noted during the period of the flare events in 1942, the D-region ionization from the solar protons absorbing the radio wave going northward from Oslo.

After the end of WW II, those and similar observations started to appear in the scientific literature, first about long-duration ionosonde blackouts and then a few additional cosmic ray intensity increases associated with large solar flares. But the event that captured everyone's attention was the HUGE solar flare of Feb. 23, 1956 — in that event, solar proton energies were almost 10 times greater than ever recorded before and anomalous propagation conditions were observed all the way from the equator to the poles, from the VLF to the VHF ends of the spectrum.

Thus, with those observations in the literature, all the pieces were in place and the present-day interpretation emerged very quickly from the subsequent discussion. Indeed, as further investigations would show, solar proton events are found to be present more often than previously suspected, observations at high altitudes from balloons, rockets and satellites showing the frequent presence of solar protons during times of high solar activity; that solved the problem of long blackouts of ionosondes and communication paths which were noted earlier.

So where are we at this point in time? As I indicated earlier, we now hear about presence of solar protons as a matter of routine from WWV broadcasts. But the folks at NOAA distinguish between two distinct categories — solar proton events and polar cap absorption events. The difference is largely one of degree, the term "satellite proton event" really meaning that solar protons have been observed by particle detectors at satellite altitudes after a solar flare; when the energy and flux of the protons are great enough to penetrate to and increase the ionization of the D-region of the polar ionosphere, NOAA then reports it as a "polar cap absorption event," using observations of galactic radio noise on 30 MHz from Thule, Greenland (89 deg geomag lat). Typical figures for polar cap absorption at Thule are in the range of 1-10dB; note, however that's for a vertical path through the ionosphere.

I don't like being the bearer of bad news, but the circumstances of what I've just put before you could prove to be even worse, perhaps by a factor of three or so, for signals going across the polar cap at the low radiation angles of a typical DX path. Now add to that the fact that absorption goes as the inverse-square of the operating frequency, about four times greater on 14 MHz than on 28 MHz, and you can see something of the adverse effect of such events on the bands which are commonly used for DXing.

But I do have some good news, something to which you can relate with your experience on the low bands. In short, D-region absorption really takes place only in the presence of sunlight, just like on 3.5 MHz. At night, in the polar regions or elsewhere, chemistry dictates that the offending electrons which give rise to the additional absorptions during the daytime hours will attach themselves to heavier molecules, say oxygen, and then be rendered harmless to passing RF signals.

So, if the sunspot number is great enough, your MUF program showing that DX propagation would be supported during hours of polar darkness, you might just get to hear signals on those paths across the polar cap, PCA event or otherwise. Indeed, if you can hear them, you should be able to work them!

Oh yes, one last thing that I forgot to mention: Solar flares that give rise to PCA events are quite likely to produce magnetic storms as well, the typical delay time between a flare and the onset of a storm being roughly 20 to 40 hours. So you will have some time to work DX on the bands after a flare is reported on WWV, but you may have to "sit it out" once again when the magnetic storm sets in, just like they had to do in the early days.

You didn't want to hear that, but in our roles, writer to reader, I have to tell it to you just like it is, almost nothing held back. Well, actually, there are more details on PCAs and magnetic storms, but we'll have to get to them another time. □

Amateur honored

The Satellite Broadcasting Communication Association, of Alexandria, VA, has announced that the recipient of the Satellite Dealer Of The Year Award will be Bob Heil, K9EID, of Heil Sound in Marissa, IL.

The award states, "For your outstanding and personal efforts toward the continued growth of the satellite television industry therefore providing for all to see that you are truly a Dealer For A New Decade."

Dave was nominated by the Superstar Connection, a leading programmer for the home satellite industry. The award was given at the recent SBCA convention of 6,000 home TVRO dealers.

Bob is the founder and president of Heil Sound Ltd., manufacturers of specialty audio products for the entertainment and Amateur Radio industries, as well as TVRO dishes and SCPC receivers. □

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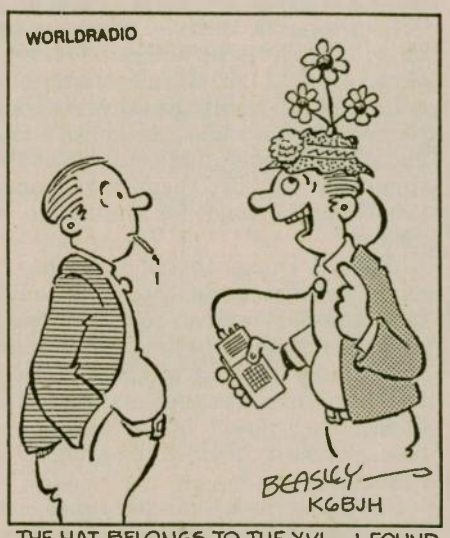

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World Radio History

Visit Your Local
RADIO CLUB

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.

ALABAMA

Montgomery Amateur Radio Club (W4AP). Alabama State Trooper Dist. Office. Intersection of Coliseum Blvd. & Federal Dr. Fred Springall, KB4EGH, (205) 288-5831. Meets 3rd Mon./monthly, 7:00 p.m.

ALASKA

Arctic Amateur Radio Club. Geophysical Institute West Ridge U of A, P.O. Box 81389, College, AK 99708. 1st Fri./monthly, 7:30 p.m.

ARIZONA

Cochise Amateur Radio Assn. Meets 1st Mon./monthly, 7:30 p.m. Located 3 mi. East of Sierra Vista and 3 mi. South of HWY 90 on Moson Rd., Sierra Vista, AZ. Net each Thur. at 7 p.m. on 146.16/76. Further info call Rich (602) 458-3928.

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. 2nd Sat./monthly, 7:30 p.m., Pima Co. Communications Bldg., 2545 E. Ajo. Net Thurs. 7:30 p.m. 146.22/82 (146.88-, 147.08+, 145.01s & 15-PKT), 448.550-.

Western Arizona Radio Club. Meets 2nd & 4th Thurs./monthly, 7:30 p.m., First Baptist Church, 1700 Palma Rd., Bullhead City, AZ. Net Tues. 7 p.m. on 147.12+600. Info call Dave Adams, W6DRM, (602) 758-5171.

CALIFORNIA

Amador County Amateur Radio Club. P.O. Box 1094, Pine Grove, CA 95665. Senior Citizens Center, Jackson, CA. Meets: first Thur./monthly, 7:30 p.m. WA6WIY Rptr., 146.835, 146.235. Net Tues. 7:30 p.m.

Amateur Radio Club of El Cajon, (WA6BGS). P.O. Box 50, El Cajon, CA 92022. Meets 2nd Thur./monthly, 7:30 p.m. at Buck Knives, 1900 Weld Ave., El Cajon, CA. Club Rptr. 147.675 (-); Nets Sat. & Wed. 7 p.m. on 147.570 simplex. Info (619) 698-6644.

Associated Radio Amateurs of Long Beach, W6RO. P.O. Box 7493, Long Beach, CA 90807. Meets: 1st Fri./monthly, 7:30 p.m. Signal Hill Recreation Hall, 1708 E. Hill St., Signal Hill, CA.

Butte Amateur Radio Club. Meets 1st Fri./monthly, Loma Vista School, 8:00 p.m. Marigold and East Avenue, Chico, CA. For info KE6EP or KB6COH, 893-5208.

Contra Costa Communications Club WD6EZC/R. P.O. Box 661, San Pablo, CA 94806. Meets 2nd Sun. at 9:00 a.m. Hickory Post Restaurant/Lucky Lanes. For info call Don K6DPQ, (415) 222-2449.

Downey Amateur Radio Club. 12708 Glynn Ave., Downey, CA 90242. Meets 1st Thur./monthly, 7:30 p.m., South Middle School, 12500 S. Birchdale, Downey, CA. Weekly nets Thurs. - except 1st, 7:30 p.m. 144.930 (S) Voice - Tues., 8:00 p.m. 145.700 (S) RTTY.

East Bay Amateur Radio Club. P.O. Box 1393, El Cerrito, CA 94530. Meets: 2nd Fri./monthly 8 p.m., Salvation Army, 4600 Appian Way, El Sobrante. Nets: Slow CW, Wed., 8 p.m. & SSB Net, Wed., 9 p.m., 21.395. Info, Bob Fields, KC6AOH.

The Electronic Museum ARC. Meets 1st Fri./monthly, 7:30 p.m., Electronic Museum at Foothill College, Los Altos, CA 94022. Call-in 145.27/145.67.

Escondido Amateur Radio Society (E.A.R.S.). Meets 4th Thurs./monthly, 7:30 p.m., New Life in Christ Church, 300 N. Broadway, Escondido, CA 92025. Info Net Sundays, 8:00 p.m., 146.88 (-) or 743-4212.

Fresno Amateur Radio Club, Inc. P.O. Box 783, Fresno, CA 93712. Meets 2nd Fri./monthly, 8:00 p.m., Manchester School, 2307 E. Dakota, Fresno, CA. W6TO/R 146.34/94.

Fullerton Radio Club, Inc. W6ULI. P.O. Box 545, Fullerton, CA 92632. Meets: 3rd Wed./monthly, 7:30 p.m., Sr. Citizens Center, 340 W. Common Wealth, Fullerton. Net: ea. Tue., 8 p.m. 147.495 simplex. Info, Gracie Hastings, N6FSL (714) 990-9203.

Gabilan Amateur Radio Club GARC. P.O. Box 2178, Gilroy, CA 95020-2178. Meets: South Valley Jr. High School, 385 I.O.O.F. Ave., Gilroy. 2nd Thur./monthly. 7:30 p.m. Talk-in 145.47/144.87.

Golden Empire Amateur Radio Society (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, Repeater 146.25/85. Meets: 3rd Fri./monthly, 8 p.m. at 1528 Esplanade, Room 110B, Chico.

Hilltop Amateur Mastertie System (HAMS). Informal mtgs. weekly/Mon. 5 p.m. at Shakey's Pizza, 12924 Washington Blvd., Mar Vista, CA, except 3rd Mon. Call for location. Info, N6FD 213/823-0767.

Kern River Valley Amateur Radio Club. P.O. Box 2611, Lake Isabella, CA 93240. Meets 4th Sat./monthly at 4 p.m. (Pot Luck). Veteran's Hall, Lake Isabella WB6ODZ Rptr. 224.50 down 1.6 low-level, 144.50 simplex.

Livermore Amateur Radio Klub, (LARK). Meets 3rd Sat./monthly, 9:30 a.m., City Council Chamber, 3575 Pacific Ave., Livermore, CA. Net Mon. 1900 on 147.12+. Elizabeth Zalaznik, KB6DLT, (415) 455-0361.

Marin Amateur Radio Club (MARC) W6SG. Box 1231, San Rafael, CA 94901. Meets 1st Fri./8 p.m.; MARC Clubhouse Bldg. 549, HAFB, Novato, CA (415) 883-9789 (Summer exceptions; contact Pete N6IYU, 924-1578). Sun. AM Club at Red Cross, San Rafael.

Moreno Valley Amateur Radio Assoc. P.O. Box 7642 Moreno Valley, CA 92303. Meets 4th Mon./monthly 7 p.m., Park & Rec. Bldg., 13671 Frederick Ave. Net: Tues. 8 p.m. 146.655- (PL 1A) & 224.460-. Info: Larry KA6GND (714) 656-1643.

Mount Diablo Amateur Radio Club. P.O. Box 23222, Pleasant Hill, CA 94523. Meets: 3rd Fri./monthly, 8 p.m., Grace Presbyterian Church, 2100 Tice Valley Blvd., Walnut Creek, CA. Net Thur., 7:30 p.m. 147.06+. Info, Vicki, (415) 458-4527.

North Hills Radio Club. P.O. Box 41635, Sacramento, CA 95841. 3rd Tue./monthly, 7:30 p.m., Carmichael Elks Lodge, 5631 Cypress Ave., Carmichael, CA. Net 145.19 Thur. at 8:00 p.m.

North Shores ARC. (619) 272-1409 So. Clairemont Recreation Center, 3605 Clairemont Dr., San Diego, CA. 1st Tue./monthly, 7:30 p.m.

Radio Amateur Mobile Society. P.O. Box 214091, Sacramento, CA 95821-10091. Meets 2nd Tue./monthly, 7:30 p.m., Carmichael Elks Lodge, 5631 Cypress Ave., Carmichael, CA. Net Saturday a.m., 224.84 at 8:30 & 146.79 at 9:00.

River City A.R.C.S. Meets: 1st Tue./monthly, 7 p.m. SMUD Bldg., Room B & C, Elkhorn & Don Julio, Sacramento, CA. For info: (916) 483-3293.

Riverside County Amateur Radio Assoc. c/o County Emergency Services Div., 4080 Lemon St., Ste. 8, Riverside, CA 92501. Meets: 2nd Thur./monthly, 7:30 p.m., Riverside County Office of Ed., 3958 12th St. Nets: Mon., 7:15 p.m., 222.860/224.46 and 7:30 p.m., 146.28/88. Info, call Mike Burton, N6KZB, (714) 682-6212.

Sacramento Amateur Radio Club. Contact: Gary Bryant, KB6KZZ. (916) 646-1171. Meets Sacramento Blood Bank, 32nd St. & Stockton Blvd., Sacramento, CA, 2nd Wednesday/monthly, 7 p.m.

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

San Gabriel Valley ARC. P.O. Box 88, Monrovia, CA 91017-0088. Meets 1st Tues./monthly, 7:30 p.m. (except Dec.) at Bowling Green Clubhouse, 405 S. Santa Anita Ave., Arcadia, CA 91006. W6QFK, Rptr. 147.165/765.

Santa Clara County Amateur Radio Assoc. (SCCARA) W6UW & W6UU. P.O. Box 6, San Jose, CA 95103-0006. (408) 249-6909. Meets: 2nd Mon/monthly, 7:30 p.m. at Agnews Developmental Center Aud., corner of Circle Dr. & Palm Dr., Santa Clara. Net all other Mon., 7:30 p.m. W6UU/R 146.385+ PL 100.0 / 442.425+ PL 107.2

Santa Clara Valley Rptr. Society (SCVRS). P.O. Box 2085, Sunnyvale, CA 94087. (408) 247-2877. 146.76 (-600 kHz), 224.26 (-1.6 MHz), 444.60 (+5 MHz). 2 meter/220 net Mon. 9 p.m. Mtgs.-3rd Fri.

Shasta Cascade Amateur Radio Society (SCARS) P.O. Box 664, Anderson, CA 96007. Meets: 3rd Wed./monthly, 7 p.m. at the C.D.F. Conf. Rm., Grape St., near Parkview Ave., Redding, CA. Net 146.64, Wed., 8 p.m.

Sierra Foothills Amateur Radio Club. P.O. Box 3262, Auburn, CA 95604. Meets: 2nd Fri./monthly at Auburn Fire Station, 226 Sacramento St., Auburn, CA. Nets 7:30 p.m. Tue. 28.443 MHz, Thur. 145.43 MHz link with 223.86 MHz.

Simi Settlers Amateur Radio Club. P.O. Box 3035, Simi Valley, CA 93063. Meets: 2nd Thur./monthly, 7:30 p.m., at Seventh-Day Adventist Church, 1636 Sinaloa, Simi Valley. Rptr. 147.93/33.

Solano County Amateur Radio Society. P.O. Box 457, Fairfield, CA 94533. Meets: 3rd Wed. 7:30 p.m., Vanden High School. 441.150+5 (Remote 145.69 simplex) PL 77Hz, (707) 448-1461.

Southern California Amateur Transmitting Society, SCATS, WB6LRU. P.O. Box 1770, Covina, CA 91722. Meets 1st Mon./monthly, Community Presbyterian Church, 540 E. Vine St., West Covina, CA. Net, Sun., 7 p.m. 147.765-, W6QFK/R. Classes. Contact: Pat McNulty, N6GXZ (714) 622-8315.

Southern California Six Meter Club. P.O. Box 10441, Fullerton, CA 92635. USB Net Tue., 8 p.m., 50.150 and 8:30 p.m., 28.400. FM Rpt. Net Wed., 7 p.m., 52.18/98 and Thur., 8 p.m., 52.28/88. FM Smplx call freq. 50.300.

Southern Humboldt Amateur Radio Club, (SHARC). P.O. Box 701, Redway, CA 95560-0701. Meets 4th Mon./monthly. 8 p.m. SHARC Clubhouse, Garberville. Rptr. 146.19/79. Info (707) 923-2373.

Stanislaus Amateur Radio Assoc. (SARA). P.O. Box 4601, Modesto, CA 95352. Stanislaus Co. Administration Bldg., 12th & H Streets, 3rd Tues./monthly, 7:30 p.m. 145.39 MHz WD6EJF, 223.68 MHz.

The Trinity County ARC. P.O. Box 228, Weaverville, CA 96093. Meets 2nd Wed./monthly, at the CD Hall in Weaverville, 7:30 p.m. WA6BXN Rptr. 146.13/73.

Tri-County Amateur Radio Assoc. P.O. Box 142, Pomona, CA 91769. Meets: 2nd Mon./monthly, 7:30 p.m., 703 N. College Way, "The Faculty House," (lower level), Claremont, CA.

United Radio Amateur Club K6AA. L.A. Maritime Museum, Berth 84, Foot of 6th St. San Pedro, CA 90731. Meets 3rd Fri./monthly except Dec., 8:00 p.m. Talk-in 145.58 Simplex.

Vaca Valley Radio Club Inc. Meets 2nd Wed./monthly, 7 p.m. at Vacaville Fire Dist. Station, 420 Vine St., Vacaville, CA. Net: WX6F club net every Tues., 7:30 p.m. 147.475/146.475 rptr. (1MHz split) PL removed during nets.

West Coast Amateur Radio Club. Fountain Valley School. Talbert/Bushard. Fountain Valley, CA. Meets 3rd Thur./monthly. 145.44-4Z.

Western Amateur Radio Assoc. Meets 1st Tues./monthly, 7:00 p.m., Cerritos Park East, 166th St. and Carmenita Ave., Cerritos, CA. Rptr., N6ME 145.400-/224.180MHz.

Westside Amateur Radio Club. Meets 3rd Thurs./monthly, 7:30 p.m., Santa Monica Red Cross, 1450 11th St., Santa Monica, CA. Info Net every Tues., 8 p.m., 146.670, -600.

West Valley Amateur Radio Assoc. 18011 Saratoga — Los Gatos Road, Los Gatos, CA 95030. Meets: 3rd Wed./monthly, 7:30 p.m. W6PIY/R. Net Tue., 8:30 p.m., 147.39+, 223.96-.

Yucaipa Valley Amateur Radio Club (YVARC). Meets 3rd Mon./monthly, 7:30 p.m. Far West Savings & Loan Community Rm., 1195 Calimesa Blvd., Calimesa, CA 92320. Pres: Don Ames W6RTM, (714) 795-5743.

CONNECTICUT

Tri-City ARC. Groton Public Library, Route 117, P.O. Box 686, Groton, CT 06340. Meets: 2nd Tue./monthly 7:30 p.m.

FLORIDA

Gulf Coast ARC, Inc. P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., Colonial Hills Civic Ctr., 87 Peacock Dr., New Port Richey. WA4GDN Rptr. 146.67/.07.

Indian River ARC, Inc. (IRARC). 597 Capri Rd., Cocoa Beach, FL 32931. Martin Andersen Senior Center, 1025 S. Florida Ave., Rockledge, FL. Meets: 1st Thur./monthly, 7:30 p.m.

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

West Palm Beach Amateur Radio Club, Inc. P.O. Box 6834, Southboro Station, W. Palm Beach, FL 33405. Meets: 2nd Tue./monthly, 7:30 p.m., Palm Beach Emergency Op. Cntr., 3723 Belevedere Rd., W. Palm Beach. Info: Jeff, WB2OUK, 586-5120, Henry, WA4HXZ, 655-4632 or Hyacinth, N4QWN, 848-0513.

GEORGIA

Dalton Amateur Radio Club (DARC). P.O. Box 143, Dalton, GA 30722-0143. Meets 4 Mon./monthly, 7:30 p.m., Dalton College Voc. Tech. Bldg., Dalton, GA. Info net: Sun. 9:30 p.m., 145.230 MHz; Wed. 9 p.m., 147.135 MHz.

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, Hilo. Talk-in on 146.76(-).

ILLINOIS

Amateur Cross Link Repeater. 10, 6, 2 mtrs., 220, 440, 900, 1.2 MHz, ATV. Meets: 1st Sat./monthly, 7:30 p.m. Info: net Sun., 8 p.m., 147.225 MHz. KD9FA Rptr./Chicago.

Bolingbrook Amateur Radio Club. Meets 3rd Mon./monthly, 7:30 p.m., Bolingbrook Pk. Dist. Rec. Ctr., Briarcliff Rd., Bolingbrook, IL. Info net Thursdays, 8 p.m., WD9AKO/R 147.33 MHz +.600 and WA9DIP/R 224.54 MHz -1.6. Info hotline (708) 759-7005. ARRL affiliated club.

World Radio History

Central Illinois Radio Club, W9AML. Meets 4th Wed./monthly, 7:30 p.m. (from Sept. to May), McLean Co. Law & Justice Center, ESDA Rm., Bloomington, IL. Club Rptr. 146.94 – 600kHz.

Chicago Amateur Radio Club. Founded 1926. Meets 1st and 3rd Wed./monthly on Northside of Chicago, 7:30 p.m. Info call (708) 869-HAMS or (312) 545-3622.

Dupage Amateur Radio Club W9DUP. Mid-America Savings & Loan, 55th & Holmes (55th St. near RT 83), Clarendon Hill, IL. 4th Mon./monthly, 7:30 p.m. Club rptr. 145.250 — 600 kHz.

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. Valley National Bank, Lower Level, Northgate Shopping Ctr. & RT. 31, Aurora, IL (312) 584-4925 for more info. Meets: 2nd 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 Civic Center, 139th & Kostner Ave., Crestwood, IL. Nets: Sun. 8 p.m., 28410 MHz and Mon. 9 p.m., 146.43 MHz.

Metro DX Club. Meets 3rd Fri./monthly (except. Dec.), at Oak Forest Hospital, (employee quarters), 159th St. and Cicero, Oak Forest, IL, at 8 p.m. Christmas party in Dec. Net: DX/Club info, every Tues., 8 p.m., 146.46 Simplex.

Northwest ARC/W9LM. Meets: 2nd and 4th Tue./monthly, 7:00 p.m., Oehler Funeral Home downstairs community room, Lee & Perry Street, Des Plaines, Illinois.

Peoria Area Amateur Radio Club. Meets 2nd Fri./monthly, 7 p.m., Red Cross Bldg., corner of Knoxville & Armstrong, Peoria, IL. Info on W9UVI rptr. 146.250/146.850.

Schaumburg ARC (SARC). Meets: Schaumburg Park District Community Rec. Cntr. at Bode and Springinsguth Roads, Schaumburg, Illinois. Third Thur./monthly, 7:30 p.m. Net 28.350, 8:00 p.m. Thur.

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 Rptrs: 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 Ellyn, 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

Baton Rouge Amateur Radio Club W5GIX. P.O. Box 4004 Baton Rouge, LA 70821. Meets last Tue./monthly, 7 p.m., Catholic High School cafeteria, 855 Hearthstone Dr., Baton Rouge, LA. Net 8:30 p.m. each Sun. on 146.79.

MARYLAND

The Peninsula Radio Operators Society (PROS). Family oriented activities, training and exams held throughout the year. PROS Rptrs. 146.925 and 146.625. PROS, P.O. Box 2315, Salisbury, MD 21801.

MASSACHUSETTS

Mohawk Amateur Radio Club. Meets: 4 Wed./monthly, 7:30 p.m., American Legion Hall, 325 Pequoig Ave., Athol, MA. (One block north of downtown traffic lights, past the bridge.)

MICHIGAN

Black River A.R.C. Meets 2nd Sat./monthly, 7 p.m., Chicken Chalet, Hwy 43 East, Bangor, MI. Contact Wm. Lee, KB8DWQ, (616) 764-8480. Rptr. 147.360+.

Farmington Amateur Radio Club. Meets 2nd Wed./monthly, 7:30 p.m., Wheeler Street Fire Station, Farmington Hills, MI. Contact: Jim, WA8SEL, 474-8765. Talkin: 146.49MHz.

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.

Oak Park Amateur Radio Club. Oak Park Community Center, 14300 Oak Park Blvd. (same as 9½ Mile Rd., west of Coolidge). Oak Park, MI 48237. 2nd Mon./monthly, 7:45 p.m. Talk-in on our 224.36 MHz or 146.64 MHz.

Top-Of-Michigan A.R.C. Meets 2nd Tues./monthly, 7 p.m. at the State Police Pst., Gaylord, MI. Net Tue., 9 p.m. EDT 146.82/22.

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

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.

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. Tom Bull. NW7S. 642-5033.

Las Vegas Radio Amateur Club (LVRAC). Meets: 2nd Tue./monthly at 7 p.m., Nevada Power Bldg. Wengert Rm., 6226 W. Sahara Ave. (Near Jones). Net Tue. 8:00 p.m. on 146.94 MHz. Info: Call George at 459-2586.

Sierra Intermountain Emergency Radio Assoc. (SIERA). P.O. Box 2348, Minden, NV 89423. (702) 782-8266. Meets: 2nd Tue./monthly, 7:30 p.m., Douglas County Lib., Minden, NV. Talk-in: 147.330.

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover NH 03820. (603) 742-0130/742-1374. 2nd Sun./monthly, 7:00 p.m. Dover City Hall. Talk-in 147.57.

NEW JERSEY

Delaware Valley Radio Assoc. (DVRA). Our Lady of Good Counsel Church. 137 W. Upper Ferry Rd., West Trenton, NJ 08628. Meets: 2nd Wed./monthly, 8:00 p.m.

Jersey Shore Chaverim. Meets 1st Sun./monthly, 9:30 a.m., JCC, 100 Grant Ave., Deal, NJ, Sept. thru June. Net 1st Thurs./monthly, 9 p.m. local on 145.110, KC2Q. For info call (201) 222-3009.

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. The tristates' only 3-band linked rptr. system 144.300 S/223.600 – /445.225 – .

Lancaster Amateur Radio Club (LARC). Meets 1st Tues./monthly, 7:30 p.m., Aurora Middle School, 147 Aurora St., Lancaster, NY. Net: W2UJR every Monday, 7:30 p.m. 146.55. Contact Luke Calianno, N2GDU, (716) 683-8880.

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. Non-profit org. uses Amateur Radio to enhance education of young people, 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. W2DQ/R 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.

NORTH CAROLINA

North Carolina Chapter TSRAC. Meets: Mondays, 28.350 on the air, 8:30 p.m. local time. "The Alligators" — all mouth, no ears.

Raleigh Amateur Radio Society, Inc. P.O. Box 17124, Raleigh, NC 27619. Clubs net nightly, 8 p.m., W4DW, 04/64. Meets: 1st Wed./monthly, 7:30 p.m., YMCA. 18th Annual Hamfest, April 8, 1990.

OHIO

Amateur Radio Fellowship (ARF). Greg Ash, KA8TOA, Sec. 423 Pioneer Ave., Kent, OH 44240. Meets: 1st Sat./monthly at Kent Wally Waffle. KA8YKT rptr. 147.075.

Ashtabula County ARC. Ken Stenback, AI8S (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 Repeater 144.75/145.35. 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.

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 Amateur Radio Club. P.O. Box 30529, Cleveland, OH 44130. Meets 2nd Thurs./monthly at the Old North Olmsted Town Hall, at Dover Center and Lorain Roads, between City Hall and the Police Station. Repeaters - (all K8SCI/R) 145.29, 224.76, & 443.15.

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 216-925-2363.

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

OREGON

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, WD6EAW, (503) 883-2736.

PENNSYLVANIA

Butler County Amateur Radio Club. P.O. Box 1787, Butler, PA 16003-1787. Meets 1st Tue./monthly, 7:30 p.m. at Red Cross Bldg., 312 Mercer St., Butler PA 16001. Call-in: W3UDX 147.96/36. Net 10:10 p.m. nightly.

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

Warminister Amateur Radio Club, WA3DFU. P.O. Box 113, Warminister, PA 18754. (215) 443-5428. Meets 1st Wed./monthly, 8 p.m., St. John's Evangelical Lutheran Church, Hatboro, PA. Net on 147.690/147.090 Wed., 8:30 p.m.

TENNESSEE

Nashville Amateur Radio Club. Meets 3rd Thurs./monthly at Lock 2 Metro Park off Pennington Bend Rd. Grilled hamburgers at 6 p.m., mtg. at 7 p.m. Call Jerry, KK4TV, at 754-2326 for info.

TEXAS

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!

Sun City Amateur Radio Club. Meets 1st and 3rd Fri./monthly, 7:30 p.m., 3709 Wickham Ave., El Paso, TX. K5WPH 147.240/147.840 Rptr. with remote operation on 220, 440, 6M, and 10M.

VIRGINIA

Southern Peninsula Amateur Radio Klub (SPARK). Meets: 1st and 3rd Tue., Salvation Army Community Bldg., Hampton, VA. Operates 146.13/73 Rptr., VEC Information (804) 898-8031.

Virginia Beach Amateur Radio Club (VBARC). Open Door Chapel, 3177 Virginia Beach Blvd., Va. Beach, VA. Meets First Thur./monthly, 7:30 p.m. For info (804) 497-1235.

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.

WASHINGTON

Mike & Key Amateur Radio Club. 3rd Sat./monthly, 10 a.m. Tukwila Com. Ctr., 4101 So. 131st St., Seattle, WA. Net. Wed. eve., 7:30 p.m. 146.22/146.82 rptr.

North Seattle Amateur Radio Club (NSARC). Meets: 3rd Tue., 7:30 p.m., (except Jul. & Aug.) at the First Interstate Bank, 30th Ave. NE and NE 125th St. (Lake City) in basement. Info: Mike Jr., W7WHT, (206) 282-1438 or P.O. Box 20279, Seattle, WA 98102.

WYOMING

University ARC. 146.01/61 Meets: 1st Tue., 7:30 p.m. Sept.-May U.W. Physical Plant Bldg., 15th & Lewis St., P.O. Box 3625, Laramie, WY 82070. June-Aug: Bernie Club picnics Wed.

World Radio History

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

Novice and Technician privileges for the entire 10M band?

Last month I reported on a Petition for Rule Making that was submitted to the FCC on April 13. In case you missed it, here's a brief recap: There was a request for changing the rules for 10M in that the frequency range of 28.300 to 29.300 kHz be made available to all licensed Amateurs, regardless of license class. This means that the Novice and Technician 10M privileges would be expanded to cover the frequency range noted.

As a follow-up to the story, I have been in contact with the petitioner, Janet V. Whitney, of Alexandria, VA. Janet tells me that she is not an Amateur, but an SWL, with many Amateur friends. She is a paralegal and drafted and filed the petition herself.

To date, I have heard nothing further regarding the status of the petition at the FCC. Proceedings at the FCC are a long and drawn out affair, and notice of this request for Rule Making should be made public sometime soon, if not by the time you read this.

Phoenix newsletter

The "Ten Meters Is Alive Net" in Phoenix, AZ, is doing their share to promote 10M activity. They have a 2M repeater on 156.25/.85 tied into a 10M base station on 28.405 MHz. They are also publishing a newsletter every other month.

The net meets each Thursday at 5:30 p.m. MST and on Saturday at 1 p.m. MST. Frequency is 28.405. If conditions favor Phoenix from your area, why not check in? Dan Meredith, N7MRP, 10-10 # 53174, is net manager.

10-10 election

Ballots have been mailed and hopefully by now you will not only have received yours, but have marked it and sent it back to the Republic of Texas Chapter for counting. Remember, ballots received after Aug. 31 will not be counted. Postmarks do not count. Biographical outlines of each candidate were printed in the *10-10 International News* Spring 1990 issue.

This is the first international election held by 10-10 and the results are important for its continued growth and advancement. Please take a minute and send in your ballot if you have not done so.

The daily 10-10 net

Did you know that 10-10 has a daily net? It operates every day except Sunday at 1800 UTC on 28.800 and is checking in about 250 stations each week, and the numbers are climbing.

It is realized that the net is located outside the Novice and Tech frequency allocation, but all others are welcome to check in. The net control stations for each day are:

Monday	W6ANK
Tuesday	KD6JC
Wednesday	N6ILK
Thursday	WB6OKH
Friday	K6PTF
Saturday	8P6SA

New DX column

Mike Davidson, KC5CP, 10-10 #24949, 10-10's DX champ, will be writing a DX column in each issue of the *10-10 International News*. If you have 10-10 DX information, please send it to Mike at 3518 Bellefontaine, Houston, TX 77025. Don't sit back and let someone else do it or assume that Mike already knows about the station.

Briefly

If you have any info about your chapter, your own 10M activities, or just an interesting bit about yourself or an Amateur friend, drop me a note and I will pass it along, either through this column or the *News*.

73, es cu next month. □

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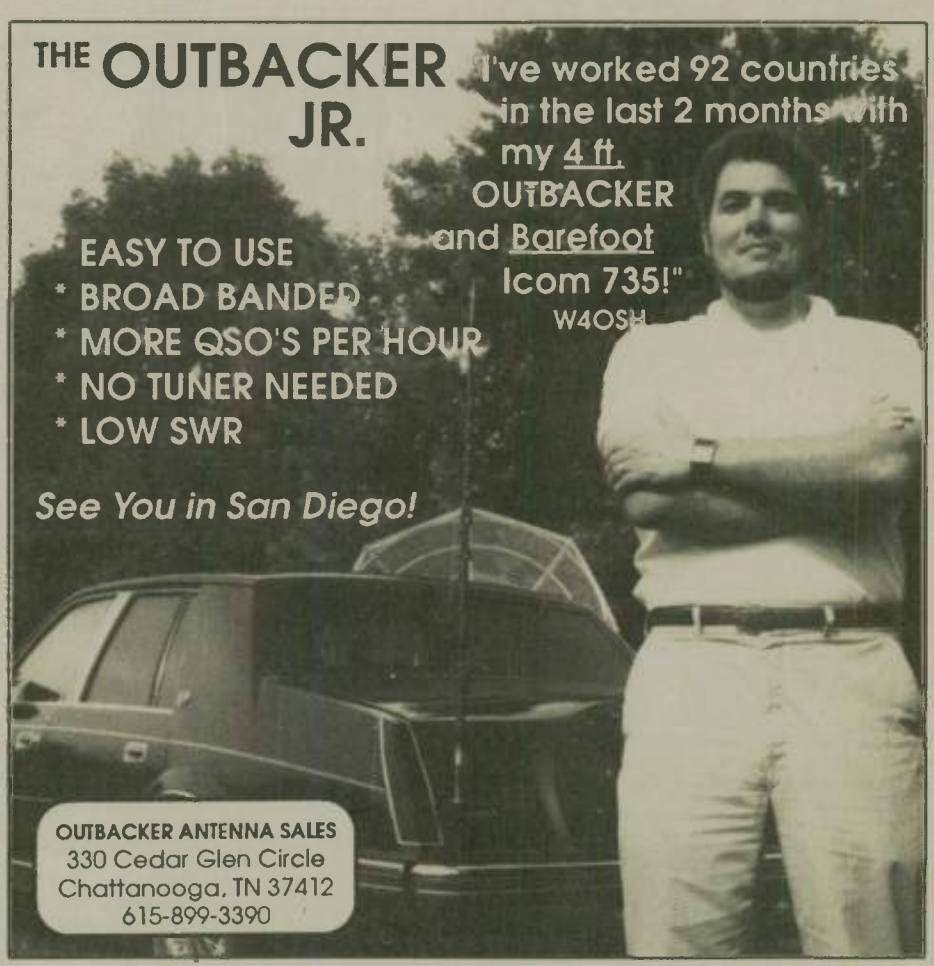
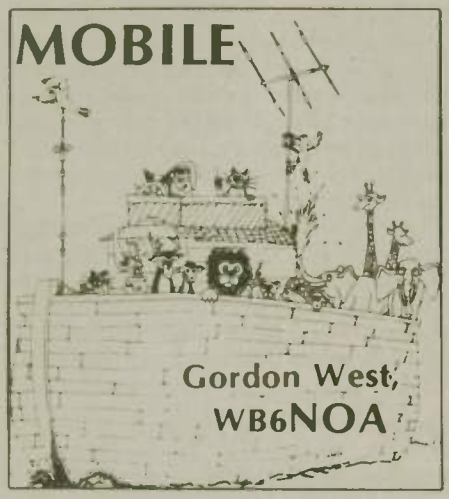


World Radio History



Ireland helical-foil fiberglass antennas

High gain, low angle radiation, VHF and UHF fiberglass antennas, are just emerging on the Amateur Radio scene.

You may have seen some fiberglass antennas come in from overseas under the Comet and Diamond label. These imports are good for the multi-bands to which they are tuned, but none may match the performance of some fiberglass sticks manufactured by an Amateur named Frank Ireland, K4UUO (Ireland Tune-Tenna Systems, 5101-BNW 36th Ave., Miami, FL 33142; 305/633-8185).

The Ireland antenna design has been around for more than 20 years, and Frank holds three patents on its unique helical-foil winding system, which offers gain, reactance cancellation, incredible broad-banding and low angle of radiation for extended VHF and UHF circuits, with no additional ground plane necessary.

VHF antenna manufacturers for marine antennas are all over the place. Their designs are straightforward for 156 MHz marine antennas — pull as many collinear matched sections of coaxial cable up a tube, add a decoupling network at the base and sell the 3dB gain antenna for about $50, the 6dB gain antenna for about $100 and the 9dB gain sticks for about $200. Collinear stacking of coax networks is a tried and proven way of getting a good VHF signal out on the air, and a reasonable bandwidth for the marine VHF 156 MHz service.

But Ireland does something different — instead of coax up the tube, the Ireland antenna features a patented stacking of halfwave helical-foil elements fiberglassed into their factory-produced molds, that end up as a gleaming white, lightweight, hollow VHF antenna — incredibly broad-banded to cover 140 MHz through 165 MHz. This allows one antenna to work on both Amateur, as well as marine, and offers up to 9dB of gain.

The "inside" secret to broad-banded antennas — helical foil windings.

The key to Ireland's success is within the helical-foil matching networks that create a 180 degree phased shift within each halfwave series stacked element. This voltage-fed system allows a relatively short series halfwave ground to series feed an efficient 18 inch wide copper foil radiator.

Ireland claims that he can match the equivalent coax cable collinear elements inside a tube with about half the overall length with equal signal output with his patented antenna.

I too was skeptical of an 11 ft. antenna that claimed the same gain as a conventional 19 ft. fiberglass whip — but after I tried it on both the water, as well as over land, I was convinced that this helical-foil technique really has signal capture and signal radiating capabilities.

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World Radio History

The most popular Ireland VHF antenna is the Model #912 two piece antenna. "9" for 9dB gain, and "12" for 12 ft. tall, this antenna breaks down in the center by simply pulling apart the six foot tip from the six foot base. It's broadbanded from 140 through 165 MHz, and comes with double foil and braid shielded low loss coaxial cable and a PL-259 connector.

It is expensive, selling for about $189.95. You can save about $30 by ordering the single piece 9dB, 12 ft. antenna, for $159.95. Both antennas are incredible performers on marine VHF and 2M VHF frequencies, plus everything in between!

The antennas mount to a standard marine one inch thread. For home use, forget the thread arrangement and simply hose-clamp it to a standing vent pipe. For marine use, inexpensive Lexan lay-down mounts are available that the antenna simply screws into. Same thing for motorhomes — use the marine lay-down mount when you are underway, and then ratchet the antenna to vertical when you are at your campsite.

This 9dB gain antenna will punch out a signal six times stronger than most mobile whips on 2M, and dramatically outperform conventional aluminum, omni-directional base antennas by at least two times or 3dB better. Plus, this antenna doesn't corrode in the salt air like aluminum antennas do on the water or near the ocean.

This same helical-foil winding concept is used on Frank's 12dB, 11 ft. tall, single-section 440 to 450 MHz white fiberglass antenna. This antenna is so broad-banded because of the foil windings that it's presently under consideration for ATV enthusiasts, too, at the bottom of the band.

Frank will tune it anywhere you want it — it sells for about $180. Yes, expensive, but specifically tailored for high gain, low height, all fiberglass, broadbanded applications. Great for mobile marine or mobile home use.

K4UUO also offers other antennas, like cellular, AM/FM, HT voltage-fed antennas and some other strange resonators for the Amateur and marine market. He is truly an antenna tinkerer who lives and breathes new concepts.

In fact, when I visited his plant in Miami, FL, I knew I was in for something when I spotted antennas sticking out of several potted plants in front of his manufacturing facility. "Universion cosmic and magnetic energy reception for the roots of the plant," pointed out Frank, motioning to little fiberglass whips standing at attention in the flower pots. Admittedly, those plants with the antennas were growing

K4UUO's plants seem to grow better with an antenna "feed" system.

like mamas and those without were just about dead.

"In Pennsylvania, I have this system 'growing' in a dairy farmland, and every cow is giving out 275 additional gallons of milk with ⅓ less feed," added Frank.

I suppose it could make sense — energy from around us channeling into the soil and then feeding the plants, which in turn feeds the cows. Anyway, when I got into his office and saw all his credentials hanging on the wall, plus all his patents and letters of commendation from groups using his antennas, I could believe just about anything!

"Down in the Everglades, nobody uses anything but Ireland antennas," said Frank, as he pointed out his public service work. He and vice-president Tom Glaze regularly fly their airboats on the Everglades, tracking down stranded or lost hikers and beaming their signals back to base camps on the VHF and UHF bands.

The competitor antenna critics may claim that Frank Ireland is just a bit ambitious on his dB claims: but when you sit down with this very talented and unique individual, who has been designing antennas for giants like King, SMR and US Fiberglass for over a decade, you know that he's onto something when his crew laboriously winds helical-foil matched networks onto his factory-produced shafts and then seals them up with a tough outer fiberglass shell.

I have tried his antennas personally and have matched them up against aluminum Amateur antennas and similar sized marine VHF antennas that use simple coax cable series collinear elements on the inside. On every single test the results prove conclusively that the bizarre Frank Ireland helical-foil design punches out and captures signals better than comparison antennas of the same approximate size.

Find out what Frank is doing by writing him a letter and asking for his catalog on Amateur Radio and marine radio VHF and UHF products. They are a unique design for the mobile operator or for the discriminating base station user whose time to rise to the top has come! □

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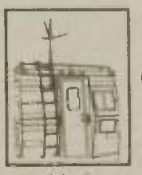

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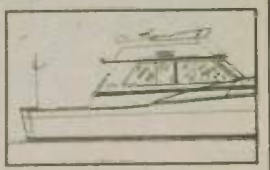

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The DX window revisited

I have been listening to the sporadic E activity being heard and worked here and have been impressed numerous times by how many of you are staying out of the window. I am even hearing you working well above 50.2.

On other days or nights, I have been chagrined by the number of you who are working cross country Es in the window, often at times when other parts of the country are working DX into Central America or the Caribbean. I have come to three conclusions: 1. Overseas operators are correct. American operators think they own the band and are the only ones on it! If I had a $100 for every comment from DX stations complaining about the stupidity of American operators ragchewing in the DX window and not paying attention, I could have retired years ago! A lot of great DX contacts have been lost because of this. 2. American operators are uninformed as to the international agreement regarding the cessation of national activity within the DX window of 50.1 to 50.125. (Tell your fellow operators in your area about it.) 3. American operators don't care and are not about to let someone or something dictate where they can work unless it is the FCC. Why would you want to kill someone's chances of working that long sought after DX contact by sitting on top of it and ragchewing?

All I am saying is that we should have a gentleman's agreement that we will not clutter up the DX window with non-DX activity. If you hear a national station in the window, either don't answer him or take him above 50.125 to work him. Then explain why he should not be working non-DX activity in the window.

I am going to tell you something that you had better take to heart. If you don't move your SSB activity higher in the band, you won't have any place to move it in a few more years! We have just seen California FM interests push legislation, WHICH WAS PASSED, giving all 6M FMers from 51 MHz up. There is even an FM group in that state that operates on 50.3 FM on a daily basis.

How long will it be before you will hear widespread use of FM at 50.1? Do you remember how much of 2M used to be set aside for non-FM use? It is almost all gone now.

We have all that spectrum from 50.2 to 51 MHz to use. Let the DXers have that little slice of a window and move much further up the band. Remember, one of these days we may HAVE to move up, only to find another mode using it. Grab it now while the getting is good!

The DX report

Most of what Pacific DX there was in May was into the southwest, south central and southeastern part of the country. New Zealand, Australia, Eastern Kiribati and Conway Reef contacts have been made here, with the New Zealand operators getting into the southeastern W4s and Australian operators getting into Virginia, North/South Carolina and Georgia.

Australian contacts were also made

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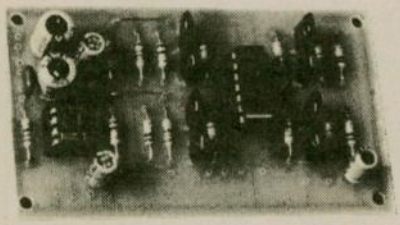

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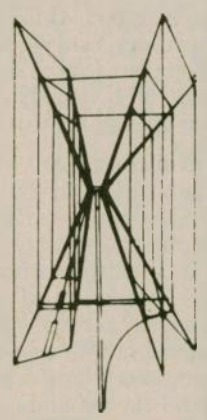

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World Radio History

in much of W5 land. This activity occurred while we were experiencing outstanding sporadic E conditions over the Memorial Day weekend.

With the advent of sporadic Es season, we have experienced, in this part of the world, an increase in activity to Mexico, Costa Rica, Belize, Puerto Rico, the Virgin Islands, Cuba, the Dominican Republic and, in general, the northern area of the Caribbean. This has caused a lot of excitement across the country, as it has meant a chance to work new countries for the newer operators. For us old-timers it was a chance to talk with old friends we have not heard for awhile.

After a slow start the first part of May, the band opened big time over the aforementioned weekend. It has been open nearly everyday or evening since. On May 29 during the SMIRK Net (Tuesdays at 9 p.m. CDST, 50.2), we had 100 stations check in from New England to Washington, and most points in between! About the only ones missing were the W6s.

I do not know what has been occurring in Europe and Africa, since the 28.885 coordination frequency is devoid of activity these days. From what little I have heard, there is the usual South African to Mediterranean/Southern Europe activity happening. In the Pacific there is still the Japanese to South Pacific activity.

DXpeditions and results

The JG3KUT/CE0 Easter Island DXpedition netted 403 contacts (295 on SSB, 108 on CW) with 305 different stations (seems like a lot of duplicate contacts being made), for 33 countries on all continents from March 8 to 18. QSL to Kenzo Nose, JA3EGE, 2-5, 2-1001, Mikuni, Toyonaka, Osaka, 561, JAPAN.

The DXpeditions of Joel Paladino, N6AMG, netted him the following:

As N6AMG/KH8, March 23 to 29, 450 QSOs in 3D2, ZC, 5W, LU, P2, KH8 and JD1; 320 JAs; 106 VKs; six Ws and two ZLs. As 5W1JP, March 31 to April 5, 550 QSOs in V6, V7, 5H, YB, XX9, ZP, V3, P2, T2, TI, KH6, KH7, KH2, HH, HK, FO, FW, CE0, CE, four ZLs, 63 VKs, 17 Ws and 393 JAs. From VK9LG April 7 to 16, 820 QSOs to T2, V6, V3, 8P, ZK2, KH7, KH0, KH6, KH2, KH5, HH, JD1, FW, FM and FK; 97 VKs; 10 Ws and 680 JAs.

Just prior to his departure from Marion Island, ZS5E had his biggest 6M openings. April 23 brought him a big JA opening from 0653 to 0830Z. He worked about 110 stations in all of the JA call districts except JA0 and JD1!

Signals pinned the S-meter on his IC-551D. From then until the next Sunday, he worked 500 JAs!

Gerhard Everett, ZS5AEN, will take over as Marion Island operator, but I do not know if the 6M gear stays or not. Gerhard is not experienced in DX pileup or 6M operation, that I know of.

3D2SM, Conway Reef, had 11 US contacts, nine W6s and Fred and Lee Fish, W5FF/K5FF. He had about 1,550 contacts in Japan, mostly KH6s, 5W1KT, KG6DX, VK4s, 3D2PO, T30KY, ZK1WL and FK8EB, using a 7-element Yagi and 300W. QSL to Kan Mizoguchi, JA1BK, 4-5-3, Sakuraganoka, Tama-city, Tokyo 206, JAPAN.

There was a planned operation from the Balearic Islands by ON1AOI and ON1CDQ for July 15 to 30. The only thing I can say about that is what the Spanish Ministry had to say to the ARRL. Six meter operations is NOT allowed.

Technical info

I am told that some of you would like to see more technical information in the column. The fact is I seldom get any in my correspondence from you. If you want to see more if it, you are going to have to provide it to me.

See you on the Magic Band all of a sudden! □

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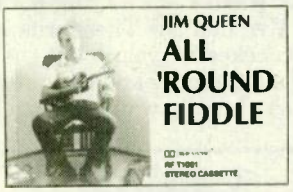

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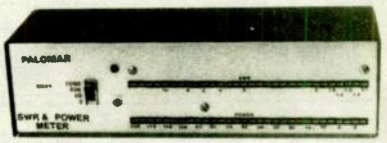

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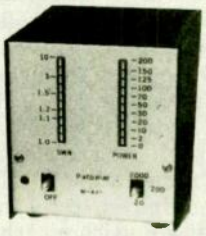

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World Radio History

I'm still reeling from my trip to the Dayton Hamvention. No, I didn't win the grand prize, or any small ones for that matter. It's because I had an impulse to buy a CD-ROM (compact disk — read only memory) player to hook on my "writing" computer.

I have three active computers in my shack, plus the AT clone (VGA) that I use for writing, desk-top publishing and AMSAT's super "Instant Track" program for satellite tracking. I also have two working 1976 model SOL computers with North Star disks and software in my antique collection.

I've wanted a CD-ROM reader for some time, so when the urge came over me while standing at the Buckmaster booth in Dayton, it was hard to resist. They were offering a player, plus the disk containing a list of all the Amateurs in the United States for an attractive price, so, without thinking too long, I popped.

The machine arrived a couple weeks after the hamfest. I pulled the lid off the AT clone and stuffed the controller card into a slot. Then the fun began.

I had to unravel three instruction books and sheets trying to figure out the sequence of installation moves. I will say Buck didn't really simplify the procedure with his sheet of instructions. He gave you an idea of what to do, but nothing specific. Anyway, I puzzled it all out and it finally worked.

The CD-ROM with the Amateur calls on it contains about a half million US call signs and addresses that are reachable with the search program included. There is also a huge pile — maybe a couple thousand or better, I didn't try to count them — of shareware programs for the Amateur. I found the same software that I am running for my WØRLI BBS, along with the WA7MBL stuff for the same purpose, in the program files. I've been too busy to dig deeper into the program stack, but believe me, there is a heap of stuff along with the call sign file.

The call sign file contains all the call signs from the FCC files, and when I say "all" I mean ALL. If someone has died in the last few years, their call is in there, so I guess that if a call sign has expired, it's in there also. I went to the funeral of WØMZE five years ago, his license expired two years ago, but Mart is still in the list.

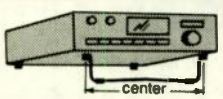
Now that we have licenses with 10 years life, I wonder how many Amateurs have given up the hobby, moved to a new address and are still on the role. Maybe there is something good about having to renew a license in just a few years after all.

Buckmaster has rigged the software so you can only take 50 calls at a time from the master file. They're in the mailing list business, so they can sell you passwords that will allow you to take either 500 or an unlimited number of addresses off the CD-ROM. I fooled around exporting some of the calls to a word processing list, but in my first attempt I discovered that I will have to work at it to make a decent mailing list, should I try.

The CD ROM works great for finding anyone by call sign, address or zip code. The list also includes birth year and expiration of license date, so you can shuffle them that way too.

I really like the idea of having the Call Book on computer. I wish the publishers of the Amateur Radio Call Books I have been buying for years would release their books on a CD-ROM. The type in the printed books is getting so small I've been known to take a Call Book to my workbench, where I have a magnifying lamp, in order to decipher a DX address. I'd pay the same as for the books, if I could get them on CD-ROM now that I have broken the ice and installed the player.

One of my biggest reasons to get the CD-ROM unit was so I could get Microsoft's program "Bookshelf." As an erstwhile writer and desktop publisher, I have been intrigued by the idea of having a dictionary, Thesaurus, Bartlett's Quotations, The World Almanac and a zip code directory, plus a bunch of other stuff, right in my computer when I am writing my columns, etc. I've had the Thesaurus and spelling checker for years, but the addition of the dictionary and the quotation file is what I really wanted. Now I have it.



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Well, almost.

When I purchased the Bookshelf program from my usual supplier of software and plugged it in, I was taken by the date on the software: 1987. I called Microsoft and asked if there was a later version. The answer, after I went through two people who admitted they didn't know much about the Bookshelf program, was "NO." So the World Almanac, which is published every year, is about three years old. I'm not given too often to looking up obscure statistics like the current population of Zambia or who had the best batting average last year, but I would like to know I have the latest edition when I do.

I also discovered that Microsoft does not support my favorite word processing software, although Bookshelf works fairly well with it. They do support some of the more popular programs, but they have only issued updates for two of them in recent times. I gathered from talking to the nice lady (#3) at Microsoft that "Bookshelf" is a down-the-list product in their multimillion dollar software business.

As a result of the call, I received the update fix program. Now I'll have to buy another word processing system to get the full benefit of the update. In the meantime I've learned to get along with the less than 100 percent operation of the CD-ROM, and I think it's a great addition to my computer.

I find I spend a lot of time exploring the cracks and crannies in the megabytes of information at my fingertips. There certainly is a pile of stuff on those two little CD disks — it's amazing.

Here in Fargo we have a local phone-line bulletin board that has a CD-ROM hooked into it. The system operator tells me there are 8,000 shareware and public domain programs on it and that I can buy the CD disk for $149. The system is growing so fast that the next edition will have an estimated 12,000 programs. Wow!

Ham stuff

Ray Donald, N6VQX, of Oceano, CA, and I have been friends for 55 years. Ray is a relative newcomer to Amateur Radio, although he and I spent a lot of happy hours back in the 1930s experimenting with five meters on the mountaintops in Southern California.

Ray wondered where the designation of "ham" originated, so he asked questions of many people. Rosalie White, WA1STO, of the ARRL told him: "No one knows the answer. Popular stories are that the word 'amateur' was pronounced 'hamateur' by British Amateurs with Cockney accents, thus shortened to 'ham.' Or, there was a

World Radio History

magazine called *Home Amateur Magazine* that became known as HAM."

I punched the button on my new CD-ROM American Heritage Dictionary section of Microsoft's Bookshelf program and I found these two definitions: "*ham n. . . . 6. Slang. An actor who overacts or a performer who exaggerates excessively. 7. Informal. A licensed Amateur Radio operator . . .*"

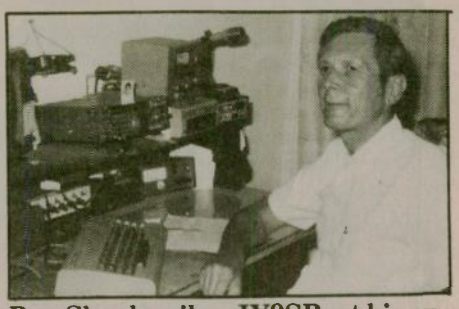
Could it be that "Ham" refers to a licensed Amateur Radio operator who "exaggerates excessively?"

If you have any other explanations of the term, drop Ray a note at 601 Pershing Dr., Oceano, CA 93445.

My printed copy of the *Dictionary of American Slang* really goes into detail, saying that in the early days it was a term of reproach.

Eavesdroppings

"I WON A BENCHER PADDLE KEY AT THE HAMFEST SO NOW I SUPPOSE I'LL HAVE TO LEARN THE CODE. . . IT CAME DOWN TO A CHOOSING BETWEEN A NEW RIDING LAWN MOWER FOR THE WIFE OR A NEW TRANSCEIVER FOR ME. . . THE BABY SITTER HAS JUST ARRIVED SO I WILL TURN OVER THE KEYS TO HER AND HEAD OUT THE DOOR. . . I'M IN TROUBLE BECAUSE MY WIFE



Ray Shankweiler, JY9SR, at his operating position in Jordan. Ray, whose stateside call is NY3N, made a long list of DX chasing RTTY fans happy with an appearance in the BARTG contest this spring.

GOT A HOLD OF THE VISA BILL WHICH HAD THE DAYTON HAMFEST EXPENSES ON IT. . . I USED MY LINEAR ONLY EIGHT TIMES IN TEN YEARS SO GOT RID OF IT. . . YOUR 400 WATTS IS SO GOOD FOR TO TYE THE RIBBONS ON WITH. . . THE SCHEDULED HOT AIR BALLOON SHOW WAS SHOT DOWN BY VERY HIGH WINDS. . . ABOUT 10,000 STATIONS CAME BACK TO ME IN THE WORLD'S LARGEST HETRODYNE. . . I'M UP TO 4 COUNTRIES ON RTTY NOW SO GUESS I HAVE THE RTTY DX FEVER. . . I LIKE RTTY BETTER THAN SSB BECAUSE THERE ARE LESS IDIOTS HERE. . . YOUR RST WOULD BE 579 IF I COULD MEASURE IT. . . RAINED ALL DAY AND WATER IS STILL DRIPPING OFF THE FEEDLINES. . . YOUR SHIFT IS ABOUT 50 CYCLES SHORT AND IT IS HARD TO READ A SHORT SHIFT SHRIFT. . . DID YOU SAY YOUR XYL IS DRIVING THE FINAL OR THE MOTORHOME? . . . WE HAD A RADIO BLACKOUT TWO HOURS AGO, I THINK IT WAS A POWER BLACKOUT. . . I'LL BE PLEASED TO SEND YOU A QSL TO CONFIRM THE CONTRACT. . . YOUR SIGNAL IS DROPPING UP QUITE OFTEN. . . I'M ONLY A QUARTER MILE FROM HARVARD BUT I DIDN'T GO THERE. . . I TYPED THIS VERY CAREFULLY BUT YOU MIGHT FIND SOME MISTRAKES. . . THE SUN HERE IS JUST SETTING IN THE RAIN.

Thanks to W0HAH, W8PHG, N6VQX, W7VFR, W7HSU and a bunch of others whom we eavesdropped upon for help with the column. Write me: Bill Snyder, W0LHS, 1514 South 12th St., Fargo, ND 59103, or drop a packet message on your local BBS to W0LHS @ W0LHS.ND.USA.NA. 73. DIT DIT. □

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Search And Rescue Communications

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

A large proportion of the letters I've gotten over the past several months start, "I'm new to Amateur Radio (or search and rescue). Any help you can offer . . ." One reader asked simply, "How do search missions start?" Good question.

There are two major categories of search and rescue missions. The first is a missing person — lost hiker, lost caver, lost child, you get the idea. The second is a missing vehicle containing one or more persons — this vehicle can be a boat, aircraft or even a car. (Once in a while, the latter type becomes a missing person search when, for example, survivors walk away from the crash site.)

Missing person searches start when the person is overdue at a destination or rendezvous point. (We're talking SEARCH, not RESCUE. A hiker who falls off a cliff and is injured is the object of a RESCUE. Search missions start when you don't know where the missing person[s] is!)

The search effort gets underway when the local constabulary get a call from mom, dad, relative or friend saying that their loved one went hiking (camping, walking, biking), and it is now midnight and they're not home. The reporting party often includes the typical comment: "I'm not sure where he (she) went, but he should have been back by now." The local police, sheriff or state police will gather as much information as possible and alert their ground search teams.

In any search mission TIME is always the searchers enemy. Hours or days could have elapsed since the person became "missing." If you ever get the chance, pass the word (especially to parents) — when your kids or friends tell you they're going hiking, biking or camping, have them let someone know exactly where they'll be (leave you a map!) and when they will return. Let the party know if they don't check in, you'll assume they are in trouble. There is nothing worse in my book of bad times than reaching someone 30 minutes or an hour after they died, knowing they lived for a day or so and no one knew where they were (beyond 100 square miles or so) or when they were expected back, delaying a search long enough to make the ending a body recovery rather than a happy family reunion.

Missing or overdue vehicle searches get underway in various scenarios. I'll concentrate on planes and boats. Boats and planes carrying large numbers of people are generally on a tight schedule and have required check points, either with a government agency or with the home office. When overdue, the alert usually comes through the check point. Most of these boats and planes are also on a scheduled route and when overdue the search area is defined as between the last known point (LKP) and the next check point.

If you're involved in a search for an airliner or cruise ship, be prepared for a large number of victims with varying injuries. These types don't happen very often.

Most common is the small plane or pleasure boat search. A common search beginning for either is the reception of an emergency signal on 121.5 MHz — the international distress fre-

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quency. Small boats and planes carry transmitters designed to trigger in an emergency.

On a boat, the device is an EPIRB or Emergency Position Indicating Radio Beacon. These are manually triggered or begin transmitting when submerged in water. On an aircraft the device is an ELT or Emergency Locator Transmitter, which can be manually activated or turned on via crash impact switch.

The signal's audio sounds like a whoop-whoop siren. Signals are picked up by other planes/boats in the area, via mountaintop monitors linked to an Amateur Radio/Civil Air Patrol repeater or via several orbiting satellites. When the signal is reported, the Coast Guard, Civil Air Patrol or appropriate agency is notified and searchers with direction finders track the signal.

Another way searches start is when the plane or boat is overdue on a flight/boat plan. These plans have an automatic mechanism built into the system that triggers a search response when a boat or plane fails to check in.

For aircraft the two most common types are the VFR or IFR flight plan. The VFR (visual flight rules) is less restrictive and is basically a start to stop plan. The pilot reports on the VFR flight plan the time of takeoff, general route and destination airport and time. On takeoff, the pilot activates the flight plan with the Federal Aviation Adminstration. Upon landing, the flight plan is closed.

Typically, when the pilot is two hours past landing time, the FAA starts the search process. Often the pilot forgot to close the flight plan and the plane is located by airport personnel at the destination.

An IFR (instrument flight rules) plan is different, because the pilot is flying on instruments. There are check points along the route for IFR planes, in addition to departure and destination. The time is a little more critical, and only 15 minutes can elapse before the FAA starts the search process. Planes on an IFR plan are also given a radar identifier and tracked via ARTCCs (air route traffic control center).

In a nutshell (for aircraft) IFR searches begin within minutes, VFR searches begin within hours and searches for planes on no flight plan begin within days. If you fly (or fly with a friend), FILE A FLIGHT PLAN!

When boats are overdue, the controlling agency is the US Coast Guard. Working with them is often the Coast Guard Auxiliary and local agencies. The Coast Guard Auxiliary is made up of volunteers and there is a special slot for Amateur Radio operators.

When planes are overdue, the controlling agency is the Air Force Rescue Coordination Center (AFRCC), at Scott AFB, IL. The AFRCC maintains agreements with each state and will alert SAR groups based on the agreements.

In some states the designated agency is the state police. In other states it is the state aeronautics department or office of emergency services. The Civil Air Patrol is often the SAR workhorse for aircraft searches (and often for missing person searches too). CAP is a civilian auxiliary of the US Air Force and all participants are volunteers. In some states the CAP may do air search and ground rescue. Sometimes the CAP does the air search and leaves the ground rescue to the sheriff or state police.

In future columns I'll explore search mission mechanics and how communicators (especially Amateur Radio operators) play a big part! Be thinking along the lines of mission staff. Wellman's first theory of SAR says missions need six staff functions: coordinator, operations, communications, public information, administration and data collection.

Next month

When I began this column for Worldradio, publisher Armond Noble thought a column on Civil Air Patrol would be good. Next month I'll cover the CAP basics, how to join, what CAP does and why it exists.

I've appreciated your kind comments and encourage you to voice your concerns, desires and opinions. Drop me a line if you feel so inclined, P.O. Box 11445, Salt Lake City, UT 84147.

Thought for Today!!

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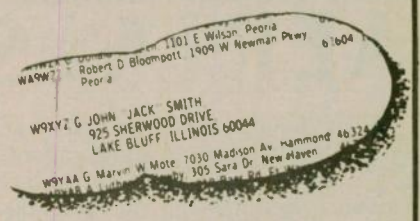

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World Radio History

KURT N. STERBA

AERIALS

Let us move to the controversy surrounding my recent remarks about a loop antenna advertised by a large Amateur equipment firm. I've been asked (through a relay from the **Worldradio** offices), "How could Kurt trash an antenna he has never tried?" The answer is an easy one. I've got a slide rule.

My statement about "the laws of physics" was mocked. There are indeed formulas for GAIN and there are formulas for aperture GAIN and EFFICIENCY. And there is the real key to this loop controversy, CAPTURE AREA. Size in wavelengths is highly important to antenna gain. No one yet (in the real world) can make anything better (within the specific parameters) than the formulas would indicate, darn it!

It has been stated that this small loop antenna "exceeds everyone's intuitive expectations." Heck, they didn't ask me for my gut feeling. But the manufacturer keeps saying it exceeds intuitive expectations!

Intuition has nothing to do with antenna facts. There is no such thing as the "100 mile-per-gallon carburetor" in antennas, unfortunately.

The offered proof that we had truly stepped into a new dimension of antennas were the "war stories" of working Bulgaria from a Bermuda veranda using this loop, with 100W on 20M! I believe every word of it. I really do believe in good propagation conditions and QRP operators working 100 countries. Nothing to it!

There have been QRPers with but 1W and a Yagi on a tower who have worked DXCC. So, let's lower the tower and yank off the reflector and the director on this QRPer's Yagi. Let's say this reduces his signal by 10dB. OK, if he now increases power from 1 to 10W, he's back up to the original radiated signal he had with the complete antenna. We have made up 10dB antenna loss with a 10dB transmitter power increase.

Now, if the transmitter power is raised to 100W from 10W, we've picked up another 10dB. So, going from 1W with a 10dB gain Yagi, our QRP guy has now increased his radiated power by 10dB. We have made up for antenna loss with power increase. And, boys and girls, this can also be done with a small loop antenna and your 100W rice box!

Over the years this column has recounted DX worked by loading up ladders, shopping carts, automobiles, small umbrellas, metal eaves around the house, high chairs, patio furniture and the like (not at the peak of the sunspot cycle), without claiming breakthrough antenna performance. Amateurs have worked 30 countries on three continents running 1/10 of a watt into a dipole at 25 ft. above ground!

It's been said that the loop in question was sent to the big guns and they worked DX with it. Yes, but what was never reported was: Did they ever switch back and forth between the loop at its narrow resonated frequency and a dipole? How far down in level was the loop from whatever they used as a reference?

A recent letter sent to **Worldradio** about me said, "It bothers me that some people say things they know nothing about . . ." That letter writer, whom I will not identify because it would surely embarrass him, wrote to defend the advertised loop antenna. A letter writer who claims to be an antenna wizard said, and I quote verbatim: "Where else can you get an antenna that covers all of the ham bands between 14 and 30 MHz? There isn't a beam, a vertical or a dipole that will do that (except a very expensive Log Periodic structure)." That's exactly what he wrote, boys and girls!

Now just a cotton-picking minute here. Let me break into this QSO. Doesn't the letter writer know that six firms make good trapped-verticals and more than a dozen others make and sell trapped-dipoles? Why shucks, my nephew's G5RV performs better than this 32-inch square loop from 10M all the way up to 80M! I'd like to see the advertised loop in action on 40 and 80M!

Those are my critics, folks, You know, just last month I got another letter asking that I do an antenna book. I've always told people to go buy Doug DeMaw's books. However, since I've just been called a dolt by people uttering silly stuff, I feel, with a sense of responsibility to my readers, that I should now do a book.

But first comes a booklet. The title is: "How you can build an antenna that covers all of the Amateur bands between 14 and 30 MHz, not for $319, not for $31.90, but for $3.19." I'll charge three dollars for the booklet, postage and taxes included. I'll let you know when it's ready.

I'll donate some of the money to the QCWA Scholarship fund. Maybe they

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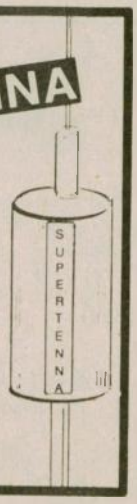

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World Radio History

can send some kids to school who will come out brighter than those we're hearing from these days. It shouldn't cost me much to do that booklet. Could do it on the back of a postcard, if I write small!

Now, I happen to know that some real heavy antenna dudes read my column. We'll invite their comments. We'll also invite reactions from others interested in antennas.

Graduates from Urbana, where are you? That University of Illinois, which has perhaps the best antenna school going, has graduated some notable people like Issbell, Carrel, Rumsey, Mayes, Dyson and Ray DuHamel. All these gentlemen helped create the Log Periodic antenna, perhaps the most novel and needed antenna during the past 35 years.

I absolutely believe that a British station did bend 10 ft. of one-inch copper tube into a circle, gamma matched it, and worked the US with only 5W. However, I never heard him say it had the gain of a dipole!

The manufacturer of the loop in question has since changed his advertising claims, so I no longer have any real rub with that company anymore, except for the financial comparison made in the loop's defense and rebuttal.

Words were put into my mouth that I used a tuner to resonate the little vertical rods. No, I measured the power with the power meter. The little verticals resonate themselves by running the rod up and down for proper resonant length. So, knock off the $150! Also, I don't need all those coax cables attributed to me, because I can (for a couple of hundred dollars difference) walk a few feet and change the little antennas for different bands. And, don't forget the $30 for the loop's control cable, the cost of a mast and the tripod you see in their photo, of which the least expensive one I could find was $17.

And what's all this talk about the advertised loop being excellent for campsite use? You need 110-volts of raw power to twist that capacitor between the ends of the loop. My 12-volt car battery just won't hack it. And besides, when I get within 15 ft. of that loop, I detune it, so how can I adjust the capacitor by hand?

Since everything is relative in antennas, let's look at the MFJ-1621 portable antenna. This is a 54 inch whip in a box with a tuner and a meter. Using this unit indoors, an Amateur worked 100 countries. Pretty good, wouldn't you say? But the MFJ literature says, "Keep in mind that this antenna is not intended to permanently replace or outperform a regular full size antenna." Now that's clean, clear advertising!

Long time readers may remember when I took a three foot long piece of wood, wrapped some wire around it, topped it with a pie-tin and worked most of the sections in Sweepstakes. Maybe I should have said that it worked better than my premonition!

None of this loop stuff is new. It harks back to the 20s. I can, even in my dotage, remember a 1952 article in *QST*. Three feet on a side and you were on 40M. Seems strange that all the wizards at RCA, ATT, Cable and Wireless, Hughes, TRW and others all stuck with dipoles, two masts and a wire antenna, instead of adopting the loop for HF communications.

The advertised loop also claims a new class of radiation pattern never before realized, folks. It claims to radiate more energy toward the horizon, regardless of height, than any other antenna. Its pattern is said to be independent of ground reflection, phase and amplitude!

Wonder why they have not run to the Patent Office with this novel idea? Well, we know why — it's simply not true, boys and girls. And what proof do I have? Well, none other than Newington, which says on pages 5 to 17 under "Additional Comments" referring to loop antennas: "The loop antenna should not be mounted horizontally except at great heights. The effect of the earth would be the same as on the pattern of a horizontal dipole at the same height." (*ARRL Antenna Handbook* 15th Edition)

Amateurs who now work or have worked at radio broadcasting stations know that the FCC wisely thinks that the vertically polarized antenna working against a ground counterpoise-radial system is the world's best low angle radiator — not a loop!

You know, all this "Such and such was worked with it, so it must be great," stuff reminds me of those Gotham ads of 30 years ago. Lists of DX were trotted out to show that this short piece of tubing and a coil and a couple of alligator clips was great. And it was, for what it was. No more and no less. It was a short piece of tubing that was matched to the feedline and it radiated as much as a short piece of aluminum could radiate.

The antenna book that made the most sense was by the late John Haerle, WB5IIR. John said, "You don't get something for nothing. Hams are always looking for a panacea, so far as antennas are concerned, but those things are hard to find."

I don't have anything against those boys at the loop factory. I did wonder about the originality of their idea when there is one very much like it being sold in the UK. But the US version is much less expensive and UPS shippable.

Next month I'll talk about some ridiculous claims found in the Amateur magazines and some awful things in the catalogs. I'm also working on something that, if you follow suit, you'll know more about antennas than anybody. P.S. I'm serious about the booklet. I'll put it on my "to do" list.

(Kurt N. Sterba goes by his monicker so he can avoid listening to kids talking about the merits of loop antennas and how they re-invented the wheel.) □

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Florida

The Greater Jacksonville Amateur Radio & Computer Show will be held on Aug. 4 and 5 at the Prime Osborn Convention Center in downtown Jacksonville from 9 a.m. to 5 p.m. Saturday and 9 a.m. to 3 p.m. Sunday. Registration is $5 at the door.

A huge indoor swap area and 50 exhibitor booths will be in operation, along with forums and meetings. Tables are $12 for Saturday, $6 for Sunday or $15 for the weekend. Power is available at extra charge. Exhibitor set up is 2 to 6 p.m. on Friday.

Major exhibitors will include ICOM and IBM. The featured speaker will be Dr. Larry Price, W4RA, ARRL President. Exams for all grades of license will be conducted Sunday at 9 a.m. A "boat-anchor" auction is set for noon on Sunday.

For information on swap tables, contact Wade Rhyne, AJ4J, at Box 11882, Jacksonville, FL 32239. For other hamfest information write Greater Jacksonville Hamfest Association, Box 10623, Jacksonville, FL 32207; 904/350-9193. □

Illinois

The Tri-State Swapfest '90, sponsored by the WESTERN ILLINOIS ARC, is being held from 8 a.m. to 2 p.m. on Aug. 19 at the Eagle's Alps Lodge in Quincy. Admission in advance is $2.50, at the door $3.

Features will include an outdoor tailgate area, indoor vendor tables, ARRL VE testing, an ARRL table, forums and XYL activities. Talk-in on 147.63/.03 and 146.34/94 MHz.

For information or reservations contact Michael Nowack, NA9Q, c/o WIARC, P.O. Box 3132, Quincy, IL 62305-3132; 217/224-8526. □

Indiana

The PORTER COUNTY AMATEUR RADIO CLUB is sponsoring the annual Northwest Indiana Hamfest and Computer Fair, beginning at 7 a.m. Sunday, Aug. 12, at the Porter County Fairgrounds in Valparaiso. Adult admission is $5, children under 12 enter free. Overnight camping space is available.

Features will include VE exams, Amateur electronic equipment and components, computer hobbyists and experimenters, dealers and commercial exhibitors and hourly prizes. Indoor and outdoor space is available. Tables, chairs and electricity are available for indoor spaces only.

The XYL answered the telephone and said: "I'm sorry, LeRoy cannot come to the phone right now. He is up on the roof adjusting the antenna. Why don't you call the hospital in about half an hour." — *Fulton ARC, Fulton, NY*

There is air conditioning in the Main Exposition Center only.

Advance tickets are available. For tickets, reservations or additional information, contact KA9TAD at 219/759-4224, or send an SASE to PCARC, P.O. Box 1782, Valparaiso, IN 46384.

Talk-in on 146.775/-6 or 52. □

New Jersey

The GLOUCESTER COUNTY ARC is sponsoring a hamfest from 8 a.m. to 4 p.m. Aug. 26 at the Gloucester County 4-H fairgrounds in Mullica Hill. Admission is $3.50 in advance, $4 at the gate.

Dealer set up begins at 6 a.m. Tailgate space is $6 with electricity, $5 without. A ticket is needed with tailgate space.

VE exams will be offered at 9 a.m. Talk-in on 147.18/78 and 223.06/224.66 repeaters or 146.52 simplex.

For advance spaces or tickets, send an SASE and check to GCARC Hamfest, P.O. Box 370, Pitman, NJ 08071. For information call KE2NY at 609/933-1213 or leave a message at the club phone at 609/478-4738. □

Ohio

The WARREN AMATEUR RADIO ASSOCIATION, W8VTD, is sponsoring a hamfest from 6 a.m. to 4 p.m. Sunday, Aug. 19, at the Trumbull Branch Campus of Kent State University, in Warren. Features will include an air conditioned indoor exhibit area, a five acre flea market on campus grounds and license exams. There will be meeting rooms and free parking available on site and refreshments will be offered.

Talk-in on 146.37/97.

Admission is $4; children under 12 enter free. Exhibitor prices are $6 per eight foot table and flea market spaces are $2 per 10 ft. space.

For more information contact: Frank Fitzhugh, KD8KJ, WARA Hamfest, P.O. Box 809, Warren, OH 44482; 216/652-0452. □

Pennsylvania

MID-ATLANTIC ARC's Hamfest '90 will take place at the Bucks County Drive-In Theatre on Aug. 12 in Willow Grove. Buyers will be admitted at 8 a.m., tailgate set-up will be at 7 a.m.

General admission is $3, each tailgate space is $2. Talk-in on 147.06/R and 146.52 simplex.

For additional information contact Al Maslin, W3DZI, at 215/446-4936. □

South Dakota

The South Dakota ARRL Convention, sponsored by the HOT SPRINGS AMATEUR RADIO CLUB, will be held at the Mueller Convention Center in Hot Springs Saturday, Aug. 18, from 8 to 5, and Sunday, Aug. 19, from 8 to 2. (Open Friday evening for setup.)

Features include VE exams Friday evening and Sunday morning, forums, exhibits, a QCWA luncheon, a flea market and an auction. Admission is $5.50 in advance, $7.50 at the gate. Tables are $1.

For tickets or reservations send an SASE to Carl Anderson, KA0PXB, 2145 Washington, Hot Springs, SD 57747. For information call Barbara Dunmeyer, KB7ADK, Executive Secretary, Hot Springs Area Chamber of Commerce, 800/325-6991. □

World Radio History

Maryland-DC QSO Party

The Antietam Radio Association, of Hagerstown, MD, is sponsoring this event from 1600Z Aug. 18, to 2359Z Aug. 19.

Rules: Stations may be worked once per band using each mode. CW QSOs in the CW band only. Non-Maryland stations must work Maryland stations; Maryland stations may work anyone. Portables and Mobiles that change Maryland counties during the contest count as a separate station in each new county of contact. No repeater QSOs count. Other HF and VHF contacts do.

Exchange: Signal Report and QTH (county for Maryland stations; state or province or, if DX, country as QTH for others.

Suggested frequencies: *SSB* — 1.86, 3.92, 7.28, 14.28, 21.37, 28.37, 50.15 and 146.55 MHz; *CW* — 3.643, 7.130, 14.04, 21.115, 28.115, 50.05 and 144.15 MHz.

Scoring: Each Maryland county, Baltimore city and DC are multipliers. *QSO points* — five points for contact with any club station; three points for contact with any mobile station; two points for CW contact with a Maryland station; one point for any other valid contacts.

Special note: Points are cumulative. Example: A CW mobile contact is worth five points (three for mobile + two for CW).

Final score: Add up all QSO points and multiply by the sum of the multipliers (maximum of 25 multipliers possible, each multiplier may be claimed once only and do not repeat on different bands).

Awards: Certificates will be awarded to the high score verified from each US state and Canadian province. In addition, there will be awards to the high score from a Maryland club station, a Maryland mobile, the three best Maryland logs, a Novice licensee, Technician licensee and a DX station.

Logs should be mailed to the contest chairman by *Sept. 10.* Indicate on your entry if you are competing in a special operating class (Mobile, Club, Novice, Technician).

Mail Logs to: Antietam Radio Association, P.O. Box 52, Hagerstown, MD 21741. Please include an SASE if you wish a copy of the contest results.

Direct any questions to WA3EOP, Contest Chairman. □

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PASS Publishing, Box 570, Stony Brook, NY 11790

New Jersey QSO Party

The Englewood Amateur Radio Association Inc. invites all Amateurs the world over to take part in this 31st annual event from 2000 UTC Saturday, Aug. 18, to 0700 UTC Sunday, Aug. 19, and from 1300 UTC Sunday, Aug. 19, to 0200 UTC Monday, Aug. 20.

Rules: Phone and CW are considered the same contest. A station may be contacted once on each band, phone and CW are considered separate bands. CW contacts may not be made in phone band segments. New Jersey stations may work other New Jersey stations. General call is "CQ New Jersey" or "CQ NJ." New Jersey stations are requested to identify themselves by signing "DE NJ" on CW and "New Jersey calling" on phone.

Suggested frequencies: 1810, 3535, 3950, 7035, 7135, 7235, 14035, 14285, 21100, 21355, 28100, 28400, 50-50.5 and 144-146. Suggest phone activity on the even hours; 15/10M on the odd hours (1500 to 2100 UTC); 160M at 0500 UTC.

Exchange: QSO number, RST and QTH (ARRL section or country). New Jersey stations will send county for their QTH.

Scoring: Out-of-state stations multiply number of complete contacts with New Jersey stations times the number of New Jersey counties worked (maximum of 21). New Jersey stations — W-K-VE-VO QSOs count as one point; DX stations count as three points. Multiply total number of points times the number of ARRL sections (including NNJ and SNJ). KP4, KH6, KL7, etc. count as three point DX contacts, as well as section multipliers.

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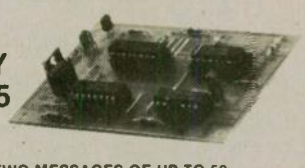

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World Radio History

Awards: Certificates will be awarded to the first place station in each New Jersey county, ARRL section and country. In addition, a second place certificate will be awarded when four or more logs are received. Novice, Technician and mobile operator certificates will also be given. A total of four plaques have been donated by the ARRL Section Managers for NNJ and SNJ to the highest scoring single operator station residing in each of their sections (separate for Novice/Technician and all other classes).

Logs: Must also show the UTC date and time, band and emission and be received not later than Sept. 15. The first contact for each claimed multiplier must be indicated and numbered and a check list of contacts and multipliers should be included. Multi-operator stations should be noted and calls of participating operators listed.

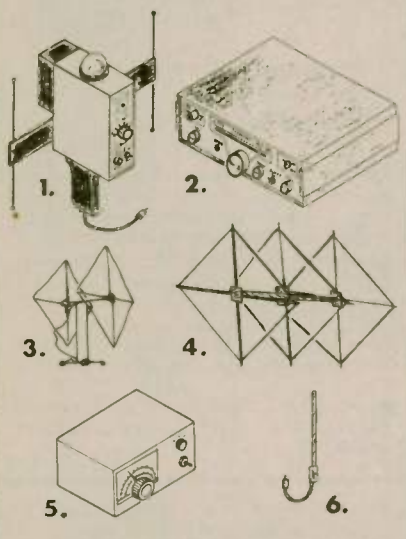
Logs and comments should be sent to: Englewood Amateur Radio Association Inc., P.O. Box 528, Englewood, NJ 07631-0528. A #10 SASE should be included for results.

Stations planning active participation in New Jersey are requested to advise EARA by Aug. 1 of your intentions so they may plan for full coverage from all counties. Portable and mobile operation is encouraged. □

All Asian DX Contest

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

RF PRODUCTS



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Contest period: *CW* — 48 hours from 0000 UTC Aug. 25 to 2400 UTC Aug. 26.

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

Entry classifications: (1) Single operator, 1.9 MHz band (CW only) (2) Single operator, 3.5 MHz band (including 3.8 MHz band) (3) Single operator, 7 MHz band (4) Single operator, 14 MHz band (5) Single operator, 21 MHz band (6) Single operator, 28 MHz band (7) Single operator, Multi band (8) Multi-operator, Multi band.

Contest call: *For Asian stations* — "CQ test"; *For non-Asian stations* — "CQ AA."

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

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

Points and multipliers: (1) Contacts among Asian stations and among non-Asian stations will neither count as a point nor a multiplier. (2) For Asian stations (a) Points . . . Perfect contact with non-Asian stations will be scored as follows — 1.9 MHz band . . . three points, 3.5 MHz band . . . two points, other bands . . . one point. (b) Multipliers . . . The number of different countries in the world worked on each band, according to the DXCC countries list. (3) For non-Asian stations (a) Points . . . Perfect contact with Asian stations (excluding US auxiliary military radio stations in the Far East, Japan) will be counted as follows — 1.9 MHz band . . . three points, 3.5 MHz band . . . two points, Other bands . . . one point. (b) Multipliers . . . The number of different Asian prefixes worked on each band, according to the WPX Contest rules. Example: JS0ABC/7 will count for prefix JS7. (4) JD1 stations (a) JD1 stations on Ogasawara (Bonin and Volcano) Islands belong to Asia. (b) JD1 stations on Minamitori Shima (Marcus) Island belong to Oceania.

Scoring: The total of the contact points on each band multiplied by the total of the multipliers on each band.

Summary and log sheet: It is recommended to use JARL AA contest logs and summaries, which are available from HQ for one IRC and SAE. (1) Each summary sheet must include your DXCC country, call used, entry class, multipliers by band, points by band and total score. It should also include a signed declaration indicating that you have observed the rules and regulations of the contest. (2) Log sheet must contain band, date, time in UTC, call of station worked, exchange sent, exchange received, multipliers and QSO points. Use a separate sheet for each band. Multipliers should be clearly marked by countries or Asian prefixes, first time worked on each band.

Awards: (1) Certificates will be awarded to those having the highest score in each entry in proportion to the number of participants from each country, and also those from each call area in the United States. (a) The number of participants under 10 . . . award only to the highest scorer (b) From 11 to 20 . . . award up to the runner-up (c) From 21 to 30 . . . award to the top three (d) From 31 or more . . . award to the top five. (2) The highest scorer in each continent of the single operator multi-band entry will receive a medal from JARL and certificate from the Minister of Posts and Telecommunications of Japan. (3) The highest scorer of the multi-operator multi-band entry in each continent will receive a medal from JARL.

Reporting: (1) Submit a summary sheet and logs of only one classification. (2) The log and summary should be postmarked by Sept. 30, addressed to JARL, All Asia DX Contest, P.O. Box 377, Tokyo Central, JAPAN. Indicate CW on the envelope. □

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Soccer, anyone?

CHUCK EARLY, K8RSH

North Olmsted, OH, is a western suburb of Cleveland, and for the past several years has been the host of the North Olmsted Soccer Organization invitational meet. On July 1, 2 and 3, 1989, the meet was attended by teams representing cities in the United States, Canada and Scotland.

The North Coast Amateur Radio Club has traditionally furnished the communications for the event, so as to allow the officials to keep in constant touch with each other during the games. At this particular meet some 24 teams played 80 matches at 10 different fields, and according to Dave Kersten, N8AUH, meet coordinator, 26 Amateurs provided over 225 hours of service throughout the three day event.

The North Olmsted Soccer Organization commended the club for its continued commitment to the invitational, and said that without the participation of the Amateurs, they never could have run the event so efficiently. □

For the gift that keeps on giving, see p.9.

World Radio History

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

Variable capacitors

Kilo-Tec has available three Nevada High Power Variable Capacitors.

These capacitors use high quality NS4 aluminum, brass and military quality moldings in their construction. Models include the TC-150, a 150pF 9.8kV breakdown voltage; TC-250, a 250pF 14.7kV breakdown voltage; and the TC-750, which is rated at 750pF with 7.8kV voltage breakdown. These high quality capacitors are suited for construction of RF amplifiers, RF tuning units and RF transmitters.

To order or receive additional information call or FAX Kilo-Tec at 805/646-9645, or write to P.O. Box 10, Oakview, CA 93022. □

AEA antenna line

Advanced Electronic Applications has an agreement with M2 Enterprises President Mike Staal, K6MYC, based in Pinedale, CA, for exclusive rights to its antenna line. Mike is the founder and antenna designer of KLM antennas.

The diverse M2 product line features computer-optimized antennas with the highest gain available. Other features of the antenna line include:

- Electronically tuned balun and driver element design for symmetrical patterns
- "O"-rings on all connectors
- Stainless hardware in critical areas, including element keepers
- Machined aluminum driven element housing with "O"-ring sealed access cover
- Ideal for use in multiple antenna arrays
- Built-in "N" connector
- Driven element housing cavities filled with silicone dielectric material for weather resistancy
- Swaged boom sections for better structural strength
- Tapered booms and solid rod elements to reduce windload
- Low windload overhead dacron boom support lines for strength and flexibility

For information on the antennas available and their prices, contact AEA, P.O. Box C2160, Building O&P — 2006 196th SW, Lynnwood, WA 98036-0918; 206/775-7373; Telex: 6972496 AEA INTL UW; FAX: 206/775-2340. □

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W1AW

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Lap-top protectors

Electronic Specialists announces introduction of the lap-top and portable computer protection series dubbed "Pocket Protectors."

An ultra-compact AC power protector, combining filtering and hi-capacity spike/surge suppression, offers 39,000 surge amp suppression to handle the wildest AC power encountered on the road. All this in a unit that

neatly fits the pocket.

Modem protection is also available in the Pocket Protector configuration. Multi-element spoke suppression is combined with RF filtering and balun noise filtering.

Available from stock, the AC power Pocket Protector (LTP-101) is priced at $64.95 and the Modem Pocket Protector (LTP-201) is priced at $45.95.

For information contact Electronic Specialists Inc., 171 S. Main St., Natick, MA 01760; 800/225-4878. □

Wideband communications receiver

ICOM is offering the IC-R100 wideband communications receiver, which provides tremendous listening versatility in a variety of locations, including air band, marine band and emergency service frequencies, as well as Amateur bands.

The compact IC-R100 is designed for flexible installation at home or in your car. Some features include:

- Super wideband receive capability. The IC-R100 continuously covers a wide frequency range within 100 kHz to 1856 MHz, in AM, FM and wide FM modes at home or in your vehicle.
- Easy-to-operate keyboard and tuning control. The IC-R100 has complete programming versatility. You can use either the keyboard or tuning control to access frequencies and memory channels.
- 121 memory channels. A total of 121 memory channels are available on the IC-R100. 100 memory channels store operating frequencies, modes, RF attenuator and preamplifier settings. Twenty scan edge memory channels are used for specifying 10 pairs of frequency ranges required for programmed scan. Plus, the receiver has one independent memory channel used for priority scan.
- Built-in 24 hour clock. The IC-R100 includes a 24 hour clock and a variety of timer functions. Even if the receiver's external power supply is disconnected, the clock continues to run because of the built-in lithium battery. The different timer functions are convenient for scheduled programs, the receiver just turns itself on and off.

The versatile IC-R100 also includes three separate antenna connectors, a built-in preamplifier and attenuator, plus a complete variety of scan functions. □

•••••

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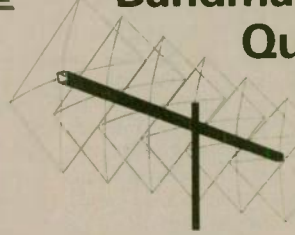
Bandmaster Quads



QSO more for greater distance with higher gain and less interference with AAE Bandmaster Quads.

- All-fiberglass construction
- Rugged engineering/all weather
- Highly directional/excellent F/B
- Full-band performance
- Unique tool-free assembly
- Boom length 5 feet, 4 lbs. (Q-144-6)
- One year full-replacement warranty

Model	Description	$ Price
Q-144-2	2 Meter 2 Element DF Quad	$ 29.95
Q-144-3	2 Meter 3 Element Quad	$ 39.95
Q-144-4	2 Meter 4 Element Quad	$ 49.95
Q-144-6	2 Meter 6 Element Quad	$ 69.95
Q-440-6	440 MHz 6 Element Quad	$ 44.95
Q-220-6	220 MHz 6 Element Quad	$ 59.95
Q-50-4	6 Meter 4 Element Quad	$149.95
Q-28-2	10 Meter 2 Element Quad	$179.95
Q-28-3	10 Meter 3 Element Quad	$229.95
Q-28-4	10 Meter 4 Element Quad	$279.95
Q-FM-DX	FM Broadcast Antenna	$ 49.95

Alabama Amateur Electronics

Call today for your high performance all-fiberglass Bandmaster Quad by AAE. Shipping not included. Visa and Mastercard welcome.

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Birmingham, AL 35243

(205) 967-6122

World Radio History

Contact NCG for info.

SWR/Power Meter

The CM-1200 Ultra-compact SWR/Power Meter is available from NCG.

For information contact the NCG Co., 1275 N. Grove St., Anaheim, CA 92806; 714/630-4541; or selected dealers. □

Computer help

RTTY-PC is an easy-to-use, multi-featured communications program for either receive-only or two-way RTTY/ASCII communications via Amateur Radio. It will send and receive RTTY (Baudot) at 60, 66, 75 and 100 wpm, or ASCII at most standard (and some non-standard) speeds between 110 and 9600 baud. By means of a suitable computer, interface and radio transmitting and receiving equipment, you can communicate with other Amateurs operating RTTY or ASCII. You can also use the program just to receive other stations. This can include Amateur and non-Amateur stations.

The program "comes up" receiving RTTY on the band to which your receiver is tuned. It is not necessary to go through a lot of menus or answer a lot of questions each time you run RTTY-PC, like some programs require. But, with a touch of a key, you can exit the main receive/transmit screen and get into the menus.

The main screen you'll see is "split" into two windows: The upper window shows actual received and transmitted text (in two different colors or intensities) and the lower window "stores" the text to be transmitted as you type and can be used to view and change messages. The two windows are separated by the Divider line, which displays the mode, speed, date, time and other information.

RTTY-PC has a Type-ahead buffer: You can type your reply to the other station even while receiving him, interspersed with messages and disk files if desired.

The program features 12 1024 character message buffers. You can send one of these 12 messages, each one up to 1024 characters in length, with the touch of a function key. These messages could include CQ, a description of your station equipment, your name and QTH, the other station's call or anything else you can think of that you might send a lot (examples are in the manual). These messages that you create can be easily changed and saved to disk and are automatically loaded each time you use RTTY-PC. They can also be quickly viewed and/or changed in the lower window while simultaneously receiving in the upper window. Or, if you like, you can use the "full screen" message changing method where you have the entire screen to view and/or change a message.

Even if your keyboard only has 10 function keys, the RTTY-PC diskette includes software to re-define two other unused keys of your choice as *F11 and F12.* Or, if F11 and F12 on your "compatible" are not strictly IBM PC-AT or PS/2 compatible (fairly common), you can show RTTY-PC how to recognize your F11 and F12 keys. Separate software is provided on the diskette, so you can do this if necessary; it is easy to do and only needs to be done once.

While using RTTY-PC, you can also:

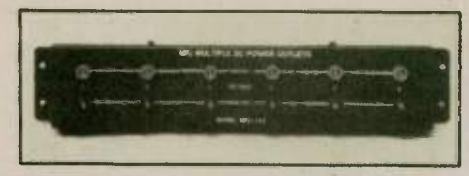
- Transmit disk files
- Save everything that you receive and transmit to disk. You can either name the file yourself or have RTTY-PC automatically name it for you.
- Print everything that you receive or transmit to a printer. You can save to a disk file and print to a printer simultaneously if desired. Files and printouts are marked showing mode and receive/transmit.

For pricing or other information, contact Comtech Research, 5220 Milton Rd., Custar, OH 43511; 419/278-6790. □

Multiple DC outlet

MFJ Enterprises Inc. is offering the MFJ-1112 Multiple DC Power Outlet for $24.95. It saves you space and money by giving you six pairs of heavy duty binding posts for connecting your accessories.

The MFJ-1112 connects directly to your 12VDC power supply. RF bypassing keeps RF



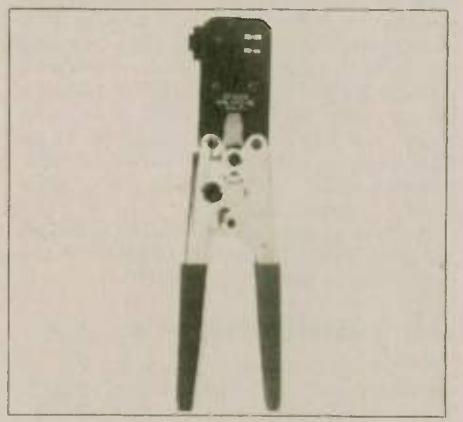
out of the power supply from the DC line outlet.

The attractive black aluminum cabinet measures a sleek 13½ × 2¾ × 2½ inches. You also get MFJ's one year guarantee.

For more information contact any MFJ dealer or MFJ Enterprises Inc., P.O. Box 494, Mississippi State, MS 39762; 601/323-5869; Telex: 53 4590 MFJSTKV; FAX: 601/323-6551; or order toll free at 800/647-1800. □

Crimping tool

Nemal Electronics International of North Miami, FL, has introduced a new ratchet crimping tool for use in the communications and computer fields. The tool offers full cycle ratchet operation with machined dies for precision crimping and long service life and features a pin holder and wire locator for ease of operation.



Part number CT2320 accommodates wire sizes from 20 to 30 gauge.

For additional information contact Nemal Electronics International Inc. at 12240 NE 14th Ave., North Miami, FL 33161; 305/899-0900; FAX: 305/895-8178. □

RADIO STORE

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ARIZONA
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1702 W. Camelback
Phoenix, AZ 85015
(602) 242-3515

CALIFORNIA
A-Tech Electronics
1033 Hollywood Way
Burbank, CA 91505
(818) 845-9203

Ham Radio Outlet
2620 W. La Palma
Anaheim, CA 92801
(714) 762-3033
(213) 860-2040

Ham Radio Outlet
999 Howard Ave.
Burlingame, CA 94010
(415) 342-5757

Ham Radio Outlet
2210 Livingston St.
Oakland, CA 94606
(415) 534-5757

Ham Radio Outlet
5375 Kearny Villa Rd.
San Diego, CA 92123
(619) 560-4900

Ham Radio Outlet
6265 Sepulveda Blvd.
Van Nuys, CA 91411
(818) 988-2212

Henry Radio
2050 S. Bundy Dr.
Los Angeles, CA 90025
(213) 820-1234

Jun's Electronics
3919 Sepulveda Blvd.
Culver City, CA 90230
(213) 390-8003

The Radio Place
2964 Freeport Blvd.
Sacramento, CA 95818
(916) 441-7388

CONNECTICUT
Rogus Electronics Inc.
250 Meriden-Waterbury TPK.
Southington, CT 06489
(203) 621-2252

FLORIDA
McClaran Sales/Aluma Towers
P.O. Box 2513
Vero Beach, FL 32961
(407) 567-8224

Mike's Electronics
1001 N.W. 52nd St.
Fort Lauderdale, FL 33309
(305) 491-7110

GEORGIA
Doc's Communication & Electronics, Inc.
702 Chickamauga Ave.
Rossville, GA 30741
(404) 866-2302 or 861-5610

Ham Radio Outlet
6071 Buford Hwy.
Atlanta, GA 30340
(404) 263-0700

IDAHO
Ross Distributing Co.
78 South State St.
P.O. Box 234
Preston, ID 83263
(208) 852-0830

MICHIGAN
H.R. Electronics
722/24 Evanston Ave.
Muskegon, MI 49442
(616) 722-2246

MISSOURI
Henry Radio
211 N. Main Street
Butler, MO 64730

NEVADA
Radio World
1656 Nevada Hwy.
Boulder City, NV 89005
(702) 294-2666

NEW HAMPSHIRE
Ham Radio Outlet
224 N. Broadway
Salem, NH 03079
(603) 898-3750

Rivendell Electronics
8 Londonderry Road
Derry, NH 03038
(603) 434-5371

NEW JERSEY
Gilfer Associates
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Park Ridge, NJ 07656
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NEW YORK
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Williamsville, (Buffalo) NY 14221
(716) 632-1189

OHIO
Universal Radio, Inc.
1280 Aida Dr.
Reynoldsburg (Columbus), OH 43068
(614) 866-4268 • (800) 431-3939

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Woodbridge, VA 22191
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World Radio History

THE 1990 QSL BOOK!

Extending a 69 year tradition, we bring you three new Callbooks for 1990, bigger and better than ever! The North American Callbook, the International Callbook, and the new Callbook Supplement bring you accurate up-to-date QSL information on over 1,000,000 amateurs throughout the world.

The North American Callbook lists the calls, names, and address information for over 500,000 licensed radio amateurs in all countries of North America from Canada to Panama, including Greenland, Bermuda, and the Caribbean islands plus Hawaii and the U.S. possessions.

The International Callbook lists over 500,000 licensed radio amateurs in countries outside North America. Its coverage includes South America, Europe, Africa, Asia, and the Pacific area (exclusive of Hawaii and the U.S. possessions).

The 1990 Callbook Supplement is a new idea in Callbook updates, listing the activity in both the North American and International Callbooks. Published June 1, 1990, this combined Supplement will include thousands of new licenses, address changes, and call sign changes for the preceding 6 months.

Every active amateur needs the Callbook! The 1990 Callbooks will be published December 1, 1989. Order now for early delivery as soon as the new books are available. See your dealer now or order directly from the publisher.

- Over 1,000,000 current amateur listings in all countries of the world • Telegraph Codes
- Then & Now call changes • Silent Keys • Census of Amateur Licenses in all countries
- Standard Time Charts • International Postal Information • World-wide QSL Bureaus
- Table of Amateur Prefix Allocations • Prefixes of the World • Plus many other features.

Publication: Callbooks - December 1, 1989
Supplement - June 1, 1990

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☐ Single 1990 North American Callbook	$31.00	$32.80	$37.00
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World Radio History

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 two months in advance. For example, if your VE group is scheduling an exam for September, please have the information to us by mid July.

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

Please mark the envelope "VE Exams."

List the location, and 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
Arkansas			
August 11	Russellville	Ben Hillis (501) 964-6885	w/i
California			
August 4	Burbank	KE6AR (818) 349-0927	w/i OK
	Stockton	AA6NO (916) 662-0810	w/i
August 5	Chico	W6YKU (916) 342-1180	p/r pref
August 11	Camarillo	N6SR (805) 484-4461	p/r pref; ltd w/i
	Concord	WW6H (415) 254-5090; WA6AEO (415) 676-8239	w/i
	San Pedro	N6DYZ (213) 325-2965	ltd w/i
August 15	Eureka	KB6FIW (707) 442-9245	p/r pref by 8/13
August 16	Fountain Valley	KI6WK (714) 846-6984	
August 18	Downey	KA3DSE (213) 923-5598	w/i
August 30	Long Beach	KA6HOQ (714) 897-6331; NF6X (213) 434-8278	w/i
Sept 1	Riverside	(714) 780-2680	p/r 7 days prior; ltd w/i
Colorado			
August 11	Denver	W0IJR (303) 366-9689	w/i OK
August 18	Pueblo	(719) 948-2291	w/i
	Westminster	N0HNR (303) 451-1231; (303) 278-4280	p/r or w/i
Connecticut			
August 18	Gales Ferry	KY1F (203) 536-0187	w/i
August 26	Milford	NB1M (203) 933-5125; WA1YQE (203) 874-1014	w/i
Florida			
August 18	Melbourne	WB9IVR (407) 724-6183	w/i OK
	W. Palm Beach	W4SS (407) 967-1477; KG4U (407) 582-7617	w/i
Idaho			
August 11	Boise	W7JMH (208) 343-9153	
Illinois			
August 11	Oak Forest	KA9HDN (312) 247-0650	w/i
August 18	Loves Park	W9SS (815) 877-6768	p/r; w/i
Indiana			
August 4	South Bend	NI9Y (219) 255-4455	w/i OK
August 5	Terre Haute	K9EBK (812) 466-2122	w/i
Kansas			
August 11	Olathe	WK0G (913) 764-2822	p/r pref
Maryland			
August 25	Laurel	(301) 572-5124	ltd w/i
Nevada			
August 4	Las Vegas	(408) 255-9000	w/i only
New Jersey			
August 8	Fort Monmouth	KZ2P (201) 905-3146 or (201) 370-8055	w/i
August 11	Cranford	N2XJ (201) 635-7686	
August 16	Bellmawr	WA2VQG (609) 546-7710	no p/r
August 18	Bayonne	WA2QYX (201) 451-9471	w/i OK
New York			
August 17	Verona	KA2NIL (315) 363-4297	w/i
August 20	Ithaca	NK2V (607) 255-5274	w/i only
August 26	North Babylon	KA2RGI (516) 957-0218	w/i OK
North Carolina			
August 11	Yadkinville	N4AAD (919) 679-8059; N4UAN (919) 679-8954	p/r; w/i
Ohio			
August 4	Columbus	Jim Kerr (614) 866-5531	w/i
	Mentor	KO8O (216) 256-0320	p/r; w/i
Pennsylvania			
August 4	Erie	W3CG (814) 665-9124	w/i OK
August 20	Perkasie	Warren Erdman (215) 679-5764	p/r; w/i
Tennessee			
August 4	Memphis	W4MI (901) 357-8148	p/r by 8/2
Texas			
August 11	Eddy	N5KZD (817) 859-5374	w/i
	Midland	KT5G (915) 694-9450	
	San Antonio	AA5HG (512) 680-2371	w/i

Antenna? What antenna?!

DAVE CAMMACK, N6NMH

I moved into a trailer park that does not allow "any" outdoor antennas. So there went the thought of being able to get back on the air.

Well, I was wrong. I now work 160 to 10M and you can't even see the antenna, which is over 208 ft. long!

It started in April 1985. While on vacation I was in an automobile accident. After receiving the settlement, I went to Ham Radio Outlet and bought my present station, which consists of an FT757GX and TH21AT. Then came the problem! What was I going to do with this station and no antenna.

Well, I got this suggestion from AC7A, which produced a low cost, low time installation antenna. And most of it was already installed!

The trailer is of wood construction, not the normal metal type. On some of the sides, the manufacturer had installed rain gutters. The drain spouts reached the ground, but did not touch the ground: PVC piping was used to drain the water to the street. So there I already had half the antenna.

Now all I had to do was connect the rain gutters together. So off to the store I went to get the needed materials.

I used #22 wire coated yellow, as that was the color of the trim around the house. With the wire, sheet metal screws, lugs, solder, soldering iron, sandpaper, weather caulking and, oh yes, don't forget the drill, I went to work putting up my antenna.

I drilled a hole in every corner of the rain gutters, sanding the area around the hole to provide a good connection, then installed the lugs with wire attached to the screws. To prevent corrosion, I covered the connections with the caulking and then used a staple gun to secure the wire on the trim.

To feed the antenna I used TV type 300 ohm twin lead, which also fit through the drain hole in the frame around the window, coupled to an MFJ transmatch, to match the load to the rig and get that great SWR down.

If you're wondering, I've worked the world already, all continents except Africa, using barefoot power of 100W on the HF bands. I'm happy with the way it works and there still isn't "any" outdoor antenna! —*Santa Barbara ARC, CA* □

World Radio History

When will AMSAT-OSCAR-13 be in range?

ROSS FORBES, WB6GFJ

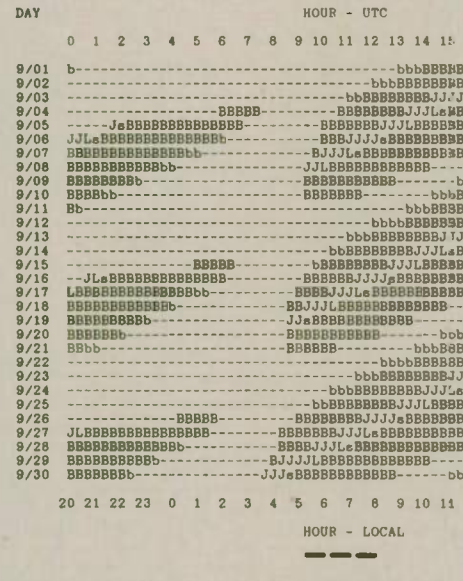
Those just starting out in the world of OSCAR communications would like to know when they can hear a satellite. The following charts are produced to give you a rough idea as to when OSCAR-13 will be within range of your location. The three charts as printed are centered on the following geographic locations: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

As you read the chart nearest your location, keep in mind the following details — all dates and times are given in UTC. The date is printed on the left hand column and the UTC hour along the top.

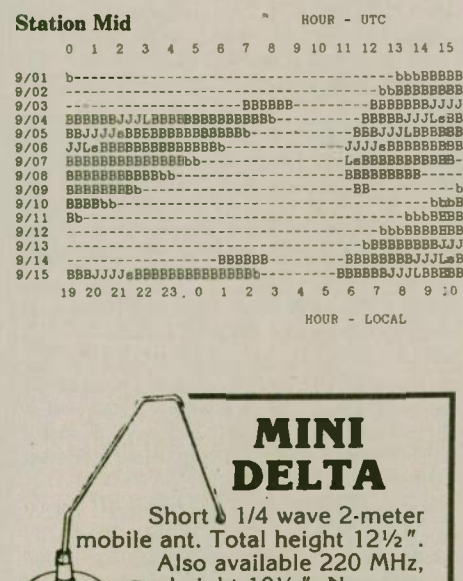
A dash mark indicates the satellite is out of range and therefore not able to be heard. The letter "B" indicates OSCAR-13 is audible at that location and signals should be heard between 145.810 and 145.880 MHz (SSB and CW). A letter "O" indicates the satellite is audible, but the only signal you will hear is the telemetry beacon on 145.810 MHz. The letter "L" indicates the satellite is audible but you will hear signals between 435.650 and 436.000 MHz (SSB and CW).

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

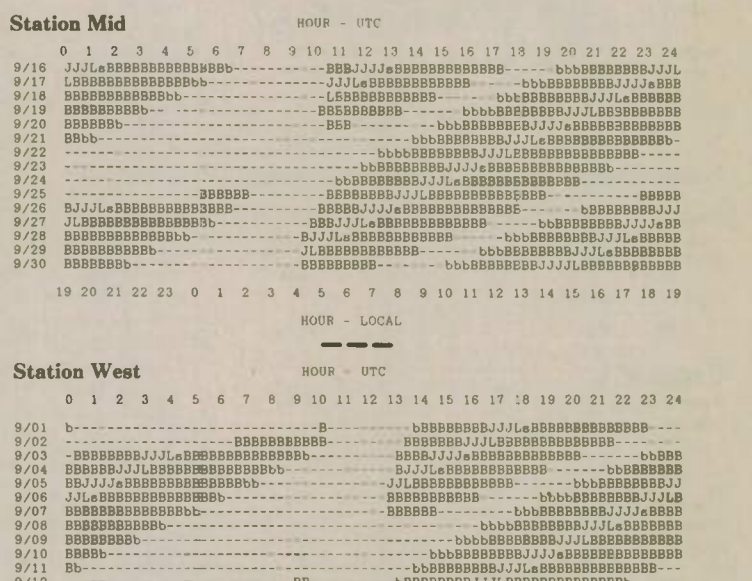
For more information about OSCAR, please send a SASE to either of the following: Project OSCAR, P.O. Box 1136, Los Altos, CA 94023-1136; AMSAT-NA, P.O. Box 27, Washington, D.C. 20044. □



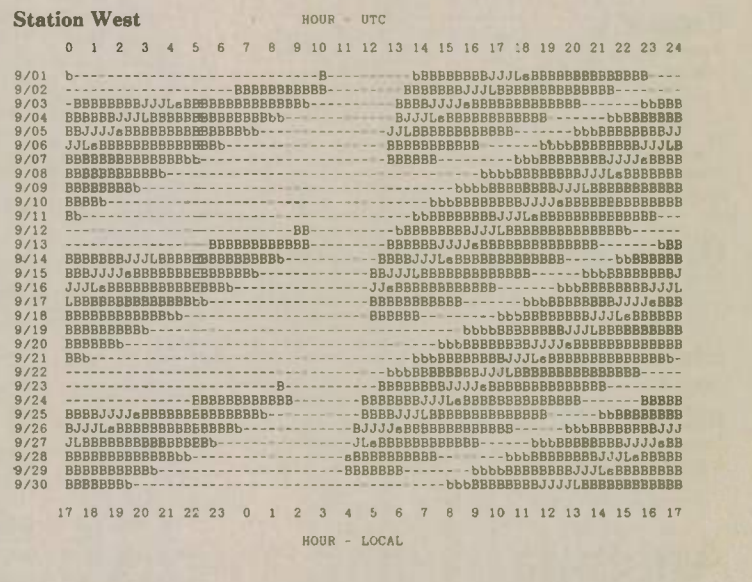
Station Mid



Station Mid



Station West



MINI DELTA

Short 1/4 wave 2-meter mobile ant. Total height 12½". Also available 220 MHz, height 10½". No more hitting your garage door. Ideal for repeater and simplex use. Has worked 45 mi. simplex.

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NOW! **$39.95** We ship.

Includes mag. mt. base and 12 ft. coax and plug.

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*NEW ZIP — Please resubmit prior orders.

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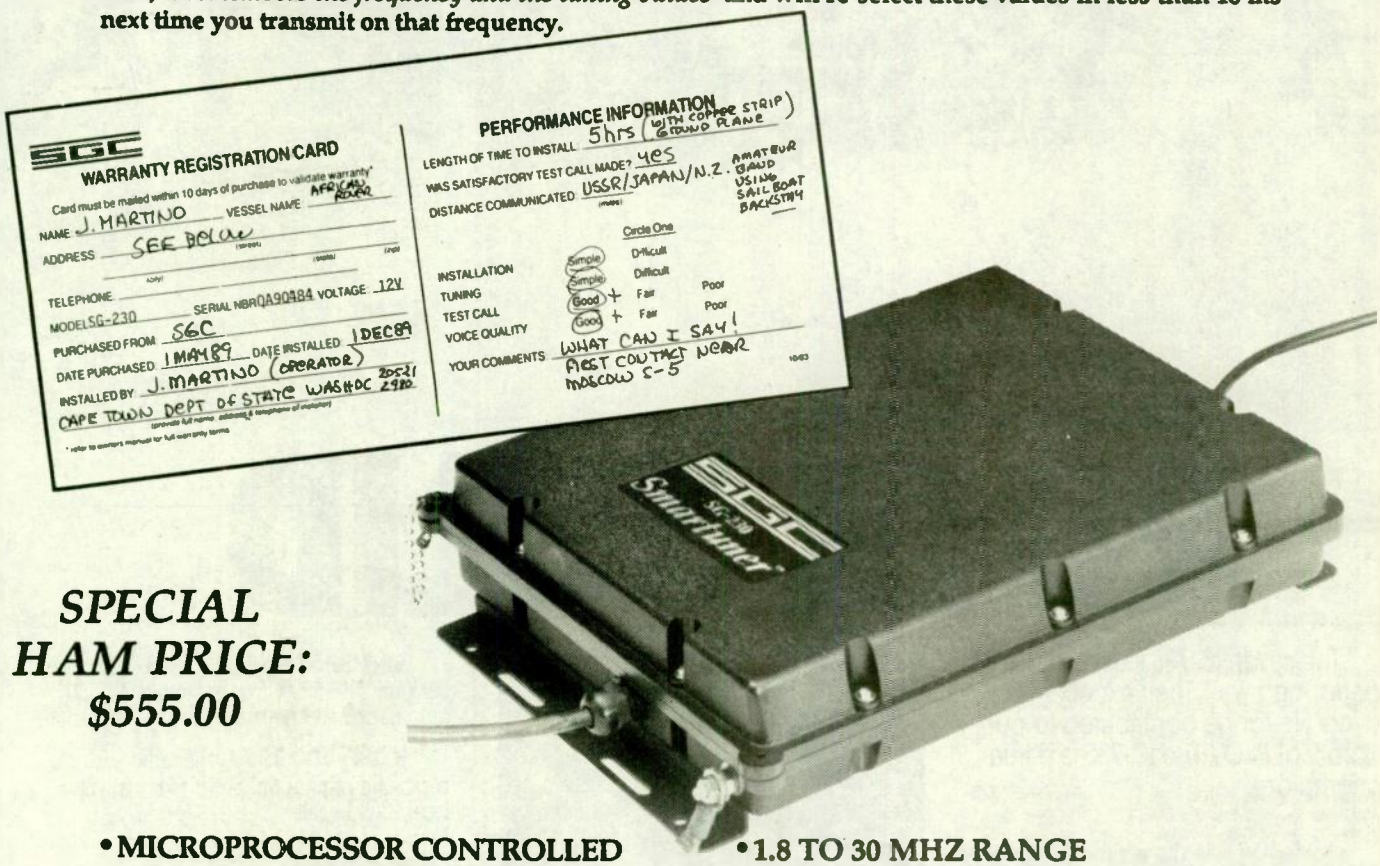

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