

# Worldradio

Year 21, Issue 9

March 1992 • \$1.25

## FEATURES

Bangkok, Thailand — News  
from the Colvins

Bradenton, FL — No  
antenna wires on  
building top?

Knox County, ME —  
Mysterious sunspot  
cycles

Pearl Harbor, HI — Special  
event station

Sacramento, CA — Reader  
survey results

Staten Island, NY — Reunion  
with rescued ship's crew

Western Pacific, aboard RCCL's *Viking Serenade* — Solar  
journey (conclusion)



## COLUMNS

- Aerials •Amateur Hi •Amsat-Oscar schedule •Amateur Radio Callsigns •Awards
- Construction •Contests •County Hunter •Digital Bus •DX Prediction •DX World
- FCC Highlights •Hamfests •MARS •Mobile •New Products •Off the Air
- Old Time Radio •Product review •Propagation •Publisher's Microphone •QCWA •QRP
- Search & Rescue •Special Events •Station Appearance •Traffic •VE Exams
- Visit Your Local Radio Club •Visit Your Local Radio Store •Who's Who

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Sacramento, CA 95818  
or  
P.O. Box 189490  
Sacramento, CA 95818

# Worldradio

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## Pearl Harbor special event station

ANN SHAVER, AH6KY

Commemorating the 50th anniversary of the attack on Pearl Harbor, special event station KH6SP was on the air for 37 hours in true Hawaiian style. In addition to the usual considerations of propagation, frequencies, power and the like, operators were also concerned with wind, rain, tourists, paralyzing traffic jams and family members who didn't always understand why daddy was ignoring them. The special event turned out to be extremely successful by anyone's measure and was Amateur Radio's own tribute to the historic happening.

After months of parallel planning by a group of Honolulu hams and Navy MARS personnel, the two groups decided to join forces. Army MARS and Air Force MARS had been involved in planning with the amateur group all along. Main operating sites included Field Day-type installations at two locations at Pearl Harbor, the Army MARS facility at Schofield Barracks and the Air Force MARS station at Hickam Field. A few amateurs, because of their special equipment needs, operated from their homes, coordinating with one of the lead stations. "It doesn't matter under whose aegis



Using the Emergency Amateur Radio Club's ambulance as a communications base, KH6SP operated from Richardson Field, overlooking the Arizona Memorial. (Photo by AH6BJ)

we operated," remarked Al Shaver, AH6KX, event coordinator for the amateur/Army MARS group. "The important thing is that we got the job done."

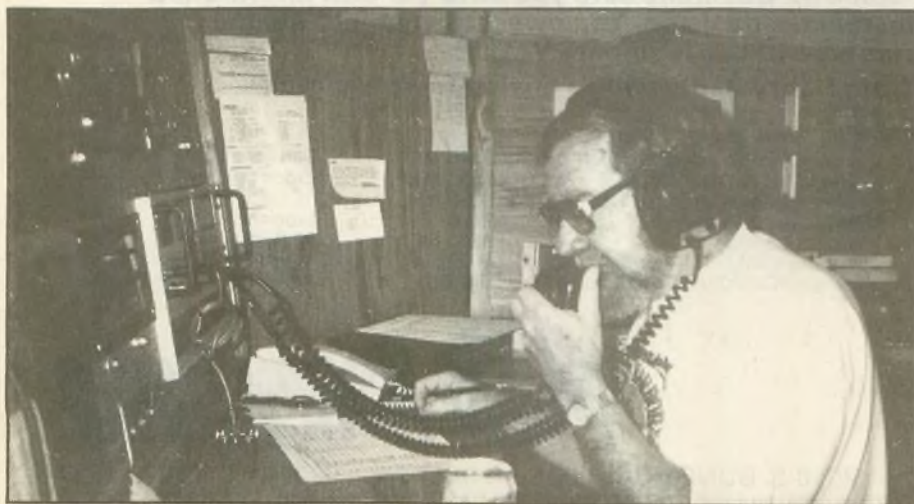
More than 30 operators made over 3,000 contacts using a variety of bands and modes. WARC bands, CW and slow-scan TV generated approximately 1,000 contacts. Calling on 12M phone, WU6T, Rich Bongeorno, re-

marked, "You're my seventh contact with KH6SP today." Obviously KH6SP was taking advantage of a good deal of the spectrum! "It was so windy at Richardson Field Friday evening when we were setting up," mentioned John Elliott, AH6BJ, who arranged for the historic location on the banks of Pearl Harbor overlooking the Arizona Memorial. "Every time the wind blew it wiped us out on the beam. The vertical was still okay. We couldn't do anything about the beam until it got light again."

"The traffic was just horrendous until mid-morning," added Wayne Jones, NH6GJ, who worked with Elliott at the Richardson Field site. "We could have used more operators. Some got trapped in that massive tie-up and were late getting here. Others must have gotten spooked and didn't even try. Still, we did just fine—no complaints!"

The situation was quite different at the Army MARS station at Schofield Barracks in central Oahu. "From our sign-on at 1700Z until sign-off 24 hours later, we always had more operators than operating stations. Or so I'm told—I was six hours late myself,"

(please turn to page 11)



Joe Weite, KH6GDR, operates a Harris rig on 17M from the Army MARS station. (Photo by AH6LS)

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# Reunion lets NY amateur, ship's crew relive rescue

If you received our special 20th Anniversary issue last Spring (distributed primarily at the '91 Hamvention in Dayton, Ohio), you may remember the exciting rescue story retold in "The Last Voyage of the Namar V." Plans for a reunion to honor those involved have been realized.

More than four years ago, a sailing vessel of Italian registry was adrift in the Atlantic, pummeled by the 50-mph

winds of Hurricane Arlene.

But the crew of the *Namar V*—Capt. Edo Guzzetti, I2NSG, his wife, Anna, and Vico Caronni—were not alone in their fear. Amilcare "Percy" Persichetty, W2NHB, an amateur with more than 50 years' experience, coordinated their rescue by relaying their constantly changing position to the US Coast Guard.

Persichetty, a native of Voghera,

Italy, stayed in radio contact with Capt. Guzzetti during the rescue effort. Because no one on board the *Namar* spoke English, he acted as translator between the crew and the freighter *Margaret Lykes*, the first ship to respond to the distress call.

Despite the high seas and heavy winds, the freighter crew was able to ferry the three sailors to safety using cables and a bosun's chair. Unfortunately, Capt. Guzzetti had to scuttle his ship so it wouldn't pose a threat to navigation in the area.

Last spring, Persichetty traveled to Italy for a reunion with the crew and mutual friend, fellow operator Libero Massoni. Massoni, with whom Persichetty has communicated by radio for more than 30 years, was the land contact for the *Namar* crew during the first part of its voyage from Italy.

During his visit, Persichetty was inducted into the Italian Radio Amateurs Association as an honorary member. That was a rare honor, he says, because few memberships are awarded.

Since returning to his Staten Island, NY home in June, he's once again a fixture at his radio controls.

—Alumni News, (Shell Oil Company), December '91. □



Percy Persichetty, W2NHB (center), fellow ham radio operator Libero Massoni, I1VHQ (right) and *Namar V* crew member Vico Caronni (left) reminisce during a reunion to honor the hams for their help in rescuing the crew during a hurricane.

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# Worldradio

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

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

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

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

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## STAFF

Editor and Publisher.....Armond Noble, N6WR  
Managing Editor.....Robin Wortley, KC6RUD  
Associate Editor.....Norm Brooks, K6FO  
Ass't Editors.....Kaye Schwartz/Brenda Leeche  
Consulting Editor.....Lou Ann Keogh, KB6HP  
Advertising Director.....Helen Noble  
Advertising Mgr.....Rosalie Hernandez  
Graphics Director.....Dianne Dunning  
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## PUBLISHER'S MICROPHONE

We now recognize those who graduated magna cum laude, earned varsity letters, made a killing in the stock market and wish to continue their track record of high achievement. The latest to become *Worldradio* Super-Boosters (lifetime subscribers) are:

- Thomas Horan, N1NHE, Stratham, NH
- John Erla, K2DPM, Colonia, NJ
- David Kanitra, Edison, NJ
- John Skubick, K8JS, Naples, FL
- H. Moulds, AA8CT, Detroit, MI
- Al Bowen, WD9DDX, Decatur, IL
- "Doc" Fahey, KB0EPE, Omaha, NE
- Lewis Delavan, WB5H6U, Malvern, AZ
- Timothy Franz, N5VST, Fort Smith, AZ
- Vernon Nesmith, N5QWW, Wichita Falls, TX
- James Cottingham, WA6WRF, Lakewood, CO
- Frederic DeSmet, N7OZP, Salt Lake City, UT
- Robert Keiser, N7VAM, Phoenix, AZ
- Eddie Eck, KO6ALT, Ontario, CA
- Thomas Griffith, N6TWW, Garden Grove, CA
- Travis Wise, KB8FOU, San Jose, CA
- G.M. Greenberg, KG7PL, Yakima, WA

Some of our more experienced subscribers have suggested that we have a reduced "Lifer" rate for seniors. Suggested was \$70 for age 70 or over. Okay! Sounds good to us.

How will we know that you are 70? Send in a photo copy of your driver's license. Those who send in a copy of their DD-214 get it for \$65.

"Your offer of a list of fellow hams in my ZIP code is the best deal in town." —Mick McDaniel, W6FGE, San Diego, CA.

"What a deal! Your ZIP code cross reference is sorely (and surely) needed." —John Dunmire, KB7GYS, Boulder City, NV.

"Your offer pertaining to ZIP code numbers couldn't have come at a better time. We're trying to form a new Amateur Radio club." —Joseph Pen-

ska, KI6CD, Cameron Park, CA.

What they and many others have done is send *Worldradio* a self-addressed stamped envelope (with the ZIP code in big numbers) and \$1; we'll send back gummed labels for every amateur in that ZIP code. If requesting labels for more than one ZIP, include \$1 each. Thanks to those who threw in something extra for the coffee fund).

The point of all this is for those with initiative to use the labels to invite others to the local club meetings, Saturday lunch or other get-togethers.

There are a lot of people who were attracted to this great activity of ours but who do need a little extra coaxing to come out and participate.

And the purely local emphasis may pay great benefits in the staffing of emergency teams. We're better off learning to depend on someone three blocks away than a pal who lives 15 miles away.

Aside from the serious, we think the local get-togethers will help more to

share in the great camaraderie that is so much of Amateur Radio.

If you've been to all the stores in your area and can't locate the Amateur Radio or electronics book you've been looking for, call Craig Clark, NX1G, at the Ham Radio Bookstore: 800/457-7373; FAX 603/899-6826.

As mentioned before, Bangladesh, probably the most devastated spot on the face of the earth, is trying to get on the air. Anything you wish to donate would be greatly appreciated. The address is Bangladesh Amateur Radio League, GPO Box 3512, Dhaka, Bangladesh.

We've all heard people say they would like to get an amateur license but they don't have time to (1) learn CW, or (2) study theory. What does it matter? They wouldn't have time to get on the air either, so it's no loss.

For those who do want to learn or improve their CW, here's a suggestion: The doctors these days are telling all of us to walk at least half an hour a day. Get one of the CW courses on cassette and take that with you on your excursion—CW on the Walkman.

Every club bulletin sent to *Worldradio* is indeed read. And we'd like to sincerely thank all those bulletin editors who recently have been mentioning *Worldradio*, giving our address and the subscription price. Be sure to contact us when you are working on your hamfests and we'll do something nice in return.

—Armond, N6WR

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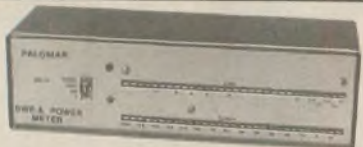
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# We hear you

At last the 1991 Reader Survey is complete. We evaluated the data with the goal of finding out what readers want more of in *Worldradio* while working to determine what things might be juggled to accommodate enough space. We evaluated the readership percentages for each column and made the following scheduling adjustments.

The QRP column will be run monthly, as the survey responses reflect an increasing interest in low-power operation; 10-10 International News, MARS and Amateur Satellites will appear bi-monthly, as they appeal to more specific groups of amateurs; a bimonthly youth column by Travis Wise, KB8FOU, encouraging more active involvement of young amateurs will be introduced shortly; and we hope to have more frequent submissions from C.H. Stewart, KD5DL (author of "Great Circles to DX Success," Sept. '91), on how small calculators can be useful in Amateur Radio.

As you may have noticed, *Worldradio* is growing in size. It is still a challenge, however, to find space to accommodate all the printworthy material we receive from you every day. With these adjustments we anticipate that we will have plenty of room to continue increasing the number of construction articles and antenna projects, as our readers indicate they'd like to see. We should also have ample room to reprint more of the great articles and wonderful tips which first appear in your newsletters from around the world.

Listed below are some of your comments which give some impression of the kind of changes (and non-changes) that you the readers would like to see.

### Technical

More articles on basic electronics, such as how transistors work as amplifiers, or how oscillators work . . . Tiny, tiny simple solid state devices . . . More

"hints and kinks" . . . Adaptation of eqp., for emergency/portable ops (i.e. packet, repeaters, power sources, etc.) . . . Articles on installation of antennas, station gear, feed-through for antenna transmission lines, etc. on small city lots . . . Articles on equipment/system repair/debugging . . . Construction articles on antennas and on useful items for use around the shop and shack (test equipment and test techniques) . . . More articles on VHF/UHF, 1.2 GHz, and microwave, covering antennas, transmission line, propagation, repeaters, operating procedures, etc. . . Info on good kits and other toys . . . More mobile, indoor antennas, and artificial grounds that work . . . Two electronic features—one to teach or review basics, and one discussing testing and troubleshooting . . . More wire antennas; more product reviews . . . More on antennas and tuners, equipment reviews, and construction . . . Especially like Kurt N. Sterba . . . More simple construction projects . . . Breadboard projects.

### Column suggestions

Maybe a bimonthly column on SWL to attract potential hams . . . August Mobile was great; how about more on established HF nets . . . More on AMSAT-OSCAR and satellites . . . Kurt Sterba's Aerials is a very truthful column by a refreshing writer! . . . The DX column is great; enjoy J. Minke's format and background information . . . Expand the mobile and mobile marine coverage . . . More QRP info and construction on a monthly basis . . . DX World should show more upcoming DXpeditions since that would help a much larger part of the amateur community . . . Find Aerials very informative and *entertaining* . . . Less space for QCWA, Who's Who and 10-10; more on antennas, special events and FCC highlights . . . Less on Digital Bus, County Hunting, and Search and Rescue . . . Keep Handy-Hams—though I don't always read it, it's important for those who do . . . More Kurt Sterba's Aerials—if this column gets dropped, I drop *WR* . . . I've subscribed for years and usually read from cover to cover. I like to see all the columns every month. Get Kurt N. Sterba back in each month! Very much enjoy New Products, Product Review, Station Appearance, Construction . . . Expand DX type news and QSL information . . . Keep up the good reporting on IOTA . . . More product reviews . . . Information on any software available that pertains to tracking grid squares worked on VHF and also counties (any band), using an IBM or MS-DOS format . . . How about a VHF column to replace the Six Shots column, plus 2M SSB and above news.

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## Other ideas

Old radio history . . . Info on repeater operation/maintenance and upgrades/accessories and add-ons . . . More articles on Novice training, esp. concerning operating procedures (many Novices read *WR*); also more space devoted to CW matters . . . Article on maritime operation, installation, protocol, etc. . . More on satellites; they are hams' future . . . More on YLs, YL nets, YL contests, DX net listings . . . More about Joe Average DXers; we get lots of info on the big guns and DXpeditioners, but none of these guys would be able to survive or gain notoriety without us in the pileups. Most of us don't have megabucks, rotatable beams or endless hours of free time to pursue the hobby, yet many of us are on or near the honor roll . . . More articles on new no-coders and proper operating techniques—new hams bringing too much CB language with them, causing needless resentment from older hams . . . More pictures and stories about individual hams, especially in European and Soviet call areas . . . More features on net operations . . . More on teaching ham radio classes . . . More for Novices and learners; more on safety . . . Stories of ham operators who live in exotic places, like on islands and in foreign

countries, where ham radio is low profile or there are very few licensed operators . . . Would like to see some old tube-type from back in the 20s and 30s on receivers and transmitters once in a while . . . A little more news on Slow Scan—quite active on 20, 15 and 10M . . . Real-life stories, adventure and/or teaching young people . . . rare dedication, service, etc. . . ARES, RACES and "how to" in an emergency . . . Any articles to do with weather nets (Skywarn) and things that have happened . . . Articles about (and suggesting solutions for) the mess on 20M (14.313) . . . Something promoting the standardization of message headers, address, etc. for local, national and global traffic systems . . . Articles on how to learn code faster, easier . . . More on RTTY, AMTOR, packet, digital, and computers . . . Articles on ATV and SSB/CW DXing on VHF and UHF; also, articles on microwave frequencies  $\geq 1.2$  GHz . . . Monthly information on nets . . . More public service activities.

## Constructive criticism

*WR*'s unique strength is that late-breaking news appears two to three weeks before the same info appears in *QST*, *CQ* or *73*. Should play up this strength more than you already do,

reporting news on DXpeditions, FCC developments, etc. . . Story about the five-year-old with a Novice ticket makes me wonder if a ham license is all that much to be proud of. It does seem to answer the question of why some with Advanced licenses can't answer simple questions. They learn by rote the answers, and after the FCC test, promptly forget what little they knew . . . Become more of a national magazine, not so much on California . . . I would like to know when a manufacturer goes out of business, not find out on the air six months or a year later . . . You have gotten away from interesting projects in QRP and antenna columns . . . Single issue devoted to Dayton and other conventions, not several!

## Compliments

Like *WR* because of news format—very readable and enjoyable . . . More of the same; I started to X the columns I liked most and then it dawned on me that I like 'em all! With 35 years as a licensed ham I feel like I can make a pretty fair judgement regarding ham publications, and I feel on safe ground when I say that *WR* whips the pants off all the rest . . . Publisher's Microphone is well composed; numerous small (please turn to page 12)

# From Bangkok, December 1991

Dear friends,

We have just completed a successful operation in Bangkok, Thailand, as HS0ZAP.

John Vajo, HS0ZAA, has been instrumental in getting licenses for foreign amateurs and also in assisting Thai nationals in qualifying and operating. He is custodian of radio station HS0AC. It was through his efforts and also Vikrom, HS1HB, President of RAST, that we obtained reciprocal licenses and permission to use the club station. (Home licenses are much more difficult and the red tape takes a great deal of time.)

We operated from the club station using their antenna and our equipment. We stayed at a guest house located 22 minutes walk away. (We were told it was five minutes but it took us 22 minutes.) The bands were not

good, and we were not at the station continuously so often missed some of the sporadically good openings. We made over 1,500 contacts and contacted 120 countries which will eventually assure us of DXCC. We attended the Seanet Conference in Chiangmai, Thailand, and enjoyed it very much.

We go now to Vietnam, where we may or may not get permission to operate. 73 ES 88, Lloyd, W6K6 and Iris, W6QL, Colvin

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Jack Kelleher,  
W4ZC

### FCC refuses to restrict amateurs in RFI cases

The FCC has said "closed" to two unusual, long-running conflicts between radio amateurs and their neighbors over susceptibility of home electronic products to radio frequency interference (RFI and TVI).

In one case, neighbors actually filed a Petition for Rulemaking to restrict amateur "broadcasting." They proposed to prohibit private amateur transmitters in areas of dense population—hams would have to use "remote, multi-user broadcast facilities" instead.

In the other case a neighbor, after extensive unsuccessful legal proceedings against an amateur, appealed to lawmakers for help. He argued that, among other things, the advent of communications satellites has rendered the Amateur Service "largely obsolete." The request was treated as a Petition for Rulemaking by the FCC, which defended its policies and declined to stop the amateur operations.

The FCC responses are contained in a similar letter sent to both neighbors (reprinted in the *W5YI* article and also in the *ARRL Letter*, 12/19/91). The *W5YI Report* says further that the letter may provide some guidance and moral support to hams who face irate or even threatening neighbors who own interference-prone consumer products.

### Number of new amateurs doubles

Figures released by the FCC continue to show that abolishing the Morse code requirement is causing the number of new hams to increase dramatically. The average number of first-time Amateur Radio licensees for the period April through October, 1991, is more than 100 percent greater than the average of the four prior years.

The first Codeless Technician operator license was mailed on April 12, 1991. April was thus the first full month of issuing the Codeless Technician Class license. 29,399 newcomers joined the Amateur Radio ranks between April and October, an average of 4,200 a month, compared with an average of 2,065 for the same period during the last four years. During 1991 65 percent of all newcomers entered ham radio via the code-free Technician path; only 33 percent entered as Novice operators. (*W5YI Report*, 12/15/91)

### 220 MHz repercussions

Last month, under "More on 216-225 MHz," we mentioned a new ARRL petition (filed Nov. 12, now designated

RM-7869), to create a subband for weak-signal communications between 222.0 and 222.15 MHz (actually, the petition cited a number of types of experimentation which can be categorized as weak-signal communications). Among other things the ARRL petition stated that "in order for a weak-signal segment of the 222-225 band to be created as herein proposed it may be necessary to relocate certain repeater operations elsewhere in the band."

One consequence of establishing this subband might be that alternative frequencies cannot be found for some repeaters, especially in densely crowded areas such as Southern California. According to *Westlink*, California hams are vowing to make this a "fight to the death."

*Westlink* goes on to say: "An ARRL spokesman said that he is aware that the action will have an adverse impact on repeater operations and auxiliary links, but says the organization feels that the needs of non-FM interests must also be protected." Also from *Westlink*: "While the ARRL stand is drawing praise in some quarters, FM interests in Southern California are charging that the League has bowed to political pressure from the small but vocal band of experimental users and 'sold out the FM community.'"

Comments by *Westlink* Editor Burt Hicks, WB6MQV, are worth noting. Burt says: "*Westlink Report* is usually biased to promote experimentation over simple communications because of our desire to see Amateur Radio con-

## 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 January 1, 1992.

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

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
0	AA0GU	KF0WA	N0QKP	KB0JUH
1	WZ1V	KD1GB	N1KWX	KA1ZOV
2	AA2HQ	KF2FZ	N2OYD	KB2OAN
3	WU3L	KE3AQ	N3LFS	KA3ZQX
4	AC4MM	KO4OV		KD4IMJ
5	AB5DM	KI5WT	N5YDF	KB5QXA
6	AB6IB	KM6NP		KD6EKR
7	AA7MH	KG7XR	N7VOX	KB7OMS
8	AA8FT	KF8RJ	N8RKT	KB8NJY
9	AA9CR	KF9HG	N9NRH	KB9HKS
North Mariana Is.	AH0K	AH0AI	KH0AR	WH0AAQ
Guam	KH2X	AH2CN	KH2FR	WH2AMW
Johnston Is.	AH3D	AH3AD	KH3AG	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6LS	WH6EA	WH6COU
Kure Is.			KH7AA	
American Samoa	AH8D	AH8AE	KH8AI	WH8ABA
Wake Wilkes Peale	AH9B	AH9AD	KH9AE	WH9AAH
Alaska		AL7NV	WL7BA	WL7CDI
Virgin Is.	NP2T	KP2BZ	NP2FE	WP2AHL
Puerto Rico		KP4TD		WP4KVA

### VEHICULAR CALL SIGNS

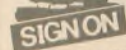
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tinue to contribute to the state of the art. However, unless someone can convince us that there is some practical purpose in "fine tweaking" our technical expertise in low power CW or SSB, or in EME work at these particular frequencies, we must consider several things. First, most of these specialized activities take place on 144 and 432 MHz. The equipment is more readily available (yes, I know some hams still build their own), and there is a several hundred kilohertz guard band on each. In addition, these systems serve dozens of users each, not just one person. Perhaps a compromise can be

worked towards. In much of the country, a good part of 222 MHz is still underutilized, while in the major cities such as Los Angeles, there are often two or even three repeater systems on the same frequency, using "PL" and DTMF tones to access the desired one. *Westlink* believes that if surveys were conducted showing just how many repeaters, auxiliary links, control receivers and users currently occupy this 150 kHz of spectrum which could not be moved to other frequencies in the band, a list of cities might be developed that could be excluded from the proposed ban on FM operation.

Add a suitable radius to reduce on-channel interference and a workable solution might be developed. No, it's not perfect, but amateurs have become experts at working weak signals through QRM. Maybe, when conditions favor tropo or meteor scatter work, many of the systems could be encouraged to shut down, for the few hours it exists. And thousands of people wouldn't have to lose the use of tens of thousands of dollars worth of equipment."

Your editor does not subscribe to this particular solution to the problem, but recalls that band-sharing has at least three dimensions: frequency, time, and geography.

#### Potential tower troubles

Clay Frienwald, K7CR, writes, "Next year will see the FCC increase the number of inspections of commercial and broadcast facilities, and with that comes a stern warning: The engineers will be looking at towers. Already in this area of the Pacific Northwest the FCC has been out looking at commercial towers with a Global Positioning System receiver, checking to see if the coordinates noted on the station license are in agreement with the GPS device. The situation is even more critical when it comes to tower lighting and related safety measures. The FCC has made it very clear that in the event that they inspect a facility and find a tower violation, *every license on that tower will be fined.*

"If you operate an amateur repeater system on a commercial tower, especially one that has marking or lighting requirements, you had better make certain that the structure is in full compliance and is kept that way. You cannot delegate this responsibility to another person even if you are getting tower space free of charge. Several amateur repeater stations around the country have already found out that the new FCC initiative into tower compliance has the teeth to bite into hams with ease." (*Westlink Report* 12/12/91)

#### Other Briefs



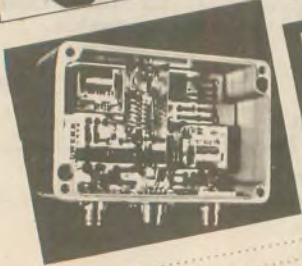
- The FCC has denied and dismissed a Petition for Rulemaking received July 26, 1991, from Scott Schoenbleben, N4UAD, of Liberty, KY. Scott requested \$97,305 be amended to prohibit AM (A3E) and FM (F3E) emission in any portion of any amateur band below 28 MHz.

- The FCC denied a request from James H. Larson, WB4KQQ, of Memphis, TN, that the commission "change its definition of a frequency coordinator and narrow the group of licensees who are eligible to decide who will be recognized as the local frequency coordinator." (*W5YI Report* 12/15/91) □

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# Pearl Harbor

(continued from page 1)

Richard LaChance, AH6IO, conceded. "We had super conditions at Schofield. We used two of those Harris rigs the company donated to Army MARS (see *Worldradio*, April 1991). Our third station, a Kenwood-940, was dedicated to CW the whole time. All three fed log periodics."

"We had a steady stream of eager participants during the entire event here at Schofield. Some of them were not Army MARS members when they arrived, but we fixed that!" chuckled Joe Hao, WH6F, State Director of Army MARS. Actually, operators at Schofield did not need to be MARS members nor was pressure placed on them to join. The excellent equipment and the convivial atmosphere were enticing lures, however. "It really was great fun and a terrific training experience," Hao continued. "About midnight someone arrived with emergency rations—a big pan of ribs, a tub of rice and a bowl of salad. That did wonders for our morale!"

Not that food or morale had ever been scarce at Schofield. "I thought I'd drop by for just a few minutes to see what was going on," explained John Miller, KA6NEI, who had earlier made several contacts via slow-scan TV. "I started operating 17M phone and just couldn't stop." Miller's two young daughters had fun meeting other hams while he logged HF contacts. "That evening we told my wife what a good



**Marcus Reed, WH6D, and Joe Hao, WH6F, welcomed everyone to the Army MARS station at Schofield Barracks. The MARS roster grew as a result of this special event. (Photo by AH6KX)**

time we had, and we all decided to come back for another session." Miller's wife, Dianna, is studying for her codeless Technician ticket.

Several operators had witnessed the attack 50 years earlier. "I was working with a crew at Red Hill, overlooking Pearl Harbor," reminisced Mingo Correa, KH6BRN. "When it started,

several of the guys wanted to leave, to warn their families. Our boss made us stay in the tunnel—that's why none of our group was injured. "I watched the



**Al Shaver, AH6KX, calls on 2M trying to locate Richard LaChance, AH6IO, who was caught in horrendous traffic en route to the event.**

captain of that battleship (*USS Nevada*) get it going during the attack and run it aground so it wouldn't block the channel. Years later I talked with a ham who had been a crew member on that ship." Correa operated primarily on 12M phone.

As a personal tribute to the historical event, Chuck Burch, AH6IN, retransmitted the text of the original message informing the world of the attack. "I sent the message at 1756Z, 50 years to the minute later, to honor those men still down there." Burch, a retired Navy man, operated 20M CW from his home for 15 hours. Don Shook, AH6A, also operating from his home, relieved Burch for four hours. "Don and I work real well together. When he was ready to relieve me, he just sent his call sign. I worked him and then he took over. I don't think anyone in the pileup even noticed the change," Burch said.

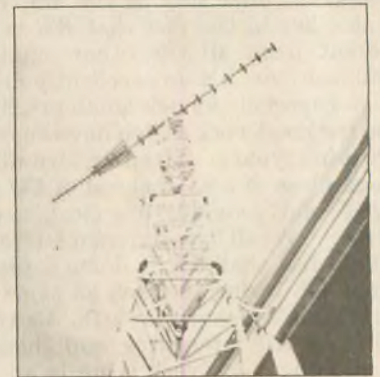
Many who called the commemorative station also had personal ties to the event itself. "I heard the bombs fall," said Chet Almond, N6DRU, who had been listening that Sunday morning 50 years ago on 10M. "I heard the

attack and then I heard the FCC close down Amateur Radio."

"I'm glad I could work you there at Schofield Barracks," said Fred Evans, W2ECC. "My son's father-in-law was at Schofield 50 years ago and is in Honolulu today for the memorial services."

"There were times I really wondered how this would turn out," admitted Shaver. "Now we know—it went great! A lot of people worked hard over the last several months—no wonder it turned out so well. All in all, the Honolulu amateur community has a lot to be proud of." □

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## Survey

(continued from page 7)

items make a good format . . . Your gracious acknowledgement of ARRL and QST contributions is certainly nicer to read than W2NSD's record-breaking scolds . . . The DX World is my favorite and very nicely organized . . . The Beasley cartoons are great . . . I read every single ad . . . Enjoy news and feature articles, product reviews—keep it up! . . . My wife and I read the complete *WR* magazine cover to cover including the antwads (want ads) or the Mart as it is called. We really do read *WR* from one end to the other; we read holes in it . . . Can only say that I really enjoy the whole magazine! I read it through before putting it down—it's sort of like a visit from a good friend. Keep up the good work! . . . Just stay as you are. Your value lies in the fact that *WR* is different from all the other amateur publications; it's an excellent publication, especially for new amateurs. Keep up the good work as you have done for 20-plus years. Often information regardless of area is ahead of *CQ* and *QST* and provides practical, useful data . . . We all have different interests, and I feel that *WR* is doing a pretty good job trying to reach all hams . . . It's basic and down to earth. Also find Off the Air interesting and thought provoking . . . Every issue is an improvement and after 15 years with the ARRL I've decided to drop them in favor of *WR*. I like the style and simplicity of all the articles . . . Don't change too much; you might do like a lot of businesses and improve yourself right out of existence! . . . No changes! Keep up the good work . . . You've covered everything that I can think of and I read *WR* from cover to cover . . . I was away from ham radio for about two

years and when I got back into it and upgraded my station and subscriptions I couldn't wait to subscribe to *WR*! . . . I also subscribe to *QST* and *CQ* but I enjoy *WR* the most, cover to cover . . . Darn good paper! . . . Very good issue (Aug. '91); found the article, "Is Amateur Radio Safe?" to be extremely important and useful. Newly subscribed but have found the first three issues a pleasure to read! . . . Best of all is A. Noble's approach in present-

ing this publication, and that's why I'm a life subscriber. P.S. *WR* has the best writers as a whole!

That's you! Don't forget that *Worldradio*, unlike other amateur publications, is almost entirely reader-written. Armond Noble, N6WR, and the *Worldradio* staff do work hard to maintain our goal of comprehensive Amateur Radio news coverage in an enjoyable, readable format, but it just wouldn't be *Worldradio* without YOU.

## Pitcairn Bicentennial Award

Gary O'Toole, KB6ISL, has reassured us that although the Pitcairn Bicentennial Award is regrettably delayed, it is in production. Initially KB6ISL ran into legal and production problems, primarily in regard to the original artwork for the certificate which featured a copyrighted picture. He says a new design is under way, and he anticipates that the awards will be off to their recipients no later than March, 1992.

O'Toole also stated that the opera-

tion period to qualify for this award was extended through December 31, 1991. Many applicants of the award may have expected to receive theirs months ago, but it should be understood that the awards will be produced and distributed all at once. DXers are asked for continued patience. Anyone wishing a refund instead of waiting for the award may request one from KB6ISL; he says that a few amateurs have already done so and have been reimbursed. □

## Postal changes

### IRCs

International Reply Coupons now will provide air mail stamps for returns replacing surface returns.

The IRCs are controlled, printed and issued by the Universal Postal Union, a foreign body. They decided to have all IRCs exchangeable for air mail last February 3, 1991, but made a printing error and didn't make the word change on the back side until recently. The back side of the new IRCs now reads as follows with the price remaining the same: "This coupon is exchangeable in any country of the Universal Postal Union for one or more postage stamps

representing the minimum postage for a priority item or an unregistered letter sent by air to any country."

It is recommended that anyone buying ICRs should call their local post office to see if the new forms have arrived yet and have replaced the older issue.

If the offices in your area don't have the new IRCs you could call your local divisional headquarters and ask to speak to the Supervisor of Accountable Papers; tell them about the new forms and ask for their help issuing to their local post offices.

### Overseas military mail

All APO and FPOs have dropped the cities of Miami, New York and San Francisco following the APO and FPOs. Effective September 1, 1991, changes are as follows:

Army and Air Force APO Miami now are:  
APO AA Zips 34001-34061

Navy FPO Miami now are:  
FPO AA Zips 34050-34099

Army and Air Force APO New York now are:  
APO AE Zips 09001-09814

Navy FPO New York now are:  
FPO AE Zips 09415-09552

Army and Air Force APO San Francisco now are:  
APO AP Zips 96201-96555

Navy APO San Francisco now are:  
FPO AP Zips 96269-96686

Example: SSGT Stanley Libman, Unit 908 Box 111, APO AP 96522-1215.

These changes were necessary for the Postal Automation Program and computers that sort the US Mail. The APOs and FPOs addresses need to be changed as soon as possible. □



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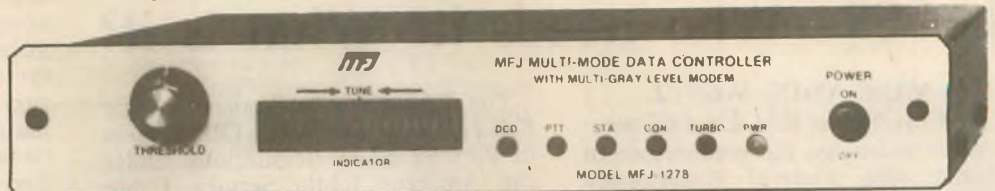
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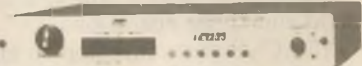
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# PUBLIC SERVICE

## RACES — Who needs it? What is it?

**BILL MUSLADIN, W6BTJ**  
Assistant State RACES Officer

Many years ago the predecessor to FEMA (the Federal Emergency Management Agency) was instrumental in the creation of RACES, the Radio Amateur Communications Emergency Service. Today FEMA's connection with the RACES is much reduced, limited to the award of monetary grants to government agencies which have RACES units for purchase of communications equipment. Note that these grants go to the sponsoring governmental agency, and not to the RACES unit itself. This is because RACES units must be sponsored and controlled by the governmental agency responsible for disaster control and recovery. These agencies are at the state, county, and/or city level. FEMA itself does not sponsor or control the RACES program at any level, nor is there a federal RACES.

The RACES is authorized by the Federal Communications Commission in Part 97 of its Regulations, under the Amateur Radio Service. Other radio services authorized and controlled by FCC regulations include local government, police, fire and many others. They are all, in effect, enabling rules to provide radio communications for eligible users. Within the limits of these enabling provisions the FCC does not control how the communications service is staffed, administered, or provided. Sometimes Amateur Radio operators think that Part 97 is the begin-all and end-all of RACES. However, that is not the case. The FCC does not tell its licensees (whether fire, police, amateur, or others) how to administer and run those operations.

RACES units function to augment, at time of need, disaster related communications capabilities of their sponsoring agencies. Thus RACES traffic will normally consist of disaster related communications *between governmental agencies*. This is the key difference between the RACES and the ARES, the Amateur Radio Emergency Service, developed by the American Radio Relay League. ARES

may handle disaster related traffic, such as health and welfare messages, support of the Red Cross, and the blood bank system. Such agencies and services are usually equally as vital in dealing with an emergency, but the communications requirements they generate are not between government units, and therefore are *not* the function of the RACES. Disasters, by their nature, may blur the distinctions between the RACES and ARES in practice, but the distinctions remain important.

For example, RACES traffic is typically between government locations, which means the home based amateur gear can have little utility, except possibly as relay facilities. RACES volunteers, when called up by their governmental sponsor, must expect to work away from home, either at a permanent or temporary government establishment. Also, RACES volunteers may be called upon to operate non-ham government radio gear and on non-amateur frequencies.

There is a third, more vital distinguishing difference between RACES and ARES volunteer radio amateurs, possibly the most important one to the RACES volunteer. RACES volunteers, when called up by their sponsoring government agency, are legally (if unpaid) employees of that agency. As such, that agency has a legal responsibility for each individual's health and welfare from the time he or she leaves home until return. In California the government's



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responsibility to its volunteers is met through the Registered Disaster Service Workers program. By recognizing in advance of call-up that RACES volunteers are an integral part of their disaster response team, each volunteer is covered just as are the paid personnel. The sponsoring governmental agency's responsibility to its volunteers has been recognized throughout the state. A survey of state, county, and city governments sponsoring RACES units overwhelmingly favored participation in the Registered Disaster Service Worker program, for their own protection as well as that of their volunteers. While

registration as Disaster Service Workers is not a requirement in the FCC regulations covering the RACES, in California the requirement is considered a prudent response to an obvious need.

In many areas of California the RACES has developed into a respected and dependable adjunct to regular staff, to be called upon with confidence. Just as there are volunteer firemen and reserve law enforcement elements in many governments, RACES volunteers have become equally important and respected as their "deputy communications" personnel. □

## The use of "outsiders"

"Why don't you go outside of government for all of your communications volunteers? That is, such as directly to clubs or local non-government organizations?"

RACES officials are frequently asked this from around the country. It sounds appealing to call upon an outside organization to provide prompt and skilled support whenever needed for tasks large or small. But today the situations are such that what is required are people (paid or volunteer) who thoroughly understand and are familiar with the organization, policies, practices and procedures of the served agency.

The best way to have that benefit is to have the volunteers as part of your governmental organization—as an active and vital RACES or auxiliary communications unit.

While historically this country has seen its citizens responding to their neighbors in all types of emergencies, and this still is a part of our nature, in many areas today there is some local authority charged with virtually any conceivable emergency. The conse-

quence is that the volunteers need to be a part of the appropriate government in order to be properly involved. RACES is such a public safety communications activity.

Our experience indicates that volunteers need to understand that they serve the agency on the agency's terms. In so doing that volunteer is afforded (at least in California, by law) certain recognition and protection, such as liability and workers compensation coverage. I suppose you'd call such volunteers the "insiders"? But I refer to them as registered with the agency in the appropriate manner. All volunteers with governments in California are registered disaster service workers in accordance with state law. We do not accept the services of anyone not so registered. To do so leaves too many people unprotected.

—Cary Mangum, W6WWW, CA Chief Radio Officer, California Office of Emergency Services. Check the policies and procedures of your local RACES and find out how you can become a qualified volunteer. □

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# What do you mean, no antenna wires on top of the building!

**AL VAYHINGER, W9ELR**

Living in a condo sometimes presents a problem as to how to radiate a ham signal out of the shack. As the rules and regulations on our condo stated, "No wire antennas on the roof," I finally obtained permission to install a Mosley MA-3, three-band mobile whip onto the air conditioner compressor on top of the roof. (The compressor belongs to me—in our case each condo unit has its own compressor on the roof.)

As no external cables could be run, I pulled the 220V wires that run to the compressor out of the conduit, added about 50 feet of RG58U coaxial cable and pulled the AC wires, along with the coaxial cable, back into the conduit. These AC wires terminate in the electrical service box in the condo. Our apartment is on the third floor of a four story building; however, this arrangement could be used on any floor of a condo. By mounting a standard fender antenna mount on the compressor on the roof (remember, this is my compressor) the hard part of the job is completed.

The instructions that came with the Mosley MA-3 were well-written and easy to follow. After adjusting the antenna per instructions, I began working 10, 15 and 20M phone using a Yaesu FT-757GX II with an SWR well below 1.2 on all three bands. An antenna tuner can be used if necessary. I didn't need one.

The great thing about the MA-3 is that there are traps in the antenna and no antenna switching is necessary to go from one band to the other. Be sure to make the coax feed at least 24 feet long. Longer than this will not hinder your operation.

The metal in the air conditioner compressor along with the electrical conduit will act as a ground plane. The concrete slab roof has metal reinforcing rods in it and I would guess that the metal rods add to the ground plane effect.

I have been using this system for about six years and get good reports on all three bands. Although this arrangement will not equal a 3-element beam, it is much better than any indoor antenna. Before attempting any



of this, make sure that you have disconnected the electrical wires involved and use the standard precautions when working around the electrical service box. If you don't feel comfortable doing this work, get a qualified electrician to do the electrical work. 73's and enjoy your hobby in a condo apartment. □

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The new Kenwood KIDS program is being announced with a special mailing to over two thousand ARRL Amateur Radio clubs in the United States. This mailing invites each club to join Kenwood in sponsoring a local junior high or high school class, scout troop, or youth club for Kenwood KIDS. Each club responding to the mailing will receive a package of educational materials including 10 copies of the ARRL publication, *Now You're Talking* and the companion Instructor's Guide. A certificate for the new Kenwood *Ham Windows* program is also included.

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puter screen," says Mike Forsyth, western regional manager.

"Getting licensed is a big part of Kenwood KIDS," added Wayne Yoshida, eastern regional sales manager. "Every successful licensed Kenwood KID will receive a \$25 Kenwood gift certificate, while the sponsoring club will receive 10 \$25 certificates for each successful class. Also, the schools and clubs can win complete HF stations."

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responsible for providing local assistance to elmer the Kenwood KIDS. Kenwood will provide the educational materials, promotional items and certificates to the first 1,000 responding clubs free of charge.

For more information on this program, contact Kenwood's Communications and Test Equipment Group at 2201 E. Dominguez Street, Long Beach, CA 90810, or call Mike Forsyth at 310/639-4200. □

## Those mysterious sunspot cycles

SAM BEVERAGE, WIMGP

Having been involved in shortwaves for almost 60 years I have been aware of many changes in propagation from season to season and over periods of years but I have never been able to find any explanation of the 11 to 12-year cycle.

Since I have been through so many of these ups and downs and do not know how many more cycles I may be around for, I have decided to come out with a theory that at least satisfies me. Here it is.

Using the following sources I gleaned a bit of information: Dr. Les Radnay's W1PL, reporting in the *QRA News* (monthly newsletter of the Quan-

napowitt Radio Association) of September 1991; the *New York Times* article dated Sept. 24, 1985, entitled "Sun's Rotation Defies Expectation"; "The Case of the Missing Sunspots" that was written by DeLancy in the Feb. 1981 issue of *Astronomy*; *The Encyclopedia Britannica Science and Technology Illustrated* Vols. 9, 17 and 25; and other miscellaneous undocumented bits of information picked up along the way. Studying this material for some time I found the following positive statements:

1. The various areas of the sun rotate at different speeds.
2. The rotation is counterclockwise.
3. The solar crust is granulated.
4. The rotation at the solar equator is 25 days.
5. The rotation at the poles is 33 to 35 days, depending on which account is correct.
6. The sunspots first appear near the poles and move toward the equator where they disappear. The transit time for this phenomenon is not given.
7. The sun's crust has "solar holes," maybe like Swiss cheese?
8. There is some indication of a change of polarity.
9. The poles are flatter than a true sphere.
10. Not everything is exact or predictable when one considers what the sun is doing with its spots, even to the exact length of time between maximum

and minimum, but 11 to 12 years is the usual stated.

Using a sphere the size of a tennis ball, I turned it in various positions and came up with the following reasoning which seems clear to me. Since the sun is rotating at different speeds in its various areas and since the crust is said to be "granular" it may be that the whole is a very loose body held together by the fact that it is spinning. The poles described as "flattened" suggests that the crust is held together tighter and few, if any, "solar holes" exist there. If this is true and if these areas of less radiation were to be at any time facing the Planet Earth it would account for the lower ionization conditions that we have during the low part of the cycle.

Now as to how the areas of lower activity could face the earth, this is what I think: The sun has another movement in addition to its counterclockwise rotation. I believe that it is turning slowly pole to pole, not in the usual orderly fashion, but with a "swirl" or "twist." Since the sun is rotating at various speeds it is reasonable to assume that an "off beat" twist is put upon the mass not unlike a trick pitch thrown by a professional baseball player. This phenomenon might go undetected amid all the other solar activity since it would be so slow in comparison to the 25 to 35-day rotation.

This is my theory on the "sunspot cycle" and, as stated previously, I do not mind "going out on the proverbial limb," at this late stage of the game. I wish to thank all those who helped answer some of my questions and to those who provided reference material on which this analysis is based.—*The Quannapowitt Radio Association, Wakefield, MA.* □

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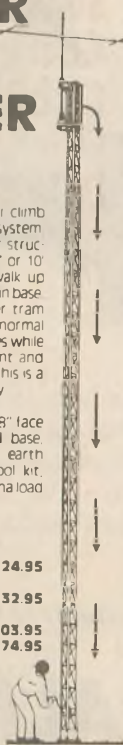
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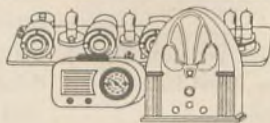
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# Solar journey

## (conclusion)

HARVEY S. LAIDMAN, N6HL

Last month N6HL recounted the series of events leading up to the Viking Serenade passengers' viewing of the unique solar eclipse of July 11, 1991.

### On the path of totality

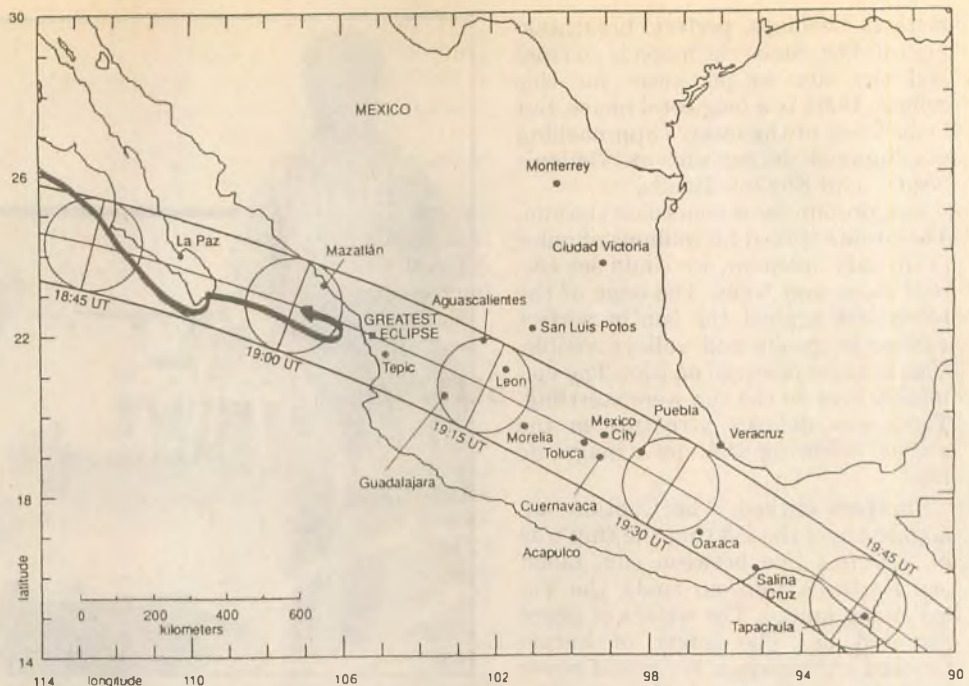
We picked at our breakfast kippers and stared out at a misty morning. Later, we stood in line at the pool to have our solar filters issued. It is necessary to use these filters until the moon completely covers the sun. Much was made of testing these filters, as serious eye damage will result if you stare at the sun. The eclipsoids laced a string through the filters and wore them like medieval breastplates.

KE9SJ/MM2 was silent this morning. Throughout the ship, observers set up their equipment and prepared to photograph, record, or otherwise immortalize the event that was about to take place. The weathermen on the bridge made timely announcements over the ship's PA system. The *Viking Serenade* intercepted the line of totality just west of Mazatlan, Mexico. Encountering a cloud bank, the helmsman turned 100 degrees and we steamed northwest along the line. We watched the clouds literally pursue us as we raced along just ahead of them. From time to time, the mist filled the blue sky above us. "Does anyone see the Moon?" someone yelled. No one did.

"Five minutes to first contact!" Some dropped their buffet plates, others leaped off their exercise bikes, some late sleepers pulled on their shorts and headed for the deck. A few came running from bow to stern. Filters raised, telescopes and binoculars poised . . .

"First Contact!" We saw nothing. Then there appeared to be a bite out of the sun at the top. We tuned to WWV to get accurate time. Over the next 40 minutes, the moon gobbled up more of the sun. There seemed to be little change in light, only an attitude—a feeling. The light was somehow metallic. During this consumption, we took time to fuel up again on finger sandwiches and coffee, and luckily, our solar filters were handily around our necks. We checked every few minutes to make sure that the heavenly apparition was still there.

The clouds had become thin wisps with high altitude cirrus off to the east, toward mainland Mexico, an indication that Mazatlan might be



The path of totality and the course of the *Viking Serenade*. (Map by permission of Fred Espenak of NASA, Goddard Space Flight Center)

socked in. When the sun was but a slender crescent, twilight came rapidly. To the west, the sky turned orange, and low clouds gave an eerie sunset. It was around noon. We looked at each other in the near darkness. We could

see several planets in the sky. The thin clouds covered the stars. Someone screamed, "Totality!"

We were totally unprepared! We were thinking that we'd see a "diamond ring" or "Bailey's beads"—but

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instead, absolute, perfect, breathtaking totality. Since the moon is so close and the sun so far away for this eclipse, there is a long total phase, but little effect of the moon's approaching edge against the sun such as "Bailey's beads" and Shadow Bands."

Red prominences danced on the sun. The corona spread for millions of miles in thready splendor, we could see coronal loops and holes. The edge of the moon laid against the sun in perfect silhouette, peaks and valleys visible. This is never resolved on film. The vermillion fires on the sun were startling. There was delicate structure in the corona following the sun's magnetic field.

Shutters clicked. The Captain announced over the PA that the ship was in a perfect line between sun, moon and Earth. Within our souls, the Yin and Yang united. The waters of peace anointed us. The finger of karma touched our psyches. We would never be the same. Confused, sleepy moths came out of hiding seeking light bulbs. It seemed like only seconds had passed. There was a dazzling diamond ring effect as the moon passed through the sun. The process reversed and we fell exhausted on our deck chairs. Science is strenuous.



Operators of the solar journey (left to right): Carl, KC6NPY; Bryant, KK6KQ; Bruce, N8LXS.

### Back on the air

On the promenade deck, Bruce reassembled the station and began to describe what we had seen to those who gathered to listen. In hearing

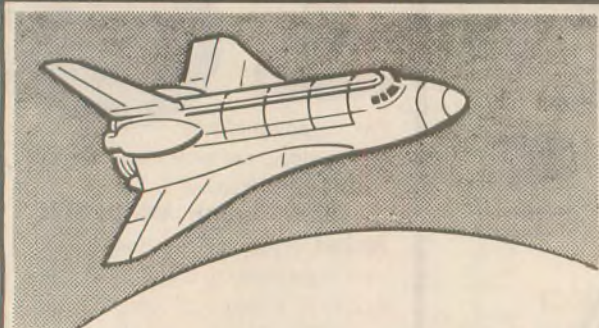
each operator describe the moment, we realized that the eclipse had touched us in different ways. The fact that we had experienced it together had made it that much more unforgettable.

The solar wind stirring in that magnificent corona reached our ionosphere and we were becalmed on the bands. We headed into Mazatlan on Friday. We found out that Mazatlan means "deer" and that fishermen kept their catch in caves in the cliffs. They have a disco that looks like a church, and everything was open because of the eclipse even though it's not tourist season and Mazatlan was overcast and missed the eclipse.

On that tennis court in Hawaii, the field of tripods was to cast no shadows. All there was of the eclipse was about seven minutes of near darkness. The observers were terribly disappointed. They folded up their gear and scuffed the chalk marks as they sought some kind of restitution. On the Big Island, the roads were busy with people unsuccessfully seeking a clear spot.

Ehukai Teves and his nine-year-old daughter, Lelani, crossed the highway near Kealahou Bay and headed into a cane field. In 20 minutes or so, they came upon Ehukai's favorite place: a quiet valley upwind of the slopes of Kiluea Volcano. They rested there beneath a mango tree, sharing a welder's glass until Mr. Moon marched in front of Mr. Sun. In a frame made of fluffy clouds, they watched the greatest show of Lelani's life.

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Upon our return from Mazatlan, we found a bit more activity on the bands. Bruce managed to make some CW contacts by keying the microphone switch. In the lounge, the singer thanked the assembled eclipsoids for the experience, and then gave "All of Me" his all.

KE9SJ/MM2 and KE9SJ/XE2 had somehow managed to make over 1,000 contacts in all 50 states and a slew of countries. Until the last moment, we didn't have North Dakota, but in keeping with the magical karma we were generating, Carl called CQ and was answered by . . . you guessed it!

We spent Saturday morning at Cabo San Lucas, just sitting in the sunny harbor before steaming for home. We told our friends on the bands that we were taking on a fresh supply of cocktail onions and a barge-load of green maraschino cherries.

### Homeward

Sunday we attended seminars at sea. We discussed the possibilities of other life in the universe. We learned the latest information on the planets from our *Voyager* and *Discovery* missions. Forrest Mims had recruited the kids on board to help with his experiments. During the eclipse, he measured ozone, radiation, temperature, etc. He was so busy collecting data that he forgot to look up and see the eclipse.

We worked 20 and 15M bathed in the solar wind and in the maelstrom of a great geomagnetic storm! It was a fitting end to our mission.



Tom, KE9SJ, with his solar filter "breastplate."

Those who had come as part of a college course sipped Pina Coladas and took their final exams. The bingo jackpot was awarded and all the luggage had to be put out by dinner time. We sadly packed up our station and drank a toast to our next mission when we would be sure to remember to take a key.

The clouds of uncertainty had lifted and we shared our experience. Suddenly, we discovered each other. As we passed in the narrow corridors, we couldn't help trading a small smile.

Tom Crull, KE9SJ; Bruce Knox, N8LXS; and Carl West, KC6NPY contributed to this article. We wish to thank Royal Caribbean and Ed Love of Love to Travel for their cooperation.

## Meet your neighbors

As mentioned in the October Publisher's Microphone, we are offering mailing labels of newly licensed hams living in each ZIP code area so that amateurs may have a means of networking more effectively with each other. The idea, as Armond, N6WR,

mentioned, is that motivated amateurs could use the listings to send correspondence out to new hams in their areas and invite them to become involved in their activities.

We have received much response expressing interest in this idea. The service is to be used only as a means of contacting nearby amateurs in an effort to encourage more local meetings and activities. We require only \$1 per ZIP code area. Just send your request with exact ZIP code(s) and payment to 2120 28th St., Sacramento, CA 95818

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The Foundation for Amateur Radio, Inc., a non-profit organization with headquarters in Washington, DC, plans to administer 45 scholarships for the academic year 1992-1993 to assist licensed radio amateurs. The Foundation, composed of 50 local area Amateur Radio clubs, fully funds five of these scholarships with the income from grants and its annual hamfest. The remaining 40 are administered by the Foundation without cost to the various donors.

Licensed radio amateurs may compete for these awards if they plan to pursue a full-time course of studies beyond high school and are enrolled in or have been accepted for enrollment at an accredited university, college or technical school. The awards range from \$500 to \$2,000, with preference given in some cases to residents of specified geographical areas or the pursuit of certain study programs. Clubs are encouraged to announce these opportunities at their meetings, on their nets, during training classes, and in their club newsletters.

Additional information and an application form can be requested by letter or QSL card, postmarked prior to May 31, 1992, from FAR Scholarships, 6903 Rhode Island Avenue, College Park, MD 20740. □

### Atlantic Division awards

Nominations are now being sought for the 1992 awards to be presented at the ARRL Atlantic Division Convention. The convention is held in association with the Rochester, NY, Hamfest, May 15 through 17.

Amateur of the Year nominees should be outstanding all-round amateurs from the Atlantic Division with a strong record of service to the amateur community. An award for lifetime service to Amateur Radio, the Grand Ole Ham, is open to Atlantic Division OMs and YLs who have been licensed at least 30 years or are at least 50 years of age. The Atlantic Division Technical Achievement Award may be presented to an individual or to a group.

Complete information on the awards and nomination procedures is available from Richard Goslee, K2VCZ, 24 Elaine Drive, Rochester, NY 14623. The deadline for nominations is April 1, 1992. □

### IARC Holyland Award

The Holyland Award is a special plaque issued by the Israel Amateur Radio Club (IARC) to both licensed radio amateurs and SWLs. The plaque is awarded for achieving basic requirements after the first of January, 1992. Stickers will be attached to the basic award after improving the achievements. QSL cards are not required, only log entries.

The award scheme is based on the geographical and administrative division of the Holyland into a grid system resulting in squares of 10 × 10 kilometers. These squares are defined by a letter and two numbers which are the relevant coordinates—E-14, H-08, etc. The country is also divided into 23 regions. An "Area" is made up from the square and the region. For example: E-14-TA (Tel-Aviv), G-18-JS (Jerusalem), etc. The "Area" is the basis for the Holyland Award scheme.

To help with the logging and for claiming purposes, a special record book is produced. The book includes detailed aims, explanations and requirements of the Holyland Award scheme; a list of regions and squares within the region; a summary of achievement for claiming purposes. In

addition to the book, country road maps and a list of settlements and their location squares are available. The book is \$10 or with the additional material \$18. These materials are available from M. Webman, 4X4JU, #14 Degel Reuven St., 49402 Petah Tiqwa, Israel.

To concentrate the effort, specific frequencies are recommended for the Holyland scheme. Mobile and portable stations will use the following frequencies ± QRM: 28.655, 21.320, 14.265, 7.060 MHz.

A contest is held annually. The first contest will take place in April 1992, starting Saturday, April 18 at 1800 UTC and ending Sunday, April 19, 1800 UTC. More details are given on request from the contest manager, IARC, P.O. Box 4099, 61 040 Tel-Aviv, Israel (SASE required).

The Israel Amateur Radio Club invites you to participate in the Holyland Award program. We hope you will find interest in expanding your geographical knowledge of the Holyland and create friendships with radio amateurs operating here. The beautiful award will be the right completion for your participation and, we hope, will give you much pleasure. □

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## Special Events

### Civil War soldiers honored

The Warminster ARC will operate special event station WA3DFU from 2200Z on March 27 to 2200Z on March 28 at the Union League of Philadelphia to honor all soldiers who fought in the Civil War, both North and South.

Operation will be on 14.275, 21.375 and 28.375.

For a certificate, send a QSL and SASE to Warminster ARC, Box 113, Warminster, PA 18974. □

### Lake ARC 40th Anniversary

The Lake ARA in Central Florida will operate special event station K4FC to celebrate their 40th anniversary on March 7.

Operation will be on 10, 15 and 20M at approximately 28.365, 21.375 and 14.265, from 1200Z to 2200Z.

For a QSL, send a QSL and SASE to Lara, P.O. Box 1465, Tavares, FL 32778. □

### Macon Cherry Blossom Festival

The Macon ARC will operate special event station W4BKM (W4BKM/SE on CW) at the Tenth Annual Macon Cherry Blossom Festival from 1300 to 2200 UTC on March 21 and 22.

Suggested frequencies (±QRM): CW—7135, 14035, 21135 and 28135; SSB—7235, 14235, 21335 and 28335.

For a certificate, send a QSL and SASE (9×12 for no folds) to Macon ARC, P.O. Box 4862, Macon, GA 31208. □

### Albert Einstein's birthday celebration

The Southern Patuxent ARC will operate special event station N31FL during the hours of 1300 and 2100Z on March 14 to commemorate Albert Einstein's birthday.

Operation will be in the lower portion of the General phone bands and the Novice 10M subband.

The theme is nuclear energy and provides an opportunity for the many Amateur Radio

operators who work throughout the industry to interact with other operators and demonstrate their hobby to fellow employees and the local community. Baltimore Gas & Electric Company is sponsoring the event at their Calvert Cliffs Nuclear Power Plant Visitors Center which is open to the public. Nuclear power plants across the United States are invited to participate by operating their own stations on the same day. Certificates will be awarded to each plant that contacts at least five other plants and submits a copy of their station log.

For a commemorative QSL card for individual operators, send a QSL and an SASE to Bob Smith, N31FL, 12480 Catalina Dr., Lusby, MD 20657; 410/260-6908. □

## Silent Keys

### Lester Cushman, W1BX

Lester Cushman, W1BX, the founder of the Cushcraft Corporation, died November 12, 1991. He was 86, an ARRL life member, and lived in Manchester, New Hampshire.

He was born in South Paris, Maine, and received his first amateur license in 1918. In 1928 he moved to Fall River, MA, where he worked as a radio service technician and later operated Cushman Radio Company, selling parts and equipment to radio amateurs and to the general public.

During WWII he served with the US Signal Corps as chief radio engineer at Grenier Air Force Base in Manchester, New Hampshire, installing and maintaining communications equipment. In the Arctic, the Azores, and Bermuda, he helped pioneer the installation of lightweight VHF communications radios in military aircraft.

In 1950 he established a business to manufacture and install television antennas. As part of that activity he designed the first amateur VHF antennas to be sold under the Cushcraft brand name.

During his career Lester Cushman

created a number of new antenna designs. "His philosophy was to achieve maximum performance while keeping the design simple," his son Robert Cushman, WA1QFY, said. "He remained an active participant in the Cushcraft Corporation until shortly before his death."

Besides his son, Robert, Cushman leaves a daughter, four grandchildren, and several nieces and nephews.

—The ARRL Letter, December, 19, 1991 □

### Walter Brown, WA4FLQ

Walter R. "Brownie" Brown, WA4FLQ, passed away last month at his home in Deerfield Beach, Florida. He was 92.

Brownie went to sea as a radio operator in 1919 and had to transmit an SOS on his first sailing. After his sea-going days he spent 25 years as an engineer with NBC in New York and was responsible for many historical broadcasts of those times.

In 1942 he was called up by the US Army as a Captain assigned to SHAFE headquarters in London. After the invasion of France he became Chief Communications Officer for Gen. Eisenhower in Paris. He made the only official recording of the Germany surrender at Rheims and that recording was rebroadcast by radio stations all around the world. The microphone used in that historical event rests on Brownie's desk in Deerfield Beach, along with many other mementoes of his illustrious career.

He was active in Amateur Radio up until a few months of his death, and he was a regular check-in on the Broadcasters Memorial net, made up of ex-broadcast hams. — Information submitted by Russ Rennaker, W9CRC, who became great friends with WA4FLQ while writing his memoirs. □

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• Asst. General Chairman, Dave Grubb, KC8CF

- **Giant 3 day flea market • Exhibits**
- **Free bus service • License exams**
- **Activities for the non-Ham**

### Flea Market Tickets

A maximum of 3 spaces per person (non-transferable). Tickets (valid all 3 days) will be sold **IN ADVANCE ONLY**. No spaces sold at gate. Vendors **MUST** order registration ticket when ordering flea market spaces.

### Special Awards

Nominations are requested for "Amateur of the Year," "Special Achievement" and "Technical Excellence" awards. Refer to the Hamvention Program for nomination form or contact Hamvention Awards Chairman, Box 964, Dayton, OH 45401-0964.

### License Exams

Novice thru Extra exams scheduled Saturday and Sunday by appointment only. Send FCC form 610 (Aug. 1985 or later) - with requested elements shown at top of form, copy of present license and check for \$5.40 (payable to ARRL/VEC) to: Exam Registration, 8830 Windbluff Point, Dayton, OH 45458-2855. *No FAXes or Express Mail please!*

### 1992 Deadlines

*Award Nominations:* March 1

*License Exams:* March 23

Appointments will be mailed by April 13

*Advance Registration and Banquet:*

USA - April 3 Canada - March 27

*Flea Market Space:*

Spaces will be allocated by the Hamvention committee from all orders received prior to February 1. Express Mail **NOT** necessary! Notification of space assignment will be mailed by March 15, 1992.

Checks will not be deposited until after the selection process is complete.

### Information

General Information: (513) 454-1456

FAX: (513) 890-5464 Attn: Hamvention  
or, Box 964, Dayton, OH 45401-0964

Lodging Information: (513) 223-2612

*(No Reservations By Phone)*

Flea Market Information: (513) 767-1107

### Lodging

Please write to **Lodging, Dayton Hamvention, Chamber Plaza, 5th & Main Streets, Dayton, OH 45402-2400** or refer to our 1991 Hamvention program for a listing of hotel/motels located in the Dayton area.

HAMVENTION is sponsored by the Dayton Amateur Radio Association Inc.

## Advance Registration Form

Dayton Hamvention 1992

Reservation Deadline - USA-April 3, Canada-March 27

Flea Market Reservation Deadline: February 1

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

### How Many

Admission (valid all 3 days)	_____	@ \$10.50*	\$ _____
Grand Banquet	_____	@ \$22.00**	\$ _____
Alt. Act. Luncheon (Saturday)	_____	@ \$8.50	\$ _____
(Sunday)	_____	@ \$8.50	\$ _____
Flea Market (Max. 3 spaces)	_____	\$30/1 space	
		\$60/2 adjacent	
Admission ticket must		\$150/3 adjacent	\$ _____
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\* \$14.00 at door

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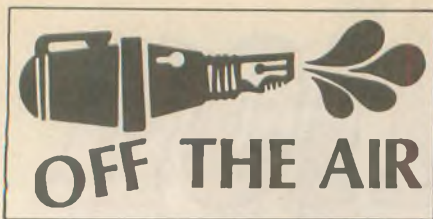
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## 6M intentions

As an avid 6M fan, I take particular interest in what happens on the "magic band." Like NØBID (January Off the Air) I feel that the ARRL made the wrong decision in implementing the 500 kHz band plan. Credit must be given to the Western Washington Amateur Relay Association (WWARA) for their attempt to address the band plan dilemma in a democratic manner. At their own expense, they contacted literally hundreds of 6M users and repeater operators, including myself, to solicit comments and input.

I must call to your attention that the 500 kHz split proposed by SCRRBA and adopted by the ARRL, and the 1.7 MHz split proposed by WWARA were not the only ones forwarded for consideration by the WWARA working group. In one such proposal I have suggested maintaining the "current" 1 MHz split between .52 and .54 MHz, and adopting a 500 kHz split, as proposed by SCRRBA, in the .51 to .55 MHz subband. This plan would allow most current repeater users and operators to operate without modification of their existing equipment, yet those suffering from TVI problems in metropolitan areas utilizing channel 2 would be able to move their operation to the .51 to .52 MHz subband. This plan utilizes two splits which are harmonically related and should not present a problem in current frequency synthesized radios or with future commercial designs. The 1.7 MHz plan does little to move users adequately from the passband of channel 2 television reception for current receivers having poor adjacent channel rejection. The adoption of the dual split band plan would not adversely impact any current users, yet would accommodate those having to deal with

potential TVI on channel 2.

A national band plan for 6M is needed to ensure growth of use of this valuable part of our amateur spectrum. We need to re-evaluate our intentions and come up with a band plan we can all live with. Current 6M users must not be discouraged by adopting a split either incompatible with or difficult to implement in current surplus or amateur gear. Even simple changes in radio gear take time and effort to implement. Such time would be better invested in activities like teaching Amateur Radio classes, emergency communications or developing new techniques. Retention of the old 1 MHz split in the .52 to .54 MHz band and adoption of a 500 kHz split in the .51 to .52 MHz subband would best serve the needs of present and future operation on the band.

RICHARD S. PENC, WK2A  
Whitesboro, NY

## A requiem for a weather net

Did you ever wonder where the weather comes from other than the sky? I'm referring to the little temperature figures on your TV screen or the recorded temperatures on the weather page of your local newspaper. While the weather service does have recording stations all over the country, major airports usually have countless small volunteer stations that are used to fill in the geographical gaps that occur between the major stations. In the case of the Amateur Radio Emergency

Service/National Weather Service radio weather net, these stations communicate the weather to each other on a daily basis—statewide.

In northeastern Washington, this weather is collected dutifully every weekday morning between 7 a.m. and 9 a.m. by Irma Curry of Colville from stations stretching from the Canadian border to Chewelah. At precisely 9 a.m. Irma, WQ7Y, moves from her 2M rig to the assigned weather net frequency on HF and joins 27 other stations from around the state as they collect weather for the National Oceanic and Atmospheric Administration office at the Sand Point Naval Air Station in Seattle.

Now, all the above has been discontinued according to a letter this station received from NOAA on October 8, 1991. There are no more local weather reports on 146.61 MHz; so Mrs. Clough, who lives right down the road and who hears these reports on her scanner, doesn't know what the road conditions are when she is planning a winter day-trip to Spokane. There is no more friendly banter between the weather stations as they give the temperatures, wind speed and direction, rainfall and snow depth.

Listening to the different stations turn in their weather from around the state is also interesting—mainly because of the people involved. Most are so old that they must be retired or felt at times that they should have been. K7PIN, "Old Slim" in Stanwood sounds like he's so ornery that he could chew the hind end off a running mule if

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he was hungry enough. No wonder the weather service quit taking our weather; they probably couldn't put up with the people taking the reports.

Heresay is that NOAA didn't quit the weather net but that the weather people couldn't find anyone to operate the computer that stores the collected weather (possibly because we weren't paid!).

The National Weather Service admits that they have a need for the data but apparently take no responsibility for assuring the supply of said data. Most of the individual stations never hear what is done with the data once it reaches Sand Point and probably don't care whether it is stored in a computer, filed, or sent to a paper shredder. The point is that a working system that was made up of interested citizens banded together for the common good of the public has been disrupted. To what end, we do not know. The National Weather Service should be made aware of the needs of the participants in the system and of the public who benefit from the reports before Sand Point ever gets them.

I don't know the answer and I don't pretend to be resurrecting the weather net, I only know that another small part of "Americana" in Washington State is gone.

SEAN C. MALONE, N7OUW  
Republic, WA

## The numbers game

What follows is based on 56 years as an active ham and more than 40 years professionally associated with another hobby. I think I know how hobbies operate, but experience and observation count for nothing when they oppose theory.

The numbers game is beyond my comprehension. Activity or inactivity are matters of opinion and degree and people do not always see it the same, but the people I talk to estimate that 50 to 75 percent of our licensees are inactive, or so nearly so as to have no impact on the hobby. Call it about two thirds. That is probably the worst record ever posted by an existing hobby. And what do we do? We step up the promotion so as to inflate an already meaningless number. Common sense would indicate that we should try to determine what happened to the people we already have. But there is nothing so uncommon as common sense.

A hobby involves a group of people sharing a common interest and enjoying the activity that it provides. All hobbies have byproducts or side benefits of value, and ham radio is not unique in that respect, though we tend to paint ours a bit larger than life. But everything that happens within that hobby is a matter of free will. When

the basic requirements have been met, nothing more can be demanded—which is a way of saying that hobby leaders can not lead, they can only represent. They can only lead where followers will follow, and two thirds of ours aren't following. I do not question either ability or integrity, but we could do without the George S. Patton complex.

There is but one absolute requirement for a hobby. It must provide a return in the form of pleasure which is equal to and preferably greater than the time, work, money, and ability that it requires. Whether or not it does so is an individual decision, made by each person according to his own standards. The leadership and the highly dedicated hobbyists always assume that their decisions should be more sound than any other. This is not true, because their existence depends entirely on the support of the majority. The only way in which you can determine the performance of a hobby is by observing the overall reaction of its membership, and in that context ham radio is failing.

Two immutable laws govern ham radio, as well as other things. These are the law of supply and demand, and the law of diminishing returns. As it concerns us, the supply is the pleasure the hobby provides. The cost is the total of the time, work, money, and

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ability that the hobby requires. The demand is the number of people who are willing to meet that price.

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Our approach to the problem of numbers is theoretical. Regardless of what could be accomplished technically, our means is limited to what our people will accept and pay for. If we assume that two thirds of our people are never active, and that two thirds of that remaining third are always on VHF, it would still figure out to about 14 people per kHz of HF living room. How far do these dreamers think they

can carry that? It is glossed over by the theory that they won't all be on at once, and that frequencies are reuseable. The theory avoids the fact that population concentrates and in some cases the reuseable areas fall in oceans and sparsely occupied areas, that few people have or could have facilities to take advantage of all frequencies, that not all bands are useable at all times, and that in any given area most people work or sleep at about the same times. The result is peak operating periods, and ham bands, like roads, must take care of the rush hour traffic.

The sophistication of equipment means that it is harder to understand, operate, and pay for. It mandates professional service, which is becoming slower, worse, and more costly. This in turn increases the need for back-up gear, which in its turn increases the cost but not the pleasure. A classic case of diminishing returns. We call it progress.

VHF/UHF is only a partial answer. It costs as much or more for much less performance, and the performance at any cost is not what many people have in mind when they think of ham radio. Those who are satisfied with it are there already. But keep in mind that about two thirds of the people we have licensed were called upon to choose between the cost and limitations of VHF and the chaos of HF, and they voted no on both issues. If that tells us nothing, what is it going to take?

The plans which were to determine "the future of the hobby" have not worked. Few options are left. But they still chant, "Ever onward and upward, to new and greater things." They urge us to "keep up with the times," "stay abreast of the technology," "move into the future," and "march with the parade." Two thirds of them aren't marching. It sounds grand in print and means nothing. It is hype. They hard-sell every development that can

possibly be applied to the hobby, forgetting that as they multiply the areas of possible interest, they divide the common bond which should unite us in exactly the same proportion. No hobby can be all things to all people.

This is a more serious problem than our leadership appears to realize. And I see no answer to it except to use more restraint. It is like trying to consolidate golf, tennis, and baseball under one administrative body, one general set of rules, and in more or less the same areas, on the theory that they are all games involving a ball and something to hit it with. We reason that since it is all part of the same technology we should use it all. It does not appear to be working too well.

TOM STENCE, KN8B  
Ashland, OH

## A lighter approach

I got quite a kick out of reading the article by John E. Gercken, KA9EPO, entitled "Are You a Lid—on Phone," which appeared in the December 1991 issue of *Worldradio*. His paragraph referring to "for ID" brought up a point which I thought I should pass on.

I have been part of a net here on the East Coast which has been meeting twice a day for many, many years. We meet on 7.153 MHz at 11:30 a.m. and again on that frequency during Eastern Daylight Saving Time at 4:40 p.m. During the winter months when the broadcast stations are pounding the East Coast, we switch to 3.778 MHz where the QRM is much less for our group. Anyway, we have been saying "for ID" for many years and one day the late W2AHZ came on the net, laughing his head off. Seems that his XYL heard him IDing and asked him why he said, "Friday, W2AHZ." Since that day most of us still say "Friday" rather than "For ID." It reminds us of good old Herbie, whom we all respected and liked. Maybe we are lids, but who cares!

GEORGE RULFFS, JR., AA4GR  
Chelmsford, MA

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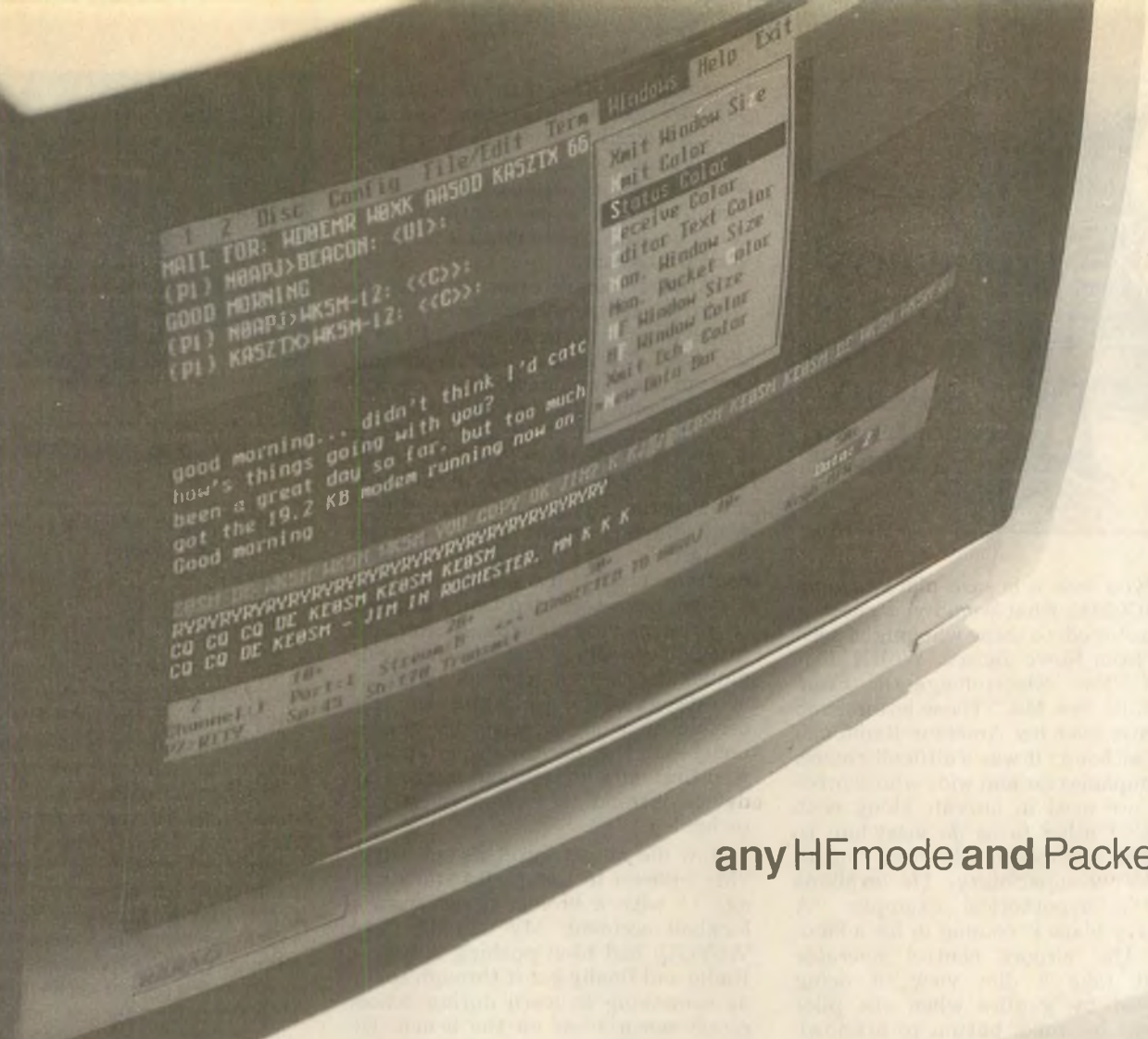
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If you saw a license plate reading 4EMCCME, what would you guess it means? Well, to those who might need help from Steve Jensen, W6RHM, it says "For Electromagnetic Compatibility See Me." Those letters won the toss over his Amateur Radio call sign, although it was a difficult choice.

Companies far and wide whose products are used in aircraft along with those of other firms *do* need him to prevent unpleasant surprises due to lack of compatibility. He explains with a hypothetical example: "A military plane is coming in for a landing. The airport control operator might take a dim view of being sprayed by gunfire when the pilot presses his mike button to acknowledge an order! It would therefore be an unpleasant surprise to the plane's manufacturer as well."

Of course, amateurs sometimes run into "incompatibility," but it can be a frustrating problem to those in the business world as they strive to meet specifications. Steve explains, "As a

consultant, I deal with systems and subsystems installed in commercial or military aircraft, advising or working with various companies that provide a wide variety of equipment to major manufacturers. It is essential that *all* these devices are compatible when installed together.

"Another simple example might be when the temperature control on the coffee warmer in the galley clicks on or off, you don't want corresponding pops in the communications or navigation equipment on the flight deck!"

Of course, most of the problems presented to Steve are far more serious. And he is not free to comment on classified equipment. "Basically, I work directly with talented circuit designers, packaging engineers, draftsmen, CAD (Computer Assisted Design) operators, and those working on printed wiring boards, power line filters, decoupling and filtering techniques for input/output connections and design of the enclosures, to make certain they are 'electrically continuous'—all the hard-working experts who turn out complex and interesting devices behind the scenes of modern technology."

How did he get into this specialty? "My interest in electronics started at age 11 with a broken finger from a kickball accident. My dad (the late W6VGQ) had been pushing Amateur Radio and finally got it through to me as something to learn during school recess when I sat on the bench. He took me downtown to the FCC in 1952 for my Novice (then a relatively new opportunity); the bug bit hard, via CW at first, and I've been enthusiastic in all modes ever since. A few years later I had my degree from UCLA in Electronic Engineering.

"One day, as I was working on



Steve Jensen, W6RHM

analog tape recorders for Genisco Technology, another division of the company sent out an urgent call for someone to solve EMC problems for customers waiting in shielded rooms with their own equipment. I wasn't even sure how to spell 'compatibility' but I learned under fire. And I liked the challenges. In 1978 I went out on my own and have been consulting for various aerospace firms ever since."

He travels frequently, and says he's been lucky to spend time in Buenos Aires for INTI, with the national telephone company in Venezuela, in Linköping, Sweden, for SAAB Aircraft, and in London. There, he enjoyed participating with the RTCA (Radio Technical Committee for Aircraft) which prepares the international EMC standard for commercial planes worldwide.

Also, Steve gives seminars in various cities on his favorite subject in conjunction with CKC Laboratories and Chris Kendall, W6HCL. As a senior member of IEEE, he is asked to present papers on EMC.

Any special tip for amateur interference problems? "Well, in my opinion, a major consideration with solid state transceivers is the common mode (RF in phase on both leads) on the 12V input power leads. These signals can easily propagate backwards through the power supply onto the commercial AC power lines, shared by the rest of your house and possibly that of your neighbors' VCRs, phone answering machines, etc.

"So I filter the input with a balun by taking a 3 in. (outside diameter) ferrite core (4000-6000 mu) and winding around it about six evenly distributed turns with both power supply leads (bifilar). The effect is to insert a high common mode RF impedance.

"Also, there's the obvious aim to locate your antenna systems as far as possible from overhead power lines, not only for safety but for reducing

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coupling of RF from the antenna to the lines."

On the side, for years Steve has been designing circuits for a company which makes emergency lighting equipment for aircraft, such as the floor lighting which can guide passengers to exits in darkness. He's worked on items for most of the Boeings since their 707, including the upcoming 777. His idea of a day off is to attend an air race or fly kites. ("Anything that flies!")

So, as for many others, Amateur Radio led him to an interesting hobby and he's found our Service to be highly rewarding.

"Sure! It first gave me a way to explore my curiosity about radio and related things." He reflects and laughs, "I'm lucky to having survived some of my early homebrew transmitters—but just think of the fascinating people I've met!"

"And I was glad when my sister, Cindy Wall, KA7ITT, asked me for

technical advice about the adventure novels she's written for ARRL (*Night Signals* and *Hostage in the Woods*). I'm for anything we can do to entice newcomers." □

Two philosophers were engaged in a deep discussion as to where the sun goes when it sets. They pondered the enigma all through the night — then it dawned on them. —CHARRO, Brownsville, TX



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Bill Mullin,  
AA4M/6

## STATION APPEARANCE

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

My station consists of a new IC-781 (which replaced my old faithful TS-930), Alpha-78, PK-232MBX for RTTY/AMTOR, PK-88/TR-7950 for 2M packet, and a KT-34A at 55 feet. Of course the antenna is the weakest part of this setup, but I only have a 1/8-acre lot with almost no usable back yard, so I'm limited in this respect.

Bill notes that he also has a comfortable chair but had to pull it out of the picture to get a shot of his station without obscuring the setup.



Other odds and ends include a TR-2600A HT, AEA Morsematic CW keyer, Heath HD-1780 IntelliRotor, and an MFJ-989 antenna tuner.

Computing equipment consists of an Everex 386/25 with 8 MB of RAM, a 160 MB ESDI hard drive, 150 MB tape backup, 14,400 BAUD telephone modem, a Hewlett Packard IIIP Laserjet printer, and an SVGA monitor with a 512 KB video card. RTTY software is only a "plain jane" modem communications program, but it does everything I need! If you wonder why such an elaborate computer setup, it's because I'm a professional computer programmer and really wouldn't be satisfied with any less!

Such an array enables me to routinely monitor a 2M packet cluster and an RTTY mailbox while saving all copy

to hard disk, and write letters such as this one all on the same computer at the same time. I can even configure the computer so that the screen is "split" with the cluster alerts showing at the bottom of the screen while I'm having an RTTY or AMTOR QSO using the top! Aren't computers fun?

I'm on both the DXCC mixed honor roll and the phone honor roll, and I am only two QSLs away from being on the CW honor roll. As for the digital modes, I have RTTY WAS and RTTY DXCC, with the RTTY DXCC count now sitting at 188/170. Most of my QSOs in the last two years have been on RTTY and AMTOR, since I've found that the digital modes are about the most exciting method of ham communications since I discovered CW about 31 years ago! □

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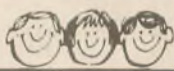
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## Amateur "Hi"



This month we found someone with real spontaneity—and guts! Norman Burnett, WB7RDO, shares one of his mobile experiences.

There is no joke like a joke on oneself. I was driving down the freeway doing 65 mph—and you have to know

that I am proud to have ham plates on my car that give my call, WB7RDO—when I looked out the side window and saw a fellow making signs for me to roll down my window.

Thinking something must be falling off my car I rolled it down, and this is what I heard: "Hey mister, how come they misspelled the word 'weirdo' on your license plate!"

Well, after that my only reply at 65 mph was, "Because I am one!"

He dropped back, never to be seen again. But the look on his face was worth the humility! □

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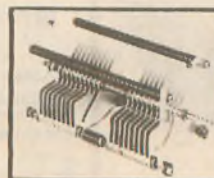
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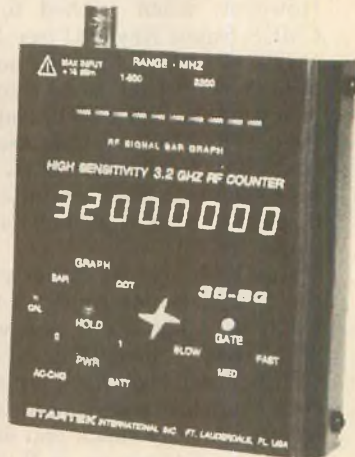
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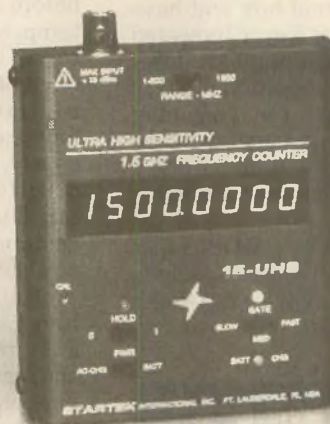
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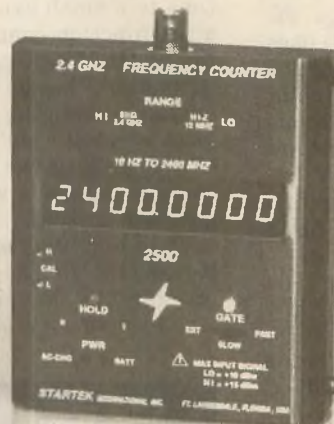
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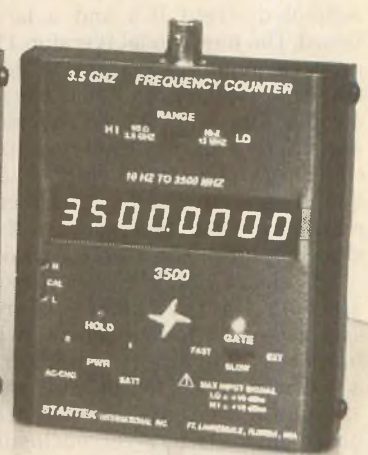
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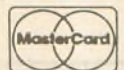
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# Product Review

## The CMOS Super Keyer II

RICHARD ARLAND, K7YHA

The old adage, "Good things come in small packages" is often over-used. However, when applied to the new CMOS Super Keyer II (see Nov. 1990 *QST*, p. 18) it really holds true. Designed by that same dynamic duo that gave us the CMOS Super Keyer (Oct. 1981 *QST*), Jeff Russell, KC0Q, and Bud Southard, N0II, the new upgraded successor is quite a bundle of goodies packed into one 40-pin LSI chip.

Having built two earlier versions of the CMOS Super Keyer, I read with excitement about the new version. It didn't take more than a couple of microseconds to make up my mind that I must acquire one of these little beauties for my shack and do a subsequent product review in *Worldradio*.

The idea behind both versions of the CMOS Super Keyer is to provide the CW operator with a contest-grade keyer in a compact package which is easy to reproduce on a large scale at low cost to the consumer. While the original model (circa 1981) used several discrete ICs and a large PC board, the new model (version II) uses only one small 1.4 x 2.4 in. PC board; a couple of transistors (Q1 is the keying output line and Q2 is the sidetone amplifier); some external resistors and capacitors; battery holder (4.5V required); speaker; and a 2 MHz ceramic resonator that furnishes a 2 MHz clock signal to the chip for timing.

The entire CMOS Super Keyer II is assembled on the small PC board. The speed control, four memory switches, battery container, speaker and associated jacks for output, paddles, external power, etc., are mounted off-board inside whatever enclosure the user chooses. Wiring between the keyer PC board and various controls, switches and jacks is accomplished using ribbon cable and/or stranded, covered wire. This makes for a very compact package and is easily

transported to Field Day or VHF contest sites.

Power is furnished by three 1.5V AA batteries. Current drain is only 10 micro amps in the standby or "sleep" state. In use, the CMOS Super Keyer II draws only 5 milliamps with the sidetone turned off. The keyer automatically enters the sleep mode three seconds after the last character is sent and stays in the sleep mode until the next paddle closure. The sidetone is the heavy current culprit, drawing almost 40 milliamps when turned on. As can be seen, if the sidetone is turned off, there is really no need for an on/off switch, since the keyer draws so little power from the battery pack in the standby mode. This further cuts the overall parts inventory by one switch.

The really nice thing about the CMOS Super Keyer II (in addition to its small size) is the ability to control all keyer functions through the use of the paddles. In reality, you could dispense with the speed control and use the paddles to input the desired speed, turn the sidetone off and on, manipulate weighting, and much more. This makes for some interesting packaging ideas. For instance, how about installing a Super Keyer inside your favorite QRP backpack rig, and control everything with the paddles? My ultimate goal is to install the CMOS Super Keyer II inside my HW-9, remote the four message buttons to a small external box and have a full-function contest keyer (powered by the HW-9's power supply) available without the hassle of additional boxes and wires hanging all over. Just plug in the paddles and message switches to the back of the HW-9 and work a contest, complete with programmable message capability.

The versatility of the CMOS Super Keyer II is amazing. Features include an iambic keyer with dot/dash

memories; four 48-character messages (user programmable); character and real-time messages; timed pauses within messages (for inserting specific information); messages that can call other messages and contain operational commands; message-loop capability for continuous playback; message break-in to allow for paddle-inserted text; queued input for multiple messages; serial numbering (000-9999); digital and analog speed control between six and 60 wpm; adjustable weighting for dot/dash ratio; built-in sidetone and transmitter tune functions; hand key mode; compensation for transmitter-induced keying distortion; selectable automatic character spacing; keyer status inquiry (the keyer will tell you, via CW, the speed and status of other functions on the keyer); and ultra low power consumption. Wow! Talk about versatility!

A complete kit of parts for the CMOS Super Keyer II is available from Idiom Press, Box 583, Deerfield, IL, 60015. Now if that company and address sounds familiar, it should. This is the same Idiom Press that publishes the book, *The Complete DX'er* (second edition) by Bob Locher, W9KNI.

The kit I received from Idiom Press was assembled in a couple of hours and ready to test. The Super Keyer worked fine from initial power up. The manual that comes with the kit is comprehensive and is a "must read" before any serious CW operation is attempted. It is virtually impossible to screw things up on the keyer. If you, for whatever reason, decide you need to start from scratch, simply hold all four message buttons down simultaneously, release them and the keyer is reset to initial parameters. This reset can also be accomplished by disconnecting and then reconnecting the power.

The documentation received from Idiom Press is absolutely first rate. Easy to read and understandable, the instruction set and tutorial are great. The format is well laid out and directs the new user right through the initial set-up and on to more advanced functions of the keyer. The CMOS Super Keyer II kit from Idiom Press costs \$45 plus \$3 for shipping and handling. Think about this for a minute. Forty-five bucks for a full-function contest keyer on a single chip! Now that is an outstanding value for the money. After March 1, Idiom Press will offer a commercial model of this keyer (completely assembled) for \$119.95. The keyer kit will remain available for \$45 plus \$3 shipping and handling. To order, write Idiom Press at the address listed above. Don't forget to tell them that you saw it in *Worldradio*! □

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## Activities Calendar

- Feb. 15-16 ARRL International DX Contest (CW)
- Feb. 21-23 CQ Worldwide 160M Contst (SSB)
- Feb. 22-23 UBA Belgium Contest (CW)
- Mar. 7-8 ARRL International DX Contest (SSB)
- Mar. 13-15 59 Japan International DX Contest (CW)
- Mar. 15-16 Bermuda Contest
- Mar. 28-29 CQ Worldwide WPX Contest (SSB)

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

## W100N

The following DXer was awarded *Worldradio's* Worked 100 Nations Award during this past period: 417) Raymond C.Y.Lee, VS6UW (all CW); Jan. 9, 1992.

## China (BY/BZ)

Not long ago China was near the top of the most-wanted list. Then BY1PK appeared, followed by several other calls as the months went by. Now, nearly every deserving DXer has worked China.

However, China is still in demand and has no problem with takers when such a call appears on the bands. The most active club station reported recently has been BY4RB. Try listening for this one between 21.017 and 21.023 MHz after 0100 UTC. He has also been on 10M, both CW and SSB. Other club calls include the following:

BY4AJT	28.489 MHz	0845 UTC
BY4BB	28.518 MHz	0830 UTC
BY4BHP	18.145 MHz	0900 UTC
BY4JEG	14.016 MHz	0030 UTC
BY4JP	14.014 MHz	0030 UTC
BY4RSA	28.011 MHz	0900 UTC
BY4WNG	21.011 MHz	0230 UTC
BY5TS	21.268 MHz	0115 UTC

Some of the calls above may be incorrect, such as BY4JEG and BY4JP, which are most likely the same call.

Amateurs in China now may have personal calls, which use the BZ prefix. The following such calls have been worked recently:

BZ1OK	21.020 MHz	0200 UTC
BZ4RBD	21.268 MHz	0230 UTC
BZ4RBX	21.233 MHz	0200 UTC
BZ4RCA	21.282 MHz	0145 UTC
BZ4SAA	28.478 MHz	0145 UTC
BZ4SBF	28.017 MHz	0100 UTC
BZ4WAB	21.021 MHz	0100 UTC

Of the personal calls above, BZ4SAA has been the most active and has been worked on 40M CW near 7.001 MHz around 1345 UTC and 20M SSB on 14.200 MHz at 0130 UTC. BZ4RBD is a YL operator.

## Cuba (CM/CO)

DX is really relative and with Cuba only 90 miles from Florida, is it really considered DX? Well, it is and we were able to find a few for you this month. Check out the following:

CO2LY	14.018 MHz	2100 UTC
CO2OM	14.239 MHz	0615 UTC
CO3RN	21.024 MHz	2100 UTC
CO5DD	3.799 MHz	0730 UTC
CO7GC	3.799 MHz	0130 UTC
CO7KW	21.281 MHz	1815 UTC
CO8OH	7.015 MHz	0645 UTC

## Antarctica

Kaare, LA2GV, should be signing 3Y2GV right now. However, he is not operating from Bouvet Island, but rather an offshore Antarctic island — Berkner Island. This one counts as IOTA AN-014. His operation should end in the early spring.

*QRZ DX* notes that KB1TX/KC4 is presently operating from a US Antarctic base at McMurdo Sound and has been reported on 14.227 MHz around 0730 UTC. For RTTY try 14.090 MHz at 0900 UTC.

From the South Pole KC4AAA is found often between 14.260 and 14.290 MHz from about 0500 UTC. When we worked him the operator was Dale, KC4TTN.

## Clipperton Island (FO0CI)

The latest word from Charlie Spetnagel, N7QQ, is that the Clipperton Island DXpedition is set to go and will include the SSB portion of the ARRL International DX Contest.

The transportation, a private sport fishing boat, limited to 12 at a cost of \$5,000 per person, is scheduled to depart San Diego on March 1 and return on March 24. Most of the operators plan to fly to Cabo San Lucas and meet the boat there to avoid the long boat ride from San Diego.

The operation will be on all bands 160 through 10M including the WARC bands, SSB, CW and RTTY. It has been a few years since the last DXpedition and this one will be appreciated by the deserving.

The DXpedition team is in need of additional operators (as of December 10) and those serious about accompanying the group should contact Jay Kobelin, WA2FIJ, at 714/941-4761

(evenings) or 213/948-7444 (days) between 0730 and 1600 PST. You may also write to Jay at 10628 Grandview Drive, Alta Loma, CA 91701.

The DXpedition team already has the license in hand with the call being FO0CI. The 1978 DXpedition to Clipperton included our DX editor whom I succeeded at that time. Since then the only other DXpedition I can recall was FO0XX in 1985.

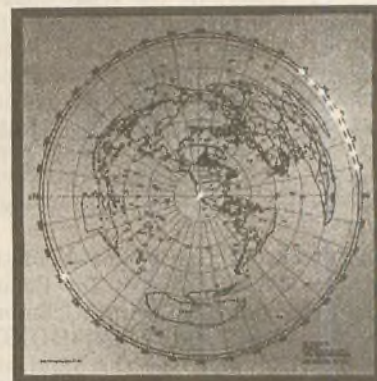
## Navassa Island (KP1)

The DXpedition to Navassa Island in January was to have consisted of five operators: Randy, N0TG; Bob, KW2P; Murray, WA4DAN; Will, AA4NC; and Ron, AA4VK. We received this information on December 23, which was too late to include in last month's column. All QSL requests for the above calls (appended with KP1) should be sent via N0TG. Donations would be appreciated to help with the cost of the charter boat expenses. If you don't care to send a donation, please at least include an SASE with your QSL request.

## Moldavia (RO/UO)

From Moldavia, RO4OA has been very active and has been reported on 3.503 MHz at 0430 UTC, 7.011 MHz at 0500 UTC and RTTY on 28.083 MHz at 1530 UTC.

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Also on 40M UO5ON and UO5OOT have been reported at 7.006 MHz at 0415 UTC and 7.018 MHz at 2315 UTC, respectively. UO5ON has also been on 80M near 3.511 MHz around 0230 UTC.

Other calls include RO5OL on 28.012 MHz at 1315 UTC, UO5GQ on 24.950 MHz at 1445 UTC and UO5OXA on 21.263 MHz at 1400 UTC. The call UO5GQ probably should read UO5OQ to follow the former-Soviet method of call sign assignment.

### Lord Howe Island (VK9L)

*DX News Sheet* reports that Rudi, DJ5CQ, is again active from Lord Howe Island, signing VK9LM. However, no one has reported his activity to the DX newsletters.

### Lesotho (7P8)

Ray Shanweiler, formerly JY9SR, is now signing 7P8SR from Lesotho and has been *very* active. He has appeared almost daily on 30M. Look for him near 10.109 MHz after 0300 UTC.

Ray has been on the other two WARC bands and has been worked near 18.076 MHz around 1900 UTC and 24.901 MHz at 1530 UTC. For contacts with Ray on other bands check the lower reaches on CW.

Also from Lesotho 7P8DX has been worked near 3.503 MHz around 0300 UTC and 3.799 MHz at 2200 UTC. The latter time is a bit early for us deservng DXers on the West Coast.

Near the beginning of the new year 7P8EN has been worked on several bands. This one may have moved on.

Three more calls were reported during this past period including 7P8FE near 21.345 MHz at 1830 UTC, 7P8RO on 24.895 MHz at 1400 UTC and 7P8RQ on 18.076 MHz at 0830 UTC.

Reg Beck, VE7IG, spoke about the latest in IOTA DXing at the Pacific Northwest Convention in Richmond last July. Reg holds both 5BDXCC and 5BWAZ, and was the 52nd and first Canadian DXer to achieve the latter. Reg has held the former calls of VE8RG, VS5RG and YA2REG and is a school teacher by profession at Williams Lake.

### IOTA

According to *DX News Sheet*, the IOTA Committee has decided to run an Annual Table to encourage continued island chasing, even by those who are already high on the IOTA Honor Roll. The period will begin on January 1 and continue to the end of 1992. The standings will be published every other month in *DX News Sheet*. Please report your standings to Don Field, G3XTT, 105 Shiplake Bottom, Peppard, Henley-on-Thames, RG9 5HJ England. The first report should



Reg Beck, VE7IG

be as of February 29 and reach him by March 14. North American IOTA types should contact Dewitt Jones, W4BAA.

We assume that the above is strictly an honor system without the necessity for QSL cards (something like *Worldradio's* DXathon). The Annual Table isn't a substitute for the IOTA awards, which do require submission of QSL cards.

Here are a few more IOTA credits that have shown on the bands recently:

AN-016	Antarctica	KC4AAA	
		14.290 MHz	0500 UTC
NA-029	Prince Edward Island	VY2SS	
		28.510 MHz	1945 UTC
NA-036	Vancouver Island	VE7NAN	
		14.244 MHz	0330 UTC
NA-055	Islesboro Island	NR1V	
		21.280 MHz	0200 UTC
NA-113	Long Island	VE3PJH/C6A	
		28.550 MHz	2000 UTC
NA-143	Galveston Island	K5EWJ	
		21.260 MHz	1730 UTC
OC-012	Yap Island	V63YL	
		14.261 MHz	0645 UTC
OC-059	Kosrae Island	V63NW	
		28.490 MHz	2200 UTC
OC-146	Celebes Island	YB8HX	
		28.436 MHz	0130 UTC

A neat way of collecting QSL cards in book form according to Reg Beck, VE7IG, is in photo albums available from Canadian Tire. These albums, which hold 400 cards in plastic sleeves, cost about \$15 (Canadian) each. Reg had such items with him for his program on IOTA last July during the Pacific Northwest DX Convention at Richmond, a Vancouver suburb. Canadian Tire is a national chain throughout Canada.

### WAZ zones

We have been in contact with Jim

Dionne, K1MEM, CQ's WAZ manager, regarding the boundary between zones 2 and 4 and the islands in Hudson Bay, which includes James Bay. Presently, there seems to be no problem, unless there was an IOTA DXpedition to one of the islands (all of the islands are VE8).

We had written to Jim with the suggestion that the boundary follow the shoreline of Hudson Bay down to where it met with the original intersection with the shore of James Bay. Jim's reply was that he was not able to change the boundaries of zones, but will add the following to the definitions of zones 2 and 4 (as published in the July 1991 CQ, page 44):

Zone 2: "... and the Melville and Boothia Peninsulas, *excluding Akimiski Island.*"

Zone 4: VE6, VE8 *Akimiski Island*, and W7...

The boundary between zone 4 and 2 is a direct line from the intersection of 60 degrees north and 85 degrees west, to Pte. Mesaconane, Quebec/Ontario. This includes the James Bay islands of Charlton, Trodely, Weston, Stratton, North Twin and South Twin, in Zone 2.

Our only recommendation is to never operate from Akimiski Island during a Worldwide DX contest as you will spend too much time explaining why you are in zone 4 and not zone 2.

### WARO Award

The WARO (Worked All Russian Oblasts) award is available to all Amateur Radio operators who have worked all of the Russian oblasts. The award is available in four classes: CW, SSB, mixed and 160M. All contacts must have been made since 01 January 1992.

Note, this is not to be confused with W1000, which required confirmation of at least 100 different oblasts of the Soviet Union. With all the changes going on over there, and as the USSR no longer exists, we doubt that W1000 is still available.

The fee for this award is \$5 (US) or 10 IRCs. Include the fee and the necessary QSL cards and send your application to Oleg Zhukov, P.O. Box 410, Kaliningrad-10, Moscow Obl. 141070 Russia. According to the list sent to us there are 88 oblasts.

### Antique QSLs

Last month we ran short of space and had to omit the old QSL cards. Therefore, we will include both for this month.

Here is one of those photo type QSL cards, submitted by Norman Weed, W6CE, who worked K7BWZ of Bristol Bay, Alaska. No date was indicated on the card, except the

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postmark of September 11, 1933, from Oakland, California.

The rig at K7BWZ was a Hartly oscillator with a 201A at the time of the contact. Norman was signing W9JKW from Elgin, Illinois, at the time, and W6JKW upon his move to California.

We received a note from N2FZ, regarding the 1937 U9AV QSL card in our January issue, telling us that he wasn't in the 1991 Soviet *Callbook*. When we expressed curiosity whether he survived the war we were referring to the operator, not the call. The U9 was a normal prefix in 1937 and isn't used at present except for special events.



Al Miller, VE7KC, provided us with this month's old-time QSL selection.

Al worked C8YR, located at Lanchow, back in 1948. This station, operated by Yuruey Chi, was located in CQ Zone 23 and was quite rare in those days.

China was not that rare the first few years following the end of World War II until the communists took over. Then it was off the air for many years. Al worked this particular station on 20M CW and received an RST 589 report.

45 SHANGKOW STREET  
LANCHOW KANSU CHINA

# C8YR

To Radio VE7KC This Confirms our CW QSO  
on 20M CW at 15:06 GMT on 12 Mar. 1948  
Ur Sig. were 1NF 5-7

PSE QSL TNX 73 YURUEY CHI

Prior to World War II the call area structure for both Canada and the United States differed from the present. On our side of the border there was no 10th call area. In Canada the 5th call area included British Columbia, Yukon and Northwest Territories. Al, then signing VE5KC from Vancouver, worked VE5LD located at Gjoa Haven, Northwest Territories. This 20M contact took place on April 18, 1937, exactly 11 years earlier than his C8YR contact in Zone 23. The sta-

tion was operated by a D.G. Sturrock, probably an employee of the Hudson's Bay Company.

Gjoa Haven is located on King William Island. IOTA chasers would have loved to have worked this one. However, contacts made prior to the war were too early to count.

The back of the card was affixed with 2¢ Canadian postage and cancelled with the marking "Eastern Arctic Mail Service—R.M.S. 'Nascople'" and was dated September 8, 1937. I bet you Canadians are groaning about today's postal rates compared to them.



### More Pitcairn dilemma

The complaints continue regarding Dr. O'Toole, KB6ISL, and his non-response to those who sent him money for the Pitcairn Island Award. We have also read about this problem in *The Canadian Amateur Radio Magazine* DX column. DXers worldwide feel that the situation is giving Pitcairn a bad name.

Upon receipt of our certified letter, Dr. O'Toole contacted *Worldradio* and assured us that the awards should be out by the end of March.

According to *The DX Bulletin* Dr. O'Toole will grant a refund to those who do not care to continue waiting for this award. If anyone does receive a refund, let us know.

## "Where Do We Go Next?"

**New book by OH2BH, now a DX author!**

Following a one-year stint in the United States, Martti Laine is introducing his first work in the field of DX literature. Tentatively entitled "Where Do We Go Next?", this new publication comes in response to public demand for a presentation in book form of the author's spectacular DXploys over the past quarter-century.

Running to almost 300 pages, the book is richly illustrated with pictures from the author's personal archives and it tells you the story of what it is like to be a super-DXer, why anyone should want to become one and how a globetrotting DXer finds life in moments of triumph and everyday toil. Everything told the way only OH2BH can relate it to the amateur fraternity.

Read all about how these DX countries were born and embark on an armchair trip for an all-

time first or major DXpedition to exclusive places such as *Annobon Island, Western Sahara, Market Reef, Southern Sudan, Revillagigedo and M-V Island* — the island that brought East and West together for their first-ever joint DX operation.

Sense the heat and excitement of being at the production end of that pileup that you once worked for a new one. Go to *Jarvis Island and Conway Reef* with today's prominent DXers and examine the profile of "a complete DXpeditioner" as Martti depicts the people with whom he was traveling to all those rare spots.

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

Price: US\$ \$22.95 plus postage. USA add \$3; Canada add \$5; others, add \$7. CA residents, add sales tax.

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### QSL information

Murray Baird, NK6Y, tells us that he received a note from LY2BZ that all bureau cards should go to: National LY QSL Bureau, P.O. Box 1000, Vilnius 2001, Lithuania. Cards that were routed via Box 88 Moscow are being held for a payment of 2,800 rubles for forwarding service. The Lithuanians cannot pay those fees!

### QSL help

Klaus Gramowski, DL7NS, is looking for help in obtaining a QSL card for a contact he made with VS9AJM on July 31, 1967. We checked the 1974 edition of *QSL Managers Directory* (no longer in print) which gave the route as K6EBB (D. McClellan, 7633 West Hill Lane, San Jose, CA 95125). K6EBB is not in the latest *Callbook*.

Larry Esau, AD6W, is looking for help in obtaining confirmation for contacts he made with CR6CK, FB8XX and KM6DI back in 1968. The QSL managers of that date are not listed in the present *Callbook*.

Ed Eby, KF1B, needs QSL routes for PA6WPX and ZS6WPX, who were active in the 1991 WPX Contest. According to *QSL Routes* (1991 edition), by Fritz-Ullrich Schneider, Y41VM, and Norbert Wenzel, Y58ZA, the route for ZS6WPX is ZS6BRZ. Nothing is listed for PA6WPX. We suggest sending both of them via their respective QSL bureaus.

Earl Gosnell, N7NZ, needs a QSL route for V44KAO. This one wasn't listed in the 1991 *Callbook*, nor is it listed in the *W6GO/K6HHD List*.

Coleman Murphy, W3BBL, is wondering if anyone else is having problems confirming a contact with KC6KW through QSL manager AG9A. Cole worked KC6KW last



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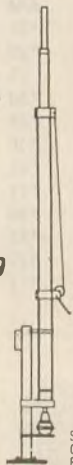
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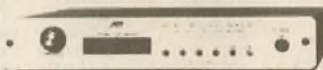
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# DX Prediction — March 1992

Maximum Useable Frequency from West Coast, Central U.S. and East Coast (courtesy of Engineering Systems Incorporated, Box 939, Vienna, VA 22183).

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

## CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	19	*12	*23	(12)	*21
10	(18)	12	*20	(11)	*20
12	31	*16	*17	21	25
14	39	17	*27	26	*35
16	41	(15)	23	25	*38
18	*40	(15)	20	21	*41
20	*33	26	(26)	15	*41
22	27	27	35	(13)	*41
24	*24	24	40	*12	*40
2	*21	(18)	34	12	*33
4	*21	(15)	31	11	*28
6	20	(13)	26	*13	*24

## WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	(14)	*16	*24	(12)	*21
12	(14)	*15	*21	(11)	(17)
14	(25)	*17	*17	21	32
16	31	16	*23	24	*39
18	33	15	21	21	*41
20	33	25	(25)	15	*42
22	27	*32	35	(13)	*41
24	24	*35	40	(12)	*40
2	*21	*31	41	12	*33
4	*19	23	36	11	*28
6	(17)	20	33	*14	*24
8	(15)	*18	*27	(12)	*21

## EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	19	(12)	22	*12	*21
9	(19)	11	*20	15	*20
11	35	*15	17	*24	25
13	*41	(14)	*28	*27	*34
15	*41	(12)	24	*26	*38
17	*43	(12)	(21)	*25	*40
19	*36	(15)	(18)	*22	*41
21	*30	24	32	15	*41
23	*25	24	39	*13	*40
1	*22	18	33	*12	*33
3	*20	(14)	30	12	*27
5	*20	(13)	25	11	*24

KF2RB/B	-KG6ZQ	8P9CR	-LA4LN
ZK1TB	-W7TB	8P9CS	-LA4LN
ZK2RW	-ZL1AMO	8P9EM	-G3VBL
ZS0Z	-ZS6BCR	8Q7XX	-DJ8MT
ZX2F	-PY2RRG	9K2LX	-ON7LX
3D2KA	-JA1CMS	9K2TK	-ON7LX
4G2VOA	-W7KNT	9K2WR	-N6UXB
4K3BB	-RB5CB	9K0CS	-9K2RA
4Z4T	-4Z4UT	9K0DT	-9K2RA
7Q7JH	-K7UP	9K0SB	-9K2RA
8P9CN	-JA7XBG	9Q5NW	-KB9ABI

BY4BHP	-P.O. Box 299, Shanghai, PEOPLE'S REPUBLIC OF CHINA
BZ4RBD	-P.O. Box 538, Nanjing, PEOPLE'S REPUBLIC OF CHINA
BZ4RBX	-P.O. Box 538, Nanjing, PEOPLE'S REPUBLIC OF CHINA
CE0ZIG	-Jaime Herrera, P.O. Box 1415, Temuco, CHILE
FR5DX	-Herik Mauduit-Larive, 63 Rue des Palmiers, F-97430 Le Tampon, via FRANCE
J69NI	-Andrew, 1603 Annapolis Ave., Hyattsville, MD 20278
KH2D	-Jim Kehler, P.O. Box 25666, GMF, GUAM 96921
N9MDW/5N6	-P.O. Box 601, Jos, NIGERIA
R16G/UW4HM	-P.O. Box 8267, Samara 443067, RUSSIA
RS3A	-P.O. Box 284, Moscow 121354, RUSSIA
UJ8JA	-P.O. Box 1, Dushanbe 734045, TADZHIK
VK0ML	-Mark Loveridge, 18 Yorktown Crescent, Henley South, Adalaide 5022, AUSTRALIA
VO2GUY	-P.O. Box 1233, Stn A, Goose Bay, NF AOP ISO, CANADA
XF0C	-Hector Espinosa Flores, P.O. Box 231, Colima, 28000 MEXICO
XU8KG	-YASME, P.O. Box 2025, Castro Valley, CA 94546
XX9AW	-S. Wheatley, P.O. Box 5953, Parsippany, NJ 07054
YA0RR	-Romeo Stepanenko, P.O. Box 812, Sofia 1000, BULGARIA
ZD8SA	-P.O. Box 2, Ascension Island, South Atlantic
5K6CQ	-Laurencio Perez, P.O. Box 4142, Pereira, COLOMBIA
7P8SR	-Ray Shanweiler, P.O. Box 333, Maseru 100, LESOTHO
9L1LA	-P.O. Box 749, Freetown, SIERRA LEONE
9M8ZZ	-P.O. Box 1084, Bintulu 97008, Sarawak, MALAYSIA

June and two requests brought nothing.

Finally, N6JM is looking for a good route for VK4NUV (1982) and VE8NI (1979). The address for each in the present *Callbook* is apparently no good.

## QSL Routes

A35DN	-DL1SDN	EM3WDP	-UV3HD
A35DX	-DF2UU	EN3A	-U23AWL
A61AC	-ON7LX	EN3AP	-UA3PW
AP/WA2WYR	-KK6TX	EO1R	-ES1RA
BV4OB	-KA6SPQ	EO3AIR	-UA3IIA
C30CAG	-F6DGT	EO3R	-RA3RQT
C9RTT	-IV3GTY	EO8M	-ES1RA
CK2QK	-VE2JAD	ES1WN	-ES1RA
CO2OM	-W3HCW	ES1WW	-ES1RA
CO2PX	-HK5LEX	ES1UM8MM	-ES1RA
CO6CG	-HK5LEX	ES7R	-ES7FU
CT4A	-EA4KK	EU2R	-ES1RA
CY0SAB	-VE1CBK	FS4PL	-FG5BG
ED5MUT	-EA5A1	FU9R	-FE9RM
EF1VFN	-EA1URC	GB50RC	-G3LJK
EF5SS	-EA4KK	H5AM	-ZS6AW
EF5V	-EA4KK	H1A60M	-JA5DQH
EK8M	-ES1RA	H18A	-JA5DQH
EK250RA	-UA9OBA	HL9AA	-N2JNZ
EK0J	-U18ZL	HS0AC	-KM1R
EL2J	-G0AKX		(see note 1)
EM3W	-U23AYR	HW5R	-F1NRG
		IJ1A	-11RBJ
		IP5T	-IK5NJJ

J37ZF	-LA4LN	UJ/UM8MM	-ES1RA
J37ZG	-LA4LN	UM8TBE/RM6P	-UM9TWA
J68AE	-WB8ENR	V29W	-KD6WW
J68AK	-W8QID	V51JM	-NK2T
J79DX	-AA5DX	V63JW	-DF6FK
JA1ODP/DU1	-JA1PPW		(see note 3)
JT1/RB5LUK	-UB4LWA	V63NW	-DF6FK
JW0C	-UB5MUJ		(see note 3)
KC4AAA	-NC6J	V85KX	-G3JKX
NI5I/P1	-NI5I	VA1S	-VE1AL
NU2L1	-G3ZAY	VE3PJH/C6A	-DL2NCY
ON8DX	-A15P	V12RC	-VK2DEJ
R420A	-U26LWZ	VK4VD	-VK4CRR
R9H	-RW9HZZ	VK9LM	-DJ5CQ
RJ1J	-UJ8JMM	VP8CDJ	-GM4KLO
RJ4X	-UJ8JMM	VP8CFM	-GM4KLO
RL0L	-UL8LYA	VP8CGK	-VK4MZ
RR2WCY	-ES1RA	VP8PCW	-G4ZGV
RY6U	-RT5UN	VP8SSI	-AA6BB
RY0D/UM8MM	-ES1RA	VP9NMW	-WB2YQH
RY0U	-RT5UN	VY9RB	-WA4DPU
S79BA	-N2BA	VY2SS	-VE7ARS
S79KMB	-KN2N	XV7TH	-SK7AX
S92AA	-F6AXX	XW1A	-JA2EZZ
TL8MB	-KB9XN	XW8KPL	-JA2EZZ
	(see note 2)	YA/OK11A1	-OK11A1
TM5R	-F6CKH	YB8HX	-KA6KKN
TN4NW	-KB9ABI	YJ0AJU	-W6ZEF
U60TLN	-ES1RA	YV25ARV	-YV5ARV
UF7FWW	-UF6FFF	ZAI2OU	-PA0LOU
UH/UM8MM	-ES1RA	ZF2AG/8	-N8AG
UI/UM8MM	-ES1RA	ZF2GO	-KA9DZM
UJ/RM9M1	-ES1RA	ZF2QZ/8	-KG6ZQ

### Notes:

- This route applies for North America only.
- This applies for all contacts since December 12, 1991. Direct QSLs may be sent to Margaret Bendt, Ambassade des Etats-Unis d'Amerique, BP924 Bangui, Central African Republic. Please include SASE with sufficient funds for postage.
- QSL via the DARC Bureau is okay.

Many thanks to the following contributors: DL7NS, ES1RA, UA6HPR, VP25EE, KF1B, N2FZ, AE2X, W3BBL, WA4MCZ, N5KZZ, W6CE, W6TUR, AD6W, NK6Y, N7NZ, N7QQ, W9IXX, KB9XN, N0TG, *International DX Association (W4WMQ), Northern Arizona DX Association (W7YS), Western Washington DX Club (K7WA), W6GO/K6HHD List, QSL Routes, Edition 1991 (Y41VM/Y58ZA), The Canadian Amateur Radio Magazine (VE3JLP), Long Skip (VE3IPR), The DX Magazine (VP2ML), DX News Sheet (G4DYO), The Long Island DX Bulletin (W2IYX), QRZ DX (W5KNE), Inside DX (N2AU), and The DX Bulletin (VP2ML).*

There are two major DX contests coming up, both CW and SSB. Check out the ARRL International DX Contests. Quit fooling around with DX nets and join the fun. 73 de John, N6JM.

## MULTI-BAND SLOPERS

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2 .. .. 80, 40M	40 ft. ..	34.95
3 .. .. NO-TRAP DIPOLE - 160, 80, 40M	113 ft. long	37.95
2 .. .. 80, 40M	85 ft. ..	36.25
2 BAND SPACE SAVER DIPOLE - 160 thru 10M*	48 ft. long	9.93

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

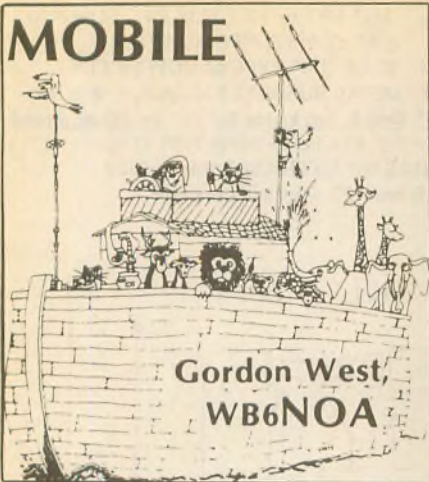
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BOX 393 MT. PROSPECT, IL 60056

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## Amateur Radio Language Guide

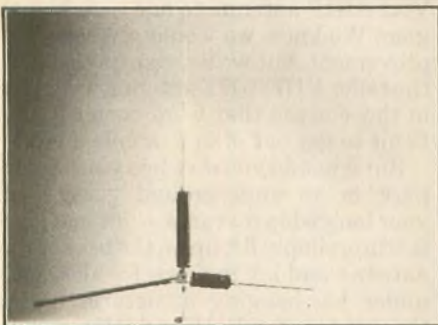
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### Tricks with whips

If you operate a high frequency, 1.8 to 29.7 MHz, mobile SSB rig, chances are you are using a center-loaded, pretuned, mobile whip. Hustler Newtronics; Hansen Supertenna; Kenwood MA-5 Series; Lakeview Ham Sticks; Outbacker; Bugcatcher, Texas Radio; Ten-Tec; Swantenna; Valor; Winnenna—these antennas all feature center-loading. They either have a loading coil in the center with a stainless steel whip tip, or helical loading in the center along with an adjustable whip tip. Notice I omitted the excellent top-loaded antennas which don't fall into this category. Mobile Mark and the very popular Spider series antennas feature top-loading, and the tricks I'm about to tell you won't apply to any top-loaded antenna.



Four-band valor spider-type antennas also work well with longer whip tips.

The longer your mobile HF whip, the higher the radiation resistance, and the more signal you are going to get out there on the airwaves. The more you load a whip down, the less efficient it gets. Ideally, your whip would have no loading at all. Consider the following measurements:

10M: eight ft. whip—a great performer.

15M: 11-ft. whip—tall and a great performer.

20M: 16 ft. whip—generally too tall for mobile in motion.

40M: 32 ft. tall whip—impractical.

80M: 64 ft. tall mobile whip—unthinkable.

The idea is to make your whip longer for better performance. Try this trick for 20M operation: Screw on a 15M center-load for operation on the 20M



Fixed mobile whips with longer tips need to be retuned to the exact frequency on which you plan to operate.

band, swapping the relatively short whip tip for another stainless steel stinger about twice as long. Next, see where the 15M resonator and the extra long whip is resonant and start fine-tuning for the 20M band. Since the 15M coil has less inductance than the 20M coil, resonance is achieved by adding a much longer stainless steel whip on top of the load. Once you find the right combination of the next-band-down load for an extra long whip, write down your whip tip lengths, and get set for an improvement in HF operation that you can literally hear and see when working DX mobile.

Since each manufacturer uses a different scheme of a stainless steel whip on top of the loading coil, you will need to do a lot of trial and error tests to see where that next-band-down coil resonates with the extra long whip tip. This is why I like the new MFJ SWR analyzer; it allows me to do all my testing without ever having to hang a signal out there on the bands.

For mobile HF operation, the name of the game is a nice long whip with as little loading as possible in order to get as much antenna out there to capture and radiate incoming and outgoing signals. Always wear protective eye glasses when working around whip tips. This is an absolute must if you are working with other hams standing close to you.

For VHF and UHF operation, improved performance to distant repeater and simplex stations may be achieved by going to a higher gain antenna. Gain is achieved by stacking elements in a collinear array over the

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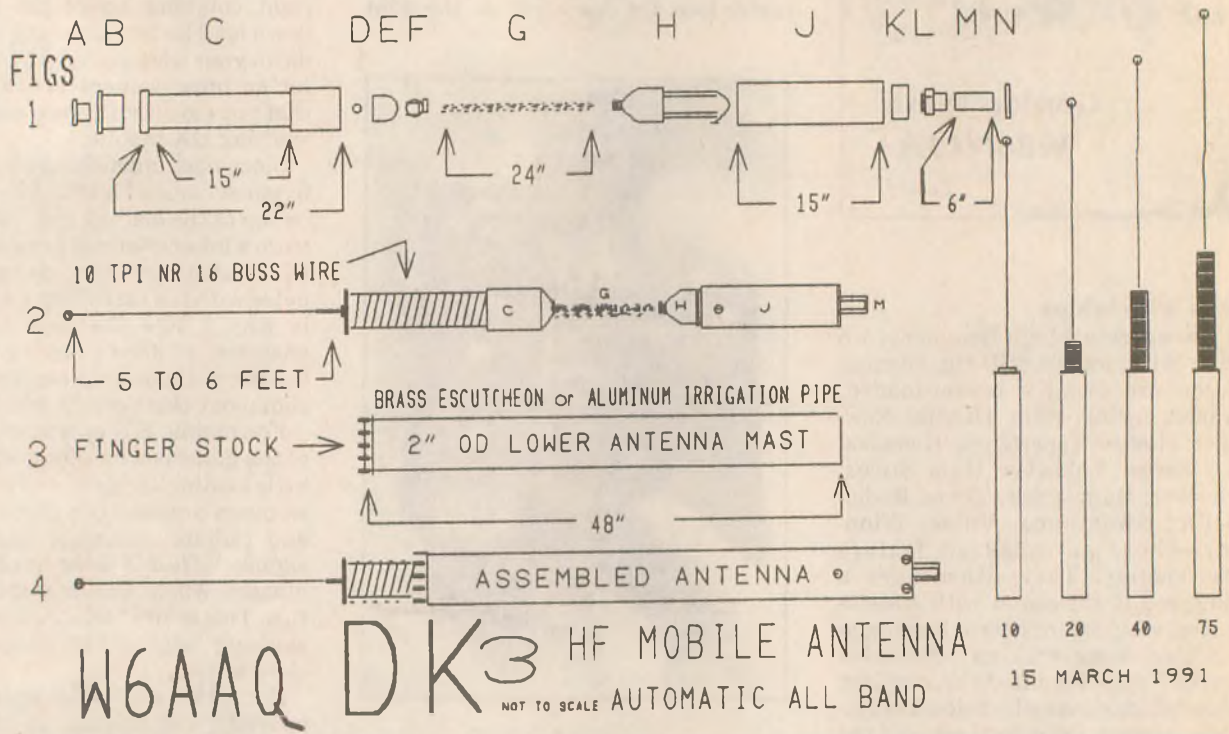
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- |   |                                     |    |                                |    |  |
|---|-------------------------------------|----|--------------------------------|----|--|
| A | 1/8" to 1/2" BRASS BUSHING          | E  | 1" PVC PIPE CAP                | K  | 3/4" NPT to 1 1/4" SLIP PVC BUSHING          |
| B | 1/2" NPT to 1 1/4" SLIP PVC BUSHING | F* | 1/4" BRASS PIPE PLUG           | L  | 3/4" COPPER PIPE ADAPTER                     |
| C | 1 1/2" SKED 40 PVC by 22" long      | G  | 24" of 1/4" by 20 ALL-THREAD   | M  | 6" of 3/4" TYPE M COPPER PIPE                |
| D | 1/4" CAP NUT                        | H  | CORDLESS SCREWDRIVER           | N  | METAL BUSHING (Doughnut) -see text-          |
|   |                                     | J  | 1 1/2" SKED 40 PVC by 15" long | F* | Drill & Tap inside for 1/4" by 20 all-thread |
- and-- 6 1/2" FINGER STOCK \ commercial or home made..see text. --also-- 75' #16 BUSS WIRE FOR COIL  
 CORDLESS SCREWDRIVER is either SKIL TWIST Model 2105 or a True Value-MASTER MECHANIC Model 8521  
 To use with W6AAQ tuner: Remove switch and batteries and replace with 5 ohm 20 watt WW resistor



**Home-brew your own very big mobile antenna.**

antenna mount. This is tough to do electronically at VHF and UHF frequencies without plenty of knowledge and plenty of equipment, so I suggest you experiment with brand-name antennas offering higher gain than what you already have. Both Comet and Diamond antennas, imported from Japan, are available in many sizes with increasing gain as the antenna length gets taller. Most antennas terminate to a screw-on mount assembly, so it's easy to unscrew a small antenna and simply screw on a larger VHF or UHF antenna (or a dualband or triband antenna) and see the performance increase.

During recent tests at NCG Corporation, manufacturers of the Comet antenna, Mick Stwertnik, KB6JVT,

and his dad, Bruce, N6BCM, made some interesting tests to repeater and simplex stations over 70 miles away on UHF. They found that a higher gain antenna, double the length of the original antenna, would usually improve signal strength by 1 S-unit, 6 dB. Even though the VHF or UHF antennas might not be rated in dB, in this "double its length" fashion we saw

dramatic improvements to distant stations by switching from a low gain VHF/UHF antenna to one with higher gain. We knew we would see some improvement, but we were surprised how the taller VHF/UHF antenna would fill in those areas that were normally difficult to get out of in a mobile unit.

But what do you do when you need to park in an underground garage? If your long whip features a "lift and lay" feature, simply lift up on the base of the antenna and lay it down for clearance under low-hanging structures. Also, the new breed of VHF and UHF mobile antennas also unscrew easily from their trunk-lip or gutter mounts, and this is one of the best ways to protect your \$100 investment when leaving your car unattended.

So there's plenty that you can do to improve your mobile HF or VHF/UHF signal. Antennas give you a two-way "power boost" without the need for linear amplifiers, pre-amps or other add-on gadgets. If you work to a longer antenna that is perfectly resonant on the frequency you plan to operate, you are bound to improve your mobile performance. □

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KENWOOD - Order Model L for TH-21/31/41AT. Model KI for TR-2500, 3500, 2600 series. Slides on bottom of radio. Model K for TR-2400. Through battery plug.

YAESU - Order Model Y for FT-207R, Wilson. Fits in battery compartment. Model N for FT-203R, 208R, 209R, 727. Powered through plug on radio bottom.

Model B for FT-23/33/73/411E/811/470/911 (slide on).

ICOM - Order Model I for all ICOM (2AT/02AT) slide on.

Others - Write for info.

**HANDI-TEK**  
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# Communications Radios

## SCANNER & SHORTWAVE

**AOR  
AR1000XC  
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AM Broadcast  
to Microwave  
1000 Channels

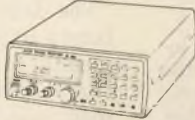
500KHz to 1300MHz coverage in a programmable hand held. Ten scan banks, ten search banks. Lockout on search and scan. AM plus narrow and broadcast FM. Priority, hold, delay and selectable search increments of 5 to 995KC. Permanent memory. 4 AA ni-cads and wall plus cig charger included along with belt clip case and ant. & earphone.  
Size: 6 7/8 x 1 3/4 x 2 1/2. Wt. 12 oz.



**AR2500  
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1MHz to 1300 MHz  
Computer Control

62 Scan Banks, 16 Search Banks, 35 channels per second. Computer control for logging and spectrum display. AM, NFM, WFM, & BFO for CW/SSB. Priority bank, delay/hold and selectable search increments. Permanent memory. DC or AC with adaptors included.  
Size: 2 1/4 H x 5 5/8 W x 6 1/2 D. Wt. 1 lb. Mtng brkt & Ant incld.



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Size: 3 1/7 H x 5 2/5 W x 7 7/8 D.  
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## SCANNERS

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100 Channel Hand Held

5 Scan & 5 Search banks with permanent memory. Extremely compact. Unrestricted 800 coverage. Permanent memory, Delay, Hold, Priority. Supplied with Antennas, Charger, Ni-Cad Batts, Belt Clip.



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100 Channel Mobile

Five banks of 20 channels, weather scan, delay, priority, and search. AC/DC power cords, Ant., and mtng brkt included.



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Bearcat BC55XLT.....	\$119.95
Bearcat BC560XLT.....	\$99.95
AOR AR880.....	\$149.00
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Bearcat BC172XL.....	\$139.95
Bearcat BC800XLT.....	\$249.95

## 2 - WAY

**RH256  
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REGENCY/RELM

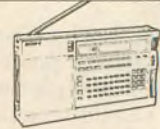
Keyboard programmable 16 channel 25watt transceiver with receive scan. Program CTCSS tone, range 148-162MHz. Mic, mtng brkt, DC cord included.  
Size: 6 1/2 W x 10 1/2 D x 2 1/2 W Wt. 64 oz.



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HR3500 10 mtr Mobile.....	\$249.00
Ranger Marine Mobile.....	\$159.00
Ranger Marine Hand Held.....	\$179.00

## SHORTWAVE

**SONY  
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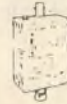


The top selling shortwave receiver. Covers 150KHz to 30.0MHz with 76 to 108 FM and 116 to 136MHz Air. Keyboard programmable with 32 memories. Synchronous detection and selectable IF bandwidth.  
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Kenwood RZ1.....	\$499.00
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### Just say yes!

In his latest book, *Uh-Oh*, Robert Fulghum makes the point that when children in a kindergarten class are asked if they can do something (dance, sing, act in a play, *pass a message on amateur radio*), they will immediately answer, "Yes . . . sure . . . now?" He points out that when the same question is asked of a college class, the responses vary from "Maybe just a tiny, little bit" to "No, of course not." Perhaps Mr. Fulghum is right and we become educated to how much we can't do. I suppose at some point along the way, we just stop trying. I invite you to regain your wonder, confidence, and optimism of a time gone

by. Yes, you can learn to be a traffic handler! It's really easy. There's nothing to it! It's lots of fun. You learn by doing. Get in there . . . find a traffic net, sing, dance . . . Say yes!

### Frequent traffic senders

There are many stations who keep up a steady flow of traffic throughout the year (as opposed to the many special event stations which come up each year for several weeks at a time). Much of this traffic is "roster traffic." That is, someone with a roster keeps moving through it, sending messages. These frequent traffic senders send so much traffic that you don't need a complete address to reach them. It is sufficient to just give their call, city and state. Following is a list of some of them:

- N1CPX, Concord, NH — Ken, tapes to blind hams
- NM1K, Enfield, CT — DXCC (28017)\*
- W1KX, Pittsfield, ME — Kiwanis Club
- WA2SPL, Alburg, VT — Joe, QSL manager for V47RF
- W3CUL/W3VR, Seminole, FL — Mae and Al Burke, QCWA (96 Gator Chapter)
- W4LQF, Arlington, VA — Paul, 36th Signal Company\*\*
- K6UYK, N. Hollywood, CA — SSA (Soaring Society of Amer.) and QCWA (8554)
- N8GEC, Warren, OH — Military reunions
- NR9K, Muncie, IN — Yohi friends (Kirk)
- WA0SGJ, Golden Valley, MN — Handi-hams (Sister Alverna)

\*NM1K, Rusty, is the manager of an independent VHF traffic net known as the Bears of Manchester Traffic Net. He reports that over the past few years the net has handled over 9,000 pieces of traffic and has had over 9,000 check-ins. They help their community by going to a nursing home and sending traffic for the residents. Many Courage Handi Ham System messages have

been using NM1K as a station of origin recently. They evidently have a direct data link.

\*\*It's particularly nice of Paul and Louise Wells to send messages to the wives of deceased members.

### Are you a Swedish ham in the US?

Then make use of the Swedish CW net to send messages home to Swedish hams. While we don't have third party with Sweden, you can send amateur-to-amateur traffic. The net manager, Holger, SM7GWF, and his wife, Malie, SM7LYL (in Malmo), would love to hear from you. Insert your message into the NTS on a net. It will be forwarded to the ARN (Atlantic Region Net—international NTS outlet). From here, it will be given to the liaison station going to SAN, our Swedish/USA net. 4Z4OX often checks in as well as a few European stations. Or, join us on 14.065 at 1130Z each Saturday.

### Zero beating

I was very pleased to receive some exceptionally good mail on this topic in response to my last article. This mail revealed that operators seem to feel that part of the problem (not zero beating) lies with the manufacturers. W6OWP, on Paradise, CA, stated, "The failure of transceiver manufacturers to provide a quick and accurate means of zeroing an incoming CW signal always bothered me." Bart mentioned an article in *73* magazine (10/90) for a tone indicator which has been demonstrated to work on the following rigs: Kenwood 830S, Kenwood 520S, Kenwood 430, Yaesu FT-101E and Yaesu FT-757GX. Bart says the circuitry is not complicated, utilizing a single 567 decoder chip with an LED that indicates when an incoming CW signal is tuned to the particular transceiver's offset audio frequency.

W2QNL mentioned he also enjoyed his Kenwood 930. But, alas, Lee states, "It is now 'locked up' with a trouble Kenwood admits is defying their diagnosis." As to zero beating . . . Lee relates a funny story on how we worked it all out. Being an NCS and an expert traffic handler, he realized the importance of zero beating. When his 930 was new, he checked the manual for how to zero beat.

"The manual neither had an index nor did the Contents have anything about zero beating. I looked under 'Transmission,' and found diagram (Fig. 5-10) titled 'CW Zero-Beating'—swell. Just what I wanted. However, Fig. 5-10 showed that the beat frequency was 800 Hz 'wide' and that didn't sink in right away. What was meant was that the audio tone

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that is heard is 800 Hz away from the two carriers when they are at the same frequency (at zero-beat). This is my monitoring tone."

So, he figured all he needed to do was to recognize an 800 Hz tone. He pulled his old clarinet from the closet and checked it with his pitch pipe to middle C (256 Hz according to Ghirardi's *Radio Physics Course*). Running through the scale, he found that G sharp was 809.7 Hz. Pretty

close. After committing the sound to memory, he was able to zero beat with NCS perfectly. Alas, a week later he changed the pitch control for code practice and realized he has also forgotten what G sharp sounded like. Thinking there should be a better way than keeping a clarinet by his side, he checked the manual again. Browsing along in the same area, he noticed zero beat again. Upon more careful review, he found the answer.

*If zero beat cannot be tuned easily (by ear), place the MODE switch to TUNE and adjust the main tuning for zero beat on the desired signal. Then switch back to the CW mode. Your transmit frequency is now adjusted to that of the station you are working,*

and receive pitch (and transmitting side-tone) will be 800 Hz.

The bottom line is: *take the effort to find out how to zero beat your radio.* QNZ is the Q-signal given for zero beating. CW NCSs generally open a net by saying QND and QNZ.

### HXE/ARL Seven

My primary mode of communication with relatives and friends is via the phone and/or letters. I send them an occasional message for the fun of it. Therefore, it isn't particularly important if the message makes it there or not. Besides, the NTS is supposed to be reliable. Recently I needed to know some Amateur Radio calls from a few people who had passed their radio license. I sent eight messages asking directly for a reply. I included HXE in the preamble and ended with ARL Seven to N4GHI. I requested eight replies from the following places: SC (two), DE, MD (two), VA, AL, PA. I only received three answers. This is an awful response. If HXE or ARL Seven is included, a reply should be sent, if only to say the message was undeliverable (no outlet, phone no good, party doesn't wish to reply or whatever). I fervently hope this isn't representative of the system.

### Education

In my last article, I suggested we all go give an Amateur Radio presentation to our neighborhood elementary school and as a grand finale, send messages for the kids. I decided to carry out this assignment myself. It was a wonderful experience. I called the principal, who put a blurb in the next teacher bulletin. To date I have made presentations to one sixth grade and two third grades. It worked so successfully that we may even start a radio club at the school. A few other teachers have asked for the presentation. As preparation, the children need to take a note home explaining the necessity for having a complete name, address and phone number (out of their local calling area) as part of an upcoming Amateur Radio presentation. The parents can also be invited to come along and enjoy the presentation. One problem you need to work out in advance is to find someone you can send messages to for those children who don't know anyone. If you are at a loss for addresses, they can address it to third or sixth graders at Washington Mill School c/o N4GHI. Try it. It's neat. It makes you feel good working with children who are so eager and interested. Just say yes! □

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Hypnosis tapes are not copy-practice tapes. **Money-back guarantee** (less restocking fee) when you use the tape 30 consecutive days.

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Believe you can't do it? **CW Mental Block Buster** is for you. Besides relaxing and re-learning the code the right way, you visualize the results that you want! Just like the olympic athletes do! **Block Buster** explodes mental blocks with a single cassette tape and a workbook with break-through exercises! It is as easy as day dreaming. But it is

the most powerful tool for personal change known to man! **CW Mental Block Buster** is \$24.95 ppd in US.

March 23, 1991  
Thank you for your **CW Mental Block Buster** tape. It really works. I have tried to learn CW for a period of 31 years. The best I could do was 3 wpm. I was at the point to give up a life long dream to be a ham. I saw your ad, and it seemed to offer a new approach. I faithfully used the tape twice a day and did the workbook exercises. I also began to use some slow speed practice tapes. Much to my surprise, I could copy 8 wpm with no problem! I passed my Novice and then the 13 wpm General—**KB2HTB**

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## Were you licensed prior to 1968?

If so, QCWA is looking for you! The Quarter Century Wireless Association is anxious to recruit the modern-day pioneers as well as the old-timers. We recognize that there has been as much real pioneering done in radio in the last 25 years as there was in the first 25, and we know we need the modern-day pioneers to carry on the organization.

QCWA was founded in 1947 to recognize the original pioneers who developed the art of wireless communications. The first official licenses were issued by the Department of Commerce in 1912. Prior to that the Navy had issued a few Certificates of Proficiency to its wireless operators. World War I brought many wireless experimenters into the military service and rapid advances in communications developed during that period. When the war was over, there was an immediate boom in Amateur Radio, and by 1922 the amateur population had grown to over 13,000. Twenty-five years later, a small group in New York City decided it was time to form an organization recognizing those amateurs who had been operating (legally) for at least a quarter of a century. QCWA came into existence on November 14, 1947.

From the beginning, the founders envisioned a viable organization that would continue to draw on the knowledge and experience represented within the membership of QCWA "for the benefit of all radio amateurs and the furtherance of the public welfare

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through radio communications." Their objectives are certainly being realized. Today the QCWA is a prestigious organization with over 10,000 active members and roughly 450,000 man-years of experience and expertise. But the future depends on new blood and continuing efforts. In other words, QCWA wants YOU!

## Historical facts

Notice the emphasis above on the words "operating legally." There was a good deal of "bootlegging" in those early days. As long as your signals presumably could not be heard beyond the state line, you didn't need a license. And if there was more than one amateur at the same address, there was only one station license issued—and consequently only one call sign. It was not until 1948-50 that an XYL could get her own call sign! Some got around it for a while by claiming to have a station at her parents' address or by getting a mobile station licensed separately in her name. It has been a bit difficult to establish proof of legal operation in some of these cases, but QCWA has a good library of call books and is very cooperative in trying to establish eligibility for QCWA membership and the anniversary awards. Remember, too, that QCWA membership does not require 25 years of *continuous* license. If you were licensed 25 years ago, and are licensed now, you are eligible for membership. Write to the new QCWA headquarters for an application. The address is 159 E. 16th Avenue, Eugene, OR 97401-7718.

## Elmer program

QCWA President Harry Dannals, W2HD, continues to emphasize the op-

portunity for QCWA members to provide "elmering" for the new generation of amateurs now coming into the Amateur Service. Much is being done in the way of training classes and examination programs, but the newcomers—young or old—need a lot of help and encouragement to actually get on the air and become good operators. We said it once before, but it will bear repeating again: Experience doesn't come in the envelope along with the license. With the sophistication of new technology and the proliferation of new and complicated modes of operation available to new amateurs, it is more important than ever that they have an elmer who can look over their shoulders and give them guidance and the benefit of his own years of learning the hard way. Don't sit back and criticize the new amateurs who aren't instant experts. Give them a few minutes of your time and your patient encouragement. That is the way we will develop good amateurs for the future.

QCWA can play a great role at both ends of the age spectrum. Certainly one of our current needs is to kindle an interest in young people to pursue technical fields of study. Amateur Radio is an obvious answer. At the other end of the age spectrum are the retirees who have devoted their lives to productive pursuits and now find themselves presented with "a gold watch and a rocking chair." Bring Amateur Radio to these older people. Give them a challenge to their lives and an activity that can provide very productive use of their new-found spare time. Get the young and the old working together in the pursuit of Amateur Radio. It can bring great benefits to both.

## National Convention

The dates have been set for the QCWA National Convention to be held in Scottsdale, Arizona. Barry Goldwater will be the featured speaker and it is hoped it may be possible to have a tour to the famous K7UGA shack. There will be the usual open forum for membership participation, and the presentation of honor awards. A full three days of activities are planned. Mark your calendar now and plan to be in Scottsdale, Arizona on October 8 through 10.

## Board meeting

The spring meeting of the board of directors will be held the first week in April at Eugene, Oregon. This is a "closed meeting," but if you have anything you would like to have the board consider, be sure to get the information to them as soon as possible. □

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That could mean the difference between hearing, "You're Q-5 armchair copy" and, "Sorry can't copy you, too much GRM."

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811A tubes resist premature failure in two ways.

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**Indirectly** heated oxide cathode tubes (like the \$400 3CX800A7) can be rendered instantly useless if their electron emitting layer is stripped off because of a severe current overload due to mistuning.

The Ameritron AL-811 is excellent for the newcomer because it's tough enough to withstand momentary mistuning. And the tubes are so inexpensive that you can replace one for mere pocket change.

**The Ameritron advantage: extra heavy duty power supply that gives you peak performance year after year**

The heart of the AL-811 power supply is its heavy duty power transformer with a



high silicone steel core weighing a hefty 17 pounds.

A full wave bridge using 52.5 ufd of total capacitance (four 210 ufd, 470 volt capacitors) produces 1500 volts under full load and 1700 volts no load. That's excellent high voltage regulation!

Full height computer grade filter capacitors with screw terminals are used — not short stubby, light duty soldered-in "high technology" capacitors that can't dissipate the heat generated by high current.

The rectifier diodes are rated for a massive surge current of 200 amps. They won't blow even if you accidentally short the high voltage supply.

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

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

**Tuned input provides excellent load for any rig**

A Pi-Network tuned input provides a 50 ohm load for your rig. Even fussy solid state rigs can deliver their full drive to AL-811.

Low loss slug tuned coils — tunable from the rear panel — let you optimize performance. High quality low drift silver mica capacitors maintain proper tuning.

**Output tank: optimum Q on each band**

The low loss pi-network output tank of the AL-811 has been carefully designed for optimum Q on each band and built with quality RF components.

The result is peak performance over each band, wide impedance matching range and exceptionally smooth tuning with efficiencies close to 70%. Even a 3:1 SWR load won't damage the tubes or tank components.

A ball bearing vernier reduction drive makes plate tuning precise and easy.

**Quiet pressurized ventilation keeps your tubes safely cooled**

A quiet fan pressurizes the cabinet with over 20 cubic feet per minute of cool air.

This large volume of air flow keeps the 811A tube temperature safely below the tube manufacturer's rating — even with a key down carrier at 500 watts output.

**Two illuminated meters**

Two illuminated meters give you a clear

picture of your AL-811 operating conditions so you can tell right away if something is wrong.

The Grid Current meter continuously checks for improper loading. The other meter switches between high voltage and plate current to warn of abnormal conditions.

**Ameritron exclusive Adapt-A-Volt™ power transformer**

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

Ameritron's exclusive Adapt-A-Volt™ power transformer has a special buck-boost winding that lets you compensate for stressful high line voltage and performance robbing low line voltage.

This makes your components last longer and gives you peak performance — regardless of your line voltage.

**Plus more . . .**

An Operate/Standby switch lets you run barefoot, but you can instantly switch to full power if you need it.

A transmit LED tells you when your rig is keying your AL-811.

A 12 VDC keying relay makes it compatible with all solid state and tube rigs. A built-in back-pulse cancelling diode protects your rig's keying circuit.

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There are a lot of things in this world that seem to go backward when technology goes forward. Take the telephone system for example. With the coming of touchtone dialing the bright young men and women who designed the digital wonders replaced the old-fashioned ringer bell with all kinds of musical sounds. I assume that the new ringer sounds were cost-effective in the manufacturing process, but most of them are non-effective in reaching my aging ears.

Oh yes, you can still buy telephones with mechanical ringers, but in the competitive world ruled by stylists, the big old bell that clanged loud enough to wake the dead has been shrunk to fit inside "stylized" telephone machinery, and ringer decibels be damned.

My hearing has been deteriorating for years; the voice frequency area is fair, but the high frequency response above 5,000 Hz is gone. I followed this degrading of the highs each time I took my annual pilot's FAA medical certificate exam. "Well, Bill," the audiologist would say, "you're down a couple Db at 5K." I grew to expect it.

I guessed the loud noise of my Cessna's aircraft engine plus a little help from the growing-old-process was causing the problem.

In my industrial film (and video) studio I had a complete magnetic 16 mm film sound system. It consisted of six magnetic film phonographs ("dummies" for you ex-film makers) and an "insert" recorder. All the machines were driven by a huge Selsyn generator. We would take up to six separately edited sound tracks of dialog, narration, music and sound effects and mix them together while watching a projected picture on the screen. The Selsyn motors made it possible to stop, back up, and go forward without losing synchronism between the elements of the mix. Then the combined magnetic track would be translated to optical for printing with the picture film.

We had a routine of running the SMPTE (Society of Motion Picture and TV Engineers) 16 mm audio test film on a regular basis. We did this to check the frequency response of the dummies and the recorder. We'd periodically put a meter and a scope on the output of the system and then chart and tweak the response of the various audio channels. The test film went up the frequency ladder in hundred-cycle increments at the low end and in thousands after 1K.

I couldn't hear a 10 kHz sine wave sound, but I could see the wave form on the scope and level on the output meter. And I also knew it was coming out of the loud speakers because invariably one of our young employees (with 25-year-old hearing) would holler: "For God's sake turn that screaming tone off!"

Well, to get back to my home telephone system, I've stayed with the old-fashioned pulse dial system because I can hear the bell in my old phones but can barely hear it in the new ones. When the television is on, I must miss a lot of phone calls because

our stylish phone, with all the memory goodies, is in the living room near the boob tube with stereo speakers, etc. Like I said, a lot of things go backward when technology goes forward.

I occasionally see a copy of *Mix* magazine. *Mix* is an audio industry journal. It features articles and ads about professional audio equipment. In it I read about 48-track recording, automated mix-downs, and all the sophisticated signal processing gear available for the recording studio. But when I listen to contemporary radio stations I have trouble understanding the lyrics of the latest hits. For me the words sung by many of the contemporary artists are all lost in a jumble of drum rim-shots, synthesized piano chords and guitar twangs. It's funny, because when I listen to old records of Sinatra, Nat King Cole, and Peggy Lee singing songs recorded many years ago on "primitive" gear, I can understand every syllable. Perhaps the modern day lyrics are intentionally hidden in the cacophony of harmonic noise because they usually consist of the same lyric line repeated over and over again.

### RTTY press book

The fifth edition of the *Radio Teletype World Press Services* is out and it's filled with 84 pages of information about the RTTY bauds that are sailing through the ether outside of the ham bands. Compiled by Thomas Harrington, W8OMV, the book should be of value to any RTTY fan who likes to browse around the radio spectrum and eavesdrop on the news services.

The book is divided into three station lists. The first one is compiled by transmitting hours, the second by frequency order, and the third by country and press service. In addition to the lists, the book has a rather interesting list of abbreviations used in the press world. Here are a couple examples: KYODO is the abbreviation for KYODO Tsushin, wherever or whatever that is. And JANA is short for Jamahiriyyah News Agency.

Tom Harrington has also included a lot of information for the beginner on RTTY, AMTOR, etc. He deals with problems of copying foreign press,

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too. Of particular interest to me is his discussion of secrecy and bit inversion codes used by some of the stations listed. As an old World War II Signal Corps member who dealt with cryptography and radio transmission work for three years in the Southwest Pacific, I'm always fascinated by methods of coded transmission.

I didn't have too much luck searching the bands for the rare and juicy DX press listed in the book. The day I got the book my AMTOR computer blew the fly back transformer. I jury rigged another old computer and set out to search the spectrum. The A and K indices, as reported by WWV, were high, and my beam favors the ham bands, but I had fun searching.

I've owned an ICOM-765 since they first came out, but I've done very little tuning outside of the ham bands. So, when I started to go through the book and look for press stations, I found out there is a lot of spectrum out there that my rig has never encountered. The ham bands are pretty small when you scan in between them.

The biggest kick I received from my expedition outside of the ham bands was tuning in KFS, a commercial shore-to-ship radio link on the West Coast. This brought back many memories. During WWII, KFS, as a service to their subscribing ships, transmitted two hours of abbreviated press each day. Almost every unit of the Army or Navy serving in the Pacific copied the daily broadcast to supply news to the troops. In my three years overseas our outfit copied the CW news, keyed at 22 wpm, every day we could. I personally learned to copy code on a typewriter by listening to KFS and later KUN, a station that transmitted the State Department News at 35 wpm (with every punctuation mark in the book tossed in). After the war an ARRL 35 wpm code proficiency test was a breeze for me.

In my recent encounter with KFS, I copied a traffic list from KFS on

SITOR, the commercial version of our AMTOR. They are still communicating with ships, and I assume they may still be sending capsule news for the merchant marine. Anyway, tuning around the non-ham bands can be fun. If you're interested in obtaining a copy of the book, contact Tom Harrington, 4555 Groves Road, Suite 13, Columbus, OH 43232.

### Eavesdroppings

I THINK SOMEONE MUST HAVE PUT THE EVIL EYE ON YOUR ANTENNA CAUSING IT TO COLLAPSE ... YOUR SIGNAL WAS LOST IN AN AVALANCHE OF RYRYRYRYRYRS... THE CAR BATTERY CAME LOOSE FROM ITS MOORING AND SUNK DOWN IN THE ENGINE COMPARTMENT AND I DRUG IT FOR A MILE DOWN A DIRT ROAD ... HOPE YOUR WIFE'S BATTERY GETS CHARGED UP OKAY ... I RETIRED FROM THE ESSEX GROUP SOME TIME AGO ... OUR LAST DOG WAS A PUPPY COON HOUND WEIGHING ABOUT SIXTY POUNDS ... I WORK THE DIGITAL MODES TO AVOID THE GARBAGE ON THE OTHER MODES AND I PERSONALLY FEEL THAT THE DEGRADE IS CAUSED BY THE NO-CODE LICENSE ... 73 AND LEAVE SOME DX FOR ME ... THERE ARE A LOT OF PIRATES OUT THERE BECAUSE ANYONE WITH MONEY CAN BUY RADIO GEAR TODAY ... MY WIFE SAYS

I FARM ANTENNAS WHEN IT WOULD BE MORE PROFITABLE IN POTATOES ... MY ANTENNAS ARE A TRI-BANDER AT 10 FEET AND A COUPLE INVERTED-VEES MOUNTED 15 FEET BELOW THE BEAM ... IT WAS CERTAINLY NICE TO WORK YOU FOR THE FIRST TIME AGAIN ... I USED TO BLAME THE WOODPECKER FOR LOUSING UP HAM RADIO, NOW I BLAME THE OZONE HOLE. I THINK IT'S LETTING SOME OF THE HEAVISIDE LAYER LEAK OUT INTO SPACE ... HAVE A GOOD WEAKEND ... I BOUGHT A NEW TRANSCEIVER AS I WANT TO HELP OUT BY KEEPING THE TRADE BALANCE UNBALANCED ... MY WIFE CAN'T WAIT FOR THE FOOTBALL SEASON TO GET GOING AGAIN ... I'M USING A NEW SOFTWARE HERE SO HOW DO YOU COP?

My thanks to W0HAH, W0ML, W7VFR, W7NSU and a few others for their contributions to the column. If you wish to communicate, my address is: Bill Snyder, W0LHS, 1514 South 12th Street, Fargo ND 58013 or W0LHS @ W0LHS.ND.U.S.A.NOAM by packet. 73 and gud DX. DIT DIT. □

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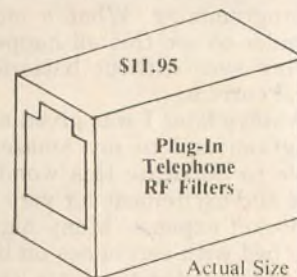
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## OLD-TIME RADIO



# Reach out

DAVID OBERLE, NE5E

As a boy growing up in central Arkansas I enjoyed most types of sports inclusive of baseball, golf, basketball, tennis, and swimming. I lived a very normal and happy life being involved with other activities such as Boy Scouts, camping, fishing, and church activities.

One day, one of my neighbors invited me over to see his home brew crystal set radio. What I saw was a square unpainted board of lumber about 12 by 12 inches with a coil, a simple labyrinth of wire circuits, a crystal and a cat whisker, and a pair of earphones. It was hard for me to believe that such a simple set up could pull signals out of the air; these signals as I listened contained news, weather reports, music, and good radio programming. What a marvelous wonder to see this all happening before my eyes without batteries or electrical current.

A few days later I was given a simple diagram, and to my amazement was able to duplicate this wonder of intrigue and excitement for very little out-of-pocket expense. Many nights I went to bed with earphones on listening to AM broadcasts on my crystal set.

A year later, my parents gave me a beautiful little Arvin AM radio; it had white dial and volume controls and a bright fire engine red cabinet. This small tube set, when enhanced with my then outdoor crystal set antenna, was able to pull in local broadcast stations, as well as some of the big broadcast signals of that day such as WOAI in San Antonio, KMOX in St. Louis, WSN in Nashville, and WWL in New

Orleans. I could even pull in XERF with studios in Del Rio, Texas, and the transmitter in Mexico. How could this all be happening with no wires connecting me to the stations, yet with the signals perfectly readable?

My interest was regenerated, and kept alive in high school when I wrote a high school English paper on Marconi and his developments and contributions to radio. This was further highlighted my senior year in high school when I heard about and visited a high school Amateur Radio club. The radio club met in the early morning before school started; when I entered the room, there before me was a licensed radio amateur with a simple CW rig, pounding brass with what to me seemed DX from Little Rock, Arkansas, our location, to a station in Mobile, Alabama. DX? What more could there be than traversing conversation over several hundred miles?

That was about it for me and radio until much later. I went on to college where I worked a great deal, and had very little time for any extracurricular activities. But that burning interest in radio never left me. After college, I started to work in the pharmaceutical industry in Dallas, then Omaha, Nebraska, then Los Angeles. In August of 1971 I was transferred by my company to San Antonio, Texas, where I now reside and work for the same pharmaceutical company.

One night my son Steven and I went to an Indian Guides meeting with fellow participants. That particular evening was devoted to sharing hobbies with the group. As the roundtable

went around one of the members attending talked about ham radio and what it meant to him; he even talked about the capability of talking to Europe and other places on the globe. After the meeting, I mentioned that I had been studying the code and was looking for the right opportunity to take a shot at the Novice exam. K5AWK invited me over for coffee several nights later with the offer that he would give me the code test. (At that time you took the code test and, if you passed, the examiner wrote for the written test from the FCC) I took the code test and passed; a few weeks later I also passed the written. A new ham was born in the framework of WN5NMV. My call today is NE5E, after upgrading.

Once my license arrived K5AWK helped me purchase a used rig and helped me build and install some dipole antennas. (I say he helped me; I mean I helped him as he labored to get me set up and on the air.)

Since then, the world has been my oyster from shining seas to mountain peaks, and from arctic circles to the Caribbean. All of it has been exciting, fun and challenging. Today I work with wonder and amazement with a Drake TR4C, barefoot power into a loop antenna.

Another facet of my amateur activities is a long-standing schedule each Saturday morning with a friend and business associate, KB5RZ in Albuquerque, New Mexico. We get on Saturday mornings over our morning coffee and converse over the 700 miles that separate us.

Amateur Radio was, is, and will remain a great hobby for those who reach out to it and handle it with respect and with partnership. Here is a hobby where you have to give some, but what you give comes back to you in increased satisfaction, joy, interest, education, and entertainment. It is still an excitement to get on the air with a CQ and wonder who is going to come back and from what part of the world.

What will be your special challenge or project with Amateur Radio in 1992? Give it some careful thought, then reach out. It will bring you wonderful returns. □

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*Far better it is to dare mighty things, to win glorious triumphs, even though checkered by failure, than to take rank with those poor spirits who neither enjoy much nor suffer much because they live in the gray twilight that knows neither victory nor defeat.*

## 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).** P.O. Box 3141, Montgomery, AL 36109. Meets 3rd Mon./monthly, 7 p.m., State Trooper Dist. Office, Coliseum Blvd. & Federal Dr. Nets Sun. 8:30 p.m. 146.84 and Thurs. 8:15 p.m. 147.18+. Info: Fred, KB8AJX, (205) 270-0909.

### ALASKA

**Arcctic 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. at club facility on Moson Rd., Sierra Vista, AZ. Net: W0LKI info Net every Thurs., 7 p.m., WA7KYT/R 146.16/146.76 rpt.

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

**Western Arizona Radio Club.** Meets 2nd & 4th Mon./monthly, 7:30 p.m., Bullhead City Lib. on Hancock Rd., Bullhead City, AZ. Local Net operates Tues. evenings on 147.12 @ 1900 hours. For info contact W6DRM (602) 758-5171.

### ARKANSAS

**Central Arkansas Radio Emergency Net, (CAREN).** Meets 1st Thurs./monthly, 7 p.m., 1111 West Capitol Ave., Little Rock, AR. Thurs. night net, 8 p.m., 146.940, swap net afterward. Severe WX net anytime 146.940. Code 8 theory classes continuously. Info, KB5IDB, Bob Hancock, (501) 771-2617.

### 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. WA6WYI 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 Thurs./monthly, 7 p.m., La Mesa Church of Christ, 5150 Jackson Dr., La Mesa, CA. Rptrs: 147.675(-), 224.080(-). PL 107.2. Nets 147.570 Wed./Sat., 7 p.m. Info (619) 697-2700.

**Associated Radio Amateurs of Long Beach, W6RO.** P.O. Box 7493, Long Beach, CA 90807. Meets: 1st Fri./monthly, 7:00 p.m. Signal Hill Recreation Hall, 1708 E. Hill St., Signal Hill, CA.

**Conejo Valley Amateur Radio Club (CVARC).** P.O. Box 2093, Thousand Oaks, CA 91358-0917. Meets 1st Thur./monthly at King of Glory Lutheran Church, 2500 Borchard Rd. Newbury Park, CA, 7:30 p.m. Info on 147.885/285 and 445.925/0.925 (PL 123) or call N6LQ Ernest (805) 499-5398.

**Contra Costa Communications Club, Inc. WD6EZR/Rptr.** P.O. Box 20661, El Sobrante, CA 94820-0661. Meets 2nd Sun./monthly at 9 a.m. Hickory Post Restaurant/Lucky Lanes. Nets: 07:10-08:30 M-F; 7:30 Thur. eve. all 145.110. 224.300 & 444.275 w/possible PL 82.5. Info call Ed, KA6OFR, (707) 996-0962.

**Downey Amateur Radio Club.** Meets 1st Thur./monthly, 7:30 p.m., So. Middle Sch., 12500 S. Birchdale, Downey, CA. Wkly nets—Thur., 7:30 p.m. 146.595 (S). For info: P.O. Box 207, Downey, CA 90241-0207.

**East Bay Amateur Radio Club, Inc.** Meets 2nd Fri./monthly, 8 p.m.-10 p.m., Northbrae Community Church, 941 The Alameda, Berkeley, CA. Info: Gordon Firestein, (415) 527-9382.

**Escondido Amateur Radio Society (E.A.R.S.).** Meets 4th Mon./monthly, 7:30 p.m., North County Blind Activities Center, 157 E. Valley Pkwy., Ste. 1B, Escondido, CA 92025. Info Net Sundays, 8 p.m. 146.88(-) or 743-4212.

**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. Commonwealth, Fullerton. Net ea. Tue., 8 p.m. 147.975 (-600). Info, Phil Gray, KJ6UV (714) 524-5223.

**Gabilan Amateur Radio Club GARC.** P.O. Box 2178, Gilroy, CA 95020-2178. Meets: First Interstate Bank, 751 First St., Gilroy, CA, 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.

**Hercules Amateur Radio Club.** P.O. Box 5043 Hercules, CA 94547. Meets 3rd Sun./monthly, 6 p.m. at Ohlone Community Center, 190 Turquoise Dr., Hercules, CA. Info: Noel, AB6AC, (510) 799-4458.

**Hilltop Amateur Masterie 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+. For info: Rosalie Powers, KC6RKU, c/o LARK, P.O. Box 3190, Livermore, CA 94551-3190. (510) 447-3815.

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

**Monterey Park Amateur Radio Club (MPARC), K6GIP.** P.O. Box 403, Monterey Park, CA 91754-0403. Meets 2nd Thurs./monthly, 7:30 p.m., Community Rm.—City Hall, 320 W. Newmark, Monterey Park. Nets: Tues. 7 p.m. 147.48 Simplex — 7:30 p.m. 28.385 MHz. Info: John Duce, N6EDX (818) 280-7052.

**Moreno Valley Amateur Radio Assoc.** P.O. Box 7642 Moreno Valley, CA 92303. Meets 4th Mon./monthly, 7 p.m., City Council Chambers—City Hall, corner of Cottonwood & Frederick Sts. Net Tues. 8 p.m. 146.655- (PL 1A). Info, Larry Marcum, KA6GND, (714) 656-1643.

**North Hills Radio Club.** Meets 3rd Tue./monthly, 7:30 p.m., Elks Lodge, on Cypress at Hackberry in Carmichael, CA. Net K6IS Thurs., 8:00 p.m. 145.190. 220 Net, Tue. 8 p.m. 224.40(-).

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

**Orange County Amateur Radio Club.** Meets 3rd Fri./monthly, 7:30 p.m. at Republic Fed. Savings Bldg—corner of Seventeenth St. and I-55 Freeway in Tustin. Call in on 146.55 simplex. Contact Ken Koehchy W6HHC at (714) 541-6249.

**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.

**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. Info net every noon on Rptr. W6AK/R 146.910.

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

**San Fernando Valley ARC.** Meets 3rd Fri./monthly, 7:30 p.m., Red Cross, 14717 Sherman Wy., Van Nuys, CA. Net every Thur., 8:00 p.m. KB6C/R 147.735(-).

**San Gabriel Valley ARC.** P.O. Box 88, Monrovia, CA 91017-0033. 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 Monday/monthly, 7:30 p.m. at United Way, 1922 The Alameda, San Jose. Net all other Mon., 7:30 p.m. W6UW/R 146.385 +/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.

**Santa Cruz County Amateur Radio Club, Inc.** Meets last Friday/monthly at Dominican Hosp. Ed. Bldg., Soquel Dr., Santa Cruz, 7:30 p.m. Net K6BJ 146.79 Mondays at 7:30 p.m.

**Santa Monica—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.

**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 Amateur Radio Club.** Meets 3 Mon./monthly, 7 p.m., Hamilton Branch Fire Dept., Big Springs Rd., Lake Almanor, CA 96137

**Southern Humboldt Amateur Radio Club.** P.O. Box 701, Redway, CA 95560-0701. Meets 4th Wed./monthly, 7 p.m., SHARC Clubhouse, Garberville, CA. 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, 224.14 MHz.

**Tehama County ARC.** Meets 1st Fri./monthly, 7 p.m., Sept.-June, CA Div. Forestry Training Rm., Antelope Blvd., Red Bluff, CA. For info: 145.850/145.50 W6SY/R.

**The Trinity County ARC.** P.O. Box 2283, 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., 7:30 p.m. Monitors 145.52 Simplex 10 a.m.-5 p.m..

**Vaca Valley Radio Club.** Meets 2nd Wed./monthly, 7 p.m., Vaca Fire Dist. Stn. on Vine St. in Vacaville, CA. Repeater: WX6F 147.475 (-1 Meg) PL 107.2. Ph: (707) 447-0163.

**Victor Valley Amateur Radio Club.** P.O. Box 869, Victorville, CA 92393. Meets 2nd Tues./monthly, 7:30 p.m., Yucca Loma Elementary School, Yucca Loma Rd., Appie Valley, CA. Talk-in 146-940/340, info net Sun. 7 p.m. 146.940/340.

**West Coast Amateur Radio Club.** Serving the Greater LA/Org. Co. area and beyond on 145.44/-4zpl. Meets 3rd Thurs./monthly, nets ea. Mon. at 01715 psf/dst & on 144.33S.

**West Valley Amateur Radio Assoc.** P.O. Box 6544, San Jose, CA 95150-6544. Meets: 3rd Wed./monthly, 7:30 p.m. at Am. Red Cross Bldg., 18011 Saratoga-Los Gatos Rd., Los Gatos, CA. W6PIY/R. Net Tue., 8:30 p.m. 147.39+. 223.96.

### COLORADO

**Denver Radio Club.** Meets 3rd Wed./monthly, 7:30 p.m., Denver Red Cross, 444 Sherman at Speer. Club net: Sundays, 8:30 p.m. 147.33 MHz.

### CONNECTICUT

**Middlesex Amateur Radio Society, (MARS).** 5 North Rd., Cromwell, CT 06416. Meets Tues./weekly 7 p.m., Portland Methodist Church, Main St., Portland, CT. Novice classes, VE sessions monthly. Contact Jack, WA1K, (203) 347-8754. Rptr. 147.090+.

**Tri-City Amateur Radio Club.** P.O. Box 686, Groton, CT 06340. Meets 2nd Tue./monthly, 7:30 p.m. Alternating, Groton Public Library at Rt. 117 & St. Lukes Lutheran Church at Rt. 12. Novice classes Info, contact Bob, KA1BB, (203) 739-8016.

### DELAWARE/PENNSYLVANIA

**Penn-Del Amateur Radio Club.** P.O. Box 1964, Boothwyn, PA 19061. Sponsor of KA3TWG/Rptr. on 224.220 covering Delaware & Tri-state area. Info/net Thurs./wkly, 20:00 hrs. or call Hal Frantz, (302) 798-7270.

### FLORIDA

**Gulf Coast ARC, Inc.** P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., 3852 Prime Place, New Port Richey. WA4GDN Rptr. 146.67/07.

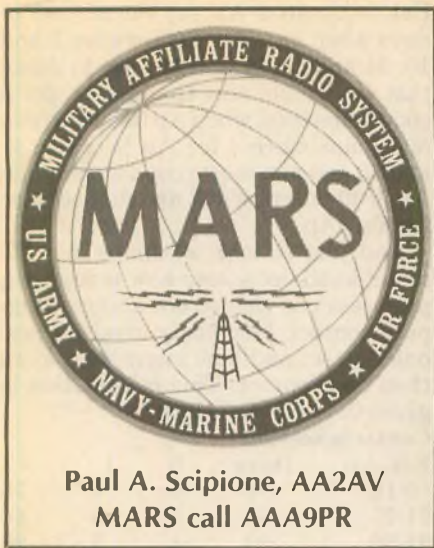
**Indian River ARC, Inc. (IRARC).** 597 Capri Rd., Cocoa Beach, FL 32931. Martin Andersen Senior Center, 1025 S. Florida Ave., Rockledge, FL. Meets: 1st Thur./monthly, 7:30 p.m.

**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.

### GEORGIA

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





As many of you probably know, I am writing the history of MARS operations during the Vietnam War, a book that the three MARS systems will publish in 1992. My book consists primarily of stories told by MARS operators who were on both the stateside and Southeast Asian ends of the net. One of these operators is Ed Luteran (ham call KL7KRN, Navy MARS call NNNØXUZ) from Anchorage, Alaska. What's really interesting about Ed is that, in addition to having been a stateside Navy/Marine MARS operator during Vietnam, he is still active in Navy MARS, even though he is an active duty NCO with 22 years in the Air Force. Along with his good friend Dave Irwin (Navy MARS call NNNØIIE), Ed ran several thousand Operation Desert Storm phone patches. This is a brief glimpse at the fascinating story of how two enterprising MARS ops helped link loved ones down in "the lower 48" with their marines and sailors half a world away in the Middle East—from Alaska!!

Significant numbers of Navy ships sailed to the Gulf as part of Operation Desert Shield in the fall of 1990, along with a number of Marine units that were stationed on the ground in Saudi Arabia. Listening to the Navy/Marine MARS phone patch frequencies one night, Ed and Dave noticed that while the MARS stations in the lower 48 were complaining that they could barely hear the MARS stations from the Gulf, they could copy their signals nearly 5-by-9. While that seemed impossible, Ed concluded that Alaska's geographic position somehow gave them a unique propagational advantage. When Ed and Dave listened a few weeks later, they became very frustrated when they noticed that stations in the continental US could not

hear the Navy afloat stations at all, while they had nearly perfect copy. Not one to sit on his hands, Ed immediately contacted Navy MARS and volunteered to run Desert Storm phone patches from Alaska. Apparently MARS officials thought Ed must be crazy, but they directed him to Fred Chapman who is Director of the Navy MARS Afloat Network. Fred expedited their application to "go afloat" and they were soon authorized to handle net traffic from their QTH stations.

But there was a problem: Ed was operating a Collins KWM2 and truly vintage 30L1 linear with only a Hy-Gain 18AVT/WBS vertical antenna. He had a classic Model 1017 log periodic antenna but couldn't use it because he lives in an on-base apartment complex at Elmendorf Air Force Base. Ed and Dave managed to install the vertical on the railing outside Ed's second floor apartment, but the SWR was terrible (the antenna was severely affected by the aluminum roof only inches above it) and the antenna kept falling off the landing. They scrounged up a telescoping mast and were finally in business when that managed to push the vertical above the roof.

Ed and Dave got started in November 1990, running 127 phone patches for our troops over in the Gulf. In December they had even a bigger month—more than 500 patches—even getting approval from their commanding officers to take off work early to run patches. But then another, very unexpected, problem developed. It seems that their signals were causing TVI in the apartment complex. Ed and Dave went door-to-door to explain the reason for the TVI. All the neighbors gladly accepted a few lines across their TV sets, except for the man immediately next door to Ed's apartment. "I don't give a damn whose phone patches yer runnin'!" the man shouted. "Yer screwin' up our new stereo system!" It seems incredible that an active duty NCO in the Air Force would object to occasional TVI caused by phone patches being run for fellow American servicepersons in the war zone, but it happened. Then, just as suddenly as the complaints started, they stopped. Ed is not sure why;

either the belligerent neighbor got a sudden lesson in patriotism from his commanding officer or maybe was himself suddenly shipped out to the Gulf!

Throughout the remainder of Operations Desert Shield and Desert Storm, Ed and Dave continued to run phone patches for the Navy Afloat Net. On many days they were the only stateside station running patches for the thousands of sailors and marines lined up at MARS stations aboard the carriers, battleships, destroyers and other vessels patrolling the Gulf. Officials of the three MARS systems should take heed: More MARS ops are needed in Alaska because the stations "up north" have coverage to parts of the world that stations in the "lower 48" can't even hear at various times.

"There's another really ironic thing about your recent MARS work," I pointed out to Ed near the end of our phone conversation. "You guys were running patches from the Persian Gulf in 1990 and 1991 using Collins equipment that was typical of the kinds of equipment we used to run patches back from Vietnam more than 20 years ago."

"Hey, Paul, I got news for you," Ed laughed, "My old Collins gear we used for the Gulf patches is the very same gear I used for the Nam patches. My rigs should get two battle stars!"

Ed and I ended our call with a discussion of the persistent rumor that hundreds of the old Collins "S" line rigs and linears used at our MARS stations in Vietnam were hastily buried at a secret location near Saigon as NVA troops closed in during April 1975. Since I am planning a DXpedition to Vietnam (with five other American operators) for later in 1992, I will personally give a \$100 prize to anyone who gives us information that leads to recovery of those rigs. Why? Because one of my goals for '92 as National Coordinator of Public Relations for Army MARS is to get approval for a display of a typical Vietnam MARS station in the Smithsonian Museum—complete with bunker or CON-EX, sandbags, M16, plastic bottles of "bug" juice, etc. Wouldn't it be neat to have rigs in the display that were actually used in Nam! □



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—The Microvolt



Let's face it, some people like to complain. But when their lament is supported by a larger group, one with considerable standing, they enjoy a sense of justification and pride, and even stand just a bit taller.

So it is with me; I've been complaining lately about all the geomagnetic activity and the problems it has created on the bands. But now no less a group than the folks at NOAA say the very same thing. Indeed, their Monthly Activity Summary in September went on record with a statement that since March '91 there has been a near-record number of days at major storm levels or above.

But I have another reason to be proud; in spite of such adversity, I've spent almost six months in headlong pursuit of long path contacts. Thus, in April '91 I started a year-long study, getting on the 20M CW band almost every day, logging all long path signals heard and working as many as I could from about 1200 to 1500 UTC.

At this point, I'm halfway through my self-imposed sentence. But now we're going from the spring/summer season of the ionosphere to the fall/winter season. Given that, it seems to be a good time to make an interim report, so let me tell you about what I've learned, as it's really "news" not found anywhere else in the literature.

For starters, in the period from April 1 to September 22, I was on the air for 168 of the 175 days. I simply slept in on

the other seven days, as they involved Amateur Radio sporting events, like Field Day, the All-Asia DX contest and such, and did not seem conducive to serious DXing, especially on long path.

Now being on record as a complainer about magnetic activity, I suppose I should blush from embarrassment when you consider that I had 681 long path contacts in that time, amounting to an average of 4.1 contacts per day! But before going any further, I'd better spell out the system of noting the magnetic disturbance, as it gives a measure of one's lament as well as a guide to success.

So to do that right, we need a geomagnetic index that is given daily and is also "global" in nature, not just the estimated A-index from the Boulder magnetometer given on WWV. I say that as one's RF does cover a wide range of latitudes and longitudes in making contacts, especially on long path where distances well over 20,000 km are the order of the day and differences in longitude are 180 degrees or more.

Now the scientific community has a daily "planetary index," Ap, that would serve quite well, being based on 13 magnetometers in both hemispheres. That system does have some bias to it but the biggest problem is that the Ap index for a given day is not released on a daily basis, but only four to six weeks after the month in question has passed.

That was the "bad news"; the "good news" is that NOAA puts out a daily estimate, even a three-day forecast, of the Ap index. It is available on the NOAA BBS and is given in the solar and propagation reports. And a study of three years of data shows that the correlation coefficient between the estimate of Ap and Ap itself is 0.91. So in this interim report, the estimate will be used and later, when the whole year of observations are put together for a retrospective study, the estimated values of Ap will be replaced by the final values.

Having said that, let's turn to the data, giving the number of days in the study listed according to the range of

Est. (estimated) Ap, say the number of days when Est. Ap was between 0 and 10, 11 and 20, 21 and 30, etc. In doing that, we should note that major storm conditions exist when Ap itself exceeds 50, minor storms for Ap between 31 and 50 and non-storm conditions when Ap is 30 or less. We'll use that scheme for Est. Ap.

And just to look at things in a bit more detail, let's note how many long path sessions yielded not a single long-path contact, how many involved just one contact and how many with more than one contact. This information is given in the table below:

Contacts/session		0	1	>1
Est. Ap	Days			
0-10	37	0	2	35
11-20	53	2	5	46
21-30	29	1	2	26
31-40	25	3	3	19
41-50	11	3	0	8
51-60	6	3	0	3
>60	7	5	2	0

Thus, of the 168 days, there were 119 days of non-storm conditions (Est. Ap of 30 or less), and on three of those days no long path contacts were made; on nine days only one long path contact; and 107 days involved more than one long path contact. On that basis, at least one long path contact was made on 116 of those 119 days, or 97 percent of the non-storm days!

Similarly, of the 36 days with minor-storm conditions, at least one longpath contact was made on 30 days, or 83 percent of the time, and for the 13 days of major storm conditions at least one contact was made on five days, or 38 percent of the time. The last point is rather amazing when you consider the havoc that magnetic storm conditions wreak on the bands!

Anyway, if you're interested in trying long path, you can expect to have a batting average of better than .750 as long as you stay clear of major storm conditions. Baseball teams would pay a fortune for that kind of performance. But you might ask about those "hits"; were they "bloopers" or "home runs"?

Let me say that the long path contacts from my QTH ranged from Crozet Island (FT4WC) to Enkoping, Sweden (SM5ACC). Moreover, I added QSLs to my "brag book" from 3B9, 5R, FH, FR5/T and V51, to name a few, and added map pins for contacts with 3B7, C9, D2 and S21. All that from a simple setup, a generic tribander at 37 feet and a 200W, homebrew linear amplifier. So it's not out of your reach; however, don't dally as the summer/spring season of '92 will offer the best variety for long path DXing for quite a spell.

So far I've just outlined some statistics about contacts and magnetic disturbances from the spring/summer

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season of the ionosphere, when the sun is above the geographic equator. We should take note of that and spend a bit of time talking about long path propagation as such and how it relates to discussions of the gray line. As you know, the gray line has enjoyed a prominent role in past discussions and one can explore its position on the globe by using the *Geoclock* computer program or, more simply, by using the plastic slides of *The DX Edge*.

For discussion purposes in this interim report, consider Figure 1, which was prepared using *The DX Edge* slide for the month of June at a time when the monthly mean gray line passed close to my QTH. From that, it is apparent that long paths to the south from my QTH to India and Sri Lanka might be close to the gray line around 1230 UTC. So it is not surprising that during the early months of the long path study, both 4S7s and VU2s were contacted regularly at the outset of a long path session.

Those contacts were consistent with "conventional wisdom," the path being sheltered from solar illumination at that time by its location in the darkness below the gray line. But having cited those circumstances, let me take a contrary position which shows, perhaps in the extreme, that gray line or terminator considerations play only a limited role in long path propagation.

On June 6, 1991, I contacted VU2JOS in India at 1332 UTC at a heading of about 160 degrees east, out to a distance of about 27,000 km and 202 degrees eastward in longitude from my QTH. But about 90 minutes later, at 1407 UTC, I contacted D2ACA in Angola at a heading of about 240 degrees east, to a distance of about 26,000 km and 224 degrees westward in longitude from my QTH.

In the first instance, my signals were passing over the southern tip of Argentina, like other occasions when I've heard VU2s and 4S7s in QSOs with LU8Xs on Tierra del Fuego. In the second instance, my signals were going off toward Tasmania (VK7) and almost at right angles to the direction for the terminator. Thus, the contact with D2ACA had absolutely nothing to do with my signals gliding along the gray line!

Don't take that last remark to suggest that I fail to appreciate the value of the gray line. It's just that there's much more to long path propagation than such a narrow or limited use of D-region considerations, important as they are for DXing. Indeed, I feel it is "over-sold" to the point of operators missing the essence of long path propagation. I will comment on that in a moment.

But to drive home the point by using

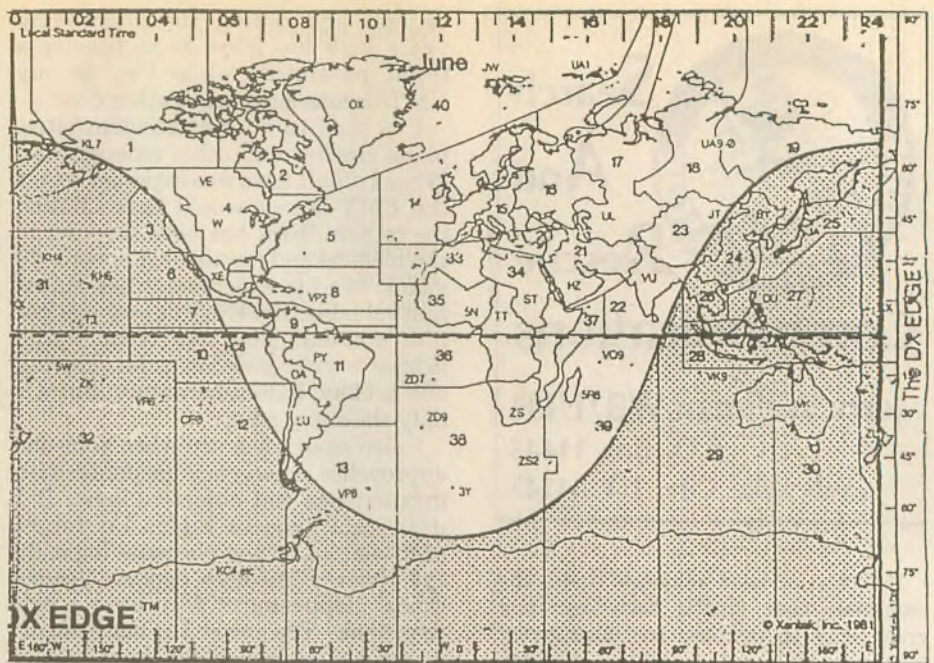


Figure 1

the weight of numbers on the side of long path propagation away from the gray line, let me say that between my first and last contact with a 4S7 or VU in the spring/summer session when the gray line was in their favor, I had more than 150 solid contacts with stations right on the African continent, all with beam headings some 60 to 80 degrees away from the gray line and into the dark hemisphere off to the west. I'm sure you get the point.

Now to "the essence." The statistics cited above show that long path propagation will be there more than 90 per-

cent of the time when the ionosphere is undisturbed by geomagnetic activity. It is no stretch of the imagination to say that long path propagation is an inherent part of what we can expect of the quiet ionosphere. However, all this is discussion based on observations from the part of Cycle 22 just after the peak of its development. Indeed, the sunspot number is way up there now, around 150. So one has to hedge a bit, saying that later, when the sunspot number drops, the critical frequencies fall from their present high values and the ionosphere shrinks in size, things will be different, quite a bit different.

DXers always QSY down in frequency around solar minimum; the same would be true of those interested in long path DXing. They need both signal strengths, set by D-region absorption, and MUFs, set by the solar cycle. But above all, they need "magnetic quiet"!

In closing, let me say that long path DXing seems to have more of an oral history than anything else. Indeed, what is written about it in handbooks and antenna books appears both trite ("Point your beam the wrong way") and incomplete ("Look for the gray line"). I will try to change that situation by preparing a detailed report when the present study has been completed. It will deal with such items as auroral and polar cap absorption events, extreme long path and the equatorial anomaly, chordal hops, seasonal effects and, most importantly, the "systematics" of long path propagation. If you or any of your friends are serious about long path DXing, drop me a postcard and I'll let you know when it will be available. □

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If I read or hear someone make the comment that traffic handling is a great way to prepare for emergency response I'll react violently! Experience handling traffic makes you a good traffic handler. Experience responding to public service events makes you a good emergency responder. It's that simple.

Many years ago my friend Rick and I took one of the first EMT classes offered in Wyoming. For a while he and I taught American Red Cross first aid

courses and during the intervening years Rick has gone on to become a flight paramedic while I've let my EMT license lapse and gather dust.

I've been to a lot of accident sites, plane crashes and other emergencies. What I didn't have was experience that the EMT license would have allowed me to gain. Rick has been working in the medical and rescue field now for 20 years. It's his experience that makes him valuable. The EMT license just got him started. Your Amateur Radio license is your starting point. Having one is okay, indeed necessary, but it's only the entry point.

I also react violently when someone approaches emergency response with inexperience and objective logic. If I used this type of logic, I'd forget preparing to respond because logically the chances are high *against* "something" happening. "Why have a battery bank? The power has not been off in my neighborhood for many, many years." "Why carry a 72-hour food bag, I've not needed it for over five years."

What you bring when responding shows a little about your experience and what you've learned at past events. During a long distance endurance run, one fellow Amateur Radio operator poked some fun at some of what I found necessary to bring. He

said I was ready for a week and ready for anything.

To me that was a compliment. I remembered the forest fire in 1974 where we got stranded for some time with a couple of hand-helds and not much else. During the endurance run, as the temperature dropped and the rain started, that dry road began looking like a several-day obstacle. At 10,000 feet elevation that extra stove and fuel looked pretty good as the temperature plunged.

We can share checklists for basic equipment to get started. What you add to your own response gear (and what value you place on it) is governed by your experience.

Experience is the only way to become good at something. The next time a "consultant" approaches you straight from the classroom with theories, stand up and tell him "TANS-TAAFL." Borrowed from Robert A. Heinlein's book, *The Moon is a Harsh Mistress*, it means, "There ain't no such thing as a free lunch." Having a theory presupposes that the objects in question will behave and follow the laws of cause and effect. But people don't do this; given the same set of circumstances, one person may react differently from another. How you will react in an emergency cannot be de-

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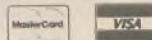
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In your emergency planning, don't forget the people factor! Guide, instruct, offer insight and suggestions—but turn them loose when they're ready to grow their own experience wings. The best thing you can do is not allow them to equate experience in one area with expertise in another.

### Connector Controversy

There's been quite a bit of debate over power connectors and standardization. I continue to support interconnectivity, but let's not get bogged down in the "what's right" debate. What's right is what your group uses. It does not matter that Wyoming uses a different connector than Florida.

Many years ago I began using four-pin Molex connectors on all my equipment. The ARES group decided on a different power connector standard. Part of my response gear includes a number of mating adapters so I can fit in with the group.

Power cords don't bother me as much as microphone or packet connections. Splicing power cords is pretty easy stuff. But try fixing a 12-pin Azden 3000 microphone plug in the middle of the night in a cold truck cab. That single experience was enough to move me to standard microphone connectors. The same holds with packet connections.

Don't get hung up on what the guys are doing in the next county unless you do a lot with them. Just focus on what your group is doing. It's great to be compatible with the other group, but if you are not, make note of the differences. Don't spend hours harping by voice and packet about what's right or wrong. Use your energy improving

### Rope of choice

Bright yellow polypropylene is the rope of choice for supporting wire antennas in trees. It is inexpensive, waterproof, lightweight, strong, and (very importantly) slippery—there are no threads, etc. to snag on the bark of tree limb "halyards" while you are elevating your latest creation from the ground.

It is not common knowledge for the beginner, however, that ultraviolet light from the sun's rays limits the useful life of polypropylene to approximately two to three years; be suspect of and immediately replace any such rope which is faded and sprouting

your local emergency response ability.

### Antenna connectors

I learned the hard way that it's a good idea to have a variety of antenna adapters on hand when you respond. Over the years I've collected enough to fill a small fishing tackle box. Keep your eyes open at the local electronics junk shop or at hamfests. I've not paid more than a buck each and have enough adapters to cover all the situations that have come up. (It's easier than soldering antenna cable in the cold!) Audio adapters for speaker and earphones are other handy gadgets to collect, too.

### Mission response

Marsh Scott, WA7SHU, calls them "truck driver missions." They're missions where you go from Point A to Point B, deliver some search teams and then return. These missions worry him because they tend to detract from preparation for missions where a lot of experience is needed.

In Utah during 1991 there was one aircraft search that involved an all-out response. There were several minor crashes that required some general response and there were a lot of "truck driver missions." If we focus on this type of mission, the tendency is to forget what needs to happen when the "big one" hits.

Gearing up for the small response is easy. It's even easier if all your training and preparation is toward the massive response mission. But there's no better training than the actual response. Treat your missions as the "big event." Do your mission briefings, call upon your communicators, plot your strategy and respond. If you treat all your missions as minimal, you'll get minimal response to all your missions. If missions have a sense of urgency, your group will become conditioned to that level of response. Each mission is important if it serves the victim—treat your missions accordingly! □

short, prickly hairs along its length, indicating deterioration, or be prepared to have your masterpiece come crashing down to the ground at the most inopportune moment. —*South Pickering ARC* □

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This column will be devoted to getting on the air on a budget. Remember when you could go to one of the old-time ham radio stores and browse for hours along aisles of reconditioned used gear? Unfortunately, the old-time ham radio stores are a rarity. Used gear is now purchased through mail order or via swap nets. With new equipment prices escalating right through the roof, the newly licensed high school or college student, the radio amateur living on a fixed income, and yours truly are in a bit of a fix.

One of the things that I tell clubs that book my QRP program is that QRP can be done on a shoestring budget. You don't even need to buy a new radio. Merely turn down the RF drive on your currnt HF rig and enjoy some QRP CW contacts using your main station equipment. What if you don't have an HF rig to begin with?

Currently Ten-Tec is the only company marketing a commercially made QRP transceiver, the Argonaut 535 (Argo II). This transceiver is *it* for commercial offerings, though the price is high and may be out of your league.

A & A Engineering offers a very neat single-band transceiver kit featuring a single-signal superhet receiver, crystal filtering, 3.5 to 5W output and more. The kits are available for 40, 30 and 20M. My 40M rig works fine and has gone on several outings. Priced at \$149.95, the A & A kit is not a bad start for a QRP station.

Ramsey Electronics also offers a

selection of receiver, transmitter and keyer kits for the QRPer. These are single-band units that are very simple to construct. Performance is in line with price. A nice little QRP station can be assembled at reasonable cost using a Ramsey kit.

Texas RF Engineering is a newcomer on the QRP kit scene. Their flyer promises a basic direct conversion (DC) receiver design that can be expanded into a single-band transceiver and more. So far the kits are not available for testing but the idea sounds great.

Kanga Products, from the UK, is a long-time QRP kit maker. They offer several outstanding designs based upon circuits that have been developed and presented in the G-QRP-Club newsletter, *SPRAT*. I currently have their SWR/power meter for evaluation. It is a very simple kit that offers the convenience of accurately reading both forward and reverse power simultaneously down to mW power levels. It is not frequency sensitive and it's much easier to build and get working than the "brune-type" SWR meters that have become quite popular over the last several years.

Alas, Heath is no longer in the Amateur Radio kit business. They sold out the last of their HW-9 QRP CW transceiver kits at Dayton this year. This heralds the end of an era, for sure.

### Never buy a used starship from a Ferengi!

Used gear should be approached with caution. A rig can look extremely clean on the outside. Once the cover is off, this same rig can become a nightmare of cold solder connections, poorly done modifications, neglect and misuse. The words *Caveat Emptor* have special meaning when dealing with used equipment. When in doubt, contact a local radio amateur who has experience with the particular type of rig you want to purchase. Ask him or her to help in evaluating its condition. Every effort should be made to ops-

check the rig prior to parting with any money. This is usually possible at hamfests and flea markets. However, buying via mail order precludes an ops-check of the equipment. The *Ham Trader Yellow Sheets* is a bi-weekly swap and sell letter that I have used with good success in the past. As yet, I have never been disappointed on a piece of gear purchased or traded via this paper. If you know what you are looking for and can speak intelligently about the equipment, it is relatively easy to spot someone trying to hustle your money. Research the rig first and then make the phone call.

What is available on the used market? I recently purchased a Ten-Tec Argonaut 509 with matching 405 linear amp (50W output) for \$175. This was a steal. Normally the 509 itself would run between \$175 and \$225 and the 405 linear would go for an additional \$125. After a general cleanup of the exterior and realignment of the 509, along with a new dial cord and pointer, I had a nice little 50W HF station at a fraction of the cost of a new rig. Deals like this are out there, you just have to find them. Recently an Argo 515 was sold for \$300!

Used Ten-Tec QRP gear holds its value nicely. As discussed earlier, a 509 will sell for between \$175 and \$225. A 515 will go for \$375 to \$450. Sure your 10-year-old Argo may not have all the bells and whistles found on the new imported rigs, but you can't beat the price! Used gear is the way to go for the budget minded radio amateur.

Kenwood and Yaesu both offer low power (10W) versions of their popular transceivers. The TS-120V and TS-130V are two outstanding offerings from Kenwood. The 130V will sell for about \$450 and has some WARC bands as well as an external VFO available (great for working splits).

The FT-301S and FT-7B are two Yaesu rigs that have good track records. The 301 will sell for about \$300 and the FT-7B will go for about \$250. Once again, value for money, these four rigs beat shelling out the kilobucks for a new rig hot off the Kenwood Maru.

Used Heathkit HW-7s, HW-8s and HW-9s are to be approached with extreme caution. First, it is extremely unlikely that you will have any idea who actually built the kit. Second, cold solder connections and other people's

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mistakes are a real drag to trouble-shoot. Third, mods abound for all three of these radios. Unless the previous owner has kept track of the mods performed, you have no idea as to how extensive the modifications are.

HW-7s don't work well unless the entire receiver front end is rebuilt. These rigs are best left on the shelf for their collector's value.

The HW-8 is an outstanding example of a great rig at an affordable price. I recently bought an unbuilt HW-8, still in the factory shipping container (dated 1979), for \$100. This rig is now built and modified to my personal tastes. It works great! Lots of mods exist for this particular QRP rig and some work with a soldering iron will greatly enhance performance.

The HW-9's receiver section needs a new crystal filter to become a true CW receiver. Problems in the VFO and transmitter section of many rigs are time consuming to correct. The HW-9 has its fair share of mods, too.

Based upon my extensive experience with all three Heathkit offerings, the HW-8 is the best value for the money. A used Hot Water Eight will run \$50 to \$75 depending upon condition and mods. An HW-9 will go for about \$150 to \$175. When you get to the \$175 price range, start looking for a used Argo 509. You get a better receiver and an SSB transmitter to boot.

The previous paragraphs have outlined the main line QRP radios that are currently available on the used rig and kit markets. I know that I have not named them all. But the ones that I have reviewed are the ones that will turn up most frequently and deserve serious consideration by the QRPer on a tight budget.

CW is fine, but how about other modes? If you work DX and need to have instant access to the local DX packet cluster, then a trip to the local Radio Shack store is in order. Last year I purchased three CoCo II and one CoCo III color computers for \$5 each. None of the units worked. All the CoCo IIs had problems in the power supplies. The CoCo III's power supply was not plugged into the main board!

The obvious question is, why would anyone want a CoCo computer for the hamshack? Well, they are cheap. Why

waste computer power (like an IBM PC) doing mundane stuff like CW keyboard and packet terminal operations, when a small stand-alone like the CoCo (or Commodore C-64) will fill the bill? Software exists to allow them to be used for CW keyboards/demodulators and packet. Using *CoCoPact* software by Monty Haley, I have used both models on packet for quite some time with excellent results. Not wanting to spend the money for the CoCo disk drive, I use cassette tape software. Monty's software (provided either in tape or 5¼ in. disk formats) is outstanding and was definitely developed with the Amateur Radio operator in mind. His current offering, *CoCoPact 3*, is really great. It features separate transmit and QSO buffers and a text editor. This allows the user to draft a message in the transmitter buffer while the QSO buffer handles all on-line functions. Once the message is ready, a simple keystroke will send it on its way. The QSO buffer has a huge 40K of memory. User defined macro keys, on-line help window, 80-column display format, auto repeat key, on-line display of bytes used in QSO buffer, full ASCII character keyboard, and much more make this packet program an outstanding value for money.

All totaled, I spent \$5 for the CoCo III, \$22 for Monty's *Coco-Pact 3* software and \$30 for a used PacComm Micro II TNC. My main packet radio is a used Kenwood TR-2200A (that's right, a crystal 2M rig) purchased for \$50. So, for less than the cost of a low-end TNC I managed to put together an entire VHF packet station that has worked flawlessly for over a year.

What I've tried to do in this month's column is to show both the newcomer and the seasoned QRPer that there is more to enjoying Amateur Radio than whipping out the plastic and buying everything new. I take a great amount of pride in my station, knowing that I have a minimal cash investment in the entire package. I am able to com-

municate on HF, VHF and UHF using CW, SSB, RTTY, packet, and FM, all without subsidizing Icom's retirement plan. In a sense, it makes me feel more in control and less at the mercy of the industry. Pearl Harbor notwithstanding, there is nothing wrong with buying the latest imported ham gear, if you have the means. However, there is a certain feeling one gets knowing that the entire station was put on the air without taking out a second mortgage on the family farm. In this case a little ingenuity greatly increases the enjoyment of ham radio.

Following are addresses of manufacturers and vendors discussed in the text:

**A & A Engineering**, 2521 W. La-Palma #K, Anaheim, CA 92801.

**Ramsey Electronics**, 793 Canning Parkway, Victor, NY 14564.

**Kanga Products**, 3 Limes Road, Folkstone, CT 19 4AU, England.

**Ten-Tec**, 1185 Dolly Parton Parkway, Sevierville, TN 37862.

**Texas RF Technology**, 17 South Briar Hollow Ln, Suite 101, Houston, TX 77027.

**Ham Trader Yellow Sheets**, P.O. Box 2057, Glen Ellyn, IL 60138.

**CoCoPact Software**, Monty Haley, Rt 1, Box 210-B, Evening Shade, AR 72532. □

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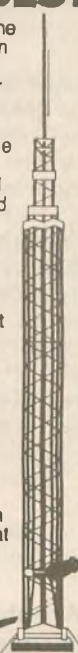
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**County Hunter**  
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In the last article, I mentioned that the MARAC offers a Worked All Counties Second Time award for county hunters who have finished confirming contacts with all counties a first time. Well, what happens after a county hunter finishes confirming contacts with all counties a second time? Do they stop county hunting and seek psychological help to cure their addiction? Do they begin to spend more time with their family? Some do, but the others begin chasing counties for the All Counties Third Time Around award. What? Say it isn't so! It's true, the Mobile QSL Bureau sponsors an award for the perpetual county hunter. The main difference between the third time and second time award is QSLs are not required for the third time. I guess after confirming all counties two times they figure the county hunter is either honest or crazy, so they give him the benefit of the doubt. What the heck!

All contacts must be made after the date the county hunter has received the Second Time Around award from MARAC. There are no classes, no band or mode endorsements available. For this reason, most county hunters add a twist to how they collect counties and make their own challenge. For example, county hunters may work only mobiles out of their own call area (i.e. N3AHA could be used for all states except MD, PA or DE). Some county hunters work all counties without relays. And one county hunter has accomplished the task of working only mobiles while operating mobile.

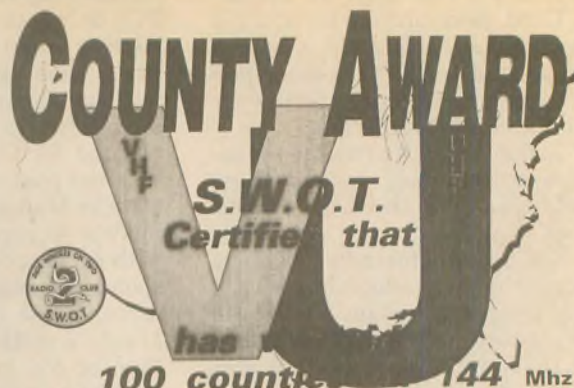
The B&B Shop, a county hunter accessory supplier, even sponsors a

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The Side Winders on Two Radio Club offers county awards to encourage VHF/UHF activity.



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Fourth Time Around Award. Again, QSLs are not required and endorsements are not available. How many brave souls have accomplished these two awards? As of January 1, 1992 there were 35 county hunters who have worked all counties three times and 15 county hunters who have worked all counties four times. Wow!

**Bingo**

Finally, there's an award for the serious county hunter, Bingo! The Master County Hunter Award, usually called Bingo, is sponsored by the Mobile QSL Bureau and may be worked in conjunction with USA-CA, Second Time, Third Time, and Fourth Time awards. The object is to work all counties by matching the first letter of the county name with any letter in the station's suffix. For example, Brown County, Kansas, could be worked with W6BSY, W3ABC, K6TMB, etc. There are a few wild cards to make the journey a little easier:

- 1) Holders of USA-CA numbers (either the CQ award or MARAC award) may be used for any county if the contact was made after the award was issued.
- 2) Any letter may be used from one-by-two, two-by-one and two-by-two calls, i.e. N6TV, WC7S, and KJ6LD.

3) For dual letter calls, W6MKM, N6CCL, W6RGG, etc., a letter may be used above or below the duplicate letter. For W6RGG, a county name beginning with "F" or "H" in addition to the "G" or "R" would be a match. A one-by-three with a duplicate letter will have four chances for a match and a two-by-two call with a duplicate letter would have five chances for a match. The best you could do is six possible chances for a match, i.e. KK6BB is good for county names starting with A, B, C, J, K, or L. Get it?

4) Since there are no counties beginning with the letter "X," any call with "X" in it (either in a three-letter suffix or anywhere in one-by-two, two-by-one, or two-by-two call sign) is a wild card for any county. One exception to wildcard rule #3 is that duplicate letters cannot be upgraded to an X. So a WW or YY callsign could use V, W, or Y and W, Y, or Z respectively.

5) Lastly, for counties with two or more words in the name, the first letter of any word may be used for the match.

My experience is that the most likely match is with a holder of the USA-CA. The second most likely match is with a call sign with an "X." Without the wildcards this award would be a

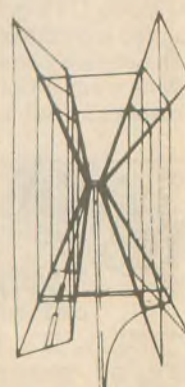
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lot tougher. In fact, for the Bingo purist, MARAC offers a Bingo the Hard Way award, for which there are no wildcards allowed. As of January 1, 1992, there were 39 Bingo awards issued. Most county hunters finish the Bingo award about the time they're finishing the Third or Fourth Time Around awards.

Two county hunters have qualified for the Mobile QSL Bureau's most elite award; a traveling trophy is awarded to a station who (are you ready for this?) has transmitted from all counties in the United States, including Alaska and Hawaii. Of course, you have to be mobile. Imagine, that's a lot of miles to travel. Those two individuals are Ken, KB7QO (Nov. 25, 1986), and Gene, W1TEE (June 29, 1991). Gene transmitted all the counties on CW.

In January I mentioned several state contests throughout the year which could help you increase your county totals. There are also state county awards, usually offered by an Amateur Radio club located in the state. I gave the address for the Worked all California Counties (WACC) Award in the September column. I have received awards from DE (WDEL), NJ (NJAC), and WY (WAC). Maryland also has an award but I haven't applied for it, yet. Other

states have county awards available. If you know of a club that sponsors a state award, send me the information and I'll publish it in this column and send it to the MARAC to be published in their newsletter, *Roadrunner*.

### VUCA

The VHF/UHF County Award (VUCA) is sponsored by the Side Winders on Two Radio Club (SWOT) and offers county awards for counties worked on frequencies above 50 MHz. The purpose of the VUCA Award is to encourage VHF/UHF activity and to recognize operating achievements on the frequencies above 50 MHz. The basic award is for 100 counties on 50 MHz and 144 MHz, 50 counties on 222 MHz and 432 MHz, 25 counties on 903 MHz and 1.296 GHz, and five counties on 2.4 GHz and up. Unfortunately, no repeater contacts are allowed and all contacts must be made from the same county or an adjoining county. It becomes apparent that this award would be easier on the East Coast where counties are more compact than the West where counties are few and far between.

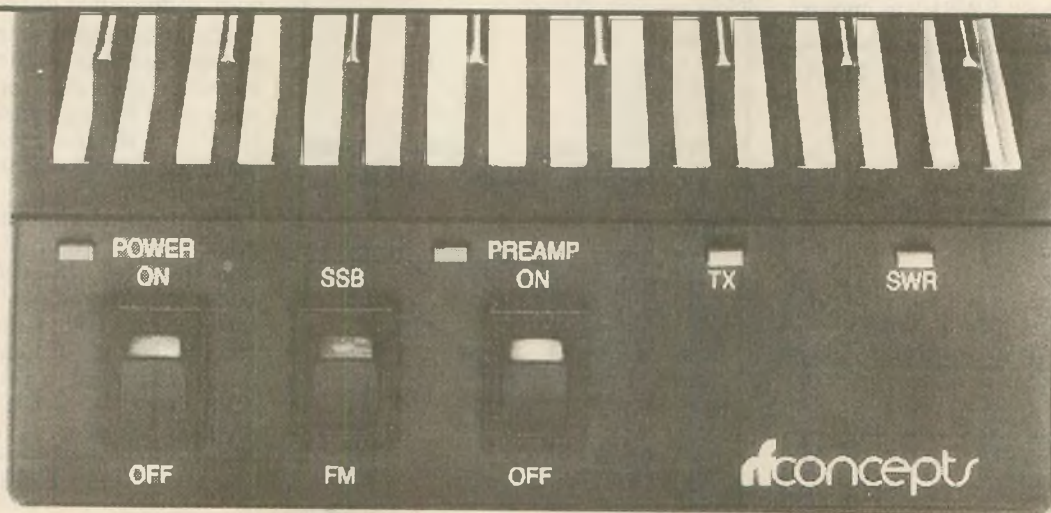
There have been four 50 MHz awards, five 144 MHz awards, one 222 MHz award, and three 432 MHz awards issued as of January 1, 1992. QSLs are required. W5AL leads the

pack with 434, 353, 58, and 90 counties on the respective bands. For more information on this award, send an SASE to L.G. Parsons, W5AL, SWOT VUCA Awards Manager, 3316 Edenburg Drive, Amarillo, TX 79106. Hey Len, maybe you could start a net... VHF/UHF Lovers County Award Net (VULCAN)!

This article concludes a year for the County Hunter column. I'd like to receive your feedback. Is there something you're interested in knowing about county hunters? Do you need more information about anything in particular?

What I have planned for the next six articles is a profile of some well-known county hunters, county hunters who have worked all counties many times, county hunters who have transmitted from all counties, and county hunter truck drivers who play while they work. I also plan to evaluate a few county hunter software programs that log contacts and print mobile reply cards (MRCs). The software sure cuts down on the paperwork blues.

As a reminder, CQ magazine USA-CA record books are available for \$1.25 each from CQ Publishing, Inc., 76 N. Broadway, Hicksville, NY 11801. Until next time, happy hunting. □



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 RFC 4-310, 30W in = 100 out  
 RFC 4-110, 10W in = 100 out

### RFC 2/70G Dual Band AMP

144 MHz, 5W in = 30 out  
 440 MHz, 5W in = 20 out

concept

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# CONSTRUCTION

## A Bowtie Kraus

J. HARVEY CHASE, W4TG

*When I describe the following antenna on the air it seems to arouse considerable interest, and several people have asked me if I am going to write it up. I have done so here, not with the intent to be derogatory toward the HF5B, rather just to use the hardware to make an entirely different antenna.*

Two years ago I purchased and assembled an HF5B, five-band, 2-element Butterfly antenna. My results with that antenna were less than desired on several accounts, even after several re-tuning projects. It had a high SWR on the 12M band and on the low (CW) end of 10M and did not perform well on those frequencies. The assembly and tuning instructions state: "15 and 10M tuning is interlocking to some extent." I found that to be a gross understatement. In trying to get the SWR down to an acceptable value on the low end of 10M, I discovered that the resonant frequency on 15M (lowest SWR) was moved

all the way out of the band on the low end of that band.

My Butterfly showed SWR curves depicted in Figures 1 through 5 after many hours of fiddling with tuning ad-

justments at its final location atop a 40 ft. tower. My operating habits include all portions of all bands and the HF5B simply did not "do it" for me. This modification may not be for you. Some operators do not like the idea of using a tuner and bothering with the extra tuning adjustments that it entails. Nor do they like the ladder line feeders and the extra care that must be taken to route them properly to avoid losses. But if you, like me, are not satisfied with an antenna, read on

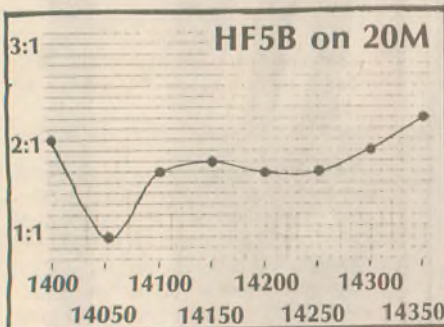


Figure 1

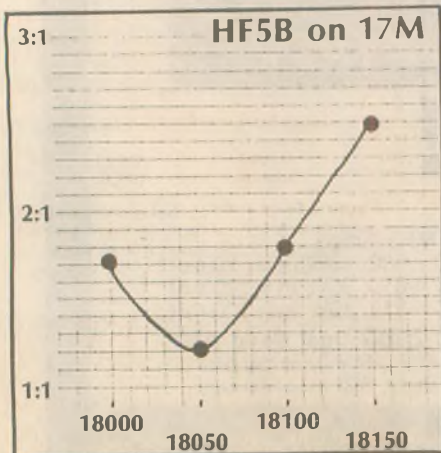


Figure 2

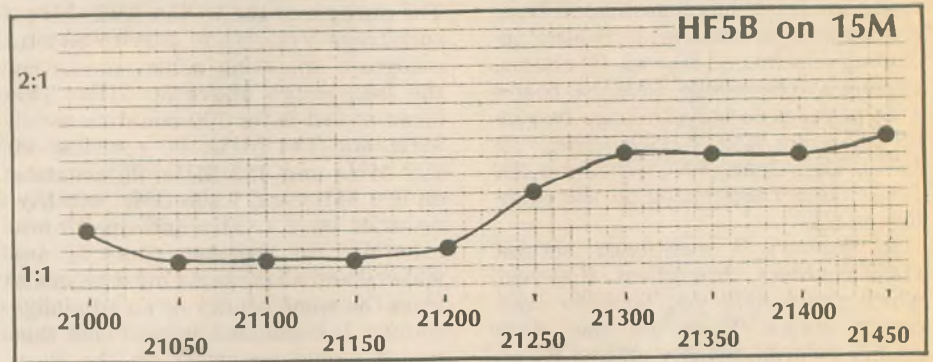


Figure 3

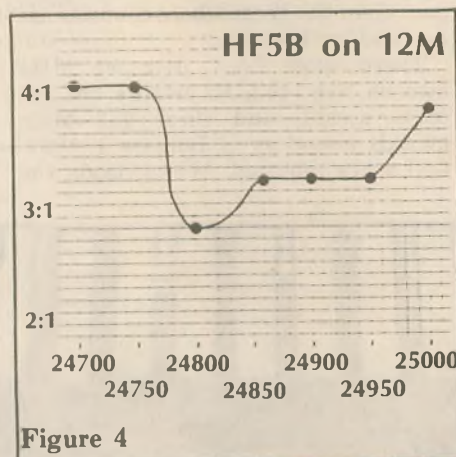


Figure 4

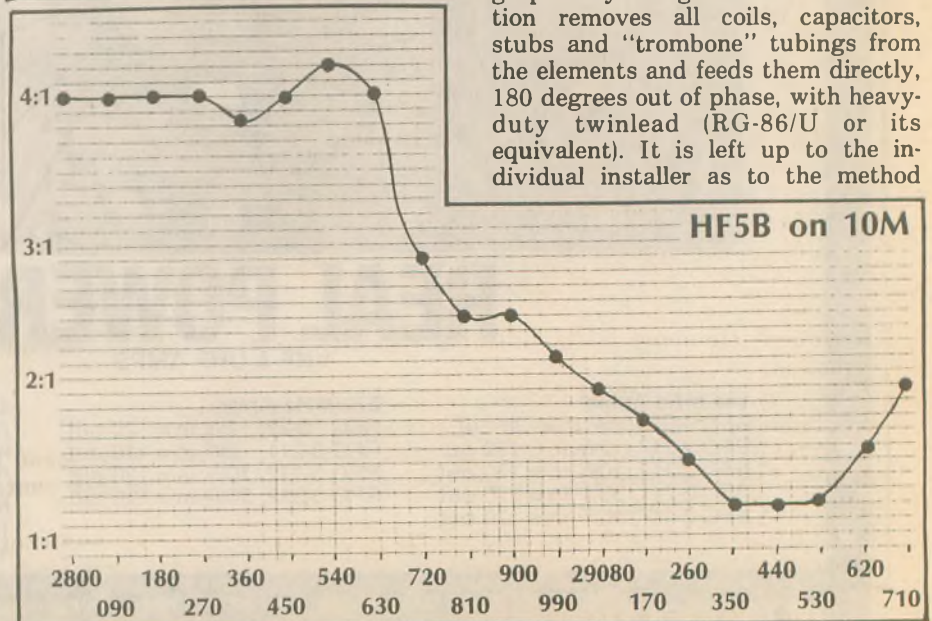


Figure 5

... you may want to do what I did with my Butterfly. Or, you may wish to homebrew one just like it from scratch. I certainly do not recommend that you buy one for the express purpose of modifying it; that would seem rather wasteful, as much of the hardware is discarded in this modification.

This modification makes the antenna non-resonant. It therefore must be fed with open-wire, or "ladder" line and tuned with a transmatch, "Match Box," or other tuner designed for balanced two-wire lines, from inside the shack.

The final configuration is shown graphically in Figure 6. This modification removes all coils, capacitors, stubs and "trombone" tubings from the elements and feeds them directly, 180 degrees out of phase, with heavy-duty twinlead (RG-86/U or its equivalent). It is left up to the individual installer as to the method



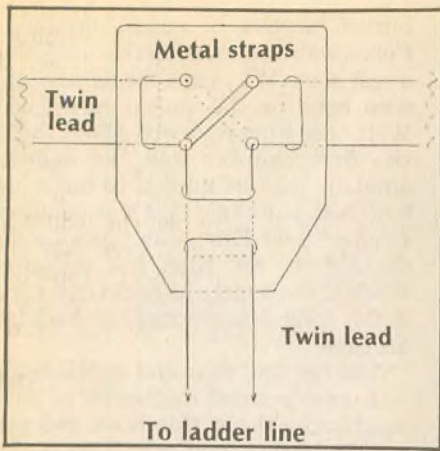
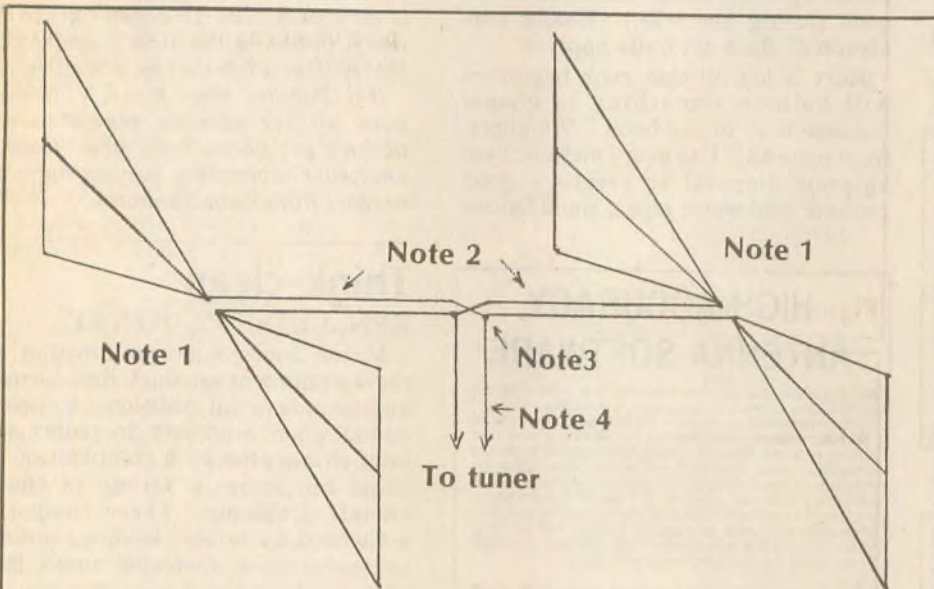


Figure 7. Crossover and feed fixture

used to support the ladder line downlead around the rotor, mast and tower parts, so as not to become fouled on these as the antenna is rotated through 180 degrees of azimuth. This configuration is bidirectional so it does not need to be rotated a full 360 degrees to cover all bearings. A detail on the fixture used at the crossover



**Notes**

1. Bowtie elements with all coils, capacitors, stubs and "trombones" removed.
2. Heavy-duty twinlead suspended on standoffs from boom.
3. Crossover and feed must be at exact center of twinlead.
4. Arrangement must be made so that antenna can rotate (at least 180 degrees) without causing the ladder line downlead to come into contact with mast, rotator, or tower.
5. Run ladder line down the tower leg suspended on standoffs so as not to come into contact with tower (as is done with TV antenna twin lead).

and feedpoint is given in Figure 7. This is an adaptation of the arrangement shown in the *ARRL Antenna Handbook*.

In preparation for this modification, groundwave signal-strength readings were taken at various frequencies on all five bands covered by this antenna at a distance of five miles from my QTH. After modification, S-meter readings were again taken, using the same power levels and frequencies, and compared with the earlier readings. It was found that there was an improvement of one S-unit on the 20, 18 and 15M bands. The improvement on the high end of 10M, where the Butterfly worked, was not noticeable. On the CW end of 10M, there was a 2 S-unit improvement. On the 12M band where the Butterfly utterly failed to perform, there was a whopping improvement of 3 S-units! QSOs with the modified antenna have been very gratifying, especially on 10M CW and on 12M, where results had been so poor before.

Further references include "A New Look at the W8JK Antenna," *Ham Radio*, July, 1981, p.60 with additional references. □

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Figure 6. Pictorial view (boom supports omitted for clarity)



# AERIALS

## LIL PADDLE

Kurt said, "This book is a bad joke," and threw it into the fireplace. (Actually he didn't say "bad joke" but this is a family magazine and I changed what he did say.)

He was talking about a new book by a fairly well-known writer about easy-to-build wire antennas.

Poor Kurt. His ire can really rise. I do my best to calm him down. He gets so exasperated at times. What sent my dear Kurt into near apoplexy was on page eight (of the book's antennas touted as "easy to build," "low cost," "immediately applicable")—a diagram of 120 half-wavelength radials.

Kurt smashed a fist into his other palm and exclaimed, "What if some kid gets this book, don't know no better and figures this is what you got to have because it says so in the book!

"This Novice wants a good signal on 80 CW. He starts out to build it. Eight hours later, the back yard is all torn up and he's gonna get a whippin' from his pa.

"Lil, this is talking about 15,000 feet of wire!"

Kurt pointed out page two, where the book says, "It is oriented as a 'hands on' construction guide."

Even I was puzzled by the references, in the diagrams in the book, to "buried metal objects, the more the better."

Kurt snorted when he read aloud (too loudly) about a ground system which "will improve the performance of any Amateur Radio antenna." Alas, while it would be dandy for a vertical, the effect of such would be almost insignificant on a dipole or Yagi.

"And why 120 radials? Don't (the old, illiterate so and so. I haven't been able to refine his language!) this guy look at the chart? After about 60 radials it don't go up." The signal strength, he meant. "And after about 30 the difference can't hardly be measured at the other end."

This book, amazingly enough, on page eight says "This is primarily for newcomers to Amateur Radio."

Kurt, red in the face, showed me something on page 40. At times like this I'm glad that he has taken out lots of life insurance and I'll be provided for in my old age.

It says there is a 3dB gain when radials are extended from quarter-wavelength to half-wave.

Now, if such were true, then going from half-wave to full-wave would then give another 3dB.

If this were even close to true, DX-ers, who would go to any extreme for an additional 6dB, would have sheets of copper extending for acres.

Kurt ranted, "If such a thing were true, Frank Jones would have said so. And I ain't seen that in no *Proceedings* either." He continued, "I know that Mister Radials reads my column. I'll believe what he says."

The book talks about a wire antenna and says it is "comparable to a triband beam." Nothing is mentioned about on what band or in which direction, etc.

Among the "easily constructed" antennas is a Rhombic, 535 ft. legs, held up by 70 ft. poles. I've stood under Rhombics at Fort XXXXX. (As I mentioned before, I taught the boys Morse code during the war.) "Easily constructed" does not quite apply.

Kurt is fearful that rank beginners will believe something is gospel because it's "in the book." We quote, from page 43, "Use every metallic item at your disposal to create a good ground: cold water pipes, small fences,

buried bicycles or autos, anything." Folks, we're not making this up! This is a real book. Why isn't the name of this wire book or the author mentioned? Well, once Kurt reviewed a book that in the first chapter told the budding amateur that he needed to dig a hole 6×6 feet. Kurt said that was pointless. Readers said Kurt was "picking on" the author. So, Kurt has mellowed. While there is more he could rant about in this book, I'm sending him back into his cage.

And for you, dear and gentle reader—if any spaced-out kids in your neighborhood get this book and your car disappears, you may have a clue. More likely they will sell your car instead of burying it. That way they can have the money to spend \$500 on wire for their radial system.

The book that you don't want costs \$9.95. Save your money and get something like the Orr and Cowan books, Doug DeMaw's books, the *ARRL Antenna Book*, etc. Nothing about burying cars in those.

Actually, the truth of the matter is that buried objects, including not only bicycles but wire, are not good return paths for vertical antennas. The reason, simply, is that RF doesn't penetrate the earth very far. The earth is very lossy. The RF doesn't get to the metal object in the first place. At 14 MHz, after a few inches, it's all gone.

(*Lil Paddle*, Mrs. Kurt N. Sterba, goes by her nom de plume so she doesn't get phone calls from licensed amateurs advocating burying bicycles, or roses from Dave Sumner.) □

## HIGH-ACCURACY ANTENNA SOFTWARE

MN 4.0 is the fastest, most powerful, and most accurate MININEC antenna-analysis program available. MN corrects fundamental problems in the MININEC algorithm for improved accuracy. MN features 3-D views of antenna geometry and wire currents, presentation-quality polar and rectangular plots, automatic wire segmentation, automatic frequency sweep, symbolic dimensions, skin-effect modeling, near-field calculation for TVI and RF-hazard analysis, up to 254 pulses for complex models, simple definition of sources and loads, and pop-up menus. MN 4.0, \$85. MNC 4.0 (1.6-2.4 times faster, coprocessor required), \$110. MNH 4.0 (huge-model option), \$25.

YO 4.0 automatically optimizes Yagi antennas for maximum forward gain, best pattern, and minimum SWR. YO handles designs from HF to microwave. YO models stacked Yagis, Yagis over ground, skin-effect, dual driven-elements, element tapering, mounting plates, and matching networks. YO runs hundreds of times faster than MININEC. YO is calibrated to NEC for high accuracy and has been extensively validated against real antennas. YO is intuitive, highly graphical, and fun to use. YO 4.0, \$100. YOC 4.0 (1.7-2.7 times faster, coprocessor required), \$130.

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

MN and YO come with comprehensive antenna-design libraries and include both coprocessor and extra-fast no-coprocessor versions. All programs include extensive documentation and an easy-to-use, full-screen text editor. Add 7¼% CA, \$5 overseas. VISA, MasterCard, U.S. check, cash, or money order. For IBM PC, 3.5" or 5.25" disk.

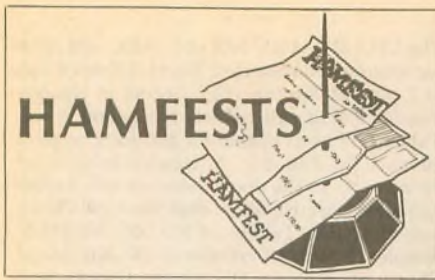
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## Think clean

KEN JOHNSON, W6NKE

Major sources of malfunction in radio equipment are dust, dirt, tarnish and corrosion. An additional source is added when a smoker frequents the ham shack. One or a combination of these can create a variety of operational problems. These may be evidenced by erratic loading, tuning, excessive noise, distorted audio, lack of audio, faulty keying or no receive or transmit function at all.

Before considering a major operation on your equipment, remove the case and give the PC boards, switches and other components a thorough cleaning with a good grade of electronic solvent. In my case I have found that the best grade of Freon TF (use with environmental responsibility) cleaner has eliminated many problems. This type of initial approach is well worth the effort before initiating major troubleshooting activities or shipping the rig back to the factory. It may also save you a bundle of money.



## Arizona

SCOTTSDALE ARC will hold the ARCA Spring Hamfest on March 21 from 7 a.m. to 4 p.m. at Scottsdale Community College. Features include VE exams and programs on DX, RTTY, packet, AMSAT antennas and ARRL forum. VE exams will be given at 10 a.m. A no-code Technician class will be presented by Loraine McCarty, N6CIO on March 20, 21 and 22. For more information on the classes, call Loraine at 714/979-CODE (days) or 714/556-4351 (evenings/weekends). Pre-registration for the class is required. Admission is \$2 per car general parking or \$5 per swap space. Overnight parking on site for self-contained RVs on Friday and Saturday. Talk-in on 147.18. Contact Walt, N7IZM, at 602/947-0338 or write to SARC Hamfest, P.O. Box 10878, Scottsdale, AZ 85271-0878. Part of the proceeds will be donated to the Scottsdale Community College Scholarship Fund. □

## California

The PERHAM FOUNDATION will sponsor Amateur Radio flea markets at Foothill College on March 14, April 11, May 9, June 13, July 11, August 8 and September 12 beginning at 6:30 a.m. in Los Altos Hills. Admission is free. \$10 for two spaces for vendors. Amateur exams (Sunnyvale VEC) will be given at 840 W. Washington Ave., from 10:30 to 11:30 a.m., Walk-ins only. Talk-in on 145.270(-) or 224.360 repeater. Call 408/255-9000 24/hrs. for any changes. □

## Connecticut

The RADIO AMATEUR SOCIETY OF NORWICH AUCTION will be held on March 14 from 10 a.m. until sold out at the Senior Citizens Center, Waterford Municipal Complex. Admission is free and food will be available. Wheelchair accessible. Bring your equipment to be auctioned. Vendor set-up is at 9 a.m. Talk-in on 146.67 repeater. Contact KA1BB at 203/739-8016. □

## Florida

PLAYGROUND ARC will hold the 22nd Annual Ham/Swapfest on March 21 and 22 from 8 a.m. to 5 p.m. on Saturday and 8 a.m. to 3 p.m. on Sunday at the Fort Walton Beach Fairgrounds. Features include a large flea market, commercial vendors, forums and meetings. Admission is \$4 at the door; YLs and kids under 16 admitted free. Tables are \$10 per day or \$15 for both days (call Len, WD4KKV, at 904/862-5771 to reserve tables). For RV parking call Tony, KC4YBE, at 904/581-0156. RV hook-ups are available. Contact PARC, Box 873, Fort Walton Beach, FL 32549. □

## Illinois

STERLING-ROCK FALLS ARS 32nd Annual Hamfest will be held on March 22 beginning at 7:30 a.m. at the Sterling High School Field House. Features include a large flea market, plenty of free parking, including areas to accommodate self-contained campers and self-contained mobile trailers overnight, and a concession stand. Admission is \$3 advance, \$4 at the door. Vendor set-up Saturday from 6-9 p.m. and on Sunday beginning at 6:30 a.m. Tables \$5, including electricity. Bring your own cord. Talk-in on 146.25/146.85 W9MEP repeater. For information, tables or tickets, contact Sue Peters, Sterling-Rock Falls ARS, P.O. Box 521, Sterling, IL 61081; 518/625-9262. □

## Indiana

COLUMBUS ARC will hold a hamfest on April 4 from 8 a.m. to 2 p.m. at the Bartholomew County 4-H Fair Grounds Women's Building. Admission is \$3. Vendor set-up will be from 6 p.m. to 10 p.m. on April 3 and beginning at 6 a.m. on April 4. Eight ft. tables are \$6. Talk-in on 146.790/146.190. For reservations contact Marion Winterberg, 11941 W. Sawmill Rd., Columbus, IN 47201; 812/342-4670.

MORGAN COUNTY REPEATER ASSOCIATION will sponsor the Indiana Hamfest on March 8 beginning at 8 a.m. at the Indiana State Fairgrounds Pavilion Building in Indianapolis. YL programs will be available. Admission is \$7 at the door. Vendor set-up will be from 3 p.m. to 9 p.m. on March 7 and 6 a.m. to 8 a.m. on Sunday. Security will be provided overnight. Eight ft. flea market tables (including space) are \$12 each. No space will be sold without a table. Talk-in on 145.25. For table reservations or information, send an SASE before February 22 to Aileen Scales, KC9YA, 3142 Market Place, Bloomington, IN 47403; 812/339-4446. □

MICHIGAN CITY ARC will hold the MCARC Annual Spring Hamfest on March 29 from 8 a.m. to 2 p.m. at Rogers High School. Admission is \$4 per person over 10 years of age. Vendor set-up will begin at 7 a.m. Eight ft. tables are \$5 each; electricity is \$2. Talk-in on 146.52 simplex and 146.37/97 (PL 131.8). For table and electric reservations or further information, call Roy Jackson, NY9B, at 219/872-4201 or write to him at P.O. Box 2013, Michigan City, IN 46360. □

## Kentucky

LINCOLN TRAIL ARC will hold their 13th annual hamfest on March 28 beginning at 8

a.m. at the Pritchard Community Center in Elizabethtown. Features include refreshments, forums and VE exams (walk-in only); contact Chuck Strain, AA4ZD, 502/351-1715. Advance tickets are \$4 or \$5 on the day of the hamfest. Advance reservations for flea market and new vendors are \$5 per table and chair (\$10 on the day of the hamfest). Vendor set-up will begin at 6 p.m. on March 27. For advance reservations, contact Whitey Hensley, WD4GDA, P.O. Box 342, Vine Grove, KY 40175; 502/877-2234. □

## Massachusetts

SOUTH SHORE ARC annual indoor flea market will be held on March 22 from 10:30 a.m. to 3 p.m. at the Viking Club in Braintree. Plenty of free parking and refreshments will be available. Admission is \$1. Eight ft. tables are available for \$12 each (which includes one free admission per table), only if paid for in advance before March 18 to Thaire Bryant, KA1MJR, 81 Saning Rd., W. Weymouth, MA 02191. Tables will cost \$14 on the day of the sale. Vendor set-up at 9 a.m. Contact KA1MJR at 617/331-3673, evenings. □

MTARA Fleamarket will be held on March 1 beginning at 9 a.m. at Smith Vocational School in Northampton. Food and ARRL VEC exams will be featured. Handicap accessible. Admission is \$3, children under 12 free. Tables are \$15 at the door, \$12 in advance. Talk-in on 146.94, 146.52 and 223.82. Contact N1CDR, 6 Laurel Terrace, Westfield, MA 01085; 413/562-1027. □

## Michigan

SOUTH EASTERN MICHIGAN ARA will be conducting its 34th Annual Hamfest/Swap-N-Shop/Computer Show on April 5 from 8 a.m. to 2 p.m. at Grosse Pointe North High School in Grosse Pointe Woods. Features include an ARRL forum and a VEC exam session. Advance tickets/vendor passes are \$2 each with one pass required for each member of your party. Advance table reservations are available for \$10 each. Talk-in on SEMARA repeater 146.74 (-.600). For information and/or table reservations, contact Thomas J. Orlicki, N8HLY, Hamfest Director, P.O. Box 646, St. Clair Shores, MI 48080-0646; 313/527-3497. □

## Minnesota

ROCHESTER ARC will hold the 15th Annual Rochester Area Hamfest Computer and Elec-

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tronic Show on April 4 at John Adams Junior High School. For information and tickets, contact the Rochester Amateur Radio Club, John Scott, N0HZN, 2824 N.W. 24th St., Rochester, MN 55901; 507/285-9236. □

## Missouri

JEFFERSON BARRACKS ARC will hold the 32nd Annual Amateur Radio Auction on March 13 at the Concordia Turner's Hall in south St. Louis City. The doors open at 5 p.m. The auction starts at 7:30 p.m. Contact Donn Hornberger, KA0SOH, 5814 Minnesota, St. Louis, MO 63111. □

## North Carolina

THE MECKLENBURG AMATEUR RADIO SOCIETY will hold the Charlotte Hamfest and Computerfair on March 7 and 8 from 9 a.m. to 5 p.m. on Saturday and 9 a.m. to 2 p.m. on Sunday at the Charlotte Merchandise Mart. Features include parking for 3,500 cars, restaurants close by and a 300-seat restaurant inside the exhibit hall, DX forums, YL programs and license exams by the Charlotte VEC on March 8. Over 180 commercial exhibit booths and over 500 flea market tables will be available. Tickets are \$6 in advance, \$8 at the door. Swapfest tables are \$18 in advance only, none sold at the door. Tickets and tables are good for both days. Children under 12 are free. Talk-in on W4BFB/R on 144.69/145.29. Reservations and inquiries may be made by writing Charlotte Hamfest, P.O. Box 221136, Charlotte, NC 28222-1136 or call 704/536-7373 for ticket and table information or 704/568-7611 for dealer and manufacturer information. □

## New Hampshire

INTERSTATE REPEATER SOCIETY will sponsor a flea market on March 14 from 8 a.m. to 3 p.m. at the Lions Club Hall in Derry. Features include a door prize and raffle. Free parking will be available. Admission is \$2 for buyers, \$10 per space for sellers. Talk-in on 146.85. Contact Wayne, KA1MKH, at 603/895-9035 or send a check for space(s) by March 1 to IRS, P.O. Box 693, Derry, NH 03038. □

## New Jersey

SHORE POINTS ARC will sponsor its 10th annual hamfest, Springst 92, on March 7 beginning at 9 a.m. at Holy Spirit High School in Absecon. Features will include food and outdoor tailgating space on the day of the hamfest, weather permitting. Admission is \$4 (XYLs and children free). Reservations will be accepted for tables in the heated indoor selling area at \$5 per 8 ft. table. Tables will be provided and limited AC is available indoors. Vendor set-up will be at 7 a.m. Talk-in on 146.385/985. For further information, write to SPARC, P.O. Box 142, Absecon, NJ 08201. □

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CHERRYVILLE REPEATER ASSN. II will sponsor the Flemington Hamfest 92 on March 14 from 8 a.m. to 2 p.m. at the Hunterdon Central High School Fieldhouse in Flemington. Features will include an indoor flea market, limited tailgating, free parking, refreshments and VE exams. For VE information and registration, contact Dick Wells, KE2HQ, at 908/479-6395. Handicapped accessible. Admission is \$5. Unlicensed spouses and kids free. Vendor tables are \$15 with quantity discount. Vendor set-up is at 6 a.m. Talk-in on 147.375(+). For table reservations and information, contact Marty Grozinski, NS2K, c/o CRA II, P.O. Box 308, Quakertown, NJ 08868 or call 908/806-6944. □

## Ohio

THE TRAYS ARC will sponsor a hamfest on March 15 from 8 a.m. to 3 p.m. at the Pickaway County Fairgrounds in Circleville. Tables are available in advance for \$5 or \$6 at the door. Admission is \$4. Talk-in on 147.78 and simplex 146.52. For further information contact Robert Daub, KF8GB, 7174 SR 188 N. Ridge Rd., Circleville, OH 43113; 614/474-7012. □

Fourteenth Annual LAKE COUNTY ARA (LCARA) Hamfest will be on March 22 from 8 a.m. to 3 p.m. at Madison High School in Madison. Features include VE testing, commercial exhibits, a full schedule of programs, a flea market, major prizes, raffles, alternate activities and dining facilities. A 2M indoor fox hunt will begin at 1 p.m. Admission for the all indoor hamfest is \$4 in advance (SASE and postmark by 3-7-92 please) and \$4.50 at the door. Vendor tables are \$6 for 6 ft. and \$7.50 for 8 ft. tables. Talk-in on 147.81/21 or 222.90/224.50 (PL 141.3). For more information, contact Roxanne, LCARA Hamfest, 5777 Fenwood Ct., Mentor-on-the-Lake, Ohio 44060; 216/257-2036 from 6 p.m. to 9 p.m. and 10 a.m. to 4 p.m. weekends, or 216/352-6756 weekdays from 10 a.m. to 4 p.m. □



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The CHAMPAIGN LOGAN ARC will sponsor a hamfest on Sunday, March 1, from 8 a.m. to 2 p.m. at Kenton High School in Kenton. Vendor set-up will be between 6 and 8 a.m. Tables will be available for \$10 each or \$8 in advance (by Feb. 21). Admission is \$4 in advance or \$5 at the door. Features will include ham gear, electronics, computers and VE exams at 11 a.m. Talk-in on 147.00(+) or 147.51 Simplex. Contact Kevin Born, N8LKB, 354 N. Cherry St., Kenton, OH 43326; 419/675-2407 or 673-1060. □

## Texas

THE MIDLAND ARC's annual St. Patrick's Day Swapfest will be held on March 14 and 15 from 9 a.m. to 5 p.m. on Saturday and 8 a.m. to 2:30 p.m. on Sunday at the Midland County Exhibit Bldg. Features include a flea market, refreshments and VE exams at 12 p.m. on Saturday. Admission is \$5 with pre-registration or \$6 at the door. Tables are \$8 each. For more information, contact MARC, P.O. Box 4401, Midland, TX 79704. □

THE FOUR STATES ARC will host its third annual hamfest on March 14 from 8 a.m. to 4 p.m. at the YWCA Building, in Texarkana. Features include free parking and VE testing. Admission is \$2. Indoor flea market tables are \$5. Talk-in on 146.62. For more information or table reservations call Pat, KG5SC, at 903/793-3677, evenings, or Travis, K5AVH, at 903/792-2080. □

## Washington

MIKE & KEY ARC is sponsoring the 11th annual electronics flea market on March 7 from 9 a.m. to 5 p.m. at the Puyallup Fairgrounds in Puyallup. Features include consignments, snack bar, free parking, and VE exams at 10 a.m. and 1 p.m. Admission is \$5. Admission after 12 p.m. is \$3. Children under 16 with an adult, free. Tables are \$20. Vendor set-up is from 2 p.m. to 9 p.m. on March 6 and 6 a.m. to 9 a.m. on March 7. Talk-in on 146.82 R, K7LED. For more information call 206/821-4188 or 206/549-4062. □

The 15th Annual INLAND EMPIRE AMATEUR RADIO Hamfest will be held on April 4 and 5 at the Spokane Youth Sports Bingo Hall in Spokane. Gordon West, WB6NOA, will be the featured speaker. Features include an HF transceiver as the door prize and a station monitor and hand-held as second prizes, on-site parking for 500 cars, space reserved for self-contained RVs, a snack bar and meeting rooms. Tables will be \$10 per 6 ft. and \$12 per 8 ft. Vendor set-up will be from 1 p.m. to 6 p.m. on April 3. For more information, contact the Inland Empire Hamfest Committee, S. 1405 Crestline, Spokane, WA 99203; 509/534-8443. □

WALLA WALLA VALLEY ARC is sponsoring the 46th Annual Swapfest on March 22 from 8 a.m. to 4 p.m. at the Community Building in Milton-Freewater, Oregon. Features include license exams for all levels, a swap table, food and prizes. Admission is free. Indoor swap tickets are \$5. Talk-in on 147.28/88. Contact Carl Elsner, N7PVW at 509/522-1270. □

## Wisconsin

TRI-COUNTY ARC will hold its annual hamfest on March 22 beginning at 8 a.m. at the Jefferson County Fairgrounds. Monies generated go to providing a scholarship to a second-year electronics student from the Tri-County area. Admission is \$4. Six ft. tables are \$4 each. Contact W9MQB, 213 Frederick St., Fort Atkinson, WI 53538; 414/563-6381. □

The MADISON AREA REPEATER ASSOCIATION will hold the 20th annual Madison Swapfest on April 5 beginning at 8 a.m. at the Dane County Exposition Center Forum Building. Features include over 20,000 sq. ft. of space for commercial exhibitors and the flea market, space for parking in the adjacent paved lot, hotel accommodations available within walking distance of the

swapfest, and food. Admission is \$4 per person in advance and \$5 at the door. Children under 12 are admitted free. Flea market tables are \$9 each in advance, plus admission. Talk-in on the MARA repeater, WB9AER, 147.15. Be sure to reserve early as tables were sold out last year. The deadline for advance tickets and table reservations is March 31. Contact MARA, P.O. Box 8890, Madison, WI 53708-8890. □

# CONTESTS

## East Meets West YL SSB Contest

This contest will take place from 1400 to 1800 UTC Friday, March 6.

**Eligibility:** All licensed women operators throughout the world are invited to participate.

**Procedure:** Call "CQ YL East" or CQ YL West." Those considered East are 1st, 2nd, 3rd, 4th, 8th, 9th call districts, VE 1-3, Europe, Africa, South America, Caribbean and Central America (except Mexico). Those considered West are 5th, 6th, 7th, 10th, KL7, and KH6 call districts; VE4-0, Asia, Oceania, Australia, New Zealand, and Mexico. Those classified as East may count only those classified as West and vice versa.

**Operation:** All HF bands may be used. The maximum power output that may be used at any time during the contest is 1500W PEP on SSB.

**Exchange:** For each QSO logs must show the station worked, QSO number given and received, RS(T) given and received, country/province/state of station worked, time, band and date. Logs must also state the power output used and the operating breaks taken.

**Scoring:** Score one point for each different YL worked.

**Logs:** All logs must show your state/province/country to qualify for awards. If you have 200 or more QSOs, submit a separate log for each band and submit a "dupe" sheet.

## 1991 Worldradio DXathon

**ELIGIBILITY:** All licensed Amateur Radio operators worldwide.

**DATES:** Jan. 1, 1991 through Dec. 31, 1991. **BANDS:** Five bands •80 •40 •20 •15 •10

**MODES:** Five modes •Phone •CW •Satellite •Visual (SSTV, FAX) •Digital (includes RTTY, AMTOR and Packet).

**OBJECTIVE:** Contact as many nations via as many different modes as possible. A nation is defined as an entity with enough sovereignty to issue its own postage stamps.

**SCORING:** Your final score will be the total number of nations worked per mode. You may count a nation only once per mode. An example of scoring: If you work Japan on CW and SSB on 20M, the point value would be two points. If you work Poland on CW on 10M and 20M, the point value would be one, as a nation can only be counted once per mode.

**SUBMISSIONS:** All entries must be submitted on official DXathon entry forms or a reasonable facsimile or computer printout with nations listed in alphabetical order by prefix, and should include call, date, time, band and mode for each entry. Use separate sheets for each mode. QSL cards are not required. In addition, a DXathon summary scoresheet should be filled out with your score totals on it. As a matter of interest, include the total different nations worked, regardless of mode. You may count Estonia, Latvia and Lithuania as separate nations for the whole year. All entries must be postmarked no later than February 28, 1992.

Entries must include your call, name, address and be signed with a declaration that the contacts were complete two-way contacts. Mail all entries to: *Worldradio*, 2120 28th Street, Sacramento, CA 95818, USA. All participants will be listed in *Worldradio*. Decisions of the DXathon committee will be final. The committee has the right to disqualify an entry for violation of the letter or the spirit of the rules. By submitting an entry, the participant agrees to abide by the decision of the committee. Awards: Will be given based on the number of entries. 100-point minimum must be accumulated to be eligible for an award. **RULE CHANGES:** Rules may be modified over the years to reflect feedback from the participants. Please send copies of this notice to your DX friends. Send 52¢ business size SASE to *Worldradio* for entry forms and nations list.

Do not send carbon copies of logs. Please print or type. Logs must be signed by the operator and no logs will be returned. Remember to file separate logs for each contest. Logs must show claimed score and must

be postmarked 30 days after contest or they will be disqualified.

Mail logs to Vice President YLRL, Dana Tramba, N0FYQ, RRI Box 213, Peck, KS 67120.

Awards: Winners will receive YL postcards. □

## Date changes YL-SSB

Please take note of the following date changes in the phone portion of the ISSB QSO Party. The new phone portion dates will be March 14 and 15, 1992.

The reason for the change is that the ARRL International DX contest is scheduled for March 7 and 8. (We do not wish to add to the competition for frequency space—HI.)

For further details of the YL-SSB QSO Party see Contests in our February issue of *Worldradio*. □

### Work Rare CW DX - CW Contests

Contest Code is the answer! This powerful hypnosis cassette tape teaches you to copy High Speed (30/40 wpm) or Ultra High Speed (50/60 wpm). Subliminals speed you along! Only 20 min/day for 30 consecutive days yields results. Info: 516-584-8164. Each tape \$14.95 (specify which program you want) or both for \$27.95 ppd in US (NY residents add 8% sales tax). Order Today!

PASS Publishing, Dept WR, Box 570, Stony Brook, NY 11790

WORLD RADIO, March 1992 87

LOGic™

New version!

The best got better!

Many hams have selected LOGic for its many unique features, such as ease of data entry and recall, superb reporting and QSL management, awards tracking, DXing aids, and freeform notes for nets and ragchewing. Thanks to input from our growing customer base and a year's programming effort, we announce version 2.1. New features include *on line* progress displays for nearly any award, any band/mode! Table of 3800+ prefixes automatically logs oblasts, provinces, etc. Even more flexible and streamlined screen, user-defined fields, and freeform notes. And much more. LOGic Jr. is still only \$39.00. LOGic II, which features contesting, interface to most rigs, custom report writer, a QSL manager database facility, and more, is only \$79. For IBM, Amiga, and ST. Coming for Mac. Ask for free 10-page info pak.

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 Duluth, GA 30136-6037  
 ☎ 404-242-0887 Fax 404-449-6687

**Hours:**  
 8 AM - 6 PM M - Th  
 8 AM - Noon Fri

**NEW PRODUCTS**

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

## KB1T calendar

KB1T Radio Specialties' contest and DX calendar features color photos, radio event dates, and operator reference. It's the perfect accessory for your radio shack or office and a great gift for your ham friends. The seventh annual edition features full-sized color photos of famous DX personalities, DXpeditions and active radio amateurs, including AZ1A, 9N1MM, 7O1AA, W0RLX, HV3SJ, 3Y5X, NE8Z, VP2MO, YA0RR, W5UN, etc. This year's calendar also features a 1992 propagation forecast and tutorial by VP2ML and a radio history 1992 retrospective by Tom Lewis.

The calendar shows dates, starting times and durations of over 100 operating events. It includes over 40 historic dates in radio and Amateur Radio, birthdays of radio scientists and inventors, plus all major US and Canadian public and popular holidays. Also has indispensable reference material, including CQ and ITU world zone maps and prefix/zones; ARRL US and VE section map and grid locator; USSR Siberian call sign map by W7YF; table of ITU amateur call sign prefix allocations; US amateur bands and modes, 160M through 23 cm; contest sponsors and information sources; North American Islands on the Air (partial list).

The spiral-bound calendar measures 11 by 18 inches opened and can hang or lie flat. Twelve color 8 x 10 in. photos plus two historic black-and-white photos. Two-color printing for dates. Total 46 pages includes 12-page reference section with its own handy tab for quick location.

Clubs: call for quantity "club pack" prices! Regular price: \$11.95. Order from KB1T Radio Specialties, Box 1015, Amherst, NH 03031.

## Fast & Fun G5RV QuickKits™

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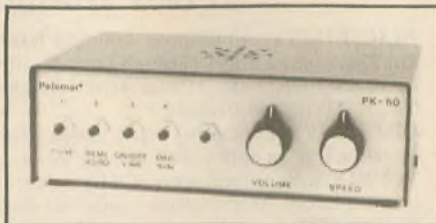
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## Message memory keyer

Palomar Engineers' new Model PK-60 keyer features four message memories; easy error correction; automatic serial numbering; pause within message; paddle sending within messages; pause between message repeats; message combining; paddle tap stops message; transmitter tune; semiautomatic and hand key operation; serial number decrement; paddle reverse for left handers; monitor



speaker; volume control and pitch control by panel knob; weight variable 25 to 75 percent; correction for rig's slow QSK time; four serial number formats; responses to inquiries giving present settings; linear speed control by panel knob; speed range 5 to 50 wpm; self completing dots, dashes and spaces; iambic; and its lithium battery holds messages and settings with the power off. The keyer operates on DC power from +18 to +20V. It keys positive or negative up to 1A and to 500V. Price: \$189.95 plus \$4 shipping in the US and Canada. Contact Palomar Engineers, P.O. Box 455, Escondido, CA 92033; 619/747-3343.

## Lakeview dualband

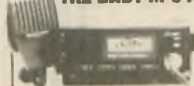
After extensive testing and fine tuning, we are proud to announce WD4BUM's newest antenna—a dualband for 2M and 70cm. This antenna comes with a very strong, black, powder coated magnet, 15 feet of RG-58 coax and a PL-259 connector installed. This amazing antenna works both bands with an SWR under 1.5:1.

The complete antenna is under 21 inches in height and has 3dB gain on 70cm. It is available in either a black or bright chrome finish. This antenna is 100 percent made in the US and comes with a free vinyl magnet pad.

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Now Available in UHF  
 (440-470 MHz)  
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• Wideband antennas, power supplies and other accessories available at reasonable prices Dealer Inquiries Encouraged.

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 11791 Loara St., Suite B  
 Garden Grove, CA 92640-2321  
 CALL 714-638-8807 or

FAX 714-638-9556 for immediate attention

The antenna is available at your Lakeview dealer for \$27.95—ask for model number DBC-1 for the bright chrome finish or model number DBB-1 for the black chrome finish.

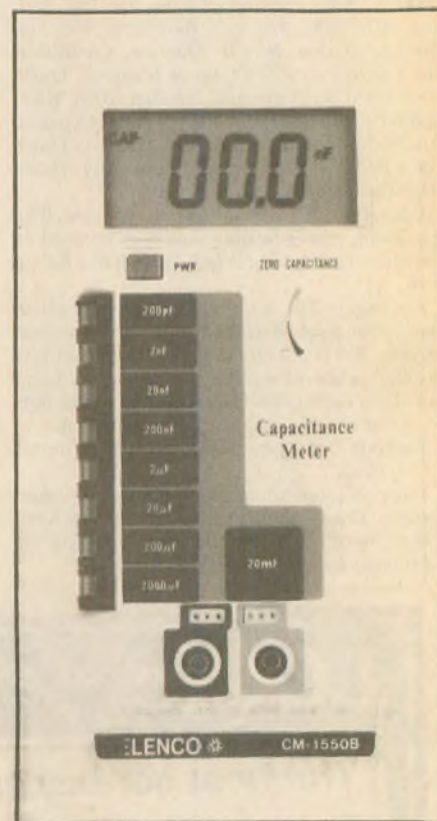
A whip can also be ordered that will fit all 3/8 x 24 TPI mounts for only \$17.95—ask for model number DBWC-1 for the bright chrome finish or model number DBWB-1 for the black chrome finish.

Both antennas and whips can be ordered direct from Lakeview Company, Inc., 3620-9A Whitehall Road, Anderson, South Carolina 29624; 803/226-6990. Add \$4 for UPS surface shipping and handling in the continental US.

## Multimeters

Elenco Electronics has introduced a new series of digital hand held multimeters that have an extra large 3/4 LCD display.

The Elenco CM-1500B multimeter and CM-1550B capacitance meter have an easy to read display that causes less headaches than most meters.



These meters have an exceptional accuracy of 1/2 percent. The CM-1500B measures AC/DC volts, AC/DC current to 20 amps, resistance, transistors, diodes, capacitors to 20uF and conductance. The CM-1550B measures capacitance from .1pF to 20,000uF. Both meters have side push button switches and the CM-1550B has a zero control. Both meters include Elenco's two-year warranty, test leads operator manual and a carrying case at no additional charge. Prices are \$75 for the CM-1500B and \$79.95 for the CM-1550B.

For further information contact Elenco Electronics, Inc., 150 W. Carpenter Avenue, Wheeling, IL 60090; 708/541-3800; FAX 708/520-0085.

## Frequency counter

Frequency counter model 3500 from Startek International Inc., is a new, hand held "shirt pocket sized" instrument that can find and measure frequencies from 10 Hz to 3.5 GHz or 3,500 MHz. It is the smallest instrument of its type ever offered with that amazing measurement range. The 3500 features an eight-digit red LED display, a "display hold" function, a one megohm input impedance from 10 Hz to 12 MHz and a 50 ohm input impedance from 10 MHz to 3.5 GHz. The user can select from three gate times giving a maximum resolution of .1 Hz to 12 MHz and 10 Hz resolution to 3.5 GHz. There are internal NiCad batteries included that provide three to five hours of portable operation. The unit can be operated while recharging the NiCad batteries with the 110VAC adaptor/charger supplied. The unit can also be powered by a 12VDC to 9VDC optional auto adaptor. Two adjustable crystal clock oscillators are utilized, one for the low range and the second for the high range. The input signal is coupled via a BNC connector



on the top. Two MMIC amplifier stages are used to provide excellent input sensitivity.

Small enough to fit in a shirt pocket, the 3500 will outperform many much larger and more expensive units. Utilizing LSI and surface mount construction, the size was minimized and the performance maximized. The excellent sensitivity of this instrument makes it ideal for use with a telescoping antenna to accurately and easily identify and measure transmit frequencies from hand-held, fixed or mobile transmitters. STARTEK also offers several other frequency counter models including a model 2500 which is identical to the 3500 except for range. The 2500 covers 10 Hz to 2400 MHz.

The 3500 is made in Ft. Lauderdale, Florida and is sold with a full year parts and labor limited warranty. Delivery from stock. US factory direct prices: model 3500: \$250; model 2500: \$210. A toll free phone number is available for orders only: 800/638-8050. □

## Dualband mobile

Icom announces the new IC-2410A/H 144 and 440 MHz dualband transceiver. Setting the pace in mobile technology, the new IC-2410A/H mobile does it all! Revolutionary features include simultaneous receive on the same band, microphone control, and optional remote control. The sleek design of the IC-2410A/H makes it one of the smallest dualband transceivers in its class, measuring only 5.5 x 1.6 x 6.9 inches and weighing just three pounds.

The new IC-2410A/H is capable of simultaneous receive on the same band. In addition to receiving two bands simultaneously, it is the first mobile to receive two frequencies simultaneously on the same band. The IC-2410A/H comes in two versions. The IC-2410A puts out a maximum of 25W on both UHF and VHF. Maximum output power for the IC-2410H is 45W on VHF and 35W on UHF. Both versions offer high, medium and low power settings.

A variety of operations can be controlled with the HM-56 DTMF hand microphone and optional UT-55 DTMF encoder/decoder, such



as setting the main band on VHF or UHF; entering memory or VFO mode; direct entry of frequency and memory channels; selecting high or low power; plus a number of other features. Use other hand-helds or transceivers capable of DTMF operation to remotely control the IC-2410A/H (optional UT-55 DTMF encoder/decoder unit required). You can even have the frequency read back to you via your remote transceiver, by installing the optional UT-66 voice synthesizer unit.

The IC-2410A/H has crossband repeat capability with repeater offsets on both bands. When in crossband repeat mode, the IC-2410A/H is capable of receiving a subtone on the input frequency while transmitting a different subtone on the output frequency (optional UT-67 tone squelch unit required).

Each band is equipped with 15 memory channels, two scan edge channels and one call channel. Plus, the HM-56 microphone has 14 DTMF memory channels. It's ideal for autodialing!

The IC-2410A/H also includes many other popular features such as separate volume controls for each band; a variety of scan modes; built-in duplexer; memory to VFO transfer capability; RF attenuator; optional pager and code squelch units; optional tone squelch and pocket beep units; selectable intensity for LCD; and 1 MHz step tuning.

Suggested retail price for the IC-2410A is \$855. Suggested retail price for the IC-2410H is \$899. Both are backed with Icom's one-year warranty. For further information, contact your local Icom dealer today! □

## LOCAL RADIO STORE

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### Jun's Electronics

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### FLORIDA

Eli's Amateur Radio  
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Fort Lauderdale, FL 33315  
(305) 525-0103 • (800) 780-0103

### Mike's Electronics

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Fort Lauderdale, FL 33309  
(305) 491-7110 • (800) 427-3066

### GEORGIA

Ham Radio Outlet  
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Atlanta, GA 30340  
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### NEVADA

Radio World  
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Boulder City, NV 89005  
(702) 294-2666

### NEW HAMPSHIRE

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Ham Radio Outlet  
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### VIRGINIA

Electronic Equipment Bank  
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Vienna, VA 22180  
(703) 938-3350

### Ham Radio Outlet

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(703) 643-1063 • (800) 444-4799







# VE exam schedules

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

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

Please mark the envelope "VE Exams."

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

p/r=pre-register

w/i=walk-in

Date	City	Contact	Notes	Date	City	Contact	Notes
<b>Alabama</b>							
Apr. 18	Tuscaloosa	Kelly Bruce, WD4DAT 205/339-7882	w/i OK	Apr. 4	Hoffman Estates	NO9A 708/593-8658	w/i
<b>Arizona</b>				Apr. 23	Lombard	KD9I 708/495-0498	w/i
Apr. 4	Tucson	K7OPX 602/886-7217	w/i only	Apr. 11	Mt. Prospect	WA9DLI 708/437-1464	w/i
Apr. 18	Tucson	Robert Olson 602/577-1050	w/i OK	Apr. 2	Mundelein	K9IW 708/367-6303	w/i
<b>Arkansas</b>				Apr. 11	Oak Forest	KA9HDN 312/247-0650	w/i OK
Apr. 11	West Memphis	Gene Bagley, AB5BL 501/739-4029	w/i OK	Apr. 25	Oak Forest	WG9R 708/687-0511	w/i
<b>California</b>				<b>Indiana</b>			
Apr. 4	Burbank	KE6AR 818/349-0927	w/i OK	Apr. 11	Hammond	W09H 219/738-2728	w/i
Apr. 11	Camarillo	Tom, KC6JLW 805/486-7619	p/r pref; w/i OK	Apr. 4	Portage	KE9I 219/762-0580	w/i
Apr. 5	Chico	W6YKU 916/342-1180	p/r pref	Apr. 4	South Bend	N19Y 219/259-9445	w/i OK
Apr. 5	Clearlake	Art 707/994-0646	w/i only	Apr. 5	Terre Haute	K9EBK 812/466-2122	w/i OK
Apr. 4	Concord	Gene, WW6H 415/254-5090	w/i	<b>Iowa</b>			
Apr. 4	Cupertino	408/243-8349	w/i OK	Apr. 25	Council Bluffs	AA0BS 712/322-1454	w/i OK
Apr. 18	Downey	KA3DSE 213/923-5598	w/i	<b>Kansas</b>			
Apr. 25	Fairfield	Jerry 916/662-0801	w/i only	Apr. 28	Emporia	K0JDB 913/343-2158	w/i OK
Apr. 7	Fremont	KJ6EP 510/791-6818	w/i only	Apr. 24	Leavenworth	Martha Auchard, WB0ERI 913/651-7350	w/i OK
Apr. 25	Fresno	Bill, N6HAV 209/227-3684	w/i only	Apr. 4	Olathe	Joe Scalet, WK0G 913/764-2822	w/i OK
Apr. 11	Grass Valley	John, N6PGZ 916/272-6728	w/i OK	<b>Maine</b>			
Apr. 5	Hanford	Carleton 209/924-4221	w/i only	Apr. 10	Augusta	N1BCF 207/623-4249	w/i OK
Apr. 4	Los Angeles	Ali Hassan, AA6WC 213/778-6226	w/i OK	Apr. 25	Bucksport	N1FPP 207/374-2184	w/i OK
Apr. 18	Monterey	408/243-8349	w/i limited	Apr. 22	Farmington	K11B 207/778-2417	w/i OK
Apr. 4	Ontario	Harry J. Kozlowski, KM6LO 818/810-0442	w/i OK	Apr. 22	Newcastle	KA1DAX 207/563-8512	w/i OK
Apr. 4	Pasadena	818/585-7038	w/i limited	Apr. 21	Presque Isle	WA1YNZ 207/455-8333	w/i OK
Apr. 18	Redwood City	Dudley, WB6WAU 408/245-4801	w/i only	Apr. 8	South Paris	KA1REBB 207/583-6915	w/i OK
Apr. 11	San Pedro	N6DYZ 213/325-2965	w/i OK	Apr. 12	Yarmouth	W3EZ 207/846-7734	w/i OK
Apr. 11	Sonora	WA6NSK 209/586-4917	w/i	<b>Maryland</b>			
Apr. 18	Stockton	N6XMA 209/952-5996	w/i only	Apr. 18	Laurel	YB3GXW 301/572-5124	p/r pref
Apr. 11	Sunnyvale	AA61Y, KG6XF 408/255-9000	w/i only	<b>New Jersey</b>			
Apr. 25	Vacaville	707/447-2680		Apr. 18	Bayonne	John, WA2QYX 201/451-9471	w/i
Apr. 4	Victorville	N6ZCA 619/244-4012	p/r pref; w/i OK	Apr. 16	Bellmawr	WA2VQG 609/546-7710	w/i
<b>Colorado</b>				Apr. 11	Cranford	24-hr. hotline: 201/377-4970	
Apr. 11	Denver	Glenn Schultz, W01JR 303/360-7293, 24-hr. voicemail	w/i OK	Apr. 8	Fort Monmouth	WB2GYS 908/532-5354	w/i
Apr. 18	Westminster	N0BLU 303/650-6826; N0HNR 303/278-4280	p/r or w/i	<b>New York</b>			
<b>Connecticut</b>				Apr. 11	Greenvale	WA2BGE 516/921-0085	w/i OK
Apr. 26	Milford	NB1M 203/933-5125; WA1YQE 203/874-1014	w/i	Apr. 8	Hamburg	Norm Jones, KD2KK 716/824-1148	p/r only
Apr. 22	Shelton	WJ1T 203/736-0488	w/i pref	Apr. 25	Lockport	Bob, KA2EG 716/433-4584	p/r only
Apr. 19	West Hartford	Larry, K1IED 203/644-2356	p/r pref	Apr. 16	Lower Westchester County	WK6R 914/834-2322	w/i OK
<b>Florida</b>				Apr. 5	Yonkers	AC2V 914/237-5589	w/i OK
Apr. 23	Hallandale	Norm, K4RBR 305/823-5437; Howard, N4EBT 305/935-5214	w/i only	<b>North Carolina</b>			
Apr. 18	Melbourne	WB9IVR 407/724-6183	w/i OK	Apr. 25	Asheville	Norman, N4NH 704/253-1192	w/i OK
<b>Georgia</b>				Apr. 4	New Bern	Andy Griffith, W4ULD 919/726-5924	w/i
Apr. 25	Dalton	Bert, N4BZJ 404/673-2214	p/r only	Apr. 18	Rutherford County	A.B. Brackett, KO4BJ 704/245-6334	
<b>Hawaii</b>				<b>North Carolina</b>			
Apr. 18	Hilo	AH6P 808/959-8893	w/i	Apr. 12	Salisbury	Isabelle, AB4UX 704/284-2414	w/i OK
<b>Idaho</b>				<b>Ohio</b>			
Apr. 11	Boise	W7JMH 208/343-9153	w/i	Apr. 4	Cincinnati	Herb, WA8PBW 513/891-7556	p/r pref; w/i OK
<b>Illinois</b>				Apr. 4	Reynoldsburg	Jim Kerr 614/866-5531	
Apr. 21	Aurora	N9AKE 708/892-1252	w/i pref	<b>Oregon</b>			
Apr. 18	Bolingbrook	NM9J 708/442-7100		Apr. 23	Coos Bay	503/888-3685	
Apr. 18	Chicago	312/929-8500, ext. 2221	w/i	Apr. 2	Medford	503/488-2691	
Apr. 25	Chicago	KE9X 312/233-0605	w/i	<i>(please turn to page 77)</i>			
Apr. 3	Elgin	K9WMP 708/888-8333	w/i	WORLD RADIO, March 1992 <b>71</b>			
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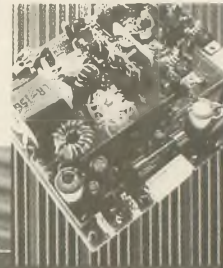
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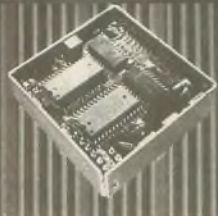


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# VE exam schedules

(continued from page 71)

Date	City	Contact	Notes
<b>Pennsylvania</b>			
Apr. 4	Erie	W3CG 814/665-9124	w/i
Apr. 2	Philadelphia	ND3Q 215/482-0386 or 215/879-0505	w/i
Apr. 18	Pittsburgh	Ben, W3OJW 412/795-2775	w/i OK
<b>Rhode Island</b>			
Apr. 28	Slatersville	W1YRC 401/333-2129; 401/333-2373	w/i OK
<b>South Carolina</b>			
Apr. 18	Charleston	Pat Foster, AC4IH 803/553-3871	w/i
Apr. 18	Columbia	Ray, N4WR 803/345-3373	w/i OK
<b>South Dakota</b>			
Apr. 18	Rapid City	KA0SEZ 605/394-1298; NU0F 605/348-6564	p/r 30 days prior; w/i OK
<b>Tennessee</b>			
Apr. 13	Blount County	Carroll, W4PCA 615/982-5839	w/i OK
Apr. 16	Fentress County	Mike Ledbetter, AB4BX 615/879-8626	w/i

Date	City	Contact	Notes
Apr. 18	Gallatin	Ronnie Gilley, KA4LUG 615/452-0883	w/i
Apr. 18	Henry County	Mackie Gallimore, AA4YF 901/247-5489	w/i OK
Apr. 12	Jasper	Charles Wooten, KD4XX 615/942-5116	p/r pref
Apr. 11	Knoxville	Ray Adams, N4BAQ 615/688-7771	w/i OK
Apr. 25	Loudon County	Bob Gray, KE4SK 615/458-6115	
Apr. 18	Memphis	Win Guin, W2GLJ 901/754-4552	w/i OK
Apr. 11	Roane County	Richard Spillee, AA4KS 615/354-4281	w/i OK
<b>Texas</b>			
Apr. 14	Houston	ND5F 713/464-9044	p/r pref; w/i OK
Apr. 11	McGregor	AB5BA 817/859-5374	w/i OK
Apr. 11	Midland	KT5G 915/694-9450	w/i OK
Apr. 25	San Antonio	K5JWK 512/657-1549	w/i
<b>West Virginia</b>			
Apr. 11	Huntington	KB8KMH 304/522-1294	w/i OK
<b>Wisconsin</b>			
Apr. 4	Racine	NW9P 414/658-8390	w/i

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# ARRL Board of Directors

Seven members of the American Radio Relay League were re-elected to seats on the League's Board of Directors. Three Vice Directors were re-elected, and four new Vice Directors were elected. The League's Board of Directors is chosen to represent 15 geographic regions throughout the country. Vice Directors are elected to serve in the event the Directors of their Divisions are unable to serve. Each year about half the seats on the ARRL Board of Directors are up for election or re-election.

Re-elected to contested seats on the ARRL Board were Hugh Turnbull, W3ABC, of College Park, MD, Director for the Atlantic Division; Joel Harrison, WB5IGF, of Judsonia, AR, Director for the Delta Division; Chuck McConnell, W6DPD, of Fresno, CA, Director for the Pacific Division; and Frank Butler, W4RH, of Ft. Walton Beach, FL, Director for the Southeastern Division. Elected in uncontested seats were Howard Mark, W0OZC, of Burnsville, MN, Director for the Dakota Division; Allan L. Severson, AB8P, of Lakewood, OH, Director of the Great Lakes Division; and Paul Grauer, W0FIR, of Wilson, KS, Director of the Midwest Division.

Vice Directors re-elected were Dr. Kay Craigie, KC3LM, of Paoli, PA, Atlantic Division; George E. Race, WB8BGY, of Albion, MI, Great Lakes Division; and Evelyn Gauzens, W4WYR, of Miami, FL, Southeastern Division. Elected Vice Directors for the first time were Richard Whiting, W0TN, of Plymouth, MN, Dakota Division; Bill McGrannahan, KO0RB,

of Kansas City, MO, Midwest Division; Rick Roderick, K5UR, of Cabot, AR, Delta Division; and Brad Wyatt, K6WR, of Los Gatos, CA, Pacific Division.

Headquartered in Newington, CT, the non-profit ARRL is the nation's largest organization of Amateur Radio operators and serves as the spokesman for Amateur Radio with government agencies. The League has approximately 160,000 members in the US. □

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I purchased a new 1992 Toyota Camry for my XYL, KN4CO. I had her transceiver (a Kenwood 231A 2M) transferred from her 1987 Camry to her new vehicle. All the equipment and wiring was placed in the same location as her previous car. The changeover was done by a commercial two-way radio shop.

On the first transmission various alarm lights appeared on the dash and remained on. I took the car to the dealer and he informed me that my

radio equipment had damaged the main computer which would have to be replaced *at my expense* of \$1,115.

He then produced a shop manual which states that at no time can you operate two-way radio equipment that exceeds 10W output in the 1992 Camry, regardless of how it is installed.

I had no choice except to pay for the repairs but the bad part is that my XYL cannot operate her radio in the new vehicle. When purchasing any vehicle, check with the dealer or your mechanic about such an installation before you go ahead with it!—*John C. Harman, W8JH, Tavares, FL* □

### The Ten Commandments of Human Relations

1. SPEAK TO PEOPLE: There is nothing as nice as a cheerful word of greeting.
2. SMILE AT PEOPLE: It takes 72 muscles to frown, only 14 to smile.
3. CALL PEOPLE BY NAME: The sweetest music to anyone's ears is the sound of one's name.
4. BE CORDIAL: Speak and act as if everything you do were a genuine pleasure.
5. BE FRIENDLY AND HELPFUL: If you would have friends, be friendly.
6. BE GENUINELY INTERESTED IN PEOPLE: You can like everybody if you try.
7. BE GENEROUS WITH PRAISE: Cautious with criticism.
8. BE CONSIDERATE WITH THE FEELINGS OF OTHERS: It will be appreciated.
9. BE THOUGHTFUL OF THE OPINIONS OF OTHERS: There are three sides to a controversy — yours, the other person's and the right one.
10. BE ALERT TO GIVE SERVICE: What counts in life is what we do for others.

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