

Worldradio

Year 24, Issue 6

December 1994 • \$1.25

FEATURED IN THIS ISSUE

Coolin, ID — Fun run becomes tornado emergency

E. Patchogue, NY — Six Meter excitement continues on the "magic band"

Keno, OR — Joint adventure via Amateur Radio, Japan/USA

Rubicon River, CA — Mountain rescue

Tucson, AZ — Packet radio series: Terminal nodes, part 3 of 5



COLUMNS

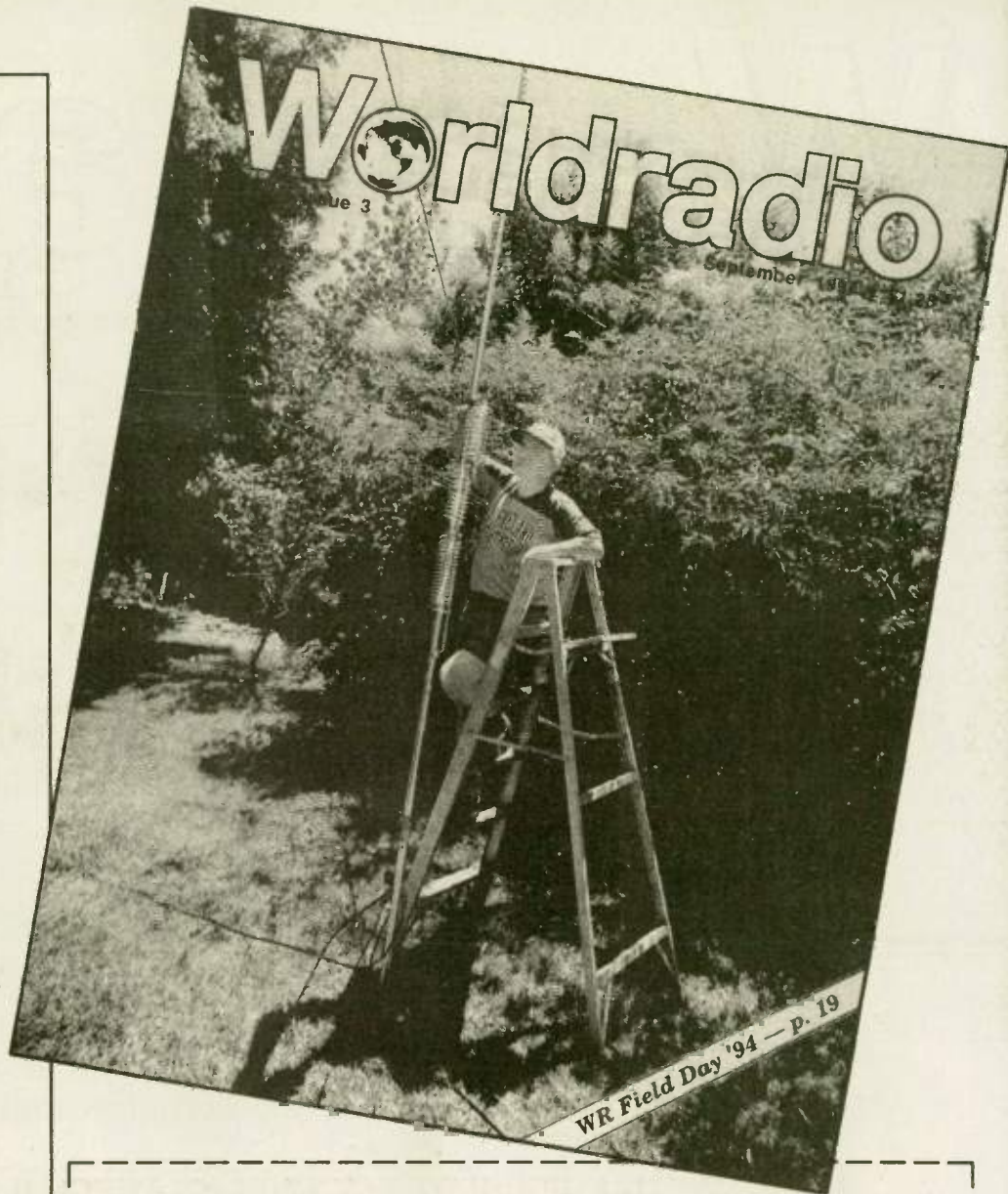
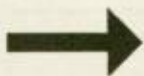
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- MARS •Mobile •New Products •Off the Air •Old-time Radio •Propagation
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FCC flash — see back cover

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Worldradio

Year 24, Issue 6

December 1994 • \$4.25



Joint adventure via Amateur Radio

Japan • USA

Keno ARC and Japanese visitors
at Crater Lake, Oregon.

BRAD CARDER, KG7OK; BEVE HAMILTON, N7LAW; TOM HAMILTON, WD6EAW;
BILL SHRADER, W7QMU

In 1990, two Amateur Radio operators, Nobuo Okazaki, JE5CBY and Tom Hamilton, WD6EAW, had a friendly QSO.

Over the next four years, one of those wonderful stories of international friendship that seems possible only through Amateur Radio emerged.

It all started in September, 1990, with a QSO between Nobuo (Nob) Okazaki, JE5CBY, and Tom Hamilton, WD6EAW.

During the course of the QSO, Tom learned that Nob was a physician who would be coming to the United States in February of 1991 to attend a conference on medical imaging. Nob's original itinerary was to fly into San Francisco then to San Jose, California, where the conference was to be held. But this was soon to change.

Tom mentioned to Nob that the Oregon Institute of Technology (OIT) in nearby Klamath Falls offered courses in medical imaging technology. When Nob expressed an interest in OIT's program, Tom asked if he would like to visit sometime.

What happened next occurred so rapidly even those who experienced it were amazed. Nob not only said he would like to visit, but altered his travel plans to fly into Portland, then on to Klamath Falls. From there he was picked up by Tom and his wife Beve, N7LAW, and driven to Keno, where Tom and Beve live. Located on the Klamath River, Keno boasts a population of about 600, beautiful scenery, and the Keno Amateur Radio Club (KARC) with 34 members!

During the almost daily QSOs between Tom and Nob, an ambitious plan
(please turn to page 6)



Dr. Nobuo Ozaki, JE5CBY, in WD6EAW's shack, during his first visit to Keno, Oregon.

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Technician renewals may show wrong class on license

If you hold a Technician class license issued before March 16, 1991, then you automatically are a Technician licensee with HF privileges (a "Tech Plus").

In some recent instances the FCC has processed the renewal or modification of such a Tech Plus license but has mistakenly issued a "Technician" (no-code) license. (Since June 8, 1994, new and renewed Tech Plus licenses have been clearly labeled as such).

If this has happened to you, do the following:

Write to the FCC explaining the situation. Including your current license status with effective date and copies of both your "before" and "after" licenses.

If you no longer have either a copy or the original of your previous license, say so in your letter.

Send this to: FCC, 1270 Fairfield Road, Gettysburg, PA 17325-7245 (or fax 717/337-1541.) Keep copies of all your correspondence with the FCC.

Expect the matter to take four to six weeks to be resolved. In the meantime, you may continue to exercise "Tech Plus" privileges. —*The ARRL Letter*

Jamboree-on-the-air DAVE SCHNEIDER, WDØENR

The Jamboree-on-the-air (JOTA) on 15 October proved to be a good way to introduce Amateur Radio to not only

Girl and Boy Scouts, but also their parents, as the Mt. Pleasant, Iowa Amateur Radio Club found out.

Henry County Emergency Management Director Ed Farley, NØCXV, formed a team of area hams to set up an Amateur Radio demonstration at Mt. Pleasant City Hall. HF was available, packet as were fast-scan amateur TV.

Some got to witness a contact through the RS 10/11 satellite, or talk to area operators on the local repeaters. Several enjoyed talking on HF to other scouts across the country.

"Parents enjoyed the day as much as the boys and girls," said Gary McMeins, NØFIB. "That made the effort really worthwhile." WR

Worldradio on tape

Fr. Tom Carten, K1PZU, reports that the high-speed duplication equipment used to produce the audio cassette edition of *Worldradio* is in need of replacement. Each month over 250 copies of *Worldradio* on audio cassette are sent to visually impaired amateurs. Tom records a master, and the duplicating equipment then makes multiple copies. That duplicating equipment is just about to give its last gasp.

If you would like to help replace the equipment, donations will be gratefully accepted. Contributions may be sent to: Tom Carten, K1PZU, 1602-K King's College, Wilkes-Barre, PA 18711. For further information on how to obtain *Worldradio* on cassette, please check "The Mart," page 65. WR

FCC 800 line

As part of its overall plan to improve customer service the FCC has a toll-free number which may be used to contact its Gettysburg, PA licensing division. The Customer Assistance Branch may be reached at (800) 322-1117 during regular business days (Monday through Friday) between 8:00 a.m. and 4:30 p.m. eastern time.

The FCC also said, in a September 20th Public Notice, that "Within the next 18 months customer service standards will be developed for other areas of Commission Operations to ensure FCC customers receive the highest quality of service possible. As these new standards become available the FCC will inform its customers." —*For more information see FCC Highlights, page 8.*

Bill Leonard, W2SKE, SK

Bill Leonard, W2SKE, former president of CBS News, died 23 October in Laurel, Maryland at the age of 78. First licensed as W1JHV in 1934, Mr. Leonard was an avid DXer and contester.

At CBS, he was part of the team that developed the newsmagazine *60 Minutes*.

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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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PUBLISHER'S MICROPHONE

Well, the newspapers made a big fuss about the winners of the Nobel prizes. (those are people who are paid to do what they do and did it a bit better than the others in their field.)

Here are the latest winners of the Noble prize. These are people who do their good works as unpaid volunteers. The latest to become Worldradio SuperBoosters (Lifetime Subscribers) are:

*Gerald Skinner, KL4VZ, Winter Park, FL

*Dave Ragan, W0BRY, Stendal, IN

*Phil Hicks, KE0TK, Buena Vista, CO

*Denton Hyder, WZ6O, Santa Monica, CA

*Pierrot Couch, N6MSY, Hayward, CA

*Leo Valdrow, WL7IZ, Anchorage, AK

The above-mentioned Dave Ragan is truly in the spirit, as he wrote: "What further glory could befall a Marine than being inducted into the Hall of Fame of WR exactly 50 years after landing on Iwo Jima? 73 and Semper Fi."

Norm Brooks, K6FO, and I went to an antenna and propagation seminar that was held on Friday, 21 October, as part of the ARRL Pacific Division convention. It was the first time that I had seen Dean Straw, N6BV, Senior Assistant Technical Editor ARRL. Talk about "product knowledge" and ENTHUSIASM! The ARRL is missing a bet in not renting him out to Toastmaster clubs to show how it is supposed to be done. There are but few presenters anywhere

with the diction, enunciation (but in an informal manner) and clarity of speech that equals N6BV's.

Should you read that he will be at a convention in your area make it a point to go to his presentation. This is an opportunity to see a professional in action. Any group planning a convention should get on the phone quickly and call the League to make a reservation for his services.

The monthly publication of the North West QRP Club (Bill Todd, N7MFB, Publisher) has, next to where the mailing label goes, "Glorious Adventure awaits you in RADIO." How true! QRPers really enjoy themselves, and the group manning the QRP booth at the convention distributing literature and showing off those tiny rigs really did so with zip and zing.

Frank Pitman, WD4DSS, in response to my comments here last month wrote (in part): ".....Right on target. Yes, America is whining. Other writers refer to 'the dumbing down of America.' Perish the thought that anyone would have to work, study, learn and/or earn anything, because that would 'limit participation.' At present written examinations for the several license classes are that in name only. All questions,

exact answers and distractors are published and available to the public. To pass a license test an applicant needs to get only 75 percent of the known answers correct on the test paper. That is ludicrous!

"The only thing standing between no license and 'instant Extra' is the Morse Code test. One has to actually learn and demonstrate competence in a skill to at least some limited degree to pass this test. However, the code tests are an order of magnitude easier now than in the days of FCC testing when one solid minute of copy without error plus a sending test was required. The whiners want no test at all.

"A lot of us think that the real goal of the endless whining and chipping away at the technical and operating expertise requirements is to eliminate all testing. How about no-code, no test, no-license Amateur Radio? That is where Amateur Radio is going!"

In *The Radio Wave*, monthly newsletter of the Endless Mountain ARC (PA) Bill Sill, KD3XR wrote (regarding my comments) "It's well known that I personally despise CW. It was a very difficult matter for me to pass the 13 wpm test. But I'm 100% in agreement with his argument."

Ken Bale, W7VCB, expressed surprise that no one had written follow up articles in the matter of "you gave many good reasons why every Amateur Radio station should contain and make good use of audio recorders."

And, very importantly, don't forget that one of the very finest gifts you could give would be a subscription to **Worldradio**.

—Armond, N6WR

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Automatic CTCSS Tone Search	YES	NO	NO	NO
Transmit Battery Saver (Repeater & Simplex Operation)	YES	NO	NO	NO
Built-In Vox	YES	NO	NO	NO
One Touch Reverse Button	YES	NO	NO	NO
Dual In-Band Receive (V+V, U+U)	YES	YES	NO	YES
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Optional Digital Display Mic with "S" Meter	YES	NO	NO	NO
AM Aircraft Receive	YES	YES	YES	YES

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Joint adventure

(continued from page 1)

had been formed to accommodate Nob's desires to see as much as possible in Klamath County. The whirlwind tour would start as soon as Nob's plane landed on Wednesday, February 20th and wouldn't stop until he left on the 24th. We were all amused as we watched what started out as a chance meeting on 15 Meters turn into a county-wide happening.

By the time that first day was over, Nob, and his traveling companion, Motoyuki Tominaga, had been welcomed by KARC board members, interviewed by the Klamath Falls *Herald*

Kleist who demonstrated the latest methods of vascular imaging (a complete tour of the facility was conducted by Dr. Jon Wayland, KB7GRI on Saturday); and met with Klamath County Commissioners Harry Fredricks and Wes Sine. And it wasn't even dark yet!

On Thursday, the Keno Amateur Radio Club hosted a pot luck dinner for their distinguished guests. Amateurs from Klamath Falls, Medford, Ashland, Chiloquin and Coos Bay, Oregon, as well as Tulalake, California, comprised the total of 75 hams who listened to Nob as he narrated a superbly produced video describing his home of Otsuki, Kochi, Japan.

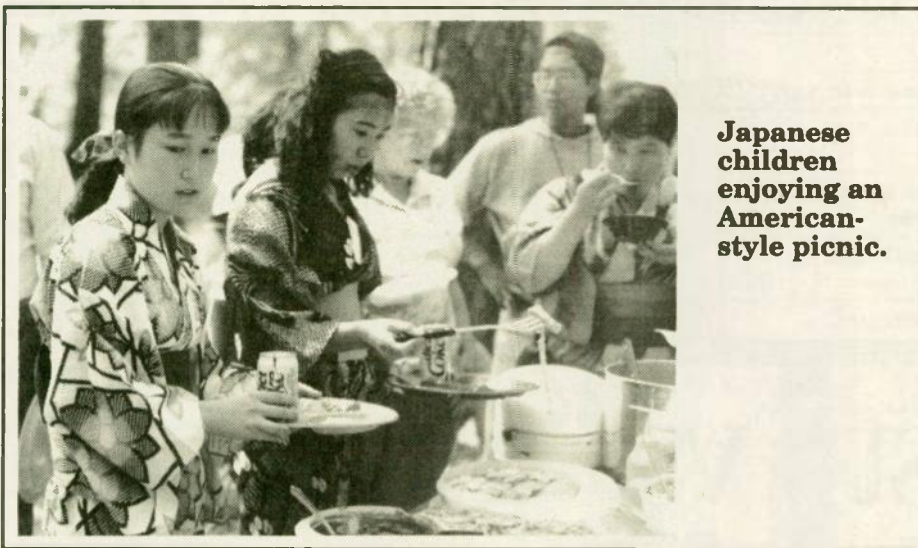
Nob had thoughtfully brought books and other literature about Kochi Pre-

the good food and the good company shared by all who attended.

Friday, Nob and Tominaga had the chance to visit Crater Lake National Park in northern Klamath County and the weather couldn't have been better. That evening they attended a birthday party for Keno Club member Brad Carder, KG7OK, at a local old-west saloon which seemed to puzzle and amuse both men.

On Saturday the 23rd, Nob joined the Klamath Basin Amateur Radio Asso-

To say the visit was a success would be a serious understatement.



Japanese children enjoying an American-style picnic.

and News for a front page story complete with color photograph; toured the County Museum; visited with Klamath County Emergency Services Coordinator Rosie Purkhiser, K7JY; toured the OIT medical imaging laboratory with Professor Jon Frink (arranged by Bill Clark, N7PXF); visited the Merle West Medical Center to meet Dr. Cheryl von

feiture, as well as some examples of the exquisite coral jewelry produced in Otsuki. The event was a total success! Everyone had the opportunity to spend time with Nob and he charmed us with his humor and wit.

A letter from the Mayor of Otsuki was read to the group as Nob and Tominaga were given embroidered Keno Amateur Radio Club hats and made honorary members of the club. Tom had let it be known that Nob had brought his QSL cards and would exchange with them with any ham. Hand-painted by his father, JE5CBY's card is a work of art and is treasured by those who receive them. That evening, and the next day, the '85 repeater was busy with talk of

ciation (KBARA) for their weekly breakfast. A planned airplane flight with KBARA President Dick Subers, K7DDI, at the controls had to be canceled. Dick had been called out to search for a downed plane. Coordination with Fire Chief Don Crownover by Robert "Purk" Purkhiser, K7JIX, and Rosie Purkhiser, K7JY, resulted in Nob and Tominaga being invited to Lake of the Woods to observe Search and Rescue under-ice diving training.

To say the visit was a success would be a serious understatement. Before Nob left, discussions were held on the possibility of the hams in Otsuki and the Keno Amateur Radio Club forming a joint membership with shared QSL cards and certificates. Similar to the "Sister City" program, this arrangement could result in exchange visits between citizens of our two countries.

On Sunday the 24th, Nob and Tominaga were driven to the Klamath Falls International Airport by Tom and Beve. Along the way, Nob was able to say good-bye to all his new friends in the Basin using the two meter repeater and Tom's mobile rig. For the entire twelve mile trip, he had a pile-up any DXpeditioner would have been proud of, as ham after ham wished him a safe trip and thanked him for coming to southern Oregon.

Each of us have our own ideas of the primary purpose Amateur Radio, but for a large group of hams in the Klamath

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Buckskin-clad Vern Buckley, KG7DR, adds a touch of the old west.

math Basin, meeting JE5CBY was a special experience in international friendship not soon to be forgotten.

Almost a year after that first QSO, in August, 1991, eighteen Amateur Radio operators from Otsuki and Susaki Cities visited Keno, Oregon, and a week-end of Japanese and American cultural exchange took place.

Upon arrival in Keno, the visitors from Japan were introduced to their host families: Tom, WD6EAW and Beve N7LAW, Hamilton; Tony, N7QZG and Sue N7QZH, Buzzard; and Dick, AA7NS and Victoria N7PGM, Santoro, after which they were whisked off to an evening meal of hamburgers and french fries and a time to relax and visit with host families.

The following day (Saturday) everyone was up and about bright and early to prepare for "Japan Day" to be held in the backyard of the Hamilton's home. More than 60 ham operators were treated to a day-long Japanese festival—Japanese dancing, Sumo wrestling, delicious food that had been shipped in from Japan and a beautiful tea ceremony.

Additionally, the guests from Japan had brought token gifts to present to everyone, as mementos of this occasion. In one short weekend of cultural exchanges a bond was developed between the participants leading to a "Sister

Club" relationship and there was once again, talk of the members of the Keno ARC visiting Otsuki and Susaki Cities on the Island of Shukoku in Southern Japan.

The following Sunday, the Keno Amateur Radio Club hosted a potluck at a local park. One of Keno's hams, Vern Buckley, KG7DR, is a "Mountain Man." He came dressed in full Mountain Man regalia — buckskins and hat and carrying amusket, to the delight of the Japanese Amateurs — everyone had his picture taken with Vern.

For most of us, this was only a dream which simply could not be taken seriously.

On Monday, local hams gathered with cars and vans and took our guests to see Klamath Lake and the surrounding rivers and mountains and finally to Crater Lake National Park. Later in the day our visitors went shopping in Klamath Falls.

Monday evening everyone gathered at Tony and Sue Buzzard's home on the Klamath River to enjoy an old fashioned western steak barbecue, and go for boat rides on the Klamath River under an orange harvest moon.

And soon Tuesday morning February 24, 1991, we bade an emotional farewell to our new friends - hoping, someday, to see them again.

Once again Nob and Tom stayed in contact through 15 Meters. As always a

major topic of discussion was that some day, members of the Keno ARC could visit Otsuki, Japan.

For most of us, this was only a dream which simply could not be taken seriously. But over a period of time Nobuo and Tom maintained contact via 15 Meters, and when Nobuo came to the States on business he would come to Keno and we would invariably discuss our dream.

Then on April 20, 1994, a fax was received from Motoyuki Tominaga, on behalf of Sawahiro Ike, the mayor of Otsuki Town. Would it be convenient for the families who hosted the Japanese guests when they visited Keno in 1991, and two members of the Rogue Valley ARC to visit the Ham Radio Club in Otsuki, Japan, for a period of eight days? This was to be an all-expense paid trip and included an itinerary of sightseeing in the Tokyo area as well as in-country transportation. Needless to say an immediate affirmative reply was sent and plans were made to obtain passports, customs information, etc.

A lot of pinching was done, to see if it were really happening and if all our dreams could indeed be coming true.

Next month we will bring you the "rest of the story." WR

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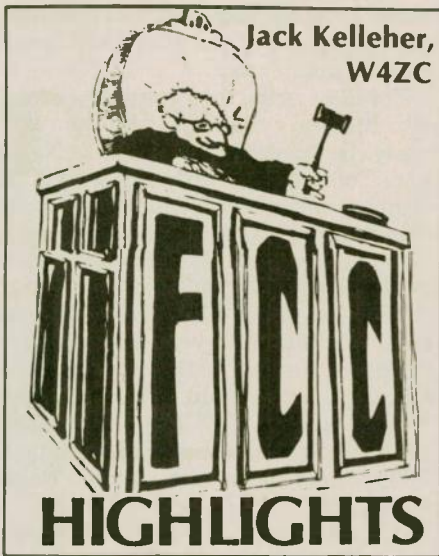
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Status of rulemaking

We sorted our mail after having been out of town attending the QCWA Board meeting and the QCWA Convention, and found that the October 1 issue of *W5YI Report* has an excellent report on the status of FCC rulemaking, gleaned from conversations with various FCC staff members. The following items are excerpts from or quotes from this material.

Vanity call signs

This proceeding has now gone through all of the preliminary steps — Notice, Comments and Reply Comments — and is now ready for Commission action; which is expected sometime this fall. It is anticipated that a vanity call sign program will be adopted; but the details on implementation are not yet known.

Immediate temporary operating authority

In October 1993 the FCC adopted a Notice of Proposed Rulemaking (PR Docket 93-267; RM-8288) proposing to

amend the Amateur Service Rules to extend temporary operating authority to new amateur operators. The notice elicited considerable comment, both for and against the proposal, and no final action has been taken.

At the 1994 VEC Conference, Private Radio Bureau Ralph Haller mentioned that officially, the proposal is still under consideration, but that instant temporary licensing may not be necessary, since the VECs and the FCC are in the process of implementing the electronic filing of FCC Form 610 applications. Under this program the VECs will prepare the application information in PC format and transmit the data to the FCC licensing facility in Gettysburg. According to Haller "the speed of service will be in hours instead of weeks... we hope to send out the license the same day." (NOTE: As we previously reported, Ralph Haller is to become Deputy Chief of the new and larger Wireless Telecommunications Bureau of the FCC).

Electronic filing of applications

Apropos of the preceding item, the FCC has forwarded the input software needed to key in FCC Form 610 Amateur Radio operator applications to both the ARRL-VEC and the W5YI-VEC. This computer program is currently being tested and the bugs worked out. It is anticipated that the initial phases of electronic filing will get under way shortly.

According to the *W5YI Report*, "The FCC is also in the process of entering into formal Memorandums of Understanding with the VECs so that they may provide the service to the government. Basically, electronic filing involves the keying in of two files (the examination session report data and the information contained on the FCC Form 610 application) using special software and then transmitting the files to Gettysburg. The FCC's data base is then updated and the license granted.

"At first, however, both the actual (paper copy) applications and a computer disk containing the files will be mailed to Gettysburg. Even this first step should greatly reduce the time taken by Gettysburg to issue an Amateur Radio operator license. Since the data is already key stroked, it will get handled immediately. (Author's note: This stage will not be reached until the "pilot program" with each VEC has been completed.)

Eventually the VECs will only transmit the needed application information to Gettysburg and will retain (and archive) the FCC Form 610 applications they receive from their VE teams. The law that used to require an original handwritten signature on the application has been changed. The FCC can now grant a license without seeing the applicant's signature. The VECs must certify, however, that they have seen the signature. (This is part of the com-

Amateur Radio Call Signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of the first of October 1994.

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

Radio District	Group A Am Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
0	AA0TH	KG0QC		KB0PDL
1	AA1KV	KD1XA	N1TDL	KB1BKV
2	AA2UF	KF2XT		KB2RWI
3	AA3IR	KE3OY	N3TLT	KB3BEZ
4	AD4XP	KS4EO		KE4RJB
5	AB5XS	KK5CJ		KC5JYC
6	AC6FU	KO6IW		KE6MUJ
7	AB7FA	KJ7DP		KC7FXN
8	AA8QP	KG8LU		KB8VBV
9	AA9MK	KF9XX	N9YRJ	KB9JAY
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Guam	WH2H		KH2KQ	
Midway Is.		AH2CX	KH4AG	WH4AAH
Hawaii		AH4AA	WH6YB	WH6CRK
Amer. Samoa	AH8K	AH6NQ	KH8BH	WH8ABB
Alaska		AH8AG	WL7XL	
Virgin Is.	WP2O	AL7PT	NP2HR	WP2AHU
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puter input procedure). Still to be resolved is how the VECs will get the data to Gettysburg; the exact data transfer system has not yet been nailed down."

Ralph Haller told the VECs that the FCC might even be able to eliminate the need for an applicant to have the actual license document in hand before beginning operation. The applicant could access a bulletin board which would indicate that their license and call sign had been issued.

Lifetime Amateur Radio licenses

This proposal from the American Radio Relay League suggests that the operator portion of the Amateur Radio license be recognized for the lifetime of the holder. Current licensees would have their operator licenses extended to lifetime. The station license portion would continue to carry a ten year term. In addition, amateurs whose operator license had already lapsed (on or after a date to be determined by the FCC) would be permitted to regain their previous operator privileges. A big advantage to applicants who let their license expire is they would not have to be retested in order to reapply for their license. They would, however, receive a new call sign two years after their previous station license expired (i.e., the current ten-year call sign limit, plus a two year grace period, would not be changed. The FCC has not yet decided whether to issue a Notice of Proposed Rule Making on this matter.

FCC "Customer Service"

As part of its overall plan to improve customer service the FCC has a toll-free number which may be used to contact its Gettysburg, PA licensing division. The Customer Assistance Branch may be reached at 800/322-1117 during regular business days (Monday through Friday) between 8:00 a.m. and 4:30 p.m. eastern time.

The FCC also said, in a September 20th Public Notice, that "Within the next 18 months customer service standards will be developed for other areas of Commission Operations to ensure FCC customers receive the highest quality of service possible. As these new standards become available the FCC will inform its customers."

Code exemption denied for senior citizens

In May 1994, Guy A. Matzinger, KB7PNQ of Cheney, Washington filed a petition with the FCC (RM-8485) seeking relief from the higher speed Morse code requirements for senior citizens. Matzinger, who is a 68-year-old Technician Class licensee, requests that applicants for the higher classes of amateur operator licenses who are 65 years of age and older be granted an exemption, if requested, from demonstrating telegraphy proficiency at speeds greater than 5 words per minute.

FCC Regulation 97.505(a)(5) provides for 20 wpm code examination credit when an examinee has a severe disability which precludes the person from passing either a 13 or 20 wpm telegraphy examination. Matzinger's petition seeks to equate senior citizens with persons who are so severely disabled that they are unable to pass these higher speed Morse code examinations. The petition also states that, although there are exceptions, the average person's faculties are diminished by the aging process.

Matzinger believes that the amateur service community now supports the change he requests. To support his contention, he supplied the results of a poll

of amateur operators which he conducted showing that 63 percent of those surveyed support an exemption while 37 percent are opposed. His petition provides an age profile of the amateur operators who were surveyed but there is no indication in the petition as to the number of persons participating in the survey. Although a public notice of the filing of the petition was given, no comments were filed.

The FCC said that Mr. Matzinger correctly notes that similar petitions have been rejected on the basis that the current operator license classes, requirements, and privileges were developed in accordance with the desires of the amateur service community who expressed their views in various rule making proceedings by filing thousands of comments. "The current operator license classes requirements, and privileges provide motivation to amateur operators to advance their communication and technical skills," FCC added.

"In addition to the foregoing, we do not accept the premise of the petition that aging, in itself, is a severe disability. The Rules, moreover, already provide the accommodation the petition requests for persons of all ages who are so severely disabled that they cannot pass a higher speed telegraphy examination.

"RM-8485 seeks to reverse a long-standing Commission policy regarding the requirements that applicants must meet in order to obtain a General, Advanced, or Amateur Extra operator license. It presents neither new facts nor novel arguments that would justify such a policy change at this time." The FCC denied Matzinger's request on 16 September.

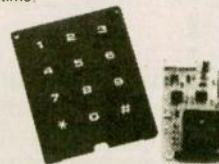
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Good neighbors

All frequency bands above 225 MHz which are allocated to the Amateur and/or Amateur Satellite Service are allocated on a secondary, non-interference basis to those services which have primary allocations in these bands. In most cases these bands are allocated primarily for government use, and these primary users have been tolerant and cooperative in sharing their frequencies with us. In recent months we have commented on potential sharing problems resulting from the mandated transfer of some of these frequencies from government use to private sector use, and the additional sharing problems which may result if and when the new private-sector users have to pay for these frequencies. In this context, we repeat below parts of an item in the *W5YI Report* for September 15th, entitled:

"Finding Good Neighbors—Ensuring Amateur Access to the 2390 - 2400 MHz Band

"In response to a Congressional mandate to make spectrum available to new wireless technologies, the U.S. government, on August 10, 1994, gave up their primary allocations in many of the bands in which hams can operate on a secondary basis. This has important implications for continuing ham operations in the 13 cm band, which spans 70 MHz of coveted spectrum from 2300 - 2310 MHz, and 2390-2450 MHz.

"Today, a few parties have already presented the FCC with plans for occupying a 10 MHz sliver of this band running from 2390 to 2400 MHz. (The ARRL band plan has allocated these frequencies for fast scan TV, high-rate data, packet, control and auxiliary links).

"The FCC is under Congressional constraints that require the government to avoid excessive disruption of existing use of federal frequencies by Amateur Radio licensees. The FCC must also consider the extent to which commercial users could share the frequency band with Amateur Radio licensees.

"Many of the commercial uses proposed for this band cannot co-exist with the Amateur Service. Moreover, some proponents have explicitly asked that the FCC entirely bar amateur operations in this band.

"Southwestern Bell has proposed establishment of a Wireless Local Loop Service in this band, but admits that an essential prerequisite would be to bar amateur operations.

"A partnership between Loral and Qual comm expressed a preliminary view that the band is useful for Mobile Satellite Service uplinks, but did not say that this use would be compatible with amateur operations.

"Similarly, the Coalition of Private

users of Emerging Technologies asked that the band be allocated to a two-way private mobile service, but did not disclose the impact of doing so on the Amateur Service, since it knows that a two-way mobile service is flatly incompatible with co-channel amateur use.

"The most promising proposal for continued amateur operations appears to be the one submitted recently by In-flight Phone Corporation (IFPC), a major provider of In-flight telephone, information and entertainment services. IFPC is proposing to construct an airborne audio/video system (AACS) which will transmit real-time television and audio programming to aircraft, where it would be displayed to passengers on seat-back video monitors. Transmission would be directly from the ground to aircraft, with a network of about 70 terrestrial stations providing full national coverage.

"IFPC maintains that its system is compatible with low power, point-to-point amateur operations in this band, and has stated to the FCC that it will work in good faith with the amateur community to develop a band-sharing arrangement that is acceptable to amateurs. No other telecommunications company, thus far, has taken that same position.

"Just as AAVS is not expected to preclude amateurs from the band, under normal conditions, amateur operations is not expected to cause a significant amount of interference to reception of AAVS signals aboard commercial aircraft, since amateur operations in this band are typically made using a low power transmitter and a high-gain directional antenna with a narrow beamwidth." WR



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"Fun run" becomes tornado emergency

GAIL WILLOCK, KB7YTV

On May 29, 1994, twelve Amateur Radio operators from the Bonner County ARES group provided communications for the Coolin (Idaho) Fun Run; an eight-mile race along Priest Lake from Coolin to Cavanaugh Bay and back which attracted 350 racers from all age groups and backgrounds.

Operators were placed every half-mile along the course and operated hand-held radios on the national simplex frequency. They provided traffic control and notification of traffic on the race course as well as injuries or problems encountered by the racers.

After a well-run race during rain, sleet and hail, the Amateurs were released for the day.

Within 45 minutes of the completion of the race, the group became involved in emergency communications when a tornado — a very rare occurrence in northern Idaho — dropped from the clouds and felled 16 trees across Highway 57 — the only access between Priest Lake and just about anywhere else. The



Operators (left to right): Duane Titus, KC7AEM; Tom Peterson, KB7ZRL; Sean Peterson, KC7AEJ; Roy Davis, KI7EP; Gail Willock, KB7YTV; Dennis Lenning, KI6DL; Jenefir Arndt, KB7WKE; Jan Lenning, KI6RE; Russ Arndt, AA7XM. Other operators not in the photograph were AA7XN, Chris Arndt, and James Willock.

highway was blocked for two hours, but Amateur Radio was there to call for assistance from the sheriff's office, Forest Service and Department of Lands as well as to turn traffic back so that traffic jams and possible accidents were avoided. No injuries or personal property damage were sustained from the tornado.

From fun run to emergency run, all within a matter of hours; Amateur Radio operators can handle the situation. Thanks to these operators, many holiday travelers were warned of the delay, allowing them to make other plans, rather than be stuck on a temporarily impassable road. **WR**

Syllogisms.....

ANDRE KUHNEL, VE3DTP

The mystique of Amateur Radio is a dark curtain few brave souls dare to open. However, once opened, we find the hobby is as interesting and as useful as could be humanly expected. So why all the mystique?

Maybe it's the weird stuff we do. Maybe it's the strange language we use. For instance, what is a syllogism? According to Webster's Dictionary, a syllogism is described as "a deductive scheme of a formal argument consisting of a major and a minor premise and a con-

clusion which must be true if the premise is true."

A few that relate to us follow:

- Most radios run on 12 volts.
- Cars have a 12-volt system.

Therefore anyone who buys a radio should buy a car (or vice versa).

- His signal is horrible.
- He just bought a new radio.

Therefore he should see a throat specialist.

- Talking is part of ham radio.
- Code is also part of ham radio.

Therefore politics is what ham radio is all about.

• Most Amateur Radio operators are men.

- Most hams enjoy "fox hunts."

Therefore divorce is inevitable.

- A radio uses frequency.
- He is often "on the air."
- He always signs as "mobile."

Therefore he lives in his car.

- He is a club member.
- Nobody ever sees him at club meetings.

Therefore we must all be blind.

- Parents are always right.
- Parents say "shut up and listen!"

Therefore all hams are rebels.

- Ham radio equipment costs a lot of money.

• Most hams have a lot of gear.

Therefore all hams must be rich.

- I'm a dedicated ARES (RACES) member.

• ARES objectives are unquestionably beneficial.

Therefore I should be paid large amounts of money.

- I'm a ham

• Hams talk to people all over the globe.

Therefore I'm famous!

— Gainesville, FL ARC

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Mountain rescue

WILLIAM S. LANGTON, KN6ER

On Tuesday, 9 August, 1994, Chris Marks, KD6MLD, Ted Hussey, KD6QJE, and Merlin Scott, KC6BFV, all from northern California, were enjoying a four wheel drive trip in the Rubicon River area, west of Lake Tahoe. All are members of the United Four Wheel Drive Club. Marks and Scott are also search and rescue volunteers for El Dorado and Placer Counties.

At approximately 2:45 p.m., several hikers entered their camp and reported an injured man approximately three miles south of their location along the Rubicon River. This area, approximately 7000 feet in elevation, is very remote and rugged. The hiker, Matt Linn, 29, of Paso Robles, California, was hiking in the area with a church group when he slipped and fell from a ledge into the river. Linn had injured both ankles and his back.

Marks went to his 4x4 and was able to access the N6ICW repeater system in Sacramento to request assistance. His request was relayed to the Placer County Sheriff's Department in Auburn by Len Morgan, K6LUQ. Placer's Auburn dispatch center transferred the request on to their Lake Tahoe Substation. Sergeant Bill Langton, KN6ER, happened to be in the Tahoe dispatch center when the call was received. Langton contacted Marks directly on the N6ICW system and requested that he QSY to a simplex frequency.

Langton, who is President of the North Lake Tahoe Public Safety Amateur Radio Club, brought up the assigned 2 Meter simplex frequency on the club's UHF repeater system's remote base which is located on the Pacific Crest at almost 10,000 feet. This setup provided instant and clear communications for all involved. Langton then talked with Merlin Scott, KC6BFV who provided grid coordinates and directions to the victim.

Deputy Ken Davis, a S.A.R. Coordinator for the Placer County Sheriff's Department, joined Langton in the effort. Davis contacted the Fallon Naval Air Station's Search and Rescue Air Unit in Fallon, Nevada and learned

that one of their rescue helicopters happened to be in the Squaw Valley area, only minutes from Linn's location. Davis and Langton arranged for the chopper to meet them at the U.S. Coast Guard Station in Tahoe City for maps and search information. The rescue chopper set down a few minutes later and they briefed the crew on the location, terrain and contacts. Langton provided them with the 2 Meter simplex frequency so that once over the rescue location, they could contact KD6MLD directly.

Once airborne, "Rescue 7" was over the Rubicon River location within five

minutes. Helicopter crew members contacted Marks on simplex and he directed them to the rescue location. Rescue team members were lowered by cable to Linn's side and he was successfully extracted within 10 minutes. The rescue helicopter then flew Linn to Tahoe Forest Hospital in Truckee, California where he was treated for his injuries.

This was a perfect example of Amateur Radio in action. Thanks to alert and well equipped operators, this Search and Rescue operation was completed in less than two hours. The helicopter crew chief summed it up when he said "Looks like everyone was in the right place at the right time for this one!" **WR**

The 47th AuSable River Canoe Marathon

**BY KEN WRIGHT, W8MLP,
and STEVE JACKSON, N8OCW**

The 47th AuSable River Canoe Marathon is now history. Congratulations to the Amateur Radio Association of Hansen Hills (a Grayling, Michigan-based club with members from Crawford, Montmorency, Otsego, and surrounding counties) are in order for handling communications for the longest and toughest canoe race in North America. This has to have been the most rewarding and exciting public service event with which this club has ever been involved. Club members contributed their time, talent and equipment to staff race headquarters in Grayling and Oscoda; in addition, field operations at 14 inter-

mediate bridge and dam locations were served over a 16-hour period beginning at 9:00 p.m. on July 30, 1994.

This year we had the added responsibility of four dam sites plus race communications from the last headquarters in Oscoda. For the first time in the 47 year history of this event, officials at both ends of the race had nearly real time information on the status of the participants as they passed each timing point.

The cooperation and support of the race committee made our job enjoyable. One race official said that our communications was the best thing that has happened to the race in the 10 years that he has been on the race committee. **WR**

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Six Meter excitement continues on the *magic band*

This is the second part of the summer, 1994 report that was started in the September issue of Worldradio.

KEN NEUBECK, WB2AMU

The band continued to be as hot as in the earlier part of the summer with perhaps one of the best sporadic-E openings ever recorded on Six Meters occurring during Field Day weekend on 25 and 26 June.

The days preceding 25 June saw virtually no sporadic-E openings from my location on Long Island. It seemed like this Field Day weekend would be like previous Field Days for Six Meters where there would be minimal sporadic-E activity and most of the contacts would be made via ground wave. There was no reason to expect anything special. However, there would be many surprises in store not only for the North American continent involved with Field Day, but also with other parts of the world on 25 June.

I helped set up Field Day station AA2DR in Rocky Point, Long Island. For Six Meters, there was a three element Yagi up about 40 feet, and an FT-625 with a linear amplifier. We got a late start with this station after setting up the HF stations. When we finally turned on the rigs about a half hour after the start of the contest, we were very very happy to hear a sporadic-E opening towards the southern states.

By 1900 GMT, we were working stations in south Florida and in Missouri. The HFers at the Field Day sites were surprised to hear so much activity on Six. What was more surprising to us was that we were hearing a number of stations from Florida in the CW portion working European call signs. We strained to see if we could hear any of the Europeans by swinging the beam that direction, but to no avail. We had a vague feeling that something really big was going on.

One of the Florida stations, KJ4E, Damon in EL98, was not involved in Field Day and was actively working into Europe. He started before Field

Day began at around 1700 GMT in the CW portion and continued through 2100 GMT until he had worked 120 stations in 21 European countries on Six Meters. Damon has told me that he has never seen any day like this, where for over four hours, he could work into Europe. Signals were typically 559 with a few of them stronger at times.

... many non-Six Meter operators at the Field Day site were completely stunned

Damon's grid square neighbor, K4SC, worked about 70 European stations but had to deal with high line noise. A number of other Florida stations such N4EKW, and W4FA were torn between making Field Day contacts and working the Europeans on Six Meters. What does one do in a situation like that? Jordan, WB2QLP, reports that many non-Six Meter operators at the K4FA Field Day site were completely stunned at the 20 Meter-like conditions on Six Meters during this time.

But that was not be the only surprise. Stations on the west coast of the United States were working double-hop skip into the east coast at the same time of the European opening into Florida.

I received a report from Bill, KJ6GR, on how well the TRW radio club, W6TRW, in the Los Angeles area, was doing on Field Day Saturday. It seemed that right from the start of the contest, there was a double hop present; several stations from Virginia, Maryland, Ohio and Delaware were worked along with single hop contacts to the midwest such as Kansas and Nebraska. This particu-

lar opening lasted about 30 minutes, but another opening occurred to the north about two hours later into Washington state and British Columbia. This coincided with the midwest opening and activity lasted for another 30 minutes.

When I arrived home at 2100 GMT, I finally heard some European stations. I managed to work CU3AC from the Azores, and PA0OOS, from Holland. Other CW stations were heard but were very weak. CU1EZ was heard on SSB at about 5 by 7. By 2200, the band died down.

It is worth taking the time to interpret what occurred on June 25th. While a map could be constructed for the West Coast to East Coast opening, it would be very difficult to construct a map from Florida to Europe. This is because at least two, perhaps three of the clouds were over water where there were no stations present. Hence it would be very difficult to determine where the signal came down as opposed to a point on land where stations are typically worked. At best, an estimate can be made as to how many clouds were present between Florida and Europe.

Because stations such as KJ4E worked into the edge of Eastern Europe, it would be estimated that a minimum of three clouds were required to reach that point, perhaps four. This coupled with the West Coast/East Coast activity at the same time (1800 to 1900), plus East Coast to Florida suggests that at least six clouds were present during the peak time period of 1800 to 1830. With the appearance of an additional cloud (the link between Los Angeles and the Washington area) during the 2000 Z time period, this makes for a total of at least seven different clouds seen in the first two hours of the Field Day contest.

The high amount of cloud activity is very significant as it casts doubt that sporadic-E events of that day were caused by thunderstorm activity, which is a popular myth among some hams. One of the clouds for the West Coast - East Coast connection was over the Northern Arizona/Southern Colorado area, where there was a high pressure area bringing dry weather and record highs for the weekend. No thunderstorm activity was reported in this area. It seems more likely that the many clouds were created by a high amount of solar activity that interacted with existing metallic particles in the E-layer during this wonderful day.

There is a great deal of research that hams can conduct in the area of sporadic-E, as there are minimal scientific studies currently going on in this area. There was plenty of E-cloud activity the next day although the link between the US and Europe seemed to be gone.

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Openings continued between the midwest and the West coast along with the Northeast to the East Coast. W6TRW worked double hop into Florida around 1700Z, and single hop skip into Texas at the same time. All in all, it was wonderful to see that Six Meters was open at many of the Field Day sites through the US and Canada and it is hoped that this might provide a sufficient spark for hams who have not operated on it previously to try out this band.

The remainder of the summer continued to see excellent activity on Six. The remainder of June saw activity every

ing that the atmosphere on the band is very friendly in comparison to some other ham bands. Tom, KC4SUS, from Miami, Florida saw activity almost every day with 28 of 30 days of E activity in June, and 23 of 31 days in July.

It appears that the southern areas of the United States see a bit more activity than the northern areas and this could be traced to either geomagnetic or temperature factors that would favor the formation of sporadic-E clouds. There was a noticeable drop off in activity in August. Sporadic-E openings still continued but not in a continuous string of

tions WA0DXZ, W0SM and WB9PWP were worked. Frank, AA2DR, reports hearing midwest stations a few days later during the late evenings. This has been a very symmetrical summer season with the center of the sporadic-E season near the first day of summer, on 21 June.

This concludes our report about the summer of 1994. As can be seen by the table, the season started strongly but faded rapidly in August. Both the summers of 1993 and 1994 were better overall than the summer of 1992, indicating some probable effect by the sunspot

**SPORADIC-E SIX METER OBSERVATIONS
MONITORED AT RADIO STATION WB2AMU (41 N 73 W)
(number of days for which E propagation occurs)**

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	%
1992	1	0	0	0	15	13	7	2	0	1	2	7	48	0.131
1993	0	0	0	0	11	23	19	15	2	3	3	5	81	0.221
1994	4	0	0	3	12	21	20	7					67	0.366
totals	5	0	0	3	38	57	46	24	2	4	5	12	196	0.215
%	0.05	0	0	0.03	0.40	0.63	0.49	0.25	0.03	0.06	0.08	0.19	0.215	

day at my location, with openings primarily to the southern states.

July started off slowly here but some excellent openings were experienced 8 July through 14th, and 19 July through 21st. Highlights for me included working the well-traveled N1KTM/MM in yet another all-water grid (EL94) on July 9th, and W5FF from New Mexico (DM64) on 19 July via double hop skip.

Newcomer Tom, KB8TAG, from West Virginia, finally got his ticket in the mail after listening to the band for the month and hearing the activity. He got on the air immediately and worked VE7BEE, as his first contact via double hop skip on 14 July. He too saw some good openings on 19 July through 21st including a double hop opening to Utah and California.

Another newcomer to the band, John, N1OWA, wrote to me that he worked 100 grids and 10 countries during his first summer on Six Meters. It is very good to see newcomers to the band get into the swing of things, including both the new Technician class licensee and long-time HF operators. Hams are find-

days as seen in June and July. This is common, based on observations made in previous years. However, there were still some nice surprises.

Bill, KJ6GR, in Los Angeles, reports that he worked into New York (FN12) and Maryland (FM29) on the evening of August 9th. In addition, he worked into the Washington State area at the same time with some contacts on CW. This would indicate the presence of at least three different sporadic-E clouds over the US at the same time. This high amount of activity can occasionally happen in August. There were no particular expectations for this year's Perseids meteor shower of 12 August, nor were any unusual observations made.

Some sporadic-E activity was heard here on 13 August with openings to the south both in the morning and late night. However by 15 August, it was apparent that the 1994 summer season had wound down, and there would be fewer openings. Moderate openings were observed on the evening of the 19 August from here to Canada and during the morning of the 20th, Midwest sta-

tion decline where conditions improved for the E-region of the ionosphere.

Stations in the northern part of the US should watch for occasional aurora openings during the fall months, while southern stations should keep an eye out for both tropo and TE openings. All should watch for that occasional sporadic-E opening that may sprint up for an hour or so. Stations should also remember that Six Meters has excellent ground wave capabilities and that local contacts can be made on a daily basis.

I will be monitoring over the fall and winter months and am looking for reports of any activity during that time for a winter report in a future issue of *Worldradio*.

Ken, WB2AMU, has recently written a book on Six Meters that is published by Worldradio, called, SIX METERS, A GUIDE TO THE MAGIC BAND. It costs \$12 plus \$2 shipping and handling (California residents - please add sales tax of \$.98) and it can be ordered from: WORLD RADIO BOOKS, P.O. Box 189490, Sacramento, CA 95818 WR

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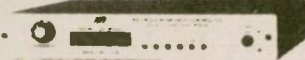
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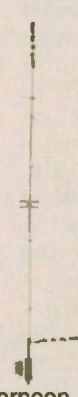
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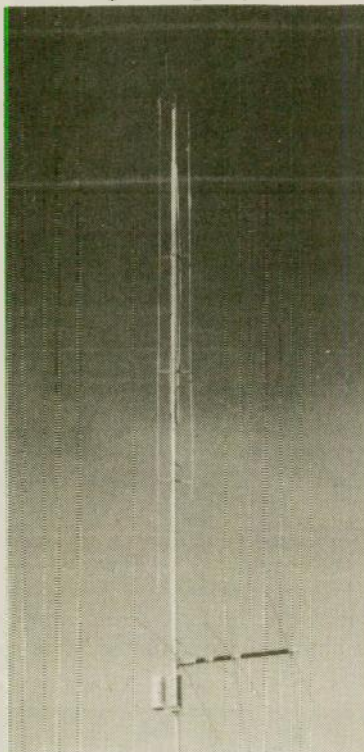
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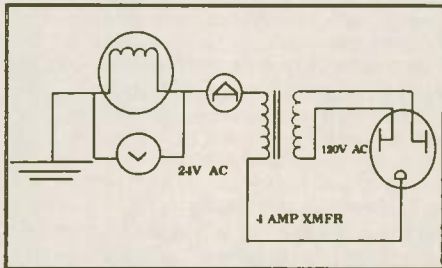
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OFF THE AIR

Dangerous advice

Seldom have I read an article that captured my attention as an article in the July issue of the magazine. This article titled "Grounds and Grounding" by W3TI is a dangerous, if not lethal demonstration of how to get the average novice to electricity killed in very short order. The safety suggestion to have a friend present should more properly read "have a trained EMT present. . ."



Granted, my drawing does not incorporate a fuse holder or fuse, however the probability of drawing more than a reasonable current from the system under test or from an accidental short is pretty low. Permanently wiring a standard three-conductor cord or cord cap will guarantee that no harm should befall the unwary.

Granted, ground testing is a tricky business with lower voltages, but the results are still going to pan out properly.

I do enjoy the magazine but I am always afraid for the safety of the uninitiated, venturous soul.

GARY A. MINKER, KC4UDZ
Royal Palm Beach, Florida

Code vs. no-code

I would like to jump into the code vs. no-code debate. If I understand ORACLE's [New Zealand's "Organization Requesting Alternatives by Code-Less Examinations"] position, the code requirement should be eliminated because it is being phased out of commercial use, and it is also unnecessary to

know the code in order to participate in Amateur Radio since most transmission is by SSB. (See November *Worldradio* FCC Highlights, p. 8) Carrying those arguments to the extreme, ORACLE would not require exams on any mode being phased out of commercial use or which an operator does not intend to use. I imagine that few ships at sea use EME to communicate, so would ORACLE propose eliminating all EME questions? And why stop there? Perhaps ORACLE would only require that SSB operators be tested on connecting equipment, turning it on, speaking into a microphone, and turning equipment off. After all, how many times a day do you actually use those nasty formulas you memorized in order to pass the Advanced and Extra written exams?

Fortunately, this is not the way most government licensing is structured. Any attorney could pick apart the bar exams by claiming that certain questions are irrelevant to his/her intended practice and should be eliminated. The same

could be said for any government licensing exam. I believe it is better to approach Amateur Radio licensing from the point of view that an applicant should be tested on every possible mode available for use, and the current code tests appear to be a rationale way to test proficiency. ORACLE is fortunate that actual sending proficiency is not tested. Can you imagine the hue and cry if we began lobbying for stricter code requirements?

The next logical leap, using ORACLE's rationale, is to eliminate licensing for Amateur Radio entirely. After all, cell phone users don't have to identify themselves every 10 minutes and are not required to pass exams and be licensed to use 800-900 MHz. If persons transmitting from cell phones on those frequencies are not subject to restrictions against use of profanity, etc., why should users of other frequencies? The answer, in my opinion, is in order to maintain the integrity of our hobby. No concerned Amateur Radio operator should want our frequencies to go the way of 14.313 (which appears to have been exempted from regulations prohibiting profanity, intentional interference, and unidentified emissions). If that happens, I'm out of the hobby.

I would consider eliminating the code requirement as a devaluation of my license. If the code serves as a gate-keeping function, so be it. You have no "right" to transmit on the HF bands — that is a privilege granted to those who choose to acquire the skills necessary to obtain a license. I submit that if the time devoted by ORACLE and its disciples to eliminating the code requirement were spent studying the code, they would have all passed by now and the issue would be academic. I can tell you that learning the code was as much fun for me as memorizing the formulas needed to pass my Advanced and Extra written exams. In other words, no fun at all. But I, like thousands of other Amateur Radio operators, chose to memorize those formulas in order to be granted the privilege of fully participating in the hobby of Amateur Radio.

It is my opinion that ORACLE disciples just don't want to devote the time and effort to learning the code, and that their arguments are merely a smoke screen to mask their true desire to obtain HF privileges as easily as possible. To them, I say, buy a CB.

SCOTT D. SPENCER
Santa Fe, New Mexico

Road blocks

RE: September 1994, Page 3, "Words to Avoid," Stan Harter, KH6GBX.

First, thanks to Stan for the excellent

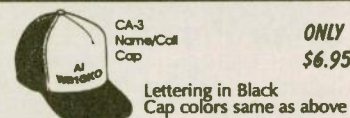
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SSD-5"	80-40-20-15-10M... 42' long = \$110, 60 ft. long... = \$114
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talk on Emergency Services and related ham activities which he gave at Seaside, Oregon, last June.

In response to Stan's remarks in the September issue of *Worldradio*, page 3, titled "Words to avoid," I believe hams going out on ARES/RACES missions should identify themselves as "Amateur Radio Operators with Department _____ on Mission No. _____." I am not a representative of "Vista County," "a CDF Fire Information Officer," or a "representative of the Governor's Office," or any other official state, local or national organization or department. If I am not passed at a road block I will call my Command Center net control for instructions.

To facilitate passage through road blocks, our Department of Emergency Management (Skagit County, Washington) has given us window stickers identifying our vehicle as part of Mission No. _____, and signed by the DEM officer of our county. If a mission number ID has not been issued, show your RACES ID card (or ARES card if the mission is sponsored by a group having a mutual operating agreement with the ARRL).

At the recent central Washington forest fires, we were passed through to the command center area where we had our windshield marked with bright orange paint showing an identifying code that passed us through all further road blocks.

I urge all ARES/RACES hams to insist their sponsoring agencies have windshield stickers available for temporary vehicle ID before we are dispatched on a mission.

The real problem I have found (particularly in the recent fire in central Washington) was being dispatched to report to an agency that did not want any communications help from anyone outside their own staff. That is the time to pick up our marbles and go home! Well, at least, report back to the command center for re-assignment.

PAUL C. LEACH, N7GGX
La Conner, Washington

CW thoughts

I got a big kick out of the Publishers Microphone in the November, '94, issue. The subject was CW requirements for ham radio licenses. I'd like to share my thoughts about the Morse code requirement but not from a technical point of view. The code means much more to me than just regulation or one-upmanship.

I use CW for a very simple reason. The appeal of code goes back to my childhood. As a kid I liked the Saturday

adventure shows on television. . . . Then there were the WWII movies. . . .

I can't forget the U.S. cavalry either. They used heliograph to reflect the sun and send messages from mountain top to mountain top. I couldn't figure out how the Indians did it with smoke though, maybe someone can help me out there.

The point here is that when I'm in my ham radio shack now, I'm really in an attic somewhere in occupied France, in 1943, sending a message to the good guys. I even put the lights of the shack on a dimmer so I could have better "Ambiance."

I would be doing code even if it were not a requirement. The argument that a wanna-be used once was that he was hearing impaired, therefore wanted to have the code requirement waived. This really tickled me, because this is the very reason that I do so much code. I can't tell a "V" from a "B" on sideband. But I can do pretty well on CW.

Some people have learned to do 35 words per minute in three months. These are talented people, I am not one of these. I did it the old fashioned way, I earned it. One dit at a time.

ERNEST J. GREGIORRE, AA1IK
Canaan, New Hampshire



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**Jim
Cole
KI7QV**

STATION APPEARANCE

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

Winners will also receive a top quality, Laserjet-printed copy of the DXCC and WAS BeamHeadings list (a \$15.95 value) compliments of Jack Hurray, W8IRI!

Although this is a modern station, such was not always the case. Beginning as a Novice (KN6RUK) in 1956, my first station was a converted ARC-5 and a BC-348Q with a wire antenna. A lot of fun and a great sun spot cycle.

The current station is centered around a Kenwood TS-940SAT, a TS-440SAT, and an ICOM 271A for all-mode 2 Meters. The amplifier is from Amp Supply, a Nye Viking MB-V-A antenna tuner and MFJ-492X keyer with a Bencher IAMBIC paddle.

A US Tower TX-472 motor driven holds a Telrex TB-6 Tribander along with a 2 Meter Boomer at about 80 feet. At the other edge of the yard an R-7 awaits the flip of the antenna switch.

For packet (not shown) I use a TR-7950, Tandy 200, and a KAM.

I have held many calls during the years including WA6CIP, WB7DOZ, N6QMZ, VK6AJC, and my most fun call

of all, VQ9JC operating from Diego Garcia in the Indian Ocean. It was from Diego Garcia that I earned DXCC in under 48 hours of operation.

In September of 1993, I upgraded to KI7QV and hope to earn DXCC in the first year of operation with this new call, even though we are at the low end of the sun spot cycle - a real challenge. So far, I have

worked over 150 and confirmed 57.

A rarity for Tucson, my shack is in the basement, a very neat 10 x 12 room with 4" steel conduit through the wall carrying all cables and wires out to the tower, some 66 feet to the rear of the room. It stays cool down there when I turn on the amplifier and the noise I generate doesn't bother anyone. **WR**



Amateur "Hi"



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

JIM KNOOP, KB8SFL

KB8SFL reminds us that "old" means different things at different times. . . .

Brand new old ham

My wife and our kids try hard not to remind me

The days of my lean, trim physique are behind me.

Not "over the hill" but fast reaching the summit,

My hairline recedes while I watch my waist plummet.

I've bags underneath each dimmed eye—

My teeth aren't all there (but then, neither am I!)

Cholesterol rises, but arches are falling—

My "get-up-and-go" is, well, constantly stalling.

I'm not an "antique" — please, just call me a "classic"—

(Tho' I've heard some remark, "Why, he's almost Jurassic!")

So why's my face beaming as bright as it can?

My very first contact just called me "Old Man!" **—©1994**

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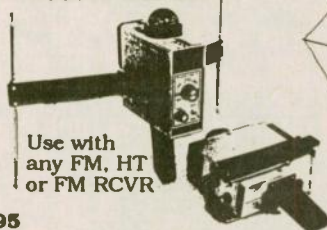
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Voyager DX



Challenger DX



Eagle DX

This chart helps you select the right GAP antenna. When comparing GAPs, bandwidth is not a concern. With few exceptions, a GAP yields continuous coverage under 2:1 for the ENTIRE BAND.

All antennas utilize a GAP elevated asymmetric feed. A major benefit is the virtual elimination of the earth loss, so more RF radiates into the air instead of the ground. This feed is why a GAP requires **NO RADIALS**. Just as elevating a GAP offers no significant improvement to its performance, adding radials won't either, making set up a breeze.

A GAP antenna has no traps, coils or transformers. This is important. The greatest sources of failure in multiband antennas are these devices. Perhaps you heard someone discuss a trap that had melted, arced or became full of water. Improvements to these inherent problems are the focus of the antenna manufacturer, while the basic design of the antenna remains unchanged. **GAP improved the trap by eliminating it!** Removing these devices means they don't have to be tuned and, more importantly, won't be detuned by the first ice or rain. The absence of these devices improves antenna reliability, stability and increases bandwidth.

Another major advantage to a GAP antenna is its **NO tune** feature. Screws are simply inserted into predrilled holes with a supplied nutdriver.

The secret is out and people in the know say:

CO—"The GAP consistently outperformed base-fed antennas...and was quieter."

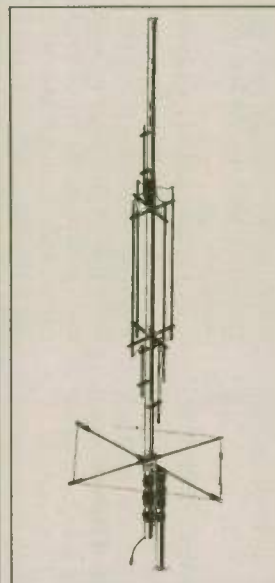
73—"This is a real DX antenna, much quieter than other verticals."

RF—"To say this antenna is effective would be a real understatement. Switching back and forth on 40m between another multiband HF vertical and the GAP, there was no comparison. Signals were always stronger on the GAP, sometimes by 5 units, not just DBs."

Worldradio—"These guys have solved the problem associated with verticals. That is, an awful lot of RF is wallowing around and dropping into the dirt instead of going outward bound. A half-wave vertical does need radials if it is end fed (at the bottom). But the same half-wave vertical does not (as much, hardly at all) if it is fed in the center."

IEEE—"Near field and power density analyses show another advantage of this antenna (asymmetric vertical dipole): it decreases the power density close to the ground, and so avoids power dissipation in the soil below it. The input impedance is very stable and almost independent of ground conductivity. This antenna can operate with high radiation efficiency in the MF AM standard broadcast band, without the classical buried ground plane, so as to yield easier installation and maintenance."

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	2m	6m	10m	12m	15m	17m	20m	30m	40m	80m	160m					
Challenger DX	■	■	■	■	■		■		■	■		31.5'	21 lbs	Drop In Ground Mount	3 Wires @ 25'	\$259
Eagle DX			■	■	■	■	■		■			21.5'	19 lbs	1-1/4" pipe	80" Rigid	\$269
Titan DX			■	■	■	■	■	■	■	■		25'	25 lbs	1-1/4" pipe	80" Rigid	\$289
Voyager DX							■		■	■	■	45'	39 lbs	Hinged Base	3 Wires @ 57'	\$399



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Silent Keys

Dean E. Frish, WØQJF

Dean E. Frish, D.D.S., WØQJF, of Mt. Pleasant, Iowa, passed away on 6 October, 1994. He was 70 years old.

Dr. Frish was born on 18 September 1924, in Cedar Rapids, Iowa, and on 9 July 1950 in Alta, Iowa, he married Joyce M. Pederson.

During World War II he served as a dental technician in the Army and fought in the Battle of the Bulge in the European Theater of Operation.

Dr. Frish received his D.D.S. degree at the University of Iowa School of Dentistry in 1952. He retired in 1986 after being in private practice for 34 years. He was a member of the Southeast Iowa Dental Association and the American Legion Post of Mt. Pleasant.

WØQJF was a member of the Mt. Pleasant Amateur Radio Club and held a General class license. He was active on the local repeaters and participated in weather watch nets and other public service events such as the several RAGBRAI visits to the area. He also

helped the club with the Adopt-A-Highway roadside litter clean-up program. In the early 1970s, Dr. Frish donated HF equipment to the local high school to help them get a radio club started.

Besides Amateur Radio, he held a private pilot's license and liked to fly his airplane. He also liked to plant trees on his rural property. Dr. Frish is survived by his wife, one son, and two daughters. —submitted by Dave Schneider, WDØENR

Fr. Joseph Panizzo, WB8NGW

Father Joseph Panizzo, P.I.M.E., WB8NGW, a pilot and missionary, died in a plane crash in Papua, New Guinea on April 20, 1994, while ferrying four teachers from Vanino into the interior.

Father Joe was born in Treviso, Italy in 1941 and was ordained in 1967. From 1969 to 1978, he served in Detroit as a

vocation director. At this time he got his ham license and joined the International Mission Radio Association (IMRA).

In 1983, at 42, he was assigned to the Brazilian Amazon. He loved his work with the Indians. Friends in the states helped him purchase a plane which he used to transport church workers, medical personnel and material aid all over the Amazon.

In 1993, he was assigned to a rugged mountainous region of Papua New Guinea, half a world away from the Amazon. On his birthday, 10 March 1994, he wrote the following letter: "The other day I was flying at 6,000 feet alone, above the mountains and forests of this area in the midst of a storm. Suddenly a wide rainbow appeared before my eyes with beautifully vivid colors. I recalled how God, in the Old Testament tells His people that the rainbow is a sign of His love for them. At that height I gave thanks to God for my life, for all the friends and relatives who know me and keep in touch with me."

—Rev. Michael Mullen, C.M., WA2KUX
IMRA Newsletter Editor

Awards

"CQ Gang" Award kicks off Golden Anniversary celebration

(Hicksville, NY)—The editors of *CQ: The Radio Amateur's Journal* will celebrate the start of the magazine's 50th anniversary year with a special operating event during the first half of January, 1995. Any licensed amateur who is currently or formerly associated with *CQ*, any of its sister publications (e.g., *Popular Communications*, *Communications Quarterly*), or other products of its parent company, *CQ Communications, Inc.* (e.g., *CQ* books, videos &

specialty products) is invited to sign "50" after his/her call sign between January 1st and 15th. Other hams may qualify for the "CQ Gang" award by contacting these stations.

"Very few magazines are privileged to celebrate their 50th anniversary," said Publisher Dick Ross, K2MGA, in announcing the award. "And we certainly would not be here today if not for the dedicated hams who have been our writers and editors through the decades. This event at the very beginning of our Golden Anniversary celebration is our way of saying 'thank you' and of putting the spotlight on these people who are so directly responsible for our success."

Complete rules for the "CQ Gang" award appear in the November, 1994, issue of *CQ*, and will be available by mail directly from *CQ*.

For a copy of the rules, along with official logs and entry forms, send a large self-addressed, stamped envelope (SASE) to *CQ Gang Award*, 76 N. Broadway, Hicksville, NY 11801. There is no fee for the award.

WR

The shortest distance between two points... is usually closed for construction. —The Lark LED

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DX WORLD

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

478. WA0CLR Robert A. Roske 12 September, 1994

479. N2PLE Wayne W. Clifford 22 September, 1994

Mauritius (3B8)

Visiting Californian, NK6F, signs his call appended with 3B8 and prefers CW. Try 30 Meters between 10.114 and 10.119 MHz from 2000 UTC, 14.008 MHz around 1800 UTC, 18.075 MHz at 1600 UTC, 21.059 MHz between 0800 and 1200 UTC, and 24.895 MHz at 1200 UTC.

Then there is 3B8CF, who operates multiband. Look for him between 7.003 and 7.008 MHz around 0200 UTC, 10.100 and 10.102 MHz after 0300 UTC, and 18.082 MHz at 1400 UTC. He has been known to operate RTTY as he was reported with signals into Japan last July near 14.085 MHz. Also reported was 3B8FG on 21.019 MHz at 1200 UTC on 2 September.

Niger (5U7)

5U7Y has been heard regularly on 20 Meters in Europe. Try 14.266 to 14.282 MHz between 1400 and 1900 UTC. This station has also been reported on 3.797 MHz at 0345 UTC working the east coast on 2 September and on 7.055 MHz between 0100 and 0400 UTC working SSB. Check 15 Meters between 21.243 and 21.252 MHz and 10 Meters on 28.470 MHz.

Nepal (9N1)

According to *DX News Sheet*, Andy, G4SSC, was to visit Nepal with the British Medical Expedition to climb some of the lower slopes of Mount Everest. If he had the opportunity to operate he would be signing with 9N1SC. That Japanese YL operator is

back on signing with 9N1KY. Look for her between 14.183 and 14.197 MHz after 0100. Also 9N1HA was reported in the pages of *DX News Sheet* as working Europeans on 6 September at 0900 UTC on 21.270 MHz. Earlier in the summer there was a station on RTTY signing with 9N1AA with reports into Japan.

Qatar (A71)

From Qatar A71AN has been very active on 17 Meters SSB. Look for this one between 18.125 and 18.150 MHz after 1500 UTC. He has also been reported on 20 Meters near 14.003 MHz at 0700 UTC and on 40 and 15 Meters working Europeans.

Other calls reported from Qatar include the following:

A71AC 14.218 MHz 1930 UTC
A71AR 21.007 MHz 1000 UTC
A71BY 14.178 MHz 2130 UTC
A71CW 10.104 MHz 0045 UTC
A71EM 14.224 MHz 0800 UTC
A71EY 14.222 MHz 1600 UTC

Cape Verde (D44)

Need Cape Verde Islands on 17 Meters? Then look for D44BS, found frequently around 1000 UTC between 18.126 and 18.156 MHz on SSB working the Europeans after 1000 UTC. Also reported in September was D44AB who was worked from the Midwest on 16 September at 2345 UTC on 14.247 MHz.

Saudi Arabia (HZ1)

HZ1AB who keeps the activity going from Saudi Arabia is often found on 17 Meters CW between 18.072 and 18.074 MHz and on SSB near 18.150 MHz. He has been reported between 1300 and 1600 UTC. Most of the reports have been European. However, one Californian grabbed this one on 40 Meters near 7.003 MHz on 10 September at 1415 UTC.

Egypt (SU)

Long Skip reports OK2FUN operating from the Czech Embassy signing with SU1KR.

Other recent activity includes the following calls:

SU1AKX 14.019 MHz 0700 UTC
SU1CS 14.247 MHz 2130 UTC
SU1SK 14.258 MHz 1915 UTC
SU2MT 14.235 MHz 2030 UTC

THE BIG DK-DX

Don Johnson, W6AAQ's
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manufactured by:

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P.O. Box 643

Oregon City, OR 97045

See *Worldradio*, Oct. 1994 issue.

R-X NOISE BRIDGE



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Iraq (YI)

More and more of activity has been reported of Iraqi DXers as indicated in the following:

YI0SW 18.149 MHz 1745 UTC
 YI1AA/2 14.228 MHz 0115 UTC
 YI1AM 14.241 MHz 0245 UTC
 YI1DZ 14.246 MHz 0015 UTC
 YI1EYT 14.268 MHz 1600 UTC
 YI1OM 14.031 MHz 1600 UTC
 YI1USG 14.252 MHz 1500 UTC
 YI9CW 14.009 MHz 1500 UTC

U.K. Bases on Cyprus (ZC4)

Only one report was found for activity from the United Kingdom bases on Cyprus during the month of September. ZC4RAF was reported on 14.171 MHz at 1800 UTC on 1 September working Europeans.

St. Helena Island (ZD7)

Many a DXer has now worked St. Helena Island in September thanks to ZD7WRG. Look for this one on 20 Meters SSB between 14.188 and 14.215 MHz after 0100 UTC, 18.121 and 18.159 MHz after 1700 UTC, 21.266 MHz around 1600 UTC, and 24.950 MHz at 1400 UTC.

Other calls reported on St. Helena Island during September include:

ZD7DP 14.213 MHz 2115 UTC
 ZD7KT 24.948 MHz 1800 UTC
 ZD7RA 14.198 MHz 2245 UTC
 ZD7SAS 18.164 MHz 2100 UTC

On 14 October many amateurs were scheduled to celebrate Radio St. Helena Day, according to *DX News Sheet*.

IOTA

The following is a selection of the activity found on the bands recently. Much of the IOTA activity centers around 14.260 MHz.

AF-018 Pantelleria Island IH9/12SXD 30 Aug
 AF-019 Lampedusa Island IG9/IT9HLR 04 Sep
 AF-046 Desertas Island CS3MW/P 03 Sep
 AS-022 Bear Islands RK0QXY 18 Sep

AS-055 Vize Island UA0KBZ/0 18 Sep
 AS-082 Dunay Island UA0QFC 04 Sep
 AS-115 Kekova Island TA4/OH3MIG 03 Sep
 EU-028 Giglio Island IA5/IK3SWA/P 06 Sep
 EU-054 Favignana Island IF9/IT9PP 06 Sep
 EU-123 Isle of Aran GM/DK4AP 02 Sep
 EU-136 Krk Island 9A/OM3LO 04 Sep
 EU-157 Harbour Island F/HH2HM 02 Sep
 NA-051 Graham Island VE7KRC/P 17 Sep
 NA-058 St Simons Island K2OLG/P 11 Sep
 NA-062 Florida Keys KW2PP/P 10 Sep
 NA-139 Assateague Island K8SCH/4 05 Sep
 NA 148 Appledore Island WF1NP 17 Sep
 OC 200 Swains Island W6BOS/KH8 22 Sep

Wroclaw Award

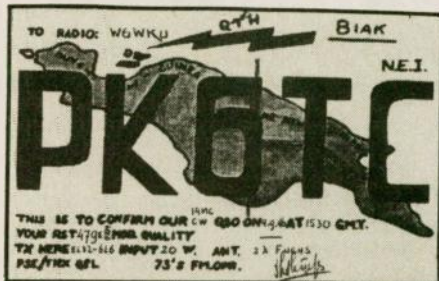
The Wroclaw Award is sponsored by Polish Amateur Radio Station, SP6PKQ, for working and confirming Amateur Radio stations located in Wroclaw since 6 May 1945. Applicants outside of Europe are required to collect a minimum of 10 points. The point value of the contacts are as follows: Each contact, 2 points; Each contact with SP6PKQ, 5 points; Each contact with SP0, SR, SN, SQ0, 3Z, 7 points

Contacts made during the celebration of Days of Wroclaw count double. This is an annual event 6 to 10 May. The club also sponsors an award in recognition of 200 years of the Battle of Raclawice and 100 years of Raclawice Panorama. The point structure is the same and all stations in the province of Wroclaw (WR) count 2 points. A contact with SP0PKQ is worth 5 points and a contact with SN0PR (15 March to 30 April and 1 June to 31 July) is worth 7 points. Both awards require a fee of 10 IRC each.

Prepare a list of confirmed contacts, certified by two licensed Amateur Radio operators and send to: Klub Krotkofalowcow SP0PKQ "IKAR", P.O. Box 2190, 50 985 Wroclaw 47, POLAND. All bands and modes count.

Antique QSL Department

Wayne Lott, K4WJB, provided us with an interesting card that dates back to 1949. ZC6XY was a station at the American Consulate in Jerusalem, who worked Ralph Brewster, W4ECE. Wayne claims



Ralph to have "worn out" the 10 Meter band at that time. Ralph received a report of 5 by 7, which was, of course, via AM. Ralph is now a silent key and Palestine is a deleted DXCC country.

Our second card is submitted by Dewitt Jones, W4BAA, for a 1946 contact he made with PK6TC on Biak Island. Dewitt was signing W6WKU from Los Angeles at that time. Since all post-war QSL cards are good for IOTA credits Dewitt used this card to confirm OC 147 Biak Islands was part of the Netherlands East Indies, now Indonesia.

Miscellaneous

Oscar Jimenez, HI8OMA, reports there are no stations in the Dominican Republic that can operate six Meters. He wants to activate this band and is looking for donations and equipment to help put another contry on this band. If you wish to help write to Oscar, at P.O. Box 3272, Santo Domingo, Dominican Republic.

QSL Information

Ronaldo Bastos Reis, PS7AB, publishes a QSL Manager List for Brazilian stations for \$1.00 (U.S.) or 1 IRC. Write to him at P.O. Box 2021, Natal, RN, 59094 970, BRAZIL. The list is published in July and December.

QSL Routes

1Z9A	AA6BB	5H3JA	AA6OB
3A2LF/OS6C	F6FNU	5H3JD	DK9MA
3B8/NK6F	NK6F	5N0GC	F2YT
3B8FT	IK8DYD	5N3ALE	DJ2VZ
3D2BY	JA2FBY	5N8LRG	WA4JTK
3D2CH	JF2GYH	5W8BL	JH2ABL
3D2FT	DJ1RL	5W8BY	JA2FBY
3D2QQ	H2ABL	5W6JA	JF2RZJ
3D2RW	ZL1AMO,	5W6JA	JF2RZJ
3D2WW	JF2RZJ	5Z4SS	A19QI
3Z6AK	SP8BJH,	6W7OG	F2YT
3ZUN	SP8KEA,	7J7AAU	K3EST
4K9IM	KB9XN	7Q7CE	IN3VZE
4L1HX	IK2MRZ	8Q7AB	DK1RP
4N76A	TDC3SZ	9A1CAL	Bureau
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4T6SL	OA4ED	9H3PB	DF4EK

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9K2DI	KA9WON	PJ7/OH2LVG	KE7LZ
9L28H	K4ZLE	RK0QXY	UAOKCL
9Q6AGD	SM0AGD	RV7AA	NT2X
9Q6EXV	FV7X	S21ZG	W4FRU
A35MW	VK2BEX	S69C	Bureau
A36SS	AA6BB	SV8/G0DXC	G6DKC
A98A	K6DF	0T5AR	SM0DJZ
AA2MN	WA8JOC	T5YOU	WA6YU
AH6T/KH2	JA6BSM	T91EN8	DJ6JV
BV80	BV8BC	T92A	S57MX
B21A1/9	JA4HCK	T92X	KA9WON
C2/DL6NA	DL6NA	T93M	DL80BC
C2/DJ1RL	DJ1RL	T94A	DL5NDT
C21/G	JA3IG	T94CR	SM6AQD
C53HG	W3HCW	T94IW	DL80BC
C6AFT	AA5NT	T94MV	F6HIZ
C6AHM	N5TVL	T94ON	DL80BC
C91Z	SM7DZZ	T94QE	DL3KCI
CN2BA	DK7FE	T94U8	9A2NR
CN2VA	IK4JO	T96X	9A2AA
CN8YB	N6EK	T97M	DL80BC
C03JA1	I6WDX	T97T	SM6AQD
C07KR	DL5DCA	T99A	I4GQU
C83MW/P	DJ0MW	T99C	S67MX
C83MW	DJ0MW	T99W	S61QV
CU1AC	W2FXA	T99Z	9A2NR
CU2TC	U2AP	T9S	DL1QQ
D2ZZ	SM7DZZ	TA4/OH3MIG	OH3GZ
EA9/EA7PN	EA5OL	T16RLI	A4JTK
ED4PGU	EA5CVN	TJ1JR	N7VEW
ED9TQ	EA9TQ	TK/HB9ASZ	HB9ASZ
E12QE2	E14HW7	TM2P	F6CYV
EJ1D	E16HD	TM6ACH	F6KPR
EKIAR	K3DWN	TU4EI	W3HCW
EL2LE	K4ZLE	UK9OAF	OZ1KYM
EW1WZ	DL10Y	UN6G	N8LYM
EX8A	DF95X	US4IXQ	WB7QXU
EX8DX	F5OJO	V26A	WB3DNA
EY8MM	DL8WN	V26B	WT3Q
EZ5AA	DF7RX	V81BF	I6MDX
FG5GZ	F6CLK	V81ML	N5FTR
FO/DL6NA	DL6NA	V51/NH6UY	WA2FLJ
FO/DJ1RL	DJ1RL	V51/W8APUJ	WA2FLJ
FR5HG/E	F8FNU	V51/N8AFPJ	WA2FLJ
FY6GJ	F2YT	V51/AH9B	WA2FLJ
FY5KE	DK8CI	V51/N9NS	WA2FLJ
H28W	5B4WC	V51/SM7DZZ	SMDZZ
HQ1T	HR1FC	V59T	WA2FLJ
HV4NAC	IK9FVC	V63BMJ	A6BSM
I1ARJ	I1BWI	V63KZ	JA6VSH
IP1/IK4IDW	IK4IDW	V63MP	JG6PBJ
IP1/4VJC	I4VJC	V73X	KH6HH
IP1/IK4CIE	IK4CIE	V85SSJ	A4ENL
IR6NM	I6IZL	VA2TA	VE2QBZ
J37ZY	N58G	V18ANT	VK4EET
J41CIP	SV1CIP	VK9IG/C	JA3IG
J45X	DL7MAT	VP2EST	KT6Y
J6DX	N9AG	VP6KZ1P	KZ1P
J6LX8/BY9	J6LX8	VP8GAV	GM0LVI
J71M	J71BG	VR2IH	G4RGK
JU1HC	JA2DDN	VR8/DL3HRA	DL3HRA
JW6H	LA5NM	W68R/KH6	N2AU
K1EFL/VP9	K1EFI	XE2Z	XE2GV
K6VW	JA6BSM	XW8KPL	JH1AJT
KG4JL	W12T	Y81DRF	W2PD
KG4JO	W12T	Y812TM	K8LAZA/
KH0/KR4VN	JA6CNL	KA6ZYF	KA6ZYF
KH6/DJ1RL	DJ1RL	ZA/G3MHV	KA6ZYF
KH6/DL6NA	DL6NA	ZA1B	HB9BGN
K82V/T12	KB51PQ	ZD8OK	N8ABW
K3NNU/HR1	K2YJL	ZF2MC/ZF8	N7MCA
OH1NOA/OD5	OH1MRR	ZF2MC	N7MCA
OH2EW/OH8	OH2EW	ZF2RV/ZF8	WJ7R
OS4AGX	ON6GK	ZG2CI	ZB2CI
OS4AGX	ON6GK	ZG2EO	ZB2EO
P39P	5B4ES	ZG2FK	ZB2FK
P46MX	JR4PMX	ZK2/DJ1RL	DJ1RL
P46S	JH4RHF	ZK2/DL6NA	DL6NA
P46W	N2MM	ZK2XN	LA9GY
PJ7/WA7LNW	KE7LZ		

Maximum usable frequency from West Coast, Central US and East Coast (courtesy of Engineering Systems Incorporated, Box 939, Vienna, VA 22183).

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

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO
8	(12)	8	*12	*8	*12
10	(12)	8	12	(8)	(12)
12	(20)	8	12	(8)	17
14	25	10	*20	(14)	*26
16	27	(10)	17	(12)	*28
18	26	(10)	(16)	(9)	*29
20	22	(10)	(21)	(9)	*29
22	*18	(16)	24	(8)	*26
24	*15	(13)	23	8	*19
2	14	(10)	(16)	8	*15
4	*13	(9)	(14)	8	*14
6	(12)	(8)	(13)	8	*13

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO
10	(10)	10	13	(8)	(12)
12	(9)	10	12	(8)	(12)
14	(15)	10	12	(8)	23
16	(19)	10	*17	(11)	27
18	21	(10)	(21)	(8)	29
20	21	(10)	(16)	(8)	29
22	(18)	20	24	(8)	28
24	16	21	27	(8)	23
2	12	17	24	8	*16
4	11	13	16	8	*14
6	(10)	(11)	(14)	8	*13
8	(10)	11	*13	8	*13

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO
7	(12)	8	(12)	*8	*12
9	(12)	8	*12	(8)	*12
11	21	8	12	13	17
13	26	9	*22	15	*25
15	27	(8)	(19)	14	*28
17	*28	(8)	(15)	(11)	*29
19	24	(8)	(19)	(9)	*29
21	*20	(13)	(23)	9	*27
23	*15	(13)	(23)	8	*19
1	*14	(10)	(16)	8	*15
3	*13	(9)	(14)	8	*14
5	*12	(8)	(13)	8	*13

5H3PW—Paul Whitaney, P.O. Box 38, Mugumu, Serengeti, TANZANIA

701AA—Ahmed Nasser, P.O. Box 7198, 21462 Jeddah, SAUDI ARABIA

9N1WU—Kazunori Abe, JA8MWU, P.O. Box 103, Asahikawa 07091, JAPAN

A71AN—Rashid, P.O. Box 22199, Doha, QATAR

ET3BN—PO. Box 150194, Addis Ababa, ETHIOPIA

EU3FT—Gena, P.O. Box 86, Kobrin 225860, BELARUS,

F/HH2HM—Michel, P.O. Box 104, F-22650 Ploubalay, FRANCE

HK0ER—P.O. Box 934, San Andreas Island, COLOMBIA

T30NJ—Karl Joseph Elsener, P.O. Box 231, Bikenibeu, Tarawa, KIRIBATI

TA2BK—Bahri Kacan, P.O. Box 83, TR 34002 Topkapi, TURKEY

TT8/F5IKR—Thierry Gauthier, F5MXH, 58 Rue de la Poste, F45240 Marcilly en Vilette, FRANCE

VR6PAC—P.O. Box 73, PITCAIRN ISLAND, via New Zealand
XR6T—P.O. Box 1234, Temuco, CHILE
XT2DX—Mustafa Platsis, P.O. Box 108, 5360 AC Grave, THE NETHERLANDS

YI0SW—Adel, P.O. Box 7441, Baghdad, IRAQ

YI1USG—Auday, P.O. Box 53381, Baghdad, IRAQ

ZD8M—Mike Wadsworth, 5 Frobisher Mews, Churchtown, Gloucester GL3 1NQ, ENGLAND

ZP6CW—Doug Woolley, P.O. Box 73, Caacupe, PARAGUAY

Many thanks to the following contributors: HI8OMA, PS7AB, SP6FER, T92X, W4BAA, K4WJB, K5OVC, W6DDB, Northern Arizona DX Association (W7YS), Salt City DX Association (KB2G), The Ohio/Penn DX PacketCluster (KB8NW), The American Radio Relay League (K5FUV), Long Skip (VA3JS), The Low Band Monitor (K0CS), Inside DX (N2AU), DX News Sheet (G4DYO), QRZ DX (W5KNE), and The DX Bulletin (VP2ML).

You might wonder why I kept referring to "working the Europeans" this month. With the propagation the way it is that seems to be the way it is. Keep the faith. Things will improve. Go confer with the old man on the hill and tell him the QRPer sent you. 73 de John N6JM.

3XY0A—Vera Zrnica, P.O. Box 160, 11070 Novi Beograd, YUGOSLAVIA

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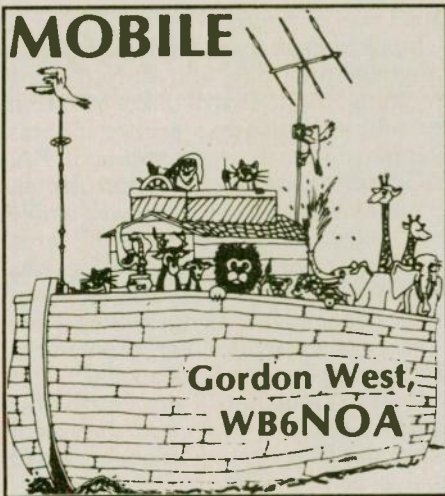
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Winter-seal open coax connections

I love to snoop the feedpoint connections on mobile units at hamfests. When passersby are standing there gawking at a big antenna coming out the back end of a huge 4-wheel-drive vehicle, I'm the one with my head inside the wheel well seeing what the inside coax cable connection looks like.

One out of two feedpoints is going to go bad! Many coax cable runs terminate to the center conductor and the braid fanning apart in a vee with the center connection going to a lug that attaches to the inside of the antenna mount. The braid goes over to a screw and accomplishes the ground connection. This set-up probably worked great for the first few weeks of the installation.

Guess what I find? Many coax-direct feeds are wide open for moisture damage and conductor deterioration. And here's what happens—the mobile coax cable run may use low-loss foam dielectric to cover the stranded or solid-center conductor. The foam wicks up moisture, runs it down the coax via capillary action, and in some cases water actually seeps out the radio end of the PL-259! Needless to say, the loss of the coax with moisture on the inside dielectric could exceed 10 to 15 dB!

The exposed copper braid quickly builds up corrosion, breaking down the copper until the braid finally becomes disconnected from the chassis of the vehicle. Moisture also creeps down the copper, completely wiping out the coax. On better quality coax, such as polyvinylchloride dielectric and silver-tinned copper center conductor and braid, it may last a few months longer before moisture ultimately seeps into the coax, changing its characteristic impedance from 50 ohms down to 10 to 20 ohms. This

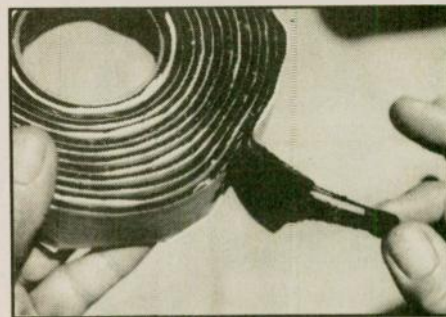
results in high SWR, and you know the rest.

I have seen many mirror mounts where the coax terminates to a P-259, and this screws into the base of the mount. No good if not protected from the elements. Coaxial cable PL-259 connectors are absolutely not waterproof. They will leak like a sieve, and trap moisture into the coax for good. Exposed PL-259s without any covering over them spell poor mobile antenna performance after a year in the elements.

And same thing for home antenna systems—if you expose the center conductor and the outside braid to your feedpoint, but don't completely seal this feedpoint, your system will be down many dBs after the next winter rain-storm.

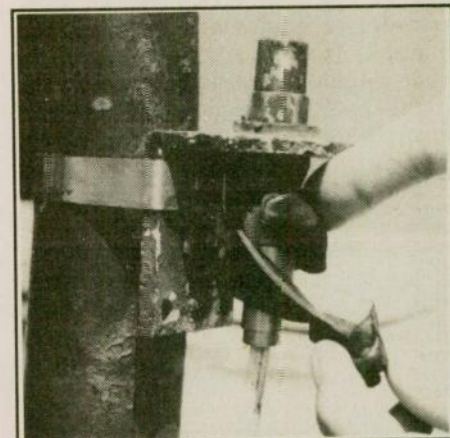
The solution? Obviously, *seal the feedpoint connection*. Liquid electrical tape works okay. But it's tough to get on evenly. Black tape—forget it. It usually begins to unwrap after a few encounters with wind and wet weather. Self-vulcanizing tape is good—stretch it to the point it gets warm, tightly wrap the connection, and you seal moisture out. But this stuff is tough to work with in tight spaces—like the inside of the wheel well.

Best stuff I have ever worked with is Coax-Seal™ manufactured by Universal Electronics, Columbus, Ohio; 800/431-3939. You order it by the small roll or big roll, or if you regularly install two-way radio equipment, order it in big rolls by the box.



This gooey stuff unwraps like tape. The big rolls are one inch wide by 12 feet long, and will probably last you through 50 different installations. You squish a blob of this black stuff over exposed coax cable connections or connector. It forms a waterproof seal over odd-shaped and difficult feedpoints. You can wrap it on, squish it on, push it on, and massage it on for a perfect waterproof feedpoint that will last for years.

Important! It's not chewing gum, so



keep it out of your mouth. It's also not easy to work with when the outside temperature is above 75 degrees. In the warm sun, it handles exactly like chewing gum, and sticks to everything—including you. But work with it cold, and it is pliable enough to squish around any feedpoint, yet not sticky enough to stick to your fingers.

It can be removed, too—best done when the connection is relatively cold. But chances are you won't need to remove it because the inside feedpoint wires or connection will be bright and shiny.

"It only comes in one color, black," reports inventor Tom Harrington of Universal. If you want white Coax-Seal, you are out of luck. But if you need a good waterproof connection, this is it! Just remember to put this stuff on when that glob of goo in your fingers is cold. You will be wearing it for weeks if you try to put it on in the tropics!

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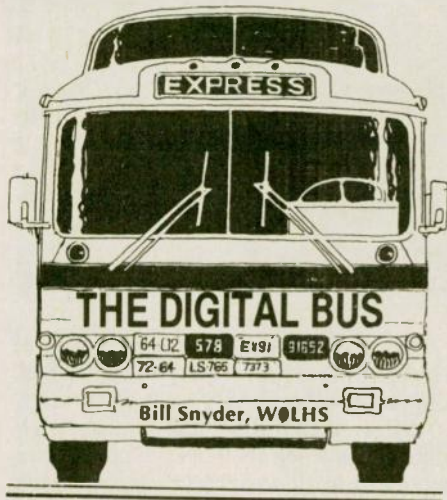
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When you get to be my age, you'll probably discover that you do a lot of "looking back" on the technology changes that you have witnessed in your lifetime. We live in an amazing world! In my time I've seen agriculture go from horse-drawn equipment to huge machines; Northwest Airlines start with single engine, 8 passenger Hamilton aircraft and go to huge jets; electricity be wired into farm homes in the country; radio broadcasting cover the coun-

try; and I had the pleasure of participating in bringing television to the prairies of my home state.

I once attended a world's fair that was called the "Century of Progress." Yup, gang, the 20th century will probably be listed as the greatest time in the history of mankind in which to live.

When now I look back on 20 years of micro-computing, one of the great advances I've witnessed is the evolution of the printers that have been hooked onto my various computers. We've really come a long way in that department, too; so, pardon me if I reminisce.

My first microcomputer was the SOL made by Processor Technology, a company that had great promise, but it expired before it had a chance to really get going. When I bought the SOL computer the industry was just emerging from the "computer kit" method of merchandising, a method that was prevalent in the early micro days. I think I got one of the first few "factory made" computers. I know it was one of the first in my area, because the other 11 members of our SOL computer club put theirs together with hot soldering irons; I got my wave-soldering done at the factory.

To give you an idea of the working guts of the SOL, it had 32K of RAM and a primitive BASIC program to do its computing stuff. If I remember correctly, I spent something over two grand for the basic computer. Because I did a lot of private flying in those days, I had a VHF radio on my office desk for use in listening to the airport weather advisories. The SOL was a dandy source of "hash" and it would break the squelch on the scanner radio whenever it was turned on. I solved that by turning the scanner off when the computer was on.

The early computers used a cassette tape recorder to boot up the operating system. It took nearly five minutes to get the SOL up and running. And then it took a lot of time to save the files we accumulated from using the machine.

But I was computing!

I took a crash course in writing Basic language programs and started doing my thing. Right away I discovered that I would have to buy a printer if I was going to do much programming in BASIC. So, I popped for a Decwriter printer. It ran at only 300 baud and was a nine pin model, but it did its stuff for a number of years. The only problem was with it was replacing a stepping motor in the paper advance system once. To do that, I got a rebuilt motor for 90 bucks from a supplier in Minneapolis.

It wasn't long until I saw North Star floppy disks (5¼ inch) and the North Star operating system in action. I had gone over to the Moorhead State University computer department for a demonstration and it only took two minutes of the demo before I was completely sold and the system ordered. The disks only held 77K of code on a floppy that cost five bucks, but they speeded my computing up like a miracle. 1976 was a great year in my computing life!

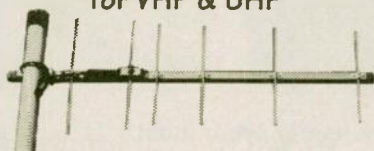
I next speeded up my printing process and gained the typewriter quality look by replacing the Decwriter with a NEC Spinwriter. I liked the appearance of the Spinwriter typefaces, and the type face spindle was easy to change. I used large sized type for putting voice-over movie narration scripts on paper. This procedure made it easy for the announcers to read during recording sessions. The NEC was also much faster than the Decwriter to use, so I ran my business invoice printing on the Decwriter and everything else on the NEC.

When I retired and sold my audiovisual production business, I took the SOL and the NEC with me; by then they had been replaced by IBM clones and 24 pin printers at the studio. I set up the SOL and printer in my home and wrote a lot of manuscripts for this column on that primitive old setup before I moved up to newer computers and laser printers.

In my hamshack I put a Toshiba 24 pin printer on the Sanyo Computer that runs my packet BBS, the first one in North Dakota by the way. It is shared by a Xerox computer that I use on the OSCAR satellite and HF ham gear. That lash-up is separate from my "writing" computer, so it has to have its own printer.

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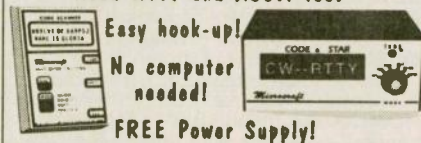
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My first laser printer, a Hewlett Packard HP-IIP, was a joy to install. I plugged a Pacific Data Postscript cartridge into it and was able to turn out great looking stuff for my first desk-top publishing efforts. Among the things I produce is a quarterly newsletter for our high school alumni association. By upgrading my computer to a 286, I was able to dash out the newsletter by using Ventura Publisher for the software. No longer did I have to get the type set at the printers and then sit and cut and paste the newsletter together. I could do most of it in the computer and take a disk to the printers and let them finish.

A year or so later I upgraded to a 386 computer and a Hewlett Packard III which used the same Postscript type cartridge. Again my work speeded up. Instead of four pages of regular typing a minute the new computer produced eight. Of course doing Postscript printing with graphics, the output slows down. That system produced printing at 300 dots per inch, which was not all bad. A year so later the HP 4, with 600 dots per inch, was introduced, and so I upgraded again. Instead of the Postscript cartridge, I bought a LaserMaster WinJet 1200 system to add to the HP-4. It boosted the print output to 1200 dots per inch which produces great looking print. Now I proof my tabloid sized (11 x 17 inch) newsletter of 12 pages on regular letter size paper by reducing it to 65% of its full size. It makes desk top publishing a joy to do.

Oh yes, I long ago upgraded the writing computer to a 486 with a 340 hard drive which, at the time, I thought would hold all I needed for programming and file storage. But I was wrong, I now have added another hard drive of 425 megs, and it is half full while the old 340 is near the top of its capacity. Some of the programs I am using — Corel Draw 5, for instance — takes about 50 megs to hold all the components. Take my advice and buy big, big, big! Graphics really eat up the space.

I also have a scanner — it's an HP IIc. I scan a lot of pictures into my high school paper, but I really bought it for scanning printed materials using an OCR (optical character recognition) program. I use OmniPro for that purpose

and it works rather well. I have alumni from all over the world sending me stories for the paper and it helps to have the ability to scan them quickly into the computer.

Scanning typewritten material into a computer is easy if the type is clean and the style is not one of the script-like faces. I keep telling my readers to clean the letters B, R, A, etc. before they type out a story to me. The new version of OmniPro has an addition that you can get some of those poorly printed letters to read correctly, but it takes more time than it is worth to do when you are scanning short bits.

So, the history of microcomputer printers in my life is only 20 years old, but it has been exciting to see the evolution of how we output the workings of our computing machinery to paper. Great stuff!

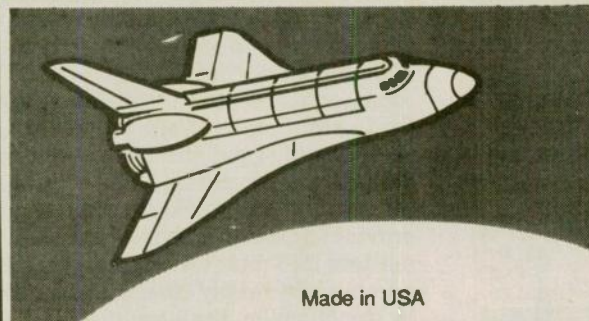
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Thanks to K6VV, WC0M, KA1RFD, for the help with this column. Write me Bill Snyder, W0LHS, 1514 South 12th St., Fargo, ND 58103. My packet address is W0LHS@W0LHS.#SEND.ND.USA.NA 73 DIT DIT WR

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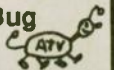
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FCC recognizes frequency coordination council

A Notice of Apparent Liability issued to a Puerto Rico ham whose repeater is alleged to have caused interference to other Amateur Radio operations has set the stage to give repeater frequency coordinators more legal clout, if the coordinator is recognized by the American Radio Relay League. On April 13th, the San Juan Puerto Rico office of the Federal Communications Commission issued a Notice of Apparent Liability to Monetary Forfeiture in the amount of \$7000 against Juan Anthony Rodriguez, NP4VG for alleged violation of Section 97.101 (D) of the Amateur Service Rules.

This is the section that deals with willful interference by one radio amateur to another. The FCC says that Rodriguez failed to remove his repeater when told to do so by the ARRL recognized local Amateur Radio repeater frequency coordinator.

In taking this action against NP4VG, the FCC has not just given validity to the existence and purpose of voluntary frequency coordinators in Amateur Radio. It has gone the one step farther that coordinators have been seeking for years. It has codified their ability to make decisions concerning who may and may not have a repeater on the air. It has given them the right to order a repeater off the air. It has also said that it will back up the decisions of ham radio frequency coordinators with the power of federal law, but, the wording of the NAL suggests, only for coordinators who are recognized by the American Radio Relay League. At press time, its not known if Rodriguez has filed an appeal.

An end of an era?

As the year 1994 draws to an end, it's time to ask a rather sobering question. "Is this the beginning of the end of the era of "open" repeater operation in many crowded urban areas?" Maybe so. It's no secret that cities like Los Angeles, New York, San Francisco, Chicago, Miami and several others are facing a growing tidal-wave of on-the-air abuse of repeater systems, of abuse to the users of these systems and toward the people who put them up and maintain them. It is also no secret that the vast majority of repeater licensees are truly fed up with the current state of affairs. For years they have begged the federal government for intervention. The FCC has turned a deaf ear. So now those who provide repeater services are taking matters into their own hands. A goodly number are simply closing their doors to the "ham in the street." They are "privating out."

Do repeater users have rights?

Maybe another way to say all of the forgoing is with the rhetorical question: "Do repeater users have rights?" It seems as if repeater owners in — starting once again in the birthplace of repeaters — Southern California — many of whom are

fed up with suffering well over two decades of harassment from members of their user base have gotten to the position of saying: "...no Mr. User. No, you have no rights. You may use my repeater only if I decide I will let you and only on the terms that I dictate."

As a person who has chronicled the explosion in FM and repeaters since their inception — including writing the FM column in *73 Amateur Radio Today* magazine for 22 years — I can only say that I am surprised that this reaction has been so long in coming. If you were to go back and read my 1981 columns I foretold of all this dilemma arriving — exactly as it has — over a decade ago. I also predicted the "privating out" of "open" repeaters. Eventually every one of the nation's repeaters will become highly selective in who the license holder will and will not permit to be retransmitted. It may take a few years longer than I predicted back in the '80s, but I would be very surprised if it did not take place.

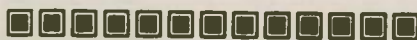
"Privating out" is currently a "big city" phenomenon. Most trends in FM and repeaters are. You won't see the FCC step in to try and stop it from occurring. First off, ordering hams to provide "open" relay service to every other ham is in effect telling those who operate repeaters that the government has declared them to be a "public utility." The FCC is well aware that this would constitute illegal seizure of private property. That in itself is way beyond its purview and any such action would result in a law suit that would literally bring the agency to its knees.

But there is still another reason for the FCC letting systems "private out." (One that no bureaucrat will admit to the ham public, but a situation that they would obviously favor.)

"Privating out" makes every "user" a system control operator and therefore equally responsible with the licensee for the overall operation of a repeater on which he or she operates. So it is natural for the FCC to prefer to deal with "closed" and "private" since it's also far easier to prove wrong-doing and take punitive action against infractions on closed/private systems than on open ones. And, as more systems "private out" watch those \$8000 NALs for various infractions begin to mount against wayward users.

A state of mind

Private and closed repeaters are more a state of mind than they are anything else. There are many people like me who enjoy having "company" come to my house to visit. But there are also other human beings sharing this world who hate the sight of anyone else who does not measure up to a personal pre-conceived notion of what a fellow human being should be.



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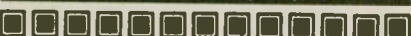
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This is the reality of day to day life; it has been that way from time immemorial; it will be this way long after all of us are dead, buried and forgotten. Apply that to repeaters. Not everyone wants "company" but there are many in ham radio who feel that they have the right to force themselves upon another person's life. Some go so far as to say — and I heard this over an HT in an Atlanta hotel room — that "...repeaters are public utilities...and they must be open to provide me with service."

Sorry, but on seven separate occasions since 1968, the FCC has stated, without any room for personal interpretation, that a repeater is nothing more than a remotely located personal station, and as such, no ham can be forced to share that station with another ham. Over the years I have gotten the feeling that the government would much rather see closed repeaters than open ones. Possibly it's because the private repeaters are not as much of a source of enforcement problems, while it is from open systems that constant complaints draw down Commission resources.

Now, let's look at what is occurring in Washington and apply that to the "great repeater debate." The latest personnel changes at the FCC are not very favorable to ham radio.

We are losing — or have already lost Private Radio Bureau Chief Ralph Haller, N4RH, to what amounts to the FCC entering the Information Superhighway. Several other ham-wise FCC staffers are being reassigned as well. An unknowledgeable FCC is one that will go to literal regulatory enforcement.

With the foregoing in mind, my advice to the anti "Private/Closed" repeater crowd is — at least for now — cool it. If you go to the new FCC/PRB seeking to ban closed systems, and you have a PRB head who goes by a rule book, you could see an end to open repeaters instead. This is because the FCC could take an opportunity to do away with a sore-spot in their enforcement budget.

Remember what I said earlier on. I can point to more than a half dozen denied rule making requests on this subject. In each case the government has categorically stated the right for private systems to exist. Now with the Johnston interpretation of 97.205 (e) (great detail in previous columns) the right of a repeater license holder to exclude any user from a system for any reason the licensee feels is valid appears to have been codified. Only the decision of a judge and jury in a federal court will change this.

The trend is there

In the 22 years I have been writing about the world of FM and repeaters I was never wrong at projecting the future course of the mode. Its not some

God-given gift, but rather simple analysis of trends. The trend here is toward privatization and unless the government steps in to force a major shift in political direction, it will happen.

Based on almost two decades of denial of such requests and the pervasive feeling in Washington that "closed" causes fewer problems than "open," I do not see any FCC intervention in the near, or even the far off future. Rather, I expect to see yet another series of Rule Making requests filed from the Amateur Radio community; they will have no support from the ARRL or any other national organization and will be summarily dismissed by the FCC based on past actions to dismiss all others. And as soon as that happens, the "privating out" will really begin in earnest.

And I will hasten to add that this is one time when I truly hope my prediction is proven wrong.

As the year draws to an end

This is the last column of 1994. It has been a rather amazing year in the ever-changing world of FM and repeaters. Thanks to the work of Southern California, attorney Sid Radus N6OMS, repeater licensees are taking back the airwaves from those who would jam, harass and make life miserable for the users of many machines. Not just in California but nationwide. We are seeing repeater coordinators and repeater councils begin to re-evaluate the way in which our crowded spectrum is utilized, to rid the repeater subbands of non-existent "paper repeaters."

We also saw a major shift in FCC regulation that has now shifted the burden of repeated communications off the shoulders of repeater trustees and squarely onto the individual ham who originates the words. We witnessed FM and repeaters come of age in handling all sorts of emergencies including last summers massive flooding in three south-eastern states. We are now seeing the FCC finally begin to acknowledge the validity and the work of the nations volunteer Amateur Radio frequency coordinators. Yes, 1994 has been one heck of a year in the world of FM and repeaters. One that few will soon forget.

A few months before I began writing the FM and Repeater Column, I was told by another publisher that the rea-

son his magazine would not have such a regular feature was because it would be akin to having a column about telephone conversations. From what we have witnessed together in the past eight months, I have the feeling that that person is probably sorry he said what he did.

Quite the contrary, it would not be all that surprising to see other magazines — that one included — follow the lead of *Worldradio*. There is truly more happening that is newsworthy to readers in this facet of the service than in almost any other.

You and I are very lucky in that we are a part of the dawning of a new age in technology, a new age in communications, and a new age in Amateur Radio. And for the foreseeable future, FM and repeaters will be a major part of it all. So, my year-end wish to all of you is to enjoy being a part of the history of ham radio as it is being made. It will never be this way again!

From our house to yours, a Merry Christmas, Happy Chanukah and a prosperous 1995!

(FM and Repeater column author Bill Pasternak, WA6ITF, receives mail at 28197 Robin Avenue, Saugus, CA 91350. His 24 hour/day voice and fax line is (805) 296-7180.

WR

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BASIC Moonbounce

Something historical happened earlier this year during the ARRL June VHF QSO Party. A team of U.S. amateurs participated as the guest observers at COØFRC, the station of the Federacion de Radioaficionados de Cuba. The U.S. team consisted of Joe Lynch, N6CL, Chip, K7JA and Janet WA7WMB, Margelli and Lauren Libby, KXØ0.

One history-making aspect of the operation was the use of a DX Rover to provide new entries for several VHF grids in Cuba that had never been worked before. Joe, who is also an ARRL West Gulf Division section manager, editor of the *QCWA Journal* and a columnist for *CQ* magazine, and Oscar Morales, CO2OJ, operated the mobile

rover.

Also making history were the first-ever contacts between the U.S. and Cuba on the 220 and 1296 MHz bands. Reportedly the 1296 MHz contact spanned a 300 mile hop between the Cuban station at Bellomonte, near Havana, and the U.S. station.

But the feat that caught my attention was an earth-moon-earth (EME, or moonbounce) contact made between the COØFRC operators and Dave Blaschke, W5UN. According to Chip's account, the exchange took nearly a half-hour to complete and when it was over the Cuban operators seemed quite pleased with the accomplishment.

For the record, the Cubans used a Yaesu FT-290R II and a 300 watt amplifier to feed dual stacked 14 element Yagis. A Timewave digital signal processor helped to lift the received signal out of the noise.

While I can't say I'm into VHF contesting, or even EME operations, I do find an interest in the moon from two other perspectives. I used to make a living as a navigator, and the moon, of course, is one of the bodies used in celestial navigation. Another reason I find the moon interesting is that I'm a photographer, and I'd like to think that maybe one day I could set up a shot as famous as Ansel Adams' "Moonrise over Hernandez."

I wrote this month's program for one of my pocket computers. I don't think

it's accurate enough to use in "real" navigation, but it could come in handy for setting up for photographic opportunities or planning EME operations. Besides, it could be fun just knowing where to find the moon if you ever wanted to look for it.

I mentioned that I wrote the program for a pocket computer. These tiny BASIC machines were popular in the pre-notebook days, and Radio Shack sold several models made by Sharp and



96 bit computer - This month's MoonTrack program fills only 15% of its non-volatile RAM.

Casio. They're hard to find now, but they're still available at flea markets and garage sales. I found a Tandy PC-5 recently at a pawn shop, and gladly paid the \$12 they were asking.

I borrowed the formulas and several routines from an existing moon tracking program originally written by Richard Collister, WA1JXN. A GW-BASIC (basica) version is available in the public domain (I got mine on the HamCall CD-ROM).

The full-blown version does several things mine doesn't: It includes a synopsis of "DX windows" when the moon is in a position to allow communications between your QTH and overseas stations. It also enables you to select a day (or number of days) and the interval between "fixes" during each. A printout option can even provide you a hard copy of the data.

The original program uses 189 lines of GW-BASIC. I doubt that my PC-5 can hold all that, so I took a lot of shortcuts. I still came up with essentially the same results as the PC-version, but with only 40 lines! (See program next page)

If you're used to working in GW-BASIC you're probably not familiar with some of the commands, like MODE, FRAC and SET, and you'll probably be surprised by the functions ASN and ACS. On the PC-5 MODE 4 sets the computer's math functions to work in degrees (rather than radians used in most BASICs). Because of this, MoonTrack will not run on anything other than Tandy/RadioShack and Casio



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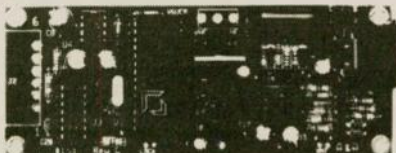


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```

1) MODE 4: X=275: Y=24: Z=360:
   PRINT "MoonTrack": REM BY
   KD5DL, 10/01/94
2) INPUT "LAT (DD.MM)", L:
   GOSUB 3: A=B: GOTO 4
3) B=SGN L*INT(ABS
   L)/FRAC(ABS L)*10/6: RETURN
4) INPUT "LONG (DDD.MM)", L:
   GOSUB 3
5) INPUT "DATE (DDMMYY)", L:
   C=INT (L/100): D=L-C*100
6) E=INT(C/100): F=C-(E*100):
   G=D+1900: IF D<90:G=G+100
7) C=367*G-INT(7*(G+INT((F+9)/12))/
   4)+INT(X*F/9)+ E-694006.5
8) C=C-.5*SGN(100*G+F-190002.5)
   +.5
9) INPUT "UTC (HHMM)",L:D=INT
   (L/100):E=FRAC(L/100)*10/6
10) D=(D+E) /24: X=C+D
12) E=FRAC(.751213+.03660
   1102*X)*Z
14) F=FRAC(.822513+.036291
   6457*X)*Z
16) G=FRAC(.995766+.0027377
   7852*X)*Z
18) H=FRAC(.974271+.033863
   1922*X)*Z
20) I=FRAC(.0312525+.036748
   1957*X)*Z
22) J=E+.6580001*SIN(2*H)+6.2
   89001*SIN F
24) J=J-1.274*SIN(F-2*H)-.186*SIN G

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26) J=J+.214*SIN(2*F)-.114*SIN
   (2*I)
28) J=J-.05900001*SIN(2*F-2*H)-
   .05700001*SIN(F+G-2*H)
30) K=I+.6593*SIN(2*H)+6.2303*
   SIN F-1.272*SIN(F-2*H)
32) L=5.144*SIN K-.146*SIN(I-2*H)
34) M=ASN(COS L)*SIN
   J*.397821+SIN L*.917463)
36) N=COS J* COS J/ COS M
38) O=(COS L*SIN J*.917463-SIN L
   *.397821)/COS M
40) P=ATN(O/N): IF P=0 THEN 48
42) IF P>0 THEN 52
44) IF N<0:P=180+P: GOTO 54
46) P=360+P: GOTO 54
48) IF N<0:P=180: GOTO 54
50) GOTO 54
52) IF N<0:P=P+180: GOTO 54
54) Q=.065709822* C
56) R=D*Y*1.00274+6.64606+(Q-
   INT(Q/Y)*Y)
58) R=(R-INT(R/Y)*Y): S=(R/Y)*Z-P
60) T=S-B: IF T>Z:T=T-Z
62) IF T<=0:T=T+Z
64) U=ASN((SIN A* SIN M)+(COS
   T*COS M*COS A))
66) W=ACS((SIN M-(SIN A*SIN U))/
   (COS U*COS A))
68) IF SIN T>=0:W=Z-W
70) SET F1: PRINT "AZ=";W;"
   EL=";U: GOTO 9

```

mas and Happy New Year, from my shack to yours! WR

•••

How are your phonetics? We regularly hear amateurs using any word that happens to pop into their head at the time they need phonetics. The Military, Police and Fire Operative, Commercial and General Aviation and other professionals all use the current official phonetic alphabet. We are amateurs in a sense, but should we be any less professional? The phonetic alphabet is in the forward section of every *Callbook*. —South Brevard ARC, Melbourne, FL

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pocket computers unless these functions are translated back to the appropriate computer's BASIC.

FRAC is a nifty shortcut that returns only the fractional part of a number and SET F1 is a way to have the answer printed to only one decimal place. ASN and ACS stand for arcsin and arccosine, respectively.

To test the program run the following example. Set LAT (latitude) to 38.30 and LONG (longitude) to 121.30. The decimal is not really a decimal point, but rather a separator to designate degrees and minutes. Also remember that Northern and Western hemispheres are entered as positive numbers, Southern and Eastern as negative numbers (the same way we did it in the "Great Circles" and "Suntrack" programs in previous issues).

Set the date to 251294 (December 25, 1994) and the UTC to 1600. The program should compute the moon's azimuth as 222.4 degrees (from true north) and elevation as 38.3 degrees.

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This example could be handy if, for instance, you're lucky enough to have Santa bring you the parts for an EME station Christmas morning. If you get up early enough, and assemble the parts fast enough, you stand a good chance at making a moonbounce QSO before the kids wake up. Merry Christ-

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A special volunteer

**SISTER ALVERNA
O'LAUGHLIN, WAØSGJ**

There are hundreds and hundreds of great folks who share their hobby of Amateur Radio with people who have physical disabilities by volunteering in the HANDI-HAM program. However, there is one person I just have to tell you about, a person so generous with his time and patience that he really is an ambassador for Amateur Radio.

Dave Justis, M.D., KNØS, is a mem-

ber of the Emergency Physicians Professional Association, practicing in the Twin Cities. Although he practices that most urgent kind of medicine in the emergency room every day, he also teaches others, and does research that will someday lead to healthier lives for all of us.

In spite of his busy schedule, "Doctor Dave" has been a stalwart supporter of the Courage HANDI-HAM System for many years, donating something so valuable that we really couldn't have done without it: himself!

Doctor Dave was introduced to HANDI-HAMs by the late Ward Jensen, WØTLE, in 1976. Since then, he has been a tireless volunteer in the cause. Among his activities are installing and building antennas, setting up stations, teaching theory, and adapting gear for use by people whose disabilities keep them from operating it in the usual way. Always an active on himself, KNØS is often found working QRP DX.

In 1984, HANDI-HAMs selected Doctor Dave to be the recipient of the Founder's Day Award at the Spring Convocation. He was cited for his generosity, and during the ten years since, he has continued this fine tradition. To really understand this ongoing commitment, you have to know about Radio Camp. Radio Camp is a week-long opportunity for people with physical disabilities or sensory impairments to learn Amateur Radio in a completely adapted setting. Sponsored by the Courage HANDI-HAM System, these camps are given twice each year, one in northern Minnesota, and the other in southern California. Campers leave the protected confines of their homes and venture out to a new world of radio and friendship. Courage Center, a non-profit agency, could never afford to offer such programs without the help of generous volunteers like Doctor Dave, who has donated his services at an amazing 35 camps!

I recall one time when Doctor Dave's quick action averted a serious illness. The camper had developed flu-like symptoms, but after observing him, Doctor Dave suspected internal bleeding... a life-threatening condition. His diagnosis was quickly confirmed in the emergency room of a nearby hospital, and a near-tragedy was turned into a complete recovery.



Dr. Dave Justis, KNØS

Some time later, the camper wrote, "My family and I will be forever grateful to you, Doctor Justis. . . ."

Doctor Dave's playful spirit seems to buoy those whose health concerns would otherwise weigh them down, enervate those who find studying theory a drag, and calm those who worry about testing day. Always ready with a story to fit the occasion, he smiles at you and your problems seem to take a back seat. This is especially useful in the Extra Class theory course that he teaches at every camp. When blind students might wonder what a capacitor or a dipole could possibly be like, Doctor Dave encourages them to "see with their fingers... a collection of components and homebrewed antennas that he delights in sharing with his students.

Although I've told you about one very special volunteer, he is only one of many men and women who donate their time, talent, and energy to the Courage HANDI-HAM System. All of our volunteers help in their own ways to share our wonderful hobby of Amateur Radio with people who have physical disabilities or sensory impairments. It is my hope that all be recognized as the very best examples of "hams helping hams."

If you are interested in finding out more about the HANDI-HAM program, a service of non-profit Courage Center, or the upcoming HANDI-HAM Radio Camp in Malibu, California, in January 1995, please contact: Courage HANDI-HAM System, 3915 Golden Valley Road, Golden Valley, MN 55422, 612/520-0515, Internet: pat.tice@giz.com WR

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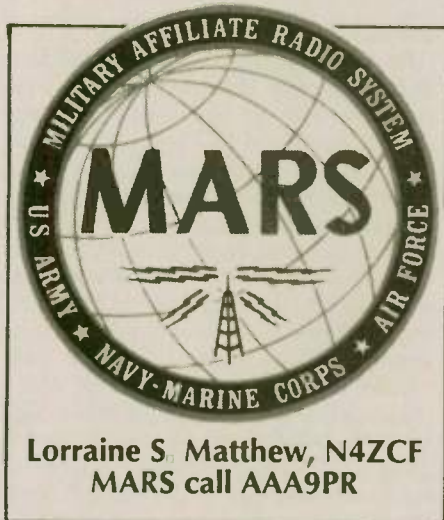
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Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

With the approach of the holiday season, 1994, the title of this column takes on deeper meaning with Army MARS serving troops in the United States, in Europe, in Korea and Japan, in the Middle East, and, most recently, in Haiti. Indeed, Army MARS serves side by side with the units in all of these locations. Army MARS stations are set up wherever the need exists.

In the case of deployments to Haiti for Operation Uphold Democracy, 19 Army MARS call signs were initially issued to the deploying units even before they left. That number included Army logistics support vessels sailing to Haiti. Army MARS stations in all states have been alerted to be ready to respond to these stations as they set up in Haiti.

At this writing, the full range and extent of the Haitian Army MARS operation can only be estimated. As was done in Somalia, the communications personnel and Army MARS will need to determine the best way to bring all systems into operation. It is expected that phone patch communications will be brought on line first. Message traffic patterns will be established as soon as transmission and delivery modes are established.

With the coming of this holiday season, the efforts of all of us in MARS and all operators outside MARS will be needed to make this year's *Operation: Holidays* a success. Again, we have thousands of families separated by circumstance and distance during this holiday season. Again, America's Amateur Radio operators can show our friends and neighbors a unique and unusual way to send greetings to loved ones far away. What about service to strangers? Of course we serve thousands of people we don't know, all the time. According to a sign I once saw, "A stranger is a friend I haven't met." Let's show all these

friends what Amateur/MARS radio communications can do for them.

The emphasis of *Operation: Holidays* on message traffic in no way detracts from the very popular and valuable phone patch service for which Army MARS is famous. We must remember one factor, however. Phone patches only offer one-way contact. They must be originated by a military person who has been deployed to a location outside the United States. The family or loved one cannot call back. This is the gap closed by the availability of messages called MARSgrams. MARSgrams can be sent to military personnel anywhere they are located — inside the United States or deployed as they are to locations around the world. This is the gap that Army MARS hopes will be filled by *Operation: Holidays*.

For the fourth year, *Operation: Holidays* is being sponsored by Army MARS in order to acquaint the military families and friends as well as the general public with the availability of two fine systems that are free for their use. The National Traffic System is a well-defined message system for use, primarily, for civilian-to-civilian sending and delivery. The MARS systems, as set up under the auspices of each service, handle traffic in which either the sender or the recipient must be an active military person. Both systems use networks of highly trained radio operators to relay the messages from the sender to the recipient quickly and efficiently. Several modes of operation may be used to keep the traffic moving. Army MARS, in particular, has expanded the number of modes used in its normal operations. All of these modes will carry the greetings of *Operation: Holidays* around the world.

The requirements for the messages are similar in both systems. The receiving operator must know FROM whom the message is being sent and TO whom it is being sent with the complete ADDRESS. TELEPHONE number of the recipient is highly desirable. Message length can average 30 words. Most people are surprised with how much can be said in 30 words. The text of the messages may not be business related.

These message services are available all year long and are always free. The experience that the Amateur operators and the MARS operators gain through

the handling of messages serves the public in most important ways. This service is vital to public safety and welfare because it is the handling of message traffic that keeps both systems operating at peak efficiency, and keeps the operators, themselves, highly practiced for those times of emergency and disaster when their skills as communicators come into high demand.

By inviting all people everywhere to participate in the use of the NTS message system and the MARS message system, it is hoped that the general public will come to realize what a valuable national asset each of the segments of radio communication represents. With increased public interest can come increased public support. With increased public interest can come increased participation as new hams and, hopefully, new MARS members. With increased public interest can come greater participation within the ham community itself. A percentage of newly licensed hams simply drop out and disappear. With an increase in public support and recognition, these hams can become busy, stay interested and develop into seasoned, effective operators.

With the support of the Amateur and MARS communities, *Operation: Holidays* can bring joy and warm feelings to thousands of people — people who might otherwise be lonely this holiday season.

Army MARS has set up stations and served our military personnel all over the world. Army MARS will continue to do so whenever the need arises.

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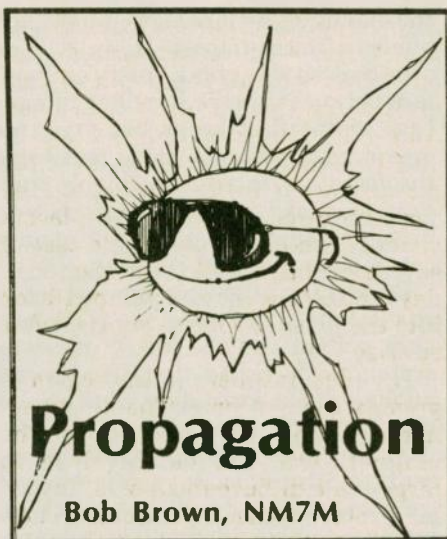
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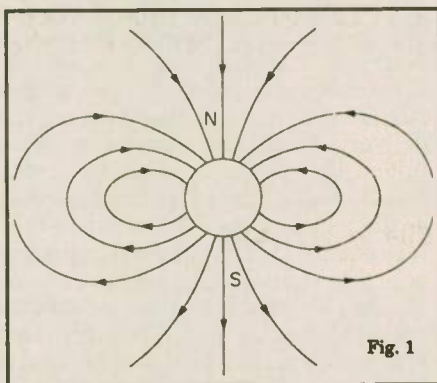
It's time to talk about the ionosphere again but now I want to call it a "medium." Of course, it is a real physical system and I have deep faith in it even though it's wispy and seems fickle at times. I even have a good feeling for how it is working on any given day and can make meaningful calculations about how it treats the messages we try to send with it.

Of course, we really don't need a medium; in 1873, Maxwell showed that electromagnetic waves can propagate across a vacuum and was even able to predict their speed, some 300 million meters per second. That figure probably applies to starlight more than anything else, coming across light-years of nothing in our galaxy, maybe with only a lonesome electron in each cubic centimeter. Even with that, optical and radio astronomers have to put up with a bit of "medium" when light and radio signals finally reach us. Thus, sunlight is refracted or bent by about a half-degree at sunrise and sunset when it goes at a grazing angle through the atmosphere. But that's way up there at the frequencies for light, say a million GHz (!).

For amateursatellite work, there's more refraction of signals on 2 GHz but not working up there on UHF satellites myself, I'm hard put to give a figure for its magnitude. Like the sun, the amount would be greatest when the satellite is on the horizon, coming into or going out of view. More in line with my experience are the simple HF satellites, RS-10 and RS-12. Since their link frequencies are low, say 21-29 MHz, small refraction effects are not the way to describe the problem. Instead, it's more like getting the signals through the ionosphere as the "opacity" of the ionosphere varies during a the solar cycle, being essentially transparent at those frequencies at solar minimum and much less so at solar maximum.

In a sense that last statement begins to define the role that our medium, the ionosphere, plays for each and every one of us. There are those who operate on frequencies where signals can go back and forth through the entire ionosphere, while there are others whose signals are confined to its lower reaches. Thus, it would seem that for some, it's a "whole loaf" while for others, it's only "half a loaf." That's not quite true; let me show you why it's a "whole loaf" for all of us.

For the longest time, say 50 years or so, radio communications were limited to the bottom-side of the ionosphere and the radio literature showed it. I won't say it was a matter of survival but all serious attention was directed toward finding out how it all worked. Thus, starting in the late, '20s, ionosondes came on the scene, bouncing RF waves or rays off the ionization overhead. Electromagnetism, both experimental and



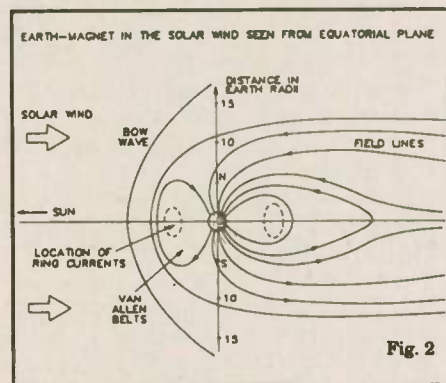
theoretical, was the vogue.

The principal theory at the time was due to Sir Edward Appleton, the British radio scientist who invoked the earth's magnetic field to explain the doubling of scope traces from ionospheric echoes. One trace, for the ordinary ray, is what would have been expected in a free-electron theory of the ionosphere and the other trace, for the extra-ordinary ray, resulted from an interaction of RF with ionospheric electrons spiraling

around the geomagnetic field.

So the earth's field complicated ionospheric theory but the field itself was considered to be like that of a simple dipole, as shown in Figure 1. And except for the local atmospheres at the earth and the sun, the 93,000 miles of space between the sun and the earth was considered to be empty. So solar ultra-violet radiation crossed that vast expanse, finally encountering the earth's atmosphere and creating our ionosphere.

After WWII, the exploration of "space" just exploded. First, there were high-altitude balloons, then rockets and finally satellites, all probing where only radio signals had been earlier. From those studies, the interaction of the two main "players" (for the want of a better word), the solar spectrum and the earth's atmosphere came to be understood. All of that was what might be called the "photo-chemical changes solar UV pro-



ducing photo-chemical changes in our atmosphere and creating the ionosphere, something like "action at a distance."

While there were clues during the previous hundred years or so, say geomagnetic storms after solar outbursts, it wasn't until deep space exploration got underway that the "void" between the sun and the earth was filled and the earth's magnetism was linked to the flow of ionized material coming from the sun, the "solar wind." Not only were puffs and blasts of solar plasma related to magnetic storms and the concurrent ionospheric counter-parts, but the steady flow was also responsible for changing the very shape of the geomagnetic field, from the simple dipole configuration shown in Figure 1 to that in Figure 2.

That last figure is a snapshot of the geomagnetic field, showing how lines of force are compressed on the sunward side and dragged out behind the earth. The physical theory behind that "Big Picture" is quite complicated and need not concern us at this point in the discussion. Our interests are strictly local,

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close in to the earth, say within 300 km of its surface and on the feet of the magnetic field lines. What happens there affects radio communication, especially on the HF bands. So let's look into that.

First, I think I've told you endless times that the geomagnetic field controls the ionosphere, making ionospheric electrons gyrate around field lines instead of taking off on ballistic trajectories once they're released by solar ultra-violet radiation. Now if you look at Figure 2, you can see three magnetic field regimes. Close to the earth is something that looks like the dipole field you remember from high-school science classes. True, it's a bit misshapen but field lines come out of the Southern Hemisphere, cross the magnetic equator and then go back down into the earth again in the Northern Hemisphere.

That region is the one which contains the Van Allen radiation belts, energetic electrons and protons trapped in the geomagnetic field. The electrons, say with 50 KeV energy, not only gyrate around the field lines in a microsecond or two, just like our ionospheric electrons, but also have a 0.25 second bounce motion between hemispheres as well as a slow drift motion in longitude.

Ionospheric electrons are no different; when created close to the earth by solar UV, they will execute similar motions, "sliding" up and down field lines or drifting but at much slower rates. There is a major difference, however; the ionospheric electrons are far down on the energy scale and may recombine with positive ions while passing through the denser portions of the ionosphere. Thus, while it is illuminated, the trapping region fills up with ionospheric electrons coming up from below but when darkness sets in, the electron population starts to decline as the ionospheric source is shut off, electrons slowly recombining with positive ions when down deep in the ionosphere.

What I've described applies to field lines which go out to about 6 earth-radii (Re). The region beyond that, say 8-10 Re from the earth's center, is similar but trapping or containment of electrons is not as durable. The reason is that those field lines are subject to ef-

fects from the solar wind, high-latitude field lines on the front of the magnetosphere occasionally being pulled back toward the magneto-tail, taking their supply of electrons with them.

When that happens, field lines at a high latitude site may no longer be closed and thus unable to retain or hold onto electrons created at ionospheric heights. Needless to say, the F-region at such latitudes will not support much HF propagation as the critical frequencies will fall catastrophically when the electrons disappear.


Like just about everything in this world, the region we're talking about has a history and a name, the plasmasphere. As for history, it was discovered by a group of Russians, led by K.I. Gringauz, back in the early '60s. In essence, it's the toroidal region out to 6-8 Re which serves as a reservoir for the ionosphere, maintaining the F-region at night.

While the simile is not the best, it's like a toroidal shaped balloon containing an "electron gas". If the surface of the balloon is ruptured, the gas will leak out, first from the field lines close to the hole in the balloon's surface. If, for some reason, the hole is sealed before the balloon is completely empty, it can be filled up again but only by puffing on the fill-tube at its base.

For the plasmasphere, ionospheric electrons leak out when field lines are "broken," i.e., no longer "closed" and going from one hemisphere to the other. The severity of an ionospheric disturbance will depend on the extent to which effects due to the solar wind penetrate past the normal boundary, the plasma pause.

In terms of latitudes at ground level, the range of an ionospheric disturbance depends on the depth of penetration or "breaking" of field lines. And since the reservoir is filled by steady solar UV, the duration of the disturbance is really nothing but the time required to refill the plasma sphere with electrons. In the case of severe storms, it could be measured in days; electrons slowly pumped back into the plasma-sphere, sunrise after sunrise.

The plasmasphere is the region of greatest concern for us. The other magnetic regions, the polar cap or the magneto-tail, become involved in large-scale disturbances also, say solar proton events or aurorae. Their field lines, out there where the solar winds blow, are buffeted around all the time, and make for less stable propagation than deeper in the ionosphere. We'll deal with them in the near future. For the moment, just think about what I've mentioned above and see how long it takes the ionosphere to recover after a major magnetic storm. If you listen hard, you might hear those field lines rejoining and the plasmasphere filling up all over again. Think about it! WR

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QRP: 'Twas a very good year

By any measure, 1994 was an extraordinary year in QRP. Interest in low power operations has enjoyed almost astronomical growth in the past five years, or so. But this year, in spite of very poor band conditions, QRP seems to be riding a crest of unparalleled popularity. Consider:

Clubs, clubs, clubs.

The two major North American QRP groups — QRP Amateur Radio Club International and Michigan QRP Club — now have lots and lots of company, with more than a dozen regional groups nationally and in Great Britain and Canada, adding the names of hundreds of operators to the rosters of low power organizations worldwide. Formed this year were the Colorado QRP Club, QRP Society of Central Pennsylvania, WI-QRP Club in Wisconsin, and, as noted elsewhere in this month's column, the GW QRP Club of Wales.

Club activity everywhere was on a fast track with construction projects, on-air activities and top flight newsletters keeping interest higher than ever.

The 1993-94 *Worldradio* QRP Organization Survey, the first of an annual

rundown of organizations from around the United States and the world to be published each January, featured information from 14 groups that responded to our survey questionnaire. The 1994-95 survey is in the works and will appear in next month's *Worldradio*, with some notable additions and some deletions.

Homebrewing

Two excellent club homebrew projects injected new life into QRP building — Northern California QRP Club's

Changes at QRP ARCI

While QRP ARCI is still the granddaddy of U.S. QRP organizations, it too went through major change in 1994:

Les Shattuck, WN2V, was named its new president and is already laying the groundwork for injecting new life into the fledgling 30-year-old club.

Cam Hartford, N6GA, took over as the club's contest chairman and has worked hard this year to publish test results in *QRP Quarterly* tallied from



This prototype version of Northern California QRP Club's "Sierra" multiband QRP transceiver kit was used by Cam Hartford, N6GA, on a summer trip to Switzerland.

"NorCal-40," and the QRP Club of New England's "40-40." Each of these single band QRP superhet CW transceivers was superbly designed, packaged and distributed by the clubs, paving the way for hundreds of QRPers to enter, or rejoin the world of QRP homebrewing rather inexpensively. The projects were reviewed in *Worldradio's* QRP column (the "NorCal-40" in February; the "40-40" in July), and kits are still available in some form.

In October, the Northern California QRP Club began shipping its eagerly awaited "Sierra" multiband CW transceiver kits to those who had pre-ordered them. This beautiful rig will be the subject of a comprehensive review in these pages in early 1995.

data he found gathering dust for several years.

Doug Hendricks, KI6DS, was named to the club's board of directors, and many club members are hoping he brings the energy to QRP ARCI that he used to help make the Northern California QRP Club one of the fastest growing and best managed QRP clubs in the world.

QRP books

Thanks in great part to a tremendous response from *Worldradio* QRP column readers, the renowned *HW-8 Handbook*, compiled by Mike Bryce, WB8VGE, was reprinted in late January after being out of circulation for several years. A query about the handbook from a *Worldradio* reader

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prompted a write-in campaign expressing interest in a reprint. Bryce was made aware of this groundswell of support, and responded with a hefty 1994 press run.

Rich Arland, K7YHA, came out with *Low Power Communications, Volume 2*, featuring advice on QRP operating practices and techniques from a virtual "Who's Who" of QRP. A review appeared in the *Worldradio* QRP column in August.

QRP gear manufacturers

TEN-TEC continued making headlines this year with the introduction of a line of kits for the QRP homebrewer ranging from direct conversion and regenerative receivers to an SSB-CW-FM 6 Meter transverter.

The company also introduced the Argo 556, a QRP version of its popular Scout 555 SSB-CW transceiver. Each has plug-in modules for bandswitching and quickly got the attention of low power operators who have looked to TEN-TEC for QRP products over the last 20 years. Jade Products, of East Hampstead, NH, came out with a line of simple kits for the QRP'er, including a lead-acid/gel cell battery charger (reviewed here in April) and J-pole antenna for VHF use (reviewed in October).

Silent key

1994 saw the passing of one of QRP's real giants, Luke Dodds, W5HKA, who left a legacy of good will and tremendous dedication to low power operations. He was the long-time secretary/treasurer to QRP ARCI, the U.S. representative to Great Britain's G-QRP Club and a kind and patient host to all who visited him at his Texas station.

QRP at Dayton

By all accounts, the QRP contingent at the 1994 Dayton Hamvention in late April-early May enjoyed one of the best gatherings ever — despite monsoon-like weather. Forum speakers included the Rev. George Dobbs, G3RJV, who spoke on QRP construction; Paula Franke, WB9TBU and Randy Rand, AA2U, speaking on QRP DX-peditions; and Jim Fitton, ZW1FMR, Chuck Adams, K5FO, and Doug Hendricks, KI6DS, who gave listeners advice on setting up, operating and maintaining QRP clubs.

Welsh QRPers join hands

Two Welsh radio amateurs, Leighton Smart, GW0LBI, and Dave Griffiths, GW0JUI, have formed the GW QRP Club, according to a dispatch from Leighton's Trelewis-based station. "It is envisaged that the club will be run on

an informal basis — no subs (subscriptions) or structures, just a local (Welsh) group keeping in touch via low power operating," Leighton said. At the moment, membership is by invitation-only, in an effort to keep maintenance of the organization manageable.

However, there are four GW QRP awards being offered to QRPers everywhere.

For the "Worked All Wales QRP" and "Worked All Wales Milliwatt" awards, applicants must have worked each of the eight counties in Wales with power of five watts and less for the QRP award, and one watt and less for the milliwatt award.

Counties include Mid Glamorgan, West Glamorgan, South Glamorgan, Powys, Dyfed, Gwynedd, Clwyd, and Gwent.

Amateurs who contact at least 25 European countries using QRP will be eligible for its "Worked All Europe QRP" award. And for the "Worked British Countries" award, QRP contacts must be verified with Wales, Scotland, Northern Ireland, Isle of Man, Guernsey, Jersey and England." Applicants must send a list of contacts with all log details, verified by another amateur, plus a 12-inch by 10-inch envelope, and one IRC.

GW QRP Club membership is "grow-

ing at a healthy rate with some interest being shown locally by operators who are now trying QRP for the first time. That's the main aim of the club, really, I guess," Leighton said. "It seems to be working so far, anyway."

Updated QRP Catalog Compendium

Many, many QRPers in the last year have written to obtain the 1993-94 *Worldradio* QRP Catalog Compendium, a listing of sources for parts, accessories and literature of interest to low power operators.

Now there's an updated and expanded Volume II, free for the asking. Since April 1993, the *Worldradio* QRP column's "Catalog of the Month" feature has been listing the names, addresses and telephone numbers of these parts houses and companies individually. For the second year, they've been compiled in a master list that is yours free by sending an SASE to the address at the head of this column. I'll get the 1994-95 QRP Catalog Compendium to you right away. And once again, you're invited to send in your discoveries of sources for use in an upcoming "Catalog of the Month," and in future catalog compendiums. **WR**

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If you've been having trouble finding new DX YLs lately, you might want to check into the YL "222" DX Net, Mondays at 0600 UTC, on 14.222 MHz. You can usually find YLs from three or four continents, with some fairly rare prefixes. The NCS is Dave Johnson, ZL1AMN, of Papakura, New Zealand. Dave and his wife Aola, ZL1ALE, are active in both YL-ISSB and YLRL ac-

tivities and have attended several of the conventions. They are active in their local Amateur Radio club, which has 103 members, including 24 YLs. That's a very high proportion of YL members, and I'd be interested in hearing from any clubs that have a higher percentage of YLs.

The VK and ZL YLs participate in YL Activity Day on the 6th day of each month. You can often find them on 3.588, 14.288, 21.188, or 28.588 MHz. Just call "CQ-YL" on these frequencies or any frequency ending in 88 on the hour.

BYLARA awards

The British Young Ladies Amateur Radio Association (BYLARA) offers some beautifully designed awards for working its YL members. (There are several OM members of BYLARA, but contacts with them don't count for any of these certificates.) The basic certificate is the BYLARA Award, which requires Europeans to work 15 YL members of BYLARA, including 10 British YLs (G, GM, GW, GI, GD, GJ, and GU). For those outside Europe, 10 BYLARA YL members, including 6 British YLs are required. For the Advanced BYLARA Award, Europeans must work 30 YL BYLARA members, including 20 British YLs. Outside Europe, 20 YL BYLARA members, including 12 British YLs, must be worked.

The Scottish BYLARA Award requires Europeans to work 6 YL BYLARA members, operating with the GM prefixes. Outside Europe, everyone must work 4 YL BYLARA members, with a GM prefix. These certificates are available to all YLs, OMs, and SWLs. No QSLs are necessary, but BYLARA membership numbers, dating from September 1, 1988, must be included. Send log data, signed by applicant, with a fee of £1.50 sterling, 8 IRCs, or US\$4 to Ella Tugwell, GØFIP, 67 Upper Kingston Lane, Shoreham-by-Sea, Sussex BN 43 6TG, England.

YL scholarships

The Foundation for Amateur Radio, Inc. (FAR) has announced the 1994 recipients of the fifty scholarships that it administered this year. Stefnee "Doc" Lindberg, NØONP, who will be studying Computer Engineering the University of Missouri, was awarded the Young Ladies' Radio League \$1,200 scholarship.

There were a total of 37 female applicants and thirteen other YLs were awarded scholarships. Congratulations



Two active SSBers: At left is Minnie Connolly, NAØV. Barb Neiman, KE5ZI, is at right.

—photo by WAØWOF

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to Jennifer Doerrie, KA5WMJ, and Stacy Jones, N5KRRK, who received QCWA Memorial Scholarships; Riva Robeson, N9ESZ, a Radio Club of America Scholarship; Christina Kirk, N3RFI, a Baltimore A.R.C. Scholarship; Jensen Montambault, KC4GPZ, the Victor C. Clark Memorial Scholarship; Erin Roberts, KB3AYH, the Frederick A.R.C. Scholarship; Karen Schneider, N9SVA, and Amy L. Tlachac, N9TLN, WARAC Memorial Scholarships; Shandi Haymore, KB7IYY, the Kevin Barry Perdue Memorial Scholarship; Kresta French, N3NMG, the Murgas A.R.C. Scholarship; Victoria Crawford, N4XDR, and Catherine Winfrey, N4MYF, Virginia Beach Hamfest Scholarships, and Pamela Cooper, KC4QJM, the Martin Co. A.R.A. Scholarship.

Information on applications for 1995 scholarships, which are administered by FAR, will appear in the March or April issues of the major Amateur Radio publications and radio club newsletters.

YL meetings

Approximately 75 members attended YL-ISSB's annual convention in Strasburg, Pennsylvania, on 23-26 June. On Friday morning, the group boarded

a bus for Gettysburg and visited the FCC facility, where they were taken on a guided tour. Next on the agenda was a visit to the Gettysburg battlefield. The group first went through the museum and saw a lighted map of the battlefield; then they were driven through the actual battlefield, while a guide explained what had happened at the various sites.

President Flo Reitzel, KU7F, opened the annual business meeting on Saturday, where ideas on how to keep the system running smoother were discussed. The facilities and activities planned for the 1995 convention in Portland were also described. The banquet was held Saturday night, where the Rigel trophies were presented, and the evening entertainment was capped off with some superb organ music, dancing, and singing.

One of the oldest regional YL clubs in this country is the Texas Young Ladies Round-Up Net (TYLRUN), which just celebrated its 40th anniversary in Commerce, Texas, on 23 and 24 September. Special guest of honor was charter member Helen Douglas, W5LGY. At age 90, Helen is still an active member of TYLRUN and checks into the TYLRUN Net from her nursing home. Myrtle Stinnett, WB5FGM, is the current President and is NCS for the TYLRUN Net, which meets each Thursday morning, at 1400 UTC, on 3.942 MHz. YLs in any state are invited to join TYLRUN. To qualify for membership, just check into three consecutive nets.

YL Updates

Mady Langdon, KA6ZYF, and her husband Terry, W6G3MHV, traveled for five weeks in Russia in May and June, covering eight time zones and operating from every city they visited. Mady's Russian call sign was UE9WTL, and Terry's was UE9WML, and they could use these calls anywhere within the Russian Federation. In some

cities they used reciprocal calls: R3/for Nizhny and Moscow, R9/for Ufa, and R0 for Kyzyl. They received the first reciprocal licenses ever issued to foreigners in Kyzyl.

Twenty-one Italian YLs operated from 17-26 September, using the call sign IU0YL, to celebrate the 25th anniversary of the Italian YL Radio Club "Elettra Marconi." If you worked at least five of the YLs, you can apply for the special award, a fabric pennant with the club's symbol. To apply, send US\$13 and your log, containing your full name and the usual info to Adriana Parducci, IK5MEQ, via Di Tiglio 183, S. Margherita 55066 Lucca, Italy. (QSLs go to the homecalls of the YLs contacted, and special QSLs will be mailed, beginning in October.)

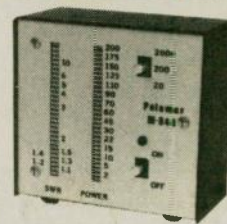
This club is named in honor of Elettra



TYLRUN president Myrtle Stinnett, WB5FGM. —photo by WA0WOF

Marconi, the daughter of Guglielmo Marconi and his wife Christina. Elettra's mother died on 15 July 1994, and Elettra will be carrying on her work. 1995 has been designated "The Year of Guglielmo Marconi" in Italy as it is the centennial anniversary of the first wireless telegraph transmission. WR

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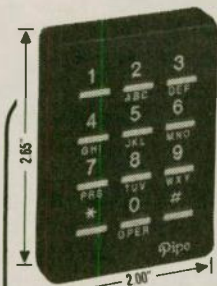
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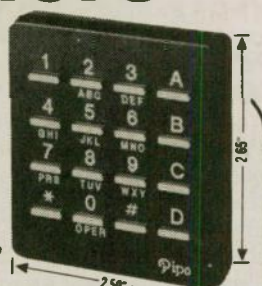
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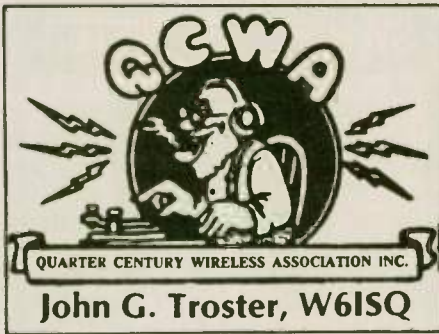
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Scholarships

QCWA is honored to announce its 10 - \$650 scholarship winners for the coming scholastic year. All members should be proud of this scholarship program which is supported by donations from QCWA members to the QCWA Scholarship Fund. Each recipient was sponsored by a QCWA member. They are:

- David Case, KA1NCN, Hampton, CT, who will attend Bard college as an International Relations and Electrical Engineering major. Sponsored by W3EP.

- Jennifer Doerrie, KA5WMLJ, Booker, TX, will study law at Tulane. Sponsored by W5IEA.

- Andrew S. Faiola, N3GLA, Silver Springs, MD, will be a graduate student at George Washington University as an International Affairs major. Sponsored by W3GN.

- Kurt R. Fuller, NØROP, Fenton, MO, will study Aerospace Engineering at Embry-Riddle Aeronautical University. WBØPO was sponsor.

- Joshua E. Hodges, KC4HTJ, Screven, PA, heads for Vanderbilt University to study BioMedical/Electrical Engineering. Sponsor was W8TWB.

- Stacy S. Jones, K5KRRK, Harrison, AR, is going to the University of Arkansas and will study Computer Information Systems. Sponsor was W5KL.

- Timothy D. Mah, N9JYM, Buffalo Grove, IL, will major in music at North-western. Sponsor was K9PNG.

- Peter S. Wycoff, KA3WCA, Washington Crossing, PA, was awarded the Ralph Hasslinger Memorial Scholarship. He will continue his Electrical Engineering studies at University of Pittsburgh. Sponsor was W2UAE.

- Matthew W. Minney, N8PGI, Shock, WV, Received the Max Jacobson-Jack Kelleher Family Scholarship. He seeks an Education degree specializing in mathematics and social sciences. Sponsor was AF8B.

- Douglas P. Regulinski, N2QAN, Stony Brook, NY was given the Leo Meyerson Family Living Scholarship. He will major in Plant Sciences at Cornell. Sponsor was W2AAF.

As in years past, these students were selected for QCWA by the Foundation for Amateur Radio Scholarship Committee. FAR selects scholars for many organizations. Leland (tench-hut) Smith, W5KL, is the Chairman of the QCWA Scholarship Committee. Hearty thanks are well deserved for the fine work he and his committee are doing in this excellent QCWA project. Scholarships are funded by interest received from investments of the Scholarship Fund. Now, in case you didn't figure it out, that means, the more dough in the fund, the more interest it generates, equaling more scholarships. You can participate in this rewarding work by sending a donation of any amount to Scholarship Fund, QCWA Headquarters, 159 E, 16th Avenue, Eugene, OR 9701-4017.

Lew McCoy, W1ICP, President, QCWA

A couple of years ago at a QCWA Board meeting, I think it was, I passed a little "spit and whittle" time with Lew McCoy, W1ICP, who by the time you read this, will have been inaugurated as the next president of QCWA. We were talking about Old New Mexico, where he lives, the history of mining, colorful stories of lost mines, ranching and Indian Wars of over a century ago. We gradually worked our way up across New Mexico and Arizona, and on north through Nevada and across Utah over to Colorado. By this time we had covered some great adventures of the old west. Then Lew said, "Did you know my grandfather was at Little Big Horn?" "No foolin," I replied. "How did he get away? Was he in a baggage train in the rear somewhere?"

"Oh no," said Lew, "his side won!" Since not many Indian names start with McCoy, I figured that I should get a bit more information. Recently I had a chance to hear more of Lew's story and here's how it goes. His Scots-descended grandfather McCoy, returned home to the hills of West Virginia after the Civil War to find that a feud had started between the Hatfields and, you got it, the McCoys, his very family. He'd had enough fighting for a while, so he and three brothers took off for the West. There they signed up in the U.S. Army as soldiers with General Crook who was Indian fighting throughout the southwest. After General Crook completed his campaign the McCoy boys went back to Illinois and began farming. Lew's

grandfather, John McCoy, brought with him from the western country his wife, the daughter of the Arapaho brave who was at Little Big Horn.

Lew's dad was raised on the farm, and later migrated to the Big City, Chicago, where he went to work for the Edgewater Beach Hotel. You may fondly remember that name. During the '30s and '40s, all the Big Bands broadcast from there.



W1ICP on the air from the home QTH. —Photo W6ISQ

Lew's father was Chief Engineer of the Edgewater. Lew says his earliest memory, at age four, was the raspy roar of a rotary spark gap transmitter that his father operated. He wasn't an amateur, but he had the spark.

Lew did the usual high school things, but also a few not usual things, like work in a magic shop. Houdini was a patron and so was Thurston who taught Lew the basics of the slight-of-hand theatrics. Lew practised continuously and even became a professional magician—his speciality was "color change." Ask Lew to demonstrate, or at least explain, that one next time you see him.

Lew finished high school at Englewood, and then went off to Indiana University to study Ichthyology. And that's no fish story. You see, Lew also had worked in the Chicago Shedd Aquarium in high school, and really liked 'em. After graduation, Lew returned to Chicago, and married Martha whom he had met back when he was a life guard on Lake Michigan. By the time WWII began, the McCoys had two daughters, and Lew was in the electrical business.

Along the way, Lew heard about Amateur Radio, and it sounded like fun, so after the war, he decided to get an amateur license. At that point, he didn't know any amateurs who could help him, so he just bought an instructograph machine, tapes, an ARRL License Manual and went to work. He received the call W9FHZ

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(Fanny's Handy Zipper) in 1945.

In 1947 he took the big plunge and went to Lake of the Ozarks, Missouri to go into business for himself as an electrical contractor. What did an ichthyologist know about electrical contracting? Nothing. So again, he read a lot of books.

It was then he got a new call, WØICP, and became net control of the Missouri Emergency Phone Net. His home brew rig was a 6L6 - 807 - pair of 810s, modulated by a pair of 805s. Sound familiar to anybody? About this time Lew worked his first DX station, HZ1AB on 10 Meter narrow band FM. Right! His first DX QSO was Saudi Arabia! That did it—he was smitten by the DX bug right then, and has been ever since. In '49 he read a notice in *QST* saying they were looking for someone for the ARRL Headquarters staff. Lew applied and was hired. He was an excellent CW operator, but thinks he got the job because he was a net control for a phone net. Most of the ARRL staff at that time were CW operators except Ed Tilton, W1HDQ, and they thought it would be a good gesture to bring a phone man aboard. So he swapped the number in his call, from a "0" to a "1"

His first job at ARRL was working for Ed Handy, W1FEH, as an Assistant Communications Manager. Then he ran

the code practice program, then moved to the technical department because they needed someone to travel throughout the country to lecture on TVI which was just beginning to haunt Amateur Radio. Because of his experience as a professional magician, Lew was a relaxed and good speaker. Seemed like he'd be just what was needed. He could talk to amateurs at conventions and at the same time, work a little magic to make TVI go away.

Lew moved on through other jobs at the League: Novice editor, Product Review editor, FM editor and into the lab, too. He developed the Moni Match, the first SWR meter. He feels he was probably responsible for a lot of fellas falling off towers while trying to get an SWR reading on the antenna. Then he designed and built the Ultimate Transmatch, which was the first well-known exotic antenna tuner. In all, he spent 32 years at ARRL before retiring and moving to Silver City, New Mexico. His sister lived there and he liked the country and the people, but it may also have been the many good Mexican Restaurants and chiles—Chef Lewigi, y'know!

The McCoy's daughters are well grown up now and just as busy as their parents. Marsha, W1HAQ, is a psychiatrist and lives in Phoenix. Sharon was an

Assistant Secretary for Agriculture in the Carter Administration, later worked in the offices of various congressional folks, and worked also for Robert McNeil of the PBS McNeil-Lehrer Report.

Lew runs a steady stream of projects ranging from western historical research, fabricating Indian jewelry, antique collecting, story telling, Mexican cooking and no doubt several more he was too busy to mention. He accepted an invitation from *CQ* magazine to become Technical Editor and you'll find a McCoy product review or other article by him in almost every issue.

One of Lew's proudest accomplishments is that he and Charlie Mellon, W1FH, are the only active amateurs who have worked all the deleted countries. He's worked all the rest too, with an all-time DXCC score total of 383! Lew's a long-time Life Member of QCWA, having been nudged in by Harry Gartsman, W6ATC, a pretty prestigious start. He's been on the Board since 1982, Veep for 5 years. His personal goal during his presidency: Make DXCC on 160.

Lew is most always on the Sunday QCWA Net on 14347 at 2000Z. When you hear him, check in and let him know you're looking forward to his term as Pres. Remember he is a magician!

73 + 25 Jack, W6ISQ WR

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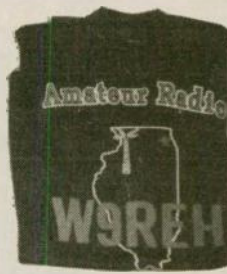
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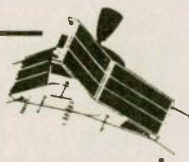
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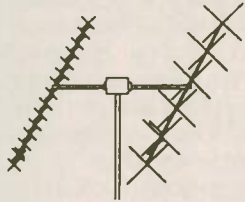
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SEASON'S GREETINGS!

Merry Christmas and Happy New Year to everyone! I hope Santa is good to you this holiday season. And that you receive at least some of the things on your ham radio wish list. In keeping with tradition, this year-end column will feature several "gifts" that are suitable for the active SATOP.

Satellite support

As you have heard me say many times in this column, we enjoy satellite communications due to the efforts of the Radio Amateur Satellite Corporation (AMSAT). In this country AMSAT-NA is our national organization. It is through the efforts of many volunteers working countless hours for AMSAT that the amateur satellite program and SAREX missions remain successful. AMSAT-NA supports us...we need to support AMSAT-NA. How? By becoming a member. Your \$30 yearly membership will go towards current and proposed amateur communications satellite projects. In addition you will receive AMSAT-NA's outstanding quarterly newsletter (more like a technical journal). Trust

me. Thirty dollars is a small price to pay for insuring the future of amateur radio satellite communications. An AMSAT-NA membership also makes a great Christmas gift for the active SATOP.

EZ-packet

In my first book, *Low Power Communications, Vol-1 Basic QRP*, I touted the virtues of using older computer equipment (Atari 600 & 800 XLs, Commodore 64s, TI 99/44s, etc) in the ham shack. Used Commodore 64s can be had for as little as \$50 for an entire system (CPU/keyboard, disk drive, monitor and printer). So why not put these ancient computing marvels to work doing some mundane tasks around the shack?

Obviously the first task that comes to mind is satellite tracking. AMSAT-NA has several programs for older Commodore and Atari machines that will prove their worth and not break the bank. True, they are not as powerful as W9IP's *RealTrak™* or AMSAT's *InstantTrack™* but they will definitely get the job done.

However, I was thinking something more mundane, namely packet radio. MFJ Enterprises offers their Model 1271 which attaches to the user port of a Commodore 64 (or 64C) computer to furnish full TNC functions! Cost: \$49.95 plus shipping. The plug-in module has options for VHF (1200 baud) or HF (300 baud) packet at the flip of a switch. The Model 1271 uses DigiCom 64 software (public domain software not included with the TNC) that loads into the Commodore 64.

Using the Model 1271 you can connect with the local RBBS, pull down the latest Keplerian data for the satellites, then transfer this data to your C-64 tracking program. In addition, by becoming a regular on your local RBBS, you can keep up with all the latest breaking satellite news via the AMSAT News Service (ANS) bulletins and Space News bulletins which are regularly posted on most boards. Not bad for an investment of only \$49.95! Instructions with the Model 1271 are quite complete and the unit comes equipped with a cord that goes between the TNC plug-in module and your data radio. All you have to do is add the proper connectors to the end of the cord and 12V DC (furnished by MFJ 1312 not included) and you are ready for packet radio!

I have used a Model 1271 for over 18 months and have had excellent results. Since my "real" job is teaching vocational electronics to adults, I find that this unit (attached to the back of one of the school's Commodore 64s) is perfect for demonstrating digital packet transmission techniques to my students. In addition, at home in the shack, the Model 1271 purrs along providing full

time packet coverage using an old Kenwood TR-2200A (crystal controlled) 2 Meter radio. The MFJ Model 1271 is an outstanding value for the money and offers anyone interested in packet radio an inexpensive solution to the TNC problem. For more information on this and other MFJ products contact MFJ Enterprises at P.O. Box 494, Mississippi State, MS 39762 (Tel: 800-647-1800).

MiniProp Plus

Several times in the past we have talked about enhanced propagation conditions and RS-12/13. The more you work through this particular satellite, the more often you will experience this much talked-about propagation enhancement. Basically, during times of increased solar activity, SATOPs are able to access the RS-12 Mode-K transponder when the satellite is not above the local horizon. This means DX via RS-12! How do you predict when these enhanced propagation conditions will occur?

MiniProp Plus is the newest version of Sheldon Shallon, W6EL's extremely successful and highly accurate propagation forecasting software. It is wonderfully enhanced and extremely accurate compared to Version 3 which I have used since 1987. One very nice feature is a world map showing the terminator and both the short and long path routes to a selected target area or prefix. The program will run on the IBM PC (XT/AT/PS-2) or true clone that has at least 512 K of memory, using MS-DOS 2.11 or higher and will support CGA, VGA, EGA, MCGA, VGA, AT&T 400 line or Hercules graphics. While not necessary, Sheldon states that a math co-processor is strongly recommended. MiniProp Plus is designed to predict received signal levels between two points on the Earth's surface. It uses a unique algorithm that searches the potential ionospheric modes to find the mode that provides the strongest received signal level.

The program is usable on frequencies between 3 and 30 MHz and will provide a multitude of information including the Maximum Usable Frequency (MUF), relative signal strengths, beam headings for long and short path, local sunrise and sunset times at each end of the path, and much more.

Having used the original MiniProp program for many years, and MiniProp Plus for the last ten months, I can truthfully say that this program takes the guesswork out of working the HF bands. By loading selected parameters obtained from the WWV propagation forecast (18 minutes after each hour on WWV), you can, with extreme accuracy,

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predict the best time and best frequencies for attempting to contact a specified target area or prefix. This will maximize the time spent at the radio, resulting in much more consistent results when working DX. This information can be directly applied to RS-12 by predicting openings on 15 meters (the Mode-K uplink) and correlating that data with the real time location of the satellite using your favorite satellite tracking software.

Order MiniProp Plus directly from W6EL Software, 11058 Queensland Street, Los Angeles, Calif. 90034-3029. Cost is \$60 US and Canada, \$65 elsewhere.

Dual band SATCOM antenna for the mobile SATOP

The Lakeview Company, Inc., 3620-9A Whitehall Rd., Anderson, SC 29624 provided me with their model DBC-1, an outstanding little magmount dual band antenna for the mobile. This little "cellular look-alike" antenna is a very low profile solution to adding a dual band antenna to your favorite vehicle.

I received my DBC-1 dual-bander at the Valley Forge Hamshow in October of 1993. Over the terrible winter of 1993/94 I used this antenna on my new Subaru wagon. Performance was outstanding. The unit acts like a quarter-wave antenna on both 2 meters and 70 centimeters. Using my Icom IC-24AT dual bander in the car (about 3 watts output) and this small antenna, I was able to access all our local V/UHF repeaters in the Wyoming Valley during my drives to and from work. This was a comfort during the worst winter in recent North Eastern Pennsylvania history.

Several times I have used the IC-24AT and Lakeview dual-band antenna to monitor AO-21 when an orbital pass coincided with my driving time. Although I have never managed a QSO through AO-21 (most probably due to my puny 1.5 watts of RF output power), it has been fun to listen in on the action. There is no doubt that if I had more RF power available in the mobile, I would be able to access AO-21's transponder.

The Lakeview Company's DBC-1 dual-band V/UHF quarter wave magmount antenna is outstanding value for money. It's low profile design (it looks like a cellular antenna) and excellent performance make this antenna a good compromise for the mobile ham. At \$27.95 it's an absolute steal of a deal. For further information contact the Lakeview Company at 800-226-6990 (for orders only) and (803) 226-6990 (tech support).

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S&S Engineering's PC-1 counter

Many of us pursue SATCOM (and ham radio in general) using pre-owned (used) equipment. Many times these fleamarket treasures are vintage rigs that lack the sophistication of today's digital "wonderbar transceivers." Of particular interest to us as users of vintage equipment is the new counter/digital VFO readout now offered by S&S Engineering, in Maryland. You might remember that S&S originally marketed their ARK-40 QRP transceiver about two years ago. This highly rugged transceiver has become my station away from home, when I am on the road.

The engineering staff at S&S carried over their rugged construction into the production of their new PC-1 counter/digital VFO. The object of this accessory is to provide the radio amateur with an accurate counter (up to 50 MHz) and a useful add-on to any receiver or transceiver that does not feature a digital VFO readout.

The PC-1 has a row of internal DIP switches that allow the user to program the digital VFO readout to count up or down, and program any offset into the counter to correctly show the frequency of literally any VFO/LO mixing scheme you are likely to encounter.

Hook up on my Ten-Tec Argonaut 509 (my Mode-K uplink transmitter) is simple. Merely pick off the VFO signal from the TX/RX mixer board and feed it into the counter. Since the VFO in the Argonaut is an "up counting" VFO, the only DIP switch that I had to change was the one to enable the "leading zero"

digit so the display would read "040.0" when the rig was tuned to 7.040 MHz (the 40 Meter QRP frequency). Mode-K uplink starts at 21.220 MHz so the display will read 220.0 at the lower band edge of the RS-12 passband. The readout will read either MHz or kHz depending upon the position of the front panel switch. It is recommended that you keep that switch in the kHz position and only read the last four digits of your rig's frequency (a quick look at your bandswitch knob will tell you what the MHz should be). Resolution in this mode is down to the nearest 100 Hz! Not bad for a \$70 add-on digital dial.

The PC-1 comes as a kit for \$69.95 (\$99.95 with case). Compared to the prices listed for other add-on counter/digital VFO readouts that I have seen, this is outstanding value for money. What better way to upgrade an older piece of gear than to add the PC-1 and be right on frequency? I have used the PC-1 on a number of rigs including the Argonaut 509, 515, NorCal-40 and an HW-8. The PC-1 also does well on my Heath Twins (HR1680/1681) providing me with an accurate look at my transmit and receive frequencies. Write or call S&S Engineering, 14102 Brown Road, Smithsburg, MD 21783 (301) 416-0661 or FAX: (301) 416-0963 for further info and a full listing of their products.

Don't forget, when you contact a manufacturer regarding products featured in **Worldradio** magazine, be sure to let them know where you found out about their product.

C U Nxt Yr. 73 Rich

WR

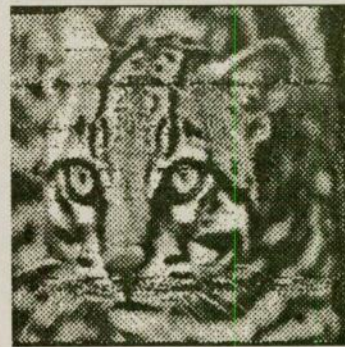
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Search And Rescue

Communications

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

A recent Gordon West, WB6NOA, column concerning mobile TV antennas sparked my interest. Gordon talked about the need to monitor media during emergencies and I would lend my support for this idea.

Let me take this a little farther and even suggest your emergency response group assign someone the duty of "information gathering." We live in an information age. The critics often berate the media but fail to mention that it's a market economy. There must be an audience and money to be made — or the news would fall prey to entertainment programming.

During a gathering of search coordinators two years ago, a lunch discussion focused on media reporting errors. These coordinators (from various agencies) were very critical of "pesky" reporters and "nosey" camera operators, yet when asked where these coordinators turn for information? You guessed it, the media. Many times I've heard search people comment about "last night's news" or "today's newspaper."

What I find ironic are the comments about "poor coverage" or "inaccurate details." More often than not, the details were obtained from someone who did not know the facts, but the "facts" were obtained from someone. Reporters who make up facts don't last long! The key for emergency responders is to provide facts in a controlled way.

I've said it before and it still applies. Saying "no comment" just means the reporter will find "facts" somewhere

else and the "facts" might not be correct. It is better to be polite, explain your function, and be honest. Rather than "no comment," refer the media to people who have correct information!

"Poor coverage" or a reporter's "failure" to mention your search group is often a failure on your part to impart correct information! Reporters have a job to do. They have an editor or producer who wants a story that is on time and covers the assigned subject. Very few editors really care where the information is gathered, as long as it can be attributed and is factual. In reality, "facts" are not consistent among sources! A ground search coordinator will have different perceptions (and facts) than an air search coordinator even though the two are working the same event.

I was recently quoted by two newspapers concerning an air search in progress — yet each story was unique and each presented my "facts" differently. One story was more correct than the other, but while the other was still correct, it wasn't complete. I was the only person to blame.

I had not explained the "facts" well enough so that the reporters understood what was happening.

Despite the differences in the stories, I still believe that publicity is critical to an organization's well-being and morale. It is important that you are recognized for your efforts. It is also important that participants are properly credited. It would have been improper for me to imply that one group was conducting the whole search effort and ignore the Amateur Radio operators, the sheriff teams, the Civil Air Patrol, etc.

Now let's consider the information need on the part of your group. I've been criticized by comm team leaders during an emergency response for repeating information heard on TV or broadcast radio. And then I've been complimented by the people in the field for helping keep them informed.

Here's my spin on information: Gather it, share it, and attribute it. I don't find any fault with letting your people know what is being reported — as long as you state very clearly where the information originated. I do have a problem with conversations that begin "a friend told me she heard from a neighbor." The latter contains no source attribution. It is OK (according to me) to have someone say "KSL News is reporting the fire as controlled" or "KSL reports the fire chief calling for an evacuation."

If you have an operator experienced in gathering and reporting information, I would suggest an information channel — a place operators can find out what is going on. This is good for people involved in the event and for interested bystanders. In short, it's rumor control and controlled information dissemination. As your group grows in size, this is an excellent area to use for training and assignment. Having information is the key to effective communications!

Positive comments

For the past couple of weeks I've been the "alert officer" for Utah Civil Air Patrol. This means when an agency needs CAP for a search mission, I get the first call. I then alert the search teams and make the decision on who runs the mission. If I'm rested and have available time, I could choose to coordinate the effort. After two or three calls in a row, I might call another coordinator to handle things.

In the first eleven days of the month, there have been two plane searches, an emergency locator mission, and two missing persons. Getting a full night's sleep might have to wait until someone else is on call next month!

Let me contrast two missions, one a plane crash and another for a missing person. On each event I had the opportunity to work with several agencies and each of the agencies was experienced in search and rescue.

During adverse weather, an aircraft experienced engine problems, declared an emergency and was lost from radar contact. An ELT signal was soon picked up and the search was underway. On this event I was impressed with the Amateur Radio operators who responded and with the sheriff's attitude. Both groups conveyed the desire to rescue survivors. Their actions and their comments were professional, positive and contained a measure of hope that survivors were to be found.

The searchers battled poor visibility, all-night ground efforts, inclement weather (wind and snow) and dangerous terrain. Throughout the night and early morning, the comments were positive and the efforts intensive.

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Unfortunately both of the plane's occupants died in the crash.

Now let me shift to another search. Two hunters were overdue and a snowstorm had passed through the area. One of the missing had medical problems that signalled an urgency.

I was struck by the contrast that this search did not urgently involve all available resources. Some resources were called two days into the search. A sense of urgency was not communicated as I received information from the ground coordinator. At one point the coordinator told me she/he thought both were probably dead, but most certainly one would be dead.

The interesting point: When this comment was made by the coordinator, both lost persons were still alive. Eight hours later, the prediction was true, one was found alive, the other had died. As I reflected on the coordinator's comments, several things occurred to me.

First, this person knew I was with another agency, but had no idea who I was and who I would be talking to. There was no thought to the fact I might have known the lost people or might be in contact with family members.

Second, the victim was considered dead before he was found. My perception was one of reduced urgency because of these comments. I wondered if this might have influenced how well the search teams were briefed or how effective their search efforts would be? What if resources were not called because of this predetermined outcome?

Be careful of your comments and attitude! If your heart is not in the effort, you are the wrong person (in my opinion) to be involved. Your comments, your body language, your tone of voice and your attitudes affect others and how well they perform. I think it was Bob Mattson (a veteran search theorist and educator) who said if you know where the victim is, why are you still searching? I would add, if you know the victim is dead, why the urgency? Of course we don't know location and condition of the victim and that's why there is a search and urgency to respond.

Response is a controlled event—that's why we have trained incident commanders and undergo training exercises. The victim cannot stop being missing at 5 p.m. and have a warm meal and then resume being missing the next morning. Be careful when you ponder an eight-to-five operation or postulate on an outcome. Until it's over, it's not over.

Fortunately poor attitudes are not prevalent. A call last night concerning a missing elderly woman prompted an all-night effort and an immediate response by many agencies. She was reported missing at 11 p.m. and by 1 a.m.

there were many agencies on-scene and others arriving by air at 4 a.m. Many of us privately speculated she would be found at daybreak — and in fact she was.

However, the speculation was not voiced and it did not affect the urgency of the response. The outcome was not decided in advance! All turned out well and someone's grandmother is now home safe. If she had required rescue, the teams were on-scene or enroute. We knew the urgency and responded.

Orange is beautiful

From the Idaho Mountain Rescue newsletter, the statement is made that "Mountain Rescue members cannot have too much orange clothing and equipment." Orange is one of those colors that does not often occur naturally in the outdoors — AND it's the color SAR teams use!

Yellow, red, bright blue and other bright colors are all neat, but orange is the universal color for rescue work. For your safety please wear orange! It doesn't matter if you are working a fireline, operating a base camp radio or running messages between operations centers: WEAR ORANGE.

Many of us belong to groups that have jackets or uniforms that, unfortunately,

are not orange. I have several suggestions! There are some very nice hunting vests that are not expensive and they're bright orange. It doesn't hurt to have one of these folded up in your grab-and-go bag.

Another nifty idea comes from Molen Distributing (2009 Iron Street, Bellingham, WA 98225). They sell a nylon vest that folds into a pocket-sized holder. The vests can be made to order with your team logo or custom lettering. The letters are large and identify your function as well as being bright orange. They have one available with or without an ARES emblem, with large "emergency communications" lettering.

Give them a call if you're looking for some high visibility. You can reach these folks at (206) 671-5259. The vests are made of light-weight nylon and are made to stretch over coats for winter use. Each also has reflective stripes and are priced at \$19 including shipping and handling. Call-sign can be added for an additional \$3. This would make a great gift for your favorite Amateur Radio operator!

I hope you have had a great 1994! Take care, keep prepared and continue to volunteer your time and expertise. Let's make 1995 an outstanding year for Amateur Radio! Happy holidays from Salt Lake City! See you next month. WR

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10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

Election results

Over 4200 ballots were returned and the count is in for the 1995 10-10 election. Although fewer than half of the ballots that were mailed out world-wide to paid up 10-10 members were returned, a good cross section of the membership did cast their ballots. The results are as follows: Dave Prichard, KA5OVO #37297, was elected as Secretary. The following were elected to four year terms as directors: Linda Barnes, KJ4FM #43299, Ed Redwine, K5ERJ #11843, Bob Ryan, K6YVG #18022, Bill Howe, VK4WBH #22187, and Pete Matson, KC1CP #37190.

Tom Henderson, K4CIH #33233, and Chuck Imsande, W6YLJ #19636, both ran unopposed for the offices of President and Vice President respectively and were declared elected by the Board of Directors at the recent board meeting in St. Louis in July. All of the newly elected officers will commence their four year terms on 1 January, 1995.

Crazy Eight Chapter QSO Party

The 10-10 Crazy Eight Chapter will hold their 15th annual QSO Party from 0000Z on 12 November to 2400Z on 13 November, 1994. During the 48 hour contest period, log time, call, name, state or country, 10-10 number and Crazy Eight number, if any. Score is one point per QSO, plus one point for each 10-10 number and one point for each Crazy Eight number, for a possible total of 3 points per contact. 10 Meter phone or CW may be used.

Send your log to Bob Ross, KA3AVB #25732, 2431 Hampton Ave., Allison Park, PA 15101 before 6 December, 1994.

New VP Manager

Until a permanent VP Manager can be found to replace Hiram Wolf, W4NWP #32033, who became a Silent Key in early September, John Ellison, WØERZ #5145, will temporarily fill the vacancy. Send all VP Certificate applications to John, at: 2 Douglass Lane, Kirkwood, MO 63122.

10-10 Scholarships awarded

The Foundation for Amateur Radio (FAR) has awarded their 1994 Scholarships including the two 10-10 \$750 scholarships. The winners of the 1994 10-10 Scholarships are Chad Kwiatkowski, N8JHG and Adam Schmouder, KA3ZJZ.

Chad plans to study pre-veterinary medicine at Central Michigan University. His mother and father are both licensed radio amateurs. He was recommended by Bill Hudson, N8FIA #47732. Adam plans to pursue an engineering degree at Pennsylvania State University. His 10-10 sponsor was Bill Waddell, KA3TUG #50571.

The newest 10-10 Chapter

The newest 10-10 Chapter comes out of Omaha, NE. They are not a paper chasing group, but have organized to maintain communications on 10 Meters with a net meeting at 0001 UTC, Mondays on 28.400. They plan to be a contest chapter, with full participation in 10-10 contests. They welcome check-ins for the weekly net meetings.

New Wednesday 28.380 Net Control

Nat Green, 8P6SA #45858, Net Control Manager, has announced that Christine Kesauer, N7PVL #58018, has assumed the position of Net Control for the Wednesday 28.380 10-10 net. Christine lives in Glendale, AZ, so point your beam toward Arizona on Wednesdays at 1800Z.

10-10 Club Station W6OI #109 on the air

In honor of the Boxboro ARRL Convention, which was held on 1-2 October. Pete Matson, KC1CP #37190, had the 10-10 Club Station, W6OI #109, on the air for the entire month of September as well as from the convention site in Boxboro during the convention. If you worked W6OI and would like an official W6OI QSL card, send your card along with a SASE to Pete at 73 S. Edgewood Road, Niantic, CT 06357-2036.

New hard copy 10-10 roster early in 1995

Due to the fact that the 10-10 "Roster on Disk" has become so popular, it has been decided to limit the printing the

traditional 10-10 hard copy roster to only those that are "pre-sold." So if you are interested in a 1995, 10-10 hard copy roster, printed on 8½ x 11 paper, send your order along with your check to 10-10 International Net, Inc. 643 N. 98th Street #142, Omaha, NE 68114-2332. The cost is US\$11 postpaid or US\$14 DX postpaid. The cutoff date for ordering hard copy rosters is 15 December 1994.

10-10 Convention dates set for June 17-18, 1995

It has been finalized that the 1995 10-10 Convention will be held in Tusculoosa, AL on June 17-18, 1995. This will be a "stand alone" 10-10 convention, that is, it will not be in conjunction with any other convention. The entire two-day program is being organized for the sole purpose of 10-10 activities, awards, contests, paper chasing, chapter activities, forums, and much more. A ladies' program is being planned for those XYs who are not hams. This all will be held at the Capstone Sheraton Inn and Convention Center located on the campus of the University of Alabama. The Bear Bryant Museum is right next door and will be open to 10-10 members. More details in later issues of *Worldradio* and the *10-10 International News*.

New roster on disk in January

The new 10-10 "Roster on Disk" will be available in early January and will include such features as call to 10-10 number and 10-10 number to call cross reference, name, address, 10-10 membership expiration date, label printing and more. The new program will be called XXIP for "10-10 Inquiry Plus." Watch for more details in the next issue.

Colorado Bighorn Museum of Amateur Radio

The Bighorn Museum of Amateur Radio is now a 10-10 member using the club call WØWO with 10-10 number 7734. The museum is the "baby" of Don Zielinsky, KØPVI #9902, who has been collecting vintage Amateur Radio transmitting and receiving equipment and publications commemorating the history of Amateur Radio for many, many years. For those visiting the Denver area, the Museum is located off I-70 at exit 316, at Byres, Colorado. It is the largest display of vintage amateur radio equipment in America with over 500 pieces, most of which are in operating condition along with nine complete operating positions. The Museum is open 8:00 a.m. to 8:00 p.m. Saturday, Sunday and holidays and at other times by special appointment. For additional information call Don at 303/822-9868.

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A reminder

Dates of contacts *are* required when submitting applications for all 10-10 awards. This requirement has been reinstated by the Board of Directors and award managers will no longer accept award applications without the date of the contact listed. **WR**

Information about 10-10?

If you would like information about 10-10 and how you can become a member and receive your own unique 10-10

number, send \$1.00 plus two first class stamps (to help cover the cost of printing and postage) plus an address label for the return of your package, to Mike Elliott, KF7ZQ #54625, at 9832 Gurdon Court, Boise, ID 83704. No SASE please as the package requires a 9" x 12" envelope. You will receive a copy of the 36 page Information Manual and the latest issue of the *10-10 International*

News, the 32-page quarterly 10-10 magazine.

If you have lost your 10-10 number or have let your dues expire and would like to get back into 10-10, the same as above to Mike will get you the information package and your original number. With the dues scheduled to increase 1 January 1995, now is the best time to renew. **WR**

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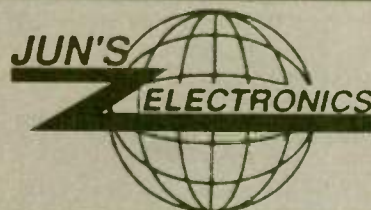
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C178 Mini 2 Meter	459	Call S
C228A 2M/220MHz	885	Call S
C558A 2M/440MHz	989	Call S
C628A 440MHz 1.2 GHz	727	Call S
C528A 2M/440MHz Twinbander	485	Call S

Model	List	Jun's
C108A Super Mini 2M HT	399	Call S
CCR-708A Communications Test Receiver With Spectral Display Scope	List \$750	Call S
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N7AVK Tops NA entries in 6th (1993) Japan International DX phone contest

Congratulations to Lewis Sayre, N7AVK, on his top score of 256,122 points in the single operator, all band category winning him a free round trip ticket to Japan donated by Yasushi Kumagai, JA7RHJ. The trip to Japan is offered annually to the top scoring North American station in the all band class. Previous winners have included such top U.S. DXers as N6AW and K3EST. Jan, N6AW, was the 1993 runnerup, followed by KJ6GQ, KA6ZYF, K0GAS, K5NA, WB6NFO and VE7XO. NH6XM in top place for Hawaii, with KH6HH as runner-up. Top for the world was VK2BEX with 421,416 points.

The highest scoring all band stations by continent, (other than world high score by VK2BEX) were as follows:

Single Operator	Multioperator
Africa -EA8BWW	No Entry
Europe -RT4UM	UZ4HKY
N.America-N7AVK	W4AQL
S.America-LU6ETB	LT5F
Oceania -YB6INU	No entry
Asia -UN8LA	No entry

The winning scores for Japan were

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compiled by JA4UHW in the single operator class and JJ3YBB in the multioperator class. *Worldradio* has also received the results of the 2nd Japan International DX CW Low Band Contest which took place in January, 1994. The top station from North America was N6AW followed by N4AR among multiband entries. High scorers from Japan and the different continents were:

Single Operator	Multioperator
Japan -JA5BJC	JJ3YBB
Asia -RA0FA	RK05XF
Europe -UX4UM	DF0RU
N.America-N6AW	No entry
Oceania -No entry	9W6VMY
S.America -PV1BVY	No entry

Unfortunately, space restrictions prevent the listing of the single band winners, but anyone wishing a complete list of the results can obtain same by sending an SASE to K4IIF.

DX contest calendar for December is holiday time, not a big month for DX contesting, but over the first two weeks we do have the A.R.R.L. 160 Meter Contest and the A.R.R.L. 10 Meter Contest, two very fun events. Dates and times are:

December 2-4; A.R.R.L. 160 Meter Contest, 2200 UTC Friday to 1600 UTC Sunday, 42 hours with no time limitation.

December 10-11; A.R.R.L. 10 Meter Contest, 0000 UTC Saturday to 2400 UTV Sunday, operate 36 of the 48 hours. For complete rules, see the November issue of *QST*.

Contesting from Europe

There are several exciting spots in Europe which you may want to consider for one of the spring contests. Actually, we prefer Europe in the autumn, but places like ITU, Geneva and HB0, Liechtenstein are so popular with European contesters during the *CQ* Worldwide events, that they must be booked well in advance. It may be a bit easier in the spring.



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4U1ITU

We received a Geneva update this month from Dr. Claudia Elisabeth Wulz, F5NYQ (formerly F1NYQ), secretary of the International Amateur Radio Club, the group who maintain the 4U1ITU station in the ITU Building. She advises that Fritz Szoncsó, F6IMS, has replaced David Kaplan as station engineer. If you would like to operate the station you should contact either Claudia or Fritz, and if it is for a major contest do it well in advance as the station is very popular among European contesters. Claudia's business phone is still 41-22-767-6592, but her telephone/fax number at her home in France has changed to 33-5042-4853. Another useful number is the club's executive vice president, Attila Matas, which is 41-22-730-6105. Their mailing address is P.O. Box 6, CH-1211 Geneva 20, Switzerland.

ITU delegates always have a right to use one of the operating positions at 4U1ITU, but visitors must join the club which requires a nominal fee of 30 French francs payable to Claudia as secretary. This small fee is well worth the convenience of having a fully equipped station in place, particularly since it is the only station in the "country" and everyone needs it for a contest multiplier.

For a moderately priced hotel, Claudia recommends the Residence des Nations, rue Grande-Pro 62, CH-1202 Geneva, tel. 734-3003, fax 740-6421. On our last visit we stayed at the Intercontinental Hotel, 7-9 Chemin du Petit Saconnex, 1211 Geneva 19, tel. 734-6091, fax 734-2864, which is expensive but only a 5 minute walk from the ITU building.

3A

We have long wanted to contest from Monaco, but the timing was never right. Mike, W5ZPA, was more fortunate in being able to operate from Monaco using the call sign 3A/W5ZPA.

Mike indicates that to obtain a 3A license you should apply at least 3 months in advance to the Ministère d'état, Postes et Télécommunications, Département des Travaux Publics et des Affaires Sociales, Principauté De Monaco. Include your first and last name, date and place of birth, father's and mother's names, nationality address, profession, address in Monaco, dates of operation, photocopy of your home license showing call sign, class and date of issue. Include 2 signed copies of application. You must pick up your license from the Direction General des Télécommunications and pay a tax of U.S. \$20. A U.S. passport is required along with a return ticket and sufficient funds, but a visa is not necessary for stays of 3 months or less. Mobile operation is not permitted, and the legal output power is 100 watts. Needless to say this would

Lew "Doc" Sayre, N7AVK fended off all comers to score the North American high in the 1993 Japan International DX phone contest. Lew's operating skills were enhanced by an antenna system consisting of 6/6 at 90' and 40' on ten meters, 6/6 on fifteen meters at 100' and 60', 5/5 at 110/50' on 20 meters, a 3-element full-size yagi on 40 meters, a 3 element full-size yagi on 80 meters and two, 1/2 wave slopers 180' apart on 160 meters.

—photo by Debra Sayre



be a limiting factor during a major contest.

Mike was a guest of 3A2LU and could not provide any information on hotels which might allow amateur operation.

SV9

Another interesting contest hot spot in the Mediterranean is Crete. Phil, G40BK, operated earlier this year as SV9/G40BK using a TS680s, PSU, ATU and wire antennas. He and his wife stayed at the Lycasti Apartments, Tavronitis Village, Hania, Crete. They

had a top second floor apartment with 2 bedrooms and easy access to the flat roof to erect antennas. Phil was able to find a 15 foot bamboo pole which he mounted on a stack pipe to support dipoles for 17 and 30M and long wires for 40, 80 and the other bands. The sea was only a 1/2 mile distant with a clear view in all directions. He indicates that the management spoke excellent English, was very agreeable and even indicated genuine interest in his operation. Licensing on Crete is very easy for Europeans as it is under Greek adminis-

tration. Greece is a CEPT country and no license is required for amateurs from other CEPT countries. U.S. and VE hams are advised to contact A.R.R.L. for licensing requirements in Greece.

Phil reports that he had no trouble getting his gear into and out of Crete. No duty, no deposits, no hassle. He carried the TS-680 on board the plane in a rucksack as hand luggage, and checked the remaining gear through in a suitcase.

LX

An update from Claude, LX1WW. There is now a reciprocal licensing agreement between the U.S. and Luxembourg. W/K amateurs can now be licensed to operate portable LX, i.e. K4IIF/LX by writing to the Direction des Postes et Telecommunications, section T, L-2020 Luxembourg.

Concerning customs, Claude advises that visiting amateurs should have copies of the invoices showing the costs of their equipment, and that they must complete a document stating that they import their equipment into Luxembourg, and will re-export it back to the United States. There are no fees for this procedure. Another useful address as follows: Office of Tourism, Cercle, Place d'Armes, L-1136 Luxembourg. **WR**

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OLD-TIME RADIO



Two decades of Amateur Radio

MIKE ANDERSON, WV7T (EX-WNØEQM, WBØLEY, 9H3GA)

There have been many changes in ham radio over the past 20-plus years that I have been an Amateur Radio operator. My first license in 1971 was a two year Novice license allowing only crystal controlled CW on 80, 40, 15, and 2 Meters. In 1972, VFO transmit was granted Novices and boy, did my Collins 32V1 transmitter get a work out! Modulated CW on 2 Meter AM was strange. The old Heath "Lunchbox" twoer at school did a fine job on 2 Meters with a code oscillator plugged into the microphone jack.

My Drake TR-22 crystal-controlled 6 channel 2 Meter FM rig later went the way of the dinosaur when I upgraded to a synthesized Yaesu FT-227R Memorizer. Eight hundred plus channels, was like having white wall tires! Heathkit, Hammerlund, Swan, Drake, and Collins, these were the names and rigs to deal with! Even now I still have fond memories of all those power houses that would light and heat my shack.

My first SSB rig was a EICO Seven-drifty-three (753). Tubes and a non-shielded, solid-state VFO that, when breathed upon, would drift out of band and out of sight.

Oh, and who could forget 1978 when all the new fangled and different kinds of callsigns came out? Each state could be worked as a different country until you figured out who was where. Remember the days of the sky hook, when

end-fed, rhombic, and long wire antennas were plentiful? Home brew and simple construction was the order of the day. I once built a 15 Meter aluminum dipole from an old TV antenna. What a sight. two by fours nailed together and the tubing screwed to the boards, but the first QSO was a JA!

Closest to my heart were those awful three hour trips to the FCC's "Dungeon Of Doom" in Denver. The cold and icy stares I have heard of never happened to me. I simply sat in fear of the power wielded by the stranger behind the desk to grant or deny my future by saying "Passed" or "Failed."

I suffered the indignity of the latter 18 times. So What! I'm a glutton for punishment! IT WAS THEM OR ME! The battle raged. They won some battles, but I won the exams. So those of you who think you cannot make it...you can! Just keep trying. You WILL make it! Volunteer examiners with friendly, empathetic faces have made exam taking less fearsome and a lot more user friendly. I have been a volunteer examiner since the night I passed my Extra exam and am proud to serve Amateur Radio.

The first Field Day station of my own in 1972: Powered by a 120V AC, gas powered generator; saggy tents, hot weather, and droopy dipoles-what a way to go! Many Field Days have come and gone but never lost the allure.

QSL cards and certificates are tributes to the operator. There are more than 2000 QSL cards in my bureau. DX Century Club (DXCC), Worked All States Low Power (WAS-QRP), Worked All Continents CW/PHONE (WAC),

IARU DX Contest 1st Place Zone 31 (Hawaii) grace the walls. Membership in many organizations, American Radio Relay League, 10-10 International, QRP Amateur Radio Club, Life Member of the North Shore Radio Club of Highland Park Illinois, and many more.

Service to Amateur Radio has sharpened the full flavor of being a ham as club officer and founder of clubs around the world. Becoming involved has added depth and dimension to an active hobby with limitless potential.

Don't let anything stop you from getting involved. All a fire needs to get started and burn brightly is a spark! Are you the spark that can ignite a group to action? You can be. Enthusiasm is the key! WR

BOOK REVIEW

Easy Target, by Cynthia Wall, KA7ITT
Published by The American Radio Relay League 225 Main St., Newington, CT 06111-1494 180 pp.; 5.5" x 8.5"; \$5.95, ARRL Order No. 4807.

Easy Target is the fourth book in Cynthia Wall's Amateur Radio series. Geared for young adult readers, the story picks up Kim, KA7SJP, as she begins a term at Oregon State University Marine Science Center. Several mysterious whale deaths draw the staff and students from the science center into the investigation of their deaths, and the discovery that the whales have been shot. In following the trail of the murdered whales, Kim and her friends stumble into a cocaine smuggling ring, arousing the ire of the smugglers and greatly endangering themselves.

The book is informative, exciting, and has humor, too. In it Amateur Radio is a vital tool that aids in the resolution of the mystery of the murder of the whales and the apprehension of the smugglers.

—Reviewed by Helen Noble WR

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Terminal Node Controllers (TNCs)

Part 3 of a 5-part series — Packet!

GREG JONES, WD5IVD

A few years ago, I could count the number of TNCs available on one hand. Made it downright simple to make a decision on which one to buy, since the choices were pretty straightforward. Now, there are lots of choices. A recent amateur equipment catalog had twenty TNCs on one page! To make a decision there are three main issues that determine what you want: Price, Functionality, and Configuration. Prioritize these and you probably have made your choice. You may find another ham who has the equipment you are interested in, and then go take a look at it in operation. Sometimes seeing how something works can really help.

There are two types of TNCs. The traditional TNC (Terminal Node Controller) does nothing but AX.25 packet radio. There is not much difference between the packet-only TNCs, except the different modem options they have: 300 baud AFSK, 1200 baud AFSK, 2400 bps DPSK, 9600 baud FSK, etc. Some of the things you might look for is HF capability or a personal mailbox option. Your other choice is to purchase a multi-mode controller, which does a little of everything: AX.25 Packet, AMTOR, Morse, ASCII, RTTY, WEFAX, PACTOR, Fax, etc. There are several multi-mode controllers available and each have a few different capabilities but all have about the same basic functions. Function and price are interrelated with both types of units. Plain TNCs that just do AX.25 1200 baud AFSK packet are going to cost around \$120. These are the defacto standard on 2M packet radio. Multi-mode controllers begin at \$250 and go up depending on how many bells and whistles are provided. If you want to play VHF packet, then the "TNC only" units are the best buy. VHF and UHF operations are typically at 1200 baud AFSK and these units allow you to get on packet with an initial low investment. A multi-mode controller allows you to play with other modes besides packet, but has a higher initial cost. Many of the additional functions of the multi-mode controllers are for use on the HF bands, so have limited use on VHF/UHF. This initial higher cost might not be worth the investment if you do not operate HF frequencies.

Many beginners get the lower cost "TNC only" unit to determine if they like digital communications and then later dedicate the unit for local VHF operations, and purchase a multi-mode controller to branch into new modes.

Configuration deals with external versus internal installation. TNCs are available as external units that stand alone and internal units that plug into an IBM PC/clone computer. With an external unit, power, an interface cable to the radio, and a serial cable to your computer are needed. Internal units are simply PC plug-in cards that fit inside your computer; thus, they get their power and communications line from the computer's bus connection. This allows the unit to do without a power supply and box, making these units a little less expensive. There are advantages to both configurations. Some hams prefer to have the equipment inside their computer, so as not to take up space in the shack. Others prefer the convenience of being able to remove their TNC for use at another location without disturbing the computer. Configuration is probably the lowest priority of the three areas.

One option not yet discussed is the software resident TNC. With the software resident TNC, only the modem is in hardware and the rest is done as software in the computer. The advantages of this type of unit are that it is simple, small, and less expensive than the stand alone TNC described above. The disadvantage is that software is only available for the IBM PC/clones and for most users the software occupies the entire computer, thus not allowing you to use other software when you are doing packet. These units are often found in emergency operations due to their size and portability. If you plan to operate packet infrequently, then the software resident TNC might be a good choice.

If you are interested in HF operations, TAPR has recently introduced a modem kit with software that allows RTTY, AMTOR, and PACTOR operations, a software resident solution to purchasing a multi-mode controller. It allows you to get on HF digital with a small initial investment to see if you like it.



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Let's review the choices. You should ask yourself: 1) What do I want to do with my computer and radio? 2) How much money do I wish to spend? 3) Is this a serious interest or something with which to experiment? 4) What do I want to access with the equipment? Once you answer these questions, you can probably determine the amount of investment you are willing to make and in what area.

The equipment by itself does not make the fun. The resources you access with the equipment provides the enjoyment aspect to our hobby, but depends on the critical mass of equipment that others have. So, your choice will probably hinge on what locals are doing. If you are just beginning in packet radio, find someone in your local area and go see what is available and what they are doing. You should be able to find several amateurs around doing different things.

If it does not look like it is increasing your fun factor — time to find something else to do. Purchasing similar equipment to that of someone you know is not a bad choice either, since then you can get local help and support when you are having problems. Having a local Elmer can save numerous hours once you purchase your equipment. Many a potential packeteer has been lost to those screens of meaningless data scrolling past on the computer.

Find an Elmer, write down the few things it takes to get you on the local resources and then learn the rest later. Have fun and then work on increasing your knowledge. When you are having fun, learning comes much easier. Purchasing the equipment is the first step down that road.

This article is provided by TAPR, the Tucson Amateur Packet Radio Corp. For more information contact TAPR, 8987-309 E. Tanque Verde Rd #337, Tucson, AZ 85749-9399; 817/383-0000.

Editor's note — all references for Greg Jones' WD5IVD, packet radio series will be repeated at the end of part 5. WR

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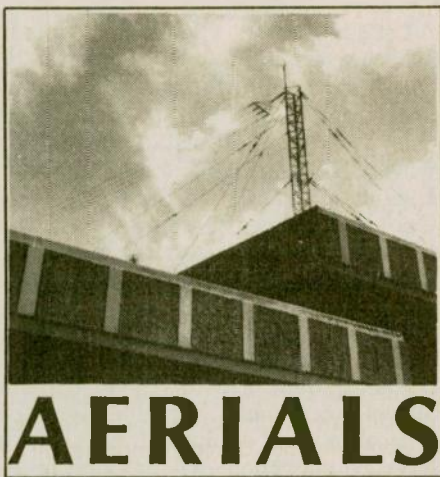


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KURT N. STERBA

I have received a letter from, oh let's call him "Monty Wooley."

In it he challenged our findings that different antenna programs could give different answers.

He even wondered if our Jose Ing was a "fictitious character." When I showed that to Kato (as we call him here in the lab) his only answer was a Tae Kwon Do chop through the air.

Also questioned was whether Jose Ing had "pirated a copy and didn't get the manual with it" of a certain product.

Hardly. Every product one sees mentioned in this column has been purchased with good American money. No freebies, no pirating. When Kato read that accusation another chop flew.

Then there was ponderous reading and obvious sarcasm about my slide rule and stubby pencil and how he hopes I work for a competitor of the company that employs him as a design engineer. I was tediously informed that should I be competing with him as a professional engineering consultant that my choice of tools gives him a tremendous advantage and that I should "Stay with it!"

OK. Let's joust. To arrive at *QST* on 03 January 1995 will be an original wire antenna design by me (slide rule and stubby pencil) and an original wire antenna design by you (using whatever Al Gore rhythm you prefer). Let's see which one they print. Do you accept?

Age will even grant youth one tactical advantage. My worthy opponent will be allowed to stroke the hair on his chinny

chin chin to assist in his cognitive activity. I will, of course, remain incognito. Naw- I've rethought the offer. Such a challenge from me is truly child abuse.

I think what started this all off was when I took off after some engineers that don't know what they are doing. This always results in similar mail as I received from Monty Wooley.

Then the discussion turned to my use of "6 dB to the 'S' unit." Brought out was that few receivers today adhere to such. True, as I myself have pointed out in this very column. A letter writer said: "Some receivers of about the vintage of your slide rule apparently did, but that was then."

In times past in ARRL publications, they did call 6 dB an "S" unit. Such is not the case now, as I can find. Instead there is some reference that in the early '40s some receiver manufacturers tried to make that a standard.

I remember the early '40s. It was the best of times, it was the worst of times.... Letter writer, with tongue-in-cheek I'm sure, said: "If you must have a 6-dB unit, let's use a different name to end the confusion. I humbly suggest the 'Sterby,' in your honor."

I humbly accept. Oh, I can hardly wait to hear hams on the bands, when checking the gain of their linear amplifiers, say: "You went up two Sterbys."

What greater recognition for my many contributions could a realistic person ask for?

What justification would there be to resurrect the 6dB as a reality rather than, as on some receivers, just S1 to S4 requiring a whole 4 dB? The Inverse Square Law is one reason, and in photography two F-stops is four times as much light or one-fourth as much light, is another reason. So, I decree that 6 dB equals one "S" Unit. And, if the receiver manufacturers don't want go along with it, that's their problem.

Letter writer also said I "whine." I've been accused of many things but never before, or, I'm sure again, will whining

be one of them. I wanted a 4L Yagi so as to put a good 440 MHz signal into the repeaters at Bracketville and Uralde. Engineer Ing said he'd work it out for me. That is when he (and other parties, also) discovered that the exact-same antenna, when inserted into various amateur computer modeling programs, yielded far differing results. Letter writer's program was not among the tested.

Ing. Ing (as we also call him) says he would go into detail on it but there just isn't time due to the great work load here at AARP. That's the Advanced Antenna Research Projects Corp. And our legal counsel, the firm of Solitary, Poor, Nasty, Brutish & Short, said we are not to engage in saying one program is more accurate than another.

Alas, another decent, fine and well meaning person wrote in to tell me I was WRONG! Kind sir, all I ask is that you first insert a quality watt meter between your exciter and your tuner. Twist knobs to your heart's content. Find the best possible match. Then transfer your wattmeter to the antenna side of the tuner. See what you see there.

There is no need to write me another letter, one of contrite apology. This is what I get paid the big bucks to do. To be at the forefront of expanding man's knowledge is sufficient reward, I don't require groveling letters of repentance trying to make amends.

Contrary, though, to some people's misguided opinion of me, I am not a "know-it-all" nor do I think I am. In fact I am even now asking for enlightenment. Asking others to share their knowledge and we'll print their answer.

I was reading in a technical book where the author said that at HF a half-dB loss was meaningless but at VHF (or was it UHF) a half-dB loss was intolerable. As I've mentioned before I profess no knowledge about VHF. (Possibly that is a psychological something since that day that someone accidentally dropped a Command Set on my foot. Long live the BC-610, (even if it did chirp). Anyway, since a half-dB difference can not be heard when riding along on an HF wave, why does the same ratio of signal loss cause such mortification on the iddy biddy wavelengths? Since the signal voltage across the loudspeaker (or headset) is what all this is about, how does the audio level difference take on a whole different picture depending on how it got there? Used in this context "dB" is expressing a ratio. If I can't hear the difference coming out of my HF receiver, why will I hear the difference (an intolerable one at that) coming out of the other rig? Answers please.

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the way, in some countries) and a friend offers you his 600W amp at a decent price. WOW! Half again as much power, just let me at those pileups! Your actual gain will be about 1.7 dB. It is of course your decision as to what less than 2 dB will do for you.

Another situation. For years you've been running that 1000W amplifier. Well, that was then and now is now. You hear there will be a Christmas bonus at the button factory this year. Now's the time to move up with the big boys. You'll really move up the ladder in the pileup pecking order with another 500 watts. Or will you?

Going from 1000W to 1500W (half again as much power) is a gain of 1.7 dB. How much gain is that? If you have a friend with a 1500W amp, have him go key-down as he varies the power from 1000 to 1500W. As you listen to the difference, you can be the judge. It's cheaper to get the same gain in the antenna system. Also, you get the same advantage on receive. Got one vertical? Phase in another. More gain that way.

The September issue of *23 Skidoo* had a truly fascinating advertisement. For the paltry sum of only \$6.95 you could obtain the plans for an antenna that

delivers "30 dB gain on all HF bands." This 1,000 times power gain antenna appears to be saying something about ethics in hammyland.

I'm sitting here reading where someone has written that a thicker wire antenna would "provide better low signal level reception" than a thinner wire antenna.

Oh, where do they get this stuff?

(KNS goes by his special moniker so as to avoid telephone calls, during his afternoon nap, from the Granite Antenna Co., going "icky-poo on you, icky-poo on you.") WR

A letter to Kurt

Dear Kurt,

We here at M² would like to publicly claim (admit, confess?) the dubious honor of being the "Einstein" company mentioned in your August column. We also proudly claim the "Straight Arrow," alias Mike Staal. Since he is up to his ears in rod elements and computer printouts, the challenge to explain your "puzzle" question has been passed to the Documentation Department (me). Thanks Mike.

You rightly puzzle about how the gain and F/B of the 20M4 can be so similar to

the 20M6 (8.7 dBd versus 9 dBd gain, 25 dB F/B for both) with such a difference in size and cost?" As we both know, there is no way a good 4-element beam can match all the performance specifications of a good six-element beam. The principles of antenna design won't allow it. But, the "weight" of different design parameters (gain, bandwidth, F/B, VSWR, boomlength, etc) can be adjusted, to enhance a specific parameter at some expense to the others. Nobody wants to sacrifice gain, suffer with high VSWR, or turn very long booms. So, with gain as the main goal, the only practical trade-off in making a 4-element beam perform like a bigger beam is reducing bandwidth. This is a key part of the 20M4 design concept.

I've been with M² less than a year, but it's my job to know the product line. Reading your column last month quickly provided the motivation to haul out the 20 Meter files. It became clear that the 20M4 and 20M6 are very different antennas. The 20M6 is a full bandwidth antenna - it produces 9 dBd of gain and 25 dB F/B across the whole band, 14.000 to 14.350 MHz. If you've got the tower, rotor, space, \$\$\$, and you want to romp full bore across the whole band, the 20M6 is your baby. The 20M4 is an alternative to the size and cost of the 20M6, offering several narrow band modes with gain and F/B approach-

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ing the 20M6 or a full bandwidth mode with more moderate performance.

The 20M4 gain, F/B, and bandwidth trade-offs can be seen comparing the specs in different modes. Optimized for CW, the 20M4 produces 8.7* dBd gain. The F/B is a bit volatile, ranging from 19.48 dB at 14.000 MHz to 16.36 dB at 14.100, and peaking at about 21.63 dB in the middle. For comparison, the Full Phone option covers 14.100 to 14.350 MHz. With 2½ times more bandwidth than the CW option, the gain is reduced a bit, ranging from 7.82 to 8.25 dBd with the F/B spread remaining almost identical. The low phone option shows the best F/B at 27.58 dB. Adjusted for full bandwidth, gain and F/B range from 7.64 dBd / 18.57 dB at 14.000 MHz, to 8.01 dBd / 22.49 dB at 14.200, to 8.14 dBd / 14.90 dB at 14.350.

These options are noted in the descriptive part of our latest catalog (which I produced), but the details didn't make it to the spec table. Just think, Kurt - one line about "narrow bandwidth mode" in the table, while not very thorough, might have made this letter unnecessary. I asked Mike a lot of questions about specifications when this catalog was put together, but 20M4 bandwidth wasn't among of them. Unfortunately, some numbers came from earlier, more simplified catalogs where the tables used one number for gain, one for F/B, etc. This is why those

neat little spec boxes can't and don't tell the whole story about what an antenna can do.

The 20M4 assembly manual supplies several pages of plots and tables showing how to optimize performance by varying element tip length and element spacing. The challenge with any antenna like this is fitting all the resulting performance data into a product catalog without turning it into a phone book we have to charge for. It takes experience and judgment to distill dozens of numbers into just a few, that not only allow fair comparison with competitive antennas but also offer the ham a realistic estimate of the performance he or she can expect. Sometimes, it seems possible. Sometimes, it isn't. As noted in your column, spec standards (and, I might add, hams' expectations) vary widely, from realistic, to wishful, to fantastic, to wildly speculative, and beyond.

We aspire to be realistic, even though, in many cases, it makes us *look* less than competitive. But even as realists, there are pitfalls. Antennas with any kind of bandwidth have gain and F/B that can vary widely. A very modest, but familiar example would be the 20M4 in its various modes outlined above. For official specs, should we select figures that reflect the worst, the best, an average, band center, band edges, popular frequencies, etc? What numbers do you pick, and what do you edit for the condensed tables in the HRO catalog? These aren't rhetorical questions in my line of work.

Well, thanks to your column (and I do mean thanks) it's clear to me that your catalog hasn't done justice to the 20M4 or its readers. There will be some changes. And, thanks for considering our man a "straight arrow." I've worked with Mike Staal, off and on, over a couple decades. I've seen his frustration with the rating games that go on, with losing a sale to someone who only picks the highest numbers (regardless of reality) or another who's been totally turned off by all the grandiose claims. Fortunately for us, he's

always happy to get back to the "drawing board" and virtually every day a new antenna design or improvement emerges.

The overall situation is improving. With the widespread use of computerized antenna programs, and helpful antenna columns like yours, more and more hams understand what a real antenna can do and who's blowin' smoke. When the playing field gets more level, I think Mike will receive his due as a master designer. Computer programs can only take an antenna design so far. Then human experience and skill are needed to craft the gain, bandwidth, F/B, VSWR, beamwidth, physical size into a useful and enjoyable product. The 20M4 and 20M6 stand as excellent examples - right along with the other 60 or so antenna designs in our catalog (more than most), offering hams a REAL variety of unique, high performance tools for exploring the amateur spectrum. Thanks, Kurt, for the opportunity to reply (and philosophize a bit). Keep up the good work.

Sincerely,
Fred Staal, M²
Fresno, CA

*Mike, being a stickler, has also asked me to mention another factor in differentiating the 20M4 and 20M6 specs. For several years Mike has used Brian Beezley's YO program. The 20M4 was originally designed on an early program that did *not* account for conductor losses (about -.15dB in this case), and showed gain of 8.75 dBd in the CW (100 kHz) mode. Brian, to his credit, continues to improve his software. The 20M6 was designed and spec'd using his latest program which calculates conductor losses. So, the 9dB gain stands as a state-of-the-art number. The 20M4, rerun on the latest program, now shows a net gain of 8.59 dB with conductor losses factored in (just a bit less than the contentious 8.7 dBd figure). So, the actual difference is really a bit over .4 dB. It's still pretty close, but the 20M4 gives up 250 kHz of bandwidth to get there.

WR

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YO 6.0 automatically optimizes monoband Yagi designs for maximum forward gain, best pattern, minimum SWR, and adequate impedance. YO models stacked Yagis, dual driven elements, tapered elements, mounting brackets, matching networks, skin effect, ground reflection, and construction tolerances. YO optimizes Yagis with up to 50 elements from HF to microwave. YO uses assembly language and runs hundreds of times faster than NEC or MININEC. YO is calibrated to NEC for high accuracy and has been extensively validated against real antennas. YO is highly graphical, mouse-enabled, and easy to use. *NEC/Yagis 2.0* provides reference-accuracy Yagi analysis and modeling of large arrays of Yagis. A special feature instantly changes array patterns and gain as you adjust array spacing. 1000 segments (2000 in free space). YO with NEC/Yagis, \$100.

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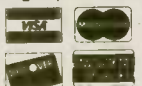


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Alabama

The Wiregrass Amateur Radio Club will hold its Dothan Hamfest on the 3rd from 8 a.m. to 3 p.m. at the Wiregrass Memorial Park in Dothan. Free admission/parking/coffee. Prizes given away every hour. Vendor set-up on the 2nd from 1 p.m. to 9 p.m. and the 3rd from 6 a.m. Vendor cost is \$12.50 per 6' table, Tailgaters \$3.00 each. Talk-in on 147.34(+) For details, contact Charles, N4RNU 205/792-5691. For table reservations write WARC, c/o Tables, P.O. Box 958, Dothan, AL 36301.

Arizona

The Pacific Southwest Chapter IX, Society of Wireless Pioneers and the Arizona Barry Goldwater Chapter 16, will hold its 7th Annual QCWA joint luncheon meeting on the 10th at 11:30 a.m. with lunch served at 12:15 at the Safari Resort, 4611 N. Scottsdale Rd., Scottsdale. Menu choices are Roast Beef Au Jus; Vegetarian Plate. Please send check payable for \$15.75 to Cliff Bruce, W7ER, 8720 E. Jackrabbit Rd., Scottsdale, AZ 85250. Many ham V.I.P.s will be present. Keynote speaker: Dave Bell, W6AQ from Hollywood who produced the "World of Amateur Radio" films. For details call Bill Jackson, W6HDP 602/772-9641.

The SUPERSTITION ARC will hold its Hamfest '94 on the 3rd from 7:00 a.m. - 3:00 p.m. at Mesa Community College, in Mesa. Prize drawings every hour. General admission \$2 per car, tailgate admis-

sion, \$5/2 spaces. Commercial vendors, \$10/4 spaces, overnight parking available (no electric hookup). Talk-in 147.12 (+) or 449.02(-) 100 Hz PL. For information contact Gary L. Jarrette, WA9JV 602/961-0817.

Illinois

Three major clubs, JACKSONVILLE ARS, IL VALLEY ARC, and C.A. ARS are coming together to sponsor the Central Illinois Winter Superfest on the 10th from 8 a.m. at Turner Jr. High School in Jacksonville. Tickets will be \$3.00 at the door. Vendor cost is \$5 without electricity, \$6 with. Dummy load available to test equipment. The site is handicapped accessible. V.E. testing with prior notification please. Talk-in 146.77(-) repeater 146.52(S). Commercial vendors, flea market, crafts welcome. Hourly prizes, 50-50 drawing (don't have to be present to win). For information, contact CAARS 217/636-7226, BBS 217/636-7225.

Michigan

The HAZEL PARK AMATEUR RADIO CLUB will hold its 29th Annual Swap and Shop on the 4th from 8 a.m. to 2 p.m. at Hazel Park High School in Hazel Park. General admission \$4.00 in advance or at door. Tables \$13.00 (reservations for tables must be received with check, no reservations by phone!). Plenty of free parking. Talk-in on 146.64(S) (DART). Swap information, tables and ticket reservations to HPARC, Box 368, Hazel Park, MI 48030.

Minnesota

The annual courage center handi-ham winter hamfest will be held Saturday the 10th with registration beginning at 8:30 a.m. at the Eagles Club in Faribault. There will be a handi-ham equipment auction, flea market, dinner at noon and program. Talk-in on 146.79(-). For more information, contact Don Franz W0FIT, Tele: 507/373-4745 or write 1114 Frank Ave., Albert Lea, MN 56007. WR

CONTESTS

Telephone Pioneer QSO party

Rules: QSO party will start at 1900 hours UTC, Saturday, 3 December 1994, and will end at 0500 hours UTC, Monday, 5 December 1994.

Call "CQ Telephone Pioneers" on phone. CW and digital mode, call "CQ TP."

Phone frequencies: (MHz) 1.850; 3.905-3.950; 7.228-7.260; 14.260-14.305; 21.360-21.405; 28.305-28.350; 50.1-50.5; 144.1-148; 222.1-225.

CW frequencies: (MHz) 1.850; 3.540-3.560; 7.040-7.060; 14.040-14.060; 21.040-21.060; 28.040-28.060; 50.0-50.1; 144.0-144.1; 222-225.

Novice/Technician CW: (MHz) 3.705; 7.125; 21.125; 28.125; RTTY: 3.630; 7.085; 14.085; 21.085.

Any station from a different chapter than the contestant, may be contacted on any or all bands for a maximum of 15 QSOs per station, with no more than one QSO per band. Any station in the same chapter may be counted once, for a maximum of one QSO per station. Only one transmitter can be on the air at the same time.

Scoring: Each Phone QSO is worth one contact point. Each CW, AMTOR, RTTY and Packet QSO is worth two contact points. Total scores equals contact points times Chapters worked. Only one multiplier may be taken for each Chapter worked. The maximum multiplier is 110.

Exchange: The last two digits of the year you became a Telephone Pioneer and chapter number.

Logs: For a copy of TPLOG 94 PC computer logging program, call Joe, KD4A, at 205/988-0741. If possible, return log sheets via your Pioneer Amateur Radio coordinator. Please use the summary sheet. Send logs showing date, time station worked, band, mode, chapter number, and summary sheet, postmarked no later than 17 January 1995, to: Eric Woods, c/o John I. Sabin, Rm. 1S012H, 3600 Marconi, P.O. Box 15038, Sacramento, CA 95851. WR

NO ENTERTAINMENT FEE

That's right. There's never an entertainment charge at the Solder-It Booth (Pacifcon '94). Come and see for yourself why the reviewers agree that the Solder-It Kit makes soldering PL-259s, miniature connectors, aluminum, and so many other nasty soldering jobs so easy. At Dayton we had a lineup of folks who needed emergency soldering jobs... Monel eyeglass frames for a fellow from Kenwood, a clasp on a gold bracelet for a YL ham from NJ, a few PL-259s, din plugs and other connectors for new rig owners, a cracked HT case, a pot metal toy gun for a budding cowpoke. One woman fixed a hole in her truck radiator so she could get home. THIS IS EASY!



The Solder-It Kit is still \$59.00 + \$4.00 S&H (Ohio add 7%) Send check to Solder-It Box 20100 Cleveland, OH 44120 (216) 721-3798. We ship within 48 hrs.

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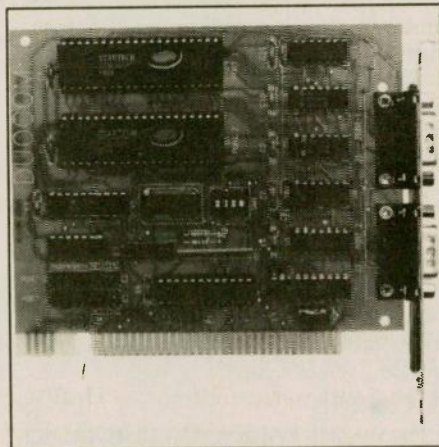
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NEW PRODUCTS

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

EL DUOCOM solves HamWindows communications challenges by providing a low-cost, American-made two port RS-232 solution.

The DUOCOM, is a two channel serial input/output interface for the IBM PC/XT/AT and compatibles. It provides the user with two additional Windows/DOS compatible serial ports for modems, printers, terminals, etc., with extended interrupt support. Its interface board has user-



selectable IRQ settings and addresses to provide error-free Windows and DOS communications. The DUOCOM also allows each port to have its own interrupt.

Features include: Two independent RS-232 channels; individually selectable interrupt (IRQ 2-5, 7, 10-12, and 15) for each port; full compatibility with HamWindows, Windows, DOS, and OS/2; 16 bit address decode allows unique OS/2 COM addresses (3220, 4220, etc.); and standard 16550 UARTs.

Price for the Sealevel DUOCOM is \$89.00

For more information, contact David Pratt, SEALEVEL Communications and I/O, P.O. Box 830, Liberty, SC 29657, 803/843-4343, Fax: 803/843-3067.

SEALEVEL RS-232 interface card

HamWindows operators typically require multiple serial ports for connecting additional peripherals to their computer-based "rigs." Most multi-port serial interface boards either do not support the specific hardware requirements of Windows, or if they do support Windows, they are extremely expensive. The SEALEV-

GGTE Morse Tutor Gold

GGTE, the developer of Morse Tutor and Morse Tutor Advanced Edition announces the release of *Morse Tutor Gold*. This new product adds enhanced drill capabilities, sound card support (certified by Creative Labs, the producer of Sound Blaster), type-along capabilities, and improved correction techniques to the many unique features previously incorporated in the Morse Tutor Advanced Edition program. The program also features an installation utility which reduces the installation process to a few minutes.

With *Morse Tutor Gold*, the user can enter characters which are causing particular difficulty. *Morse Tutor Gold* will then send a customized random drill containing only those characters.

In response to requests to be able to type what is heard, virtually all of the modules support type-along. Those who prefer to write what they hear may do so. Significant redesign of the correction process allows the user to reveal the text sent by the computer, one line at a time. There are also many more features.

Warren Hoffnug, KF6VV, president of GGTEc stated that with the release of *Morse Tutor Gold*, the company is discontinuing the Morse Tutor Advanced Edition. GGTE urges all Morse Tutor and Morse Tutor Advanced Edition owners to update their address records with GGTE, as special upgrade announcements will be sent out in the next few weeks to all registered users.

Suggested retail price is \$29.95. For more information contact GGTE, P.O. Box 3405, Newport Beach, CA 92659. Phone or fax 714/968-1571.

Harlan Technology Color Slow Scan

Harlan Technologies announced color Slow Scan TV for the Sound Blaster sound card at the 1994 Dayton Hamvention. The new version is an upgrade from Slow Scan II which would copy color modes, but display them in black and white. Color Slow Scan will send and

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Model HF9V-X (shown to the left) for 80/75, 40, 30, 20, 17, 15, 12, 10 and 6 meters.



Model CPX counterpoise kit for Butternut models HF9V-X, HF6V, and HF6V-X; substitutes for ground or elevated radials. Self-supporting tubing bolts onto base of antenna. Mast not provided.



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receive Robot 8, 12, 24, 36 second black and white, Robot 36 and 72 second color (displaying in color), as well as Scotty 1 and Scotty 2 (displaying in color).

Hookup of the Sound Blaster-compatible card to your radio equipment is very easy. The send mode is accomplished by reading the pixels on the screen and creating a voice file which can then be transmitted. A larger display area, plus a zoom to full screen feature was added.

Color Slow Scan will auto track for the best color pictures! After the picture has displayed, the amount of frequency difference detected is displayed. Horizontal resolution has been doubled, giving a much sharper picture. Pictures can be saved, re-displayed and used in paint-brush programs. A slide show feature was added which will show files saved.

Requirements for color Slow Scan are a PC computer (286 or better) with DOS 3.3 or higher & 640K memory, hard drive, VGA display, and a Sound Blaster compatible card.

Color Slow Scan can be ordered from Harlan Technologies, 5931 Alma Dr., Rockford Illinois 61108 815/398-2683 for \$99.95 plus \$5.00 shipping (overseas shipping \$10.00). Illinois residents add \$6.25 tax.

CQ Buyer's Guide

The 1995 edition of the *CQ Amateur Radio Equipment Buyer's Guide*, featuring more than 1,000 ham radio products and a half-dozen articles on making the best use of that equipment, is now available.

Directory listings include current models of HF transceivers, VHF/UHF equipment, packet equipment, antennas, amplifiers and much more. Each product

listing includes a description of its features, specifications, photographs when available and suggested list price. Plus, there are several charts comparing the major features of popular models in different categories, such as HF and VHF antennas.

In addition, the *Guide* includes a comprehensive listing of Amateur Radio manufacturers, importers and dealers, making it an invaluable source for contacting the companies that build, sell and repair ham equipment and accessories.

The *CQ 1995 Amateur Radio Equipment Buyer's Guide* retails for \$5.95 (\$6.95 in Canada) and is available from many ham radio dealers. It may also be ordered directly from *CQ* at 800/853-9797.

MFJ Super DSP Filter

The MFJ-784 Super DSP Filter has a tunable "brick wall" bandpass, lowpass, high-pass, notch filters and programmable pre-set filters.

The automatic multiple notch filter



eliminates heterodynes, adaptive noise reduction reduces noise, and QRN for voice, CW, and data. With MFJ-784, you get MFJ's tunable FIR linear phase filters that minimize ringing, prevent data errors and have "brick wall" filter response with up to 60dB attenuation

just 75 Hz away.

The MFJ-784 searches out multiple heterodynes and eliminates them. The adaptive noise reduction filter silences background noise and QRN so well that SSB signals sound like a local FM repeater.

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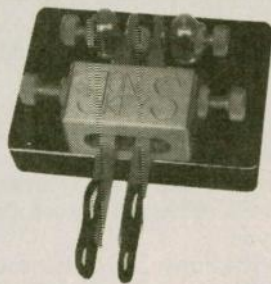


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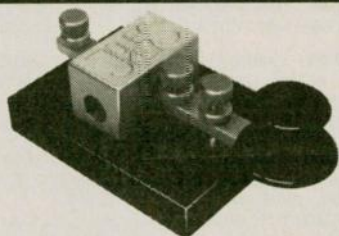
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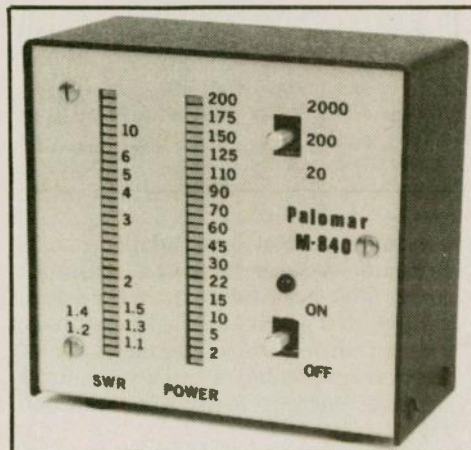
The MFJ-784 Super DSP filter measures in at 9" x 2½" x 6", and uses 12V DC or 110V AC with the MFJ-1315, \$14.95.

The MFJ-784 Super DSP Filter comes with MFJ's "No matter what" full one-year unconditional guarantee, for \$219.95.

For more information or to order, contact any MFJ dealer, or MFJ Enterprises, Inc., P.O. Box 494, Mississippi State, MS 39762 or call 601/323-5869, Fax: 601/323-6551, or order toll-free at 800/647-1800.

Light Bar SWR/Power Meter

Palomar Engineers announces a new deluxe SWR and Power meter, Model M-840. The light bar displays move instantly so peak power and SWR readings are accurate even during SSB operation. There is no need to stop talking



and go to "Tune" to read either one. Power readings are both RMS and PEP. Calibration is automatic for "hands off" operation.

The meter features a remote sensor so that heavy RF cables do not have to be brought to the meter itself. The sensor operates from 1-30 MHz. A six-foot connecting cable is included.

Power required is 12V DC. An AC adapter is available. The meter is 4" x 4" x 2" in size and is priced at \$199.95.

For further information, contact Palomar Engineers, P.O. Box 462222, Escondido CA 92046, 619/747-3343, Fax: 619/747-3346.

ASL-2010 Skylog log periodic

The new Cushcraft ASL-2010 Skylog Log Periodic antenna is the answer for hams who would like to have a single antenna that covers 10 through 20 Meters. This design eliminates the need

for two Yagis to cover the traditional bands and 12 and 17 Meters. It uses a single feed line (balun included) and thus there is no need to switch antennas when changing bands. This design does not use traps of any type thus the wind load is reduced significantly. The antenna is not power limited and will easily operate at full legal limit continuously.

The ASL-2010 boom is 18 feet long. The gain of the antenna is 6.4 dBd. There are 8 elements, the longest of which is 38 feet. Brackets and mounting plates are aluminum as well. All U-bolts and worm clamps are entirely stainless steel.

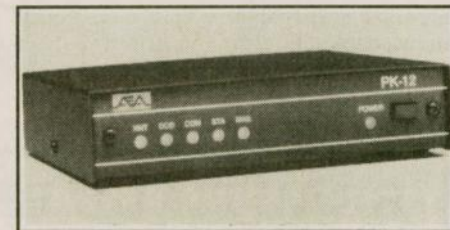
The ASL-2010 is easy to install on your tower and provides superior performance at a modest price, which is suggested at \$800.

For more information contact: Ken Albertson, Cushcraft Corporation, P.O. Box 2680, Manchester, NH 03108. Tel: 603/627-7877, Fax: 603/627-1764.

VHF/UHF Packet Controller PK-12

Advanced Electronic Applications is proud to introduce the PK-12 Packet Controller. The PK-12 is a low-cost packet controller designed for those just getting into packet radio, as well as serious "packeteers" who want a small unit they can take with them when they're on the go. The PK-12 is a power-saver as well, requiring less than 80 mA.

The PK-12 comes with AEA's popular



MailDrop feature. MailDrop allows users to automatically receive and reverse-forward messages and control third party traffic. If the standard 14K bytes of battery-backed Mailbox isn't enough, then it can be easily expanded to 100K bytes.

To make things easier for beginners, the command set can be limited to the most frequently used commands.

If you're an experienced packeteer, the PK-12 offers many special commands not found in other data controllers. The Gateway firmware included in the new PK-12 will support local acknowledgment of

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packets like a full-service node does. Advanced users can customize the PK-12 for optimum performance in their applications.

The PK-12 is designed to be an excellent traveling companion. It weighs under 12 ounces and measures only 5.78" W x 5.28" D x 1.35" H. The small size and low power requirements make it ideal for Amateur Radio operators who want to take packet radio on vacation, back to college, or even go mobile with it.

Suggested retail price for the PK-12 is \$129, and for the 100K MailDrop UPGRADE, \$50.

The PK-12 is available from your favorite Amateur Radio dealer, or contact Advanced Electronic Applications, Inc., P.O. Box C2160, Lynnwood, WA 98036, 206/774-5554, Fax: 206/775-2340.

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ers are included in case the license must be removed in the future for whatever reason.

They are mailed first class with a cardboard sheet for protection. The certificates are \$2 each, shipping included, and discounts are available upon request; an SASE will bring additional product information.

Send correspondence to Michael Simmons, WB9CWE, P.O. Box 422, Casey, IL 62420, 217/932-2930.

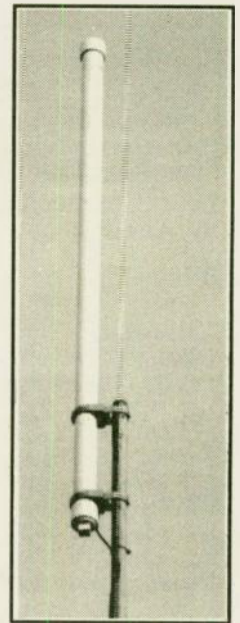
Enclosed Jade-Poles

Jade Products, Inc. announces its newest product, the enclosed Jade-Pole antenna, in 3 styles, 2 meters (144 MHz), 1¼ meters (220 MHz), or 6 meters (50 MHz). The antenna is

a conventional J-Pole antenna using ladder-line technology. It is constructed of heavy-duty #18 copper-clad steel conductor and comes with a standard SO-239 connector.

The antenna is rated at 300 watts and is usable over the entire band of operation. It can be used with any length coaxial 50-ohm cable. Length specifications are as follows: 6M is 13', 2M is 5' and the 1¼ is 3'. The 2M and 1¼M versions come completely assembled, while the 6M needs minor assembly. Instruction manual is included.

Suggested retail price for the 2M is \$28.95, 220MHz \$27.95, and the 6M \$37.95. The mounting kits are extra, and are between \$4.25 and \$6. The Jade-Pole mounting kits range in price from \$17.95 to \$27.95. Contact Jade Products, P.O. Box 368, E. Hampstead, NH, 03826-0368; 603/329-6995, or fax 603/329-4499.



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VE exam schedules

As a service to our readers, *Worldradio* presents a feature listing those VE exams, times and locations which are sent to us.

Please remember that our deadline for publication is three months in advance. For example, if your VE group is scheduling an exam for September, please have the information to us by mid June.

p/r = pre-register

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.

w/i = walk-in

Date	City	Contact	Notes	Date	City	Contact	Notes
Arizona				Montana			
1/14/95	Tucson	Joe, K7OPX 602/886-7217	w/i	1/03/95	Great Falls	George, AA7GS; 406/453-2360	
California				Nevada			
1/03/95	Fremont	KJ6EP 510/791-6818	w/i only	1/21/95	Minden	WW7E 702/265-4278	w/i
1/04/95	Sacramento	Jim, AB6OP 393-8839 or Earl, AB6CN 331-1115	p/r pref.; w/i OK	New Jersey			
1/14/95	San Pedro	N6DYZ 310/325-2965	p/r pref; w/i ltd	1/02/95	Sayreville	Larry, N2ELW 908/754-5800 day; 908/613-8967 eve; 908/613-8967	w/i OK
1/14/95	Sunnyvale	408/255-9000, 24 hr.		1/11/95	Ft. Monmouth	MARS 908/532-5354	w/i
1/15/95	Hanford	Carleton, AA6GZ, 209/924-4221	w/i	1/14/95	Cranford	24-hr. hotline: 201/377-4790	w/i OK
1/15/95	Berkeley	Cary, N6YBD 510/530-0544	w/i only	1/19/95	Bellmawr	Bill, WA2VQG 609/933-1500	w/i
1/21/95	Redwood City	Joe, KB6OWG, 145.23(-) PL=100Hz	w/i	New York			
1/26/95	Long Beach	W6LRF 714/847-6370; N6LUH 310/596-1023	w/i OK	1/10/95	Hicksville	Bob, W2ILP 516/499-2214	w/i
1/28/95	Fairfield	Dick, AB6EY 916/791-0268	w/i OK	Ohio			
1/29/95	Sunnyvale	408/255/9000, 24 hr.	w/i only	1/07/95	Cincinnati	Herb, WA8PBW 513/891-7556	w/i OK
Connecticut				1/19/95	Youngstown	James, N8IRL 216/534-1394	p/r only
1/25/95	Shelton	Lee, WA1TSW 203/735-9476	w/i OK	Oregon			
Florida				1/11/95	Roseburg	AA7GD 503/672-7564	w/i OK
1/21/95	Melbourne	407/768-8000 x 8149		1/14/95	Eugene	Bary, AA7LE 503/343-8811 days; 503/935-2518 eves	p/r
Hawaii				1/18/95	Florence	Hal, N7NNA 503/997-2323	p/r pref;
1/21/95	Hilo	AH6P 808/935-8893	w/i	Pennsylvania			
Idaho				1/06/95	Nazareth	Robin, WA3T 610/820-9110	w/i
1/14/95	Boise	Lem, W7JHM 208/343-9153	w/i OK	1/07/95	Erie	Norma, W3CG 814/665-9124	w/i OK
Iowa				1/21/95	Elco	Lou, KA3FLU 412/938-8125	p/r only
1/28/95	Mt. Pleasant	Dave, WD0ENR 319/986-6164	w/i OK	Rhode Island			
Michigan				1/12/95	Providence	Judy, KC1RI 401/231-9156 or Al, NNTU 401/454-6848	w/i OK
1/07/95	Mt. Clemens	Bill, N8CVC 810/468-8345, 4-9p.m.	w/i OK	Texas			
Missouri				1/10/95	Houston	Harold, ND5F 713/464-9044	p/r pref;
1/07/95	Kimberling City	NQ0G 417/739-2888	w/i OK	1/21/95	Austin	Jim, AB5EK, 512/327-6184	w/i
1/14/95	Sullivan	N0GLN 314/764-2777	p/r only	1/21/95	Lubbock	Gerry, WB5R 806/765-5526 or Doug, W5JUV 806/745-1504	
1/21/95	Godfrey	Richard, KF9F 618/466-2306		Vermont			
1/21/95	St. Louis	NOIS 314/892-4434	w/i OK	1/21/95	Montpelier	WB1AJG, 802/433-6172	w/i OK
1/28/95	High Ridge	James, WA0FQK 314/942-2268	p/r				

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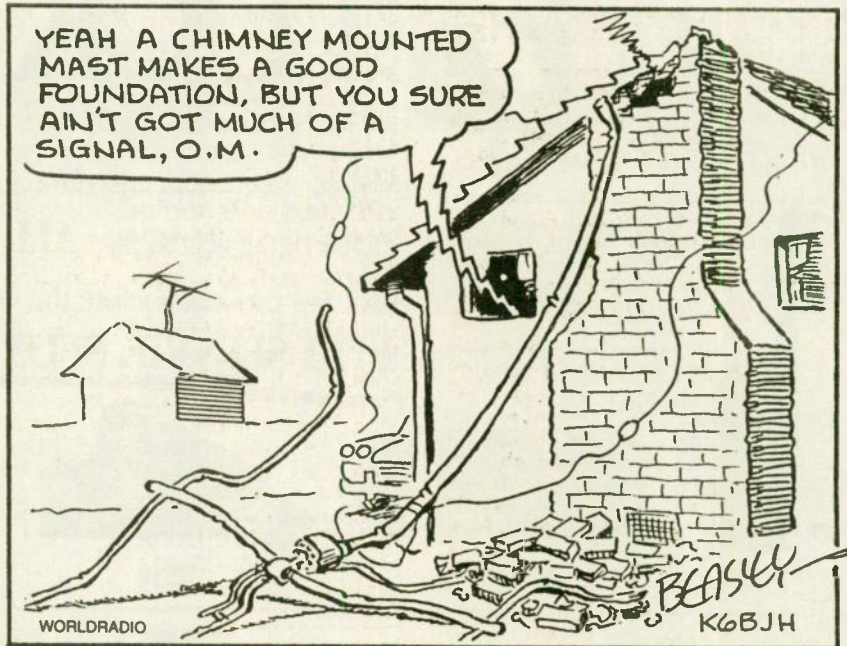
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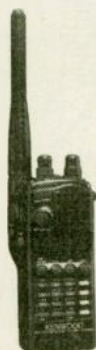
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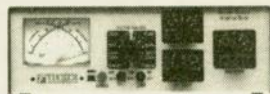
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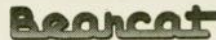
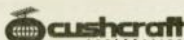


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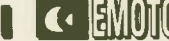
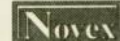
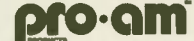
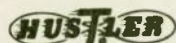
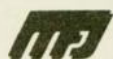
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FCC announces rules changes

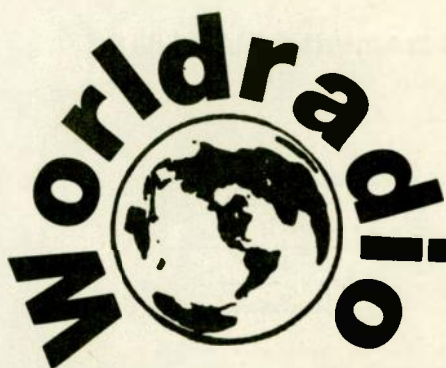
October 24, 1994

The FCC announced that beginning December 20, 1994, the following amendments described as "nonsubstantive procedural changes" will become effective:

1. To permit electronically filed data from VECs (paper applications will still be accepted);
2. Authorizes operation as soon as the new license appears in the amateur service licensee data base, rather than the present wait for the license document to be delivered. Details of how the new licensee can determine his/her call sign will be announced later;
3. To add a new rules section entitled "Examinee Conduct," to emphasize that an examinee must comply with the instructions given by the administering VEs;
4. To treat "Technician Plus" as a license class;
5. To provide for a "renewal short form" which the FCC states will be mailed in advance of the license expiration date, beginning sometime in 1995. The FCC again stated that renewal applications will not be accepted more than 90 days in advance of the expiration date.

Because of the "nonsubstantive" nature of these rule amendments, there is no notice or comment period required by federal law, and they will take effect on December 20, 1994.

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