

Worldradio

Year 19, Issue 5

November 1989 • \$1.25

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The main fuselage of flight 232, upside down in a corn field after it burned. Doug Potts, KA0VHV, and Hugh Boylan, KE0UD, look at the remains.

Amateur response to United Airlines Flight 232 disaster

MIKE NICKOLAUS, NF0N; DOUG POTTS, KA0VHV; and ALAN PEDERSEN, KA0VNM

DATELINE: Oct. 10, 1987

A commercial airliner carrying 87 people crashed on takeoff at Sioux Gateway airport. Sioux City, IA. Many critically injured people and the dead littered the taxiway. Twelve Amateur Radio operators from the Siouxland area provided communications on behalf of all of the emergency service agencies.

This incident was the first drill practiced by the newly organized City-wide Disaster Planning Committee.

DATELINE: July 19, 1989

THIS IS NOT A DRILL, REPEAT, THIS IS NOT A DRILL!

At 3:55 p.m. a United Airlines DC-10 crashed while attempting to make an emergency landing at the Sioux Gateway Airport. Flight #232 was carrying 296 passengers. Of

these, 111 perished and 185 survived.

The response to this tragedy by the Amateur community was phenomenal. Some had participated in the drill in 1987 and the organized response due to this simulation was a major factor in providing the high quality of communications assistance to the disaster response teams. The following is an accounting of many of the events that occurred over the next five days.

At about 3:30 p.m. the alarm was sounded at the Sioux City Fire Department for an "Alert 2" at the airport. An "Alert 2" indicates that a pilot has declared an in-flight emergency. This calls for the immediate dispatch of the crash, fire and rescue units. Before these units arrived on scene, the call was changed to an "Alert 3" status. An "Alert 3" in-

(please turn to page 6)

Hurricane Hugo

NORM BROOKS, K6FO

14.275 MHz, 1511Z, Sept. 20, 1989, "They need insulin."

That was typical of the role Amateur Radio played in the aftermath of Hurricane Hugo as it relentlessly advanced across the Caribbean.

As I write this, just before Worldradio is going to press, Hurricane Hugo has passed Puerto Rico and the Virgin Islands and is heading toward the Georgia-Carolina coast at the rate of 17 miles per hour.

Emergency nets in the vicinity of 14.275 kHz are jumping with activity. Health and Welfare queries from the US mainland to the Caribbean islands are the primary traffic.

K1MAN, from Maine, is currently Net Control on the International Amateur Radio Net, with N0DCP, St. Louis, acting as alternate NCS. K1MAN handles the net very professionally, no doubt using the knowledge he gained after having been on the island of Jamaica with Hurricane Gilbert last year.

So far, the net has given out over 200 reference numbers to stateside Amateurs who have left messages with the net. Between every message the net stands by for "emergency or high priority" traffic. Sometimes the net control has the unpleasant task of reminding the stateside Amateur that seeking Aunt Minnie's welfare status is only routine, even though the distraught relatives may consider it an emergency.

(please turn to page 3)

'Communicator' license proposal

On Aug. 31, 1989, the ARRL petitioned the FCC for a new "Communicator" class of Amateur Radio license which does not require a demonstration of proficiency in Morse

(please turn to page 12)

If you plan to buy an amplifier this year...

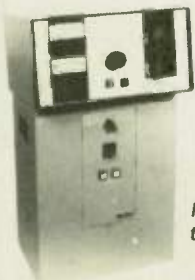
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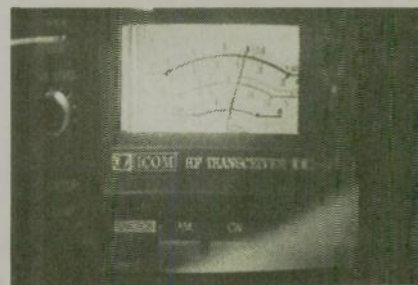
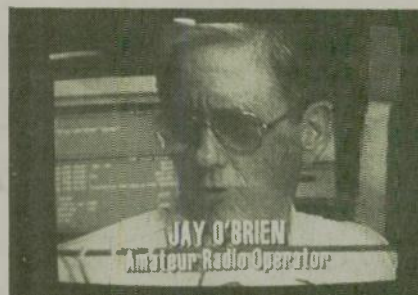
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Pictures from a TV interview with Jay O'Brien, W6GO, about Amateur Radio's role in the aftermath of Hurricane Hugo. KOVR is Channel 13 in Sacramento, CA. Photos — Norm Brooks, K6FO

HURRICANE Hugo

(continued from page 1)

H&W traffic is reduced to bare bones simplicity. All that is wanted is from whom the message is coming and about whom is the inquiry. The message text is simply ARL NINETEEN.

It is unfortunate that Amateurs don't listen for a while before transmitting on an emergency net. More than once I heard K1MAN explain how the simple H&W message should be formatted, yet the very next message is transmitted to him differently.

The emergency nets were involved in making arrangements to send Amateur operators along with equipment to the islands of St. Croix and St. Thomas, locations to which much traffic was directed, but where there was a

death of operators. It is interesting that private companies were offering the use of their corporate jets to fly Amateur operators, radio equipment and Red Cross supplies to the islands.

At this time the Amateurs are reporting that the Puerto Rican telephone system is being rebuilt rapidly. No doubt anxious relatives will be able to reach their families by that means. It is communication to the smaller islands like St. Croix and St. Thomas that is still critical.

Amateur Radio is doing a fine job in furnishing communications in this emergency. It is unfortunate that so much of our effort goes unheralded. Here in the Sacramento, CA, area, one of our better-known Amateurs, Jay O'Brien, W6GO, received favorable publicity through a visit from a local

TV station. We hope Amateurs in cities all over the world can get similar publicity.

Worldradio invites amateurs involved in handling Hugo traffic to send reports and pictures of their activities so that we may publish them in our next issue. □

CONTENTS

FEATURES

- | | |
|--|---|
| Amateur MicroSats to be launched — 22 | Amateur response to United Airlines Flight 232 disaster — 1 |
| Amateur Radio as a learning motivator — 14 | Getting started on OSCAR — 17 |
| Hurricane Hugo — 1 | |
| Instructor Almanac (conclusion) — 50 | |

COLUMNS

- | | |
|-------------------------------|--|
| Advertisers' Index — 63 | Off the Air — 26 |
| Aerials — 47 | Product Review — 52 |
| Amateur Radio Call Signs — 11 | Publisher's Microphone — 4 |
| Contests — 57 | QCWA — 41 |
| Digital Bus — 45 | QRP — 37 |
| DX Prediction — 31 | Six Shots! — 42 |
| DX World — 28 | Special Events — 24 |
| FCC Highlights — 11 | Subscription, Worldradio — 9 |
| Hamfests — 56 | VE Exams — 60 |
| MART Classifieds — 61 | When will AMSAT OSCAR-13 be in range? — 59 |
| Mobile — 35 | Who's Who — 34 |
| New Products — 54 | |
| 10-10 International News — 44 | |

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

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

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

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

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organization. Its pages are open to all. Permission is hereby automatically granted to reprint from this publication with appropriate source credit. If there is something useful, we wish to share it.

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STAFF

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Associate Editor Norm Brooks, K6FO
Assistant Editor Kaye Schwartz
Consulting Editor Lou Ann Keogh, KB6HP
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PUBLISHER'S MICROPHONE

First off we put the spotlight on those who found a better long run investment than diamonds, gold, stocks or bonds . . . a lifetime subscription to **Worldradio!**

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Class tells: Newspapers reported on an airline crash in Brazil and the rescue of most of the passengers. The Associated Press said, "the survivors contacted the ministry by ham radio . . ." *The New York Times*, however, used the term "Amateur Radio."

A great number of people will not see those mentions of our avocation in a lifesaving role (and say, "I'd like to be one of those") because: "45 percent of American adults do not read a daily newspaper." (Jonathan Kozal)

This, in the greater scope of things, may be an even greater problem for this country than the lack of growth of Amateur Radio.

Speaking of such, our efforts these days seem to be geared toward the "young people." Possibly better results per hour spent would come from going after the more mature.

Presentations could be made to such groups as Sons in Retirement and the like. These folks have the time, a few bucks in their jeans, are looking for activities, and they can read and write.

The last factor puts them far ahead

of a good number of high school and college students.

So we don't get his wife in the doghouse with her employer, we're leaving this reader anonymous. In part: "We both know what the trouble is in our schools. If we could only eliminate the early 60s from our history. My wife teaches high school, she can tell some good stories."

Thom Ashton, NY2I, Vestal, NY, reports: "In an attempt to interest youngsters [in the hobby] we contacted all principals and science coordinators in our local schools to volunteer our services and show how Amateur Radio can be used to assist in the teaching of the sciences. We proposed discussions and demonstrations to students on the practical aspects of communications and basic electricity and the use of Amateur satellites to demonstrate, in practical terms, physics, orbital dynamics and the like . . ."

"To date we have not had a single taker. Is the apathy with the kids or with those we entrust to oversee to what they are exposed in school?"

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A pal of mine sent me 73 magazine's latest mailing to its advertisers. This is a quote from W2NSD/1: "Worldradio does its best to hype what little is happening in hamdom, but it makes awfully dull reading. I get to page three and I'm asleep."

I do ponder our mission and am actually pleased to see that our destiny has been to act as warm milk for Uncle Wayne. Hamdom should show its gratitude to Worldradio. For, while Wayne is dozing, radio Amateurs are spared hearing Blarney Stone stories about \$60 million deals.

On the same day I received the 73 literature, a phone call came in from an advertiser saying he got THREE TIMES the results from Worldradio than he did from 73. And when you consider how much more they charge than we do, we're quite pleased.

Oh, if we could just get more companies to "key" their ads!

While at the Southwestern Division ARRL convention, while waiting to go into the restaurant, a man in the line, seeing call sign badges, asked if there was a ham radio convention in the hotel. A conversation ensued and it turned out that he had been licensed but let it drop about 10 years ago. Odd . . . he didn't look totally stupid.

I'm just amazed when I hear such things. We've had people in the avocation who haven't realized that one of the greatest personal safety instruments is a hand-held in the car. It would be worth renewing the license even if one had no interest in DX, QSL cards, building, ragchewing, the fraternal feeling, theory or whatever, just to be able to have that important tool . . . communications.

—Armond, N6WR

Enthusiasm is the greatest asset in the world. It beats money, power and influence.
—Henry Chester



* For More Information, call 1-800-669-2070



Flight 232

(continued from page 1)

icates that a crash is imminent or has occurred. At 3:55 p.m. Flight 232 did crash on impact near the end of a closed runway at the airport.

Brenda Waldron, supervisor of the Sioux City Communication Center phoned Doug Potts, KA0VHV, at about 4:45 p.m. and asked that the local Amateur Radio operators be placed on standby to assist with communications during the disaster. Because Loren Barbee, WB0YOW, the Woodbury County Emergency Coordinator, was hospitalized, Doug, the Assistant Emergency Coordinator, activated the emergency net on the 146.91 repeater and asked for any Amateur Radio Emergency Service volunteers to report in.

John Bylin, K0AAR, and Mike Nickolaus, NF0N, were contacted by the American Red Cross chapter and were asked to respond to the disaster site. Mike is the Emergency Coor-

dinator for Dakota County, NE, which is across the Missouri River from the airport. He loaded his motorhome with communications equipment and ARES communication supplies and, after receiving Red Cross identification, went to the disaster site. Roads leading into the airport had already been secured and only properly authorized personnel were allowed into the area.

Rick Larson, KD0XD, responded to the American Red Cross chapter office; Carol Campbell, KA0RJF, went to the Emergency Room at St. Lukes Regional Medical Center; Pete Hittle, N0JTE, responded to the Emergency Room at Marian Health Center; Denny Migis, WB0YNY, and DeLane David, KA0GDP, went to the control tower at the Sioux Gateway Airport; Alan Pedersen, KA0VNM, Assistant EC for Dakota County, NE, and Otis Baker, KA0VOE, were at the Emergency Operations Center; Roland Holder, WB0SFZ, and Bryan Struble, N0HTZ, responded to Briar Cliff Col-

lege; Doug established net control at his residence, assisted by George Weaver, N0HUD.

In addition to these locations, Amateur Radio operators were dispatched later to the flight line at the disaster site, the temporary morgue on the grounds of the Iowa Air Guard and the Command Post at the disaster site. From one to five Amateurs were active at each of these locations for the next five days.

Twenty-four hour operation was necessary for the first two days and additional Amateurs volunteered their services. Many stayed on-site for 30 or more hours providing communications.

Each of the Amateurs provided personal equipment, utilizing hand-helds and base stations. Commercial power was available for charging batteries and running the base stations. Denny's Technical Service of LeMars, IA, loaned additional 2M radios and antennas.

Much of the effort was to provide communications and volunteer assistance for the American Red Cross. Communications were established between the Red Cross food preparation location, the Red Cross chapter house and the housing location for the survivors and their families at Briar Cliff College. Amateur assistance was used to locate a department store that would stay open past closing time to provide a change of clothes for the survivors.

Amateurs also assisted in the efforts to provide food, beverages, water and ice to the large number of Iowa Air National Guard, Army National Guard, NTSB, FBI and other personnel working at the crash site.

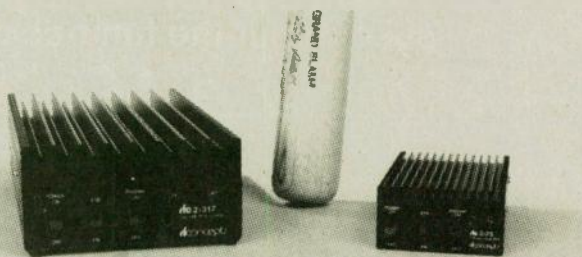
In addition to the Red Cross assistance, the Amateurs passed traffic for the Sioux City Police and Fire Departments, Woodbury County EOC, the 185th Air National Guard, Sioux Gateway Airport, Salvation Ar-

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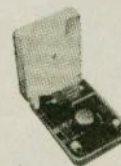


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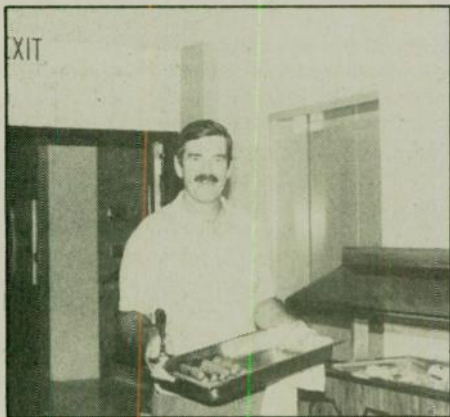
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Doug Herman, KD0TG, helps with the emergency feeding as well as with disaster communications. Amateurs helped with many different duties, pitching in wherever needed.

my, National Transportation Safety Board, St. Lukes, Marian Health Center, ambulance services, medical personnel, morticians and private individuals. Packet stations were set up at several locations and, although not utilized, were ready and available if required.

The Amateurs also assisted in locating personnel for the agencies and individuals involved in the emergency response.

One special communications request was made and met. Two operators were needed to provide communications between the temporary morgue and the State Medical Examiner, who was at the crash scene identifying victims. This was set up using simplex and the Amateurs involved made the communication link in a very short time.

Offers of assistance from other Amateur Radio communities were received from as far as 200 miles away, and included Sioux Falls, SD; Lincoln, NE; Des Moines, IA; Denison, IA; Council Bluffs, IA; and Omaha, NE. Although the Siouxland Amateur community was able to respond to this emergency with its own volunteers, the offers of assistance were taken seriously and were very much appreciated.

Several Amateurs from the Omaha-Council Bluffs area did come with the American Red Cross vans and joined local Amateurs in communications assistance. Al Huygens, WD0FOY,

Plymouth County EC, also assisted in the coordination effort.

The all-out effort by the Amateur Radio operators was acknowledged and appreciated by all of those involved in the response to the crash of Flight 232. Approximately 64 Amateurs responded to this tragedy, contributing over 1150 hours of assistance. No words can express the gratitude felt for all of those who worked so professionally throughout this ordeal.

Judgments and observations

As with any disaster, a number of judgments must be made by certain people at critical times. Following are some of those made by the Emergency Coordinators:

1. It was decided early on that both Doug and Mike would lead the effort and make the major decisions. Doug was the initial net control and Mike was at the crash site location. This worked well with both individuals placing key personnel at the various sites. Since both knew the capability of most of the volunteers, they could quickly utilize the proper talent at the right place.

They also allowed what could be called a loose net operation, meaning that not all communication need go through the net control. Since most of the communication was not of a life or death nature, general courtesy and knowledge of other operators worked well. They felt that communications were maximized using this technique.

During the last few days additional people had a chance to gain net control training in a real situation.

2. Even though the Amateur Radio operators had participated in the drill two years earlier, the drill ended when all "victims" were transported to the hospital facility. Since Sioux City does not normally accommodate aircraft the size of a DC-10, a response for a disaster of this magnitude had not been planned. It was realized early on the second day that Amateur assistance was just beginning.

Planning then began for the next three to five days. Although there were enough volunteer operators in the local area, it was felt that the extended hours would begin to take their toll. Fortunately, the weekend was coming and offers came in from many who worked during the week and could dedicate their help for the weekend.

Outside volunteers were nearly called in, but it was decided that the community could handle it. Everyone knew that the offers of assistance were still there if needed.

On Friday evening six Amateurs met to plan for operators for the next two days. Net control then asked for volunteers to fill shifts on both days of the weekend. All slots were filled and communications for the weekend were adequate.

3. Packet operations were set up early on in anticipation of considerable traffic via the bulletin boards for Health and Welfare. However, it was later relayed that United Airlines would be handling all inquiries in this area. This was a considerable reduction in the need for H&W traffic.

The preparations were there, however, as the NF0N-2 BBS is only a

DX Helper

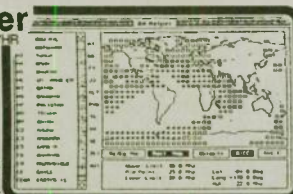
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few miles from the crash site. The K0BOY BBS in Omaha is also an HF capable BBS.

4. The crash site was seven miles from the repeater site and the hand-helds required the use of high power. Continual use of hand-helds drained the battery resources faster than they could be charged. Although base stations were already set up, hand-helds were necessary for roving communicators.

On Friday afternoon Doug and Alan set up a portable repeater at the airport site. By using a plus input to

146.91, the hand-helds could use low power to get into the repeater and dramatically cut the battery drain. This worked very well and will be incorporated into the disaster plan from now on.

What we learned from this experience

Everyone learned from this experience and this knowledge can be applied to future disaster communications. Here are some of the areas that could be helpful to others in a similar situation.

1. Knowing whom to place at specific locations can help smooth the information flow. Place a key communicator who is trained at each location and utilize less experienced personnel to assist the key communicator.

2. Have a single net control. He or she can decide how to run it, depending on the type of disaster. In the Flight 232 case, a relatively loose control worked best. In a situation where a life or death situation was occurring, it might be best to run a tight ship. A decision has to be made early on as to which type of control to use.

3. Someone has to be the major decision maker. During this incident two people held this role. They had worked together prior to this disaster, so it worked well.

One can't be wishy washy, decisions have to be made and made fast. People who have had training in disaster situations are people who should be in control at this time. Emergency Coordinators are the best ones to make these decisions, as they have the best available training from the ARRL, local Red Cross or other emergency agencies.

4. Plan for the worst. Situations usually last longer than anticipated. In this disaster NF0N took his motorhome along with numerous supplies for communications and sleeping facilities. It was used for sleeping, a meeting facility, high power communications and a portable packet station. Also, once into a site it's difficult to get out and return, due to security restrictions.

5. Have portable repeaters. Hand-helds using low power into a portable repeater extend the range and battery life dramatically.

6. Log all of the repeater communications using a VOX operated tape recorder. Ideally, this recorder should be at the net control station in order to record all transmissions. Net control can record additional events that occur by dictating into the recorder. In this case a combination of handwritten logs and about six hours of tape recordings were used.

7. In this type of disaster, work is just beginning after the first two days. Once the survivors have left for their homes, the relatives of the deceased will arrive. They will need to be housed, fed, comforted and provided for. This is probably one of the most difficult areas to deal with emotionally.

Communications and volunteers will be required at the morgue. Some people can work in this situation while others cannot. A personal knowledge of the volunteers is necessary in order

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The crash site at the Sioux Gateway Airport. The investigators and rescue personnel were amazed that 184 of the 296 passengers survived.

to place them properly.

8. Cooperate with the local Disaster Response Team, EOC or Emergency Planning Committee. In this case the disaster simulation in 1987 probably saved a great number of lives due to the quick response. The Amateurs were much more effective in providing their service because they knew the names and faces of the key players in the other disaster agencies.

9. One positive effect of the disaster drill was that the emergency response teams were more effective in their own communication. They did not require extensive assistance from the Amateurs. This had the effect of making the volunteers more available to those agencies and areas where they were most needed.

10. No one will be prepared for the emotional impact. Many of the operators were required to be in and around the morgue and crash site and to be with families of the deceased. Counseling for the Amateurs involved is usually available during and after the disaster and should be taken advantage of. All members should be encouraged to attend at least one of these sessions. Their importance cannot be overstated.

11. Packet stations should be set up both base and portable. Even though this situation did not require extensive use of packet operations, most disaster communications can utilize digital modes. Amateurs are the only ones who can provide this type of communications and it can be valuable in many emergencies.

12. Visible identification of operators is helpful. Jackets with ARES patches, arm bands and large identification signs on walls can be used. Advertise where the communication services are located so people can easily find the operations centers.

13. Have monthly meetings to review disaster communication preparedness. A different topic each month will keep meetings interesting. One meeting could be for planning to make kits of supplies that can be taken to a disaster site. Another one could be to make common power cables for base stations.

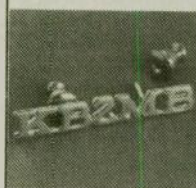
14. Review the entire operation with those who participated and solicit their feedback. Open the critique to all and encourage them to tell what went right and wrong. Ask for their input for improving the communications plan. Many of them may want to become more involved in disaster planning and actual participation.

Who do you think?

Send an SASE to Star Quest Publishing Co, 11765 West Ave., San Antonio, TX 78216, for an application form if you want to be listed in *Who's Who In Amateur Radio—1989*.

This book goes to press on Nov. 15, 1989, so hurry. There is no charge for listings, but you can purchase a copy at a 20 percent pre-publication discount if you order before press time!—*Information submitted by Jackson Daugherty, N5FKE* □

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**Bill Grenfell,
W4GF**

Incoming FCC chairman-designate Alfred Sykes, in his first official statement before the Senate Commerce Committee, advised: "I am aware of the concern expressed by the Amateur Community over the FCC's [220 MHz] decision. . . I am aware of no reason to think that the Commission decision was erroneous."

In its June 15, 1989, Order reallocating 220-222 MHz to the land mobile service, the FCC stated it had "...considered a variety of factors in reaching the decisions in the first Report and Order. . . Among these factors were the need to provide for narrowband land mobile operations, the impact of existing Amateur use, the potential for interference to TV broadcasting and the actions of the 1979

WARC [World Administrative Radio Conference]."

In response to the Amateurs petition for reconsideration of its (Docket 87-14) action, the FCC said, "Comments filed by individual Amateurs were of little value for determining statistics on overall use of the band. . . In most instances, individual Amateurs gave no indication as to whether they actually use 220 MHz themselves. Further, most of the comments that did indicate use of the band were vague." (*W5YI Reports*, 08/15/89 & 09/01/89; *ARRL Letter*, 08/25/89).

In its July meeting the ARRL Board of Directors directed its counsel "...to go after new spectrum near 1 1/4M by initiating a Request for Rule Making before the FCC seeking a secondary status allocation to Amateurs in the 216-220 MHz band segment. . . The League notes that this action should not have the effect of delaying or impeding an appeal of the earlier FCC decision to reallocate 220-222 MHz." (*Westlink Report*, 08/18/89; *ARRL Letter*, 08/11/89).

"Amateurs, the press and the ARRL are asking the FCC to reexamine the new Part 97 rules released in June. . . in a petition to make it easier for reporters to use Amateur stations for newsgathering purposes."

The news media organizations say the "essential reform needed" is the elimination of the requirement that the information involve the "im-

mediate safety of life or protection of property." (New rule 97.113(c)) The media said that the requirement "effectively prohibit[s] news coverage which the Commission should encourage, such as information on the aftermath of a hurricane or tornado, or of an airplane crash."

"In such a case there may no longer be an immediate threat to life or property, but there still is an absence of other communications means to report the devastation and/or loss of life." (*W5YI Report*, 08/15/89).

"The ARRL and many Amateurs fear wholesale incursion of non-licensed consumer products into Amateur bands as a result of the recently revised Part 15 rules. . . Interference to Part 15 devices from legally operating ham stations is a potentially serious problem, unless the devices are used in non-residential settings, such as factories, where Amateur stations are unlikely to be."

At a Part 15 workshop, the FCC's spokesman for its Technical Standards Branch said, "The ARRL and others have come in and petitioned against the use of 902-928 MHz and higher bands by Part 15" (devices).

Industrial, Scientific and Medical (ISM) Part 15 devices have been allocated operation in the 902-928 MHz, 2400-2450 MHz, 5.725-5.875 GHz, 24.00-24.25 GHz and 244-246 GHz bands, where Amateur stations are not protected from interference due to the operations of ISM devices. [ISM includes operation of equipment or appliances designed to generate and use locally radio-frequency energy for Industrial, Scientific, Medical, domestic or similar purposes, excluding applications in the field or telecommunications.] (*W5YI Report*, 08/15/89).

A request for Technician and Novice access to the 18.068-18.110 kHz segment of the 17M band with a 200W power limit, received from Dennis Murphy, KB6LZW, was denied by the FCC. It "decided that Murphy failed to present any facts or arguments not previously considered in its Report and Order."

The Commission went on to say that, "Novice and Technician Class operators should be excluded from the

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 Sept. 1, 1989.

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	WW0G	KF0EV	N0KZG	KB0FDO
1	NY1M	KC1QF	N1GXH	KA1UJF
2	WS2R	KE2PD	N2JVZ	KB2IND
3	NW3C	KD3OS	N3HLK	KA3VCY
4	AB4QF	KM4XI	N4WTV	KC4MFK
5	AA5NR	KG5XY	N5PDG	KB5KMF
6	AA6QE	KJ6ZE	N6WET	KC6FOP
7	AA7BR	KF7WI	N7NLL	KB7IOG
8	WU8Z	KF8BE	N8LGA	KB8IBG
9	WK9E	KE9SB	N9IVP	KB9DIU
North Mariana Is.	AH0H	AH0AF	KH0AM	WH0AAL
Guam	KH2K	AH2CF	KH2ED	WH2AMH
Johnston Is.	AH3B	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAG
Hawaii		AH6JV	NH6UK	WH6CFB
Kure Is.			KH7AA	
American Samoa	AH8C	AH8AD	KH8AH	WH8AAZ
Wake Wilkes Peale	AH9A	AH9AD	KH9AD	WH9AAH
Alaska		AL7LM	NL7SO	WL7BVN
Virgin Is.	NP2F	KP2BQ	NP2DI	WP2AGY
Puerto Rico		KP4QH	WP4WR	WP4INE



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17M band in view of the enhanced privileges they had received and because of the band's small size." (ARRL Letter, 08/25/89)

On Friday, August 4, 1989, the Senate confirmed the nominations of Sherrie Patrice Marshall, Andrew Camp Barrett and Alfred C. Sykes as members of the Federal Communications Commission. After being sworn in by Commissioner James Quello, Mr. Sikes was designated by President

Bush to be FCC Chairman. (Westlink Report, 09/01/89).

END-OF-MONTH LICENSE TOTALS

June 1989		July 1989
48,711	Extra	49,275
100,808	Advanced	101,311
115,686	General	116,289
109,296	Technician	111,708
84,806	Novice	84,589
459,307	Totals	463,172 □



Certainly a first! Valery Tyulyupin, RA9YD, of Barnaul, Siberia and his San Diego host, Terry Dubson, W6MKB, at the Hamcon '89 SW Division convention banquet. Valery and another Soviet visitor were hosted in the US by members of the Central Arizona DX Association, and after a good time in Arizona, came on to California. More Hamcon '89, see page 14. Photo — Armond Noble, N6WR

COMMUNICATOR license

(continued from page 1)

code. This new class of license, if adopted by the FCC, would grant privileges on Amateur frequencies above 220 MHz.

According to the League's proposal, transmitter peak envelope power (PEP) would be limited to 250W. Another provision of the League's proposal would be that a Communicator licensee could not be the control operator of a repeater or auxiliary station. Examinations would be administered through the Volunteer Examining Coordinator system.

According to ARRL Executive Vice President David Sumner, K1ZZ, "It was a very difficult issue for the Board to deal with because there were strongly held views at opposite ends of the spectrum. There were a number of pro-

posals for different things. We started out with the committee report and proceeded from here to discuss various amendments to it. There had been many other options considered informally during the preliminaries. People should be reassured that the Board gave this subject very, very deep and careful consideration."

Under the League's proposal, Communicators may upgrade to Technicians simply by passing a five wpm code test given under the VEC system.

Code examinations will continue to be required for all other classes of Amateur Radio licenses and Morse code will continue to be an important part of ham radio. The ARRL Letter □

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—Mt. Diablo ARC, Pleasant Hill, CA

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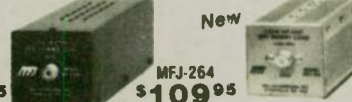
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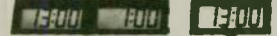
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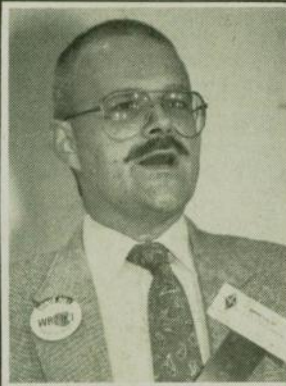


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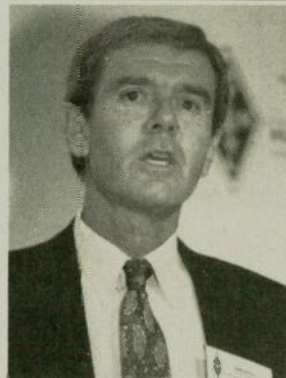
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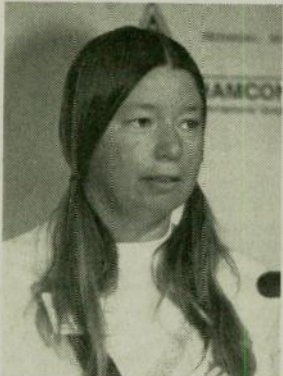
Carole Perry, WB2MGP



Bill Watkins, NI6U



Owen Robbins, KB6WYU



Judy Robbins, KB6WYV



Dave Oliver, KB6WYT

Amateur Radio as a learning motivator

Six teachers — elementary, junior high and special education — and a high school principal presented ways they utilize Amateur Radio to motivate learning in their schools.

Representing New York were Joe Fairclough, WB2JKJ, and Carole Perry, WB2MGP, both of whom work at the junior high level.

From the Los Angeles area were panel moderator Bob Wallar, KB6QNR, Judy and Owen Robbins, KB6WYV

and KB6WYU, and Dave Oliver, KB6WYT, all of whom work at the elementary level — Dave in special education. The participating principal was Bill Watkins, NI6U, of El Segundo High School.

Joe Fairclough's experiment in "Education through Communication" started about 10 years ago, after 10 years of teaching. He had been an Amateur since 1962 and felt his 7th grade bilingual lower east side New York classroom approach needed something new.

One day he took a SR146-A crystal-

controlled hand-held radio into his classroom and left it on a desk. After a couple of days, the students began to ask what the object was. They were skeptical when he told them people could talk around the world on it.

The hand-held evinced such interest among the students that Joe wrote up a curriculum plan using radio as a tool to improve English language skills, and received approval for it. His program is self-supporting (that's always a good way to get an innovative approach into the classroom — the powers-that-be love programs that work and aren't going to cost them anything extra!)

Joe's administration decided his program was so novel they would give him a "special class" to test it, so he started with a self-contained class of students who were not able to function successfully in regular classrooms. Their academic skills were enough improved after a year they could be funneled into some regular classes and spent only part of the day with Joe for the next three years.

The second year the special English program was expanded to include two more groups of students, and it now serves 220 students with problems.

Three years ago the Radio Club of Junior High School 22, NYC, started their attempt to expand nationwide to encourage schools to use Amateur Radio as a tool to motivate learning in many different areas. The club membership now numbers 10,000.

The students work two nets a day; the Classroom Net, 1000 UTC, Monday through Friday on 40M, 7.238 MHz; and on 15M, 1330-2000 UTC, 21.395 MHz. Field Day activities are conducted on the street (it's a big event for them) and they enter major contests on 15 and 40M, and some on 10 and 20M.

Carole Perry, WB2MGP, found herself at loose ends job-wise about nine years ago when the electronics firm of which she was vice-president relocated. She happened to hold a teacher's license, so she agreed to fill a two-month vacancy at a Staten Island junior high school as an interim assignment.

There was no curriculum designated for the assignment and Carole was

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basically given free rein, so she decided to use Amateur Radio as the core for her teaching. . . after all, it was only for two months. . .

At the end of two months, the program seemed to be successful, the students were eager and parents were supportive, so the school district said, "Why don't we do it again?" Nine years later, she's still doing it "again," and her program is mandatory for all students in the school, two 40-minute periods a week. Carole feels that self-esteem is the best product of the program.

Carole starts her students with learning the code. She says she never mentions the Code/No-Code controversy going on in Amateur Radio today. Her students do not perceive the acquisition of code skills as an impossible task — it's just part of the whole ball of wax — a secret language which is a status symbol once it's acquired.

Students purchase code oscillators that fit in a plastic box about the size of an earring box. The money from the sale of the oscillators is used to purchase other equipment for the program.

Carole encourages parent involvement with the students by telling them to "study at home with the person who has the money."

Spelling and language skills improve in the program because of peer pressure — junior high students do not want their friends to make fun of them because they misspelled a word in a message. Geography skills are whetted when the students contact people in other countries. Preparation for visitors from Sierra Leone opened up many avenues for study about that country and its people. Current disasters are monitored to develop the awareness of how Amateur Radio helps in everyday life.

Handi-hams and retirees are vital resources in Carole's program. These contacts help develop admiration, compassion and respect for others in the students, and also enable interaction with older people — a link that may be missing in the homes of many students.

Carole's students participated with students of Gordon West, WB6NOA, on a "CQ All Schools Net" on Tuesday and Thursday, 28.303 MHz (check with them for this year's schedule) and that was very successful. They talked to people at the Johnson Space Center, and on Aug. 1, 1985, talked to Tony England, W0ORE, aboard the Space Shuttle.

Although attaining an Amateur Radio license is not the main goal of Carole's program, 75 percent will get a Novice license and 10 percent will

upgrade. Local clubs are used to continue the licensing instruction.

Learning in the class does influence career choices, and even though the student may not become an Amateur Radio operator, he or she develops knowledge and positive feelings about the hobby.

Bill Watkins, N16U, taught English for 16 years and used Amateur Radio in his English classes. Now, as principal of El Segundo High School in Southern California, he finds that the utilization of the school site and facilities in disaster preparedness activities provides an excellent vehicle to stimulate interest in Amateur Radio.

El Segundo High School has been designated a major center for a field hospital in case of earthquake or other disaster. The need for a good communication center is vital, and as such, a station has been set up in the school, with links between schools as well as with the city.

Bill suggests that students be involved in the disaster planning network, and interested students be incorporated into local RACES and ARES groups.

Owen Robbins, KB6WYU, a teacher at Stowers Elementary in Cerritos,



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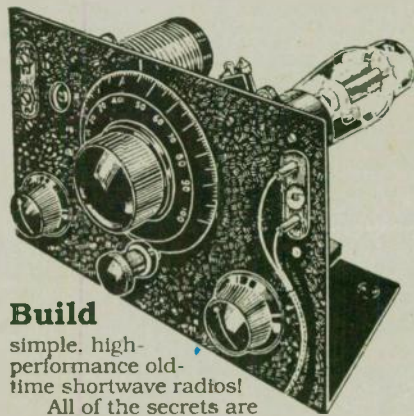
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Also included is a new chapter showing how you can use transistors to replace hard-to-find vacuum tubes. You'll even see the circuit that was lashed together on a table top one night using junk box parts, a hair curler and alligator clips. Attached to an antenna strung across the basement ceiling and a 9 volt battery, signals started popping in like crazy. In a couple of minutes an urgent message from a ship's captain off Seattle over 1500 miles away was heard asking for a navigator to help him through shallow water!

These small regenerative receivers are extremely simple, but do they ever perform! This is a must book for the experimenter, the survivalist who is concerned about basic communication, shortwave listeners, ham radio operators who collect old receivers, and just about anyone interested in old-time radio.

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CA, was convinced that technology needs to be introduced into the elementary schools, as opposed to just the basic tools of education — reading, writing and math.

He and his wife, Judy, KB6WYV, who teaches at Cerritos Elementary, are both involved in disaster communications. They utilize telecommunications to talk all over the world and bring it into the classroom.

The Robbins participate in the ABC Ham Radio Network (in the ABC School district, a consolidation of the old Artesia, Bloomfield, and Carminita districts), and features such things as a Trivia Question for the Week, interviews with Jet Propulsion Laboratory staff members and regular communica-

tions with Barry Ulrich, KB6RAA, and his largely Hispanic-background class of 5th-7th graders in the Montebello School District.

They also participate in a pen pal program via packet radio, improving English, spelling and communication skills along the way (plus the immediacy of packet sure beats waiting for the post office!). Owen says the beauty of participation in PBBS (packet bulletin board system) is its portability.

Owen's class is also involved in an Australian project, with a \$2,000 cost per year, which is privately underwritten.

Judy's fifth graders, many from Chinese backgrounds, participate in an

earthquake prediction project in which they monitor and report the number of missing dogs and cats as an indicator of the likelihood of an earthquake. The children search the paper for "missing" ads and relay the information to the proper authorities. Collection and compilation of the information involves many math skills.

They also regularly monitor an Earthquake Net.

A survey concluded that 27 percent of the students wanted to pursue a career in science. When polled, the students said their inspiration had been the people they had talked to on packet radio.

Dave Oliver, KB6WYT, taught a special education class. Not comfortable using computer games as merely a babysitter in his class, he started to teach word processing. A grant from Chapman College enabled him to embark on a pen pal program with children in England via packet, and his students were inspired.

A second grant from Chapman College enabled Dave to do more. His students studied the countries they contacted and kept track of the news from those countries. He started code teaching, licensing study and contacting other rooms in the school.

They also did some third party work around town on 220 and 2M. They listened in on the space shuttle. When the inter-school net with Judy and Owen developed, it was of special interest to Dave's students.

Many of the sixth grade students in Dave's school participated in a camping project, and the students who were unable to participate in the camp were not completely shut out because they kept track of what was happening at camp via radio.

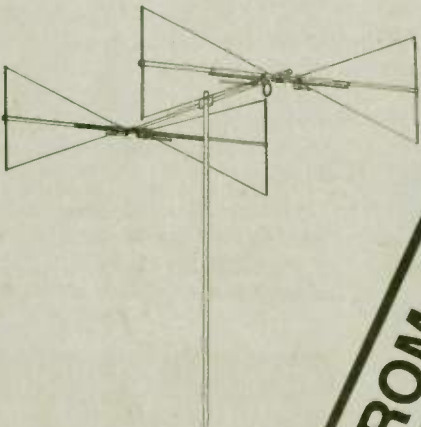
Bob Wallar, WB6QNR, has used Amateur Radio as a vehicle for teaching in his classroom for 19 years. He advises that you should capitalize on the good publicity you get on your program, and that will smooth the way for equipment and expenditures on future projects.

One of the projects Bob is looking forward to this year will occur on Nov. 21, the Tuesday before Thanksgiving, when his class will talk to the caretaker of the Statue of Liberty via the ABC Net and a 2M phone patch by Steve Mendelsohn, WA2DHF, to Joe Fairclough's kids at JHS22. The time has not yet been determined.

Other upcoming events: Gilbert Yanaw, K6TOS, will take a 220 radio to JPL (Jet Propulsion Laboratory) to enable the scientists there to talk directly with the students in the classrooms and radio hookup will per-

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mit students to directly interview their school superintendent and members of their Board of Education.

Bob says it is the successes that make it all worthwhile — students who were steered into the science fields because of their exposure to Amateur Radio. He told of one student he had years ago in the fifth grade, who came from a family background in which mere existence had been a struggle and the luxury of a college education was not a probability. Bob had a visit from



Bob Wallar, KB6QNR

the student not long ago. He had recently graduated from college with a degree in physics, and attributed his interest in physics to his early experience with Amateur Radio.

Several of the participants in the panel emphasized the importance of the introduction of such programs "early" (elementary or junior high school). By the time students are in high school, there are so many other things going on that it's an uphill struggle to compete with other activities.

Each of the panel members expressed a willingness to share information about their programs. Schools are not overburdened with superfluous money and there are many fingers clutching for available funds.

Also, many school administrators are reluctant to jump into untested waters, especially if it's going to cost them money. So your best bet may be to look for seed money outside the schools or get something going that can be self-supporting; gain some degree of success, publicize it well, and go to shake down the school board for money only when you have something that's a sure thing!

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Getting started on OSCAR

NORM BROOKS, K6FO

"You must establish three sets of parameters to intelligently get started in Oscar satellite work," said Gene Davies, AA6NP, in his presentation at the AMSAT Forum at the ARRL Southwestern Division Convention in Los Angeles on Saturday, August 26, 1989.

Gene is AMSAT's Los Angeles area coordinator and he is very knowledgeable in Oscar work. His introduction of "parameters" is a new and sensible approach.

By way of introduction, Gene quickly reviewed the developmental steps of Amateur satellites; Phase I — experimental (Can we really get a repeater station into orbit?); Phase II — We did get it up there, but into low earth orbit, and it whizzes by in 15 minutes or so; then Phase III.

The first Phase III satellite was aboard a rocket that failed, and is now sitting at the bottom of the Atlantic Ocean. The second one, called Oscar 10, had a bumpy launch. One of its antennas was broken off and it ended in an orbit that was useful, but not the orbit aimed for. It did, however, serve us for many years, and is even now useful, but it has lost its on-board computer due to radiation damage.

Now we have the most recently launched Phase III bird, called Oscar 13. Its launch was faultless, it is in the desired orbit and it is working very well. Getting started on Oscar 13 will be the main thrust of this presentation.

Oscar 13 carries four transponders:
 Mode B — Up on 435 MHz, down on 145 MHz.
 Mode J — Up on 144 MHz, down on 435 MHz.

Mode L — Up on 1,200 MHz, down on 435 MHz.

Mode S — Up on 435 MHz, down on 2,400 MHz.

Mode B is the most used, Mode S the least.

What will you hear on Oscar 13? Primarily the usual ham conversations — the weather, equipment and the like. This will be in single sideband voice or CW. There is a little RTTY and packet too.

But there is also an added feature. No matter what time of the day you may be receiving the satellite, if it is out at the end of its orbit, you will hear DX. Some Amateurs have already achieved DXCC (worked 100 countries) on Oscar. Other awards, such as Worked all States, are attainable too.

There is one award that is unique to satellite operation. It is the ZERO award. It is a test of your station's ability to hear weak signals from the satellite.

CW signals are sent at progressively weaker levels, from level 9 down to 0. If you can copy only level 9, you have a lot of work to do to improve your station. Getting to the smaller numbers is difficult to achieve. It gives you something to work toward.

Back to establishing parameters. Gene suggests you decide on the limits of spending for your Oscar equipment, based on available budget, frequency

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of use, type of operation and available space.

On the chalkboard Gene listed "Strategic Planning" factors to consider. . .

Distance of antennae from shack: Keep antenna feed lines as short as possible. The longer they are, the more you will require "low loss" feedline, such as Belden 9913 or Hardline.

Height restrictions: Keep the antennae as close to the ground as possible, raising only to clear obstructions, such as trees and buildings.

Size and windload: You don't want to invest \$500 or more on an antenna in-

stallation and have it blow down in the first windstorm.

Obstructions: You need a clear shot to the satellite. You're not going to do very well pointing through the neighbor's house or an oak tree.

Weather considerations: Do you live in hurricane alley?

Other uses: What else do you want to use the station for?

"My station is set up so I can also work terrestrial VHF and UHF, to see how many grid squares I can work," he added.

Tactical planning

Antennas. There are a lot of antennas on the market suitable for Oscar. Cushcraft puts out a set. KLM puts out probably the best pair of antennas that can be bought at this time. They manufacture a 40-element crossed yagi for 435 MHz and a 22-element crossed yagi for 2M. Most of those you hear on the satellite will be using KLM antennas.

Support: It should be stout enough so it won't come crashing down. Remember that the connecting boom that ties the two antennas together needs to

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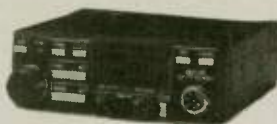
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be non-conductive. This is to keep transmitted signal from crossing over into the receive antenna.

Most Amateurs choose a fiberglass rod put out by KLM. A cost saving alternative is to use PVC pipe filled with a wood dowel and glue.

Feedline: This is very important. You don't want to spend dollars on a power amplifier and a preamplifier, only to lose signal in the feedline.

Ideally, a satellite station would use hardline or Heliax. It has much lower loss than standard coaxial cable. It is more difficult to work with and more expensive if you're purchasing it new. Used hardline is available at swap-meets — look for it.

Belden 9913 is better to use than RG-8/U. If you use it, be sure your connectors are installed properly and are watertight.

Now that we've covered antennas, let's look at selecting the transmitting/receiving equipment. I won't endorse any particular brand. I'll only say I chose the Yaesu FT-736. It's easy to operate, has a good receiver and a good-sounding transmitter. But it has not been without problems, especially the earlier models. Owners are giving the newer models great reports. If you're buying a used one, look at the serial number.

Check the reputation of any rig you plan to buy. What do other hams think of its performance? Other Amateurs will tell you the problems they may have had. This is especially true of service. There is a big difference between the service the companies provide.

The last factor is accessories. Here again the parameters are what kind of operating we want to do, and how much we're going to spend.

Transmitter Power Amplifier. There are times in Oscar 13's orbit when you will want to run over 25W to get an adequate signal back from the bird. You do this by adding an amplifier, usually in the 100W range, although we rarely use it that high.

Receiver preamplifier. The signals coming from the bird are very, very weak. They have travelled a long distance and have encountered a great deal of path loss.

Transmitter filters: These are important to operate Mode J. This keeps

your third harmonic of your 2M transmitter from getting into your receiver.

Receiver filters: These are usually cavity type filters to help your receiver reject the enormous amount of "crud" heard on the 2M band in the large metropolitan areas.

Antenna polarization switching: It is recommended, but not absolutely essential, that you be able to switch both transmit and receive antennas back and forth between right-hand and left-hand polarization. Commercially made antennas do this easily with relays.

Headphones: Oscar operation is full duplex — you listen to yourself while you talk. Without headphones, you will establish a long loop feedback — a hor-

rible screech. Others will know whether you're using them or not!

Microphone: Because of a bassy response from Oscar, the microphone of choice will accentuate the highs. The most widely accepted mike is the Heil HC-4.

Join AMSAT!

Gene urged all Amateurs who are the least bit interested in satellite operations to join AMSAT. Membership is only \$30 per year.

AMSAT is facing increasingly higher costs in producing and launching satellites. Every bit of support you can lend will be appreciated. Send to: AMSAT, 850 Sligo Ave., Silver Spring, MD 20910. □

Hams credited with averting tragedy

KELLY BRUCE, WD4DAT

The 15 Amateurs from the Tuscaloosa, AL, area providing communications assistance for the West Alabama Air Show Memorial Day weekend may have averted a tragedy.

Hams were stationed in the Tuscaloosa Airport control tower, along the flight line, at headquarters and with police and medical groups among other areas. Their efforts are credited with preventing at least one serious accident.


Amateurs were able to stop three airplanes from taxiing into an area where four skydivers were coming down — air traffic controllers had been

unable to contact the planes and authorities were worried that the divers' parachute ropes would become entangled in the propellers.

The two days Amateurs spent in the 90 degree-plus heat were appreciated by event coordinators — the hams have been invited to add a demonstration station and may operate a special event station at next year's show. —ARRL Alabama Section News □

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Cross Country life saver

STEVE NARANS, WB0VNF

Some time ago I took my wife and daughter to North Bend, NE for a Cross Country Meet in which my daughter was to run. We arrived a few minutes late and the race had just begun, so we were rushing to the starting line when I noticed that one of the runners was beginning to struggle.

This is not normal, I thought, for her to be so affected after less than a mile. Just then she collapsed! My wife, a nurse by profession, and I were there immediately. One look, a search for the feeble but very rapid pulse and shallow breathing and my wife said, "This girl needs help — fast!"

My handie-talkie to the rescue. Arriving at my car, I gave a call on the 07/67 repeater and immediately, Steve, N0ILA answered.

I requested an ambulance so he called 911. The Fremont Police relayed the call to the North Bend Emergency Squad, who were there within 10 minutes of the incident.

The ambulance took the 13-14 year-old girl to the hospital for observation and released her a short time later. She had a high blood sugar level.

In retrospect, I ask myself what would have happened had Amateur Radio not been there (there was no other system for emergency com-

munication set up and no medical personnel present) and what if we had not arrived late and had not been walking past this more secluded part of the course.

As it stands, though, we were in the right place at the right time — and all it takes is one person to "be there" on the repeater, just listening, ready to assist when someone calls.

Just like many other instances of unselfish assistance by hams, we didn't even get the girl's name or leave ours in case there were questions. I do know it'll be a lot easier to tote the hand-held along when I go to future events! —Ak-Sar-Ben ARC, Omaha, NE

Check your license expiration date.

Dedicated teacher honored

Advanced Electronic Applications Inc. awarded Robert "Bob" Wallar, WB6QNR, its 1989 Amateur Ambassador Award at the ARRL National Convention in Dallas, TX, on June 3. The award was presented by George Buxton, N7EZJ, Executive Vice President of AEA, at the convention banquet.

AEA presents the Amateur Am-

bassador Award on a yearly basis to the radio Amateur who demonstrates extraordinary efforts in promoting the Amateur service to individuals new to Amateur Radio.

Bob was chosen Ambassador because of his utilization of Amateur Radio in the grade school classroom. WB6QNR, a science teacher at Luther Burbank School in Artesia, CA, feels that Amateur Radio is an important instructional tool and motivating influence with his students.

An example of this is Bob's promise to his students to give them an opportunity to talk with a government official. Senator John Glenn agreed to an

on-the-air question and answer session with Bob's students. Bob traveled to Washington, DC, and operated the US Senate Amateur Radio station, W3USS, with Senator Glenn.

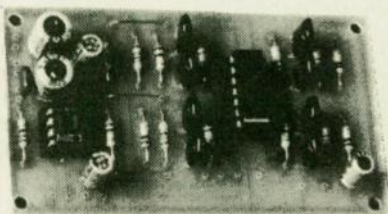
Contact was made with Bob's classroom Amateur station approximately 3,000 miles away. Students were able to communicate over the air with Senator Glenn and utilize the Amateur Radio skills they learned in the classroom. The event was taped and was a segment of the television program, *The New World of Amateur Radio*.

Bob is active in the Los Angeles School District Amateur Radio Club, where he has been instrumental in getting other teachers to become hams and use Amateur Radio in their classrooms. He also shared his enthusiasm and interest for Amateur Radio as a member of the ARRL Educational Task Force Committee.

Former recipients of the AEA Amateur Ambassador Award include (please turn to page 22)

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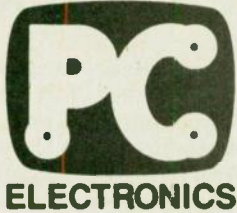
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*Transmitting equipment sold only to licensed radio amateurs verified in the Callbook for legal purposes. If newly licensed or upgraded, send copy of license. Receiving downconv. available to all starting @ \$49 (TVC-2G).

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

The TC70-1 has full bandwidth for color & sound, like broadcast. You can show the shack, home video tapes, computer programs, repeat SSTV, weather radar, or even Space Shuttle video if you have a home satellite receiver. See the ARRL Handbook chapt. 20 & 7 for more info & Repeater Directory for local ATV repeaters.

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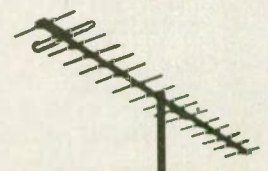


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KLM 440-10X 11dBd \$65
KLM 440-6X 8.9dBd \$51

HAMS! Call or write for our full line ATV catalog...Downconverter boards start at \$49

Dedicated teacher

(continued from page 20)

Mary Duffield, WA6KFA; Barry Goldwater, K7UGA; and Byron Lindsey, W4BIW.

AEA will be accepting entries for the 1990 AEA Amateur Ambassador Award through May 1, 1990. All entries need to include a letter or report outlining activities of the nominee in the following three categories: Dedication to Amateur Radio, positive influence on those outside the Amateur service and initiation of special projects or programs to promote Amateur Radio. The recipient of the award is chosen by a panel of judges from AEA and is awarded \$1,000 and an all-expense paid trip to the ARRL National Convention.

Entries may be forwarded to AEA, Attn: Amateur Ambassador Award, P.O. Box 2160, Lynnwood, WA 98036.



DAD'S SICK TODAY AND COULDN'T COME, SO HE SENT ME AND OL' REX INSTEAD TO BITCH ABOUT THE TV!!

Amateur MicroSats to be launched

On Nov. 10, 1989, from the spaceport of the European Space Agency located near the equator in Kourou, French Guiana, a powerful Ariane IV rocket is scheduled to carry six Amateur Radio satellites into orbit. Four of these six satellites have been dubbed MicroSats because of their unusually small cube-shaped size measuring nine inches on a side.

These tiny satellites, in comparison to the huge military and commercial satellites normally flown today, represent the ultimate in small, low-cost, highly efficient spacecraft design. The design and construction of these MicroSats has been coordinated and organized by the Radio Amateur Satellite Corporation in collaboration with

the American Radio Relay League and the Tucson Area Packet Radio Association. These are nonprofit organizations dedicated to furthering the state-of-the-art in Amateur Radio communications.

The Radio Amateur Satellite Corporation, known as AMSAT, has been responsible for the design and construction of numerous Orbiting Satellites Carrying Amateur Radio, or OSCARs, over the past 20 years. Most recently, through the efforts of AMSAT-affiliated organizations from around the world, OSCAR-13 was successfully placed into orbit last year aboard an Ariane IV rocket.

Although OSCAR satellites had
(please turn to page 63)

USMC's "new" antenna sprays ionosphere

The following is part of an article entitled "Marine antenna may not be pretty, but it works better," by David Evans, which appeared in the July 7 edition of the Chicago Tribune.

A half dozen Marines at the 9th Communications Battalion at Camp Pendleton, CA, have devised a stunningly simple type of mobile radio antenna that allows them to transmit

into a region where high frequency radio waves normally would not be received.

The primary purpose behind the new technology is to overcome skip zone, which has been a major headache for wide area continuous communication.

The solution is as ingenious as it is obvious. The Marines built an antenna to transmit straight up; the signals hit
(please turn to page 49)

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Tower tumbles in organized effort

JIM WALTRESS, N5JPX

The art of lowering Amateur Radio antenna towers has been raised to a new level. The task was to remove an 80-ft. tower with a tri-bander, stacked 2M beams and rotator on top. The location is in the middle of a residential neighborhood where crashing towers would be noticed.

The normal procedure involves the use of a medieval torture device known as a gin pole. It requires some hardy soul to climb the tower with wire cutters, pliers, wrenches and other implements of destruction and disconnect the various cables, coax, antennas and accessories mounted on the tower.

The thought of climbing 80 ft. into the air and taking apart that which is your only means of support seems a bit risky.

Saturday, May 6, dawned clear and cool at the home of Don Elder, KC5VD, just east of Jackson, MS. It was the kind of day that is perfect for outdoor activities.

Don assembled his troops: K5QNE, KA5VBE, assorted family members, several inquisitive neighbors and Yours Truly.

The troops were holding steaming cups of coffee in the cool morning air as

Don began the tactical briefing. The objective was identified as an 80 ft. tower located on the back side of his home. The mission was to remove by disassembly the entire structure, while sustaining a minimum number of casualties. Weapon system would be limited to hand tools. Reinforcements would be provided in the form of a large crane with a 100 ft. boom.

The attack was to be launched at 0830 local. Friendly forces launched the offensive on time and, one hour later, the antenna and tower were in the truck and on their way. That's right, one hour, and it was down and disassembled.

This extraordinary success was achieved by lifting the entire tower — antenna and all — and disassembling it from the bottom up. This left the major components still attached to the tower but at GROUND LEVEL when they needed to be taken off.

The next time you are faced with a tower to take down, let me suggest that you investigate using a crane to pick up and take it apart from the ground. This system is fast, efficient and, most importantly, it appears to be safer — *The Magnolia Report* □

Long time between QSOs

Norman Hart, VK4KO, and Tadashi Okyuama, JA1KFN, made their first contact in 1934. But they had to wait 55 years for their next QSO.

It appeared to be a routine CW contact on 14 MHz on Nov. 25, 1988, when Norman, age 80, chatted with 85-year-old Tadashi.

After the contact Tadashi checked his records and found Norman's old QSL card confirming their first QSO on Nov. 10, 1934, using phone (AM) on the 7 MHz band.

He sent Norman a photocopy of the QSL along with a Christmas card. "I thought it was remarkable and he must have a very good record of his QSOs. I have written off to thank him," Norman said.

The log of VK4KO has some 68,000 contacts since Norman obtained his license in 1931.

Norman and Tadashi were young men setting out on a lifetime involvement in the hobby of Amateur Radio when they first met on air.

Now, both old timers, they're able to renew that friendship, which is only possible through the world's best hobby. — *Amateur Radio* □

It ain't braggin' if you really done it. — *Dizzy Dean*

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- # 31 17-19 wpm Speed Builder
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SPECIAL EVENTS

Montana, USA

The Butte (MT) Amateur Radio Club will operate special event station W7FO during the week of Nov. 6 through 12. This event celebrates the 100th birthday of Montana's statehood.

Suggested frequencies: 3.890, 7.280, 14.280, 21.370 and 28.470.

To receive a special centennial certificate, send a 9 x 12 SASE (business size) to Butte ARC, P.O. Box 4036, Butte, MT 59701. □

Will Rogers Days

The Rogers County Wireless Association (Claremore, OK) will operate special event station N5OK to celebrate Will Rogers Days on Nov. 4 and 5 from 1300Z to 2300Z from the Will Rogers Memorial.

Suggested frequencies: Lower 15 kHz of the General band on 20 and 15M and 28.430.

Send a QSL and SASE to RCWA, Rt. 3, Box 793, Claremore, OK 74017. □

Give thanks

On Saturday, Nov. 25, in Thanksgiving commemoration, the Whitman Amateur Radio Club will once again be operating a special events station at the historic Plymouth Plantation in Plymouth, MA, from

1200Z until 1800Z. The Club call, WA1NPO, will be used.

The suggested frequencies are: 7.290, 14.290, 21.360 and 28.350.

The station will be set up on the beautiful, historical recreation of our forefather's first successful settlement in the new world, overlooking Cape Cod Bay.

A special QSL card will be sent to those sending an SASE. Also, a handsome 8½ X 11, special certificate with the Mayflower II in the background is available for the event.

All replies must be sent to: Whitman ARC, P.O. Box 48, Whitman, MA 02382. □

AMSAT-NA 20th anniversary

The Radio Amateur Satellite Corporation, AMSAT-NA, is celebrating its 20th anniversary at the 1989 Space Symposium and Annual Meeting, hosted by the Central Iowa Technical Society in Des Moines, from Nov. 3 to 5.

Friday evening will be registration and an informal dinner; Saturday's schedule includes registration, seminars, a luncheon, a banquet and the annual meeting; and Sunday there will be seminars and an open board meeting.

Seminars include: MICROSAT/PACSAT, PHASE-IV, UoSAT-D&E, a satellite fox

hunt, a Command Station Development Program, Digital Signal Processing and much more.

For further information send a SASE to CITS-AMSAT 89, c/o Ralph Wallio, W0RPK, 1250 Hwy. G24, Indianola, IA 50125. □

Amateur "Hi"



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

This month's winner is John Dascenzo, W3IPD, from Mount Dora, FL. Priorities come and go, but call signs are forever.

I have an elderly friend who is also an Amateur Radio operator. A couple of months ago, while sleeping, he started groaning in pain. His wife tried to wake him up, without success.

She had him taken to the hospital, and contacted his doctor. It turned out he had suffered a mild stroke.

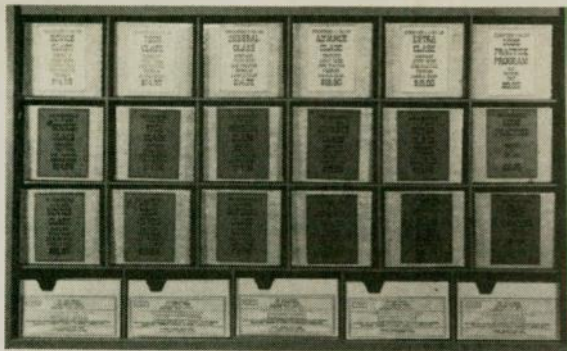
"Eddie," she said, "this is Rose." He didn't recognize her. The doctor came in; "Hello there, Ed." He didn't recognize the doctor. His wife said, "Eddie, what's your name?" No answer; he looked at her, but couldn't remember. "Ed, where do you live?" He just shook his head. Nobody was getting through to him.

Rose, in frustration, said, "Ed, what are your call letters?" Without any hesitation, he said, "WA4TLG . . . Tough Little Germ." Rose turned to the doctor and said, "He didn't recognize me, he didn't know his own name, but he did know he was WA4TLG — with phonetics, no less!"

Resonant: Small insects which infest pitch

Resonant filter: Used to remove small insects from your pitch; sometimes called a "pitch fork."

—Yakima ARC, WA



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- **ULTRA-COMPACT BODY**
5 7/8" (W) x 2" (H) x 8 1/2" (D)
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45 watts on 2M and 35 watts on 70 cm. Approximately 5 watts low power.
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(Specifications guaranteed on amateur bands only. Modifiable for MARS/CAP permits required)
- **SIMULTANEOUS**
Receiving on both bands at the same time
Scanning: intermix scan modes on both bands at the same time
- **INDEPENDENT**
The volume, squelch and control dial are independently adjustable on both bands. You can store the following information on both bands at the same time. Priority function, choice of 37 encoding/decoding sub-tone frequencies, call channel, scan function (program, memory channel, VFO or unique open channel scan), memory skip, bell function, + or - repeater shift.
- **FULL DUPLEX CROSS BAND OPERATION**
Transmit on one band while receiving on the other band -- telephone style.
- **AUTOMATIC BAND EXCHANGE (A.B.X.)**
When in the ABX function is active, an incoming signal on the sub-band will activate an automatic exchange between the main band and the sub-band.
- **PRIORITY**
The VFO frequency is monitored for 5 seconds and then shifts for one second to the selected priority channel (In both bands at the same time).
- **DUAL SPLIT SHIFT OPERATION**
Operates odd offset operation
- **BELL FUNCTION**
- **REPEATER REVERSE FUNCTION**
- **CALL CHANNEL FUNCTION**
- **BEEP FUNCTION**
- **20 MEMORIES (10 FOR EACH BAND)**
Each memory channel can store frequency, repeater offset, encode/decode frequency.
- **4 SCANNING MODES**
Program scan, memory scan, band scan and unique open channel scan (opposite to normal busy scan). Scan stops on a busy (or open channel) channel and then resumes approximately 5 seconds after stopping even if the signal is still present.
- **REPEATER OPERATION**
The DR-570T can be used as a cross band repeater.
- **EASY TO OPERATE FUNCTION**
- **LARGE AMBER MULTI-FUNCTION LCD DISPLAY**
Visible in all conditions, it indicates main and sub-band frequencies, frequency step, "on air", "call", "CTCSS", "PRI", "REV", "-", "+", "T", "T" (tone), tone frequency, "MUTE", "LOCK", "ABX", "J", "BUSY", "F", "S/RF meter", "REV"
- **MHz FUNCTION FOR BOTH BANDS**
One MHz is increased or decreased per touch
- **SELECTABLE DUAL AND SINGLE BAND OPERATIONS**
One touch selection with pressing of twin key
- **SELECTABLE BAND MODE (MAIN/SUB)**
One touch selection with pressing of band key
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Fee opposition

There is a Budget Reconciliation Proposal, currently on its way from the House Energy and Commerce Committee to the House Budget Committee, which contains a provision which would levy a \$30 licensing fee on all Amateur Radio operators. I strongly oppose the imposition of any fees for what has been traditionally free and I am sure that the other half-million hams here in the United States feel the same way I do.

Unfortunately the only hope we have of preventing this measure is for all of us hams to write each of our Congressmen in the US House of Representatives.

One of the reasons I oppose any fees for ham radio licenses is because many of our engineers, scientists and technicians started in electronics through ham radio as a hobby in their youth. Every day, we are being outdone by other countries who have more of these technical people than we do. We should therefore be doing all we can to encourage more of our youngsters to become hams since we need more people who are technically competent.



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High quality golf shirts, printed one side, \$15.50, both sides, \$16.50.

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Anne Wright, N6BOP

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CA residents add 6% sales tax.

But charging people to become hams will only serve to discourage them from going into these technical areas. Each of these short term monetary gains of \$30 for the FCC will mean that we have one less engineer, scientist or technician.

Another reason I oppose these fees is that, since the Federal Communications Commission has relinquished all of its former duties in administering and grading the ham license examinations to the ham radio community itself, the total cost to the FCC for issuing each license has dropped to less than \$1 per license. I feel that this \$1 cost should be absorbed in my existing US Federal Income Taxes, not be increased to \$30 and passed directly on to me.

(I talked with someone involved with the House Energy and Commerce Committee, and he confirmed my suspicion that the \$30 fee is grossly excessive by providing me with some of the thinking behind the Budget Reconciliation Proposal: He said that FCC figures give the cost of administering each license as only \$5, but it would cost the government \$10 to collect each \$5 fee, so they just added everything all together and then doubled the total for good measure. I believe the FCC cost is closer to \$1 and that the extra \$29 will go toward offsetting the millions of dollars it costs the FCC to issue commercial broadcast licenses to the profit-making TV and radio stations. We hams, who by FCC rules are not allowed to make any money from our hobby, will be subsidizing the commercial broadcast TV and radio stations that make billions of dollars in profit.)

Ham radio operators do a lot of community service and provide emergency communications during natural disasters each and every year. We also participate in Civil Defense through organi-

zations such as RACES. Charging Hams to provide these and other safety-related services to the public, when we donate our services at absolutely no charge, seems ludicrous.

The Budget Reconciliation Proposal presently exempts both the General Mobile Radio Service and Class D Citizens Radio (Citizens' Band Radio) from any of these fees, so each ham needs to write his Congressman in the House of Representatives and request that they also exempt Amateur Radio from these unwarranted licensing fees. Please provide a copy of each letter to the following address: House Budget Committee, 214 Annex 1, Michael Telson, 300 New Jersey Ave. S.E., Washington, DC 20003.

There is one additional bit of bad news: The Senate Budget Committee is working on a similar Proposal, which would have us paying \$35 for our ham radio licenses. The House is evidently ahead of the Senate so far, but each of us will probably have to write both of our US Senators next.

STEVEN L. KARTY, N4UHO
Vienna, VA

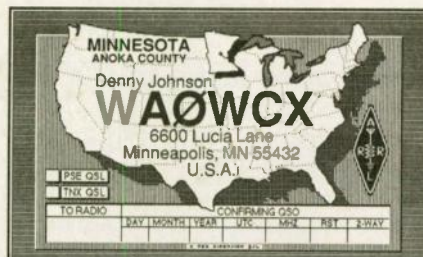
Support tradition

There is a lot of contention permeating the air of America today. Americans disagree about abortion; are divided pro and con about flag burning as a right or a desecration and Amateur Radio operators, not surprisingly, share that discontent and probably line up exactly the same as the general public on those two items.

But, as always, hams have their own specialized fights. We have always disagreed about the relative merits of the various facets of our hobby — nets, contests, DX lists, to name a very few of the many — but today, the absolutely insane hostilities that are taking place on 14313 kHz exceed the stupidities of all the CB wars of just a few years ago.

The FCC prefers to remain aloof (if the Amateurs tear themselves apart, fine. There are lots of business users in the wings ready to grab that incredibly valuable spectrum space. And *business*, not individuals, pay the lobbyists).

Essentially the conflict is one of



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jealousy; a turf fight where some envious new turks aided by some disillusioned, discontented malcontents are seeking to dislodge the service nets that have, for many years, been available to all on that frequency. The Maritime Mobile Service Net alone has been there 23 years. Other nets and their most recent managers are:

South Africa Maritime Net	0630Z-0700	ZS5MU
International Maritime		
Mobile Net	0700Z-	DK0SS
International Traffic Net	11-16/22-00	K4PT
Maritime Mobile Service Net	11-22/00-02	KA80
Seafarers Net	02-0430 03-0430	WA6ZEL
Pacific Maritime Net	0430-0700	KH6CO

These nets have used that frequency for many years and the Amateurs who need help know that someone is always there.

The usurpers argue that "no one owns a frequency." That is correct. Also: "no one can 'take over' an occupied frequency." These new "Net Managers," KV4FZ, K1MAN, N5FX, attempt to get on 14313 early and if they "cannot hear" anyone else on freq., they capture it so that when the scheduled net controller appears for his net, it is "occupied."

Entreaties to these men as to why they are doing this generates the reply, "The nets that have been on this frequency for years have been running traffic illegally. We are going to run 'legal Amateur traffic nets,' and the Maritime Mobile Service Net board of directors is an illegal entity and illegally fired me as a net controller (K1MAN and N5FX)."

What constitutes legal or illegal activity is decided by these selfsame appointed vigilantes of Amateur Radio honor.

The MMSN, for one, has moved often, usually up about 5. The rest of the nets are hard to find, most 50 and 100W mobiles cannot compete with the KWs on 20M.

I believe most hams who use that band are aware of what is happening and that "this too shall pass" in time. I

urge all hams to support the traditional service nets of this and other established net frequencies.

**GEORGE "PAT" PATTERSON,
N4DQY
Indian Harbour Beach, FL**

LX7A

The Bavarian Contest Club will return to Luxembourg for the 1989 CQ World Wide DX Contest, participating in both Phone and CW portions as a Multi/Multi entry using the exclusive call sign LX7A. This will be the first time the LX7 prefix is put on the air (WPX chasers look!).

The operating crew will consist of about 35 hard-boiled contesters and DXers and will do its best to put out a big signal on all bands. Prime frequencies will be 1.835/1.850, 3.760/3640, 7.095, 14.260, 21.360 and 28.460 MHz on Phone and 1.833, 3.533, 7.033, 14.033, 21.033 and 28.033 MHz on CW. On 160M, the JA window will be given special attention with a second RX in parallel to the main RX when the band opens up.

Every QSO will automatically be confirmed with a QSL card via the QSL bureau. This is the preferred way. If you catch us on 6 bands (DX: 5 bands) you will receive a special confirmation. For those who really want their cards direct, QSL to:

**Bernd Koch, DF3CB
Kohlbeckstr. 26**

8060 Dachau, F.R. Germany

We are sorry for the delayed shipment of the promised awards from the 1988 LX8A activity due to the heavy workload of the QSL manager DL7MAE. They are now being put in the mail by DK6WL and DL4MEH and should have arrived when you read this.

**BERNHARD STEIBL, DF7RX
Kelheim, F.R. Germany**

You can call me . . .

I was reading the May issue of Worldradio and, after observing much of the mundane, such as the potential loss of 220 MHz, the slow or no growth of Amateur Radio, the lack of verbal and written response from Amateur Radio operators bonding together to ferret sticky fingers from the likes of UPS and other similar antibodies. . . I then saw the light on page 10! An Amateur from Iowa has petitioned the FCC to change the Extra class title to: "Master of Communications." The FCC has even assigned a file number to this revelation of more junk mail!

Just what Amateur Radio needs. . . titles and a bunch of folks filling the mail sacks to the FCC with an issue paramount to Amateur Radio in 1989.

A lawyer friend of mine told me that there is no law against calling oneself "doctor," so long as one does not imply or practice without license or qualifications. Possibly this well recognized and respected title will appease those with fragile egos and dubious self esteem.

We may lose 220 MHz and other bands, but the FCC or UPS won't be able to take away our titles!

73,

Reverend, Doctor, Sir, Lord, Czar,
King, Emperor, Etc.,
**MICHAEL A. JARCHOW
Calistoga, CA**

IBM-PC Shareware \$3.00-disk / \$2.50 disk 10+

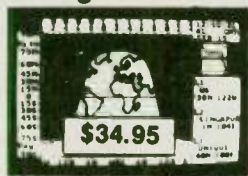
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- 167 Telix 3.11 - great comm program - built in Z-modem!!!
- 1061 HAM RADIO 1-Packet-related - YAPP & PACTALK Lp.
- 1082 HAM RADIO 2 - USAT-90 satellite tracker, MINIMUF propagation forecaster
- 1084 HAM RADIO 4 - MORE ham programs - all countries, Smith charts (need BASICA or disk 591)
- 1089 MAPPER - an EXCELLENT EGA world map that shows grayline, MUF, longpath, shortpath, distance, beam headings
- 1097 RD-SSTV decoder - excellent SSTV pic. decoder for the PC-hooks into serial port - with example pictures
- 1099 TS440 & TS940 rig control - programs that allow you to control your Kenwood rigs via the computer.
- 1110 K1EA DX Contest logger - the much talked about program! Links via packet to PacketCluster, automatically logs, dups and keeps score QUICKLY!
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- 1143 KAM RTTY - RTTY/ASCII/AMTOR/CW prog for KAM's
- 1145 PK232 Terminal Program - for AEA PK 232 TNC's
- 1148 PicPro - WeFAX / packet pictures for Kantronics TNC's
- 1149 GEOCLOCK-Real-Time Grayline Map of Earth - Like DX-Edge (CGA/Herc) - order #1150 for EGA/VGA version
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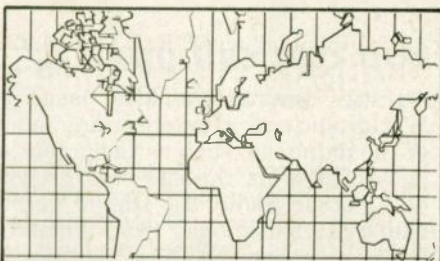
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DX WORLD

John F.W. Minke III, N6JM

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Activities Calendar

- 11-12 Nov. DARC European DX Contest (RTTY)
- 11-12 Nov. RSGB Second 1.8 MHz Contest (CW)
- 12 Nov. CRCC Romanian DX Contest
- 18-19 Nov. OVSV All Austria Contest (CW)
- 25-26 Nov. CQ World Wide DX Contest (CW)

W-100-N

Our congratulations to the following DXers for completing the requirements for Worldradio's Worked 100 Nations Award:

- 365. KA5YCM Crawford Bishop
 - 366. YC1RED Abdullah Iskandar
- (All 15M SSB)

Here's a husband and wife team, Soviet style. Toivo, RA3AR, and Natasha, RA3AP, Laimitainen, of Moscow, are quite active on the bands.



RA3AR is chief operator of the

Moscow Intersectoral Scientific/Technical Eye Microsurgery Complex Club Station, UZ3AZZ. He is a former pilot of civil aviation with Aeroflot and also holds the title of Master of Sport. Toivo also acts as QSL manager for Antarctic Stations 4K1A, 4K1HK and 4K1ANO, plus UA0ZDA in Kamchatka.



Toivo's better half, Natasha, is an engineer and is active on all bands, primarily on CW. Thanks to Tony Spino, KA1HBV, for these photos and information. Tony visited this couple when he was in Moscow in March 1988. Toivo hopes to be able to visit the United States this fall. (No, we have no information on the cat!)

Uruguay (CX)

According to RSGB's *Radio Communication, Spectrum Analysis*, by John Allaway, G3FKM, the first 50 MHz contact between the United Kingdom and Uruguay was made on April 21 of this year. The honors go to G3OUF and CX4HS. For a 6M contact with CX4HS, listen near 50.110 MHz around 1800 UTC.

Of course, not all activity from Uruguay is limited to 6M. On 10M CX5BI was reported on 28.024 MHz in early September at 1700 UTC and CX8BBH on 28.030 MHz at 1415 UTC.

Two other calls were reported with DX5TV on 40M near 7.048 MHz working Europeans around 0001 UTC and CX8CG on 14.256 MHz at 0130 UTC.

St. Pierre (FP)

FP5DX is available for 160M contacts on 1.832 MHz on Friday and Saturday evenings. His operating times will normally be between 2345 and 0400 UTC.

EP5DX is not interested in a list type operation, but will schedule for a specific time. For schedules please contact Ralph Hirsch, K1RH, 172 Newton Rd., Woodbridge, CT 06525. Give Ralph desired dates with an alternate and please include a S.A.S.E. for confirmation.

FP5DX is very active on other bands, too. Look for him near the following:

3.796 MHz	0130 UTC
7.006 MHz	0115 UTC
14.006 MHz	0130 UTC
21.025 MHz	2330 UTC

French St. Martin (FS)

Craig Maxey, WB7RFA, will be returning to French St. Martin in October for the CQ World Wide DX Contest. He will operate in the single band category on 10M using the call FS5R. For contacts before and after the big contest, he will be using the call FS8FG5DX.

Korea (HL)

There are still several of those HL9 types over in Korea. HL9NVT holds only a Technician license and his voice privileges are restricted to 10M between 28.300 and 28.500 MHz. Look for him between 2100 and 2230 UTC Sunday through Thursday and 2100 and 2400 UTC on Friday and Saturday. HL9NVT is located at Taegu.

We have only two reports for 40M activity this month. Look for HL9EP or HL9EV near 7.004 MHz around 0945 UTC.

Active on 20M CW is HL1CG. Look for this one between 14.005 and 14.031 MHz from 1100 UTC.

On 15M CW we have a few calls reported this past period:

HL1AV	21.010 MHz	1330 UTC
HL1EX	21.013 MHz	0400 UTC
HL1HP	21.012 MHz	0900 UTC
HL4SF	21.017 MHz	1515 UTC

Several other calls were reported active from Korea recently. They include the following:



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Adapted from Nov. 85 QST article
by Al Helfrick K2BLA

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HL1ACP	14.205 MHz	1245 UTC
HL1XP	14.026 MHz	1200 UTC
HL2IDC	14.196 MHz	1230 UTC
HL9CG	14.242 MHz	1045 UTC
HL9EP	14.017 MHz	1245 UTC
HL1IRL	21.297 MHz	1330 UTC
HL5FEE	21.260 MHz	1530 UTC
HL9TF	21.301 MHz	2200 UTC

HL5BDS is not in Korea at all, but rather in the South Shetland Islands in the Antarctic. Most of the activity for that one has been 10M CW.

Thailand (HS)

Fred Laun, K3ZO, reports via *The DX Bulletin* that on Aug. 17 Thai PTT officials had an audience with King Bhumiphol Adulayadej and presented him with the call HS1A. To avoid confusion the club call for the Asian Institute of Technology was changed to HS0AIT from HS0A. This should pave the way for operation by other Thai Amateurs with personal calls, probably early next year.

HS0AIT has been very active and mostly on SSB. Listen between 14.186 and 14.190 MHz around 1130 UTC and 21.275 MHz around 1600 UTC. For a CW contact try 21.008 MHz around 1900 UTC.

Also reported was HS0B between 14.198 and 14.226 MHz around 1300 UTC and 14.027 MHz at 1100 UTC, HS0E between 21.311 and 21.345 MHz after 1700 UTC and HS1BV on 21.242 MHz at 1815 UTC. HS0YDY has been found near 14.025 MHz between 0715 and 1015 UTC.

Mongolia (JT)

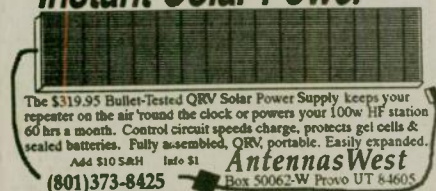
Located in CQ Zone 23, this one is always a good catch. The most reported call this past month or so was JT1KAA. Look for this one between 21.210 and 21.320 MHz any time between 0200 and 0900 UTC. On CW try 21.041 MHz at 0115 UTC or 14.039 MHz at 2345 UTC.

CW reports include the following calls:

JT1BE	14.049 MHz	2430 UTC
JT1BR	14.045 MHz	1315 UTC
JT6KE	14.010 MHz	1115 UTC
JT6KED	14.011 MHz	1100 UTC
JT9C	21.035 MHz	0230 UTC

The location of the last station is reported to be in the city of Uliastai, about 1000 km west of Ulan Bator.

Instant Solar Power



For a SSB contact try one of the following:

JT1BE	14.193 MHz	1345 UTC
JT1BJ	21.275 MHz	1315 UTC
JT1BV	14.226 MHz	1500 UTC
JT1T	21.238 MHz	0300 UTC
JT9C	21.263 MHz	1330 UTC

Kiribati (T3)

Kiribati, for DXCC purposes, is divided into three separate countries. West Kiribati (T30) was formerly known as Gilbert and Ocean Islands. Reported very active recently was T30BC, with most of the activity on the DX nets. Try 14.220 or 14.226 MHz after 1200 UTC.

He has also been reported between 14.174 and 14.185 MHz at about the same time around 0500 UTC on 14.222 MHz. On 15M he was reported on 21.296 MHz at 1045 UTC.

Other calls reported from West Kiribati included T30AC on 14.222 MHz at 0700 UTC, T30SDK on 21.275 MHz at 0300 UTC, T30XAC on 14.222 MHz at 0615 UTC and T30XDK on 21.275 MHz at 0315 UTC.

East Kiribati, formerly the Line Islands, was represented by T32AB on Christmas Island on at least three bands. Try 14.310 MHz at 0900 UTC, 21.240 MHz at 0330 UTC and 28.513 MHz at 0100 UTC.

Also on Christmas Island is T32IO. Look for this one between 14.160 and 14.225 MHz around 1000 UTC. If you need this one for the WARC bands check 18.146 MHz at 0430 UTC.

QRZ DX reports November activity by WC5P, signing as T32BE, and WD5F signing T32BO. They will be active in the CQ World Wide DX Contest.

Gabon (TR8)

Activity seems to have dropped off from this one. However, try TR8SA, who has been reported on 21.294 MHz around 2130 UTC and 28.500 MHz at 2030 UTC.

Also reported was TR8CJ on 14.227 MHz at 0115 UTC and TR8RS on 21.222 MHz at 2100 UTC.

V6 and V7

According to *DX News Sheet*, the ITU has assigned the V6 prefix to The Federated States of Micronesia (formerly Eastern Caroline Islands). Amateur Radio stations will use the series V63AA through V63ZZ.

The publication also reports that JA2NQC has plans for operation from there in early September and possibly with the call V63MS.

The new call for KC6JC is V63JC. He had previously been issued V63AP, but requested that his call be changed.

During September at least three new calls were scheduled to be active — V63AQ, V63AR and V63AS — by visiting DXers from Japan. In October JA7HMZ plans operation from Ponape as V63AD.

In addition the prefix V7 has been allocated to the Republic of Marshall Islands, with Amateur Radio stations using the V73AA to V73ZZ block. Now that's a great prefix!

IOTA news

The Florida Westcoast DX Ring recently received permission to operate from Egmont Key, just west of Tampa Bay in the Gulf of Mexico. This island counts as NA-34 in the IOTA awards program. The group will operate from the island on Nov. 11 and 12, both CW and SSB, using the call KO4J. All QSL requests should be sent direct. Please provide a S.A.S.E.

New DXers might wonder what all this IOTA business is about. Created by Geoff Watts, this program is now sponsored by RSGB and consists of 15 separate awards. The object is to work islands or groups of islands throughout

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the world. One could work for the basic award of 100 islands — anywhere, or perhaps a particular continent. The continental awards, however, require confirmed contacts with at least 75 percent of the activated islands.

Here is a group of islands for this issue, which includes the IOTA reference number, name of group, call letters, frequency in MHz and UTC time.

AF-19 Lampedusa Island	IG9ONU	21.295	1636
AN-15 Lutschow-Holm Bay Group	8J1RL	21.186	1130
AS-27 Wrangal Island	UA0HAE/UA0K		
AS-37 Koshiki Island	JA6IEF/6	21.270	1130
AS-47 Daito Island	JA6IEF/6	21.261	0900
EU-19 Alexandra Island	UA0BAZ/UA10		
EU-41 Maddeleina			
Archipelago	I2ZBX/IM0	28.004	1602
EU-89 Corvo Island	WA6K/CU9	14.260	1352
EU-90 Palagruza Island	YU2WM	24.938	1830
NA-02 Providenciales	VP5JM	14.156	0300
NA-09 Cornwallis Island	FD1JYD/VE8	14.124	0659
NA-31 Aquidneck Island	KA10WC	21.240	2105
MA-37 Shemya Islands	KL7FB1	21.328	2000
NA-38 Madeleine Island	VE7FZZ	14.260	1230
NA-56 Isle of Pines	CO4/CM2LM	14.220	0646
NA-65 Brown Island	K7LHV	14.025	0620
NA-118 Green Island	C17GRN	14.264	2100
OC-22 Flores Island	YC9LVH	21.303	1355
OC-27 Timor	YB9ZDA	21.301	1432
OC-98 Pukapuka Atoll	ZK1DP	14.116	0600
OC-106 Cagayan Sulu Island	N6VMW/DU8	14.226	
SA-29 Grande Island	PY1ZAK	21.325	1900

Some of the above may no longer be active. Check your logs to see if you have worked them.

Islands on the DXCC countries list also count. In the Caribbean area, some of the DXCC countries may only count for one island group. Further informa-

tion on the program is available from Roger Balister, G3KMA, La Quinta, Winbridge, Chobham, Woking, Surrey, GU24 8AR, ENGLAND.

Those of you familiar with the program might be interested in four new reference numbers:

- AS-61 Diomed Islands
- AS-62 Habomai Islands, including Shikotan
- AS-63 Petra Islands, including Andrey Island
- NA-119 Derneire Island

IARU news

The Aruba Amateur Radio Club was recently welcomed in as the 127th member of the International Amateur Radio Union. Seventy-seven member societies cast their votes, all affirmative.

1990 International DX Convention

The Southern California DX Club announces the 41st International DX Convention to be held at the Visalia Holiday Inn, April 6 through 8. The club is busy planning this big annual event.

Experienced attendees will be making their hotel reservations now, as the hotel fills fast. Make your reservations directly with the hotel. Be sure to mention the DX Convention for special room rates. The 800 number given was 821-1127. This evidently is a special number for the hotel rather than the local number. The Holiday Inn national reservations number would only give you a no vacancy answer.

Further information is available from Don Minkoff, NK6A, 213/397-2984, or 12567 Brooklake St., Mar Vista, CA 90066.

Antique QSL department

Long time reader and supporter of our column, Al Miller, VE7KC, provided us with this QSL card from a fellow DXer, M.E. Saunders, VE7KH.

The call OQ5BL was assigned to Paul Rousseau of Jadotville in the Belgian Congo, who worked OM



Saunders in Crescent, British Columbia, over 40 years ago on Nov. 17, 1947. Paul was running 100W AM on 10M.

Belgian Congo rates as a DXCC country and is now known as Zaire.

QSL Information

WB7RFA reports that he has hundreds of IRCs for sale at 55¢ each. For those who are interested, please send a check for the appropriate amount to: Craig M. Maxey, WB7RFA, P.O. Box 463, Lake Oswego, OR 97034. We would suggest that you include a SASE along with your order.

The DX Bulletin reports that The American ARC of Korea recently received 55 pounds of QSL cards for past HL9 operations, with some of them dating back 10 years. The club requests that if you have held a HL9 call in the past 10 years, please send a SASE to Box 153, APO San Francisco, CA 96206.

IRCs — International Reply Coupons — are good until redeemed at your favorite post office for postage. However, you cannot redeem an IRC in a post office of a country where the IRC was issued.

Lou Berry, WA6WHQ, offers his services as QSL manager. Any DX station in need of a QSL manager may wish to contact Lou at 2259 North Marter Court, Simi Valley, CA 93065.

QSL routes

A35ML	—OH4ML	HL6BDS	—HL1ASS
A35SK	—SM5CQT	HL9TF	—WB0DUL
C30LBS	—IK1CJT	HS0E	—K9EL
C17GRN	—VE7IGV	HS0YDY	—JH7FQK
CN8ST	—F2CW	IG9ONU	—10YKN
CR9M	—CT1CWT	IY0M	—IK0EBD
CY0DX	—VE1AL	JW6XGA	—LA6XGA
E12VNO	—NN50	JW7WAZEL	—LA8PF
E18KM	—W2ORA	KG4UN	—K8UNP
EK2RR	—UQ1GWW	KX6OR	—ADIS
EK3LT	(See Note 1)	LX1RQ	—SP6SJD
EL2FQ	—W2EK	N2HNQ/KH8	—JH41FF
FD1JYD/VE8	—F6IGX	N6VMW/DU8	—VE3XN
FK0BM	—F6BHX	NU3Y/VP9	—WA3IJZ
FS5R	—W7EJ	OH4ML/H44	—OH4ML
FS/K4MQG	—F74HK	OH0/OH6LF	—OH6LF
FW/K40MX	—VE7YL	OX/OZ1LQH	—OZ1LLC
FY0EK	—DK9M1	OY3QN	—OZ1ACB
GB4XT	—G4NPH	P29CG	—WB9SVK
HC5K	—KITN	P40A	—KA1XN
HG89HG	—HA5ML	P40GD	—N2MM
HG89HG	—HA5ML	R9ZF	—RV9FQ

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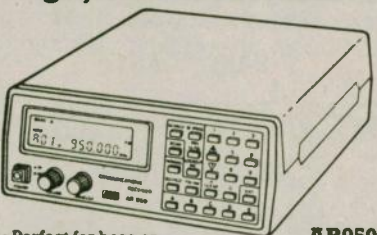
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DX Prediction

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.

NOVEMBER 1989 WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	(15)	17	21	(13)	20
12	(15)	16	20	(13)	19
14	(27)	16	19	22	38
16	32	16	27	21	45
18	35	16	(24)	15	47
20	35	21	33	(14)	47
22	30	33	39	(14)	46
24	26	35	43	13	39
2	20	30	40	13	27
4	18	21	28	13	24
6	(17)	19	24	12	22
8	(16)	18	22	(13)	21

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	(19)	13	20	(13)	20
10	(19)	13	20	(13)	19
12	34	13	19	22	37
14	42	17	32	25	42
16	45	(16)	27	22	45
18	44	(16)	(25)	16	47
20	36	(19)	34	15	46
22	31	27	40	14	40
24	25	23	39	13	28
2	23	16	26	13	25
4	21	(15)	23	13	22
6	20	(14)	21	12	21

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	19	13	(20)	13	20
9	19	13	20	13	20
11	35	13	19	22	34
13	43	14	35	26	40
15	46	(13)	30	25	44
17	46	(13)	(24)	21	46
19	40	(13)	(30)	15	47
21	33	(23)	37	14	41
23	25	(23)	38	14	30
1	23	(16)	26	13	26
3	21	(15)	23	13	23
5	20	(14)	(21)	13	21

- R9ZF/NN7A --NN7A
- R9ZF/NN7D --NN7D
- R9ZF/W4YS --W7YS
- RB9P/
- RB5WA --RB9WA
- S79MX --HB9MX
- T30AC --AA6BB
- T30BC --ZL2QW
- T30XAC --AA6BB
- T32AB --N7YL
- T32BE --WC5P
- T32BI --KH6DFW
- T32BO --WD5F
- T32IO --AH6IO
- T32PO --NH6PO
- T5YD --F6AYA
- TJ1MW --N4MUJ
- TM7EU --FF6KDC
- TR8RLA --NV7J
- TR8SA --F6FNU
- TZ6VV --N0BLD
- UA0BAZ/UA10 --UA9MA
- UA0KAY --UA0KCL
- UF6FJ --UF6FF
- V63AD --JA7HMZ
- V63AP --KC6JC
- V63AQ --JH1BNB
- V63AR --JH2BNL
- V63AS --JH2HLT
- V63JC --KC6JC
- VE8/FD1JYD --F6IGX
- VK9LV --K1JB
- VP2EXX --KC8JH
- VP2EY --HB9SL
- VP6JM --W3HNC
- VP5/W4NPX --W4NPX
- VQ9SS --N6SS
- VS6UO --G3IFB
- WA4ZEL/JW --LA8PF
- XT2CW --DK7PE
- XX9SW --KU9C
- Y61HG --Y34K
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- BY4CPA --P.O. Box 6013, Shanghai, People's Republic of CHINA
- BY5QW --P.O. Box 317, Fuzhou, People's Republic of CHINA
- BY5RC --P.O. Box 710, Fuzhou, People's Republic of CHINA
- BY5RCS --P.O. Box 709, Fuzhou, People's Republic of CHINA
- BY5RSA --P.O. Box 538, Nanjing, People's Republic of CHINA
- BY5RY --P.O. Box 5816, Fuqing, People's Republic of CHINA
- BY5SY --P.O. Box 239, Fuzhou, People's Republic of CHINA
- BY5TS --P.O. Box 901, Fuzhou, People's Republic of CHINA
- BY5VZ --P.O. Box 238, Fuzhou, People's Republic of CHINA
- BZ1DX --P.O. Box 2564, Beijing, People's Republic of CHINA
- BZ4RC --P.O. Box 538, Nanjing, People's Republic of CHINA
- BZ4RCC --P.O. Box 1827, Nanjing, People's Republic of CHINA

- Y73SOP --Y63TA
- YN30CZ --NT7S
- ZF2AH --WA6VNR
- ZF2LG --KB6SFD
- ZS6JR --KA3DBN
- ZS8MI --ZS6PT
- ZY0TI --ZP2BNQ
- 3D2HL --DJ6JC
- 3D2KK --SM7PKK
- 3D2MB --VE7YL
- 3D2ML --OH4ML
- 3D2RJ --ZL1BQD
- 3D2RW --ZL1AMO
- 3D2SI --DJ6SI
- 3D2VT --K6VT
- 3D2WV --DK2WV
- 3D2XV --VK2BCH
- 3X1SG --ON7GV
- 4LINV --RA1NA
- 4L1QRQ --UW3AA
- 4U1ITU --U12HB
- (See Note 2)
- WB3CQ
- K3ZO
- DK8MZ
- K3ZO
- OE6LAG
- 5N4/K0LXA --WD9GJH
- 5N0ALE --D12VZ
- 5N0MRD --DL3KCE
- 5T6CK --DL1HH
- 5W1IL --JA3RCT
- 6Z2E --G3OCA
- 6Z2E --HB9STZ
- 7P8DP --W8JPI
- 7X4VUK --F61FF
- 8P9X --K4FJ
- 9H3EH --DL2GBT
- N6SS --HA8ZC
- 9L/PA0GAM --PA0GIN
- 9M6SDX --9M6MA
- 9M8STA --9M2SS
- 9Q6EE --WA9INK
- 9V1YB --OH1NPY

Notes:
1. SSB contacts made with EK3LT should be sent via UA3PM: V. Yu. Konnov, P.O. Box 410, Tula 300 034, USSR. Contacts made on CW or RTTY should be sent via UA3PPF: S. Yu. Lutakov, P.O. Box 98, Tula 300 008, USSR.
2. This route applies for July 1989 operation only.

Many thanks to the following contributors: KA1HBV, K1RH, KC2KU, NK6A, WA6WHQ, NN7A, WB7RFA, W9LNQ, UA3PPF, UA9MA, HL9NVT, VE7KC, International Amateur Radio Union (W4RA), Northern California DX Foundation, Southern California DX Club (WB6PSY), Northern California DX Club (KE6ZE), Western Washington DX Club (KS7L), *The DX Magazine* (VP2ML), *DX News-Sheet* (G4DYO), *The Long Island DX Bulletin* (W2IYX), *Inside DX* (N2AU), *QRZ DX* (W5KNE) and *The DX Bulletin* (VP2ML).

We hope you had a good summer. It is now the middle of October, with much DX activity on the way. If you have not already, be sure to check out your antennas to see that they are in tiptop shape. GL DX es 73! de John N6JM. □

○ Just when you learn to make the most of it, most of it is gone. ○

The 1989 Worldradio DXathon

ELIGIBILITY — All licensed Amateur Radio operators, worldwide.
DATES — Start: 0000 1 January, 1989. End: 2359 31 December, 1989.

Exceptions: No contacts made during the time frame of any DX Contest will be valid. This is to be a prestigious award program, made so by its difficulty.
BANDS — 80, 40, 20, 15, 10 meter bands, plus satellite/moonbounce frequencies.

MODES — Phone, CW, Digital (includes RTTY, AMTOR, packet), Visual (SSTV), and Satellite (includes moonbounce).

Five Bands/Five Modes equals DXathon.

CATEGORIES — There is only one category — Single Operator.

OBJECTIVE — Contact as many NATIONS on as many modes as possible. A NATION is defined as an entity with enough sovereignty to issue its own postage stamps.

VALID CONTACTS — A NATION may be worked but once, on each mode, regardless of the frequency band. This is not a five-band per mode contest.

SCORING — Final score will be the total number of NATIONS contacted on the various modes. Contact with your own NATION does not count. The highest possible score would be about 900.

SUBMISSIONS — Entries must be received by 1 February, 1990. No QSL cards need be submitted or received by the entrants. Send signed log extracts to:

WORLD RADIO
2120 - 28th Street
Sacramento, CA 95818 USA

Award winning logs will be published in *Worldradio*. Decisions of the DXathon committee will be final. The committee has the right to disqualify entries for violation of the letter or the spirit of the rules. By submitting an entry, the participant agrees to abide by the decision of the DXathon Committee.

AWARDS
World Champion — The World Champion will receive a trophy significant enough to honor the effort.

Gold, Silver and Bronze Medals will be awarded for the highest scores on each continent.

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B.—The highest score in each USA call area.

C.—The top single-band score in A. and B. above.

D.—Technician/Novice scores as warranted.

E.—High scoring 4 mode, 3 mode, 2 mode participants.

Nations with the highest participation (weighted vs. Radio Amateur population) will be honored.

In case of ties, duplicate awards will be made.

A certificate of participation will be awarded each "radio athlete."

It would be appreciated if monthly scores were sent in for publication.

RULE CHANGES — Rules may be modified over the years to reflect feedback from the participants. Please send copies of this page to your DX friends.



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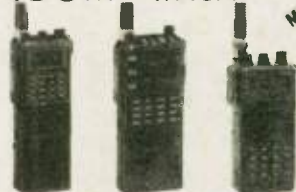
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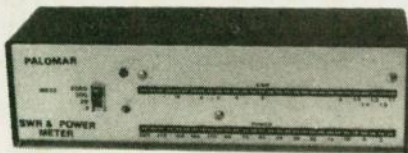
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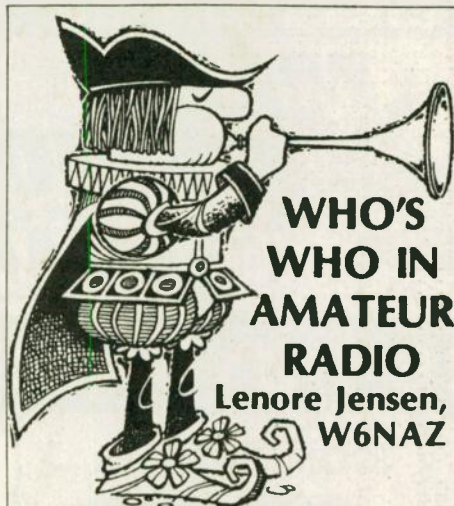
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WHO'S WHO IN AMATEUR RADIO
Lenore Jensen, W6NAZ

Hats off to Mary Duffield, WA6KFA! She's the retired teacher who uses Amateur Radio and her sailboat to help kids "find themselves" and make this a better world.

It started 10 years ago when she volunteered at schools to assist problem students in gaining self-esteem. Soon clubs in other schools joined in and her Redwood Youth Foundation was born. It urges our young people to have a sense of their own power to create their future.

An outstanding early result came from 11-year-old Jim Hall, who was inspired to get a grant for "clean water" from the Washington Institute, making possible a "telephone networking" between kids in 21 different schools and countries to see what could be done.

They discovered that the Freedom School on the Mohawk Indian reservation in upstate New York had the greatest need to eliminate pollution. All joined in urging officials to cure it.

Now there is a Jimbo Club, named in honor of the late young Jim who had wanted to accomplish something before he died. He did.

But enter Amateur Radio. The local Lions Club presented Mary with a ham rig for her sailboat, forcing her to earn her ticket. It became obvious to Mary that sailing combined with radio communication would be an obvious way to enthuse young people.

By now she has taken many on cruises, visiting kids in other ports and teaching radio so that more than 200

have earned their tickets. The goal now: Each Teen Teach Ten.

Mary says, "Our sparkplug has been Ben Deovlet, W6FDU, who donates countless hours and gear, using his talents to repair it. Also hearty thanks to the former president of the Santa Cruz ham club, Leon Fletcher, N6HYK, and the current president, Wayne Thall, KB6KN; Brian Green, N6HWY; Alan Crowell, W6JT, Dave



Mary Duffield, WA6KFA, is holding a winning QSL card designed by Rob Bennet, KB6SKY.

Harbaugh, W6TUV; and many others. "We have six local schools with Amateur Radio stations, towers and antennas, and expect more to join us. All this at no cost per school.

"Also, we've a station at the Vet's Hall, making an umbrella of emergency and neighborhood communications over Santa Cruz," she added. Packet helps keep phone costs down.

Last May ham operators from each school sailed a small fleet of sailboats up to San Francisco Bay, in parallel with a bicycle brigade along Highway 1. The aim was to urge everyone to join a "Kids Crusade" to communicate and cooperate on a global scale. The Santa Cruz Yacht club has been very helpful.

Mary has taken kids to Mexico four times, once to Venezuela, and on countless short sails. They've sent some to their sister city Puerto La Cruz in Italy.

Tireless Mary is interested in other school radio clubs across the country (please turn to page 51)

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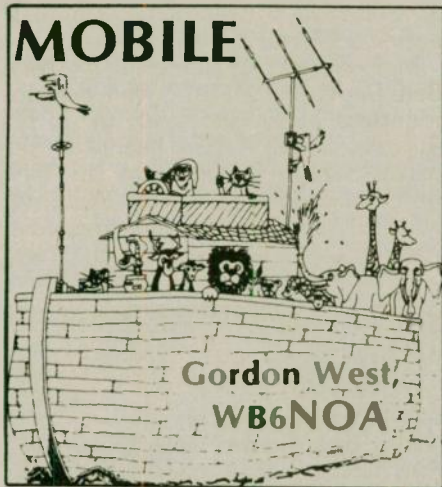
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MOBILE



Mobile omni TV antennas

Why suffer the picture-jitters when you are mobile with your AC/DC color TV? You can achieve excellent TV reception with a mobile TV antenna, coupled to your set with high-quality RG-59AU coaxial cable. There are some new innovations in preamplified mobile TV antennas that will make viewing the tube a pleasure!

Directional vs. omni. There's no question about it, a home-style directional TV antenna is the ultimate for picture-perfect viewing. Directional home-type antennae discriminate against ghosts caused by multi-path reception. Unfortunately, they are usually bulky and ineffective when moving or underway and constantly changing your direction.

If you are always on the move, yet still want the benefits of a small directional antenna, check out the TDP Electronics (11 Old Bee Tree Rd., Swannanoa, NC 28778) AC/DC, remote-controlled TV antenna system housed inside a 21-inch radom.

Inside the radom is a printed circuit board Yagi antenna with VHF and UHF reception capabilities. There is also a solid-state preamplifier to give the incoming signal an approximately 15dB boost.

The preamp also contains a filter to notch out FM radio interference and a tiny electric motor, with a reduction gear train, turns the antenna a full 360 degrees. A new wireless hand-held remote control unit allows you to beam in those signals for best reception.

This entire affair weighs only about six pounds and the radom is completely sealed up against the weather. This antenna system is private-labeled for Radio Shack, so see it at your local store.

If you are perpetually on the go, you may wish to enjoy some of the benefits of an omni-directional TV antenna system:

- Ideal for boats constantly swing-



The arrow indicates the best location for a mobile TV antenna.

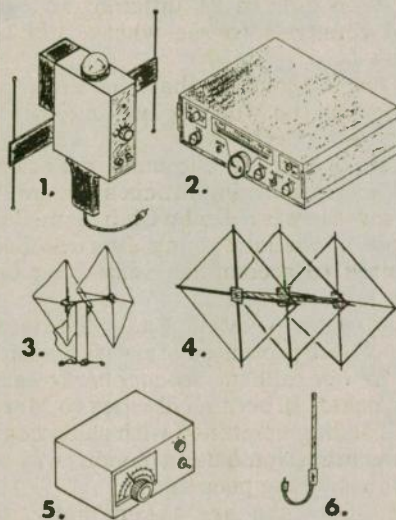
ing at anchor

- "Hands free" reception when changing direction
- Best for mobile-in-motion reception
- More compact than Yagi
- Remarkable receive capabilities out in the open

The disadvantage of an omni-directional TV antenna is its natural tendency to pull in "ghosts" caused by signal reflections. Ghosting is caused by second, third and fourth receptions of TV signals slightly delayed by their longer reflective route. The only way to prevent ghosting is to move to an area where multi-path reception does not take place.

Shakespeare (Route 3, P.O. Box 733, Newberry, SC 29108) offers the ulti-

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mate in a marine TV antenna, developed with the Winegard Company, a pioneer in TV antennas. Their Model 2010 omni-directional TV antenna system never needs adjusting once it has been properly installed. It is designed to receive signals a full 360 degrees, even in rocking boats or moving RVs.

This new omni-directional antenna for TV reception operates on 12-volts or house power and features a low-noise, solid-state, internal amplifier that boosts received signals an average of 15dB on VHF and 20dB on UHF.

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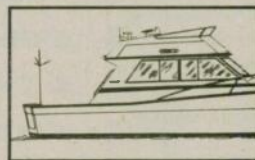


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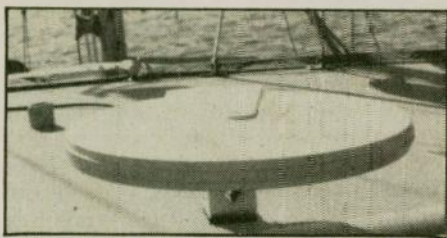


At Home



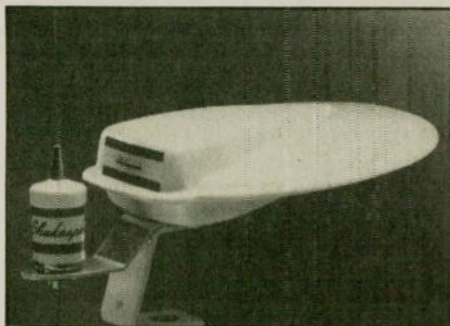
If you live in an apartment, condominium or restricted area, the Spider™ may well be the answer to your antenna problems.

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Marine installation of the Shakespeare TV antenna

The antenna system comes complete with its low-profile, sleek, disc-like radom in gleaming white ABS plastic, switchable power supply, VHF/UHF band separator, 30 ft. of RG-59AU cable and a one inch, 14-thread ferrule that fits any standard marine mount or extension mast for quick, easy, do-it-



Combination TV circular omni antenna and a 2M halfwave whip

yourself installation.

For your VHF E-skip enthusiasts, this antenna system is great for predicting 6M and 2M sporadic E openings because DX TV stations pour into your TV set, loud and clear. Unlike directional antennas that pull in only one station in one direction, the omnidirectional antenna from Shakespeare allows for signals to come in off the sides and from behind. It's a great way

Radio Officers luncheon

Forty four people gathered in Forked River, NJ, in May for the second Midlantic Radio Officers luncheon. Most of the men were former Merchant Marine Radio Officers who graduated from the US Maritime Service Training Station at Gallups Island in Boston Harbor during WW II, but some Radio Officers present were not Gallups grads. One is still sailing.

A purser and chief steward were also welcomed. Much memorabilia was displayed and old acquaintances were renewed.

A US Coast Guard Chief discussed the Coast Guard and its doings in this day and age, which was interesting to the new/old Coast Guard vets. Door prizes were given, including a ladies

to stay alert on band openings.

So, there is no longer a need to leave your TV behind. These new antennas, mounted on the outside of your vehicle or boat, will give outstanding reception. As long as you keep your ham antennas at least 15 ft. away from the TV antenna, TVI should not be a problem.

Try your hand at TV DXing, too. □

door prize of Lenox china.

Each man present was "plastered" with his name plate and Amateur call, and each lady was given a corsage.

The reunion was hosted by Bob Mitchell, W2CSL (R34), and Pete Rogers, R-18. □




Len Moffitt, a Gallups Island graduate, is holding his Liberty Ship model built from "scratch" from original plans that he has in his possession.

JANUARY 4, 1983

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Here's an early Christmas present for all you QRPers out there. Almost a year ago I wrote to several big time European QRPers in hopes of having several guest editorials in this column. I received promises from three: George Dobbs, G3RJV; Colin Turner, G3VTT; and Petr Doudera, OK1CZ, who were eager to accept.

Petr has provided the material for this month's column on QRP and ham radio in Czechoslovakia. He is one of the driving forces behind the OK QRP Group (similar to the G-QRP-Club and the QRP ARCI). He uses a highly modified FT-101E that he purchased in the UK several years ago, along with a host of homebrew (HB) gear.

Petr was originally licensed 15 years ago as OK1DKW, a call very familiar to European QRPers. He is currently living in temporary quarters about 90 miles from Prague (Praha) near the Polish border.

Petr's QTH only allows a temporary antenna out the window to a nearby fence. The antenna is made out of .3mm wire and is only about six feet off the ground. Nonetheless, OK1CZ managed to snag VS6VT on 20M while only running 5W output!

No stranger to HB equipment, Petr still takes great pride in building and operating his Amateur station. Now I'll turn it over to Petr for a brief look at ham radio and QRP in OK-Land.

Let me introduce Czechoslovakia and its radio Amateurs to you. Czechoslovakia is the country in the heart of Europe which has borders with DL, OE, HA, UB, SP and Y2 lands, plenty of mountains and rivers but no sea, although a fleet of merchant ships sails all the oceans, as you may have noticed having heard all those OK4../MM calls on the bands. People often

mix this country with Yugoslavia, perhaps due to the similarity of their names

Yes, two slavonic languages are spoken in Czechoslovakia. Czech in OK1 (Bohemia) and OK2 (Moravia) and Slovak in OK3 (Slovakia).

To complete the prefix survey, OK4 are stations on ships; OK5, 6 and 7 are special events and contest call signs and OK8 are guest licenses issued to all foreign Amateurs who hold a valid license in their own country.

Czechoslovakia has a population of over 15 million people and an area of 49,000 square miles, which compares to the state of Pennsylvania. The capital of the country is Prague (pronounced *Praha* in Czech). You may have heard about other cities — Brno, Bratislava and Plzen, of Pilsen beer fame. Also, Budweiser beer is known more widely than the town from which it originates — Ceske Budejovice (how about that, Spuds? *ed*).

The Amateur Radio population consists of over 3,000 licensed Amateurs plus a few hundred clubs. Amateur license classes are similar to those elsewhere in the world. Our Class C, B and A compare to the US Novice, Advanced and Extra licenses. Class C operators may only use CW in the restricted segments of 160, 80 and 10M and all modes on VHF with a maximum power output of 40W.

Class B and A license holders have all bands and all modes, with the main difference being power requirements. Class B stations can run a max of 150W while Class A stations can run up to 500W. There is also a no-code VHF only license and finally a youth Novice license for people between 15 and 19 years of age (prefix OL + 3 letter suffix). The OL license holders may use 160M and VHF, with a max output of 10W.

OK Amateurs are keen on construction of homebrew equipment. In

almost every shack you would find either a complete home built station or at least some homebrew accessories.

For many OK-land Amateurs homebrew is not only a vital part of the hobby, but also a must due to the lack of commercial rigs (there aren't any ICOM, Yaesu or Kenwood dealers in Czechoslovakia). While some OK clubs and a few lucky individual radio Amateurs do possess commercial equipment, they have had the gear imported from other countries, which is VERY expensive.

OK Amateurs not only build simple rigs, but they dare and succeed in building very complex all-band, all mode gear, too! Among the popular construction projects are HF and VHF transceivers (XCVRs) designed by various OK Amateurs, Soviet UW3DI XCVR, copies of the Atlas XCVRs or combinations of various designs (check out the homebrew HW-8 clone in the photo! Benton Harbor should be jealous! *ed*).

Old tube receivers (you remember... they glow in the dark! *ed*) are still widely used in OK-land. Don't laugh, they are not only useable but still good for today's crowded bands. All those bells and whistles, memories, scanning and other sophisticated creature-comforts of the modern receivers

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Petr Doudera's, OK1CZ, 4-year-old daughter Katerina is getting a jump on her CW practice.

are nice, but you don't need them to hear the other station.

I have, for many years, used an old

RCA AR-88 receiver (WW II vintage with single conversion, eight tubes) with a few mods such as a Q-multiplier,

RF attenuator, crystal calibrator and AF filter. To this ancient "boat anchor" was added a QRP XCVR adaptor for all nine HF bands, CW/SSB, driven by the local oscillator of the AR-88.

Don't laugh...with this rig I've worked over 20,000 QSOs, including DXCC (140 countries) with under 5W output! (Kinda makes 'ya feel a little inadequate, don't it? *ed*).

There are also OK Amateurs, including some top DXers, who still use separate TX and RX units. German WW II receivers using converters and other mods have been popular, as well as Czech and Russian RXs from the '50s and '60s. The key to success is not in the rig itself, but the techniques, abilities and knowledge of the individual radio Amateur.

High-tech, modern rigs can also be found in the shacks of OK hams and clubs. Homebrew solid state rigs featuring high dynamic range, low noise RF front ends in the HF and VHF spectrum are not uncommon. Home construction also surfaces in RTTY, SSTV and EME stations in Czechoslovakia.

Over the last few years OK-land has seen growing interest in QRP. Four years ago a dozen QRP fans got together and founded the OK QRP Group, which now has some 60 active members. A formal membership criteria consisting of a point system whereby an aspiring member must accumulate a total of 300 points to achieve entry into the club assures that members are skilled operators and home constructors. One point is awarded for each QSO (copies of logs are submitted prior to membership being granted) and 70 points are awarded for construction of a homebrew rig. As a service to the membership the OK QRP Group provides data sheets on various components, organizes home construction and operational competitions and sponsors a monthly QRP net on 80M CW. In addition, the Group has an annual QRP rally (hamfest, *ed*) and OK/G (UK) activity weekend (a QRP contest between OK QRPers and the G-QRP-Club members).

Three members of the OK-QRP-Group are proud holders of the Ade Weiss DXCC QRP Trophy (criteria: DXCC while using less than 5W output), while five others are close to this target.

OK1DZD has worked 90 countries using only homebuilt 1W XCVRs, all incorporating simple direct conversion (DC) receivers! Will OK1DZD be the first OK-QRP-Group member to win the coveted DXCC Milliwatt Trophy sponsored by Ade Weiss?

OK2BMA has over 100 countries (please turn to page 51)

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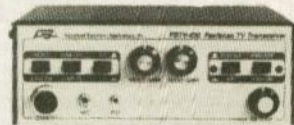


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... a unique new mobile data printer, includes a packet controller and a 13.6 VDC printer that interfaces with any mobile radio. In a recent user test it proved to have about twice as much audio level range tolerance as other TNCs. It is also an ideal unit for emergency work and a commercial version is perfect for dispatching service, emergency and police vehicles.

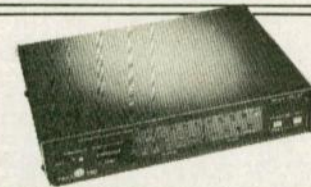
The FSTV-430, AEA's newest

The exciting FSTV-430 fast scan television transceiver makes getting on ATV easy and inexpensive...live or taped. Almost any video camera can be used. Simply plug it into the FSTV-430, connect to your 70 cm antenna and you're on the air. Use a standard TV for receiving signals and, of course, an amplifier will extend your range. It's reliable, portable and light weight and can be used in-station or mobile from any 12 VDC source. The only license required is a technician or higher.

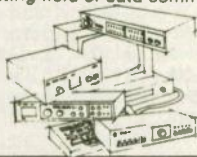


The PK-232 by AEA

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Obviously, we can fill in a system that you have already started. Or we can furnish a complete system to fit your needs and budget. For example, here's some suggestions for the amateur just entering the exciting field of data communications, or for the amateur who wants the best available.



NO. 1 For the fun (and very affordable) mode, VHF Packet, AEA PK-88 with personal mailbox, 8K programmable memory and TCP-1 P compatibility. For serious 20 M world-wide DXing on Packet, 200 or 600 Hz shift... add the superb HAL ST-7000.

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If you have any questions concerning these units, or would like to discuss your requirements with a knowledgeable specialist, please call and ask for George Sanso, AB6A. We also carry a large selection of excellent commercial products for data communications and emergency systems as well as a complete inventory of amateur equipment and linear power amplifiers.



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Visit Your Local RADIO CLUB

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

ALABAMA

Montgomery Amateur Radio Club (W4AP). Alabama State Trooper Dist. Office. Intersection of Coliseum Blvd. & Federal Dr. Randy Smith, N4LZK, (205) 832-4598. Meets 3rd Mon./monthly, 7:00 p.m.

ALASKA

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

ARIZONA

Arizona Amateur Radio Club. Meets: 2nd Thur./monthly, 7:30 p.m., 1510 E. Flower St., Phoenix, AZ. Club info on W7WGW/R 147.88/147.28 Rptr.

Old Pueblo Radio Club. Meets: 2nd Wed./monthly, 7:30 p.m. Location: Franklin Blvd., University of Arizona, N.E. corner of 5th St. & Park.

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. 2nd Sat./monthly, 7:30 p.m., Pima Co. Communications Bldg., 2545 E. Ajo. Net Thurs. 7:30 p.m. 146.28/88 (146.22/82, 147.88/08, 147.70/10-PKT).

Western Arizona Radio Club. Meets: 2nd & 4th Thur./monthly, 7:30 p.m. at Fort Mohave Mesa Fire Dept., 1/2 mi. East of Hwy. 95 on Joy Ln., Mohave Valley, AZ. Net Tues. 7 p.m. 147.12 or call (802) 758-5171.

CALIFORNIA

Amador County Amateur Radio Club. P.O. Box 1094, Pine Grove, CA 95665. Senior Citizens Center, Jackson, CA. Meets: 1st Thur./monthly, 7:30 p.m. WA6WYI Rptr., 146.835, 146.235. Net Tues. 7:30 p.m.

Associated Radio Amateurs of Long Beach, WB6RO. P.O. Box 7493, Long Beach, CA 90807. Meets: 1st Fri./monthly, 7:30 p.m. Signal Hill Recreation Hall, 1708 E. Hill St., Signal Hill, CA.

Citrus Belt Amateur Radio Club. P.O. Box 3788, San Bernardino, CA 92413-3788. Meets: 1st Fri./monthly, 7:30 p.m. at 777 E. Rialto Ave., San Bernardino.

Clairemont Repeater Assn. P.O. Box 7675, Huntington Beach, CA 92615. Meets for breakfast 3rd Sat., 8 a.m. odd months. W5Y1 Broadcast Sun. 2000. Net last Tues. 2000. WB6HUL/R 145.220-1A PL

Contra Costa Communications Club WD6EZR/R. P.O. Box 661, San Pablo, CA 94806. Meets 2nd Sun. at 9:00 a.m. Hickory Post Restaurant/Lucky Lanes. For info call Don K6DPQ, (415) 222-2449.

East Bay Amateur Radio Club. P.O. Box 1393, El Cerrito, CA 94530. Meets: 2nd Fri./monthly 8 p.m., Salvation Army, 4600 Applan Way, El Sobrante. Nets: Slow CW, Wed., 8 p.m. & SSB Net, Wed., 9 p.m., 21.395. Info, Bob Fields, KC6AOH, 415/237-3761.

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

Fullerton Radio Club, Inc. W6ULL. P.O. Box 545, Fullerton, CA 92632. Meets: 3rd Wed./monthly, 7:30 p.m., Sr. Citizens Center, 340 W. Common Wealth, Fullerton. Net: ea. Tue., 8 p.m. 147.495 simplex. Info, Gracie Hastings, N6FSL (714) 990-9203.

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

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

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

Kern River Valley Amateur Radio Club. P.O. Box 2611, Lake Isabella, CA 93240. Meets 4th Sat./monthly at 4 p.m. (Pot Luck). Veteran's Hall, Lake Isabella WA6UYW Rptrs. 146.085/146.685 224.22/Down 1.6 WB6ODZ Rptr.-224.58 Down 1.6 Low-Level.

Livermore Amateur Radio Klub (LARK). First Presbyterian Church, 5th & L St. Bill Richards, WD6J (415) 829-5229. Net Mon. 1900 on 147.12+. Meets 3rd Sat./monthly, 9:30 a.m.

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

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

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

North Hills Radio Club. P.O. Box 41835, Sacramento, CA 95841. 3rd Tue./monthly, 7:30 p.m., Carmichael Elks Lodge, 5631 Cypress Ave., Carmichael, CA. Net 145.19 Thur. at 8:00 p.m.

North Shores ARC. (619-275-1495) P.o. Clairemont Recreation Center, 3605 Clairemont Dr., San Diego, CA. 1st Tue./monthly, 7:30 p.m. Club net each Mon., 7:00 p.m. 28.485 MHz.

Orange County Amateur Radio Club. Meets 3rd Fri./monthly, 7:30 p.m. at Mercury Savings, Tustin, CA, 1095 Irvine Blvd. 2 Meter Net Wed. at 9 p.m. 146.550 simplex.

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

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

Riverside County Amateur Radio Assoc. c/o County Emergency Services Div., 4080 Lemon St., Ste. 8, Riverside, CA 92501. Meets: 2nd Thur./monthly, 7:30 p.m., bsmnt., County Adm. Bldg., 4080 Lemon St., Riverside. Nets: Mon., 7:15 p.m., 222.860/224.460 and 7:30 p.m., 146.28/88; Tue. — YL Net, 7:30 p.m., 224.460, Bkfst, 3rd Sat., By You Bob's Rest, Riverside.

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

Sacramento "Old Timers" Ham Radio Bkfst. Club and Sacramento Valley Chapter #169 OCWA (Quarter Century Wireless Assn.). Meets 2nd Wed./monthly, 8 a.m., Carrow's Restaurant near Watt Ave., and Hwy 80 exit. For info contact Paul Wolf, W6RLP (916) 331-1830.

San Fernando Valley Radio Club, W6SD. P.O. Box 3151, Van Nuys, CA 91407. Meets: 3rd Fri./monthly, 7 p.m., Red Cross Van Nuys, 14717 Van Nuys Blvd., Van Nuys, CA.

Santa Clara County Amateur Radio Assoc. (SCCARA) W6UW. P.O. Box 6, San Jose, CA 95103. (408) 249-6909. Meets: 2nd Mon./monthly, 7:30 p.m. Net other Mon./monthly, 7:30 p.m. Net other Mon., 7:30 p.m. W6UU 146.385 + /442-425 +.

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

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

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

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

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

Southern California DX Club. P.O. Box 56292, Sherman Oaks, CA 91413. Meets: 2nd Thur./monthly, 7:30 p.m. at Dept. of Water & Power, 111 No. Hope St., downtown Los Angeles. Weekly DX roundtable, Thur., 7:30 p.m., 145.480-PL 100Hz. DX Packet system 145.680. Info: Gary WB6PSY (818) 710-1705.

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

Stockton-Delta Amateur Radio Club. Meets: 2nd Thur./monthly 7:30 p.m. Red Cross Bldg., 747 N. Pershing, Stockton, CA (Hwy 5, Pershing off-rmp). Net 28.450 SSB 8 p.m. Wed. Visitors welcome. Club Rptr. W6SF receives 147.165 MHz.

The Trinity County ARC. P.O. Box 228, Weaverville, CA 96093. Meets 2nd Wed./monthly, at the CD Hall in Weaverville, 7:30 p.m. WD6FHX Rptr. 146.13/73.

Tri-County Amateur Radio Assoc. P.O. Box 142, Pomona, CA 91769. Meets: 2nd Mon./monthly, 7:30 p.m. Pomona First Federal S&L (basement), 399 N. Garey, Pomona, CA.

United Radio Amateur Club K6AA. L.A. Maritime Museum, Berth 84. Foot of 6th St., San Pedro, CA 90731. Meets: 3rd Fri./monthly except Dec., 8:00 p.m. Talk-in 145.655 Simplex.

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets: Victor School Board Room, 6th & "A". 2nd Tue./monthly, 7:30 p.m. WA6EFW Rptr. 146.34/146.84.

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

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

Yolo Amateur Radio Society. Meets: 1st Tues./monthly, 7:30 p.m., Davis Branch of the Bank of Woodland located at 239 E. St. in Davis, CA.

CONNECTICUT

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

FLORIDA

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

Platinum Coast Amateur Radio Society, Inc. (PCARS). P.O. Box 1004, Melbourne, FL 32902. Meets: American Red Cross Bldg., 1150 S. Hickory St., 2nd Mon./monthly, 7:30 p.m. Talk-in on 146.850 rptr.

Sarasota Amateur Radio Ass'n, Inc. Meets: 3rd Tue./monthly, 8 p.m. on the 6th floor (board rm.) of the County Admin. Bldg., corner of 301 & Ringling Blvd. Club Rptr. W4IE, freq. 148.91/31, open to all. Phone patch *Up #Down. Welcome.

South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tue./monthly, 7 p.m., Melbourne Library, 2275 S. Babcock St., Melbourne, FL.

West Palm Beach Amateur Radio Club, Inc. P.O. Box 6834, Southboro Station, W. Palm Beach, FL 33405. Meets: 2nd Tue./monthly, 7:30 p.m., Palm Beach Emergency Op. Cntr., 3723 Belevedere Rd., W. Palm Beach. Info: H. Felton, 655-4632 or H. Logan, 848-0513.

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo, HI 96721-1938. Meets: 2nd Tue./monthly, 7:00 p.m., Helco Auditorium, 1200 Kilauea, Hilo. Talk-in on 146.76(-).

ILLINOIS

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

Bolingbrook Amateur Radio Society. Meets: 3rd Mon./monthly, 7:30 p.m., Annerino Rec. Cntr., Recreation Dr., Bolingbrook, IL. Info net Thurs., 8 p.m., WA9DIP/R 224.54/222.94 and WD9AKO/R 147.33/147.93.

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

Chicago Suburban Radio Assoc. (CSRA). P.O. Box 88, Lyons, IL 60534. 447-HAMS. Meets: 2nd Wed./monthly; 8 p.m., Clyde Bldg., 7222 W. Cermak, N. Riverside, IL. Net Mon. at 8 p.m., 147.225 + and 29.68 -.

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

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

Fox River Radio League. Valley National Bank, Lower Level, Northgate Shopping Cir. & RT. 31, Aurora, IL (312) 584-4925 for more info. Meets: 2nd Tue./monthly, 7:30 p.m.

Hamfesters Radio Club, W9AA. P.O. Box 42792, Chicago, IL 60642. Meets 1st Fri./monthly, 8 p.m., Crestwood Civic Center, 139th & Kostner Ave., Crestwood, IL. Nets: Sun. 8 p.m., 28410 MHz and Mon. 9 p.m., 146.43 MHz.

North Shore Radio Club. Meets: 2nd Mon./monthly. Net 8 p.m. Tue. Karger Center, 1850 Green Bay, Highland Pk., IL. WB9FRM Rptr. 147.345 + 600 (PL 1B). Info: NSRC, P.O. Box 1066, Highland Pk., IL 60035.

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

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

Six Meter Club of Chicago K9ONA. Bank of Lyons, Lower Level, 8601 West Ogden Ave., Lyons, IL. 2nd Fri./monthly, 7:30 p.m. Club Rptrs: 146.37/97, 448.30/444.30.

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

KENTUCKY

Kentucky Colonel's Amateur Radio Club, Inc. (KCARC). P.O. Box 9781, Bowling Green, KY 42102-9781. Meets 3rd Thur./monthly, Greenwood Mall mtg. place, Scottsville Rd., Bowling Green, KY. ARES Net 7 p.m. each Thur. 146.85 (-)KA4CLLJR.

MARYLAND

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

MASSACHUSETTS

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

Mt. Tom Amateur Rptr. Ass'n., Inc. P.O. Box 3494, Springfield, MA 01101-3494. Meets: 3rd Thurs. (Sept.-May), 8 p.m. Holyoke Com. College, Holyoke, MA, 220, 440 & packet. Info net Wed., 7:30 p.m. 146.94/R. Emer. net Sun., 8:45 a.m.

MICHIGAN

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

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

South Eastern Michigan A.R.C. Meets: 1st Fri./monthly, 7:30 p.m. Grosse Pointe North High School, Bldg. C. Cafeteria Commons. For info contact: AK8I (313) 372-1252. W8FWC Rptr. 146.740/146.140.

MISSOURI

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

NEVADA

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

Las Vegas Radio Amateur Club (LVARC). Meets: 2nd Tue./monthly at 7 p.m., Nevada Power Bldg. Wengert Rm., 6226 W. Sahara Ave. (Near Jones). Net Tue. 8:00 p.m. on 146.94 MHz. Info: Call Jeff at 363-9013.

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

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover NH 03820. (603) 742-0130/755-2600. 2nd Sun./monthly, 7:00 p.m. Dover Dist. Court. Talk-in 147.57.

NEW JERSEY

Bayonne Emergency Mgt. ARC (BEMARC). 16th St. & Ave. A Firehouse, Bayonne, NJ 07002. Meets: 2nd Tue./monthly, 7:30 p.m. Rptrs: 53.09/145.430/224.280/445.575 MHz.

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

Gloucester County Amateur Radio Club (GCARC). Woodbury V.F.W. 1st Wed./monthly, 8:00 p.m. Woodbury, NJ. Talk-in 147.18/78. For info call K2JF (609) 589-2318.

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

NEW YORK

Communications Club of New Rochelle, NY. Harrison Street Firehouse. Bill McCaren, K2LV, (914) 738-0768. Meets: 1st Mon./monthly, 8 p.m.

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

Hall of Science Amateur Radio Club. P.O. Box 131, Jamaica, NY 11415. HOSARC, 2nd Tue./monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park at 7:30 p.m. The tritestates' only 3-band linked rptr. system 144.300 S/223.600 - I445.225 -.

Orleans Amateur Radio Club (WA2DQL). Meets: Office of Disaster Preparedness (CD), West County House Rd., Albion, NY 14411, 4th Wed./monthly, 7:30 p.m., 147.527 - WA2DQL

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

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

Suffolk County Radio Club. 3rd Tue./monthly, 8 p.m. Bohemia Rec. Ctr., Ruzicka Wy. W2DQ/R 144.610/145.210, 223.080/224.680 rptr. Info call Jim Heacock (516) 473-7529.

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

Westchester Emergency Communications Assn. (WECA) 147.66/147.06, 222.80/224.40, 447.475/442.475. Meets: 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains, NY. Info: P.O. Box 831, N. Tarrytown, NY 10591. (914) 631-7424.

NORTH CAROLINA

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

Raleigh Amateur Radio Society, Inc. P.O. Box 17124, Raleigh, NC 27619. Clubs net nightly, 8 p.m., W4DW, 0464. Meets: 1st Wed./monthly, 7:30 p.m., YMCA. 18th Annual Hamfest, April 8, 1990.

OHIO

Amateur Radio Fellowship (ARF). Keith Melvin, KA8TKE, Sec. P.O. Box 2486, Streetsboro, OH 44241. Meets: 1st Sat./monthly, Kent Wally Waffle. KA8YKT rptr. 147.675/075.

Ashtabula County ARC. Ken Stenback, A18S (964-7316). County Justice Center, Jefferson, OH. 3rd Tue./monthly, 7:30 p.m. County Rptr., 146.715.

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

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

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

North Coast Amateur Radio Club. P.O. Box 30529, Cleveland, OH 44130. Meets 1st Thurs./monthly at the Old North Olmsted Town Hall, at Dover Center and Lorain Roads, between City Hall and the Police Station. Repeaters - (all K8SCI/R) 145.29, 224.76, & 443.15.

PENNSYLVANIA

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

Mercer County Amateur Radio Club W3LIF. P.O. Box 996, Sharon, PA 16146. Meets: 4th Tue./monthly at 7:30 p.m. at Shenango Valley Medical Center, Farrell, PA. Net, Thur. 8:45 p.m. on 147.75/15 W3LIF/R.

Warminster Amateur Radio Club. Meets: 1st Wed./monthly 8 p.m., St. John's Lutheran Church, York Rd., Hatboro, PA. Nets: WA3DFU/R info. Net Wed. 8:30, 147.09/147.69.

VIRGINIA

Southern Peninsula Amateur Radio Klub (SPARK). Meets: 1st and 3rd Tue., Salvation Army Community Bldg., Hampton, VA. Operates 146.73/13 Rptr., VEC Information (804) 898-8031.

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

WEST VIRGINIA

Jackson County Amateur Radio Club. D. Geneal Bailey, NK8P, Sec.-Treas. 113 Winters Dr., Ripley, WV 25271. First National Bank of Ripley. Meets: 1st Thur./monthly, 7:30 p.m. Net Mon. 9 p.m. on 146.67/07 W8JNUR.

Tri-state Amateur Radio Assn. Meets: 3rd Tue./monthly, 7 p.m., Green Valley Vol. Fire Dept., Norwood Rd. & 16th Street Rd., Huntington, WV. ARES net Thur. 9 p.m. on 146.76/16 W8VA/R. Info N81PK 523-5264.

WASHINGTON

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

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

WYOMING

University ARC. 146.0161 Meets: 1st Tue., 7:30 p.m. Sept.-May U.W. Physical Plant Bldg., 15th & Lewis St., P.O. Box 3625, Laramie, WY 82070. June-Aug. Bernie Club picnics Wed.

Ohio ham helped by faraway friends

Lawrence D. Strader, WA4ZWH

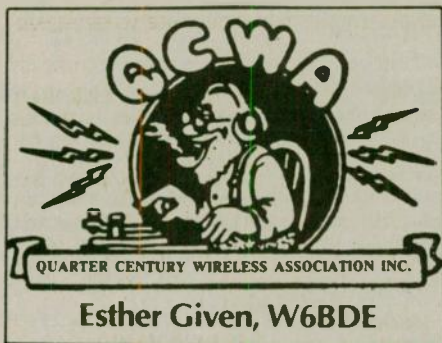
Bob Winberg of Cambridge, Ohio, retired three years ago and took up Amateur Radio operating as a hobby. He made friends via the airwaves with a number of people.

Then illness struck — Winberg survived an aneurysm near his heart, but was confined to a wheelchair. He went back on the air, but he needed a new antenna. So, it was Tennesseans John

Gwin, NI4M, Mike Hyder, N4NT, and L.D. Strader, WA4ZWH, who drove more than 600 miles to put up an antenna for Winberg.

Winberg said he was "overwhelmed that there are such fine fellows in Amateur Radio."

—Daily Jeffersonian, Cambridge, OH



QCWA welcomes two new officers and one new director, who took office Sept. 1 for two year terms:

HARRY DANNALS, W2HD, QCWA's new president, resides on Long Island, NY, with plans to move to a new home in Charlottesville, VA, soon. He is a retired senior engineer from Sperry.

Harry is second generation QCWA. His dad, W2GG/K4GG, was a charter member. He has two licensed sons, WA2FEW and WB2GZU, and a supportive YF, Kay.

W2HD has served ARRL for over 40 years in many capacities, including the presidency and as a QCWA director from 1983 to 1985.

JOHN SWAFFORD, W4HU, secretary, was first licensed in 1940. His first employment was with Northwest Airlines as an operator of both radiotelegraph and radiotelephone. He spent six and a half years as an engineer in radio broadcasting, served with the US Army Signal Engineering Agency as an engineer/communications specialist during Korea and from 1967 until retirement worked for the US State Department's Office of Communications. John's QTH boasts a computer and he is well acquainted with procedures capable of handling QCWA's data processing. He and his YF Ann reside in Arlington, VA.

PETE BACKSTROM, W3DM, is the new director elected to the QCWA Board. A resident of Murrysville, PA, and licensed since 1935, he credits Amateur Radio with leading him into a successful career as a mechanical and metallurgical engineer. He also holds several industrial patents.

In executive session at its June meeting, the QCWA Board of Directors voted unanimously to honor the organization's president, Leland

Smith, W5KL, naming him President Emeritus in recognition of his outstanding performance during his four years as president.

Leland's new status began Sept. 1 at the conclusion of his presidency. He will attend all future QCWA board meetings, serving in an advisory capacity.

The Quarter Century Wireless Association is proud to introduce the 1989 winners of its seven \$750 scholarships. The awards went to licensed Amateurs enrolled for fall 1989 sessions in institutes of higher learning.

CHRISTOPHER GALASSIE, AD9Q, Champaign, IL, is a graduate student at University of Illinois in pursuit of a PhD in Computer Science and Medicine. His QCWA sponsor was W9AJH.

REBECCA BETH KNOLL, N4JST, Staunton, VA, is a history major with a 3.91 GPA at Southern College. Her mother, dad and brother are also licensed Amateurs. QCWA sponsor, KB4OLM.

ROBERT M. POPELLA, KA3HIE, Belle Vernon, PA, plans to major in secondary education at Clarion University. A DX chaser, he also comes from an all-ham family. QCWA sponsor, W8RVU.

COLIN SMITH, KB5BSH, Ada, OK, will pursue a degree in Electrical Engineering at the University of Oklahoma. He is recipient of several civic and scholastic awards and maintains a fine academic record. QCWA sponsor, W5LJI.

DIANE WILLEMIN, KE8DJ, Cleveland Heights, OH, is continuing her graduate studies toward a doctorate in Biomedical Engineering. She also comes from an all-ham family. QCWA sponsor, W8QKO.

LAURIE SANDELL, N2FSO, Larchmont, NY, was awarded the second annual Leo Meyerson Family Living Scholarship. She has been accepted

in the Honors Program at the University of Wisconsin. Another all-ham family member, she holds an excellent academic record and has enjoyed community involvement through Amateur Radio. QCWA sponsor, NX2H.

WILLIAM H. SANDS, KA3FXX, Pennsburg, PA, received the fifth Robert S. Cresap award. He attends Carnegie-Mellon University, where he continues studies in Electrical and Computer Engineering. His activities in school, community and Amateur Radio are outstanding. QCWA sponsor, W3BUR.

QCWA is grateful to The Foundation for Amateur Radio, which has efficiently administered scholarship programs for QCWA and other Amateur Radio organizations over the years. Their service handles applications, screening, research and award designation.

This year a total of 31 awards were made under FAR Scholarship Committee's expertise, headed by QCWA member Hugh Turnbull, W3ABC.

Perry Crabill, W3HQX, secretary treasurer of QCWA's Shenandoah Valley Chapter 137, wishes to advise Worldradio readers that the chapter meets on the third Wednesday of odd numbered months, has dinner in the Winchester, VA, area and draws membership and attendance from an area 70 miles northwest of Washington, DC.

Their bi-monthly schedule includes a 5:30 social hour, dinner at 6, followed by a short business meeting and program. They generally conclude by 9 p.m.

This is just one of the 171 QCWA chapters whose activities are scheduled to accommodate QCWA members in a specific geographical area. □

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TEMPO, SANTEC - Order Model T (Simple mod). Write for spec sheet/info on other radios.

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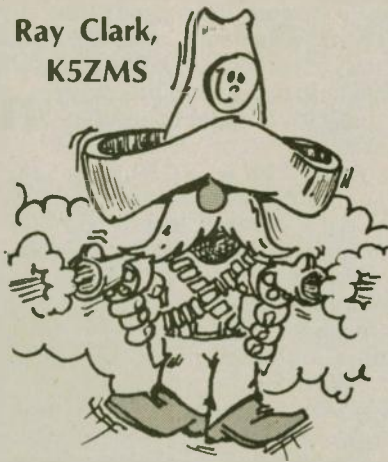
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Final thoughts on the 1989 Es season

According to Pat Dyer's, WA5IYX, records, the month of August brought Central Texas 915 minutes of Es activity — a pretty good amount. The months of May to August produced 69 days of openings and a total of 1,420 different Es events, for a total of 7,245 minutes of Es activity. That makes this year the fourth best of the '80s.

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Not bad for a year during the peak of a solar cycle when Es activity is traditionally lower!

The August average flux was 218. The smoothed flux as of February 1989, is 194. These are the highest numbers since 1982. The flux has again peaked over 300, recently hitting 305. This was the fifth time, as of this writing, that the flux has topped the 300 mark during this solar cycle. Cycle 21 had nine days and if this activity keeps going, we will far surpass that.

By the time you read this, we should be in full swing on the Fall/Winter F2 season, which should rival anything we have seen in the history of 6M.

The Jimmy Treybig, W6JKV, Fall DXpeditions

At this time Jimmy is working on firming up plans to visit the Eastern

TA4/G3SDL from Sept. 29 to Oct. 6 while he was there on a trip. I think it is another feather in our warbonnet that he was able to get Turkish permission to operate 6M! This is amazing considering that the last two times I lived in Turkey we lived in fear of having our radio equipment confiscated if we used it.

DXpeditions

JA2NQC was to operate from Eastern Caroline Island, now called the Federated States of Micronesia, as KC6MS in early September. He also planned trips to Saipan, Guam, Marshall Islands, Tuvalu (Lord Howe Island) during this trip. If you worked him QSL to Mine Sugiyama, JA2NQC, Box 5, Ninomiya, 259-01, Japan.

American Samoa was to be active on Six by Mitsumata Uto, JH1IFF, as

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Caroline Islands from Oct. 22 to Nov. 2. He believes this may be an excellent time to give the United States a good shot at this part of the Pacific.

Following that trip will be a jaunt to that western bulge of Africa that has proven to be so productive over the years. His C5 Gambia operation, the J52 operation and the EL-Liberian operation of last cycle all indicate this is an excellent area in Africa.

Although his plans are not yet firm, Jimmy is looking at the possibility of operating from EA9-Ceuta, EA8-Canary Islands or CT3-Madeira Islands. Other locations on the Western bulge of Africa might be considered. The best advice I can give you is to keep in touch with Jimmy or others on 28.885 to get the finalized details of his trips.

Turkish activity on 6M

I hope many of you got to work

N2HNQ/KH8, with KH8/JA4RED. If you worked them, QSL to: Mitsumata Uto, 681 Tatsukawa, Sanyo, Akaiwa, Okayama 709-08, Japan. QSL to: Okayama DX Club, P.O. Box 49, Okayama Central, 700-91, Japan; via the JA Buro.

If you worked 9H3EH on Six from Malta from Sept. 21 to Oct. 19, QSL to: Claus Floesser, DL2GBT, Herrenstr. 21, D-7550, Rastatt, West Germany; or via the DL Buro.

DX report

As I write this in early September, I have been receiving occasional reports of activity into Europe and Africa from areas along the Eastern seaboard of the United States. Es activity, possibly connected to F2, has brought some continued contacts into these areas by those who have been on the alert for such activity.

The same thing applies to the Western seaboard. There have been reports of continued activity into the South Pacific from California stations. Since 28.885 has been propped out much of the time, I have not been able to keep tabs on the activity.

I only have a few specific dates. On the 25th, at 0200Z, I am told that the

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VK4s were into W7HAH in Montana. KG6JDX/6 says they had a fair amount of activity into the South Pacific over the summer period.

KH6s report getting into the same area off and on also. The KH6 50.057 beacon is reported back on the air now. ZSs are reported getting into Europe again. ZS6WB and ZS6XL are both reported to have recently worked YJ8GP at 0800Z via long path.

J52US is still active on the band, not having left that country for his new assignment as of this writing. There is already a Sierra Leone station on 6M, I am told.

August 28 to 30 seems to have been a productive day, as was the 18th of that month. LUs and others in South America were reported being worked in W2, W4 and W5 land, around the Great Lakes area and into VE2 and VE3s. On the 29th the big thrill here was an opening to HP3XUH around 2200-0030Z, with most of us in this area getting a contact. It is very rare to get into Panama from here.

Also the 29th, ZS6WB worked JAs and 7X. Pat Rose, W5OZI, reports working LU8AHW, 8MBL, LU3EX, HP3XUH and OA8ABT. On the 30th he worked LU9EHF, LU8DIO and LU3EX.

Who's on six!

There will be two A22 stations on Six soon. One is R.J. van Zeeventer, A22RA, who has bought a TV-506 through SMIRK; and the other is A22BW, who is being provided a SWAN 250C through ZS6WB!

New countries on Six

It was just reported to me that ON-Belgium and LX-Luxembourg have both been given permission to operate 6M. At this rate all of Europe will be on 6M before the F2 gets started good! All ZC4-Cyprus stations also have permission to work 6M, effective Aug. 24, 1989!

New G distance record set

The June 24, 1989, contact (apparently via Es) between Ted Collins, G4UPS and Dave Strawe, from Wash-

ington has set a new G to W distance record, it seems. Congratulations to both!

Beacons

The OH1SIX beacon is said to be on 50.025. The TF6MM beacon is on 50.055 now.

Scatter shooting

Ever wonder where OA8V went? He was back in the United States for some time, but he is now in Kenya as 5Z4FO. He and his son, OA8CW, used to be very active on Six from Peru. You can find him on 21.210 or 28.410.

The Southwest Ohio DX Association will be on St. Lucia as J6DX for the CQWW CW Test. They might be on Six. They need some more operators. Contact W8OK or N9AG.

Solar cycle 22


We are about to embark on what is being predicted as possibly the biggest cycle in recorded history. If predictions come true, 6M will be the band on which to be.

The best advice I can give you is to be on 28.885 and 6M as much as you can over the next six months. Keep the 6M rig turned on and on 50.110 at all times when you are at home. Call often and use 28.885 to keep you informed as to where the band is open.

Pay as much attention as you can, for we will probably not see conditions like this again in our lifetime. Good DX to all of you!

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

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Scenes from the scene

Field Day with the Amateur Radio Fellowship... KA8YKT photos



Here we have Huey Maughan, KA8YKT, working 40M phone while the XYL Debbie Ancher, KA8TK8, comes along for the ride.




Garry Delugach, KD8JM, probably caught some of you on 75M phone.

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10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

Illegal operation on 10M — an update

Last August and again in last month's column I discussed the illegal operation that was occurring on 10M in the New York City area by some for-hire vehicle drivers. Last month I requested that those reading this column send a letter to the FCC and a copy to their senator. I also suggested that you drop me a QSL card with the notation "I sent my letters."

Due to the copy deadline for this issue, the October issue is just reaching you at the time of this writing, so it is impossible for me to report how many of you actually took the time to write the letters. I hope that at least a few of you felt the need to follow through on this important problem.

As a result of my letter to Mr. Dick Smith, Chief, Field Operations Bureau, FCC, I received the following letter, and I quote:

"Dear Mr. Imsande:

The FCC shares your concern about illegal radio transmissions among taxi cab and for-hire vehicle drivers in New York City. The New York office has

received approximately 500 complaints alleging illegal radio operation by area for-hire operators. In response to these complaints that office initiated a cooperative project with the City of New York Taxi and Limousine Commission to reduce illegal operations on the airways. Staff conducted remote and on-site monitoring to locate and shut down illegal operations.

On-site investigations and inspections have also been conducted at John F. Kennedy and LaGuardia Airports. A recent effort with Yellow Medallion Taxi Company resulted in the shut-down of 15 illegal stations. The New York staff will continue an ongoing program to reduce the number of illegal operators in the for-hire service.

Any specific information that you may have about the identity of illegal operators should be forwarded to our office: Federal Communications Commission, 201 Varick St., New York, NY 10014-4870; 212/620-3437.

Thank you for contacting me about this matter."

Should any additional information become available on this subject, I will pass it along in future columns.

10-10 Scholarship winners

The Foundation for Amateur Radio has announced the 10-10 International Net Scholarship Winners. They are Patrick W. Jungwirth, WG6L, of Visalia, CA; and Lesley D. Walker, N4FTJ, of Cullman, AL. Each of the 10-10 Scholarship Winners have received a check in the amount of \$750.

Patrick will be a senior studying electronic engineering at California Polytechnic State University at San Luis Obispo. His academic record is excellent, with a good cross-section of school and community involvement. He was recommended by Sheridan Harris, WA6IOO, 10-10 #3696.

Lesley, an excellent student, has been accepted at the University of Alabama in Huntsville, where he plans to study electrical engineering. His

mother and father are both licensed hams and operate a poultry farm. His sponsor was Herman Gardner, N4TUN, 10-10 #49922.

The FAR is a non-profit organization that administers 31 Amateur Radio scholarships from 19 different organizations. An item of particular interest to 10-10 members is that about one half of all applications considered by the FAR had 10-10 sponsors. This compares to about one third last year.

The 10-10 coordinator for the 10-10 Scholarship Award is Director Morie Goldman, W6EHM, 10-10 #4189. 10-10 will again participate in the scholarship program next year and has again established two \$750 scholarships.

If you would like to contribute to this worthy program, your donation would be greatly appreciated by both 10-10 and the deserving scholar that receives one of the awards in August 1990. Please send your donation direct to Treasurer Gerry Gross, WA6POZ, 10-10 #21274, 1624 N. Dorothy Dr., Brea, CA 92621. Please make your check out to 10-10 International Net Scholarship Program. Mail your check now while it is fresh in your mind.

Nominating Committee chairman

At the recent 10-10 convention, the Board of Directors appointed Tom Henderson, K4CIH, 10-10 #33233, as chairman of the Nominating Committee for the selection of officers for the upcoming election. This election will be the first under the new bylaws enacted last year and provides for each paid-up member to vote.

Last call for Rosters

This may be the last call for the 1988 10-10 Membership Roster, as the supply is dwindling. Only a limited number were printed and when these are gone there will be no more until the Board of Directors approve another issue.

Send your check for \$7.50 to Roster Manager, Dee Gilbert, KA6HQJ, 10-10 #30631, 515 E. 2nd St., Rialto, CA 92376.

New Zero District manager

Due to the illness of Alice Hathaway, N0DES, 10-10 #34978, it has been necessary to appoint a new manager for the "0" District. President Norm Lefcourt, W6IRT, has announced that Judy Long, WD0DHH, 10-10 #28254, will take over the Zero District Manager's position immediately. All members with a "0" in their call should send their dues renewals to Judy at 2681 Aster St., Pueblo, CO 81005.

The latest word, as I write this, about Alice is that she is much improved. □

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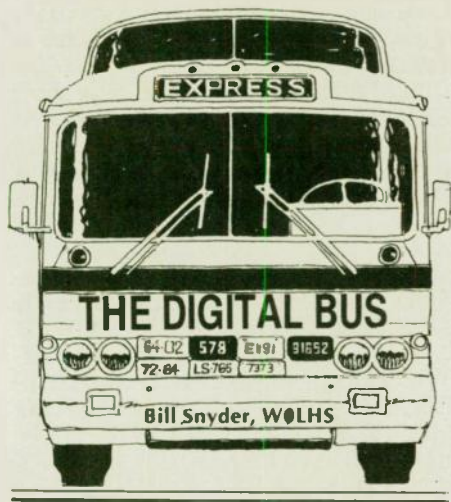
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The longer I run a small-time packet mailbox BBS for the Amateurs in my area, the more I wonder whether or not the system is any good as a traffic handling mode. One day I think it's the greatest, the next day I wonder if it's worth the effort. Here are a few of my thoughts. . .

Why do I think it is the greatest? Well, Bob Lawrence, W7VFR, and I have been swapping messages two to five times a week for well over a year. He lives in Pasco, WA, at the end of a 2M link with the Seattle area. I have received messages from Bob that have taken only three hours to make the trip. The timings of the five or six forwarding stations are such that some of them sail right through like the old days of the Western Union Telegraph.

Here is the routing of the message I received from Bob today. I would say this is typical — neither the fastest nor the slowest. Bob put it in the 2M mailbox of N7HHU in Yakima, WA, about 100 miles away from Bob's home in Pasco, at 1556Z time. It then went to N7HFZ in North Bend, WA, at 1708Z. A few minutes later, at 1725, it moved to the Skipnet HF station, WB7DCH in Enumclaw, WA, where it was transferred from 2M to 20M and shipped off at 1755 to W9ZRX, located in Westfield, IN.

Not bad up to this point. Only two hours so far.

The message didn't remain long in Indiana, for 41 minutes later it was in the mailbox of Bill Bowman, VE4BBS, in Selkirk, Manitoba, where it started

the 250 mile junket via digipeaters to me.

The path from Bill's station can take a number of different routes. If propagation is good on 2M, it hops from digipeater to digi through Pembina, Grafton, and Mayville, ND, then to Barnsville, MN, and finally to me.

As an alternate path many messages stop in Harold Hanson's, KD0EM, mailbox in Devils Lake, ND, which is also in the line of fire from Manitoba to me. In this case Bob's message went via KD0EM and so it wound up in my house at 2314Z. A typical message from my old friend in Pasco.

I visited Bob's shack over a year ago and started him on packet — he'd been a good old RTTY fan for many years, so the transformation was an easy one. Since that time we have kept up an almost daily chatter by packet message.

Bob and I went to high school together, became hams about the same time and have enjoyed each others ragchewing for many years. Packet has been a great thing for our friendship.

So much for the good stuff about the packet network. As far as Bob and I go, it couldn't work better. The BBS stations that forward our stuff have been very cooperative and we owe them our thanks for their efforts to keep the link going "just for us," you might say.

Now what's wrong with packet like that? Nothing. It's great, but all packet traffic ain't like that, and that's where my beef starts.

Over a year ago I asked readers of this column to "send me a message to test the system." Many did and I answered everyone I received (except for a few that were wiped out in a computer crash). Messages came from all corners of the United States, even the Philippines.

But lo, it was not like the traffic between Bob's keyboard and my computer. Some of them spent as long as 31 days bouncing around the system like hobos without a home. One message started in Texas, toured Louisiana, Kentucky, Florida, West Virginia and Iowa and then found a good path to me. Most of the time it was just wandering around aimlessly. So I tagged it, and many like it, a "wandering packet message."


I thought when I first asked for a

test message that the zip code system was going to be the address system of the packet clan. But no, we wound up with a hierarchical system that will work worldwide. However clever it is, it intimidates the average packet operator to the point that he never tries the US system, let alone the "worldwide" one. I know. Of the 100 hams who use my BBS, only a handful have ever sent a message to another ham outside of the state of North Dakota. And everyone who did has had to be tutored in order to make it work. The system as it stands is too complicated and it's getting worse.

More and more flaws are showing up. It used to be that "W0RLI @ W0RLI.CA.USA.NA" would reach Hank, the author of the software we are using to run our system. The CA means California, the USA our country and the NA North America.

But California is a big state with lots of mailboxes, so the Californians added another step. It split the state into chunks and put area designators like #NOCAL or #SOCAL in between the call sign and the state abbreviation (Hank now lives in Oregon, I just used his call as an example). Florida and Missouri have the same #THING going also.


Come now, gang, do we need to complicate an already complicated thing? Isn't it time to toss it out and install zip coding? Re-do the software so the zip code is put in place of the present #NOCAL, #NOFLA and #SWMO designators and keep the rest like it is: W0LHS @ W0LHS.58103.ND (.USA.NA would be optional to keep it compatible with the foreign address-

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

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ing system. NTS traffic could be addressed NTSND @ 58103.ND, plus optional country and continent code). Remember the *Call Book Magazine* has a zip code for every US licensee. Ain't hard to find either.

What little I see of NTS traffic seems to work, but the NTS, to my way of thinking, put the cart before the horse. The NTS method is to address a message 58103 @ NTSND. I used to get non-NTS traffic addressed: W0LHS @ 58103, that's all. It worked fine. So turn it all around — make it simple.

North Dakota is divided into eight zip code (three digits) areas. My BBS covers 581, KD0EM's 583, N0CKB's 587, etc. Simple as can be. A message addressed to 58301 goes to KD0EM because our forwarding tables are all set to do just that. No looking up call signs of a BBS in BBS files, etc., merely address it to the zip.

I once sent a blind message to a zip in California and got an answer back in less than five days.

One mile from my shack is Minnesota, with a different zip code area. No sweat for me. I can reach the 565 zip area and pass traffic to a number of stations who take NTS traffic for delivery. But I can't forward into other Minnesota stations because the path to the

east is very poor. So now I send all Minnesota traffic to Canada and it eventually gets to Minneapolis, which covers the major part of the state.

I have no way of separating nearby Minnesota local traffic from the rest of the state if it is addressed to just MN. I can do it easily with zip codes.

When I thought zips were going to be the system, I got a lot of static from California BBS SYSOPS, so I gave up and accepted the present system. And so it goes, the system gets worse, the average ham is afraid to use it and the "wandering message" is the norm rather than the exception.

I would like to see the ARRL sponsor a "Packet Party Weekend" to really test the system. Have every packet ham send one, two or up to a dozen messages to hams AT LEAST TWO STATES away from their own borders. I'll bet the thing would be chaos of the first order.

The system would gridlock in the first hour. It would take days for the whole thing to untangle. And I'll bet there would be less than 50 percent delivery when the total thing was finally unsnarled.

It certainly would be fun to try. My hard disk can hold about 10 more megabytes of traffic, so I'm ready.

I'm afraid the ARRL would never attempt anything of that nature — it's hard to get a committee to take a chance like that.

EAVESDROPPINGS

"AROUND HERE THE FISH ARE BLUE, NOT RED, AND THEY HAVE BIG, BIG TEETH. . . I CAN'T COPY YOU — YOU'RE BURIED IN THE WOODPECKERS NEST. . . I HAVE A TIP-OVER TOWER THAT QUIT TIPPING. . . GOOD LUCK FROM LUXEMBURG. . . I DON'T THINK IT'S YOUR PROBLEM THAT I CAN'T COPY YOUR RTTY SIGNALS. . . THE PROPAGATION IS GOOD FOR PROPAGANDA TODAY. . . I HAVE REDUCED POWER

TO 50 WATTS AS THERE IS NO USE IN MAKING MORE NOISE THAN NECESSARY. . . SORRY I AM A BEGINNER IN RTTY SO ONLY MAKE RUBBER STAMP QSO. . . LEON IS NOT VERY ENTHUSIASTIC ABOUT THE NET BUT HE RUNS IT. . . ONE MAN'S BELL IS ANOTHER MAN'S WHISTLE. . . YOUR RTTY SOUNDS SLOW BUT IT WORKS OKAY. . . MY AGC IS TOO QUICK FOR AMTOR OR SOMETHING — MAYBE IT'S THE OTHER WAY AROUND. . . I HAD SO MUCH FUN ON AMTOR THAT I COULD HAVE CHIRPED ALL NIGHT. . . THERE ARE SO MANY DIGITS ON THIS NEW RIG'S DIAL READOUT I DON'T KNOW EXACTLY WHERE I AM. . . I GOT A DISEASE CALLED MS-DOSE HERE. . . MY QSL WOULD LIKE TO EXCHANGE DIRECTLY WITH YOURS. . . RTTY IS MY GREAT LOVE, GUESS WHAT IS NEXT. . . QSB IS THE GREAT OUT FOR POOR COPY. . . EVER NOTICE HOW MANY SIDEBANDERS SAY 'BY GOLLY' AS MANY TIMES AS THEY SAY 'YOU KNOW?'. . . I DROVE OVER A HILL AND NEARLY HIT A BLIND MAN WITH A SEEING EYE RACCOON. . . BAUDS AWEIGH TO YOU, MATE. . . THE OIL BUST COST OUR COMPANY THE CESSNA CITATION AND THE LEAR JETS. . . I AM THE SECOND OPERATOR AT THIS STATION — THE ROBOT. MY MASTER OFFERS YOU HIS APOLOGY FOR NOT ATTENDING TO YOU PERSONALLY."

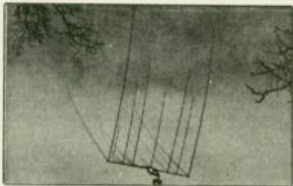
Thanks to W0HAH, W7VFR, WQ0J and a bunch of others for the input to the column. Write me: Bill Snyder, W0LHS, 1514 S. 12th St., Fargo, ND 58103; or packet me W0LHS @ W0LHS.ND.USA.NA.DITDIT. □

Call for papers

With the publication of the first issue of *The AMSAT Journal*, Editor Joe Kasser, G3ZCZ/W3, is asking for papers and articles for use in the second issue.

Joe is looking for papers dealing with all aspects of OSCAR satellite operation. Please submit your articles to: AMSAT NA Headquarters, P.O. Box 27, Washington, DC 20044, Attention: Joe Kasser. — *The ARRL Letter* □

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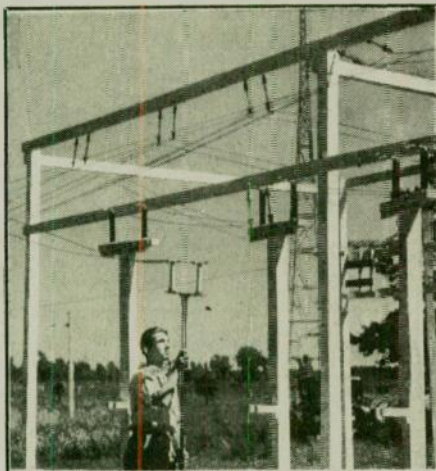
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AERIALS

KURT N. STERBA

Aww, gee. I was reading a book (which I shall not name, so no one will say I'm "picking on them") about antennas and it had some bum dope in it.

In talking about high SWR, it said that there would be "considerable power loss" and called a condition where a 70 ohm feedline met a 25 ohm antenna a "considerable mismatch."

This is not really so. I shall explain. In order for the loss to equal that of the loss already in the feedline, you would have to have a SWR of 4 to 1.

What that means is: Let's say you have 100 ft. of RG-8/U foam at 14 MHz. The loss in the line is about half a dB. With a 4 to 1 SWR you now add an additional half dB. Half a dB! You can't hear a half dB difference!

There is a chart in the real books that shows exactly what the additional loss (for each type of feedline) is under various SWRs. One has to get to some pretty ridiculous extremes before anything of any consequence occurs.

For example: If your feedline has .5dB loss normally, with a SWR of 10 to 1, the total line loss will be 2dB. Remember, it takes 3dB to equal half a "S" unit.

We're assuming, of course, that you have a tuner capable of matching 10 to 1, which is the beauty of open-wire

line...being essentially lossless, at grotesque multiples times lossness, still comes to next to nothing.

Let's take a SWR of 20 to 1. Would you believe you have a TOTAL loss of about 1 whole dB? Believe it.

What this is all leading to is: You can pretty well put up anything and it won't be that far "down" from optimum.

For example: You don't have room for an 80M antenna. OK, use your 40M antenna. The radiation efficiency would be about 70 percent of the full size 80M dipole. Match the impedance and you are on the air and talking to people.

Now, some lengths of open-wire can act strangely. I put up a full size inverted V for 80. It fired up just great on 80, 40, 15 and 10, but even with the tuner it acted strange on 20. I added about eight feet of line and it worked just fine.

Speaking of taming the beast, should your quarterwave vertical act a little strange, add a radial that is three-quarter wavelengths long and that will tame it.

There is an area of highly effective antennas that is practically never mentioned. I was going to get into it this time, but I see that the October 73 magazine made mention, so I refer you to their page 72 for the diagram.

It is the vertical Yagi! Yes, it works just fine. It is used in commercial applications with great results, but has just never caught on in Amateur circles.

It is ground-mounted with a driven element, director and reflector. Visualize the normal quarterwave vertical. The center conductor goes to the antenna, but now, from the shield goes one wire to the quarterwave director and another wire to the quarterwave reflector. These radials take the place of the boom in the regular Yagi.

Yes, you can forget about the other half of the elements and make up for

them with the normal radials common to verticals.

The 73 article says make the reflector five percent longer than the driven element and the director five percent shorter. It also says space the elements .15 of a wavelength from each other. Well, I'd suggest that it be .2 from driven element to reflector and .1 from driven element to director. Run a tuner on the feedline.

This offers great potential for those who must hide away their radiators.

The elements, for a 10M beam could be hung from the rafters of your garage. Want to be on 15? Just bend the extra lengths horizontal. Want to be on 20? Go up eight feet and lay the other eight feet on the garage roof. Since this is truly a vertical, grounding to the water faucet would help.

Another version could be supported between two trees. The gain would be nearly a "S" unit in the favored direction with nice rejection of unwanted received signals off the back and side.

Next month we'll have a couple of letters from readers as to what worked for them. Actually, we'd like to see more input from you experimenters.

(The secret Kurt N. Sterba is really your friend. Unlike the big and famous manufacturer, he will never tell you that a 17 ft. antenna is a halfwave on 20.) □

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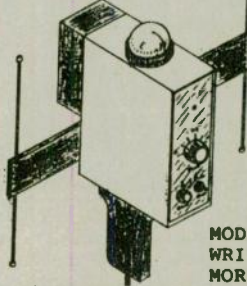


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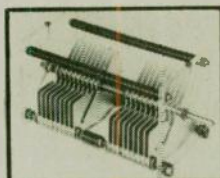


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BOB HANSON MAY WELL HAVE HAD 200,000 FRIENDS. NOW HE NEEDS THEM ALL . . .

The world of communications has lost a great friend and devoted public servant. On Wednesday, May 8, 1989 Bob Hanson, W9AIF, passed away on the operating table during a delicate and enormously costly liver transplant operation.

Bob will be mourned by literally hundreds of thousands of individuals whose lives he touched throughout the world as a noted columnist . . . public service association executive (SCAN, REACT, Community Watch) . . . communications industry advertising and marketing manager . . . and active radio amateur.

But mourning alone cannot pay adequate tribute to Bob's total dedication to serving others—including his wife of 23 years, Marilyn, and two teenage sons, Peter and Andrew.



Since liver transplants are regarded by some as “experimental surgery,” not one dime of the expense—estimated in excess of \$200,000—was covered by insurance. We simply cannot allow Bob's wonderful family to live with that impossible burden.



Your help is desperately needed. Immediately Please, please send your contribution today Make checks payable to: **Organ Transplant Fund Inc./Robert Hanson** a legally constituted non-profit organization. Any funds collected in excess of those required to pay actual medical expenses will be used to relieve similar transplant victims.

**The Robert Hanson Fund.
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"NEW" antenna

(continued from page 22)

the ionosphere and shower back to Earth out to a distance of about 250 miles.

"It's like taking a garden hose and shooting it at the ceiling," Lieutenant Colonel Doug Black, the battalion commander, said. "The water falls in a big circle, down into every gully and hole."

The technique is known as near vertical incidence skywave, or NVIS. The battalion got serious about it last year when Major General Gene Deegan asked the unit to come up with a better way to communicate on the move. The unit's existing NVIS antennas could only be used from stationary positions.

The task of coming up with a mobile NVIS antenna fell to Staff Sergeant Donald Campe and Sergeant Louis De La Cruz. Borrowing from a book of antennas used by hams, they decided on a loop antenna; the trick was devising a way to mount it to work from the top of a moving vehicle.

"We made one out of tent poles to support the antenna wire and duct tape to hold it all together," Campe said.

De La Cruz suggested using polyvinyl chloride (PVC) pipe to make the antenna sturdier. The result is a contraption that looks like a king size bed frame mounted on top of the unit's standard radio truck. Metal engineer stakes mounted at four corners hold up the rectangular shaped assembly of PVC pipe. One ft. lengths of PVC pipe stick down from the horizontal frame; they support a wire antenna looped

three times around the frame's perimeter.

Total time to design and build: Two days. Total cost of materials: \$125.

Four of these vehicles were taken to the Marines' vast desert training area at 29 Palms, CA, for evaluation. They were also taken to Sequoia National Forest, which has both heavy vegetation and deep canyons. The results were outstanding.

The NVIS antennas apparently not only overcome the vagaries of terrain and the skip zone, but also offer other advantages.

For example, they need less power and are less susceptible to location by enemy direction finders, which locate radios similar to the way a compass needle points to magnetic north.

NVIS antennas are hard to locate, Black said, "because the signal has equal strength in all directions."

Nevertheless, these antennas are not a cure-all. Operators must be careful about the frequencies they use because radio waves in the higher frequencies go right through the ionosphere and off into deep space. And signal fading occurs if the antenna vehicle isn't on level ground.

Despite these limitations, the technology has its enthusiasts in the Army too. Lt. Col. David Fiedler, a communications expert with the New Jersey National Guard, is an ardent proponent. Installations statewide now communicate with \$31 NVIS antennas, and Fiedler has equipped the Guard's Chevrolet vans with mobile antennas.

Fiedler is something of a fanatic about the ultimate goal. "We must

banish forever the term skip zone," he said. "We created it and we can eliminate it." —Information submitted by Dick Rubens, KE9BI □

OLD COAX CABLE: Have you priced copper braid used for grounding recently? You'll find it runs from 30 to 75¢ per foot, depending on width. For goodness sake, don't ever throw away any old coax cable before first stripping off the copper braid for future use. Again, this will save you some money. —Bob Lasater, KA9-SEO; Sterling-Rock Falls ARS, IL

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Source: Computer theory courses

Computer disks are now available to let your students practice their theory examinations. Some disks merely give you all the questions and answers and others are smart enough to generate sample exams, re-do missed questions and then give you, the instructor, a graphic display of your students' progress.

But before we tell you about where to get the disks at an instructor's rate, let's look at the "rollover" dates from old questions to new: Novice/Technician: Nov. 1, 1989; General/Advanced: Nov. 1, 1990; and Extra: Nov. 1, 1991.

Before buying any disks make sure you are using a current question pool that coincides with the ultimate written examination date.

Students who enjoy working with computers will especially like studying for their written exams on computer disks. There is one disk for each examination element. Most disks run

about \$30 each retail and some disk manufacturers, as well as their dealers, will offer a discount for quantity purchases for instructors.

One way to use the computer program is in the classroom. If you teach at a facility that has many on-line computers, your students can try their hand at practicing for the exam. At DeVry Institute in Chicago, well-known instructor Jim Georges uses their computer system almost entirely for exam preparation.

As an instructor you might also sell these disks to your students and make a few dollars between your selling cost and the suggested retail. There is absolutely nothing wrong with making a little money selling training materials. After all, you need to recoup some of those expenses involved in your volunteer teaching efforts.

• The Lanz Company, Louisville, KY; 502/895-1377. Bob Lanz, N4ISL, goes to many hamfests and sets up an attractive display of this theory computer disks. All his study programs include FCC authorized questions and answers, schematic symbols, diagrams and formulas, plus a little code practice.

Each of his programs are available for \$14.95 retail. Bob indicates that he will work closely with any instructor ordering programs in quantity. All Lanz programs require IBM PC-AT-XT or compatible MS DOS minimum 256 memory, single-disk drive — mono, CGA, EGA video supported.

This program is also available on 3.5 inch disks for an additional \$2. Documentation is also included on the disk to install on a hard drive.

Lanz also has the same programs for Commodore 64/128 with compatible drive and monitor.

And for those students who might not have a computer but do possess a video player, he offers the same program on VCR-VHS. No audio, simply the questions and answers with enough time for the students to read over the question and try to pick the right answer. Video prices are approximately \$20.

Instructors who order multiple quantities of these programs could receive a discount up to 50 percent. However, this needs to be negotiated ahead of time.

• Diamond Systems, Niles, IL; 312/763-1722. This is one of the first companies to offer theory study programs for the computer.

With Diamond System disks your students can study the individual sub-elements, generate a complete question test from the nine sub-elements, or study from the entire test question pool data base. The Diamond System disks are designed for IBM type computers.

The software license preparation and self-study materials contain the complete FCC data base for all sub-elements for obtaining the various ham radio licenses. The prices, per disk, are about \$45 to \$60 and also include code practice. Instructors may be eligible for discounts for quantity purchases.

• MFJ/QSO Tutor (QSO Tutor, Kennett Square, PA; 215/347-2109; MFJ, Mississippi State, MS; 601/323-5869). This is the most advanced program I have tried, and at \$29.95 retail per each disk, it's the best value. Each license examination disk runs on IBM personal computers and compatibles, with minimum 256K RAM and graphics capability. The disk contains the entire question pool for each license class.

You can work with the entire pool of questions, selected areas or automatic selection of questions in your weak

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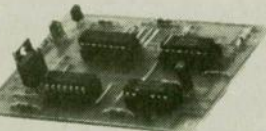
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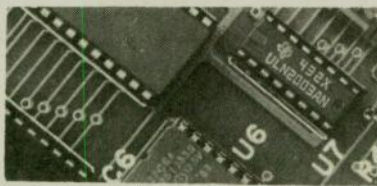


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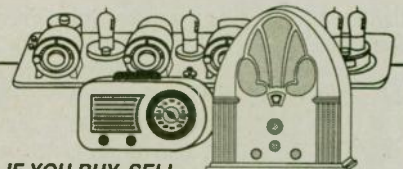
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areas. In other words, if your students miss a few questions, those questions may automatically be repeated.

Graphics galore come with this program — including full-screen graphics and even explanations on appropriate questions and a pop-up calculator. The explanations are a relatively new twist when it comes to disk programs. They will allow your students to more easily solve the more technical problems.

Best of all, the MFJ and QSO Tutor graphics are extraordinary. You can change the colors with the utility

menu. All diagrams and figures are included for color graphics and one key switches you between the question and diagram on the left. After your students have studied the picture, you can switch it back and answer the question.

There is even a detailed score bar graph screen that you may bring up during a study session or at the end. It will give your students a graphic display of their score in each exam category. This program is certainly the most sophisticated and should be your

first consideration. An instructor discount program is being negotiated now through local participating dealers.

Watch out: Novice and Technician class question pools change Nov. 1. To my knowledge, no disk programs currently reflect the new questions and answers. If you are teaching a class after that date, make sure you have the newly revised Novice and Technician questions and answers.

Learning and teaching theory on the computer is fun. These companies are your best source for educational disks.

Who's Who

(continued from page 34)

and hopes they'll join together in their good work.

Locally, the several school ham clubs QSO on 28,520 MHz at 2000 to 2200 UTC on Monday, Wednesday and Friday and monitor 21,310 and 14,320 at those hours. Although this is not limited to problem kids by any means, several have overcome great handicaps when learning ham radio gave them prestige and respect. One, a child of alcoholics, was invited to teach at a school from which he was earlier kicked out.

"One of our triumphs is Todd Meyer,

KB6VOQ, awarded \$5,000 by the Hitachi Foundation as an outstanding young leader," Mary said. "He formerly had a reading block but his wonderful family and teachers encouraged him to study ham radio."

"Also 10 years ago a minority girl in the 5th grade, inspired by radio, told me she wanted to become an electrical engineer and now is well on her way."

The State Legislature is carefully watching the work of the Redwood Youth Foundation and its successes.

A teleconference on Hiroshima Day networked 22 countries. The Founda-

tion is sending a transceiver to the high school in Sister City Alushta, USSR, so they can meet on 40M.

Passionately convinced that we must give youngsters a belief in themselves, Mary shudders at TV being used as a baby-sitter "with its kiss-kiss-bang-bang" fare. She hopes many other Amateur Radio operators will want to try their own ways to teach junior high and high school students the joy of ham radio.

(Redwood Youth Foundation, 2355 Brommer St., #23, Santa Cruz, CA 95062 — 408/462-0300) □

QRP

(continued from page 38)

confirmed on QRP using a homebrew version of the Heathkit HW-8 (he calls it the HMW-8).

Well, that's it in brief. Now you know a bit more about the Czechoslovakian Amateur Radio operator. Next time you work an OK ham try "AHOJ" (hello in Czech) for an ice breaker. CU, QRP, 73 es AHOJ de Petr, OK1CZ.

I'd like to thank Petr for taking the time out of his very busy schedule to write this guest editorial for my column. QRP operation in Czechoslovakia differs quite a bit from that in the States.

I hope you enjoyed this little journey across the pond. In the future I will present the UK view of QRP in a guest editorial by G3VTT. 73s es Gud DX. Rich K7YHA. □

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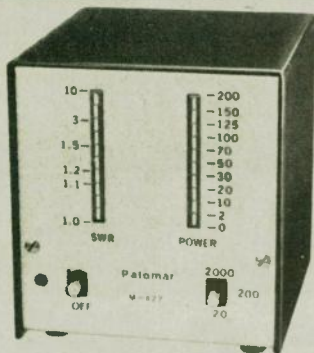


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Product Review

MFJ Versa Tuner V

STEVE HALL, WM6P

The opportunity presented itself for me to visit the MFJ booth at the Dayton Hamvention this year. I was very impressed by the wide variety of innovative products offered by MFJ.

Available was everything from computer graphics over packet radio; to a digital multi-mode controller with built-in CW memory keyer; to the widest range of tuners, from HF to VHF, offered by the industry.

The subject of this review is the MFJ top-of-the-line 3KW MFJ-989C antenna tuner. Rather than repeating all the specs that can be found in the catalog, I will discuss my impressions of the operation and the features that I found of interest. These are my findings of the first two weeks of use in my station.

Many extra features made this tuner's use a pleasure. The ones of particular interest follow.

Cross-needle SWR/Wattmeter

This arrangement allowed easy tune-up, as no calibration or meter switching was required to measure SWR, forward or reverse power. Both high and low power level positions are available. A meter light is included, requiring 12VDC if this function is desired.

Both peak and average power positions can be selected. I found that the readings of both SWR and power agreed closely with readings taken on a Bird Model 43 wattmeter.

Built-in dummy load

In the past the addition of a dummy load required external antenna switching, cabling and one more item to position in the shack. As a built-in unit several external items are eliminated. Due to the power dissipation limitations of the resistive element used, only



exciter tune up can be made on this load, but this is all that is required in most cases.

Antenna switch

Most top-of-the-line tuners include front panel antenna selection of a balanced and several unbalanced antennas, but this unit also allows two coax fed antennas to be selected, either to be tuned by the unit or bypassed directly to the transmitter. This advantage may not be immediately obvious but has proven to be useful when complete flexibility is needed. I have not seen this feature on other tuners.

Roller inductor

Frequently the difficulty in achieving a seemingly perfect match in non-roller units is due to the coarseness of inductance switching. With a roller an infinite number of settings are available within the limitations of the coil size. This can really speed up tuning.

In conjunction with the roller is a three digit turns counter which allowed me to quickly find inductor positions used in the past. The variable capacitor front panel positions are also marked.

Operation

For many years HF antenna tuner design and construction has been an area of interest to me and I have built and used a variety of types. These have included "T," Pi, auto, SPC and link coupled, homebrew, commercial and military. Each have some advantages and definite drawbacks. This unit uses a popular "T" design with many advantages that proved itself very versatile under a variety of antenna matching requirements.

Most any commercial tuner will easily match transmitter and antenna if the antenna has an impedance near

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that of the feedline and transmitter output. An example would be a coax fed halfwave dipole that needs the help of a tuner to provide a good match over an entire band, such as 3.0 to 4.0 MHz. This is a fairly simple task for any tuner. The real test is to demand a good match over a number of bands where a wide variety of impedances will be encountered.

To test this capability I chose a 66 ft. dipole, center fed with 450 ohm open line. This feed was connected to the balanced terminal of the unit and an attempt was made to match to all bands, 160 to 10M, including the 18 and 24 MHz bands. I have used this antenna to test many tuners with few able to provide a match to several bands. This test demands a wide impedance matching range considering the impedances one would expect, from less than 50 to well over several thousand ohms.

In each case tune up was accomplished quickly without any evidence of flashover or inductor heating. The procedure used was to center the transmitter and antenna capacitors at mid-range and peak receiver noise with the roller inductor. This always put the inductor within one or two turns of the final inductor position used. At this point, power was applied and again SWR dip was found with the inductor. A small adjustment of the two capacitors completed the match and in most cases no reflected power was measurable.

Once notes are taken on approximate control settings for future use, tuning takes little time at all.

Due to the resonance of the antenna on 40M, tune-up on this band offered little challenge, as matching was immediately accomplished. Band width between 2 to 1 SWR points was 250 kHz allowing use of nearly the entire band with only one tune-up.

Ten meters, sometimes a difficult match with non-resonant antennas, can present a problem, but not in this

case, as one tune-up provided over 300 kHz of bandwidth.

As expected, the use of this relatively short antenna on 160M was the most difficult test attempted. If a tuner fails on this band it is normally due to the lack of sufficient inductance or capacitance. Fortunately the coil had turns to spare and a good match was achieved.

To assure myself of the efficiency of the match, several contacts were made with good reports. I was pleased considering the compromise of using a 7 MHz antenna on 1.9 MHz.

If a design improvement was to be made, I would allow slightly more room between tuning capacitor knobs and the antenna selection switch, as there was marginally enough room for fingers.

Construction

Some of the early production units had a less than stellar paint job. To improve the quality of both painting and metal work, MFJ has invested in additional manufacturing equipment in their Mississippi factory.

I was not aware until I spoke to the president of MFJ, Martin Jue, K5FLU, that most of the MFJ products, including all of the tuners and keyers, are manufactured in the United States. Additionally, major components have been upgraded in the pro-

duction of the model 989C to improve the unit.

The only units I have had the opportunity to closely inspect, available from other manufacturers and with significantly higher quality components, are priced about twice the cost of this unit. I question the need for the extra expense for Amateur Radio applications.

One item worth mentioning is the inclusion of an unconditional guarantee, with a statement by MFJ that user repair of faculty units would not invalidate the warranty. I thought that was a refreshing attitude for the manufacturer considering the nature of Amateur Radio operators as do-it-yourselfers.

Final comments

The ease of use of this tuner makes it a winner. This has not been the case with other units from larger major manufacturers where matches could not be achieved and components were not sufficient for advertised power levels. This model offered a good balance of performance, features and price. There was not a single item of design or operation that made me regret my selection of this unit.

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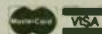
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One of the titles is somewhat unusual — *The Hamfest Book*. It lists names, dates and sizes of the hundreds of hamfests, conventions, etc.

held each year. If you're scheduling an Amateur Radio activity, you'll need this book to check for a clear time slot.

Other titles available are: *Introduction to Packet Radio*, *Packet Command Handbook*, *Advanced Packet*, *RS-232 as Related to Packet*, *Beginning Packet*. . . *An Operator's Guide*, *Glossary of Packet Terms and Communication Codes Handbook*.

The retail price for each book in the United States is \$2.95, plus \$1 for shipping and handling. To order contact your Kantronics dealer or the factory at Kantronics Inc., 1202 E. 23rd St., Lawrence, KS 66046; 913/842-7745. □

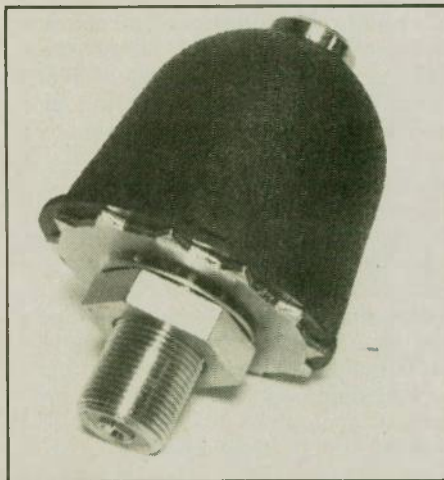
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For information contact Valor Enterprises Inc., 185 W. Hamilton St., West Milton, OH 45383; 513/698-4194. □

Book for newly licensed amateurs

Almost half of all people who obtain a Novice Amateur Radio license never actually get on the air. Many new hams are in awe of the complexity of the various modes of operation and are unsure of their ability to adhere to all the rules. Add to that the practical problems of assembling equipment, setting up a ham shack and installing antennas and it's not surprising that so many newly licensed hams never get on the bands. *Talk To The World: Getting Started In Amateur Radio*, a book by James P. Dux, K3JD, and Morton Keyser, N3MK, is designed to help beginners get started and stay involved in this fascinating hobby.

In addition to providing information and practical tips on obtaining a Novice license, the authors take the mystery out of the technical and procedural aspects of ham radio. Emphasizing what is practical, low-cost and effective, they describe in comprehensible language how to obtain and set up equipment, organize a ham shack, put up antennas and understand the special jargon and operating protocols on the various bands and modes. They also discuss specific "no-no's" and provide handy tips for improving Morse code speed and moving up to higher level licenses. A glossary of common ham terms and phrases is included.

With the recent changes in FCC rules for entry-level hams, more people are getting involved in Amateur Radio. This practical guide is sure to help a higher percentage of them get on the air.

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About the authors: James Dux earned his first license in 1959 and Morton Keyser in 1934. Both hold the Extra licenses and are members of the American Radio Relay League. □

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Share more than just conversation with AEA's new FSTV-430 Fast-Scan TV Transceiver. Personalize Amateur Radio communications by sending a live color transmission of yourself, your ham shack or your family that rivals broadcast quality.

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If you own a video camera, you can quickly and inexpensively set up your ATV station with the addition of the FSTV-430 transceiver and a 430 MHz antenna such as AEA's 430-16. The only license required is a Technician or higher.

The FSTV-430 is currently available through AEA authorized dealers. □



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SSTV and FAX system for Commodore Amiga

Advanced Electronic Applications announced its agreement with Black Belt Systems to market the Commodore Amiga Video Terminal (AVT) "Master" system.

Developed by Ben Blish, N4EJI, and Dr. Anne Williams, N7LWZ, the AVT Master utilizes the unique graphics capabilities of the Amiga to transmit and receive high resolution facsimile and slow-scan television images. Received images can be printed on any Amiga printer or saved on a disk file.

The capabilities of the system are numerous. For example AVT Master can manage your logbook, SSTV system, packet bulletin board, home balance spread-sheet, paint program, PC board design program, etc., all at the same time.

A unique capability of the AVT mode is the 400 Hz bandwidth, instead of the conventional 1100 or 1200 Hz SSTV bandwidths. If

used in conjunction with a CW filter and IF shift, this drastically improves the signal-to-noise ratio, enabling clearer reception of weak signals. Further, all video information is crystal-locked at both the transmitting and receiving stations at the start of each frame, eliminating misalignment.

Another unique feature of the AVT Master is its ability to send high speed color images over the telephone lines to similarly equipped AVT Master stations. There's also telephone ring detect and auto answer.

The benefits of the AVT Master for SSTV are: The ability to get through when no other SSTV mode can, enhanced reception, the removal of color/luma phase and position errors, full-color images, QRM and QRN resistance and higher resolution than any other SSTV mode in use to date. □

Full line catalog

Bird Electronic Corporation has released its new 60-page full line catalog of RF power measuring equipment and accessories that includes hundreds of photos plus detailed descriptions, specifications and ordering information for thousands of Bird products.

In addition to the extensive line of famous Bird Wattmeters — including high accuracy, peak reading, high power, low power, multi-

power level and low frequency models — the new Bird catalog presents comprehensive selections of calorimeters, plug-in elements, line sections, QC-Connectors, RF loads, attenuators, switches, directional couplers and accessories from 50 ohm adapters to carrying cases.

The Bird full-line catalog is available now at no charge to qualified service establishments laboratories and RF engineers and buyers from Bird Electronic Corp., 30303 Aurora Rd., Solon, OH 44139; 216/248-1200. □

Now receive or leave messages with other local hams using the 16K Bulletin Board featured on the smallest TNC available — the Heath® HK-21 Pocket Packet.

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Get your message across... even when no one is listening.

computer via RS-232 and you're ready to call a fast-growing number of packet hams.

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To order, call 1-800-253-0570

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HAMFESTS



Alabama

The MONTGOMERY AMATEUR RADIO CLUB will host the 12th annual Montgomery Hamfest on Nov. 18 at the Garrett Coliseum at the South Alabama State Fairgrounds in the North Eastern section of historic Montgomery. Admission and parking are free.

The hamfest is all indoors, including the flea market.

Connecticut

On Sunday, Nov. 12, from 9 a.m. to 3 p.m., the SOUTH CENTRAL CONNECTICUT AMATEUR RADIO ASSOCIATION will sponsor its 10th annual flea market at the North Haven Park and Recreation Center in North Haven. Admission is \$3.

Sellers may begin setup at 7 a.m. Tables are \$12 in advance and \$15 at the door. Reservations for tables must be received with a check by Nov. 2; no reservations by phone.

Features include VE exams, commercial exhibits and refreshments. The facilities are wheelchair accessible.

Talk-in on 146.01/61/61.

For more information or to make reservations, send a SASE to SCARA Flea Market, P.O. Box 81, North Haven, CT 06473. For information you may also telephone Brad Oestreicher, WA1TAS, between 7 and 10 p.m., at 203/265-6478.

Illinois

The Rockford Hamfest/Computer Fair 89 will be from 8 a.m. to 3 p.m. Nov. 12 at the Forest Hills Lodge in Rockford. Tickets are \$3 in advance and \$4 at the door. Parking is free.

Featured will be commercial booths, flea market tables and food and beverages.

Talk-in on 146.01-61 and simplex 146.52.

For tickets send a SASE to Rockford Hamfest, P.O. Box 10003, Rockford, IL 61131; or call Paul Klein, K9VJJ, at 815/226-4696.

Indiana

The ALLEN COUNTY AMATEUR RADIO TECHNICAL SOCIETY will sponsor the 17th annual Fort Wayne Hamfest Sunday, Nov. 12, at the new Allen County War Memorial Coliseum Exposition Center in Fort Wayne.

Highlights of this year's hamfest include the 1989 Indiana State ARRL Convention and the fall meeting of the Indiana Repeater Council.

Doors open 8 a.m. Tickets are \$3.50 in advance, \$4 at the door. Parking is \$1. Standard tables are \$12, premium tables are \$25. AC power is extra.

Talk-in on the 146.88 (-) and 443.80 (+) repeaters.

For more information write AC-ARTS, P.O. Box 10342, Fort Wayne, IN 46851.

Ohio

The NORTH COAST AMATEUR RADIO CLUB Swapfest will be held from 9 a.m. to 2 p.m. on Nov. 26 at the North Olmsted Community Cabin in North Olmsted. Admission is \$2.

Eight ft. tables are \$5 per table; four ft. tables are \$3 per table. Tickets for the NCARC raffle prize — a Health Dual Band hand-held — are \$1 apiece or six for \$5. Winner need not be present to win.

Talk-in on the 145.29 and 224.84 repeaters. Additional information may be obtained from the NCARC PBBS (C N08M-1 on 145.09). Download the files entitled COMCABIN.LOC and SWAPFEST.INF. You may also call the hamfest chairman, Chuck Early, K8RSH, at 216/777-1595.

To insure the return of table reservation confirmations and tickets, send a SASE before Nov. 12 to NCARC, P.O. Box 30529, Cleveland, OH 44130.

Oklahoma

The ENID AMATEUR RADIO CLUB is sponsoring a hamfest from 8 a.m. to 5 p.m. on Nov. 4 at the convention hall in Enid. Admission is free.

Features include walk-in VE exams, refreshments and dealers. There will also be a flea market, for which tables are free by reservations.

Talk-in on 145.29-144.69 or 444.400-449.400.

For more information contact Tbm Worth, P.O. Box 261, Enid, OK 73702, 405/233-8473; or Fred Selfridge at 405/242-3551.

Pennsylvania

Sponsored by the WASHINGTON AMATEUR COMMUNICATIONS CLUB, CYLONSOFT ELECTRONICS and the MEADOWS RACE TRACK, the 2nd annual Tri-state Hamfest and Computer Fair will be held Sunday, Nov. 19, at the Meadows in Washington from 8 a.m. to 3 p.m. Admission is \$1 (children under 12 enter free).

Four major prizes will be awarded. Also featured will be food, XYL prizes, a check-in prize, an ARRL table, simulcast horse racing and more.

Talk-in on 145.49/W3CYO repeater and 146.52.

For information call: Walt Piroth, N3BKW, FAX 412/258-8342 or N3BKW @ KA3MZS BBS; Carl Stark, KD3KH, 412/225-5684; Jim Mounts, KA3EBX, 412/941-2670; Jack Kern, KA3OIJ, 412/941-2069; Sandi Shaffer, N3FPF, 412/941-1737; or Ted Lockman, WB3BZK, 412/222-6473.

Texas

The Houston Com-Vention '89 and the ARRL Texas State Convention will be held Nov. 3 to 5 at the Sheraton Crown Hotel-Intercontinental Airport in Houston.

Featured will be an ARRL Forum, commercial exhibits, a swap fest, seminars, license exams, family activities, a transmitter hunt, a banquet and prizes.

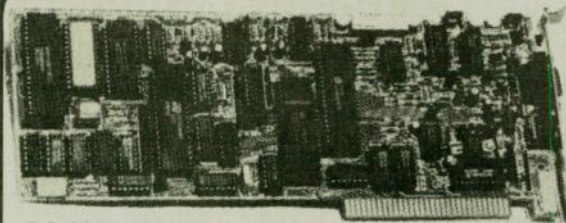
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ALARA Contest

The Australian Ladies' ARA Contest will be held Saturday, November 11, from 0001 to 2359 UTC. All licensed operators throughout the world are invited to participate. Also open to SWLs.

Object: Participation — YLs work everyone, OMs work YLs only. One contest (combined phone and CW) run over 24 hours.

Suggested frequencies: Bands to be used are 3.5, 7, 14, 21 and 28 MHz only. The following are suggested frequencies for easier location of contacts: 28.100-28.350, 28.500-28.600, 21.100-21.200, 21.350-21.370, 14.060-14.235, 7.100-7.120, and 3.525-3.590.

Operation: Phone and CW. Each station may be counted twice on each band for credit — once on phone and once on CW. All contacts must be made in accordance with operator and station license regulations. No net or list operation, no crossmode.

Procedure: Phone — Call "CQ ALARA CONTEST." CW — YLs call "CQ TEST ALARA." OMs call "CQ YL."

Exchanges: ALARA Member — RS or RST, serial number starting at 001, ALARA member, name. YL non-member or OM — RS or RST, serial number starting at 001, name.

Scoring: Phone — 5 pts. for ALARA member contacted, 4 pts. for YL non-member contacted and 3 pts. for OM contacted. CW — Double all points for CW contacts. SWL — 5 pts. for ALARA member logged, 4 pts. for YL non-member logged.

Logs: Single log entry (but Australian YL Novices entering for the Mrs. Florence McKenzie CW trophy should indicate their CW score separately also). Logs must show date/time UTC, band, mode, call sign worked, report and serial number sent, report and serial number received, name of operator of station worked and points claimed.

Logs must be signed. Logs are also to show full name, call sign and address of operator and show final score (points claimed). Logs must be legible. No carbon copies. No logs will be returned. Decision of the Contest Manager will be final. Logs must be received by the Contest Manager by Dec. 31. Contest Manager: Mrs. Marilyn Syme, VK3DMS, P.O. Box 91, Irymple, 3498, Vic. Australia.

Awards: Mrs. Florence McKenzie CW Trophy — This will be awarded to the Australian YL Novice operator with the highest CW score (not necessarily an ALARA member.) Minimum score 50 pts. The actual trophy, because of the size and weight, will not be forwarded to the winner, but a certificate bearing a photo depicting the trophy will be sent to the winner each year.

Certificates will be awarded for the following: Top score overall, top score phone only, top score Australian YL Novice CW (Mrs. F.

McKenzie certificate), top score ALARA member in each country and VK call area, top score YL non-member in each continent, top score OM in each continent, top score SWL in each continent, top score VK Novice and top score overseas YL Novice CW. □

Montana Centennial QSO Party

Sponsored by the Butte Amateur Radio Club, the contest takes place from 0000Z, Nov. 11, until 2400Z, Nov. 12.

Band and mode: 10 to 80M phone and CW. Work stations once per band and mode. CW QSOs in the CW band only.

Exchange: Signal report, serial number and QTH (county for Montana stations, state/province/country for others).

Scoring: Count one point for phone contacts and two points for CW contacts. Montana registered centennial station W7FO counts 100 points per band and mode.

Multipliers: Montana stations — multiply QSOs by states worked (DX only one multiplier). Others — Multiply by Montana counties worked.

Suggested frequencies: Phone — 3.890, 7.280, 14.280, 21.370 and 28.470. CW — 40 kHz from low end. Novice — 25 kHz from low end.

Awards: Certificate suitable for framing to highest scorer in each state, Canadian province and highest scoring DX station.

Logs: Mail logs to be received by Dec. 12 (include legal size SASE for results) to W7FO, Butte ARC, P.O. Box 4036, Butte, MT 59701.

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NP22	\$32.95
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* 8(S) .. (1200MAH @ 9.6V)	\$64.95	
ICOM (INSERTS)		
PB-2	\$19.95	
PB-3	\$18.95	
PB-5	\$24.95	
PB-7 .. (500MAH @ 13.2V)	\$29.75	
PB-8 .. (900MAH @ 8.4V)	\$29.75	
KENWOOD		
KNB-1 .. (500MAH @ 10.8V)	\$49.61	
KNB-4 .. (2200MAH @ 7.2V)	\$65.95	
PB-1 .. (1100MAH @ 12V)	\$62.95	
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KX-T3805, PQP-25F301A	\$11.00	
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SONY		
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EX-SERIES MOST MODELS	\$8.00	
XE-SERIES	\$9.00	

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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.

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- World-wide QSL Bureaus
- Table of Amateur Prefix Allocations
- Prefixes of the World
- Plus many other features.

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Supplement - June 1, 1990

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When will AMSAT-OSCAR-13 be in range? -----

ROSS FORBES, WB6GFJ

Those just starting out in the world of OSCAR communications would like to know when they can hear a satellite. The following charts are produced to give you a rough idea as to when OSCAR-13 will be within range of your location. The three charts as printed are centered on the following geographic locations: East = New York City; Mid = St. Louis, MO; West = Reno, NV.

As you read the chart nearest your location, keep in mind the following details — all dates and times are given in UTC. The date is printed on the left hand column and the UTC hour along the top.

A dash mark indicates the satellite is out of range and therefore not able to be heard. The letter "B" indicates OSCAR-13 is audible at that location and signals should be heard between 145.810 and 145.880 MHz (SSB and CW). A letter "O" indicates the satellite is audible, but the only signal you will hear is the

telemetry beacon on 145.810 MHz. The letter "L" indicates the satellite is audible but you will hear signals between 435.650 and 436.000 MHz (SSB and CW).

Remember, if a letter is printed on the chart, you should be able to hear OSCAR-13.

For more information about OSCAR, please send a SASE to either of the following: Project OSCAR, P.O. Box 1136, Los Altos, CA 94023-1136; AMSAT-NA, P.O. Box 27, Washington, D.C. 20044. □

Station West		HOUR - UTC	
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W1AW rededication

More than 200 people from all across the nation gathered at The Hiram Percy Maxim Memorial Station, W1AW, for its rededication on July 20. Rev. Michael F. Mullen, C.M., WB2GQW, 1987 recipient of the ARRL International Humanitarian award, gave the invocation. ARRL President Larry E. Price, W4RA, was Master of Ceremonies and opened the event with comments of welcome.

Other guest speakers included Steven Bafundo, President of the Newington Chamber of Commerce; Bobby Baines and Michael Riley, KX1B, of the American Red Cross; ARRL Honorary Vice President, George Hart, W1NJM; Paul Perakos, Assis-

tant Treasurer for the Connecticut Bank and Trust Company; and Fred Hammond, VE3HC, President, Hammond Manufacturing Company Ltd.

On behalf of ARRL staff, David Sumner, K1ZZ, ARRL Executive Vice President, stated that the HQ staff was proud to be a part of a 75 year tradition.

He went on to say, "W1AW is a monument to one man, Hiram Percy Maxim, without whose vision ARRL and probably Amateur Radio itself would not exist. The renovated station is testimony to the love of that man, and of what he created, that is felt by thousands of people in this country and overseas."

President Price then cut the ribbon and W1AW was open for tours by the guests in attendance. A number of on-the-air contacts were also made from the newly renovated W1AW. —The ARRL Letter □

You know you are really hooked on Amateur Radio when you discover that your "Club Med" vacation stupidly falls on Field Day ... and Field Day finds you on the beach at Bimini, packing a low-band rig and a Honda generator ... surrounded by nice men in white coats helping you in a funny jacket.

— Western ARC, Cerritos, CA □

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
Arizona							
Nov. 4	Tucson	K7OPX (602) 886-7217	w/i OK	Dec. 3	Terre Haute	K9EBK (812) 466-2122	p/r 30 days prior
California				Iowa			
Nov. 4	Burbank	KE6AR (818) 349-0927	w/i OK	Nov. 19	Des Moines	NA0R (515) 967-3890	w/i
	Oakland	K6KQN (415) 986-5055	p/r pref; w/i OK	Maryland			
Nov. 11	Apple Valley	WB3KMZ (619) 240-2025; or K6BET (619) 244-6080	w/i OK	Nov. 25	Laurel	(301) 725-1212	ltd w/i
	Jackson	WZ6Y (209) 295-7947	p/r pref; w/i OK	Massachusetts			
	San Pedro	N6DYZ (213) 325-2965	p/r; ltd w/i	Nov. 17	Holyoke	William C. Sample (413) 567-7301	w/i
Nov. 15	Eureka	KB6FIW (707) 442-9245	p/r pref by 11/12	Nov. 18	Melrose	NC1V (617) 665-6061	w/i
				Nov. 22	Cambridge	Nick Altenbernd (617) 437-0320	2-day p/r
Nov. 16	Fountain Valley	N6ISY (714) 775-6095	p/r	Michigan			
	Long Beach	KA6HOQ (714) 897-6331; or NV6X (213) 434-8278	w/i	Oct. 7	Saginaw	K08M (517) 793-9636	w/i OK
Nov. 18	Hawthorne	WS6T (213) 600-4160	p/r pref; w/i OK	Nov. 12	St. Joseph	WR8R (616) 926-1747	w/i OK
	Porterville	KG6WG (209) 539-2429	w/i	Minnesota			
Nov. 25	Eagle Rock	KB6RXE (818) 791-1779; or AA6HE (213) 256-2904	w/i	Nov. 4	Duluth	KA0SYN (218) 879-4010	w/i
	Stockton	AA6NO (916) 662-0801	w/i only	New Jersey			
Dec. 2	Riverside	(714) 780-2680	p/r 1 week prior	Nov. 6	Sayreville	K2FD (201) 442-9215	w/i
Colorado				Nov. 8	Port Monmouth	K2USA (201) 532-5354	w/i
Nov. 11	Denver	W0IJR (303) 366-9689	p/r pref	Nov. 11	Cranford	N2XJ (201) 635-7686	w/i OK
Nov. 13	Boulder	N0BWS (303) 530-1872		Nov. 16	Bellmawr	WA2VQG (609) 546-7710	no p/r
Nov. 18	Westminster	N0HNR (303) 451-1231; (303) 278-4280	p/r or w/i	Nov. 18	Pennington	AA2F (609) 737-1723	p/r pref; w/i OK
				New York			
Dec. 16	Pueblo	(719) 948-2291	p/r 30 days prior; w/i	Nov. 17	Verona	K2NIL (315) 363-4297	w/i
Connecticut				Nov. 26	North Babylon	KA2RGI (516) 957-5726	w/i OK
Nov. 11	Stamford	W1LUH (203) 625-3680 or (203) 322-3156	p/r pref; ltd w/i	Ohio			
Nov. 18	Gales Ferry	KY1F (203) 536-0187	w/i OK	Nov. 12	Independence	WT8A or WT8B (216) 526-3807	w/i
	Portland	KN9Y (203) 342-4300	p/r pref; ltd w/i	Pennsylvania			
Florida				Nov. 4	Erie	W3CG (814) 665-9124	w/i OK
Nov. 7	New Port Richey	AA4FG (813) 849-1224	w/i	South Carolina			
Nov. 11	Crestview	W4DTV (904) 678-7181	w/i	Nov. 18	North Charleston	AA4IX (803) 873-9465	w/i
Nov. 18	Fort Myers	WV4F (813) 481-4880	p/r	Tennessee			
	Melbourne	AA4NP (407) 768-1954;		Nov. 2	Memphis	Maxine Balentine (901) 386-4375	p/r by 11/30
	W. Palm Beach	WB9IVR (407) 724-6183	w/i	Texas			
		W4SS (407) 967-1477;		Nov. 5	Princeton	NW5W (214) 736-2397	w/i
		KG4U (407) 582-7617	w/i	Nov. 11	Midland	KT5G (915) 694-9450	
Georgia					San Antonio	NS51 (512) 681-0702	w/i
Nov. 16	Atlanta	KC4MJ (404) 449-3340	w/i	Nov. 21	Denison	KA5KTP (214) 786-3847	w/i
Idaho				Virginia			
Nov. 11	Boise	W7JMH (208) 343-9153		Nov. 5	Middletown	NC4BV (703) 869-5241	p/r pref
Illinois				Washington			
Nov. 11	Belleville	WA0LIS (618) 397-7235	w/i OK	Nov. 22	Redmond	WR7V (206) 881-1088	w/i
	Oak Forest	KA9HDN (312) 247-0650	w/i	West Virginia			
Indiana				Nov. 25	Charleston	AC8K (304) 343-7251	w/i
Nov. 4	South Bend	NI9Y (219) 255-4455	w/i OK				
Nov. 25	Lebanon	K9DFK (317) 249-2020					

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The number for the Kenwood Bulletin Board System is 213/761-8284. The

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Operating hours are 5 p.m. to 8 a.m. Pacific Time Monday through Friday; 24 hours on weekends and holidays. Because this bulletin board is being

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For more information contact Wayne Yoshida, Regional Sales Manager, Communications & Test Equipment Group, Kenwood USA Corporation, 2201 E. Dominguez St., Long Beach, CA 90810; 213/639-4200. □

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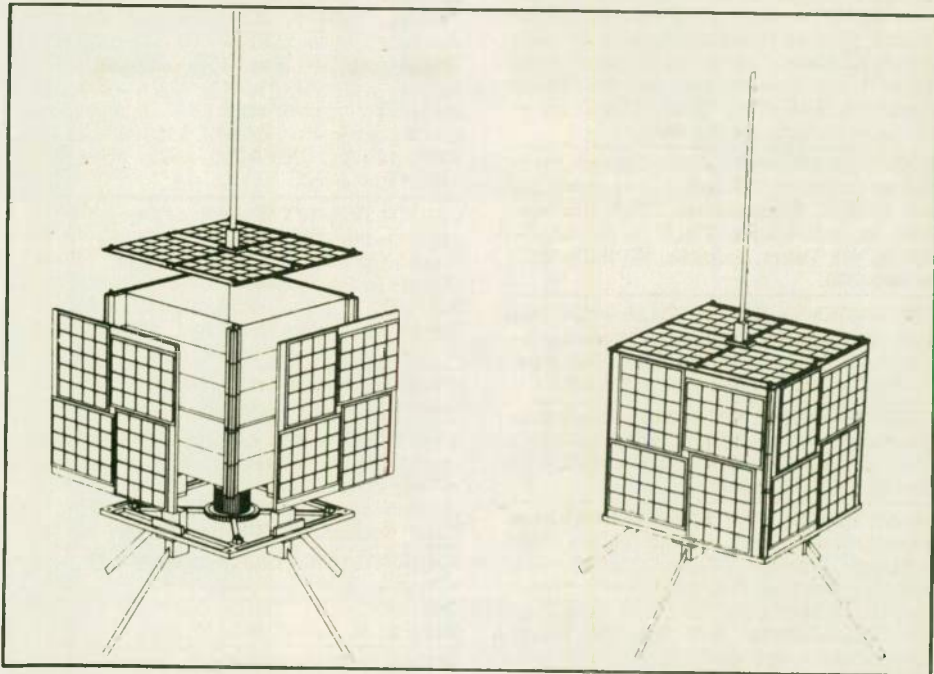
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When submitting photos, please DO NOT write on the backs of them — they often stain the fronts of other photos, making them unusable.

MICROSAT launch

(continued from page 22)



Two views of MicroSat. The left drawing is an exploded view and the right shows the satellite with the covers on. (Drawings courtesy of Dick Jansson, WD4FAB)

been getting heavier and larger, the MicroSats represent a radical departure in philosophy.

Because of the dearth of launch opportunities caused by the Shuttle Challenger accident more than three years ago, AMSAT now has to pay the full cost for launches, which, until recently, were provided essentially free of charge. But because of the competition from other commercial satellite users to find space on launch vehicles,

AMSAT found it necessary to turn to a small satellite design which requires only modest launch support services and can fit in places on the launch vehicle normally reserved for lead ballast.

While large aerospace companies employ thousands of engineers and technicians and supercomputers and command almost unlimited budgets, AMSAT and the Amateur Radio community prove that state-of-the-art, back-of-the-envelope design is alive and well.

Individuals and organizations interested in receiving additional information regarding membership, programs or other information should contact AMSAT, P.O. Box 27, Washington, DC 20044; 301/589-6061. □

ADVERTISER'S INDEX

- | | | |
|---|---|--|
| A & A Engineering — 28 | GGTE Morse Code — 43 | PacComm — 56 |
| Ace Communications — 30 | Glen Martin Engineering — 19 | Palomar Engineers — 10, 12, 30, 34, 52 |
| Ace Systems — 14, 17 | H & M Jewelry — 10 | Personal DataBase — 8 |
| Alicco — 25 | H. Hornsby — 20 | QCWA — 44 |
| Anne Wright, N6BOP — 26 | H. Weinstein — 51 | QSO Software — 49 |
| Antennas West — 7, 20, 22, 24, 26, 29, 30, 42, 45, 52 | Ham Radio Outlet — 32, 33 | Radio Engineers — 35, 47 |
| Antennas, Rudy Plak — 3 | Handi-Tek — 41 | Radio Place — 53 |
| Antique Radio Classified — 50 | Heath Co. — 55 | Radio Works — 36 |
| AXM Inc. — 14 | Henry Radio — 2, 38 | Renaissance — 7, 27 |
| Azimuth — 51, 54 | ICOM — 64 | rf concepts — 6 |
| Battery Tech — 57 | IIX Equipment, Ltd. — 41 | RLD Research — 15 |
| Bel-Tek — 20, 50 | IMRA — 43 | Sign-On — 11 |
| Brian Beezley, K6STI — 41 | Int'l. Radio & Computers — 42 | Sparrow Hawk Communications — 45 |
| Budwig Mfg. — 28, 37 | Jun's Electronics — 18 | Spider Antennas — 35 |
| Butternut Electronics — 16 | KB1T Calendars — 20 | Summitek — 19 |
| C.A.T.S. — 34 | Kilo-Tec — 47 | Synthetic Textiles, Inc. — 29 |
| Call Sign Cups — 52 | Lakeview Co. — 37 | Todd Skogen — 46 |
| Callbook — 23, 58 | Lanz Company — 24 | Universal Radio — 44 |
| Comm-Pute Inc. — 49 | LEB Enterprises — 37 | Van Gorden Engineering — 4 |
| Cotec — 55 | Lindsay Publications — 15 | Visit Your Local Radio Club — 39, 40 |
| Courage Center — 54 | M. Bohnhoff — 23 | Visit Your Local Radio Store — 22 |
| Creative Control Products — 50 | Maxcom — 36 | W5YI — 46 |
| Delta Loop Antennas — 46 | Media Mentors — 6 | W5YI-VEC — 45 |
| DX Edge — 27 | MFJ — 13 | W9INN Antennas — 17, 34 |
| Embroidery Warehouse — 17 | Mike Forman — 63 | Wrightapes — 14 |
| Engineering Systems — 43 | New Dimension QSL's — 26 | Yaesu — 5 |
| EPO Software — 47 | One of a Kind Jewelers — 19 | |
| Fallert's Engraving — 53 | Organ Transplant Fund Inc./Robert Hanson — 48 | |
| Gene Hansen Co. — 29 | P.C. Electronics — 21 | |

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