

Worldradio

Year 20, Issue 1

July 1990 • \$1.25

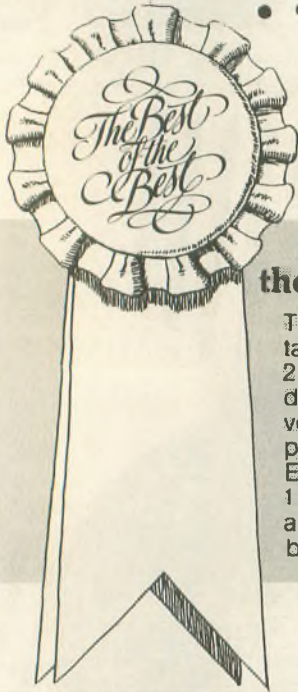


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19th Anniversary Issue

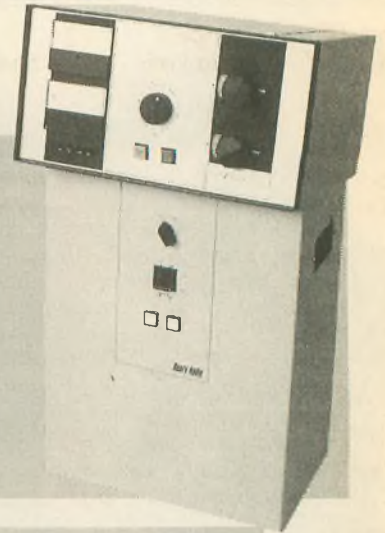
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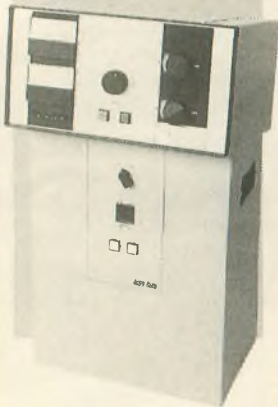
the FT-1000 the 3K Classic X

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1989 Worldradio DXathon

The results are finally tallied and the medals are on their way to the winners. We learned something from tallying the first DXathon and have slightly revised the rules for the 1990 DX-

athon. Look for the revised rules in our August issue.

Congratulations to our 1989 medalists and thanks to all of you who entered.

First Place Worldwide

JA0DAI Shin-ichi Watanabe Niigata, JAPAN 375 pts. SSB, CW, RTTY

First Place Europe

HA3NY Laszlo Weis Szekszard, HUNGARY 286 pts. SSB, CW, RTTY, SSTV

First Place Africa

5Z4BP Ben Pont Nairobi, KENYA 155 pts. SSB

First Place North America

KE0AH C. Boyd Louisiana, MO; USA 100 pts. SSB

First Place Oceania

4F2BAA B.A.C. Moreto, Jr. Malolos, PHILIPPINES 90 pts. SSB, CW

Second Place Asia

JG1NBD Takashi Hashimo Tokyo, JAPAN 325 pts. SSB, CW, RTTY

Second Place Europe

OK2SG Stan Krivy Rosice, POLAND 193 pts. SSB, CW

Second Place North America

KA0FPJ Leroy Carkenord Denver, CO; USA 67 pts. SSB

Third Place Asia

US6DF Leonid Malinin Azerbaijan, USSR 149 pts. SSB, CW

Third Place North America

NQ7Q Wayne Sutherland Laramie, WY; USA 65 pts. SSB

Honorable Mention*

YU1NR Hovakovic Ratko Kragujevac, YUGOSLAVIA 192 pts. SSB, CW, RTTY, SSTV, FAX, EME

*This exceptionally well-organized entry, in the true spirit of the DXathon, was the only one which utilized all five modes. The date of the postmark was illegible and, due to excep-

tionally slow mail, it did not arrive at our offices in Sacramento until after the judging had been completed. Nevertheless, we felt it too good to be ignored. □



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Worldradio

July 1990
Vol. 20, No. 1

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is published monthly by
Worldradio, Inc.
2120 28th Street
Sacramento, CA 95818
(916) 457-3655

Subscription Dept.
Worldradio
201 Lathrop Wy., Ste. D
Sacramento, CA 95815
1-800-365-SUBS

Second class postage paid at
Sacramento, CA & additional offices.
POSTMASTER: Send address changes
to **Worldradio Inc.**, P.O. Box 189490,
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the flame of vitality to this avocation.

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Warrenville, IL; Ed Harter, WA0J,
Springfield, MO.

We constantly hear that we need
more Amateurs. What is never actual-
ly stated is: How many more?

It is stated that defense of our fre-
quencies would be easier if we had more
Amateurs. More relative to what?
What reference shall we use? What is
the optimum level of Amateurs?

Should a country have more Ama-
teur Radio operators than barbers?
Well, there are 64,083 of those, so we're
ahead of the game. How 'bout CPAs?
(123,688). Got them beat.

Let's see now, how about private
pilots? Like AR, flying takes a govern-
ment test and a few dollars to partic-
ipate. The number there is 357,081.
(There are 293,728 private aircraft.)
Seems we've got the pilots beat.

As an indication of a nation's scien-
tific and economic status, should a
country have as many Amateurs as,
say, physicians and surgeons? The
United States has 408,050 of those, so
AR wins again.

OK, how 'bout attorneys? You
remember lawyers. They are the entity
which the United States produces 10 of
to each engineer, while Japan produces
10 engineers to every one attorney.
America has 434, 121 attorneys, so AR

wins again.

Boats. Boats, big and small, just like
AR, from expensive down to a little
rowboat. No test at all to run one.
625,000. Due to the total lack of any
other standard, proposed by anyone,
the number of boats seems a goal for
which to shoot.

We hear that Amateur Radio needs
to grow. Who is telling us this? And if
so, what is an acceptable growth rate?
What would be considered good, and
by whom?

Wayne Green wrote to *Westlink
Report* in response to something they
said about what I said about what he
says. I quote, in part, his reply:

"Yes, the American tax setup has
hurt our competitiveness with Japan,
as has our preoccupation with quarter-
ly profits. But it is a fact that Amateur
Radio, if it had continued to contribute
engineers, technicians and scientists at
the pace it did before "Incentive Li-
censing," would by now have provided
our country with well over two million

high-tech career people that we don't
have.

"One only has to talk with anyone in
the electronics industry to quickly
have all this in perspective.

"I think Amateur Radio can honest-
ly lay claim to having made the single
most significant contribution to the
decline of America as a world power."

It is of course a tribute to Wayne's
genius (we know that he is, for he tells
us so often enough) that the reporters
for *The Wall Street Journal*, *Forbes*,
Fortune and *Business Week* have
missed such a story, but he found it. No
economist from Stanford, Harvard or
the Department of Commerce, not
even John Kenneth Gailbraith or
William Buckley, has found such a
link.

Wayne, however, knows that the
United States would have invented the
Walkman if there were but six more
Amateurs on 6M in Missoula, MT.

There must also be a connection be-
tween the lack of a code test in Japan
and their having a life expectancy of
five years more than the American.
And yes, of course, their miniscule
crime rate is also due to having no code
test for some license grades. Possibly
CNN could interview Mr. Cray, as he
tells that his super computer would
have been on the market six months
ago if there were more Amateur Radio
operators.

The reality of all this is that the other
world technical power, West Germany
(not as obvious because their products
are not in every discount store), has an
Amateur exam that brings tears to the
eyes of strong men.

If we want engineers, technicians
and scientists, we can hire all we want
from those who wish to settle in the
United States.

What part does Amateur/not Ama-
teur play in the fact that the Honda
Civic is the best-selling car in the
United States?

—Armond, N6WR

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Dayton — April 1990



The flea market was "days of yesteryear." How many looking at these pictures now, spent endless hours calling CQ on the Novice portion of 80M?

Informative programs highlight Hamvention

JOHN MINKE, N6JM

County hunters

A county hunters forum was held Friday afternoon. Moderated by Ron Toth, WB8NWK, who was assisted by NF8X, the discussion dealt mostly with hunting mobiles in the counties of the United States. Although the more familiar award in this category is CQ's USA-CA, most of the action was directed at that of the Mobile Amateur Radio Awards Club.

NF8X discussed county hunting on CW and said the main frequency was 14.066.5 MHz, with a secondary frequency of 7.035 MHz. 21.066 MHz was also mentioned.

He said not to worry about the code speed, they will slow down for you. The system runs smoothly, often without a

net control present.

NF8X mentioned one mobiler who had managed to operate from all the counties and W1TEE, who had operated CW from all the counties (except Alaska and Hawaii), driving a 1976 Plymouth. He had put over 400,000 miles on the car in the course of this endeavor.

Ron mentioned that when mobiles are running, they are in control, as opposed to the net control. The mobiles call the shots.

If you would like more information on county hunting, particularly that of MARAC, send a business sized SASE to Bill Nash, W0OWY, 6604 Hounds Run South, Mobile, AL 36608.

There is also a computer program for county hunters called CHERRIES (County Hunters Entry Recording Reporting Interactive Executive System). This is available from Sherwood Engineering Inc., 1268 S. Ogden St., Denver, CO 80210, for \$49 plus \$5 for shipping.

DX Dinner

The Fifth Annual DX Dinner, sponsored by the Southwest Ohio DX Association, was on Friday evening, April 27, at the Stouffer Center Plaza Hotel. Although not an official function of the Dayton Hamvention, this get-together is one of the highlights of the big bash for the DXer.

As in many DX functions, the usual DXCC countdown was made to recognize our top DXers. All the deserving DXers stood up and, as the an-

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nounced DXCC total was increased, sat down when their individual total was reached. By the time 370 was reached there were four DXers still standing, one of them having an all-time high of 371 countries. The calls included W2AGW (who just turned 83-years-young), N4SU, W2JUV and TI2HP.

You might recognize the call N4SU. That belongs to Dave Kennedy, who has contributed to our *DX World* Antique QSL Department several times.

Another highlight of the festivities included Clyde Hester, K5TX, of SMIRK, proudly awarding to Lee Fish, K5FF, the First 6M DXCC. Her husband received number two.

The evening's program included guest speakers Ellen White, W1YL, Al Slataer, G3FXB, and Jacky Calvo, F2CW.

The annual SWODXA Plaque this year went to the 3Y5X DXpedition and was accepted by Kare Pederson, LA2GV, and F2CW, two of the team members.

DX Forum

Scheduled for four hours Saturday morning, this year's forum was moderated by Steve Bolia, N8BJQ, and was divided into six presentations of interest to DXers.

The first presentation, "The ARRL DX Advisory Council," was presented by Dick Roderick, K5UR, who discussed the most recent action by the DXAC, plus other items, such as current open items, the DXpedition disqualification criteria, new country petition requirements and DXAC correspondence.

The most recent action taken was that of the rejection of PTI (Puyallup Tribe of Indians) as a new DXCC country, by a vote of 16 to 0. They did approve the addition of 17 and 12M for endorsement credits to completed 5-band DXCC, by a vote of 15 to 1. Thirty meters was also approved, but was held back and not presented to the Awards Committee, as the band is still used on a shared basis.

During 1989 there were 11 new country petitions submitted to the DXAC. Only three passed. Correspondence to the DXAC is increasing and doubled in 1989 from the previous year. No new country petitions have been received this year, and nothing has been received concerning the recent Jarvis Island DXpedition.

Questions were opened and Dick was asked why Marquesas Islands didn't count as a new DXCC country. The answer was that it failed to meet Point 1 of the Countries List Criteria.

The situation of Abu Ail was also questioned. This little island has been maintained by the Red Sea Light Cor-

poration since 1911. Its charter was to terminate in April and be handed over to Yemen. However, we were informed that country has no interest in Abu Ail.

John Kanode, N4MM, Director of the Roanoke Division and liaison member of the DXAC to the Board of Directors, also spoke. He said field checking of QSL cards for DXCC applications would reduce cost and the workload at headquarters. From the show of hands, it appeared that most of



Kay and Mike Eyman, WA0WOF and W0XM, an Extra class couple who also subscribe to our other magazines, *International Travel News* and *Military*, stop by the *Worldradio* booth.

the DXers did not care for that idea.

Don Search, W3AZD, of the "ARRL DXCC Desk," spoke next. Don reported that the date of the DXCC applications that they are now working on is Jan. 11, and explained that the reason for the backlog is due to financial cutbacks. However, this has been resolved.

Don then answered questions from the floor. One dealt with Burma and why contacts with that country do not count. The reason was that Amateur Radio there has been suspended. Then a suggestion was made to delete countries where there is no legal operation. This could not be done, though, as there have been valid operations in the

past.

Concerning DXCC endorsements, Don stressed the importance of including the last endorsement date of your award. That is at the lower right hand corner of the form that was sent back to you with the QSL cards of your previous submittal. Don said to fill out completely the *application forms* and only check off items that apply. In other words, if you are submitting cards for one of the band endorsements, do not check off SSB or CW, as you are not applying for the SSB or CW endorsements.

Incidentally, a copy of your DXCC record is available from the DXCC desk. Please provide a business sized SASE.

The Colvins, Lloyd and Iris, W6KG and W6QL, were up next, discussing their most recent Yasme DXpedition. As in all their presentations, they used color slides.

The first country from which they operated was Niger, where they signed 5U7QL (the suffix of Iris' call). Next they went over to Burkina Faso (formerly known as Upper Volta) and used the call XT2KG (Lloyd's suffix). Lloyd said that they made 14,000 contacts in 169 countries from that country, which was their best ever.

Lloyd and Iris then went to Bahrain, an island in the Persian Gulf, now connected to Saudi Arabia by a long causeway. From that country they signed A92QL.

They also visited and operated from Australia and New Zealand. Their New Zealand call was ZL0AKH. The final country in their long tour was French Polynesia, where they signed FO0XXL from Maria Island.

Lloyd introduced UV3GM, who had helped them with another one of their tours to the Soviet Union, where they managed to operate from all 15 of the republics.

"PacketCluster" was the next (please turn to page 11)

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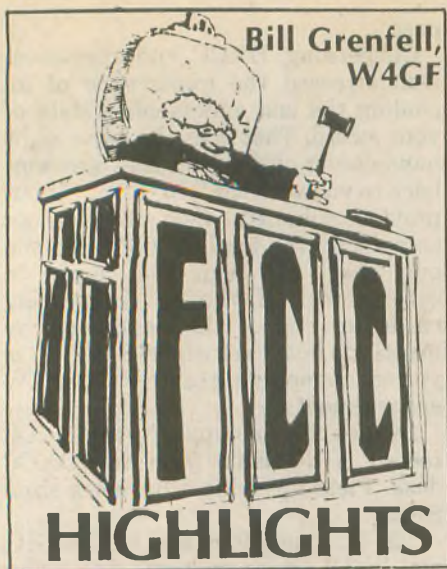
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By letter (dated April 19, 1990) the ARRL has asked that its petition for rulemaking, RM-7248, be withdrawn.

The League's purpose in submitting the petition was to implement in the rules a plan to facilitate the present and future development of RTTY and data communications among Amateurs by permitting automatic control of RTTY and data transmissions, including third-party message-handling in certain segments of the high frequency bands. The ARRL retains this goal, however, the League's Board of Directors would like to have the opportunity to revisit the matter and to consider alternatives to the specific proposal contained in the petition.

It also specifically requested that the present STA for automatic control of Amateur HF digital communications be extended, if necessary, for additional periods, in order to develop further experimental data on these modes. (The present Special Temporary Authority expires in January 1991.)

The FCC has granted the ARRL a license to conduct experiments on the potential for interference from Amateur 220 MHz operations to TV channel 13. In disposing of the many petitions for reconsideration of the reallocation of 220-222 MHz to land mobile use (General Docket 87-14), the FCC said that it might consider making spectrum below 220 MHz available to Amateurs if it did not interfere with television. This is seen as the first step

toward that end.

The results of these experiments may be crucial to obtaining FCC acceptance of Amateur operation in the 216-220 MHz region. It is particularly interesting that the ARRL will test spread-spectrum emissions. Spread spectrum — the transmission of high speed digital information (voice or data) in a wide bandwidth — is known for its ability to share spectrum without disturbing co-channel users of conventional technologies.

Some Amateur experimentation with spread-spectrum has taken place. An Amateur repeater using this mode is being constructed near Washington, DC. (The ARRL experimental station, KF2XAA, is not authorized to communicate with regular Amateur stations, but is a self-contained operation that will communicate with units under its own license.)

On Oct. 11, 1989, FCC Special Services Division Chief Robert H. McNamara wrote to a number of Amateurs seeking comments and information on phone patches, information bulletins and over-the-air telegraphy practice. The letter requested information and insight that could bring a resolution to "the unfortunate continuing over-the-air dispute that takes place on the 20M band . . . which is jeopardizing international good will . . ."

The letter asked a number of questions on these topics. In a Dec. 29, 1989, letter on the matter, McNamara

stated that the replies "... confirm that misuse of an important Amateur service frequency band was having a major negative impact upon the service. They clearly show that the Amateur service was not fully cooperating in selecting transmitting channels and in making the most effective use of the Amateur service frequencies as required by Section 97.101(b)."

McNamara stated that there were two general views for a solution in the responses. One was that the Amateur community should be allowed to solve the problem internally. The second, that the Commission should mount a massive enforcement effort.

McNamara said the second approach was not possible due to enforcement priorities and budget constraints; if direct Commission intervention proved to be necessary, it would be in the form of additional restrictions that may affect all Amateur operators. He said, "In view of the above, we will afford the Amateur community the self-regulation opportunity suggested . . ."

The ARRL's Nov. 15, 1989, letter, which contains a number of specific suggestions in this regard, was sent to the FCC.

On March 20 the ARRL filed its comments with the FCC in its proposal to establish a Personal Emergency Locating Transmitter Service (PELTS) in the 220 MHz band. The League said this proposal is premature because the FCC's proceeding in PR Docket 87-14 to reallocate the 220-222 MHz band to

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 May 1, 1990.

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

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
0	AA0AZ	KF0KC	N0LVA	KB0GPB
1	WF1J	KC1UO	N1HOA	KA1VOO
2	WY2C	KE2TJ	N2KPW	KB2JYY
3	NZ3I	KD3SC	N3IAV	KA3WET
4	AB4VB	KN4ID	N4YWA	KC4QGP
5	AA5RQ	KI5FA	N5QJH	KB5MNR
6	AA6VL	KK6JU	N6YRK	KC6KPM
7	AA7EM	KG7DG	N7OQX	KB7KPA
8	AA8BA	KF8GC	N8MEX	KB8JTR
9	WR9N	KE9WJ	N9JOA	KB9EQI
North Mariana Is.	AH0H	AH0AF	KH0AM	WH0AAL
Guam	KH2M	AH2CG	KH2EJ	WH2AMM
Johnston Is.	AH3C	AH3AD	KH3AC	WH3AAE
Midway Is.		AH4AA	KH4AD	WH4AAH
Hawaii		AH6KJ	NH6WL	WH6CHT
Kure Is.			KH7AA	
American Samoa	AH8D	AH8AD	KH8AI	WH8AAZ
Wake Wilkes Peale	AH9A	AH9AD	KH9AE	WH9AAH
Alaska		AL7LZ	NL7TW	WL7BYC
Virgin Is.	NP2F	KP2BT	NP2DT	WP2AHB
Puerto Rico		KP4QQ	WP4XS	WP4IYE

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the land mobile service is not final. The PELTS docket number is PR 89-599.

On March 16 the ARRL advised the FCC that it was "... gratified to note the absence of comments proposing the reallocation of existing Amateur Radio bands to other services in the FCC's inquiry relative to its preparation for WARC-92. (FCC General Docket 89-554).

The FCC has reaffirmed its contention that the federal government has authority in matters of radio frequency interference and states and local municipalities have none!

In a letter to the ARRL, the FCC's Robert L. Pettit said that congress has

pre-empted any concurrent state or local regulation of radio interference pursuant to the provisions of the Communications Act of 1934 as amended. Section 302(a)(1) of the Act provides that the FCC may, consistent with public interest, convenience and necessity, make reasonable regulations governing the interference potential of devices which, in their normal operation, are capable of emitting radio frequency energy to a degree that might cause harm to radio communications.

According to Pettit, state and local laws that require Amateurs to cease their operations on the threat of legal penalty, as a consequence of radio frequency television interference, are

automatically unconstitutional, as they have been entirely pre-empted by Congressional action.

END-OF-MONTH LICENSE TOTALS

February		March
49,648	Extra	49,346
100,738	Advanced	100,156
115,678	General	114,964
113,699	Technician	112,872
<u>83,364</u>	Novice	<u>82,512</u>
463,127	Totals	459,850

(Some material in this column was obtained from various publications, including the *ARRL Letter*, *W5YI Report*, *Westlink Report* and FCC Rule-making Notices.) □

CQ Communications Inc. purchases Ham Radio

Last month we told you that on April 26, 1990, at the Dayton Hamvention, Skip Tenney, W1NLB, publisher of *Ham Radio*, and Dick Ross, K2MGA, publisher of *CQ*, jointly announced that CQ Communications Inc. has purchased *Ham Radio*, the Ham Radio Bookstore and *Ham Radio Horizons*.

Staying on with CQ Communications Inc. will be Craig Clark, NX1G,

and Terry Northup, KA1STC. Craig will be involved in a number of different areas at both a corporate level and with the development of the Bookstore operation. Terry will continue as a book editor and with the development of a series of high-tech quarterlies in the Amateur Radio field.

Plans for the Bookstore include publishing and distributing a wide

range of titles appropriate to the interests of each of the four CQ Communications' magazines: *CQ*, *Popular Communications*, *Modern Electronics* and the newly-acquired *Electronic Servicing and Technology*.

Skip Tenney plans to devote his time to his computer consulting business for both small businesses and the banking industry. □



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 RFC 3-312, 30W in=120 out

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



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Dayton!

(continued from page 7)

presentation, on packet radio for DX spotting. Jay O'Brien, W6GO, and Dick Newell, AK1A, of Pavillion Software, explained the basic operation of PacketCluster, which Dick developed. Their presentation was broken down into DX Spotting and Logging, Multi-Node Capability, Custom Data Bases, Mail Functions, General Announcements and Talk and Conference Modes.

Kare Pederson was next, with his presentation of the famous Bouvet Island DXpedition. He was supported by additional comments from Jacky Calvo, F2CW. At the end of the presentation they were asked about the QSL cards. They replied that they were in the mail. However, they did have the 160M logs with them.

Other queries concerned what the temperature was like at Bouvet and the possibility of a DXpedition to JX (Jan Mayen) for some low band operation. They replied that the average temperature was at the freezing point and that Jan Mayen was a military base.

The final presentation was by HA5PP, who gave a brief run down of his operation from Vietnam in October and November 1988. He spoke through an interpreter. The operation in question was that of 3W8DX and 3W8CW, by three Hungarian DXers.

Contest Forum

The Contest Forum, moderated by Tim Duffy, K3LR, was scheduled for the entire afternoon on Saturday. Eleven presentations were listed in the program, but only nine were presented. Some of these were repeats of those given at the Visalia DX Convention three weeks earlier.

First on the agenda was "Contest Expedition to ZW5B," by Jim Neiger, N6TJ. This was one of those presented at Visalia.

Jim, who has 25 years of contesting experience, reported that during the early 1980s, he and several other top contesters began looking for interesting locations from which to contest. This led up to the ZW5B entry in the 1989 CQ Worldwide SSB Contest.

Although they were only the number two score, they made 13,664 contacts in 189 zones and 710 countries, for a total score of 35,830,544 points. (This was a multi-multi entry, where you add up the zones and countries worked on each band for total zones and countries.) From this Curitiba location in Brazil, the antennas were spread out over 10 acres.

Contesters are getting more sophis-

ticated than ever. This includes the introduction of computer programs into contest logging. This too was part of the Contest Forum, and not one, but

wide and WPX, ARRL DX and a few others, and can be interfaced with your packet system and control your radio.

Although Ken does not advertise his



Everyone looks up to top contester Jim Neiger, N6TJ.

two, presentations on this subject were given.

The first was "The CT Contest Logging Software," by Ken Wolff, K1EA. This program is well-known by the top contesters. Some of the features include complete duped and score logs for such major contests as CQ World-

program, it is available from the Yankee Clipper Contest Club for a mere \$25. Any excess revenues go for the support of the club. If interested you may order through Bill McGowan, KC1EO, 33 Truell Rd., Hollis, NH 03049. Checks should be made payable to the YCCC.

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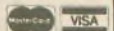
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Every contest forum must have pictures or slides of some super contest station, and "The KS9K Super Station," presented by Paul Hellenburg, KS9K, was no exception.

Initially, his station began with a 124 ft. rotating tower and by 1985 he had three 125 ft. towers. In 1987 Paul acquired 13 acres about 1½ miles from Lake Michigan, in Wisconsin. We were shown slides of the installation phase of the towers at the new location.

These new towers included 10M at 165 ft., 15M at 135 ft., 20M at 175 ft. and 40M at 175 ft. The 40M beam has a boom of 42 ft. Paul made use of a crane and was given a bill for \$1,800. He said that if the towers had been any higher, it would have cost an additional \$3,000 to \$4,000.

Our second presentation on software was "The NA Contest Logging Software," by Dave Pruett, K8CC. Dave stated that his program was not in competition with that of the CT program (K1EA's presentation), but rather a complement to it. His program deals with contests not included in the other.

Also not on the program was a short presentation of the LY2ZZ Lithuanian contest station, by Victor Peteraitis, LY2BIG. He was a guest here in North

America, arriving in Montreal on about March 4. From there he has traveled all over the United States, including Visalia.

Victor said that he expected three more towers to be installed at LY2ZZ when he left. With the present situation there, he doesn't know what will happen. Victor's presentation of LY2ZZ also included shots of some of the operators, including LY2BIL, one of their best operators, and LY2BAW, their 160M man.

"An Overview of the Mature W3-LPL," by Frank Donovan, W3LPL, was the next presentation. This was another one of those super stations. Frank said that he had discussed with his wife that it was about time to move to a new location. Frank showed us a slide of a large brick residence and said it was what his wife had in mind. Then he showed us a shot of a large antenna farm and said that was what he had in mind. The third shot showed them both together and it was obvious that both their needs had been met.

The new location of W3LPL has seven towers, four of 200 ft. each and three of 100 ft. each. One 200 ft. tower contained a 7-element 10M beam that was designed by WB3BGU. Frank said that this antenna was a real "blockbuster."

A computer-designed 6-element 15M beam developed by W1RR was installed on another 200 ft. tower. This particular beam had a 46 ft. boom. The backup 15M antenna consisted of two 5-element beams on a 100 ft. tower. The 20M was 5-elements at 200 ft. Designed by KH6CC, this antenna had a boom length of 56 ft. The backup antenna was a W2PV type with 4-elements on a 100 ft. tower.

Forty meters consisted of two beams on a 200 ft. tower, and the final 100 ft. tower stacked backup arrays for both 10 and 40M.

Frank also has 160M verticals at the perimeter of the antenna farm. He had problems with the verticals in the direction of the towers, but finally solved the problem by detuning the offending towers by simply running a wire down off the top.

There are two complete stations on each band and the entire antenna system has been designed with light-



We asked famed contester Chip Margelli, K7JA, which brand of transceiver he used to rack up those big scores and which one he took on the DXpeditions. He was kind enough to share his secret.

ning strikes in mind, which includes grounding the coaxial cable at both the top and base of each tower. Also, several ground rods are installed at each tower. Further caution is taken by disconnecting the cables at the station entrance during the lightning season.

Next it was award presentation time, done by Jone Dorr, K1AR, and Steve Bolia, K8BJQ. Several of the top contesters in the world came forward to be presented with plaques for their accomplishments in the recent CQ contests. Honorees included W3LPL, for his multi-multi effort of both SSB and CW, with combined scores of 29 million points.

The forum was rapidly approaching the end, with the last presentation, "Operating the Novice Roundup," given by Ronni Stern, KA1NRR.

Ronni, who resides in Vermont (a good multiplier in any contest), said that up there in the winter there were two things to do, go skiing or operate in contests. Ronni doesn't ski.

She described her frustrations at being a beginner in contests and the learning experience she gained from them. She also requested that others jump in and help out in the Novice Roundup.

This concluded the Contest Forum and, as it was near the end of the day's activities, it was time to prepare for the big banquet at the Convention Center in downtown Dayton.

ARRL

This Sunday morning forum was moderated by Allan Severson, AB8P, Director of the Great Lakes Division. Assisting him were George Wilson, W4OYI, first Vice President of the ARRL, and George Race, WB8BGY, the Great Lakes Division Vice Director and Michigan Section Manager.

One of the subjects presented by Al (please turn to page 14)



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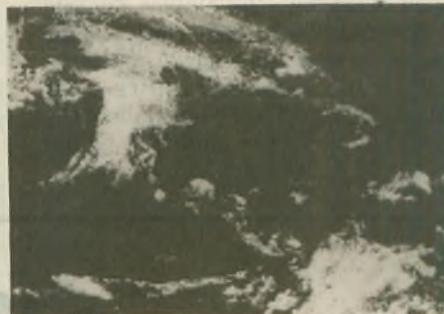
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WORLD RADIO, July 1990 13

Dayton!

(continued from page 12)

was the possibility of a codeless license. The League's proposal was one of 12 that had been filed with the FCC.

The problem is how to structure the license. Presently, the elements of Amateur testing include 1A, the Novice code; 2A, the Novice theory; and 3A, the Technician theory. One thought is that this new Communicator license would require only elements 2A and 3A. To upgrade to the Technician class, the applicant would be required to take element 1A.

W4OYI stated that he felt that Amateur Radio cannot get along without the Novice and Technician classes in their present form. This drew a round of applause from the audience.

Another item discussed was what to do with the 80M Novice band. Should we leave it the way it is, shift the entire segment lower by 25 kHz, or just add 25 kHz to the lower end to make the Novice band 3675 to 3750 kHz? The reason this change might be needed is because of SSB interference from Canadians that had moved further down the band following the additional SSB expansion for Extra class ticket holders.

Al also discussed the 220 MHz band, where the FCC wants to take 2 MHz from the Amateur service and give it someone else. UPS was interested, but may be having second thoughts. They are looking elsewhere.

Even if we lose that portion of the band, we may gain some other frequencies at the next WARC meeting. With the next upcoming WARC conference, 40M probably will be up for grabs. W4OYI reminded us that each country, regardless of its size, has one vote in the conference. It is up to us to educate the newly formed countries and get them on our side.

A question from the floor concerned how to promote Amateur Radio. It is up to us to sell Amateur Radio. The ARRL will provide the necessary materials. □

Wayne Green faults ARRL

PETER ONNIGIAN, W6QEJ

Probably the most outspoken critic of the American Radio Relay League, publisher Wayne Green, W2NSD, at the Dayton Hamvention in April accused the ARRL's board of directors of financial mismanagement and lack of foresight in not using a public relations firm to promote Amateur Radio in Congress and throughout the country.

"If the ARRL were doing its work," said Green, "we would have an organized advertising promotion effort going that would bring in new hams. Look at what the NRA does for the gun hustlers! We need a PR firm like the NRA promoting Amateur Radio."

Green said about \$4 million comes in each year from memberships and another \$6.3 million from *QST* advertisers, for a yearly gross income well above \$10 million. But none of it goes to any PR firm to promote Amateur Radio.

He went on to say, "The FCC does what Congress wants it do do. And you know how much it costs to buy Congress? If 400,000 hams pitched in \$10, that would be \$40,000 apiece for each Senator! Spreading another \$10 per ham per year for the Representatives — why, Congress would give us the entire broadcast band."

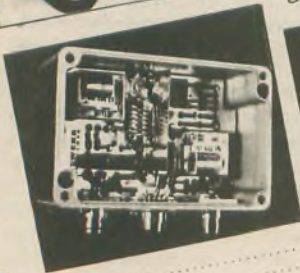
Code proficiency

Green believes it only takes about two weeks to build up one's code speed from 13 to 20 wpm, with only 20 minutes per day of practice. He urged everyone to get their Extra class ticket this way.

About the Extra examination, he commented that it's easy. "You can

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guess 25 percent correct because it's a multiple choice question test," he said. "Gone are the days of drawing diagrams."

From Green's notebook

"Don't complain about Amateur activities to the FCC. They don't have a budget for Amateur Radio. They got mad at us a couple of years ago and cut the Amateur staff down, from 18 to 2 people! So the less trouble we are, the longer we are going to be alive.

"If we had a truly active national organization that was doing its job, that organization would police its own members, like the lawyers, doctors, professional engineers, etc."

If we eliminated code requirements for licensing, we would get nothing but benefits. By ridding ourselves of that obstacle, we can promote Amateur Radio as something fun you want to do. We'd probably have twice as much code activity, via computers, than the amount of code we now have. A recent survey indicated 80 percent of those currently using code are using computers."

"We need to change three ARRL directors, which will enable us to make a major change in the direction of the league." Asked why he did not run for director, Green stated, "One who is in the industry cannot be a board member," according to the bylaws.

"The League has done a very impressive job of putting in commercial equipment at W1AW. We have the Harris commercial transmitters and receivers, which were budgeted at, I think, \$450,000, and it went over \$750,000. I don't think that will be reflected in the financial reports. Computer run, it's the only Amateur Radio station in the country licensed by the FCC to use a paid operator."

Nearly 500 Dayton Hamventioners, lining the walls and sitting on the floor, listened to W2NSD. The controversial talk had its bright moments, as when Green suggested that all Amateurs should sell and install home and office burglar alarm systems! Someone said that in his state, you had to have a contractor's license to do that kind of work, to which Green replied "Then get a contractor's license."

MARS — A bridge in troubled times

The following is an excerpt from a speech by Lt. Gen. James S. Cassidy, Jr., USAF, Director of Command, Control and Communications, The Joint Staff, Department of Defense, Washington, DC, given at the Dayton Hamvention on April 28.

I'm very pleased to be here at Dayton. Downtown Dayton on a Saturday morning is not the place you generally go when you work at the Pentagon, but I'm pleased to be back in the great midwest — particularly to be able to talk to you folks in the MARS business at this great Hamvention.

I am a staunch supporter of MARS because of the professionalism and service that it provides the United States. Not just for the Army, Navy or Air Force, but to the whole Department of Defense, as well as to individuals worldwide who need your assistance.

I need to tell you a little about myself. Moving from being the commander of Air Force Communications Command to Washington was a shock. I was a two-star general out at Scott. Scott AFB is a friendly area — the whole base was located out in the middle of a cornfield and you had to go 20 miles to get to St. Louis — the big city. In this small town atmosphere, whatever I wanted as a two star general, those folks did their very best to make me happy. I came to Washington and they gave me another star and I moved into the Pentagon. I asked somebody to do something and their response was "Huh?" I found out there were more four star generals in the Pentagon than we had generals in

all of Scott Air Force Base.

This reminds me of the story about this young bull. He and two old bulls were on a hill overlooking a meadow full of cows. Of course this young bull had no cows of his own, as the two old bulls owned all the cows. He was hoping for the future, when along came a truck with a huge trailer in the back. When the man opened the trailer, out came the biggest, ugliest, meanest bull that anyone had ever seen.

One of the old bulls on the hill said, "Y'know, he looks pretty tough. If he wants them, I'm gonna let him have half of my cows." The other old bull said, "I'm gonna let him have all of mine."

Meanwhile, the young bull was acting up, scratching and clawing the ground, tossing dirt around and slobbering. The two old bulls asked, "Are you trying to pick a fight?"

"No, no," the young bull answered. "I just want him to know that I'm a bull!" (Laughter)

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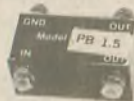


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Washington — pawing and kicking! I just want the rest of those guys to know that I'm a general!

One of our staff lieutenant colonels likes to tell the story of how MARS got him through an Air Force readiness inspection in Korea. It seems the IG (Inspector General) team was systematically taking out one after another of his comm systems. First, a simulated thousand pounder took out the cable to a microwave tower, and with that cable went AUTODYN, AUTOVON and all of his secure voice. Then the Satcom antenna took a simulated direct hit. A simulated fire in the telephone office took away his local telephone connectivity. This went on until all he had left was the commando escort HF facility and a co-located MARS station.

A simulated A29 crash took out the HF antenna farm and the transmitter site, or so the IG team thought. It seems that prior to the IG team's unannounced arrival, this commander had helped his ground radio troops relocate the MARS station in what was supposed to have been a condemned dormitory and they hid the antenna field in an abandoned power station. He refused to tell the IG team where it was. He told them it was out there, but that they would have to find it.

For two days, the wing command post simulated operations through the MARS station which helped our staffer, who was the commander at the time, earn an outstanding rating for his piece of the supervision, and an overall excellent rating for his piece of the exercise. This may be an unusual use of MARS, but it is one of the many illustrations of MARS usefulness.

Last December I received a letter from General H.T. Johnson, who is the commander in chief of Transcom. I'd like to quote some of it for you. He said, "As you know, MARS has served our field commanders as a back-up command and control system for contingencies and national disasters for decades and it continues to provide



Lt. General James S. Cassity, Jr., USAF, spoke to MARS members and future MARS members, commending the work done by those involved in the service.

critical support. In today's austere funding environment, MARS provides a back-up capability at a cost that is cheaper than any other system. MARS has never failed to meet our most urgent needs."

He continued, "Hurricane HUGO hit Charleston AFB on Sept. 21, 1989. We lost all our communications. During the night, the only communications available was our MARS station. There was no satellite connectivity, no landline, no tactical networks, nothing else had remained on the air except MARS."

General Johnson up to this point had a strong case for MARS, but he really wasn't finished yet. He continued, "Let us keep MARS on the air. It is one of the very few last-ditch communications systems that always works. Anything you can do to assure the continued viability of MARS will be appreciated."

That was to me in my job on the joint staff. I thought that those were very strong words from one of your strongest supporters, a man who knows what HF systems can and do on a daily basis throughout the Air Force, Army and Navy.

HF systems such as MARS can be thought of in terms of words that tend to be a little bit overused in some of our military vernacular. But the term "force multiplier" is an accurate term. It multiplies that effectiveness of many of our other forces, because you're there to provide that kind of activity. I believe that HF radio has become increasingly important as a force multiplier across the entire defense department. It is survivable. It will work. It can be helped. It is inexpensive and it is a super back-up way.

My suit is purple — it just looks blue from out there. That's what we say about the Joint Staff. The Navy is dark blue, the Air Force is lighter blue, the Army is green and the Marine Corps is (please turn to page 18)

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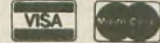
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Dayton!

(continued from page 16)

olive drab. We put all that together and I don't think that it's really purple, but we call ourselves purple suits. So, I want to add my thoughts about the Navy as well as the Army.

The Navy, too, is a firm believer in MARS programs. There are FLOTNETS that provide phone patches and Marsgrams for sailors at sea. Often, it's the only connection with their families.

Again, Hurricane Hugo, put MARS to test for the Navy. When the hurricane kept the sailors out at sea, where the ships stayed at anchor out of harm's way, MARS provided them with a connection with their families in Charleston, which as you know, was in harm's way.

MARS can also be credited with saving ships that might have been lost or damaged because of a sunken barge in the Charleston harbor. It was a MARS transmission that warned the folks coming back in of the danger.

The army has long required MARS stations as the standard set of communications equipment for post, camp and station. As with the other services, these stations are manned primarily by volunteers and extra shifts from Army people who care. The Army has shown its commitment to MARS by providing manpower to staff six gateway stations in Hawaii, Korea, Germany, Fort Dietrick, Fort Sam Houston and Fort Lewis Washington.

Amateur Radio is alive and well, you

just need to come to Dayton to the convention to recognize that. It's amazing that we call it "Amateur," for your kind in the MARS business are certainly "professional."

A few words on the earthquake. When the ground quit shaking in Santa Cruz county last Oct. 17th, 592 homes were destroyed, 2,069 suffered heavy damage, 3,210 had minor damage, 668 mobile homes were damaged or destroyed, 10,000 people were displaced from their homes and six people had died. Within minutes, Amateur operations came alive. Setting up 24 hour coverage, more than 370 Amateurs worked eight straight days. Volunteers appeared from California, Nevada and Oregon. Three operators at one station handled over 5,000 messages in a 48 hour period. Radio Amateurs were the first to alert the Fort Ord Medical units and set up ambulance and helicopter support. Imagine all this support — and in only one county.

Before the Berlin Wall and the Iron Curtain came crumbling last fall, the fiscal environment of the Defense Department had begun to change. The defense budget has been declining since fiscal 1985. By 1995 the result will be a cumulative 10 year real decline of over 25 percent. Unfortunately, the fiscal guidelines of the five year defense plan continue to reflect after-inflation growth until very recently. Now, with this reduction in the number of troops, I think you can imagine the turmoil that planners and programmers have gone through over the past two years in trying to deal with the

budget, particularly when the classic Soviet threat was still very real in every intelligence estimate.

But Congress has said Gorby's in charge, it's all safe for the world. Our planning system has been driven by decades by that Soviet threat, and now, without it, we're really pondering exactly how much, what size, and how sophisticated does our defense establishment have to be? I know that many of you would like to see your taxes go down, or at least some of those taxes go for highways instead of new tanks or airplanes. I think that your Department of Defense is up to the task, but I am worried, particularly with the demand and flow of communications that we may push too far, too fast, in response to the current environment.

I'd like to read you a short excerpt of a message that I sent out to all the service communicators — those people in the Army and the Navy and the Air Force that kind of report up to the Joint Staff. I said MARS is a vital system which provides our nation with critical communications capability during natural, as well as man-made, disasters and contingencies. I share concerns expressed by General Johnson, regarding the apparent erosion of MARS support. The service MARS provides, the lives it saves, the assistance it brings to local communities and the resulting good press are well worth its small cost. The future we all face can be a very bright one. The only times we got ourselves into trouble with war have been when we were unwilling to spend enough on our defense and peace. I hope we won't forget this piece of history as we move into this new era.

MARS was the center of attention in a recent display of jointness between the Army and Air Force at Howard Air Force Base in Panama. One of Fort Ord's 7th Infantry Division field artillery units, deployed to Panama, presented the Air Force's 1978th Comm Group MARS station with an award. During the first eight days of operation Just Cause, the MARS unit had provided more than 490 Marsgrams and 1,400 telephone patches. One Army lieutenant said the MARS station had been identified as a combat multiplier and once again they came through.

I take my hat off to all of you who are in the MARS business. I challenge you to look out and seek those folks who are youngsters in high school or junior high and introduce them to the world of Amateur Radio. We need them in the service in all our services and we need the MARS support this year, next year and all the years I can see into the future. □



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On tuners

Speaking before a packed room at the Dayton Hamvention in April, Ken Glanzer, K7GCO, delivered another of his well-organized discussions on antenna tuners. He traced the development of the antenna tuner, from the early 1920s with open-wire lines to coaxial VHF tuners just now commercially available.

Ken simplified the function of a tuner, which unfortunately is not well-understood by the average Amateur. He explained that the purpose is twofold. Located at or a couple of feet from the transmitter, the tuner first brings about resonance by cancelling inductive or capacitive reactance at that point in the feedline. This accomplished, there remains only the radiation resistance (assuming a lossless transmission line.)

The second function of the tuner now comes into play. That is to transform this resistance to 50 ohms or, in rare cases, to 75 ohms, so that a near-perfect match exists.

The various types of tuners now available are, to a large part, variations of an unbalanced Johnson match box using a differential capacitor first described in a WW II Navy manual! Each brags, and sometimes has, a feature not found in others. Some have a great deal of harmonic reduction, some don't. Some have more VSWR band width than others. Some provide a low resistance path to ground, eliminating static electricity and reducing noise on reception. Some have greater reactance matching capability than others.

What is Ken's favorite tuner? A simple capacitor, in series with the coax center conductor. By using a coaxial transmission line that is one quarter-wave on 1.781 MHz (with velocity correction), this length will work on all bands, from 160 to 10M. The dipole or trap dipole must be resonant at the low end of the band concerned.

This length of coax will then reflect an inductive reactance at the transmitter-tuner end. Thus the capacitor can be adjusted for good VSWR, probably under 1.5 to 1.

This tuner does not raise or lower the radiation resistance for a match to 50 ohms, but then it has only one compo-

Ken Glanzer, K7GCO, shared his vast knowledge of antennas and tuners.



nent and one knob! It works quite well with 91 ft. two inches of 50 ohm coax, with a velocity factor of 66 percent.

"Judge" Glanzer, as he is known, provides an excellent tutorial, com-

plete with printed handouts and a Q and A session on antenna impedance matching. If you have the opportunity, don't miss his tuner talk. He is full of facts and he presents them well. □

Quad antennas

PETER ONNIGIAN, W6QEU

During the Dayton Hamvention Robert Haviland, W4MP, presented a discussion about quad antennas. While the slide show was dismal due to poor enlargement on the screen, the talk was well-attended, proving that the subject of quads is one of great interest.

Robert announced that his forthcoming book on quads is to be published by CQ soon. He explained that Clarence Moore is the originator of this wire antenna and that the original work on it was done in Ecuador. The one-wavelength perimeter of the original design may be fed from just about any corner or halfway between. Placement of feed determines polarization. The quad may also be loaded with inductance in order to reduce its size.

Some cardinal points Robert discussed included the fact that Two wavelength perimeter quads work well and quads may be operated on their

second harmonic. He pointed out that the wire diameter of the quad controls the input reactance much more than the input radiation resistance.

There was also the inevitable discussion on the relative merits of a quad and a Yagi during the question and answer period. The discussion was not conclusive, however, because it's like comparing apples with oranges. The Yagi has nearly halfwave elements, while one quad element has two half-waves of radiator. So a 2-element quad should be compared with a four element Yagi.

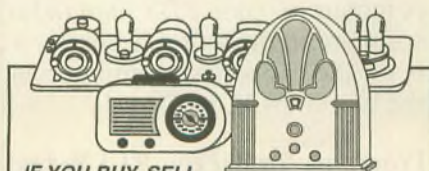
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Robert Haviland, W4MP, got into the swing of things as he explained how the quad antenna works.

About wire diameter, Robert said he didn't realize the importance of it until after he wrote his book. The diameter is very important, as it controls the input reactance.

The computer work in Robert's presentation was done with MINININEC programming. His conclusion was that a 2-element quad makes an excellent two-band antenna. □

Perils of mobiling (part 1)

C.K. "Skip" WALTER, AD0H

I'm the first to admit that some of my most enjoyable hamming has been done from the car. I was late getting on 2M for repeater work and even later, by

several years, at installing a HF rig. But, as much fun as it has been, mobile operating has had its more difficult moments.

Speed trap

Let's start off with one of my frequent trips across Iowa. While we have good interstates (I-80 going east and west, I-29, I-35 and I-380 connecting north and south), I prefer the less traveled state and county highways.

First, the traffic is considerably lighter — it must all be on the interstates. Second, the back roads are more interesting and provide a wide variety for an easily bored driver, like me. I enjoy seeing the farms and towns wherein live the real people, a welcome contrast to fellow transients at the

superhighway rest stops.

On this particular night I was on a previously uncharted road, in QSO with a K7 in Oregon. At the border of a town I'll call "Center City," I saw the lower speed limit sign of 45 mph. I slowed down from my 55 and bent my ear to the fading 20M signal. That must have been about the time I passed a 30 mph sign, because my next observation was of a police car pulling out of the hamburger stand parking lot with red lights flashing.

I quickly signed with the K7, explaining that, since there were no other cars on the road, the police car must be after slow-driving, law-abiding me.

The officer, named Barbara and not in a mood to compromise, showed me her radar readout of 42 mph, which I was sure was accurate, but not acceptable in a 30 mph zone. That cost me \$41 and an uncomfortable half an hour. If only 20M had been in better condition, that never would have happened.

Antennas on, off and ouch!

What probably kept me from HF mobile was the matter of an antenna. I didn't want to drill holes in the body, or anywhere else for that matter, and I didn't want to draw too much attention to the car, for fear of attracting those inclined to steal good equipment.

I finally accumulated enough limited knowledge to recognize that the list of antenna alternatives is fortunately limited. I blindly ordered a Hustler mobile whip, with resonators for 10 and 15M, a strap bumper mount and a "quick-release" attachment. The latter quickly released me from about \$18 but, more importantly, allowed me to remove the whip from the bumper mount at the end of each trip, leaving the car looking about normal on most days which are spent in the employer's parking lot.

For those who haven't seen one closely, the whip is about five feet in length and the resonators (about a foot for 10M, over three ft. for 40M) are screwed into the top of the whip. Add those up and the total antenna height quickly exceeds the height of a garage door. Which was my next peril.

The mobile whip may look unusual to the so-called man-on-the-street, but it gradually starts to look normal to the mobile operator; so normal that I forgot it was there and drove the car into the garage. The resonator gave a sickening scrape as it was bent over at a right angle by the garage door.

The whip itself was also bowing a bit, but the resonator felt the most pain and promptly snapped off when I gingerly tried to move the car backward. I wonder how many orders the radio supply stores receive for (please turn to page 25)

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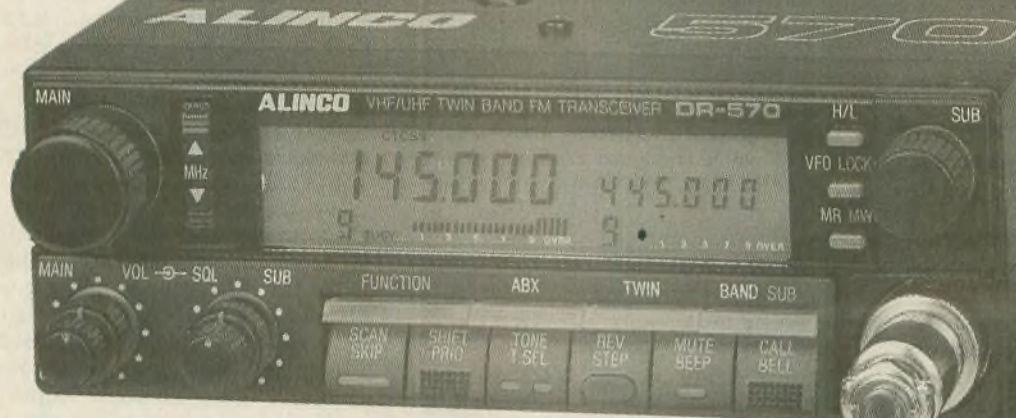
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- **CALL CHANNEL FUNCTION**

- **BEEP FUNCTION**

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Tracking elusive interference (conclusion)

JOHN NEELEY, K6YDW, and BILL KELLERHALS, WA6FJS

Last month Norm Lucas, WB6RVR, told his tale of the tormenting signal and how he and some friends from North Sacramento tracked it to Tahoe City.

Now we pick up where they left off, just having contacted Tahoe area Amateurs on the 147.150 repeater.

Tahoe City, CA (on the North Shore). On Sunday, Feb. 25, I (K6YDW) was monitoring the 147.15 MHz Reno repeater, listening to the QSO between WB6RVR and WB7RPS, concerning the steady tone carrier on the 145.05 MHz packet channel. Prior to this I had noticed the carrier at my location in Tahoe City, rendering the channel useless.

In listening to the conversation, Norm told about the fly-over on Saturday, Feb. 24, and the successful locating of the source of the signal as being between Homewood and Tahoe City, and definitely in the Tahoe Basin. I broke in at this time and mentioned that I could also hear this signal, without an antenna, on my HT. Between the three of us, we discussed

tracking the signal in the Tahoe City area.

Since it was another beautiful day here in the Tahoe Basin, I proposed to Norm and Mike that I would proceed on this end with the effort to locate the source of the signal. At about 10:30 Sunday morning, the XYL and I loaded into the pickup, carrying with us a 2M HT and a 440 MHz, 6-element yagi, and drove south to the Homewood Ski Area.

Upon arrival at the ski area, I took the HT with the yagi connected and swept the area. The signal was everywhere, due to reflections from the water, mountains and snow. Taking off the yagi, I could not hear the signal very well, so I surmised that we were in the wrong area.

I drove north toward Tahoe City, stopping a few times to try to take bearings on the signal, but coming up with the same results. Since Bill lives on the south side of Tahoe City, I stopped at his house.

Bill works for Pacific Bell (as I do), and is the Radio Technician for this area. I thought that he might have

some DF equipment in his truck to help narrow the search area.

Well, no luck. Bill had no DF gear with him and none was available in the local area.

Bill used an I.F.R. Service Monitor to determine that the signal was indeed on FM 145.05 MHz (145.0512 exactly). The source was putting out a tone on 1300 Hz, which gave a beautiful sine-wave on the monitor.

Bill and I drove around in his area, as the signal on both of our HTs was strong with any antenna. Suspecting that the source might be close, we drove up and down the streets in the area, looking for antennas and taking signal strength readings. By this method we decided that the source was not in this locale.

We drove north again into Tahoe City proper and the signal appeared stronger on the bargraph S-meter on Bill's HT. We stopped a few times and attached the 440 MHz yagi to Bill's HT. Bill changed the frequency to 145.06 and we began to show an increased reading north of Tahoe City.

We were now back in my area and, as the signal was full quieting at my home QTH, we proceeded to the area above my house, the Highlands. We drove up and down each street in the development, and as we did so, the signal

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would peak between Old Mill Road and Village Drive.

Continuing to cover all the streets we looked for VHF antennas. We soon found a "drooping groundplane" on one house, along with some HF antennas. As we neared this location, the signal really increased, and we suspected that we had found the source of the signal.

Bill stopped in front of this house and, using the yagi with the HT offset to 145.070 MHz, we showed a peak right at this house. The couple who live here, Frank and Jeri Lawson, are both Amateurs and CAP members.

We knocked on the door and Frank, N6UYC, let us in. When we explained the nature of our quest, Frank showed us his radio equipment, all of which was turned off. Frank has no packet capability.

Inside Frank's house, the signal was so intense that it was very hard to believe that the source was not in the house. Looking out over Frank's deck, we checked for any suspicious antennae and discovered zilch.

After a chat with Frank, during which we apologized for intruding, Bill and I began walking up and down both sides of CedarCrest Drive. The signal would fall off five houses either side of Frank's house. I took off toward the back of the houses on the other side of the street, walking to the rear looking for antennas. I wished for my showshoes, as I was hip-deep in snow. No antennas were sighted on this side of the street either and, as it was getting late, we broke off the search for Sunday.

The next day, at about 1700 hours, Bill and Placer County Sheriff's Communications Reserve (P.C.S.C.R.) member Larry Clark, NY7J, went to the CedarCrest area in a rain storm and began another search. They brought with them a Digi-Max portable frequency counter and a 440 MHz. Sweeping the area around Frank's house with this unique DF rig, they got a peak between two houses on Polaris Dr., directly below Frank's house.

They drove to Polaris Dr., and, with the Digi-Max saturated, the yagi was exchanged for a rubber duck. Using this method, the signal was determined (theoretically) to be coming from 3185 Polaris Dr.

But there was no antenna! No coax, no occupants (no tracks in the snow), a general lack of any evidence.

The next idea was to pull the AC power and see if the signal would go away. However, it was still raining and when Larry touched the box it bit him. A quick consultation resulted in a decision to put off further activity until tomorrow.

On Tuesday, Feb. 27, at about 1030 hours, Bill and Bob Dobbins, K6KFF, another P.C.S.C.R. member, went to the area with equipment, listened to the 145.05 MHz signal on the IFR Service Monitor and pulled the AC main switch. The signal went away! The switch was turned on and the signal did not reappear.

EUREKA! (California's apt motto: "I Have Found It").

Since the hunt had been completed, it was time to find the owner. Bob went to the Sheriff's office and determined the name of the owner and called and spoke with his wife. When Bob told her of the problem, she confirmed the existence of the equipment and its use as a packet readout of temperature, AC voltage and various other functions, both at Tahoe and at other homes they have in California. She confirmed that the antenna is in the attic.

So ends the "Great DF Hunt." I sincerely hope that the unnamed operator, whose call sign has been protected, will appreciate the efforts taken to find his unattended station.

Again, I would like to commend all parties who were involved in this saga, since without the cooperation between them, the outcome would have taken quite a while longer. □

Southern Africa 6M Award

The Southern Africa 6M Award is available to Amateur Radio operators in all countries except the Republic of South Africa. Applicants must show proof of having completed two-way 6M QSOs with stations in at least 10 different grid squares on the African continental mainland SOUTH OF THE EQUATOR, with all contacts made on or after Jan. 1, 1986.

Application should be made by submitting QSLs or photocopies certified by a representative of your national Amateur radio organization and five IRCs to: VHF Awards Committee, Pretoria Branch, S.A.R.L., P.O. Box 1259, Pretoria 0001, REPUBLIC OF SOUTH AFRICA. □

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WORLD RADIO, July 1990 23

4J1FS - Malyj Vysotskij, 1989

NORM BROOKS, K6FO

Now that we have your attention by using the full Russian name, we will shorten it to MV Island.

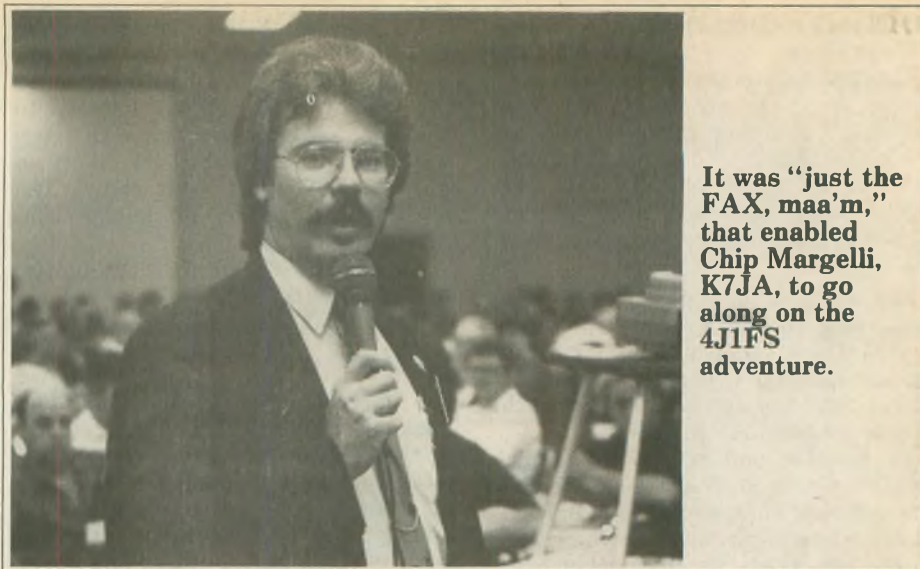
Finnish and Russian Amateur Radio operators got together for a second time in May 1989 to staff a DXpedition to MV Island. MV is unusual in that it is located entirely within the USSR, but is leased to the Finnish government.

The previous such trip was in 1988, and at that time the boat bringing the Finnish participants almost sank.

Chip Margelli, K7JA, and Martti Lane, OH2BH, presented "East Meets West in a Shrinking World - 4J1FS," on Sunday morning, April 8, 1990, at



Martti Lane, OH2BH, was part of the 4J1FS operation.



It was "just the FAX, maa'm," that enabled Chip Margelli, K7JA, to go along on the 4J1FS adventure.

the International DX Convention in Visalia, CA. It was a very professional slide show, letting us in on the ordeals encountered in such an operation.

Instead of seeing a forbidding beach that had to be "stormed," we saw a modern wharf at which a cruise ship was already docked! It seems a Finnish tour group also found the island attractive.

Chip recounted to us that he had but four weeks notice that he could go along on the DXpedition. He used FAX to request visas and operating licenses from the Finnish and Soviet governments. Twenty hours before his departure for Helsinki, his Russian visa came through by FAX. His advice to future DXpeditioners — "Don't forget to use FAX, it works."

The group made about 16,000 contacts in 1988, but this year they were aiming higher, by covering OSCAR 13, VHF, aurora and moonbounce. They added the 13 and 160M bands, too. The objective was 35,000 contacts, and they made 41,000.

Chip's operating teammate was UZ3AU, who was a very capable radio

repairman. At one point, when the radio quit (the Russian said "kaput"), he expertly replaced a faulty coil with one he improvised on the spot. He proudly announced, "You now have Russian coil."

This year the participants on the island along with K7JA and OH2BH included: Gennadiy Grigoryevich Shulgin, UZ3AU; Ari Korhonen, OH1EH; Jari Jussila, OH2BU; Mika Hermas, OH2JA; Jukka Servio, OH6DD; and Enn Lohk, UR2AR.

In proceeding to the island, the group had to pass both Finnish and Soviet checkpoints. Chip remarked that it was interesting to encounter a young lady Soviet soldier, with heart shaped earrings, heavy mascara and a machine gun!

The only reason they were allowed to take radio transceivers into the USSR was the Radiosport competition. Radiosport will be part of the Goodwill Games in Seattle in July and August 1990.

In conclusion, and the most important thing to note, 4J1FS was a happy experience. □



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Updated information

A couple of points of correction need to be made regarding an article, "Hurricane Watch seeks volunteers," which appeared in the June 1990 issue.

The Hurricane Watch Net doesn't use RTTY; they use FEC and AMTOR instead. They also don't monitor 14.313, using instead 14.300 or wherever the Maritime Mobile Net is allowed to operate.

We hope the mixup caused a minimum of confusion. □

Mobiling perils

(continued from page 20)

resonators only, or am I the only one so absent minded (well, I am a professor, so it would make sense).

Less of a problem is changing bands and matching the number on the resonator with the band switch on the rig. To go from one band to another, you stop the car and walk to the back bumper, then tilt the mast at its pivot, which is about eye-level. You then unscrew one resonator and replace it with another. This can all be done easily within a minute, which is necessary when it is raining or when you are attracting suspecting stares.

But one day I changed resonators and the rig, a solid-state Icom 730, would not put out the usual 100W on 20. This indicated trouble, either in the transmitter or something wrong with the carefully installed antenna. It took me about 10 miles to decide that I should see if the right resonator was on the mast. Sure enough, what I had screwed back on was the same 15M resonator that I had just taken off, having fumbled them around in my hand. The only band change had been at the rig, not at the antenna.

I later sold the car and had to prepare it for delivery to the new owner, who was naturally in a hurry to get it before I could do more damage. It was then that I learned that removing antennas and cables, especially the latter, takes nearly as long as installing them.

The power cable was easy: Find the screw under the dashboard which attached to a grounded metal part and loosen it. The positive 12-volts was simply unplugged from a terminal ahead of the fuse box (the power cable supplied by Icom is already fused; any more would be redundant). The switch in the car's speaker lead was cut out and two wires taped together (they won't come apart until the new owner drives down a rough road).

The antenna cable was something else. I had snaked it under the floor mat, under and around the back seat and through the trunk. There was also a cable for the 2M trunk-mounted whip to retrieve from the same path. The back seat had to be loosened from its mountings, which are designed to hold backseats in place through violent collisions.

It might have helped to simply cut the cables, but I intended on using the same setup, right down to the coax connectors, in the new car, so I wrestled with that rear seat for many minutes before it was sprung free. Then I could look forward to re-installing the whole mess.

Learning the county hunting ropes

Mobiling fun really picked up when I heard about the County Hunter's net on 14.336. Having resonators for only 10 and 15, I inserted a small MFJ antenna tuner in the line and tuned up while on a trip to western Nebraska. When there was a pause in the net, I said, "QRZ from Dawes County, NE. This is AD0H."

I naturally assumed everyone needed Dawes and would welcome me with a pileup. No pileup happened, but the net control asked if I wanted on the list. I didn't know to what list he referred, but I said "Roger" and waited for my turn to work whatever county did cause a pileup.

When nobody called me within a few minutes, I turned the rig off and played tourist some more. The next day I checked in from Sheridan County, another one assumed to be unpopulated by hams. Once more there was no instant pileup but I said to "put me on the list."

Be sure to catch the conclusion next month. Skip will find out the error of his ways and learn why no one is calling. He will also tell us more about his mobiling experiences.

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

Message from cosmonaut

Members of the Bethel (Connecticut) Educational Amateur Radio Society were very excited Friday, January 12, to receive a message from Soviet Cosmonaut Aleksander Volkov, confirming the club's on air contact with him last year.

The orbiting Soviet space station MIR has allowed its Amateur Radio licensed cosmonauts to operate a 2M

transceiver during their non-working hours. This confirmation validates that the station is in the operator's log book. The BEARS managed nearly 30 contacts with the MIR spacecraft during their operational periods last year.

The BEARS are sponsored by the Technology Education Department of the Bethel Middle School and coordinated by Peter Kemp, KZ1Z. □

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SPECIAL EVENTS

To the skies

The Oswego County (Fulton, NY) Amateur Radio Emergency Service and the Fulton Amateur Radio Club will operate special event station KY2F July 7 and 8, from 1300Z to 1900Z each day, from the Central New York International Air Show.

Operation will be in the General 20, 15, 10 and 2M bands and the Novice portion of 10M.

For a certificate send your QSL card and a large SASE to Fred Swiatlowski, KY2F, P.O. Box 5227, Oswego, NY 13126. □

Last steam train

On July 7 and 8, W0MLY and others will operate special event station W0MLY/RR, celebrating the last steam locomotive built in China, also the last steam locomotive to be built in the world.

Operations will be conducted from the caboose on 7250, 14250, 21250 and 28350; CW 25 kHz up.

For a QSL with a picture of the locomotive, SASE to W0MLY, Box 7, Rippey, IA 50235.

Tom Sawyer Days

The Hannibal Amateur Radio Club will operate special event station W0KEM July 7 to 8, from 1500Z to 2100Z each day, to celebrate Tom Sawyer Days. Suggested Frequencies will be 14.315, 18.130, 21.360 and 28.410.

For a certificate send a QSL and 9 x 12 SASE to Hannibal Amateur Radio Club Inc., P.O. Box 1522, Hannibal, MO 63401. □

Open house

On July 7 and 8, from 1000 to 1900 UTC both days, the RAF Chicksands Amateur Radio Club (RAF Chicksands is a US Air Force Base located 40 miles north of London) is celebrating its annual open house, with special event station GB2USA. Suggested fre-

quencies: phone — 28.480 or 14.280; CW — 28.180.

For a QSL and certificate, send your QSL and an SASE to: Martin R. Mullican, GB2USA, RAF Chicksands, UK, Box: 1840, APONY09193-5000. □

Grand National Shoot

In commemoration of the 24th annual Grand National Shoot, the Civil War Skirmish Association (Bloomfield, IA) is sponsoring special event stations WR0U and WB0B from July 7 to 15 to operate phone and CW stations.

Suggested frequencies: CW — 7.046, 7.105, 14.046, 21.105 and 28.048; SSB — 7.255, 14.260, 21.357 and 28.360.

For a QSL send an SASE, or for a certificate send a 9x12 SASE, to the Callbook address of the station worked. □

Emerald Bay

From July 8 to 14 special event station WA6OPZ will be set up at Emerald Bay (Boy Scout camp) on Catalina Island, CA, from 1500 until 0700 UCT daily. This event will commemorate the Boy Scout's use of Emerald Bay since 1925.

Frequencies used will be around 28.45, 14.30 and the General portion of the 15 and 40M phone bands. CW operation will be around 7125 and 21150 kHz.

Those contacting this station may get a certificate by sending a QSL and a 9 x 12 SASE to Marshall Jacobson, 16441 Gilmore St., Van Nuys, CA 91406. □

International Peace Garden

Special event station VE4IHF will be on the air from 9 a.m. to 6 p.m. CST on July 13 and 14, from the International Peace Garden on the US and Canadian border. Frequencies that will be used are as follows: 80M — 3.941, 40M — 7.255, 20M — 14.255, 15M — 21.355 and 10M — 28.355.

For a Peace Garden certificate, send two IRCs and a self addressed envelope to Dave Snyder, VE4XN, 25 Queens Crescent, Brandon, Manitoba, CANADA R7B 1G1. □

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Transmitting Society, Chaska, MN, will operate special event station WB0RMK from 1500Z to 2100Z on July 14 in celebration of Bar-B-Que days. Frequencies will be 7245, 14245 and 28345.

Upon making a contact, send a QSL and SASE to: WA0CXW, SMARTS Secretary, P.O. Box 144, Chaska, MN 55318. □

Disneyland's 35th

Disneyland is celebrating its 35th year as the world's premier theme park, and the Disneyland Amateur Radio Club will operate a special event station as part of the celebration.

On Saturday, July 14, and Sunday, July 15, club members will be using the call N6MM (Mickey Mouse and Minnie Mouse both approved the suffix) and operating from 1600Z to 0400Z on the following suggested frequencies ±QRM): 20M — 14.260; 15M — 21.335; 10M — 28.450; 2M — 146.94 (Disneyland repeater).

Special QSL cards will be mailed to all contacts who send QSL cards with QSO number and one first class postage stamp for the return card, to Disneyland Amateur Radio Club, P.O. Box 3232, Anaheim, CA 92803. □

ATV/beacon balloon launch

STRATONet Florida, sponsored by the Daytona Beach Amateur Radio Association (K4BV), will launch a high altitude Amateur Radio-equipped balloon from the Crystal River, FL, airport on July 14 at approximately 1300Z. Alternate launch dates are July 15 and July 21 with Inverness, FL, as an alternate launch site.


Amateur Radio operators from all over north and central Florida expect to track the balloon's anticipated two hour flight and recover the complete package following ascent to 100,000 ft. and slow return to earth by parachute.

The balloon's payload will consist of a fast scan Amateur television transmitter on 434.000 MHz, transmitting a color graphics ID using vertical polarization. There will also be a 1W ID/Flight telemetry beacon on 144.340 MHz using vertical polarization. The 2M beacon will include altitude, internal and external air temperature and battery voltage data, as well as the CW ID: K4BV.

The balloon's anticipated altitude should permit the transmitted signals to be received 400 to 500 miles away. Ground tracking stations and FAA radar will provide tracking. Amateur Radio operators equipped with direction finding equipment will attempt to recover the payload at the completion of the flight.

Mission Select Audio and Net Control, N4EEB, in Ormond Beach, FL, will be in operation on 7.155 MHz LSB, with operation

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commencing at 1000Z and continuing until recovery is effected.

Amateurs checking into the net who provide signal reports or tracking information from the balloon will receive a special certificate commemorating the flight. Amateurs may also respond by mail with reception reports to receive the certificate. Address all correspondence to: John Bayne, N4EEB, 7 Castle Manor Dr., Ormond Beach, FL 32174; 904/677-8520. □

Sporting event

The East Linn ARC (Sweet Home, OR) will operate a special event station from 1800Z to 0100Z July 14 and 15 to commemorate the annual Sportsman's Holiday & Calapooia Round-Up.

Operation will be in the General 80, 40 and 20M phone bands, Novice 10M phone band and 15M Novice CW band. For a certificate send a QSL and SASE to the operator's Callbook address. □

Aviation celebration

In celebration of two events 50 years apart — the anniversary of the first flight of the B-2 Advanced Technology Bomber and the 51st year of Northrop's (California) building airplanes — the Northrup radio clubs at Pico Rivera and Hawthorne, W6VPZ/6 and W6VPZ, will operate 24 hours from 1100 PST, July 21, to 1100 PST, July 22.

Operation will be 25 kHz from the lower band edges of the Novice and General bands (10, 15, 20, 40 and 80) and 1.920. For a QSL contact Northrop Radio Club, W6VPZ/6, 8900 E. Washington Blvd., Pico Rivera, CA 90660, and Northrop Radio, W6VPZ, One Northrop Ave., Hawthorne, CA 90250. □

Pass the Certs

The Gabilan Amateur Radio Club will sponsor special event station KG6GF, commemorating the 12th annual Gilroy Garlic Festival from July 27 to 29.

Approximate frequencies will be 14.260, 21.360 and 28.360. Station operation will be 1600 to 2400 hours UTC.

For a certificate and QSL card, send an SASE to GARC, P.O. Box 2178, Gilroy, CA 95021-2178. □



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The Fox Cities Amateur Radio Club (Appleton, WI) will operate special event station W9ZL from the 38th annual International Experimental Aircraft Association. Fly-In and convention, in Oshkosh, WI, from July 28 to 31.

The club will operate from field stations primarily during daylight hours, and will operate in the General portions of the 10, 15, 20 and 40M bands. Present plans are to operate on as many modes as possible, including packet (VHF and HF), CW, phone, RTTY and ATV.

All QSLs must include contact numbers. Special certificates will be issued for proper QSLs. Send an 8x10 SASE to: Wayne Pennings, WD9FLJ, 913 N. Mason St., Appleton, WI 54914. □

Coast Guard Festival

In conjunction with the 1990 Coast Guard Festival, commemorating the 200th anniversary of the Coast Guard, the North Ottawa ARC (Ferrysburg, MI) will operate special event station KE8DL from July 30 to Aug. 4 from 1500Z to 2300.

Operating frequencies will be the lower 25 kHz of 40 and 20M and between 28.400 to 28.450. Contact any NOARC member during the week and those contacts will also be recognized.

For a certificate send a QSL and no. 10 SASE to KE8DL, 1815 Hillcrest, Grand Haven, MI 49417. □

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Touchdown!

The Canton (Ohio) Amateur Radio Club will operate special event station W8AL to celebrate the Pro Football Hall of Fame Greatest Weekend, from July 30 through Aug. 3, 2200 to 0200 UTC, and Aug. 4 to 5, from 1700 to 2300 UTC.

Frequencies: SSB — 28.350, 21.350, 14.270 and 7.270; CW — 28.150, 21.060, 14.060 and 7.060. There will also be RTTY, packet, AMTOR and 2M FM operation. SWLs welcome!

For an unfolded certificate send your QSL and a 9 X 12 SASE with two units of first class postage. For a QSL or folded certificate, send your QSL and a #10 (business size) SASE to Randy Phelps, KD8JN, 1226 Delverne Ave. SW, Canton, OH 44710-1306. □

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

This month's winner is Dwayne Kincaid, WD80YG/3 of St. Leonard, MD. His story makes you wonder who, or what, is on the other end.

We have a nice repeater in our area of southern Maryland that's loaded with all the features and extras you could

ask for. The most notable of these is the voice synthesizer. Our manager has it programmed to do almost everything possible that a voice synthesizer combined with a repeater could do — right down to the time and temperature.

One day, while monitoring in my car,

a gentleman that was not from our area was finishing up his QSO with a local ham. After exchanging 73 and signing, the non-local station (a W1—, I believe) cleared.

The repeater immediately came up and IDed with its digital voice: "Good morning, the time is 8:47 — Welcome to the K3HKKI repeater." The courtesy beep sounded, and the W1— station came right back: "Good morning there K3HKKI. Didn't catch the handle on that end. Thanks for the time report . . ." He waited for the reply. The W1— came back again, "Sorry there old man, you're not making it into the machine— try it again." Still nothing.

I wanted to break in and tell him that it *was* the machine, but I was laughing too hard and didn't have the heart anyway. Besides, he would have figured it out on the next 10-minute ID cycle. □

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Loop antennas for 10M

DALE HUNT, WB6BYU

The fullwave loop has a number of advantages over a dipole. It has broader bandwidth, a bit of gain and the feedpoint is closer to the ground, allowing a shorter feedline.

For 10M a fullwave loop requires about 36 ft. of wire. The simplest construction is a diamond supported at the top by a pole or tree branch, with the side corners tied out with strings to convenient supports. Each side is about 9 ft. and the total span (horizontal or vertical) is under 13 ft.

The shape is not too critical. The usual method of matching the feedpoint impedance (about 120 ohms) is to use a quarterwave of 75 ohm coax cable as a matching transformer.

The next size up is 3/2 wavelengths, with more gain and a feedpoint impedance around 2000 ohms. A 3/2 wavelength loop for 10M takes about 54 ft. of wire, slightly larger than a full-wave loop for 15M, for a diamond 13 feet 6 inches on a side and a width/height of about 19 ft. This is a reasonable sized antenna for a light-weight support over 25 ft. high. Maximum radiation is perpendicular to the plane of the loop.

To test the idea, I put one up in about half an hour on an existing mast. I measured the wire and tied loops in it for each corner. I tied the top corner to the halyard and 50 feet of light twine to each side. At the bottom the free ends were tied to an insulator with 6 feet 9 inches of 300 ohm twinlead as a match-
(please turn to page 46)



STATION APPEARANCE

Boyd Benham
W6RPI

This month's winner is Boyd Benham, W6RPI, of Cambria, CA. Following he tells us about his equipment.

I've been an Amateur since 1939, receiving my call while living in Gridley, in Northern California. The first rig, a blue "Arcturus" 46 tube driven by a "53" crystal oscillator, has been active ever since!

The main console has a Kenwood 180S, 220 station monitor, Kenwood



7850 2M base, phone patch, Palomar power meter, rotor control and dummy load meter.

The Henry 2KD classic linear is below the desk. On the other wall is the

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packet setup, with an AEA PK232, Yaesu 757GX and Kenwood 201A for 2M packet with an Apple 2.

I cover VHF, HF packet weather FAX, Morse, RTTY and AMTOR.

My antennas are a tri-bander, trap doublet 40-80, Butternut vertical and two loops for 17 and 24M. □

Book Review

Publication for enticing youngsters to the hobby

An Introduction to the Wonderful World of Ham Radio, by Richard Skolnik, KB4LCS, is published by MFJ Enterprises. Intended largely for upper-primary to young teenagers, this book was designed to introduce young people to Amateur Radio.

The purpose is accomplished simply, without overburdening young readers with too much technical information before their interest is whetted. It touches on many facets of Amateur Radio and reinforces each section with real-life situations involving Amateurs on the air. Many of the instances cited involve young people.

The first few chapters center on what people do with Amateur Radio; the next few touch on radios, code and the people involved in Amateur Radio; and

the last few chapters deal with how to go about learning more about Amateur Radio, who to contact, how to set up a station, etc. There is a glossary of terms in the back of the book and addresses of places to write for more information.

As a former elementary teacher, I found the book very interestingly written and it should prove to be a good motivational tool to involve young people in the hobby. —Helen Noble, Sacramento, CA □

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Alinco 2M mobile transceiver

RICH ARLAND, K7YHA

A recent Pennsylvania Emergency Management Administration (PEMA) simulated emergency test revealed a gaping hole in my emergency communications equipment.

Since my synthesized 2M rig had been stolen from my van in February 1989, I had been relying upon a 2M hand-held to perform the multiple role of mobile and portable VHF transceiver. This had some obvious shortcomings, not the least of which was the inability of the HT to go outside the "normal" Amateur bands and cover some much needed emergency service frequencies.

A call to Alinco Electronics in Torrance, CA, provided me with the promise of a DR-110T 2M mobile transceiver for product review, to arrive within a few days. Sure enough, four days later, the familiar brown truck pulled up in front of the house and I had my DR-110T.

Also provided (based upon my need to have the radio go outside normal Amateur frequencies) was the necessary modification paperwork. The mod is ultra-simple, just cut one jumper and reset the radio, using the steps outlined in the modification sheet. The radio now transmits and receives in 5 kHz steps from 130.00 MHz to 169.995 MHz. Now we're getting somewhere!

The DR-110T is a valuable emergency communications device.



The DR-110T is a very compact VHF radio. It is small (5½×2×6¾), weighs in at 2.4 pounds and fits nicely on the front of my van console. The four-color LCD display is very easy to read in all but the brightest sunlight. The display shows the operating frequency, shift, memory channel, reverse and offset indication, tone encode/decode indication, S/Rf meter and much more.

The DR-110T can be programmed to select frequencies in 5, 10, 12.5, 15, 20 and 25 kHz steps. This adds tremendous flexibility to the transceiver.

It is refreshing to know that the DR-110T can put out a whopping 45W on 2M, when needed. Most of the time I use the radio on the low power setting, which yields 5W output. Current drain on receive is approximately 500mA. Current consumption on high power is about 9.5 amps (for 45W output) and .5 amps on low power (for 5W output).

The modulation system is variable reactance FM, with the max deviation set at +/- 5 kHz. Through the use of dual offset programming and two memory channels, you can program any split you want within the operating range of the radio. Oh, yeah, you can also go +/- 600 kHz, too.

The receiver is a dual conversion superhet with a .16uV for 12dB SINAD sensitivity. Audio power output is a healthy 1.5W (at 8 ohms), so there is plenty of audio to drive an external speaker in a noisy mobile environment.

The DR-110T has 14 memories which can be programmed throughout the entire range of the radio. Each channel stores the operating frequency, split, tone encode/decode, etc. The hand mic has a 16 button DTMF pad on the back, which makes autopatching a breeze.

There are four independent scanning modes: VFO Scan scans the entire band; Memory Scan scans selected memories (lock-out function is available to de-select desired memory locations); Programmed Band-Scan scans selected segments of the band (hi/lo limits); and Priority Scan allows for a discreet frequency in VFO or memory, to be utilized as a priority channel which is checked every nine seconds during memory scan. CTCSS tone encode/decode can be programmed in the

radio for repeaters and/or remote base operations which require sub-audible tone access.

In my particular mobile operation, the DR-110T proved to be a godsend. With the expanded frequency coverage and unlimited split capability, I am able to load in the local Army MARS repeater split, PEMA simplex frequency and several of the local police/fire frequencies and still have room for the most frequented 2M repeaters and simplex freqs.

The DR-110T solves the problem of how to monitor the local emergency services freqs without resorting to a mobile scanner. Using the DR-110T in this dual role avoids the hassles of trying to mount a mobile scanner in the van in addition to the 2M rig. In today's small cars, this is a prime consideration.

The mobile mount deserves some discussion. It is a U-shaped piece of metal that mounts to any flat surface. The DR-110T slips into the mount via friction fit side lugs on the radio. The mount is configured in such a way to provide three height adjustments for the radio. My Toyota van has a vertical front on the console between the front seats, which is the only place I can mount any radio equipment. In order to properly view the LCD display in intense sunlight, I had to shim the back of the mount about 1 inch to provide the proper slant to the radio. This mounting location is really less than ideal, but it's the only one available due to the construction of the driver's compartment.

How does it work? In a word, *terrific!* The small size and tremendous flexibility of the DR-110T make it a valuable asset to the emergency communicator.

In use over three months, the little rig performed flawlessly in both the mobile and base station environment. The ability to scan emergency service frequencies AND act as a 2M radio really make this rig very good value for money.

For current prices on the DR-110T and other fine Alinco products, contact your nearest Alinco dealer or write Alinco Electronics Inc., 20705 W. Western Ave., Suite 104, Torrance, CA 90501. □

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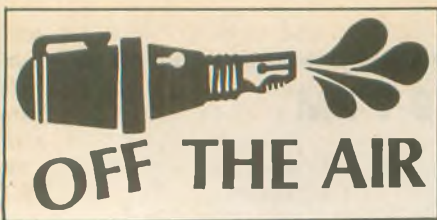
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Gen July



No-code defended

In the Off the Air section of the March 1990 issue, I read a most distressing (and I would hope minority) view of the no-code controversy, titled "The old chestnut." Opinions are like noses. Everybody has one. Here is mine starting with a few pointed questions to Mr. Red Barger, W3CVE, the author:

1. Have you ever "tuned-up" on a QSO?
2. Do you spend most of your time on CW in the HF frequencies?
3. How would this no-code license affect you?
4. Do you feel that "name calling" strengthens your position?
5. Do you feel that there are sufficient numbers in the Amateur community who follow your thinking?
6. When was the last time you listened in on 75M phone? (Or 2M for that matter!)

7. When was the last time you operated in the UHF or microwave region?

8. Do you think there is a possibility that the Amateur community may lose portions of the above bands, as was the case with 220 MHz, due to "low usage"?

9. Do you care?

It is obvious that code does not keep out the "riffraff," nor does it make a good operator. I consider myself a pretty good operator. I take great care in my operating practices. I run a clean station at no more than 100W, ever. I prefer HF phone and all digital modes to CW. However, my associates in this hobby are spread all over the spectrum, operating ATV to CW. A very non-prejudicial mix, wouldn't you say?

Yo! Red! Wake up! Take some of your own advice. "The person who has the ambition to study has the ability to learn." LEARN what Amateur Radio is evolving into. This could open the doors to the next Einstein who might otherwise become a lawyer!

Whether you like it or not, no-code is coming, and more than likely some really talented people too.

Remember, "Ignorance is bliss," and as long as you stay this sedated, you will never know the real need for this change!

Look at it this way, you can always exercise your given right to utilize that ol' ON/OFF switch.

MIKE CUSSON, KF7YB
Bothell, WA

WI, some 25 miles to the south. For some time I've known that they have been using 145.25 MHz for something, since it locks up my Kenwood TE7730 every time I use the scanning portion. Since there are no repeaters on that segment around here, it has not been a problem, although friends tell me it has caused pulse problems for our 145.49 repeater locally.

Last year a state senator I know personally sponsored a bill to protect the cable companies from piracy. This ticked me off no end. I wrote to him complaining that they shouldn't get any protection like that when they couldn't even obey the law themselves.

I got a testy letter in return to which I replied with an even more testy letter . . . but the bill passed anyway. Money talks as usual.

This time I didn't let it ride. I had heard from a young friend in Beaver Dam — about 40 miles north — who had received threatening letters from this same cable company . . . they are nationwide, I think. They even sent letters to his neighbors telling them that he was at fault for getting into their TV sets.

After much travail my friend called the FCC in Chicago and the EIC threw his weight into it . . . the cable company became very busy changing connectors and cables in Beaver Dam.

I wrote a letter to the FCC explaining the problem. It has taken a long time plus getting Congressman F.J. Sensenbrenner's office involved, but the problem has been resolved . . . at least here.

I sent the cable company a copy of my letter to the FCC, but never received a reply.

JOHN O. SATTERLEE, WA9SAB
Fort Atkinson, WI

Interference problems

I'm a printer on a daily newspaper in Fort Atkinson, and also do a bit of writing for them as well as a lot of picture taking. I've been a ham with the call WA9SAB for 23 years. I'm NOT technically inclined but have had schooling in electronics, both regular and digital.

The cable company for this town of 9,000 is headquartered in Janesville,

HELP

I would like to get in touch with Amateurs operating 2M packet using a Texas Instrument TI/99-4A computer with a Kantronics TNC, model KPC-2. Please contact me at 9357 Hoff St., Philadelphia, PA 19115.

BILL SOBLE, W3QXT

Another hat tossed

Since there are so many letters written and printed on this subject, and since so many of the letters, both pro and con, seem to express the same old worn out points in the argument, there is no need for rehashing that here. Any of us in the ham community who use packet from day to day are also getting tired of seeing the same old points being cussed and discussed.

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The subject matter to which I refer is the no-code license proposal. I hope that my points of view for this debate are different, yet thought provoking enough, that they will be seriously considered by the entire ham community.

My first point is this: Adopt the no-code license along the lines most proponents want — include all privileges above 30 MHz, excluding 2M, except for digital privileges in the 144.900 to 145.100 packet subband.

The examination for such a license would be 100 questions, covering rules and regulations, operating procedures, electronic theory and operations practice (basic day to day operation involved in normal Amateur communication).

Point two: While we are at it, I believe this point merits as much or more consideration as the no-code Amateur license. The time has come to completely overhaul the Amateur licensing structure in the United States. This is a bold statement in light of the fight that incentive licensing caused in the mid-sixties, but if we push for a no-code license on top of the present five classes of license, then we have created a ridiculous bureaucratic nightmare!

Imagine for a minute all the new red tape this will incur on the ham community. Do we really want that? I should think not!

I am an ARRL member and as one I feel that the League's proposed answer to the no-code license is not workable. Instead let's push for three classes of license.

The no-code class would serve as the entry level, with its 100 question test (which is already more rigorous than any of the present entry level classes). The next higher class would require five wpm code and a 100 question test on HF operation, rules and regulations for HF, technical knowledge for HF and operations practice for HF. The privileges for this class would be more than the current Technician and somewhat in line for the current General, allowing this licensee to participate in the NTS on HF and other public service on HF, plus DX and ragchewing, but only allowing 500W output by these licensees in their subbands.

The highest class of license would convey full Amateur privileges. A 15 wpm code test would be required, with a 100 question test on RTTY, SSTV and HF packet radio.

This class would be the only one to allow these techniques on HF. The middle class would be allowed CW and SSB emissions only. Also, only the highest class conveys the privilege to use 1500W on all frequencies, while the no-code class would be allowed a maximum of 200W.

This is my basic proposal for the

Amateur licensing system. I am serious and believe the public interest would be better served by it than if we allow a sixth class.

We hams need to be as progressive in all areas as we are in communications (legislative too). I sincerely believe this system will provide incentive to upgrade, will enhance the abilities of new hams to meld with the existing ham population and expand the technical base of Amateur Radio. Also it will serve to avoid overburdening the VE testing system, although in my system all tests for all classes would be administered by the VE system.

These are my opinions, and they are as valid (or foolish?!) as anyone else's. They provide food for thought and I really think they provide an answer to the current debate.

NATHAN BARGMANN, KA0RNY
Bremen, KS □

Heathkit HO-10 noise problems

After experiencing a few weeks of annoying interference to the HF gear in the shack, I decided I had to find the source of this noise. I later noticed that upon turning off the Heath HO-10 monitor scope, the noise disappeared.

After probing, staring and contemplating the problem, I concluded that the noise was due to high voltage arcing at the CRT socket. These sockets are constructed by trapping the metal pin contacts between two layers of phenolic and then riveting the two layers together. The resulting air space, between the two layers, provides a great place for dust accumulation. Over years of use, this dust, along with a little moisture, is all that is necessary to provide a leakage path for the 1000-volts on some of the contacts. *Voila*, a spark gap transmitter.

I have two of these compact little scopes in the shack and both exhibited the same symptoms, one much worse than the other.

Heath still maintains inventory of these sockets and after ordering and installing them the problem was completely resolved. This problem may surface on other Heath scopes as well. The replacement socket appears to be an improved version.

A little hint about rewiring the new socket: Do not attempt to completely

unsolder and unwrap the wires and component leads from the original socket. Using small wire cutters, simply cut the entire terminal away from the body of the socket. Using a small screw driver, carefully pry the remaining socket body off of the CRT pins.

Now position the new socket over the CRT pins aligning the keyway in the socket to the key on the CRT base. Gently tap the socket onto the CRT base with a small hammer and a small round dowel. Move the dowel around the socket base to allow even movement onto the CRT pins.

After you have the new socket in place, trim as much of the old terminal away from the old solder connection and resolder this to the new terminal, being careful not to make cold-solder joints. Pre-tinning of the new socket terminal will help in making a good reliable solder connection. I repaired both of my units without having to remove the CRT from its mount.

It is a good idea to make a neat sketch of the socket wiring prior to proceeding with this operation.

RICK LUTZINGER, KD6ZR
Fremont, CA □

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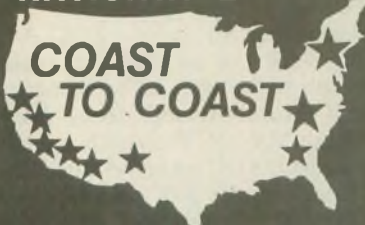
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- 07-08 July RCV Venezuelan DX Contest (SSB)
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- 20-21 July World Radiosport Team Championship
- 21-22 July LCRA Colombian DX Contest
- 21-22 July MARTS SEANet Contest (CW)
- 28-29 July RCV Venezuelan DX Contest (CW)

For details on contest activity, consult your favorite contest column.

W-100-N

The following DXer recently completed the requirements for Worldradio's Worked 100 Nations Award:
375. WA4SFN Douglas W. Henry

Oman (A4)

The DX Bulletin reports that the XYL of A41JV is busy studying for her Amateur Radio ticket and hopes to be the first YL operator on the air from that country.

Presently A41JV appears to be the most active station from Oman, all on CW. Look for him between 14.004 and 14.025 MHz. He has no particular time of operation. On 15M he has been worked between 21.016 and 21.042 MHz. Try looking for him from 2100 UTC.

We have only a single report of 10M activity for A41JV, that being 28.025 MHz around 2200 UTC on April 22. *The DX Bulletin* reports that he is



During December 1989 XW8KPV, the second official Amateur Radio station in the People's Democratic Republic of Laos, was activated by a group of Japanese DXers. Shown operating in Vientiane is JH1AJT, one of the team members and QSL manager. Zorro reports that they made 9,000 contacts with the United States, 7,000 with Japan and 8,000 with Europe and others. (Photos courtesy of JH1AJT).

also on 40M looking for stateside calls near 7.005 MHz from 2200 to 0300 UTC.

According to *Inside DX*, A41JV, along with the members of club station A43KM, was to have activated Kuria Maria Island from May 17 through May 24. This little spot was a separate DXCC country until 1967.

Other activity has been represented by several calls reported on 15M SSB:

A41FI	21.293 MHz	2100 UTC
A41KC	21.231 MHz	1945 UTC
A41KL	21.285 MHz	2230 UTC
A41KN	21.270 MHz	2200 UTC
A41KP	21.288 MHz	2215 UTC
A41KR	21.265 MHz	2115 UTC
A41KY	21.310 MHz	2230 UTC
A41SN	21.220 MHz	2330 UTC
A45ZP	21.239 MHz	1600 UTC
A47RS	21.303 MHz	1945 UTC

Only two calls have been reported on RTTY, those being A41KC on 14.090 MHz at 1730 UTC and A41SK on 14.085 MHz at 2330 UTC. For SSB activity on 20M look for these calls:

A41JW	14.169 MHz	0200 UTC
A41KC	14.253 MHz	2000 UTC
A41KJ	14.192 MHz	1400 UTC
A41KL	14.212 MHz	2115 UTC
A41KY	14.240 MHz	1330 UTC
A45ZP	14.152 MHz	1500 UTC

Other activity of calls not shown above includes:

A41KB	28.567 MHz	1230 UTC
A41KV	21.033 MHz	2130 UTC
A41WX	14.008 MHz	0230 UTC
A45ZN	14.028 MHz	1400 UTC

Gambia (C53)

Very little activity has been reported from this one. *Long Skip* mentioned a C53FJ reported on 21.261 MHz around 2230 UTC. No other information was reported on that station.

The DX Bulletin reports C53GB to be a net regular on 14.256 MHz. Several weeks ago he was active on 10M between 28.470 and 28.490 MHz around 1200 UTC.

Malpelo Island (HK0)

QRZ DX reports that a group of Colombian DXers are making preparations for a DXpedition to Malpelo Island this Fall, perhaps in October or November.

Dodecanese Islands (SV5)

Bob Schenck, N200, of the South Jersey DX Association, was to be active from Rhodes for about 10 days beginning May 21st. The calls would be N200/SV5, SV0AA/5 and WA3-

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TYL/SV5. If you worked the group, be sure to send for a QSL, as Bob promises a good looking card.

They also planned activity in the CQ Worldwide WPX Contest.

Kirghizia (UM)

Much 15M SSB activity from this Soviet republic is by UM8TBE. He has been found between 21.219 and 21.255 MHz from 0130 UTC. Early risers might also find him around 1200 UTC.

Also reported on this band is RM8MD on 21.270 MHz at 0245 UTC, UM8MAA on 21.271 MHz at 0300 UTC and UM8MK on 21.229 MHz at 0345 UTC.

CW contacts are plentiful on 15M also. The following were reported during the month of April:

RM8MA	21.019 MHz	0400 UTC
UM8MBA	21.030 MHz	0345 UTC
UM8MDE	21.015 MHz	0130 UTC
UM8MY	21.018 MHz	0145 UTC
UM8NA	21.040 MHz	0245 UTC
UM8NU	21.002 MHz	1700 UTC
UM9MY	21.014 MHz	0245 UTC
UM9QWC	21.009 MHz	0315 UTC

RTTY contacts were available from UM8MTF on 14.082 MHz at 1400 UTC and UM8MU on 21.090 MHz at 1415 UTC.

On 20M, the most popular band, CW activity came from these stations:

RM8MA	14.015 MHz	0130 UTC
UM8DX	14.020 MHz	0230 UTC
UM8MBA	14.017 MHz	0200 UTC
UM8MBX	14.023 MHz	0215 UTC
UM8MCF	14.007 MHz	0330 UTC
UM8MCV	14.006 MHz	1430 UTC
UM8MK	14.009 MHz	0315 UTC
UM9MY	14.021 MHz	1345 UTC
UM9QWC	14.040 MHz	0230 UTC

A lesser amount has been reported on SSB, including UM8MO near 14.146 MHz at 0300 UTC, working Canadians, and UM8TAA on 14.186 MHz working into North Carolina on April 7 at 0045 UTC.

UM8MBA was the only station reported on 17M early in the month on 18.074 MHz around 0200 UTC. Forty meters was represented by UM8MGO on 7.006 MHz at 1230 UTC and UM8MO on 7.006 MHz at 1200 UTC.

Namibia (V51)

Stations in Namibia, formerly known as Southwest Africa, have swapped their ZS3 prefixes for the new V51 prefixes. The suffixes remain the same.

According to QRZ DX, the call V51NAM is a special call being used by several operators until their own calls have been issued. The QSL route for this one goes to P.O. Box 1100, Windhoek 9000, Republic of Namibia.

Be sure to include the operator's name.

Ten meters is the popular spot for this one. Try looking for the following calls.:

V51BG	28.560 MHz	1730 UTC
V51GB	28.560 MHz	1745 UTC
V51NF	28.503 MHz	1615 UTC
V51P	28.500 MHz	1330 UTC
V51SW	28.460 MHz	1330 UTC

On 15M the following calls were reported:

V51BI	21.307 MHz	1730 UTC
V51E	21.335 MHz	1815 UTC
V51GB	21.332 MHz	2030 UTC
V51NAM	21.237 MHz	2230 UTC
V51P	21.272 MHz	1915 UTC
V51W	21.247 MHz	2215 UTC

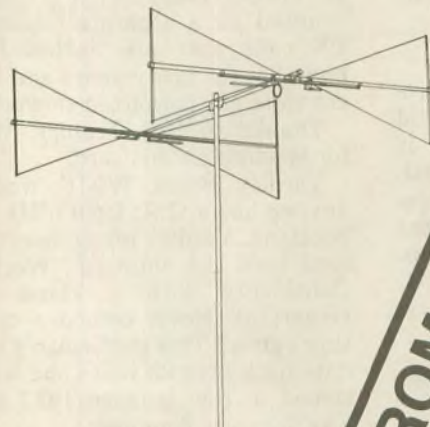
Other activity from Namibia includes V51BG on 12M near 24.950 MHz at 1630 UTC on April 21, V51E on 6M near 50.102 MHz at 1330 UTC at the end of March and V51P on RTTY at 1730 UTC on April 22 on 21.087 MHz.

Niger (5U7)

During the early part of April there was quite a bit of activity from 5U7NU. He has been active in one of the DX nets on 14.227 MHz. Many stations had worked him on 10M on the first day of April between 1145 and 1345 UTC. *The DX Bulletin* did report 5U7NU on 14.180 MHz around 2230 UTC on April 23, so perhaps his activity will resume.

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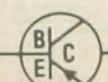
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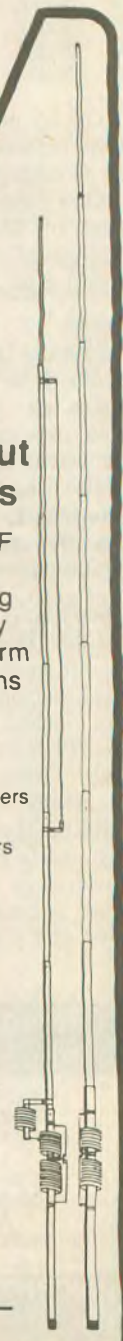
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Algeria (7X)

An active station in Algeria is 7X2DS. *The Long Island DX Bulletin* reports that this station is found on 10M at 1530 UTC most days between 28.450 and 28.460 MHz. He is available for schedules.

He has also been worked on 20M between 14.195 and 14.210 MHz. Look for him around 0200 UTC.

Also on 20M these calls have been reported:

7X2SR	14.208 MHz	0145 UTC
7X5AV	14.226 MHz	0045 UTC
7X5ST	14.250 MHz	0400 UTC

If you desire CW try looking around for these calls:

7X2FK	14.039 MHz	0130 UTC
7X2FY	14.033 MHz	0430 UTC
7X2SF	14.027 MHz	0145 UTC
7X3DA	21.037 MHz	1945 UTC

On 75 meters 7X4AN has been active between 3.790 and 3.799 MHz. Try looking for him around 0200 UTC.

One lone report on 17 meters was that of 7X3DA on 18.138 MHz at 0715 UTC on the 18th of March according to *Inside DX*.

Iota

Islands On The Air is an awards program that was established several years ago by Geoff Watts. Later, it was assumed by the RSGB. North American DXers may order their copy of the directory and a set of rules from *The DX Bulletin*, P.O. Box 50, Fulton, CA 95439. Please include US \$4, which covers postage.

Feedback

John Balz, KA7KSY, commented on our question of the "local society" certification of your logs for the Kenyan Award. The local society implies an officer in your local Amateur Radio club. John is a past Honorable Secretary of RSK and signed 5Z4CQ.

Ralph Myra, N1FJL, questioned our QSL route for AH3C being in K9UIY. Ralph says it is instead OH2BN. Well, there is confusion here. K9UIY is indeed the route for AH3C. However,

the route for AH3C/KH6J is OH2BN. Remember, if your contact was with AH3C on Jarvis Island, it goes via OH2BN. Otherwise, it is to K9UIY.

Antique QSL department

Here is another card from the estate of Roy Weisbach, W9UX. Roy was W9PST in Chicago when he made this pre-war contact with the Netherlands East Indies.



The call PK3EM was assigned to E. Monfils at Sourabaya on Java. Roy worked this station on 20M back on Aug. 30, 1938. The time of day, according to the card, was 21 Java.

Prior to the addition of Indonesia to the DXCC countries list in 1963, Java counted as a separate country. The PK calls were also included in the ban list for many years and US DXers were not permitted to work them.

Thanks to Bob Truhlar, W9LNQ, for sending us this card.

Yardley Beers, W0JF, wonders if anyone has a QSL from 6KO, Forfar, Scotland. Yardley remembers that the card bore the notation "Worked All Continents with a Hand Driven Generator. Never owned a transmitting valve." This gentleman's exploits date back over 60 years and was mentioned in the January 1927 issue of *The Wireless Engineer*.

The photo of all the QSL cards is that of W1SW, the club station of Phillips Academy, Andover, MA. The photo was taken by Yardley during a visit around 1929. The 6KO card should be on the lower part of the right hand wall, but is not recognizable. Do not confuse this with the 5KO on the left hand side.

Almost all of the cards on the left hand wall are from the British Isles and the other wall contains calls from elsewhere (except the United States and Canada).

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Yardley pointed out some of the cards that may be of interest.

On the second line from the top (left wall) you will find 2KF. This was the station of Jack Partridge, the first station in the British Isles to work the United States. On the third line is G5BY (with the large "G"), which was operated by Hilton O'Heffernan, who some years later would be the top scorer in the ARRL International DX Test.

Next to the bottom, fourth card from the left, is 2NM. This was the station of Gerald Marcuse, one of the founders of the IARU. Later, he received special authorization to use his Amateur station to broadcast entertainment and news. The success of these experimental transmissions led to the initiation of the overseas service of the BBC.

On the bottom line, the second card from the left, is G2SZ. This was the station of Mill Hill School in London, operated by Cecil Goyder. He made the first contact between England and New Zealand (4AA) on Oct. 19, 1924. The cards represent contacts made by earlier students at the Academy, mainly Frederick Weyerhaeuser, 9CIP, and John Murry, 2AMD (later W1BNN).

This was all back in the days prior to prefixes. Yardley says that they used "intermediates" in place of the usual "de." For example, instead of "G2NM de W1SW," it would be "2NM g u 1SW." In later years, when Amateurs in more countries became active, it would be "2NM eg nu 1SW." I'm sure our readers can decipher the eg and nu.

QSL routes

A41KB	—ON6BY	E09AQK	—UA9CQ
A41KJ	—N5FTR	ER2Q	—UQ1GWW
A43KM/0	—A41JV	ER4L	—UA4LCQ
A51JS	—VK9NS	ES6D	—UR2RDO
A71RJ	—DJ9ZB	EU9A	—UC2ADX
BV2A	—K2CM	EU0YL	—UC2ABC
C6A/		EV4AW	—UA4WE
WA2ICE	—WA2ICE	EW8A	—UC2AHZ
CE0ZIG	—NR8J	FJ/N01MH	—N01MH
CT0B	—CT1CWT	FK8JG	—F6CXJ
CU3LB	—KB2FJG	F081GS	—F6CEM
DK6AS/SV5	—DJ8MT	F08VR	—N6VO
EK0KBZ	—UA0KBZ	F09WVR	—N6VO
EN3A	—RW3AG	FR5A/E	—FR5A1
EN4AA	—UZ4AWB	FY5FO	—F6BYZ
E01AZM	—UZ1ZWA	HF0POL	—KB6GWX
E06BCK	—UB4CWX	HP1XJN	—ND3N

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JR41SF/CE0 JW9VDA JW9ZV KH8/ VK2EKY KH0AC KH0JA5VBH KW50/YN3 LGS5LH	-LA9VDA -LA9ZV -WA3HUP -K7ZA -J11NJC -KF7GH -G0MFF <i>(See Note 1)</i>	SV0AA/5 TA5KB T110E TY1DX UM4N/ UW4CF US1A V29A V51E V51GB VK9EW VK9WB VS6CM VU2NBT WA3TYF/SV5 YB6AQA YM5KB	-N200 -HA0NNN -T14SU -IK6PHG -UW4CF -W1AF -W4FRU -K8EFS -ZS3GB -W5EW -W5EW -W0JLC -WA4FVT -WA3TYF -KC9XN -HA0NNN	ZK1AK ZK1XQ ZK2KZ ZK2RW ZL0A1C ZY4LH 3D2AM	-HB9AAA -PY4LH -YASME <i>(See Note 3)</i> -NR8Y	8J90XPO 8P9A0 8P9AP 8P9AQ 9N1FOC	-JA3RL -VE3CRG -WG5J -N5RM -K5VT	LY2WW T20JH T30JH TJ1MW	-Gintas Sakenas, P.O. Box 2237, Vilnius 232 050, LITHUANIA -P.O. Box 299, Ryde, NSW 2112, AUSTRALIA -P.O. Box 299, Ryde, NSW 2112, AUSTRALIA -Mike Invergo, American Embassy- Yaounde, Washington, DX 20520-2520 -P.O. Box 2177, Windhoek, NAMIBIA -4254-A Menoher Road, Wahiwa, HI 06786 -Bra Ven Kong, P.O. Box 308, Moscow, 103 009 USSR -P.O. Box 379, Moscow, 117 602 USSR -P.O. Box 105, Rouiba City, 35300 ALGERIA
N200/SV5 OK8AID P29LB P29PL PA3CX/ST0 P3JBT RH6Y/ RW9AT S20VT	-N200 -YU3A1 -KC2Z -VK9NS -PA3CX -W1AX -UA9AQN -K5VT			A45ZN C21NI EN8TJ EO3ATD JT1BJ JT1BS JT1CD	-P.O. Box 981, Muscat, OMAN -P.O. Box 299, Ryde, NSW 2112, AUSTRALIA <i>(See Note 2)</i> -P.O. Box 19, Sevastopol, 335 038 USSR -P.O. Box 90, Dzerjinsk, 606 029 USSR -P.O. Box 74, Ulan Bator 28, MONGOLIA -P.O. Box 676, Ula Bator 13, MONGOLIA -P.O. Box 74, Ulan Bator 28, MONGOLIA		V51BG V63AY V83XV 4K2YL 7X2DS		



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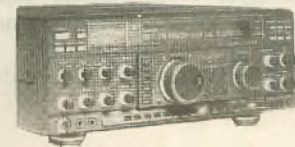
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1. Applies for the dates May 7 to 12.
2. This route applies only for contacts made by VK2GJH from May 30 to June 6 and after June 27. Please include an SAE with two IRCs or US \$1.
3. All HF contacts go to the Yasme Foundation, P.O. Box 2025, Castro Valley, CA 94546. JA1BK will handle the 6M contacts.

Many thanks to the following contributors: N1FJL, N200, W6TUR, KA7KSY, WD9IWP, W0JF, JH1AJT, Salt City DX Association (KB2G), Southern California DX Club (WB6PSY), Western Washington DX Club (KS7L), *The DX Magazine* (VP2ML), *Long Skip* (VE3IPR), *The Long Island DX Bulletin* (W2IYX), *Inside DX* (N2AU), *QRZ DX* (W5KNE) and *The DX Bulletin* (VP2ML).

April was a busy month for us, with two of the biggest DX affairs to attend. Following Visalia we were able to take a couple of days vacation. In another two weeks we were off to Dayton. With all the work to catch up on around the house, little time was left for DXing. However, I made it a point to go after AH3C/KH5J and work them on several bands and modes. Missed him on 160 though.

Have a good summer and GL DX de John N6JM.

DX Prediction — July 1990

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

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

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	(25)	21	24	20	20
10	29	17	22	19	22
12	36	21	20	24	27
14	41	25	(19)	27	34
16	44	24	(18)	29	38
18	44	(21)	(18)	29	41
20	36	28	34	26	43
22	30	31	41	21	40
24	26	31	44	20	33
2	23	30	44	15	28
4	24	28	42	22	24
6	32	26	35	24	22

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	24	27	23	(18)	25
12	(22)	21	21	19	23
14	(28)	24	19	24	31
16	32	24	(19)	27	36
18	35	20	(18)	28	40
20	36	27	(26)	25	43
22	30	31	39	21	39
24	26	35	43	18	35
2	23	37	45	16	29
4	24	37	44	21	25
6	32	35	40	26	22
8	28	32	29	24	20

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	24	21	28	17	21
9	27	(18)	23	21	21
11	34	(22)	21	25	26
13	39	26	(19)	28	33
15	43	21	(18)	30	38
17	43	(17)	(18)	30	41
19	40	(20)	(25)	28	43
21	33	25	38	25	41
23	28	28	43	23	38
1	24	29	44	19	31
3	20	27	43	19	27
5	29	26	37	21	23

Amateur tips off police

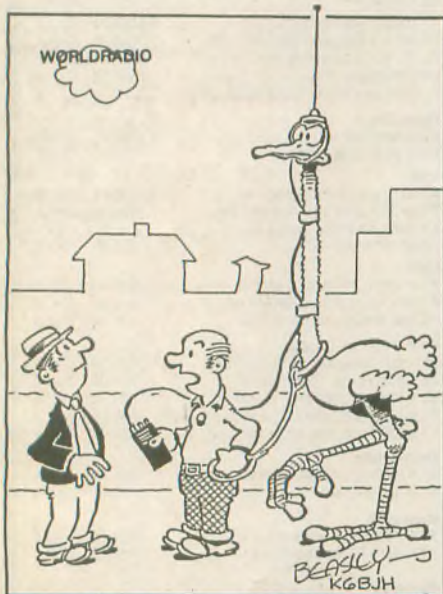
Following is part of an article entitled, "Ham operator alerts police to city break-in," by Marlo Barnhart, which appeared in the Jan. 15, 1990, edition of the Hagerstown, MD, paper, The Daily Mail.

An attentive Amateur Radio operator led Hagerstown City Police to the arrest of three men, two 18 and one 19 years of age, early yesterday. The men are allegedly responsible for more than a dozen break-ins and thefts in the past few days.

The trio has been charged with one break-in and theft each so far.

"We got a call from a ham radio operator around 2 a.m. Sunday," said Cpl. Jerry Landsman of the Hagerstown police. "The caller said he was picking up walkie-talkie transmissions that sounded like somebody trying to break into a building." — Information submitted by Robert H. Stoner, W3MP

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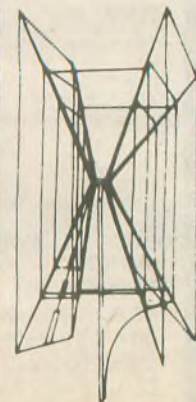
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10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

Novice and Technician privileges for the entire 10M band?

A Petition for Rule Making was submitted to the FCC on April 13 requesting that the FCC make certain rule changes to Part 97 of the Commission's Rules governing the 10M Amateur band. Specifically, this petition requests that Novice and Technician license class Amateurs be permitted to operate voice and telegraphy in the frequency range of 28.300 to 29.300 kHz of the band. This expands the Novice and Technician 10M privileges from the current 28.300-28.500 by an additional 800 kHz.

As a little background, the Commission allocated Novice and Technician class Amateur licenses Morse code and Sideband voice in the 28.300-28.500 kHz subband of the Amateur band on March 21, 1987. At that time the Commission agreed that limited voice and digital privileges "... should provide the proper degree of enhancement so that Novice operators would still have an incentive to upgrade to higher operator classes."

The 10M band is 1700 kHz wide and is, by far, the widest high frequency Amateur band. It is also the most vulnerable to wide swings in signal propagation, due primarily to the sunspot cycle.

The current sunspot cycle is at or near its peak. At the present time contacts with Amateurs around the world are not only possible, but are almost a

daily occurrence, primarily during daylight hours.

At the time the sunspot cycle is at its minimum, contacts are primarily of a local nature, due to the poor propagation on the band.

In order to support the Petition for Rule Making, the petitioner, Janet V. Whitney of Alexandria, VA, monitored the 28300-29300 kHz voice subband of the 10M band during daylight hours each Saturday and Sunday between Dec. 1, 1989, and April 1, 1990, and found the following conditions:

Stations Subband	Logged	Remarks
28300-28500	789	Novice/Tech subband
28500-28700	197	General-Extra subband
28700-28900	23	General-Extra subband
28900-29100	7	General-Extra subband
29100-29300	3	General-Extra subband

The above figures were stations monitored per hour with a state-of-the-art receiver and a CRT frequency spectrum analyzer. The petitioner states that she was able to determine that on the average, approximately 60 percent of the stations operating in the 28300-28500 kHz Novice/Technician subband were General, Advanced or Extra class licensees. There is *no* rule preventing the operation by higher class licensees in lower class subbands.

I, for one, holding an Advanced class license, spend almost 100 percent of my time in the 28.3-28.5 portion of the 10M band. After reading Janet's petition several times, I asked myself, "Why am I always tuning that portion of the band?" My answer? I guess there are several.

First, I have limited time on the air, so I usually want to collect some new 10-10 numbers and new members are

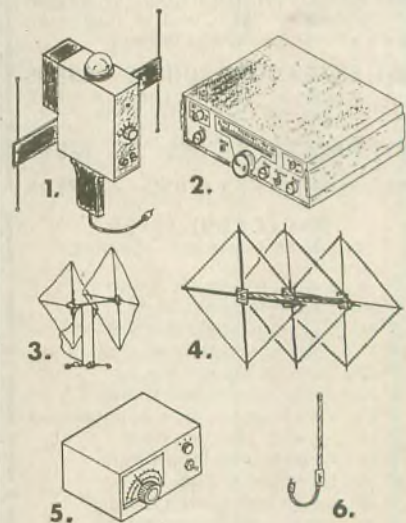
usually Novice/Techs and are in the 28300-28500 subband. Second, 28.3-28.5 is where the action is. I also find the same conditions as listed in the table above when I tune above 28.5, so I tune back down below 28.5. Next, during contest periods, particularly 10-10 contests, I am trying to make as many contacts during the contest period as possible, so I locate where the most stations are — 28.3-28.5. And finally, I can usually find some of my Amateur friends in this portion of the band.

Well, what does all of this add up to? I cannot find fault with Janet's petition. After all, one of the basic purposes of 10-10, as stated in all of the 10-10 documents, "is to promote activity on the 10M band." This means activity in the entire 10M band.

Activity on the 10M band will help to prevent takeover by another service because the band is *being used by Amateur Radio*. At the present time, it would appear that we could lose the upper portion of 10M and few, if any, Amateurs would be affected. The chart indicates that only 33 Amateurs out of a total of 986 (3½ percent) would be affected if the frequency 28.7-29.3 were not available to the Amateur service.

Rule making by the FCC is normally a long and drawn out procedure. There

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will be time for comments, comments and more comments. We will all have an opportunity to submit our comments and suggestions, and if and when that time comes, you will hear about the requirements for making your view known to the FCC in this column.

In the meantime, what is your view on this subject. I would like to hear from you.

10-10 election

If you are an "active" 10-10 member, that is one whose dues are current, you should have received your ballot for the first all member election of officers. Please send your ballot as soon as possible to the Republic of Texas Chapter in the self-addressed envelope provided in your ballot package. Note the cut-off date on your ballot, as ballots received after the cut-off date will not be counted. Postmarks do not count.

If you are a new 10-10 member or one who is back after an absence, the ballot mailing list is composed of all paid up members on the computer data file as of April 10.

New editor

We have a new editor for *The 10-10 International News*. He is Bob Arnold, N2JEU, 10-10 #53887. Bob will need input from anyone with information about their chapter, pictures or whatever you have to offer.

You may contact Bob at RR 5 Box 32, Canastota, NY 13032. He can also be reached via the WA2TVE packet BBS or if you are on Compuserve you can leave electronic mail in his e-mail box, 70310,255. He can also be reached via "the twisted pair" at 315/697-7478.

Speaking of sending information to Bob, the same goes for me. If you have some interesting information about

yourself, a friend or your chapter activities, drop me a note and I will do my best to get it in this column. Remember that the deadline is approximately six weeks prior to publication, so send items regarding dated information as early as possible.

Finally

If you are interested in obtaining an Information Pack and Application Form for joining 10-10, send me a "green stamp" (\$1) and one of your address labels. You will also receive the latest copy of the official 10-10 magazine, *10-10 International News*. My address is 18130 Bromley St., Tarzana, CA 91356-1701.

If you have lost your 10-10 number or do not know to whom to send your dues, an SASE to the above address will get you that information. If you are looking for your lost 10-10 number, please enclose a list of all of your previous calls, as well as your current call. Previous address information is not required.

Until next month, have a good time collecting 10-10 numbers, and if I don't cu on 10 I hope to cu next month. 73

10M antennas

(continued from page 30)

ing section between the feedpoint and the coax (purists may add a balun).

The antenna was hoisted to the top of the mast, and the side strings were tied to the fence to pull the whole mess into a diamond. With no tuning, the SWR on 10M was 1.5:1, and not too bad on 15M, either! The first station I worked was in Australia.

The antenna and matching section could be tweaked for minimum SWR. If this antenna is fed with parallel conductor line to a tuner, it will work from 20 to 10M.

If you are only interested in 10M a better feed method is a quarterwave shorted stub. Connect 9 feet of open wire line to the feedpoint about 4 inches above the short, then slide the jumper and feedline taps up and down the stub for lowest SWR.

A two wavelength loop (a fullwave on 20M) has a poor pattern. However, if the top of the loop is opened, we have a 4-element "bi-square" antenna with about 3dB gain over a dipole. This takes about 72 feet of wire, each side is 18 feet, with a total height/width of 25 feet. The support should be at least 35 feet high. You can use the same matching methods as the 3/2 wave loop.

For multi-band operation a trap or halfwave stub can be used to open the top of the loop only for 10M — *Key Klix, Santa Barbara, CA*

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All-band mobile whip

Just like clockwork, every month or so a new style mobile whip ends up on my doorstep, with a little note asking if I will give it my best test and review. I have seen a lot of different styles of mobile whip antennas for vehicles and boats, so, opening up the tube, I had little hope that what was inside would really be a breakthrough. But when I began to pull out the Australian-made "Outbacker," all-band mobile antenna, I definitely knew this whip would be unlike anything else I have ever tested.

First inspection revealed a six foot tall, helical-wound whip with a stainless steel stubby tuning rod at the tip. The entire body of the antenna was covered with a thick, spongy, resilient coating that turns out to be dipped polyurethane epoxy for added strength and protection. I subsequently learned that the inside helical windings were rated at 500W for peak envelope power output.

All along the shaft were little nodules with engraved meter-band numbers on them. An external wire, wound clockwise firmly around the antenna shaft, plugged into the band of your choice. To change bands, simply go to another tap with the clockwise-wound wire.

The base of the antenna terminated into a very strange half-inch stud with non-US threads. I was later assured that this was the mounting configuration preferred by outbackers in Australia, and subsequent antennas would arrive with the more common $\frac{3}{8} \times 24$ threads — and indeed so, subsequent

antennas used the common thread.

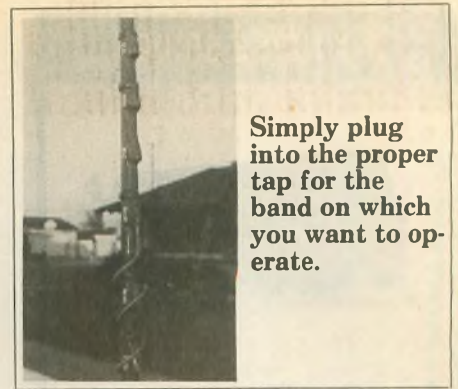
Part of the antenna system was a huge, heavy-duty spring with a coaxial cable SO-239 at the base. There is nothing magic about the base — it offers no loading, and only serves as powerful protection against tree branches. If you plan to use this antenna on a vehicle that will encounter obstacles, plan to use the hefty base and the bigger threads. However, if you plan to use the whip on your mobile unit or on a boat, order the antenna with the more common $\frac{3}{8} \times 24$ threads that fit into any mount.

The next morning I compared the Outbacker on a band-by-band trial against conventional Hustler whips, the Valor Pro-Am whips, the Spider and even my old trusty Swantenna with selectable tap tuning. In all tests the Outbacker antenna performed as well as all of the other antennas when it came to output performance, low SWR at the proper band setting and good broad-banded characteristics on 40 and 80M (good as you can expect from a slender mobile whip).

I'm not sure exactly how the wire tapping system works — because when you go to a new section tap on the antenna, not only is the upper part of the antenna RF hot, but also a portion below the tap is hot, too, as evidenced by a fluorescent tube held next to the antenna. However they did it (and it's patented and secret), it's pretty unique for band changing.

Too bad that the outside "Wonder Wire" (as they call it) is exposed — but after a while, you simply visualize it as part of this strange-looking antenna; and as long as you keep the "ugly lead" (as I call it) nice and tight around the lower shaft, it somewhat blends in — but believe me, you'll get plenty of questions about this antenna when you pull up to the next hamfest!

For maritime mobile use, the antenna shines. They sent me a second unit, pure white in color (including the ugly lead), and besides 10 through 75M



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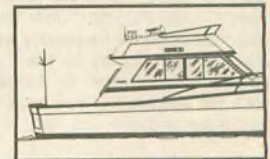


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band taps, they also gave me taps for 6, 8, 12, 16 and 22 MHz. If you are a mariner, you know instantly what I'm talking about — taps for not only the Amateur bands, but also taps for individual marine bands, too, all on one shaft.

We ran several tests out on the water, and it's only a 20-second proposition to go from 40M Amateur to 22 MHz marine, just by re-wrapping the wonder lead around the shaft and going to the upper tap and plugging the little banana plug into the corrosion-proof jack.

The antenna was discovered in Australia by Don Arnold, WD4FSY, a well-known world photographer who always packs-in his Amateur Radio when he goes on new assignments. The antenna has been in production for many years in Australia, and Australians use it on their overland vehicles for staying in touch on the Australian high-frequency "intercom" bands for outbackers. When mounted on a vehicle or a stainless steel rail, it offers a perfect 50 ohm match. But, like any mobile antenna, it works better up high — not all the way down on your lower bumper.

Don's job is not selling antennas, but he got so excited about what this antenna could do for those needing a specialty, all-in-one HF mobile system, he is bringing these in by the hundreds in different configurations for different applications.

Several antenna experts have written me their polar-plot findings, and I even have some Smith charts that better illustrate the performance of the antenna on many different Amateur bands and special-order frequency bands. While I'm no antenna engineer, every technical report echoed that this antenna performed as well as a single-band antenna of the same height, yet with multi-band capabilities.

Mariners will like the antenna because it may be ordered in white, and offers both Amateur and marine



Don Arnold, WD4FSY, holds his new type HF mobile whips.

capabilities, combined onto one shaft with up to 15 individual taps. If you are into strange mobile antennas, you might order it in black or the standard drab-brown to draw the curiosity of fellow Amateurs. If you are just into 40 and 80 mobile, they have a 2-band version with improved efficiency and bandwidth. They also have a mobile, all-band antenna that breaks down into two four foot sections for easy storage in your trunk.

You could also put this up inside an attic with a suitable ground plane, or even run them end-to-end as an all-band dipole. But remember, each time you change bands, you must go back to the whip and plug into a new band tap.

The antennas are somewhat expensive — but not necessarily that much more so than commercial-quality, multi-band mobile rigs. The standard Amateur frequency antenna runs anywhere from \$249 to \$279, depending on what type of base assembly you might want, and what special order bands you might want, too. The white antenna for combined Amateur and marine coverage runs around \$390, but this includes the massive stainless-steel base assembly necessary for heavy-weather use. The antenna is less if you don't want the massive base set-up.

"While I'm not a regular antenna salesman, I will go so far as to offer a money-back guarantee if you're not satisfied with our Outbacker antenna," commented WD4FSY. I bet he won't get many takers on this, because the antenna performs so well.

Try it yourself: Outbacker Antenna Sales, 330 Cedar Glen Circle, Chattanooga, TN 37412; 615/899-3390; FAX 615/698-5716. Yes, it looks weird, but it performs great! □

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6M DXCC recipient

We spent an exciting weekend with Lee Fish, K5FF, at the Dayton Hamvention. We were asked to present Lee with her DXCC trophy from SMIRK (the first ever) at the DX Dinner Friday night. I am sure a lot of HF DXers were surprised to know that not one, but about a dozen operators, have worked DXCC on 6M now. There are about nine more operators waiting for QSLs to come in.

We re-presented the trophy at the VHF/UHF Forums Saturday morning. Presentations were made by SMIRK president Tex Kennedy, N5TX, and Vice-President Gene Barnes, K5GE.

Lee married Fred Fish, W5FF, in 1962. In 1965 she earned her Novice license as WN5MFZ. In 1966 she received code proficiency endorsements for 15, 20 and 25 wpm. She also completed Basic Electricity and Basic Electronics courses at Albuquerque Technical Vocational Institute.

In 1969 she earned her Extra class license. She was appointed Emergency Communication Chief for MARS Navy-Marine Corps, New Mexico-El Paso Area, call sign N0KVD. She handled Vietnam war traffic and in 1977 she requested call sign K5FF.

In 1979 Lee became interested in 6M while chasing contacts on 2M. Fred had put a small Yagi for 6M on the roof-mount and bought her a Swan 250C so she could use 6M as an indicator of what 2M might be doing. He came home one day to find her on the roof turning the 6M antenna by hand so she could work the band. To keep her from breaking her neck, he put the antenna on a rotator. Lee had been bitten by the 6M bug! (It bites a lot more operators than you realize).

By the end of the year, she had her 6M WAS (#283). Other WAS awards

held: 144 MHz, 1980, #23, endorsed first YL WAS; 220 MHz, 1984, #4, endorsed first YL WAS; 432 MHz, 1987, #11, endorsed first YL WAS. WAC awards held: 50 MHz, 1981; 144 MHz, 1985; 432 MHz, 1983.



SMIRK PRESIDENT Ted Kennedy, N5TX, presents 6M DXCC award to Lee Fish, K5FF.

Fred, SMIRK #3190, is the second holder of 6M DXCC. His interest in radio began in 1937 during his senior year in high school. He was building then state-of-the-art crystal sets. Fred recalls lying in bed late at night, listening to music played by high-powered WLW, with the crystal output going to a large magnetic speaker.

His first Amateur operator license was issued in 1943, while serving as a chief radio operator in the Merchant Marine. The station license would not be received until post-war 1946, when Amateur operation was resumed.

In January 1979, after receiving the Swan 250C, he first started enjoying the 6M band, as did Lee. They were soon chasing states and by the year's end, both of them had received their 6M WAS.

They upgraded the 6M station to an IC-551D, a Mark 6B amplifier and a Cushcraft 617-B Yagi. After completing WAS on 50, 144, 220 and 432 MHz, they decided to part with their homebrewed 32 ft. dish, give up moonbounce and pursue DXCC on 50 MHz.

It has been satisfying, if frustrating, at times. With many hours spent at the rig, fine cooperation from their two nearby electric utility companies and numerous DXpeditions by Jimmy Treybig, W6JKV, and others, Fred and

Lee recently logged their 113th DXCC country on Six.

Fred has held Commercial First or Second Class Radiotelgraph FCC licenses since 1943. He now holds Second Class Radiotelegraph and General Radiotelephone licenses.

The SMIRK International Awards of Merit

The Awards of Merit were provided through the generosity of W6JKV. They are unique, being made of 6×8×1 inch blocks of lucite. The wording and the SMIRK face appear to be



Ray Clark, K5ZMS (l.), and Ted Kennedy, N5TX (r.) admire the Awards of Merit provided by Jimmy Treybig, W6JKV.

floating and three dimensional. The background is in black, the wording and SMIRK face are white and the name in orange. Ask to see one of the recipient's awards next time you see them.

SMIRK would like to take this opportunity to thank Jimmy for his support and his design specialist, Terry Hill, for her work.

The DX report

Most of the DX reported during April continued into South America and into the Pacific. There has been some good DX from South America to Africa and Europe.

The usual DX for this time of year/solar cycle between Africa and Europe has been occurring. The African/European, South American/African/European activity has been happening after approximately 1200 UTC. There has been South America to Africa and South America to the Pacific DX happening during the last several hours of the radio day. Some Pacific stations have made contacts into Africa.

There was one VK4 to New England opening during April that caught a lot of operators asleep at the switch. There was also a VK3 to Alabama opening recently. Those of us in the southwest, along the Gulf Coast and into Florida have been blessed with continued activity into CE0, FW, KH6, KH7, KH8, T32, VK, VR6, ZK2, ZL, ZL7, 5W1, etc. In addition, we have had the usual

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South American activity into CE, CX, HC, HK, LU, OA, ZP6, etc.

What has been conspicuous by its absence has been the European/African activity and the Caribbean activity to the United States. Operators in the Pacific Northwest have almost been left completely out of the activity so far.

Pacific stations have reported excellent openings into Central and South America and into the Caribbean — AH3C/KH5J, FW, JD1, KH7, T32, VK9, ZK2, ZL7, 5W1, etc.

DXpeditions still got results, even under poor band conditions. Several DX operators in the Pacific and South America have been pointing out that they are hearing beacons from Europe and Africa after dark in those areas. However, they are not hearing the operators. It is apparent that most operators in those areas turn the rigs off when the sun goes down.

The same can be said of American operators who think it is all over when the sun goes down. Pat Rose, W5OZI, will tell you differently. He has worked some great DX in the early evening hours in recent months.

For those who remain active on 28.885 and watch the band closely, the DX is still there for the pickings. W5FF and K5FF and others continue to rack up contacts under less than desired conditions.

DXpeditions and results

Kerry Mundell, ZL7TPY, says his DXpedition netted him 270 QSOs from March 19 to 31. He got C31, HH7, HI8, KP4, VK2 and 4, ZL, all JA call districts except JA4, W4, W5 and W6 (66 US contacts); he heard KH8, VK9 and H44, but did not get the contacts.

Great job Kerry, and much appreciated. Kerry may try ZL8 from March 25 to April 7 next year.

QSL info

For Fernando de Narona QSL via Bill Smith, W9VA, for 6M QSOs only. You can also QSL direct to the 1989 or 1990 CBA.

6Y5FS has returned home to England. QSL to N.E. Bethune, G3FRS, 22 Dunbar Rd., Wood Green, London N22, ENGLAND.

Jarvis Island AH3C/KH5J 6M QSLs go to Kan Mizoguchi, JA1BK.

Ex-F00OQ) is now FE1JKK/FY on

6M. QSL via Alain Thebault, FD1-JMH.

SMIRK was pleased to find that Matts Persson, SM7PKK, an excellent operator, had decided to do some 6M operating on his ZK2 trip. He made numerous contacts and often went begging for lack of signals.

You can QSL him to: Betesv 22, S-24010, Dalby, SWEDEN. Please send an SAE with one US green stamp. That will go to help defray the cost. If that contact was exciting for you, put in a few extra green stamps.

Apparently Mike Barry, ZD8MB, has returned to England after all. I had thought that he had gone back to the island, but he wrote me in March saying he could confirm ZD8MB contacts via P.O. Box 4235 CSR, Patrick AFB, FL 32925-0235. You can also QSL to him as Mike Barry, G4MAB, "Holme Beck," Low Hesket, Carlisle, Cumbria, CA4 OEU, ENGLAND. Mike says QSLs are piling up, but all will be answered eventually.

Scatter shooting

Kevin Szot, KB6SL/CE3, says VP8BFH and VP8BOQ have 6M gear but no antenna. He asked SMIRK to donate one and we shipped one to Kevin's home QTH in 6-land. When Kevin came home on a short vacation he took the antenna back with him. It is on its way to the Falklands by now. They are in Port Stanley, I believe.

During a contact with Alfredo Lieberwirth, LU3EX, he told me that he had just qualified for DXCC when he got CE0DFL. The next day he got ZD7CW for #101! I knew he had to be close. So there is another one waiting for a few QSLs!

He has since upped his totals to 105 countries worked.

Jim Langdon, J37AE, has left Grenada.

Wayne Wyatt, WB5QBV, just got 6M WAS #901. I was really surprised that many have now been issued. Mine is #159, dated July 1, 1977, so in 13 years there has been quite a jump!

Whenty Bethune, 6Y5IC, blew his transverter recently, but is working to get parts in to fix it.

Who's on Six!

V31JO is active. Larry Wolff, WA2ALY, runs a Swan 250 out of his home port under the call VQ9LW. He uses a 4-element Yagi.

A.G.F. Selmes, G4KLF/MM, will be ZS1DD/MM and has his A45ZN call. He hopes to get permission to operate Six from Oman. L.A. Rossi, PA3-ECR/SU, is said to have 6M permission to operate from the Gaza Strip through September of this year.

Tom Friedrich, ZS3AT, has left Namibia for West Germany. Kiyoshi Uchiyama, JA8JRC/6W1, continues to be active from Senegal.

EL2B is back in Liberia and should be on Six. EL2FO should be receiving his SB110 from N2AU and be on Six soon.

Jose Amador, CO2JA, is also said to be active on Six now. T20JH is active with a TS-680S. He plans to take his gear to Nauru as C21JH. V85DA is on around 13 to 1600 UTC.

Technical info

While at Dayton I picked up some information about the Rutland Arrays antennas. I think they plan on putting out a mid-sized Yagi for 6M by this summer. You can write them at 1703 Warren St., New Cumberland, PA 17070 (717/774-3298) for further details.

I saw hardly any new or used gear for 6M at Dayton. However, I did see the new Yaesu FT-650 tribander for 6, 10 and 12! It arrived at Yaesu just before they made the trip to Dayton.

There were no spec sheets on it yet, but they tell me it runs 100W on Six and has many fine features, similar to some of their HF rigs. It will probably cost between \$1,200 and \$1,500. Keep in mind, though, that you will not have to buy a heavy duty power supply and a brick to put on it since it is already a 100W rig.

I talked with the Mirage/KLM people at their Dayton booth about the A-1015 6M amplifier. I expressed my displeasure regarding the lack of a decent GaAsfet preamp in it and asked if they had plans to change to one. They did not seem to think they would. I told them that, in my opinion, the TE Systems 0510G amplifier could run rings around their unit when it comes to receiving.

They told me their new high powered brick for 6M will have the GaAsfet preamp in it. It is too bad they won't change out the one in the A-1015. Except for that, it is a good amplifier.

WA5IYX says the average flux for April was 184.4. The smoothed flux based on October 1989 is 205. These numbers continue to fall.

Don't forget to get your SMIRK Party contest logs into Lisa Lowell, KA0NNO. Even if you only had a small score turn it in. Who knows? You might win your section!

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Going to the Dayton Hamvention is always a batch of fun. This year, as usual, I made the trip with Bob Stanek, W0HAH. Bob's other hobby is performing as a clown named "Rags" at the Minneapolis Aquatennial and other events around the country. With a clown like Bob, you can bet he would have some clown gags to enliven the convention.

After clowning at the White House Easter Egg roll this year, Bob bought a nifty little trick from a Baltimore magic shop. It's a little plastic ball peen hammer with a built-in synthesized glass-crash sound effect. What a perfect gag to carry to a hamfest where there were a thousand TV monitors and CRTubes to be tested for "safety glass!"

Bob walked up to one flea market exhibitor where a smiling lady was watching the "store" filled with CRT stuff. Bob "tested" the monitor with the little hammer. "Crash, tinkle, tinkle, tinkle," said the little ball peen gimmick. The nice lady, startled at hearing the sound effect, became terribly incensed.

"You broke it, mister," she screamed at W0HAH, "so you bought it!" Imagine the look on her face when she discovered she'd been tricked!

Yet another exhibitor's face went from sweet to sour when he heard the glass-tinkle emanate from his Sony Betacam TV camera sporting a big price tag. I must say the "sound effect hammer" was the best gag I've ever seen at a hamfest of any kind. It had its grand premier at Dayton, thanks to Rags.

The RTTY dinner

The RTTY dinner is always the focal point for me at the Dayton gathering. This year Dale Sinner, W6IWO, publisher of the *RTTY Journal*, was the man in charge. The food was great and the fellowship was first rate. Even

the DXers were friends, and that's something! Vic Poor, W5SMM, presented a slide presentation of his APlink program.

Dale Sinner also presided over the "Digital Digest Forum" in the Hara Convention Hall. As there were many things to discuss, the time went by too fast. The contributions from the audience by such TAPR and AMSAT digital wizards as Tom Clark, W3IWI, Phil Karn and Harold Price, NK6K, was a bonus for the audience.

One subject at the Digital forum dealt with Amateur Radio equipment for the blind. I'm interested in that subject because, as a VE, I've participated in examining sight-impaired candidates.

Recently I ragchewed at length with one of my old friends who has slowly lost his eyesight. A newcomer to hamdom, my blind friend has told me about the problems he has with Amateur equipment.

First, a blind person usually has trouble with the maze of knobs, dials and buttons on a sophisticated rig. For those with only diminished vision, reading dials can be a problem. The average sighted person can distinguish between colors easily, but the red and green numbers on indicators completely disappear for some people with vision problems.

My ragchewing friend tells this little story to illustrate the complexity of the the problem. He was trying to work the Jarvis Island DXpedition on SSB with a brand new transceiver equipped with an audible dial readout. The DX station was working split mode, so my friend punched up what he thought was the split button on his transceiver and jumped into the fray. Well, he made a mistake and the rig was not in

the split mode, so when he called Jarvis he was on the DX frequency. The self-appointed doctors of Lidology, lid managers, band policemen or whatever other name you have for those friendly folks who boost their ego by chastising the poor folks who call on the DX frequency, jumped all over my blind friend.

They called him stupid, dumb, lid and every other non-swearing word they could think of at the time. My friend, reeling from the verbal onslaught, started to boil over too.

"I had to control myself," he told me later, "I had an urge to come back on the frequency and tell them off."

"What would you have said," I asked.

"You know-it-all #@&*, if I could see, I'd be on the right frequency.' But . . . I kept my mouth shut."

All this brings up an idea. With computers able to interface with a modern transceiver, why couldn't a special box be developed to plug into a transceiver and provide extra voice synthesizers to speak out functions other than just the dial frequency. Also, the knobs could be bump and shape-coded so the blind person could feel the position and the function title easily. I have a Fargo friend who owns a computer repair shop. He is totally blind, but he sits and writes software for clients with his talking computer.

More of this technology should be put into use for Amateur Radio because it is the greatest hobby in the world for those with vision impairment. I've seen the smile on the faces of the blind when they get an Amateur

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ticket or upgrade a previous license. Every person smiles when they pass a test, but the biggest smiles are on the sightless. I have felt the glow.

Line length stuff

I have noticed, and others have pointed out to me, that one problem that keeps showing up in packet radio messages is line length. Many message senders let the software put the carriage return/line feed characters into the text by just merrily typing away with no thought of line length. They let the word wrap stuff in the program do the CR/LF work.

I have no problem with this until I print using the PR command in the WØRLI software. If the line exceeds 80 characters, the printer acts like it is a 132 character-wide job and it shoots off the paper. In order to print out the message I have to put it in my word processor and shorten the line lengths.

So, I have adapted a policy of actual typing in the carriage return/line feed by hitting the ENTER key when the character count gets to about 60 or so letters. If I am answering a short-line message — less than 40 — I usually keep the line length down to that figure. I assume the short-line message is from a sender who uses a 40 character screen.



Oleg Lagurashvili, UA3TT, poses for the camera. Oleg has 5BWAZ number 118, 5BDXCC NUMBER 1511 AND DXCC number 312. He has given many RTTY DXers new countries in the Soviet block.

Hoax stuff

Junk mail on the packet BBS system has long been a problem for me, but the most bizarre piece of junk I have heard of missed my board. It dealt with a FAX message that wound up in the packet BBS system.

The ALLUS message alerted people about a tattoo transfer kit being sold to children. The toy tattoos were allegedly "soaked with LSD," so when kids would use them, the psychedelic acid would be absorbed through the skin or the mouth if they wet them that way. The alert bulletin even alluded to some being doctored with strychnine. Wow!

Apparently this Alert "ALLUS" bulletin made its way around the country via FAX and then some unsuspecting Amateur dumped it into the junk mail section of the Amateur packet BBS system. The original bulletin had the admonition to reproduce and distribute the bulletin, as the little tattoo kits were spreading drug culture, etc., to our youth.

Every now and then a bogus story like the tattoo ALERT makes its way into the Amateur community. When a SYSOP sees something like that he should immediately become suspicious and check its authenticity.

If there were any truth to such a message the news media would jump on it instantly. KZ1Z rates the tattoo story with the one that made the rounds a while back. It was a hoax about an SWL who was dying of cancer and wanted to make the *Guinness Book of Records* by collecting the most QSL cards before he died.

Sandy Fried, N2SF, suspected the message might be a hoax when he saw

it on his screen, so he checked with the medical center listed as originating the ALERT bulletin. It turned out to be a complete hoax. The med center said they had received about 1,000 calls about the FAX and BBS message. There was no truth to the ALERT at all. So Sandy put a HOAX bulletin into the packet system.

I'm glad some bulletins take a long time to get to my BBS, if for no other reason than the tattoo hoax dying before it reached North Dakota.

Eavesdroppings

"MAN, WHAT A LOUSY CRT DISPLAY HERE, ALMOST LIKE TRYING TO READ UNDERWATER . . . LISTENING TO THAT RARE ONE ON CW WAS JUST ONE UP, UP, UP, RIGHT AFTER ANOTHER UP, UP, UP . . . I'M A MILE FROM A 2700 FOOT MOUNTAIN AND I'VE BEEN TRYING TO BURN A HOLE THROUGH IT FOR 29 YEARS, BUT NO LUCK YET . . . HE TYPES WITH TEN FINGERS LIKE ANY OTHER MAN, SIX ON ONE HAND AND FOUR ON THE OTHER . . . HE RUNS SO MUCH POWER HE BLINKS THE LIGHTS AT HOOVER DAM . . . I ALWAYS WANTED A BUNCH OF RHOMBIC ANTENNAS, BUT ITS HARD TO DO ON A FIFTY FOOT LOT . . . THE SOLAR FLUX MUST HAVE FLUXED AGAIN . . . THE BAND IS SO DEAD THE POWER LEAK ACROSS THE STREET DOESN'T BOTHER ME AT ALL . . . I HOPE THEY MAKE IT HOME FROM SPRATLEY WITH THE LOGS . . . I GOT THE WORST NEWS FROM THE LACCADIVES WHEN HE SAID "YOU AREN'T IN THE LOG!" . . . WHEN THAT SOLAR FLARE HIT I THOUGHT MY ANTENNA HAD FALLEN DOWN, SO I WENT OUTSIDE TO CHECK THE COAX . . . LIKE ALWAYS YOUR RIG IS DOING A GRATE JOB . . . I NEVER GO TO DAYTON ANYMORE BECAUSE I HATE TO SEE ALL THAT NICE OLD EQUIPMENT FOR SALE . . . I ALWAYS WONDER HOW MUCH UNSOLD STUFF AT THE DAYTON FLEA MARKET IS LEFT ON THE GROUNDS TO AVOID HAVING TO HAUL IT HOME . . . EXCUSE MY INGLISH AS IT IS AS BAD AS MY JERMAN . . . 73 AND KEEP YOUR HOT LITTLE FINGERS ON THE KEYS."

Thanks this month to WØHAH, N2SF, W8PHG, W7VFR and others for help with the column. The channels of communication to me are mail: 1514 S. 12th St., Fargo, ND 58103, or packet: WØLHS @ WØLHS.ND. USA.NA 73. DITDIT. □

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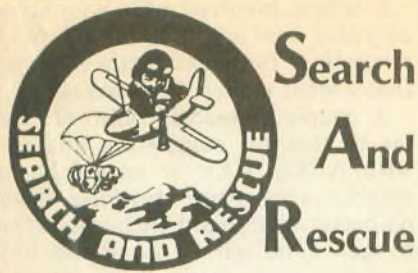
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Plain language — PLEASE!

Several years ago, during a search and rescue mission briefing, I broke out laughing when the briefer started giving out the various radio codes. There was a code for bad weather recall, there was a code if the target was sighted and there was even a code to land for lunch.

Why radio codes at all? Why not just say what you mean?

Listening to several public service agencies, there are 10 codes, nine codes and even "code" codes (code four, code 10, etc.). And only some of the codes seem to indicate the same thing. Think of the confusion if, during an emergency, all these agencies were on a common channel or if one dispatcher called another via twisted pair and used codes that only confused the other.

Many new Amateurs get confused when the "old-timers" resort to the Q-language on voice repeaters. Confusion may be OK some of the time, but not during a search mission.

And why do public safety volunteers feel this pressing need to be secretive? It's a great public relations tool to have your local news reporter (or prospective volunteer) hear what's going on and get it correct? Hey, Amateur Radio might even get credit for its assistance during the SAR mission.

If you're in the decision making end of your SAR communications effort, push for plain language. If you find the plane crash, say so. If you need an ambulance, say so. Gee, if you've got to land because of turbulence, why not say so!

When the local paramedics talk to the hospital, they talk to be understood. That's what is important — being clearly understood. Remember that English is generally a universal code!

Silence is golden!

I often wonder why many of us make

several calls on a voice repeater and then feel the compelling need to announce "Station Not Heard" or "No Response Heard." Heck, I heard the call and it was obvious to me no one answered. It's sure amazing, though, how many of you have to tell me that no one answered your call.

Really loud, really clear

Signal reports for voice (this does not apply to the RST system for CW!) — just what does 40 over 9 tell me. Is that better than 38 over 9 or even S-9? And then there's all the signal report mutants: You're fuzzy, you're scratchy, you're hard copy, you're passing a picket fence or there's a buzz on your signal. I just love it when I am a low (or high) deviate.

How about a plain language suggestion from the Allied Communications Publication 125, to which most military and militarily-affiliated groups subscribe:

Signal Strength — Loud, Good, Weak, Very Weak or Fading. (You pick whichever one fits. Each is very clear and self-explanatory. Loud means your signal is very strong. Fading means your signal strength fades to such an extent that reception cannot be relied upon.)

Signal Readability — Clear (excellent quality), Readable (quality is satisfactory), Unreadable (signal quality is so bad I cannot understand you), Distorted (something is affecting your signal quality), With Interference (something is interfering with your signal) and Intermittent (your signal is intermittent and I am having trouble reading you).

A signal can be Weak and Readable and be a "good signal." If you tell me I am S3, that doesn't tell me if you understand what I am saying. If I am weak and unreadable, that makes it very clear to me that I'm not getting through.

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Equipment standardization

Isn't it frustrating to have your 8-pin Azden microphone not work on your Kenwood radio with the same plug? Or to have your radio conk out and you have to splice power connections in the middle of a blizzard while trying to drive to a search base?

It took six months to complete, but all my radios (even the aviation, marine, HF, VHF and 11M radio) have the same microphone plug and power connectors. This made every microphone interchangeable and makes it so easy to hook in a spare radio during a search mission.

I used the Kenwood pinout (from the TS-430S) as the microphone standards, only because I had more Kenwood rigs than ICOM, Azden or miscellaneous rigs.

For power cables the local ARES groups are using the Anderson Power Pole connectors. These are great. I found out about them too late and am using the Radio Shack supply of 4-pin Molex plugs (I do have several pig-tails that allow me to connect to the ARES folk too). I put two fused positive wires

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at the pointy end, two negative on the square end. I've wired several spares in the vehicles and every radio we own fits.

It's such a time-saver when my packet TNCs can mate to any of the VHF (or HF) radios and can be connected to the power quickly. Radio Shack sells the 8-pin microphone connector, but hasn't yet offered the chassis mount mate. I ordered a bunch from ICOM at a good cost and put them into every radio. It takes about 30 minutes per radio. It may not match everyone else's but, hey, it's a start and it makes my response time faster and more efficient. Every desk, mobile and boom microphone can now be used with any other radio.

As I said, it takes a little time and you don't need to follow my plan — more important that you just take the time and do it, especially if you want to be active in SAR communications.

I also made sure each radio has a BNC or SO-239 antenna connector and a miniature stereo headphone jack (not the sub-mini size). I wire the stereo jacks so left and right are connected, but that allows me to use a custom Y-cable and stereo headphones to route audio from one radio into the left ear and from another radio into the right ear.

Reader response

One fun part of writing this column every month is receiving your feedback and knowing I've motivated a response. All I can do is provide you with some information. If you take this information and apply a little experience you obtain knowledge. I cannot share knowledge — you're on your own in that department.

25 Years a Ham?



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I've been involved in SAR for almost 20 years now and it is fun as well as rewarding. It takes a little effort and that's what makes it rewarding.

A couple of reader comments took me to task for suggesting affiliation with ARES, CAP or an established search/rescue group. Hey folks, there's no better way to kill enthusiasm than to get a bunch of good old boys together and go it alone. You've got to have some method to involve ALL your people and go on a real mission once in a while. If the sheriff or CAP or ARES don't call you to help, you'll get pretty discouraged.

You may not like ARES or CAP or you may not have voted for your sheriff, but often they have the "official" status and can provide you with the vehicle to become involved. Remember, the goal is public service. People are what make or break the organization — get involved and make it better!

The second best way to discourage activity is to operate from your house during a search mission. Think about it. Do you want to operate from someone else's house? It is tough to offer training and inspire dedication if one or two people run the mission alone from a living room — even more upsetting if the group has a facility available.

Pardon me if I smile when you ask why there aren't more trained communications folk or why your communications center isn't finished after you've run the last 10 missions from your house, office or car. Involve people on a regular basis from a regular facility and you'll be surprised at how willing they'll be to help fix things up!

Instant replay

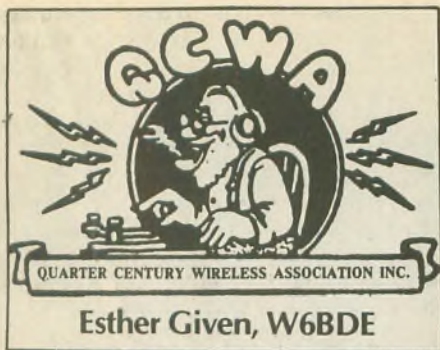
Most really good news announcers or radio personalities record their shows and then listen to themselves. They do this to improve their on-the-air delivery.

I use a quarter-speed cassette recorder on a voice-actuated-switch (VOX) at home hooked to a scanner. When I called the local net, it was fun to record the net and then listen to how well I did. What a learning tool!

If you're the NCS (net control station) have someone record the net for you. Take a listen to how you sound. I'll bet you'll notice things you never realized you did (or said). It's difficult to tell someone to slow down or speak clearly, but send them a tape and they'll hear what you're talking about.

I've collected quite a few tapes of search missions over the years and they're great for training new (and "seasoned") operators.

Please contact me with your comments and suggestions: P.O. Box 11445, Salt Lake City, UT 84147. □



QCWA membership number assignments began with numbers 1 through 34 being those present at the first official QCWA meeting on Dec. 5, 1947, in New York City. Thirteen months later QCWA had grown to 108 Amateurs who lived in the greater New York area. This numerical system continued for 42 years, and application #23,001 was processed Jan. 11, 1990.

It was inevitable that over the years a former member who re-joined might have been issued a new number. When data processing was installed, QCWA was amazed to find that only 153 such instances had occurred. These were promptly corrected to reflect the earlier number designated for the applicant.

Active membership in mid-1989 numbered around 11,000 (almost half of the total issued). The other 11,000+ includes silent keys, elderly Amateurs no longer active in the hobby and drop-outs. This is an enviable record for any organization which has existed for 42 years.

QCWA is proud of having provided

an important goal for 23,000 plus licensed Amateurs when they reached their quarter century anniversary, not to mention the ones we'll service in the future.

Thirteen of its fourteen directors attended QCWA's spring Board meeting in Irving, TX, April 13 and 14. In addition, four non-incumbent candidates for the office of director attended as observers.

Harry Dannals, W2HD, presided, conducting a well-disciplined meeting. Officer and committee reports were received, followed by the transaction of business.

A major item considered was QCWA's position concerning the FCC's no-code license proposal (PR No. 90.55) and the action to be taken. It has become obvious that no-code Amateur licensing has been added to taxes and death on the list of inevitables.

An important meeting is scheduled at the FCC in Gettysburg on June 15. QCWA will have at least two Board members attending. The Fall issue of the QCWA Journal will carry QCWA's position on the no-code proposal.

Other items deliberated were QCWA's award recommendations, scholarship program, the annual convention in Kansas City Oct. 12 and 13 and President Dannals' proposed realignment of committee responsibilities.

QCWA's 1990 Directory has been published and distributed to each member or family group in good standing as of Jan. 1, 1990. Sanctioned by the Board of Directors, the directory

includes lists of current members, silent keys, local chapters and its constitution and bylaws.

President Dannals has appointed the nominating committee to present a slate of nominees for QCWA's 1991 election. Those named were Mike Orofino, W2KO; Art Rauch, W4VZ; Jack Troster, W6ISQ; Frank Schwab, W8OK and Jim McKim, W0CY. The committee will be seeking candidates for the offices of president, vice-president, secretary, treasurer and five directors at large. Their final report will be represented to the Board at the 1990 annual convention in Kansas City.

Candidates must be current members, preceded by no less than two years in good standing prior to nomination. Term of office is two years. Any qualified member wishing to serve in an office who is not contacted by the nominating committee prior to Oct. 12, 1990, may submit a petition signed by 25 or more QCWA members in good standing. The petition must reach the QCWA secretary by Dec. 31, 1990.

QCWA members in central Wisconsin welcome the formation of Badger Chapter #174, which will serve the mid-state area around Stevens Point and Wausau. President Robert Baird, W9NN, and Secretary/Treasurer Fred Guth, W9BCC, are two of its chapter officers. □

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Let's get Amateur Radio growing again!



Two of Amateur Radio's greatest boosters are a pair who discovered it in their senior years, 10 years ago. Successful insurance man Frank Traugher, KA6TTQ, and his wife Sally, KA6TSG, think it's all very exciting.

For instance, recently, while talking through the 2M Southern California repeater on Catalina, Frank suddenly found himself in QSO by satellite to Les Abbie, VKZLL, in Southern Australia.

"That's not what we expected when we studied for our tickets with the Newport Harbor Yacht Club and Gordon West," he said. "We just hoped to be able to communicate from our boat." (He owned boats for a long time and called them all "Convinster" — meaning he had to persuade Sally that he kept needing bigger and better

"stinkpots," as power boats are affectionately dubbed.)

Unfortunately, they didn't meet in person when he was close to Les' QTH very recently on a trip Down Under. Frank loves to travel and has made three trips around South America by ship.

"I'm proud of my Penguin Pin, for swimming in the Strait of Magellan (where the Atlantic and Pacific meet at the tip of South America), although," as he smiles, "I must admit that they let us swim in the ship's heated pool and gave us hot toddys after!"

Sally and Frank are in their eighties and very active. They are also able now to look back on interesting lives.

Frank was brought to California "still in 3-corned pants" and grew up in mid-Hollywood, across the street from Charlie Chaplin's studio.

"I used to hang around his dressing room and raced him on my bike as he drove away," he said. "I was only 13, but he hired me to handle his fan mail; I learned to sign his autograph on about 100 pictures a day. (Wonder how many are now prized by collectors!) By the way, letters with the best English and penmanship came from China."

Then he recalls his days studying at UCLA.

"On Hollywood Boulevard is the famous Grauman's Egyptian Theatre, where so many glamorous premieres were held. Well, about 50 of us were hired to appear in the live stage prologue when they ran *The Big Parade*.

"We were soldiers and I was the commander of the Italians. For six months,



Frank and Sally Traugher, KA6TTQ and KA6TSG, discovered Amateur Radio late in life, but are making the most of it now.

every performance, I would shout, 'Squad halt, present arms, forward march!' I think we earned \$35 a week. But that was better than the 50¢ a day I earned as a kid riding a produce truck."

But in their Amateur Radio days, Sally and Frank found many interesting adventures, such as talking via repeaters on a 9,250 mile drive cross-country. "The local Amateurs are always so helpful, suggesting motels and spots of interest," Frank said. "One time in Texas, we couldn't believe what we saw: About a dozen shiny Cadillacs nearly half-buried. A local explained that the owner bought a new one each year and couldn't bear to turn them in, he so loved his caddies."

On one of his cruises, Frank, Sally, his brother and sister-in-law tossed over four sealed wine bottles with messages. All eventually were returned to them, having floated up to four years and 10,000 nautical miles.

Sally is so enthusiastic about her ticket, she's seriously hoping to upgrade — at age 80! Her life, in addition to raising a family, has been spent volunteering long hours for worthy causes, such as more than 50 years service for the Los Angeles Philharmonic Orchestra and the famous Las Floristas, who stage elaborate headress balls for charity.

They live happily in the beautiful home Frank built 50 years ago in La Canada/Flintridge, not far from Pasadena's Jet Propulsion Lab.

So, to all the seniors who may not have ventured in yet, come to Amateur Radio, they say. It's great! □

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Cycles

Is there such a thing as traffic cycles? If so, do they run in regular patterns, like solar cycles, or are they more prone to random events, as in a stock market cycle?

It has seemed to me for some time that there isn't as much traffic on nets as there used to be... say over the past seven years. This is the current length of my Amateur Radio/net experience. There are nights on EAN (Eastern Area Net) that NO traffic is listed for the 4RN (Fourth Region). When traffic stops flowing to Florida, we are in trouble. Thus, it was good to read in a newsletter from New York that after some data crunching, it has been decided that, while there may have been a recession in 1988 (mid-1987 through early 1989), traffic and check-ins are now at an all time high.

Having available data from Virginia since September 1989, the urge to check trends on our six daily nets overwhelmed me. Traffic peaked in December, as one would expect. Another strong peak in February for Valentines Day. Comparing September to April (two non-holiday months) traffic was up about nine percent on three nets and down about nine percent on three nets. A tie.

Check-ins peaked in January, but were down between 1 and 1.6 percent in April. This could be because we switched to Daylight Savings Time and had our first warm spring/summer days.

A better comparison would be between the same months over a number of years. Another newsletter, this time from Northern California, appeared in my mailbox recently. Noting the statistics on the back, two things seemed apparent: First, there was not a lot of traffic (52 pieces in February and 57 pieces in March). Their VHF net did a bit better (59 pieces in February, with no data available for March.) If you deduct 30 net reports, there was less than one piece of traffic per net.

The second thing I noticed was that it was amazing to see that out of seven (Sunday through Saturday) RN6 liaison positions... seven were "open." The VHF net did better, with

only three "open" positions.

In comparison, Virginia nets handled 373 pieces of traffic in March. That's an average of 62 per net per month (deduct 30 net reports and you have one message per net per day on average). It is assumed that no packet activity is included in these figures. While traffic seems consistent, we appear to have more people interested here (most NCS/liasons filled on six daily nets).

Traffic is our sustenance. Luckily, we have a few people among us who have large rosters of names to which they keep a steady flow of traffic moving. Throw in a special event or two and traffic handlers can remain in that expectant stage of hoping that when they check into a net, there will be something to do besides saying "hi/bye." Those of us without some quantity of relatives or friends whom we can bother with holiday greetings could resort to stratagems of checking with a local senior citizens establishment, getting a local school interested in a radio station/club and/or just sending traffic.

We do seem to have regular holiday cycles. Almost anyone willing to check into several nets a day (local, region, area, perhaps a TCC sked) for the 12 days before Christmas should be able to make the Brass Pounder's League.

Traffic also seems to have "random" cycles, though perhaps like the stock market, their timing will have to remain nebulous.

With packet available in the shack, one can send a message exactly when one wishes and not have to wait for or know any net procedures. This is extremely easy, requires no discipline, and can be worked into your own schedule whenever you wish. It's also devoid of human contact. Perhaps in 50 years we will look back on the one net cycle which had one great peak and then ebbed as we all became too busy to interact.

California and back in 23 hours

A message was last seen leaving a Virginia net, destination California, Sunday night at 7 p.m. (local). It should have reached the 4RN at 7:45 and EAN at 8:30. A TCC op would have sent it on a PAN sked at 9:30 p.m.

A reply was received the next day

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(here in Virginia) on a 6 p.m. (local) net. This is the way we all ideally envision traffic flowing.

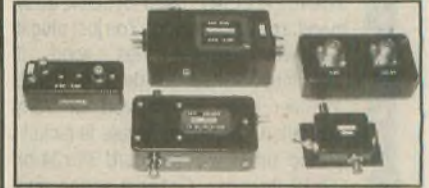
Unearthing new traffic handlers

The wheel has been invented again. It's such a good idea, lots of you must have tried it.

WB4EDB in Virginia suggests that we man an NTS table next to the official ARRL table at all hamfests. While we do claim a relationship with ARRL, we also want to keep a bit of distance between traffic handling and other activities, such as DXing, QSO-ing, policy making... thus, a separate

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table with a separate sign noting that this is your NTS spot.

A single piece of info listing local nets, frequencies, etc., could be handed out; questions could be answered; encouragement to check in given; Net Directories, ARRL radiograms, etc., could be sold; and interaction with others practiced. You could even take traffic messages and become a "special event." Many independent nets have been doing this.

NTS has been too complacent, feeling that HQ was on top of things. HQ just slashed the NTS budget by 84 percent, and seems to be waiting for the Board to give them direction. The Board seems to be waiting for HQ to advise. There may be a hole in the middle.

Quantity or quality

Some Amateur activities require a lot of people to make them work. It's hard to have a random QSO when there aren't lots of random people playing.

Randomness has advantages. It requires no planning, any one of the 24 hours is good, you can engage in long, intrinsic conversations and even find out what the weather is like without having to turn on your TV.

DXing is fun. A lot of Amateurs do it, though some constraints apply. There are some hardships like "pile-ups." But that lets you know that a lot of people enjoy the activity.

Passing traffic doesn't involve a vast quantity of people, but everytime an emergency happens, publicity is generated which eclipses all other radio activities. A few well-trained Amateurs can make a difference.

This difference doesn't seem to be appreciated by some who make policy decisions. When the latest movie was commissioned by the ARRL to show Amateur activities, it did not mention

NTS. When one of our Board of Director's was asked "Why?", the answer was that the NTS involved so few people.

Spacing

Spacing is just as important in SSB as it is in CW. If you decide to spell a word on voice, leave a space between the letters. Picture here someone spelling the word "Gerald" vertically; i.e. (fast) G with E R A L D on top of the G. Some have the ability to vertically space a word phonetically.

And speaking of phonetics . . . have you heard the guy who says my name is Gene . . . that's Germany, energy, notion, Eisenhower. Then he doesn't even give you enough time to write down those four words (try figuring out how to spell Eisenhower), put a box around the first letters or come up with his name before he's on to his QTH.

It's not at all hard to learn 26 words. When you are expecting Romeo and you get one of the other guys or even a radio, it does take extra time for the brain circuitry to switch from the expected to a translation. The reason we are asked to learn these 26 words is to be uniform. Note that only two of the 26 have one syllable. No one seems to have a problem with Mike. Ike Just stands out in a crowd. Those of us who are involved with a Gulf might want to refer the matter to a committee, as "ulf" isn't very distinctive and "gulf" often needs a repeat. The committee might want to come up with something more pronounced, like "gopher" or "gotcha."

Another pattern of spacing behavior is to allow the receiving station as much time to copy long words like Albuquerque or Cincinnati as he has for short words like Dallas. The former take not only twice as long to write or type, but an added factor must be thrown in for a thinking about how to spell it.

Spacing is particularly important between numbers. You send "350734B Ave" and the other station says "CFM 350734BAVE." Do you CFM this in the hopes that other station knows where the spaces are?

How long should a net run?

Every traffic net has a designated time at which it intends to start. An NCS should call the net, ask for traffic and take check-ins. If no traffic is listed, some NCS feel that perhaps they should just call and call and call a few times.

It sometimes gets a bit tiresome to listen to an NCS call for 10 minutes in the hopes that s/he can lure another station into checking in. The latest word from HQ (printed) is that you are (please turn to page 67)

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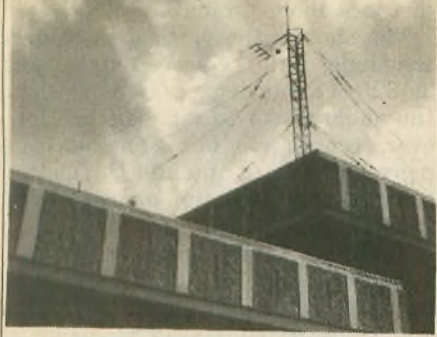
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KURT N. STERBA



AERIALS

I was quietly sitting in my shop at the radio ranch (I grow antennas — big ones) working out the dimensions for my new 75M discone, when the phone rang. It was publisher Armond Noble, N6WR.

Heat, heat . . . that's what he got from a manufacturer who didn't care for my remarks about his new product, a small, remotely-tuned loop antenna for HF service. I had mentioned it in my previous month's column.

Armond was asked who I really was; did I have the qualifications in the antenna field and was I formally trained in this field, because the loop was invented for this company by someone who was.

Well shucks, I washed my neck and behind my ears and attended the university, which shall remain nameless. I was then given this piece of paper which I hang on my office wall. I was then allowed to stand at the blackboard and look into young starry-eyed faces and hope they were understanding my explanations of current flowing from negative cathodes to positive plates, tank circuits and their Qs and of course the black art of electromagnetic radiation! My first students were those for whom Uncle Sam was paying tuition as a way of thanking them for going to Korea.

That's all I wish to say about myself at this time. My background, in all modesty, is ample to critique a loop antenna. I can read Kraus and his 26 pages in Chapter 6 of his second edition (*Antennas*, John D. Kraus, McGraw Hill 1988) as well as the next guy. I can

go through his formula for finding the radiation resistance of a 32 inch square loop at 14 MHz, which was .064 ohms! I even found out where Kraus says this loop antenna would be 7½dB below a dipole on 20M!

So, boys and girls, let's go back to Antennas 101. Here is what you need to know regarding loop antennas:

"The strength of the electromagnetic field radiation from a section of wire carrying radio-frequency current depends on the length of the wire and the amount of current flowing."

Did you note that "strength" and "length"?

I now offer what naturally follows, "The efficiency decreases rapidly, as the antenna wire is shortened."

Did you note that "decreases" and "shortened"?

And, "The power gain in receiving is the same as the power gain in transmitting." To which I add, "The transmitting and receiving properties of an antenna are reciprocal."

What has all this got to do with exaggerated claims about a loop antenna? Unless you want to rewrite the laws of physics, you can't throw everything ever written about aperture (also known as capture area) away. You'll just have to accept that a 32 inch square loop doesn't have the capture area of a 36 ft. long dipole. That is, the little loop doesn't (can't) have the "gain of a dipole." Surely it has directional properties, but directional patterns alone do not forecast the gain, since there are losses to be accounted for.

In the small loop the losses are really big. There is the mismatch loss of matching 50 ohms to .064 ohms, of radiation resistance on 14 MHz. Don't forget the IR loss. That could be considerable when considering an aluminum loop. Then there's the insulation loss.

I'm not comfortable with the firm in question telling us that this omnidirectional loop antenna has the gain of a dipole. It may have the pattern, but surely not the gain.

And what gain are they talking about?

Could it be that they meant gain over a shopping cart? Maybe a patio table? Maybe they meant to say gain over an isotropic radiator? But then, that would be wrong also. Remember, a

dipole has gain over the isotropic, 2.15dB worth. How? By having a null in the direction of the dipole ends, more power is radiated broadside to the dipole axis.

But the loop antenna ad said it was omni-directional! I suppose they meant when horizontally polarized, the loop radiated equally well in all directions of the azimuth, but they didn't say that.

What ruffled my DX bulletins was the fact that this loop antenna was the subject of a book written by an Amateur who spent an entire page telling us how smart he was. And he also made the statement that the advantage of a Yagi was not the meaningless two "S" units gain, but rather the front-to-back ratio.

First of all, two "S" units is hardly meaningless. It can be the difference between hearing something (even with earphones on) going "gurgle, gurgle" down there or instead understanding every word or letter. Two "S" units is 12dB on well-calibrated receivers.

Also, I have yet to see a 12dB gain Yagi on 20M. Have you ever seen one? You'd remember it, because the boom would be about 140 ft. long!

Back to the loop. Four Amateurs, I've been told, were shipped early models of this loop and are quite pleased with it. Whoever heard of rejecting a gift horse — or antenna! Even then, at the peak of this sunspot cycle, I'm not surprised that a 32 inch loop will get you a VK, ZL, DL or G.

One loop has now been shipped to me, relayed through the Worldradio offices, and I shall play with it. I don't want to send it out to the commercial antenna range, as the engineers there would think I'm losing my marbles in my old age. But that would be the only scientific way to determine its pattern and its gain over a dipole.

Well, to assist me in my home testing at the shack, I've obtained an MFJ-1700B transmitter-antenna switch.

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This has inputs for six different antennas AND another switch places the antenna in use to six other receivers, tuners, bridges, whatever you want with a coax connection. This should prove to be very useful for antenna experimenters, and takes "A-B" comparisons to new heights.

I shall compare the loop with my favorite backyard reference, the shopping cart, and let you know the unsentimental results in a couple of issues.

Must be the phase of the moon or something, because we're getting the Maxcom letters again. These consist of Amateurs telling us how awful the thing is.

ISOLOOP™ antenna rebuttal

MIKE LAMB, President, AEA Inc.

I must say that I was duly entertained by Kurt N. Sterba's article appearing in the May issue of *Worldradio*. I do enjoy his writing style.

His reaction to our new AEA ISOLOOP™ antenna is what we expected from many well-experienced radio Amateurs before they have the opportunity to try it for themselves. What we did NOT EXPECT was an article written before the author even tried the antenna, proclaiming that the antenna cannot possibly work as well as claimed without breaking the laws of physics.



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I've done some very preliminary work with one (hope to devote some real time to it soon) and I can say now that it certainly is not "a dummy load," as so many of its detractors call it. This without their ever having used one.

What I don't understand is why we don't get any letters about that real big antenna company that has an all-band vertical ranging from 80 up to 10 and claims a radiation angle of 18 degrees. There's also a little polar plot in their brochure.

Now, the thing that controls the angle of radiation (or amount of power in a particular lobe, if you prefer) is the length of the antenna. Or, as they refer

to verticals, "height," meaning in this case length of the vertical, not a distance above ground.

The shorter the vertical the higher the angle, with the lowest angle being at .625 of a wavelength (5/8) after which the angle starts to raise again. However, according to the big antenna company, with a 26 ft. antenna, this has the same angle of radiation on every band from 80 through 10.

You'll pardon my laughter.

(Sr. Sterba goes by his disguise so he can go to conventions, stand in front of booths and listen to swill and never let on. Otherwise, he would have to shout "Knave, knave," and the fuss would embarrass Lil'.)

Background

We at AEA have had several requests for an effective compact HF antenna since we introduced the Isopole™ antenna back in 1979. Dr. Donald K. Reynolds, co-inventor of the Isopole, never really appreciated the need until he personally retired from his E.E. Professorship (where, among other subjects, he specialized in teaching antenna design courses at the graduate level) and moved into a condominium with limited space for HF antennas.

In researching possible design approaches, Don came to the conclusion that a fractional-wavelength tuned-loop antenna might provide the best solution to our problem. The small loop offers the following advantages:

- Small size
- No ground radials
- Good efficiency
- No external tuner necessary
- Easy to mount
- Portable
- Omnidirectional when mounted in

the horizontal plane

- Out of band signal rejection
- Good decoupling from the feedline
- One octave tuning range

The high Q resonance effect of the ISOLOOP is also a big advantage for modern solid-state transceivers with broad-tuned front-end stages. As an example, the front-end bandwidth of many transceivers will allow very strong out-of-band broadcast transmitters to mix with VCO phase noise, causing an elevation of overall receiver noise level. With the ISOLOOP these signals will be attenuated significantly, resulting in a decrease in the noise level. Again, this translates into an effective gain in the signal-to-noise level.

In the horizontally polarized mode, the ISOLOOP has a radiation pattern looking like a doughnut. Maximum radiation is at zero degrees (on the horizon) in free space, with very little radiation straight up or down. So, whereas the radiation efficiency of the loop may be down one or two dB from the ideal dipole, it would appear that much of that is made up by concentrating the pattern toward the horizon.

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Disadvantages of other loops

- Most use expensive vacuum variable capacitors
- Utilize heavy copper tubing or large diameter aluminum tubing

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- Only commercially available units started at \$600

- Not UPS shippable

Don and I started building models about three years ago, with mixed results at first. We finally worked with Mike Staal (co-founder of KLM and M2) over the past year and a half to finalize the mechanical design into something that would be manufacturable at a price Amateurs could afford.

The performance results substantially exceeded our expectations. We are able to achieve performance very similar to a perfectly tuned full-sized dipole antenna ANYWHERE in the 14 to 30 MHz operating range. In practice, the ISOLOOP is only about 6 to 10dB down from a full-sized Log Periodic array that would operate the same frequency range, but represents a system cost differential of a similar magnitude!

Other cost comparisons

Kurt's comparison of our ISOLOOP with a \$15 antenna should probably be explored a bit further. First, he needs five antennas at \$15 each to cover the five Amateur bands, 20, 17, 15, 12, and 10M, which is \$75. Then, assuming four radials for each band at an average length of 12 ft. (250 ft. of copper wire at, say, 5¢ a foot), there is an additional \$12.50. Insulators for each radial would add a subtotal of approximately \$20.

Now, the ISOLOOP and one vertical would each require one run of coax. The ISOLOOP requires a run of five conductor, tuner control cable that is roughly equivalent in cost to the coax needed for a second vertical. That still leaves the customer needing three extra coax cables (150 ft. total at 22¢ a foot), connectors and a coaxial switch at approximately \$40, which adds another \$73 to the total cost. The antenna tuner Kurt mentioned sells for \$150 (the tuner and control box come with the ISOLOOP). Also, don't forget some low cost brackets for mounting the antennas to some support (five at a cost of \$15 each, totaling \$75).

Let's see, that adds up to . . . \$405.50 . . . a long way from \$15!

With all five of these vertical antennas and the accompaniment of radials, we are hardly left with a "low profile" compact antenna. With the ISOLOOP you have only one switch to control.

With the antenna tuner Kurt selected, you need to adjust three interactive controls each time you change bands. Any bets on who can get to the next frequency first?

How about noise? The vertical antenna is famous for being one of the noisiest antennas going. The tuned loop is similarly famous for being about the most quiet antenna known. To me this equates an apparent receive gain (increased signal-to-noise ratio).

The vertical antenna is also typically very poorly decoupled from the feedline. That means any computer hash picked up on the shield of the coax feedline will be dumped right into the receiver front-end. Also, when transmitting you will have radiation from the outside shield of the coax leading to your vertical.

How about performance?

Kurt can best answer this question. Kurt has already shown to my satisfaction that his "low cost" vertical antenna is quite a DX antenna. I have no doubt that the ISOLOOP will perform at least as well.

Though I do not know Kurt's true identity, from his articles I believe him to be from an era when integrity and ethics were important. In that spirit, I have offered (and Kurt through an intermediary has accepted) the loan of a production ISOLOOP for his first-hand evaluation. I trust that after he has had an opportunity to enjoy the ISOLOOP for himself the merits of this antenna will become more apparent. I suspect he will be delighted with the simplicity, neatness and convenience of assembly and operation, combined with the low system cost of the ISOLOOP antenna. All this AND performance that exceeds everyone's intuitive expectations.

Kurt N. Sterba will respond in next month's issue. □



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Illinois

The HAMFESTERS RADIO CLUB is sponsoring its 56th annual hamfest and computerfest Sunday, July 29, at the Will County Fairgrounds in Peotone. Hours will be from 6 a.m. to 3 p.m.

There will be a fully air conditioned exhibit building and covered pavilions for the flea market. A food and beverage service will be available.

There will be a grand prize drawing for \$500 in cash (winner need not be present), plus many more prizes. There will be a special prize drawing for flea market sellers.

Donations required are \$4 in advance, \$5 at the gate. Children under 12 enter free. Talk-in on the CFMC Repeater, WA9ORC, at 146.16-146.76.

For information, reservations (by July 15) or advance tickets (send an SASE and check), contact Don Burch, N9DWI, 8438 S. Kolin Ave., Chicago, IL 60652; 312/582-9776. □

The AMATEUR CROSS LINK REPEATER ASSOCIATION of Chicago will be having its annual hamfest/computerfest Sunday, July 22, beginning at 8 a.m., with setup at 6 a.m. The location will be The Hall in Berwyn. The facilities are handicap accessible.

Tickets are \$3 advance, \$4 at door. Talk-in on 147.225+, 224.480- or 443.700+, KD9FA. For information send an SASE to ACLR, P.O. Box 348257, Chicago, IL 60634; 708/795-0380. □

Iowa

The DES MOINES RADIO AMATEUR ASSOCIATION will be sponsoring a hamfest on July 7, at the Sacred Heart School in West Des Moines.

Activities will include VEC testing, seminars, a flea market and commercial dealers. For more information write to: Hamfest 90, Des Moines Radio Amateur Association, P.O. Box 88, Des Moines, IA 50301; or contact Harold Ober, N0HZK, at 515/289-1330. □

Kansas

The CENTRAL STATES VHF SOCIETY will hold its annual convention in Wichita from July 26 to 29 at the Marriott Hotel. Room reservations should be made directly with the hotel.

For more information contact Lonnie Roberts, WD0L, 628 Elaine, Clearwater, KS 67026, 316/584-6465. □

Maryland

The BALTIMORE RADIO AMATEUR TELEVISION SOCIETY Maryland Hamfest and Computer Fest will be held on Sunday, July 29, at the Maryland State Fairgrounds in Timonium. The facilities are handicap accessible.

Eight foot tables in the main exhibit hall, with access to A/C power, are \$40 each or four for \$150. Tables in the Home Arts Building (no A/C power) are \$20 each or eight for \$150. Dealer setup begins on Saturday at 2 p.m. Sunday setup begins at 6 a.m. There is no set opening hour.

Tailgating is \$5 per vehicle space and is for sale only on the day of the hamfest. No advanced reservations for tailgating will be accepted.

Free VE exams will be held in the air conditioned administration building promptly at 10 a.m. Pre-registration IS required!

Talk-in on 147.03/+, 443.4/+ or 224.96/-. For table information and reservations, write

to BRATS, P.O. Box 5915; Baltimore, MD 21208; or call N3HFS at 301/583-9147, 24 hours a day. □

Missouri

The ZERO BEATERS AMATEUR RADIO CLUB will hold its annual hamfest on Sunday, July 15, at the Bernie H. Hillerman Park (Washington fairgrounds) in Washington.

There will be refreshments, a flea market (flea market parking \$2 a space), VE exams (walk-in basis starting at 10 a.m., bring original license and a photocopy), seminars, dealer displays, non-Amateur displays and free parking. Talk-in on the 147.24 repeater. Admission is free.

For more information contact Dane Brockmiller, Rt. 2 Box 623, Union, MO 63084; 314/583-2323. □

North Carolina

The WESTERN CAROLINA AMATEUR RADIO SOCIETY hamfest will be July 28 and 29 at the Fireman's Training Center, just west of Asheville. Hours will be from 9 a.m. to 3 p.m. Saturday and from 9 a.m. to 2 p.m. Sunday. Admission in advance is \$4; \$5 at the gate.

Features will include dealers, refreshments, WCARS/VE exams (pre-registration only) and good fellowship. Talk-in will be on 146.91 and 146.76. For dealer information contact KA4WPM at 704/253-0269; other info, contact KA4CAC at 704/667-3212. □

North Dakota

North Dakota and Manitoba's biggest and best hamfest will be held at the Peace Garden on the US/Canadian border from July 13 to 15.

Registration will start on the afternoon of the 13th. The 'fest will end at about noon on the 15th after a general meeting.

Lots of activities are planned, such as transmitter hunts, mobile judging, a giant outdoor flea market, dance, bingo for the ladies and games for the kids. There will also be a breakfast for all on Sunday morning. A special event station, operating under the call of VE4IHF, will be on the air on Friday and Saturday. It will be a great weekend for camping and hamming, as there are ample camping spots on site. The Peace Garden is located just a few miles north of Dunseth. □

Ohio

The ASHTABULA COUNTY AMATEUR RADIO CLUB will be holding a hamfest and computer show on July 29 from 8 a.m. to 4 p.m. at the Ashtabula Branch of Kent State University.

There will be indoor vendor space, a paved outdoor flea market, door prizes, refreshments and food services. Admission will be \$4, \$3.50 in advance. Children under 12 enter free. Tables will be \$8. A mobile check-in prize will be given also.

Talk-in will be on the county repeater, 146.115/715. For advance admission, table reservations or info, contact Ken Stenback, AE8S, 722 Lyndon Ave., Ashtabula, OH 44004; 216/964-7316 9 to 9. □



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Pennsylvania

The NORTH HILLS AMATEUR RADIO CLUB is sponsoring its 5th annual hamfest on July 8, from 8 a.m. to 4 p.m. at the Northland Public Library in Pittsburgh. Talk-in on the W3BIS repeater, 147.69/.09.

The hamfest will feature free admission, free dealer and paved tailgating space, free parking, food and drink, handicap facilities, VEC testing at 8 a.m., ARRL table, door prize drawings hourly, main prize drawing — winner need not be present and 50/50 drawing.

VEC information is available with an SASE to John Rosenwald, NM3P, 400 Stevens Dr., Pittsburgh, PA 15237; 412/931-2651. Preregistration is strongly suggested. Hamfest information is available with an SASE to Bob Ferry, Jr., N3DOK, 9821 Presidential Dr., Allison Park, PA 15101; 412/367-2393. □

The 11th annual MURGAS ARC (K3YTL) Hamfest & Computerfest will be held Sunday, July 1, at the Ice-A-Rama in Wilkes-Barre. Setup will begin at 6 a.m.; doors will open to the general public at 8 a.m. Admission is \$4; \$3 in advance. XYLs and children under 16 enter free.

Outdoor tailgating space is \$3; bring your own table. Indoor selling spaces are \$10 per space; this includes a table. Please reserve these in advance. Indoor spaces will be held until 0830, unless they have been paid for in advance. Bring your own extension cord. 110V power is available indoors. This should also be reserved in advance.

Features will include an electronic show and an ARRL table. There will be opportunities to buy and sell new/used electronic parts or gear and computer equipment and parts. There will be special drawings and refreshments. Free parking will be available.

Talk-in on 53.81, 53.61, 146.52, 146.61 and 444.825 or 10 GHz.

FCC exams will be offered beginning at 10 a.m. To register send your name and address to Joe Caffrey, W3DZH, 79 Kellers Lane, Plymouth, PA 18651. Specify the license desired and the current license held.

For more information contact K3SAE-KB3GB, RD.1-Box 214, Pittston, PA 18643; 717/388-6863. □

Wyoming

The WIMU '90 hamfest will be held at the Virginian Lodge in Jackson Hole, from Aug. 3 to 5. Sponsored by the Eagle Rock ARC of Idaho Falls, ID, the 58th annual hamfest will feature an open swapmeet, seminars, a commercial exhibit area, forums, ARRL officials, women's and children's activities and much more. Talk-in on 146.31/91.

Admission by mail is \$10; \$12 at the door. Send registration to: WIMU '90, P.O. Box 2415, Idaho Falls, ID 83403-2415. Make checks payable to WIMU '90.

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For further information contact Doug Smith, WA7PYO, at 208/528-5121 days or 208/529-1504 evenings. For reservations at the Virginian Lodge call 800/262-4999; mention the hamfest. □



Tennessee On Ten QSO Party

The sponsoring chapters of this event are the Chattanooga Choo-Choo, Great Smoky Mountain, Trail of Tears and Music City. Times of operation will be from 0000Z July 27 to 2400Z July 29. All duly licensed Amateurs are invited to participate.

Rules: 1. Contacts may be any mode on any 10M frequency. 2. Exchange call sign, name, state, 10-10 number and chapter BASIC numbers. 3. A station may be counted only one time per mode. 4. Logs must be kept in UTC (Zulu) time. 5. A dupe sheet is required if there are more than 100 contacts; a cover sheet is required with your call sign, 10-10 number, total contacts, total points claimed and chapter designation.

Scoring: 1. One point for each QSO. 2. One point for each 10-10 number. 3. One point for each sponsoring chapter BASIC number. 3. One point for each Tennessee station. (Maximum seven points for each QSO.)

Awards: 1. First, second and third place winners receive 50 bonus points to any sponsoring chapter of your choice. 2. Fourth through 10th place winners receive 25 bonus points to any sponsoring chapter of your choice (exception: Music City awards to be announced). 3. If winners are non-10X members, one years membership in 10-10 International and membership in sponsoring chapter of choice.

Log: 1. Must show date, time, call sign, name, state, 10-10 number and appropriate chapter numbers. 2. Must be postmarked no

later than August 31. 3. Mail to L. B. Cebik, W4RNL, 2414 Fair Dr., Knoxville, TN 37918 (SASE for results). □

Maxims etcetera

Harvey Maxim II, N6NTW

Occasionally we receive support from our readers in the form of contributions to *Squelch Tales*. One such floated across the groundplane the other day, and is presented as received:

- Never trust a driver with less than two antennas on his car.

- A QSL in the hand is worth two entries in the log.

- It is better to give than to receive QSLs.

- Where apathy is the master, the slaves don't care one way or the other.

- Never have a dialogue with an illegal operator — it is difficult for others to tell which is the idiot.

- Give me a lever long enough and a fulcrum strong enough and I can get an A from my Physics 101 instructor.

- If Ben Franklin had flown his kite on a clear day he'd have discovered solar power.

- You can do more with a kind word and QRP than you can with 1500 watts. — San Diego RA, CA □

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as described in World Radio and NASWA Journal. 150 kHz to 30 MHz true active antenna. \$33.00 inc. shipment. AD-2 AC/DC portable/fixed base active antenna with Medium Wave ferrite antenna coupler. 150 kHz to 30 MHz. \$61.00 including shipment. Also described in Word Radio and NASWA Journal.

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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.

Remote control switchbox

The ComTek RCB-5 remote control switchbox is more cost effective than running separate coaxial runs to each antenna. The RCB-5 switches in less than 50 milliseconds. Switch one, two or up to five antenna ports on line at once. Use it to control your stacked arrays for upper or lower or both in phase or both 180 degrees out of phase.

The RCB-5 is \$149.95. Foreign add 10 percent shipping and handling. It will be shipped the day after your order reaches them.

Contact ComTek, 1 Cider Mill Lane, Upton, MA 01568; 508/529-6330. □

TX Enhancer

Housed in a small shielded, attractive enclosure, the International Radio and Computers Inc. TX Enhancer simply plugs in between your microphone and the mic jack on your radio.

For use in AM, FM and SSB operation, on HF, VHF and UHF radios, it contains a status

LED and two-position, center-off switch. One position keys up your transmitter and injects a short duty pulsed tone into the mic audio. This provides a pulsed drive in SSB for safe, no-rush tuning of your linear amplifier, while allowing more accurate tune-up than can be had by tuning up in the CW mode with a reduced carrier. Each pulse will provide 100 percent peak output, but the average output will be approximately 25 percent.

The other position provides a short beep transmitted at the end of each of your transmissions, telling the station you're in contact with that it is his turn to talk. Useable in the PTT mode (and VOX mode with almost all ICOMs and most Kenwoods), it is especially useful in roundtables or just plain ragchewing.

The TX Enhancer requires one battery, which is supplied. The price is \$62. Specify version when ordering. Add \$5 shipping and handling in the United States and Canada; \$13 elsewhere.

Version K8-200 works with all Kenwoods that have an 8-pin mic jack. Version I8-346 works with all ICOMs that have an 8-pin mic jack.

For information contact International Radio and Computers Inc., 751 S. Macedo Blvd., Port St. Lucie, FL 34983; 407/879-6868.

Book catalog

There has never been a better time to get involved in shortwave listening or Amateur Radio operation. These are exciting times for radio enthusiasts.

Record numbers of sunspots have made the higher frequencies come alive with signals from stations all over the world. New state-of-the-art equipment is expanding the range of frequencies we can tune and the types of transmissions we can monitor. Dramatic events on the world stage are followed on international shortwave broadcasts.

The new edition of *Great Radio Reads*, from Tiare Publications, offers more books on shortwave radio listening and Amateur Radio than ever. In addition to the growing library of Tiare books, the company has expanded this catalog to offer you some of the best books

from other publishers, including such well known publications as *Passport to Worldband Radio*, *The Guide to Utility Stations*, *The Shortwave Log*, *FM Atlas and Station Directory*, *The NRC AM Log* and *Clandestine Confidential*.

Other titles available through the catalog include: *So You Bought a Shortwave Radio!*; *Shortwave Radio Listening with the Experts!*; *Shortwave Goes to School*, a teacher's guide to using shortwave radio in the classroom; *Secrets of Successful QSLing*; *The Utility QSL Address Guide*; *Limited Space Shortwave Antenna Solutions* and *Easy-UP Antennas For Radio Listeners and Hams*.

When ordering through the catalog, there are three bonus items available for purchasing up to certain amounts. The catalog may be obtained from Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147, for \$1. □

RFI filters

K-COM offers a line of filters designed to fight telephone interference introduced by Amateur Radio transmitters and amplifiers. The in-line devices provide deep RF attenuation within the 3 to 30 MHz range.

Model RF-1 uses modular connectors for fast and simple attachment to telephones and modular jacks. Model RF-2 allows user option of filter installation at any point within telephone wiring, including protector housings, service entrance and inside jacks.

The RF-1 is \$11.99 and the RF-2 is \$6.99. Add \$1 shipping and handling.

For information contact K-COM, P.O. Box 82, Randolph, OH 44265. □

Computer DXCC help

MFJ Enterprises Inc. has released an IBM compatible software that helps you get your DXCC award for only . . . \$39.95.

One reviewer of the beta version of MFJ-1281 Easy-DX (trademark) called it, "the single indispensable program for any DXer with a computer." (Peter Smith, N4ZR, *Digital Digest*, July/Aug. 1989, p. 12).

RADIO STORE

VISIT YOUR LOCAL

ARIZONA

Ham Radio Outlet
1702 W. Camelback
Phoenix, AZ 85015
(602) 242-3515

Ham Radio Outlet
5375 Kearny Villa Rd.
San Diego, CA 92123
(619) 560-4900

CALIFORNIA

A-Tech Electronics
1033 Hollywood Way
Burbank, CA 91505
(818) 845-9203

Ham Radio Outlet
6265 Sepulveda Blvd.
Van Nuys, CA 91411
(818) 988-2212

Ham Radio Outlet
2620 W. La Palma
Anaheim, CA 92801
(714) 762-3033
(213) 860-2040

Henry Radio
2050 S. Bundy Dr.
Los Angeles, CA 90025
(213) 820-1234

Ham Radio Outlet
999 Howard Ave.
Burlingame, CA 94010
(415) 342-5757

Jun's Electronics
3919 Sepulveda Blvd.
Culver City, CA 90230
(213) 390-8003

Ham Radio Outlet
2210 Livingston St.
Oakland, CA 94606
(415) 534-5757

The Radio Place
2964 Freepoint Blvd.
Sacramento, CA 95818
(916) 441-7388

CONNECTICUT

Rogus Electronics Inc.
250 Meriden-Waterbury TPK.
Southington, CT 06489
(203) 621-2252

FLORIDA

McClaran Sales/Aluma Towers
P.O. Box 2513
Vero Beach, FL 32961
(407) 567-8224

Mike's Electronics

1001 N.W. 52nd St.
Fort Lauderdale, FL 33309
(305) 491-7110

GEORGIA

Doc's Communication & Electronics, Inc.
702 Chickamauga Ave.
Rossville, GA 30741
(404) 866-2302 or 861-5610

Ham Radio Outlet
6071 Buford Hwy.
Atlanta, GA 30340
(404) 263-0700

IDAHO

Ross Distributing Co.
78 South State St.
P.O. Box 234
Preston, ID 83263
(208) 852-0830

MICHIGAN

H.R. Electronics
722/24 Evanston Ave.
Muskegon, MI 49442
(616) 722-2246

MISSOURI

Henry Radio
211 N. Main Street
Butler, MO 64730

NEVADA

Radio World
1656 Nevada Hwy.
Boulder City, NV 89005
(702) 294-2666

NEW HAMPSHIRE

Ham Radio Outlet
224 N. Broadway
Salem, NH 03079
(603) 898-3750

NEW JERSEY

Gilfer Associates
P.O. Box 239
52 Park Ave.
Park Ridge, NJ 07656
(201) 391-7887

NEW YORK

Hirsch Sales Co.
219 California Dr.
Williamsville, (Buffalo) NY 14221
(716) 632-1189

OHIO

Universal Radio, Inc.
1280 Aida Dr.
Reynoldsburg (Columbus), OH 43068
(614) 866-4268 • (800) 431-3939

VIRGINIA

Ham Radio Outlet
14608 Build America Dr.
Woodbridge, VA 22191
(703) 643-1063

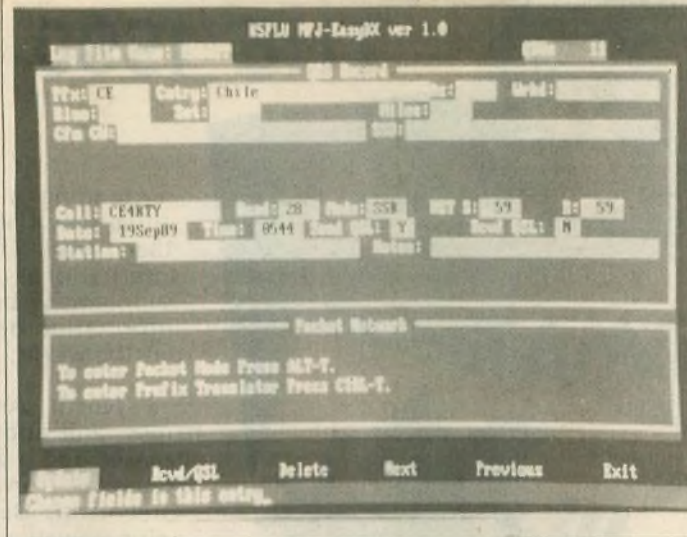
Why? Because the new MFJ-1281 Easy-DX program is a unique tool that instantly organizes all your DXCC activity, plus you get a packet terminal program and a Packet-Cluster (trademark, Pavillion Software) interface so you'll get the very latest DX information.

You can enter any call and it tells you at a glance whether you need that country on the band, the mode or both. It also tells you if you've worked the station before. Plus it gives you a list of contacts with the country, including bands, modes and QSLs received — so you can get the station to QSY to the band on which you need him.

When you enter a call or prefix it tells you the country, azimuth to the (or a) major city and the sunrise/sunset times at that QTH. You can import contest logs from the popular CT logging program so that you can easily bring your contest QSOs into your DXCC log. It even keeps up with your QSL activity.

Packet radio users get a built-in terminal program. MFJ Easy-DX will monitor the PacketCluster DX spotting network and send "DX" in Morse code if a country you need on the band, mode or both is reported on the network. You don't even have to be at your computer — so long as you're within earshot of the speaker.

You get two packet screens. One is a receive only screen that can be displayed along with Easy-DX so you can monitor any packet channel while you log your SSB and CW contacts



MFJ Easy-DX brings DXCC within your grasp.

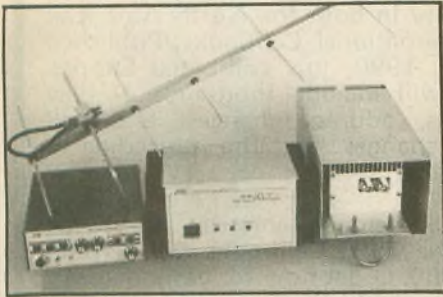
into the program. The other screen is a send and receive packet terminal program that is built into MFJ Easy-DX.

Easy-DX also prints QSL labels, keeps up with your outstanding QSLs, prints you a summary of DXCC activity by band and mode, prints out daily log sheets, lets you update your log as QSLs are received and more.

DXCC is within your grasp. Let MFJ's incredible new MFJ Easy-DX help.

MFJ-1281 comes on two 5 1/4 inch floppy disks. It requires a 100 percent IBM compatible computer, with at least 512K of RAM. A hard disk is strongly recommended.

For more information contact any MFJ dealer or MFJ Enterprises Inc., P.O. Box 494, Mississippi State, MS 39762; or call 601/323-5869; Telex: 53 4590 MFJSTKV; FAX: 601/323-6551; or order toll free at 800/647-1800. □



ATV System

Advanced Electronic Applications has developed a complete Amateur Television system, which includes the FSTV-430A transceiver, LA-430/50 linear amplifier with MPS-100 power supply and 430-16 antenna. Technician class or above Amateurs can now enjoy Fast-Scan TV that rivals broadcast television quality.

Transmit AND receive live or taped full color video and crisp audio.

The basics. The basic components of the ATV system are the FSTV-430A transceiver and 430-16 antenna. The FSTV-430A simply connects to a video camera or camcorder, a standard TV set and the 430-16 430 MHz antenna.

The FSTV-430A transceiver. The FSTV-430A transceiver features a low-noise UHF GaAsFET preamp with a typical low noise figure of less than 1.5dB and a crystal-controlled or variable tuning down converter. Output is available on channel 3 or 4 for signal reception AND monitoring transmissions. Two frequencies can be selected from the front panel for transmission (one crystal is included with the unit). The design is also optimized for superior video and audio quality without sync buzz, even with weak signals.

The 430-16 antenna. AEA's 430-16 antenna

is a high-performance, 16-element, 10 ft. boom computer-optimized yagi specifically designed for ATV operation. It features broad-band frequency coverage from 420 to 440 MHz, 14.3dB gain, O-ring sealed connectors, 28 degree E plane and 32 degree H plane beam widths.

The LA-430/50 amplifier with power supply. To give a boost to ATV signals, AEA also offers a 50W PEP mast-mounted Linear Amplifier (patent pending) covering 420 to 450 MHz and a GaAsFET preamp, which utilize the antenna feedline for DC power. The mast-mount eliminates the line loss between the amplifier/preamplifier and the antenna, to improve both transmission and reception. It's the equivalent of a 100W amplifier in the shack with 55 ft. of RG-8 coax with a 3dB line loss or a 200W amplifier with 110 ft. of RG-8 coax.

The amplifier is housed in a weather resistant anodized aluminum case. The MPS-100 power supply for the LA-430/50 also provides

a regulated 13.6 volt output for the FSTV-430A. This remote amplifier/preamplifier unit is also an excellent choice for OSCAR satellite work.

For pricing and availability contact AEA, 2006 - 196th St. SW/P.O. Box 2160, Lynnwood, WA 98036; 206/775-7373. □

Speaker/microphones

MFJ Enterprises Inc. offers several miniature speaker/microphones that fit most hand-held radios and are available with regular or "L" connectors. They measure just 2 x 1 1/4 x 1/4 inch.

In this tiny package you get a first-rate electric mic element and wide range speaker for superb audio on both transmit and receive. These feature-packed speaker/mics also give you an earphone jack for private listening, push to talk button, swiveling lapel/pocket clip and a lightweight retractable cord.

MFJ-285 and MFJ-285L (with "L" connector) fit ICOM, Yaesu and Santec HTs; MFJ-287 and MFJ-287L fit Kenwood. All four models come with MFJ's one year guarantee.

For more information contact any MFJ dealer or MFJ Enterprises Inc., P.O. Box 494, Mississippi State, MS 39762; 601/323-5869; Telex: 53 4590 MFJSTKV; FAX: 601/323-6551; or order toll free at 800/647-1800. □

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Extending a 69 year tradition, we bring you three new Callbooks for 1990, bigger and better than ever! The North American Callbook, the International Callbook, and the new Callbook Supplement bring you accurate up-to-date QSL information on over 1,000,000 amateurs throughout the world.

The North American Callbook lists the calls, names, and address information for over 500,000 licensed radio amateurs in all countries of North America from Canada to Panama, including Greenland, Bermuda, and the Caribbean islands plus Hawaii and the U.S. possessions.

The International Callbook lists over 500,000 licensed radio amateurs in countries outside North America. Its coverage includes South America, Europe, Africa, Asia, and the Pacific area (exclusive of Hawaii and the U.S. possessions).

The 1990 Callbook Supplement is a new idea in Callbook updates, listing the activity in both the North American and International Callbooks. Published June 1, 1990, this combined Supplement will include thousands of new licenses, address changes, and call sign changes for the preceding 6 months.

Every active amateur needs the Callbook! The 1990 Callbooks will be published December 1, 1989. Order now for early delivery as soon as the new books are available. See your dealer now or order directly from the publisher.

- Over 1,000,000 current amateur listings in all countries of the world
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- Then & Now call changes
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- International Postal Information
- World-wide QSL Bureaus
- Table of Amateur Prefix Allocations
- Prefixes of the World
- Plus many other features.

Publication: **Callbooks - December 1, 1989**
Supplement - June 1, 1990

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VE exam schedules

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

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

Please mark the envelope "VE Exams."

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

p/r = pre-register

w/i = walk-in

Date	City	Contact	Notes	Date	City	Contact	Notes
Alabama							
July 28	Montgomery	Leroy Bell Jr. (205) 269-4201	w/i	July 21	Rushville	N6RS (317) 763-6090	w/i
Arizona				Iowa			
July 7	Tucson	K7OPX (602) 886-7217	w/i OK	July 7	W.Des Moines	NA0R (515) 964-0900 or (515) 967-3890	w/i OK
California				Maryland			
July 7	Burbank	KE6AR (818) 349-0927	w/i OK	July 28	Laurel	(301) 572-5124	ltd w/i
July 14	Apple Valley	NF6I (619) 241-4732; K6BET (619) 244-6080	w/i OK	Missouri			
	Jackson	WZ6Y (209) 295-7947	p/r pref; w/i OK	July 7	Antonia	WD0GDY (314) 671-4243	no w/i
	Palm Springs	WK6I (619) 564-2655	p/r	Nevada			
	Redding	NT6E (916) 243-REVA	w/i OK	July 14	Minden	W7QO (702) 265-3430	no p/r
	San Pedro	N6DYZ (213) 322-2965	ltd w/i	New Jersey			
	Santa Barbara	KB5AH (805) 682-2665	w/i OK	July 7	Cranford	N2XJ (201) 635-7686	w/i
	Stockton	AA6NO (916) 662-0801	w/i	July 11	Fort Monmouth	KZ2P (201) 905-3146 or (201) 370-8055	w/i
July 18	Eureka	KB6FIW (707) 442-9245	p/r pref by 7/16	July 19	Bellmawr	WA2VQG (609) 546-7710	w/i OK
July 19	Fountain Valley	KI6WK (714) 846-6984		July 21	Bayonne	WA2QYX (201) 451-9471	w/i OK
July 26	Long Beach	KA6HOQ (714) 897-6331; NF6X (213) 434-8278	w/i	July 21	Pennington	AA2F (609) 737-1723	w/i OK; prefer p/r
July 28	Hawthorne	NO6I (714) 823-7158; WS6T (213) 600-4160	w/i OK	New York			
Colorado				July 9	Ithaca	NK2V (607) 255-5274	w/i only
July 14	Denver	W01JR (303) 366-9689	w/i OK	July 20	Verona	KA2NIL (315) 363-4297	w/i
July 21	Westminster	N0HNR (303) 451-1231; (303) 278-4280	p/r or w/i	July 22	North Babylon	KA2RGI (516) 957-0218	w/i OK
Connecticut				North Carolina			
July 29	Milford	NB1M (203) 933-5125; WA1YQE (203) 874-1014	w/i	July 14	Yadkinville	N4AAD (919) 679-8059; N4UAN (919) 679-8954	p/r; w/i
District of Columbia				Ohio			
July 13	Washington	David Boyd (703) 659-6241 or (202) 695-2020	w/i OK	July 8	Independence	WT8A or WT8B (216) 526-3807	w/i OK
Florida				Oregon			
July 14	W. Palm Beach	W4SS (407) 967-1477; KG4U (407) 582-7617	w/i	July 26	North Bend	WA7PH1 (503) 756-6846	
Georgia				Pennsylvania			
July 22	Atlanta	KC4MJ (404) 449-3340	w/i	July 7	Erie	W3CG (814) 665-9124	w/i OK
Idaho				July 16	Perkasie	Warren Erdman (215) 679-5764	p/r; w/i
July 14	Boise	W7JMH (208) 343-9153		July 21	Pittsburgh	WA3ZPL (412) 364-9528	
Illinois				South Carolina			
July 14	Bloomington	KM9L (309) 662-1230; NO9W (309) 378-4032	w/i OK	July 21	N. Charleston	AA4IX (803) 873-9465	w/i OK
	Galesburg	KA9PCU (309) 342-5977	w/i	Texas			
	Oak Forest	KA9HDN (312) 247-0650	w/i OK	July 14	Eddy	N5KZD (817) 859-5374	w/i
July 21	Bolingbrook	NW9K (815) 886-5135	w/i OK		Midland	KT5G (915) 694-9450	
	Loves Park	W9SS (815) 877-6768	p/r; w/i	July 17	San Antonio	AA5HG (512) 680-2371	w/i
Indiana					Sherman	AA5MF (214) 786-3847	w/i OK
July 7	South Bend	NI9Y (219) 255-4455	w/i OK	Virginia			
				July 27	Stafford	David Boyd (703) 659-6241 or (202) 695-2020	w/i OK

Traffic

(continued from page 58)

to run a net 15 minutes. And some NCS wonder why some check-ins take to reading a book or watching TV on the side. Have you ever been on a local net which had no traffic and two check-ins and you had to listen to a net being called for 14 minutes?

A traffic net should last exactly as long as it takes to clear traffic (or less if the traffic is moved off frequency). If there is no traffic "at net time," bid the check-ins *adieu* and close the net. This could take up to two minutes.

80 plus

For those who hate the generation gap and want to be able to relate to

others of approximately the same vintage (traffic or chit chat), try the OCTO NET on Tuesdays at 1200Z on 14045, plus minus QRM. Remember, you must be in your octos (80s) to participate. □

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

A dollar won't do as much for people as it used to — and vice-versa.

When will AMSAT-OSCAR-13 be in range?

ROSS FORBES, WB6GFJ

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

As you read the chart nearest your location, keep in mind the following details — all dates and times are given in UTC. The date is printed on the left hand column and the UTC hour along the top.

A dash mark indicates the satellite is out of range and therefore not able to be heard. The letter "B" indicates OSCAR-13 is audible at that location and signals should be heard between 145.810 and 145.880 MHz (SSB and CW). A letter "O" indicates the satellite is audible, but the only signal you will hear is the telemetry beacon on 145.810 MHz. The letter "L" indicates the satellite is audible but you will hear signals between 435.650 and 436.000 MHz (SSB and CW).

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

For more information about OSCAR, please send a SASE to either of the following: Project OSCAR, P.O. Box 1136, Los Altos, CA 94023-

1136; AMSAT-NA, P.O. Box 27, Washington, D.C. 20044.

OSCAR Seminar Sept. 29 and 30

Everyone interested in Amateur Radio satellites (OSCAR) is invited to attend a seminar during the last weekend of September. There is so much information available and so many subjects will be covered that an entire weekend will be devoted to OSCAR!

Speakers will cover all aspects of OSCAR, from basic information necessary to get started right up to advanced topics for the experienced OSCAR user. Computers will be available to demonstrate OSCAR software. Displays showing some of the equipment used by OSCAR users will also be available.

Whether you are interested in RS satellites on 10M, worldwide DX available on OSCAR-13, telemetry sent from DOVE and other microsats or if you just have many questions about OSCAR, this seminar is a must for you to attend.

One of the most important parts of the seminar will be the Open Forum, whereby you will be able to ask questions about using ANY of the OSCARs of the more experienced users attending. A partial list of subjects that will be covered include the following: Understand-

ing Keplerian Elements, How Operate Microsats and FO-20 Successfully, OSCAR — a Basic Tutorial About Using the Satellite, Successful Mode S Operations, How to Use the RS Satellites, Present Status and Future Plans for OSCAR, Understanding OSCAR Telemetry, Successful Mode L Operating, An Open Forum Question and Answer Session and How Noise Figure Relates to Successful OSCAR Operation.

The seminar will be held at a location right off highway 280 in Cupertino, CA. Motels, restaurants and shopping are all close by. Published papers will be part of the material provided to everyone who registers for the seminar.

We have also made arrangements to have equipment available to check the frequency deviation of your 145 and 435 MHz transmitters if you bring them with you. This can help those working Microsats and FO-20.

Pre-registration is required so adequate seating and supplies will be readily available. The funds raised will be allocated toward the building of future Amateur Radio satellites.

Sponsors of the seminar are The Tandem Radio Amateur Club and Project OSCAR Inc. For complete registration forms and details of the seminar, send a business sized SASE to OSCAR Seminar, Project OSCAR, P.O. Box 1136, Los Altos, CA 94023-1136. □

Station East	HOUR - UTC
	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
8/01	b-----
8/02	-----
8/03	-----
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8/26	-----
8/27	-----
8/28	-----
8/29	-----
8/30	-----
8/31	-----

Station Mid	HOUR - UTC
	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
8/17	-----
8/18	-----
8/19	-----
8/20	-----
8/21	-----
8/22	-----
8/23	-----
8/24	-----
8/25	-----
8/26	-----
8/27	-----
8/28	-----
8/29	-----
8/30	-----
8/31	-----

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

Station West	HOUR - LOCAL
	19 20 21 22 23 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
8/01	-----
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8/04	-----
8/05	-----
8/06	-----
8/07	-----
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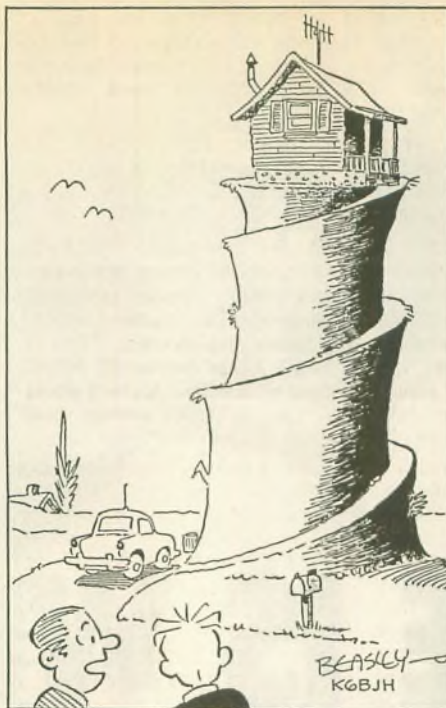
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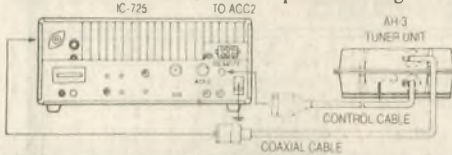
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Full Featured Operation! 26 tunable memories with Band Stacking Registers which enable you to store a frequency, switch bands, and return to the stored frequency • 10Hz digital frequency display • Three tuning rates • Three scan modes • Highly effective Noise Blanker • RIT • Semi-QSK CW • Optional narrow CW filter • Built-in AH-3 controller • IC-725 measures only 9.0 x 3.7 x 9.4 inches (H, W, D).

Optional AH-3 automatic and remote antenna tuner for mobile and portable operation. Plugs



directly into the IC-725. Wide impedance matching range. Mating whip unit (AH2-B) bolts to auto's frame, works 80-10 meters.

ICOM
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