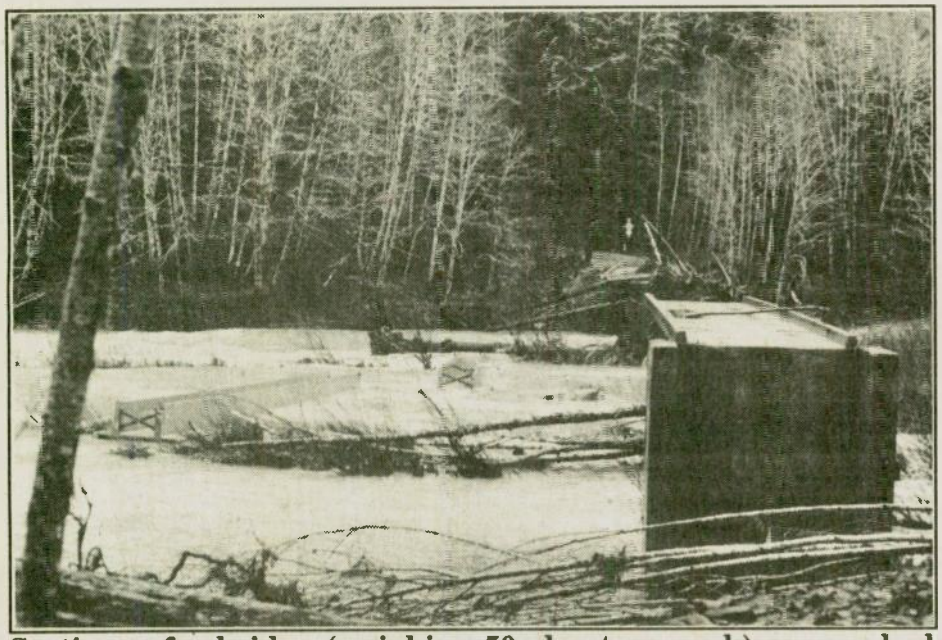
Worldradio

Year 25, Issue 10 April 1996 • $1.50



Sections of a bridge (weighing 50-plus tons each) are washed away by rising flood waters near Jewel, Oregon. ***—photos by Al Mikalow, K7OOZ***

Amateurs assist community during Oregon flooding

Ann S. Shaver, WH2E

Do you harbor suspicions that Amateur Radio operators are no longer necessary during emergencies? Do you secretly suspect that cellular phones have rendered the 2-meter handheld obsolete for crisis communications? Then talk with members of the Vernonia, Oregon, Fire Department and change your mind! As they will no doubt tell you, there is still an important role for amateur communications.

As the Columbia River rose, eventually overflowing its banks during the recent Pacific Northwest flooding, the town of Vernonia became increasingly isolated. Columbia County officials recognized their responsibility for the area, but initially they thought there was no way they could communicate with the town. The washed-out roads and the mountainous terrain rendered most transportation and communication impossible.

These were minor deterrents for Bill Merwin, N7VZF, and Al Mikalow, K7OOZ. Both are active members of the Technology Amateur Radio Club (TARC), a group which works closely with other emergency responders such as ARES, RACES and SATERN (Salvation Army Team Emergency Radio Network). Russ Fillinger, W7LXR, TARC president praised the two for doing "yeoman's duty." "They manned the Vernonia fire station 20 hours a day and were the primary means of communication. The area is too remote for cellular phones to be effective. "The flood left the town high and dry, so to speak," Fillinger explained. "There were a lot of displaced people, a lot of abandoned cars. These hams maintained basic communications between Vernonia and the outside world. They coordinated getting supplies such as food and diapers. They enabled county officials to assess the needs of this isolated community."

As expected, most of the communications were via 2-meter FM. Because of the mountainous terrain, this meant relying on local repeaters, which sometimes becomes problematic. Fillinger became personally involved in the crisis response when he discovered that the height of his antenna and the power of his station enabled him to work the emergency site on simplex. Fillinger has an impressive all-mode station at his hilltop QTH. "Fortunately they didn't need me, but it was comforting to know that there was a reliable back-up," he mentioned modestly. Packet radio was

(please turn to page 11)

Club celebrates 80 years of service

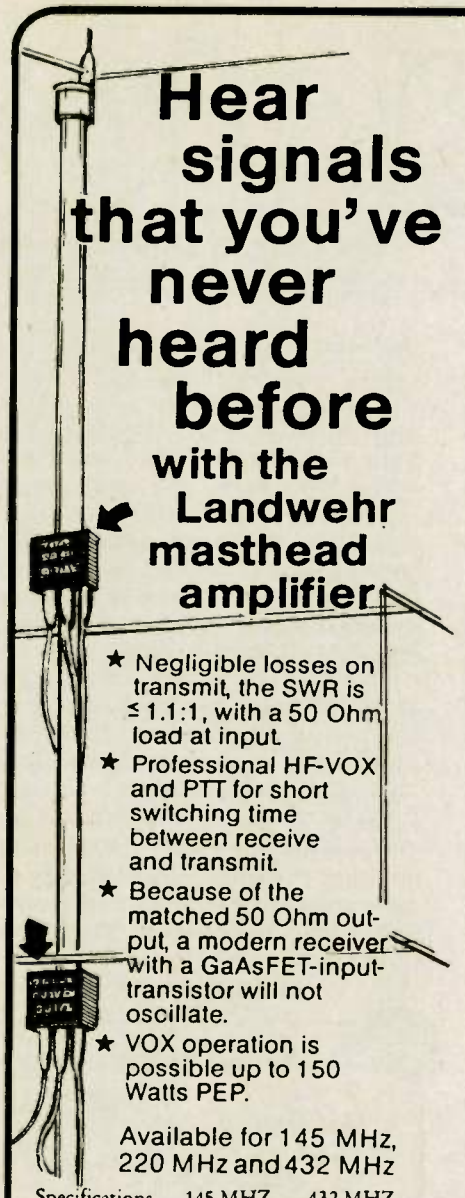
J. Wesley Sammis, W2YRW

South Jersey Radio Association (SJRA) may be celebrating 80 continuous years without missing a monthly meeting, but age has nothing to do with its forward thinking: Founded on 12 June 1916, at the Collingswood, New Jersey home of W. G. Phillips, 3AFD; Harry Densham, 3EH, presided with 18 persons present (South Jersey was in the 3rd call area at that time). The South Jersey Wireless Association, soon to become the South Jersey Radio Association, was dedicated to furthering Amateur Radio throughout Southern New Jersey, and never looked back.

Continuing to meet throughout the depression, two world wars and beyond, SJRA has been a leader in many amateur activities. Contesting, new and unusual design projects, promoting homebrew and innovating ways to present Amateur Radio has

(please turn to page 6)

Hear signals that you've never heard before with the Landwehr masthead amplifier



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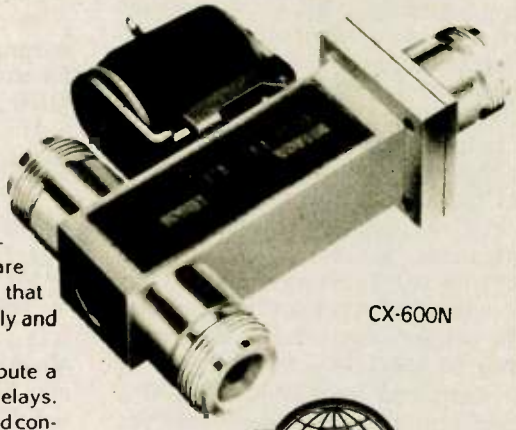
— Ted S. Henry



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Worldradio NEWSFRONT —

Some information has been supplied to *Worldradio* Newsfront courtesy of *Newsline*.

Antenna rules petition

The ARRL has petitioned the FCC to compel state and local governments to reduce restrictive regulations on Amateur Radio antennas, and make "reasonable accommodations" in line with PRB-1.

In a Petition for Rulemaking filed February 7, the League requests that ". . . any state or local ordinances restricting ham radio antennas to heights below 70 feet would be presumed to be unreasonable, unless the state or local authority could show its restrictions support a clearly defined health, safety or esthetic objective." Under the proposed new rules, state and local governments would also be prevented from charging "substantial" fees or application costs to amateur licensees.

The ARRL, in its *Bulletin* dated 15 February, 1996, also states that the League wants the FCC to acknowledge that it has an interest in the effective performance of Amateur Radio stations in areas regulated by deed restrictions or restrictive covenants rather than by local zoning ordinances. Clarifying the preemption policy, according to the League, would serve to guide municipalities in making fair accommodation for amateurs, and also help avoid "divisive and costly litigation" between amateurs and municipalities.

In the proposed changes, state and local governments could apply to the FCC for waivers in unusual circumstances. As of this writing the FCC has yet to assign an RM, or Rulemaking number to the petition.

The petition suggests the wording of Section 97.15(e) be as follows:

1. State and local regulation of a station antenna structure must not preclude amateur service communications. Rather, it must reasonably accommodate such communications; it must constitute the minimum practicable regulation to accomplish the state or local authority's legitimate purpose; and it must not impose substantial costs on amateur service licensees.

2. Any state or local antenna restriction or regulation which, on its face or as applied, would limit amateur station antennas to heights below 70 feet is presumed unreasonable unless the promulgating authority can demonstrate that such regulation is necessary to accomplish a clearly defined, and expressly stated health, safety or aesthetic objective; that there is no less burdensome alternative to the regulation; and that the Federal interest in efficient Amateur Radio communications from the amateur station at issue is otherwise reasonably accommodated.

3. Any state or local authority, or other entity that wishes to maintain and enforce zoning, land use or other regulations or restrictions inconsistent with this section may apply to the Commission for a full or partial waiver of this section. Such waivers may be granted by the Commission in its sole discretion, upon a showing by the applicant that local concerns of a highly specialized or unusual nature create an overwhelming necessity for regulation inconsistent with this section. No application for waiver shall be considered unless it includes the particular regulation for which waiver is sought. Waivers granted according to this rule shall not apply to later-enacted or amended regulations by the local authority unless the Commission expressly orders otherwise.

Romeo disqualified

The ARRL Awards Committee met recently to review submitted documentation for the 1992-93 P5RS7 operation submitted by Romeo Stepanenko. After a review of all material available, the committee voted unanimously to disqualify Romeo Stepanenko from participation in the DXCC program.

This disqualification is based upon Rule 12, Operation Ethics, and Rule 13. The disqualification means that Stepanenko is not eligible to participate in the DXCC program in any manner. This includes, as provided for under Rule 12, paragraph (b) disallowance of contacts made with any station or DXpedition operated by him from the time of this action.

Indecency laws upheld

The United States Supreme Court has said that restricting the hours when legally defined indecent speech can be broadcast is constitutionally valid. This finding could pave the way for the FCC and other government agencies to prosecute hams who use this kind of language on the air.

In rebuffing free speech-advocates on 8 January, the Supreme Court has told federal regulators that it is constitutionally valid for them to confine television and radio programs containing indecent language to late-night hours when children are less likely to tune in. The justices also let stand a Federal Appeals Court ruling that upheld government limits on indecent broadcasts to the hours between 10 p.m. and 6 a.m.

The news media and civil liberties groups had challenged the rule as a violation of the right to free speech. The appeals court had ruled last summer that the rule was justified by the government's overriding and compelling interest in protecting the nation's children.

(more NEWSFRONT, page 12)

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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. ***Worldradio*** is an independent magazine not affiliated with any other firm, group or organization. Its pages are open to all.

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PUBLISHER'S MICROPHONE

It's now time for the spotlight to fall on those who may go to Stockton and collect the Noble Prize. The latest to become ***Worldradio*** Super-Boosters (lifetime subscribers) are:

Ronald Baker, N1JJW, Center Harbor, NH

L. Halvorsen, WA2AMW, Princeton, NJ

Joseph Defino, Jr., KF2WC, Tuckahoe, NY

Henry Hamarman, N3NID, Lansdale, PA

William Bruggemann, WA4EQG, Evans, GA

Arpad Miklos, WY8M, Warren, MI

Lyman Stevens, N7PEF, Logan, UT

Kenneth Jensen, K6GOA, Wildomar, CA

James Latham, KE6QJV, Livermore, CA

Philip Barber, KL7D, Anchorage, AK

Pat Bailey, K7KBN, Bremerton, WA

and an extra salute to **Michael Martin, NØCID**, with Uncle Sam at APO Europe.

•

Sadly, an Amateur Radio manufacturer, one with a fine prior reputation, has severely disappointed many amateurs. Atlas Radio, which collected many amateur's checks (and cashed them) over a period of years is unable to either produce a transceiver nor return the money.

Many promises as to delivery dates or return of monies have been made and the promises have not been kept.

In the travel field, the advice is given (due to the failure of quite a few tour operators, cruise lines and air carriers) to always pay with a credit card. That way if the trip does not materialize no money is lost. Possibly that advice would be good for the purchase of high-ticket items in the radio field.

Also, before a merchant can offer the convenience of card usage by the customer there is some level of investigation of the business by the credit card issuer.

Not accepting cards however, should not be taken as an indictment of the merchant. I know of one fine vendor who didn't take cards on the VHF hand-held rigs he sold. I asked him why and he explained that the three percent the credit card company charged him for the transaction was exactly the amount of gross profit he was making on the unit.

Yes, that was gross profit, prior to the expenses of running the business and the net profit.

Apologies to the many who received call signs which were not their own in the mailing label area last month. And no, we didn't think that everyone had the first initial of "C." What happened is when the equipment of the computer house in Sacramento that maintains the subscription records talked to the equipment at the printer in southern California the call signs all skidded by one record and the "C" identifying the third issue of the year moved from its proper place. Both companies said it would never happen again.

•

Last month I mentioned that you may receive periodically a second copy of this magazine and we hoped that you would give it to a non-subscribing ham friend or to a potential amateur. George Young, Jr., N9VOK, Chicago, IL, wrote a very nice letter about what he liked about ***Worldradio*** and mentioned that he gave his copy to his non-ham sister "who is studying code and theory to join our ranks."

Of my three closest friends, two are hams and one is not. I have worked on the third, who is just a marvelous person and would be a great addition to hamdom. The studying would be no problem (he was a pilot in WWII). But it just doesn't interest him. Maybe it takes a special kind of imagination to be an amateur.

I remember as a youngster listening to those radios that had "shortwave" besides the regular standard broadcast band. That was before the amateurs were on single sideband and an AM radio would let you listen in. (There were even ham band converters that put the signal into the radio in the car.)

I was captivated by it. This was the greatest thing there was!

Later, when I was 18 and went into the service, the Army sent me to a six-month radio school (repair). My attitude at the time was: they are teaching me radio and paying me too, what could be better than this?

I find Amateur Radio just so very interesting. There is even something exciting about walking through the parking lot of a hamfest and seeing all the call sign license plates. I guess I'm really in the right place being here.

—Armond, N6WR

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- High Power Output:
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* Cellular Blocked

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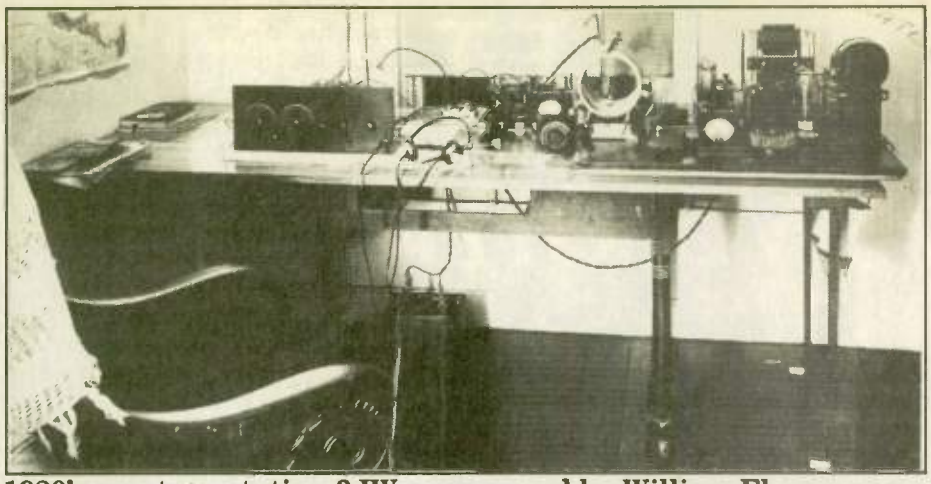

1920's amateur station 3JW, was owned by William Ebensperger of Glouster, NJ. He was one of the first to work England on 40M.

80 years of service

(continued from page 1)

helped membership, currently 250, continue to grow each month.

In 1991, SJRA held a gala dinner for its 75th Anniversary (see photo on back wrap). As the 80th year approached the question most asked became: "What do we do for an encore. How best to celebrate this momentous occasion?" The guiding committee decided it would be most appropriate to have amateurs, everywhere, share in this event. A year-long series of activities has been developed. Thus, 1996 has been designated SJRA "Friendship through Amateur Radio," year.

The celebration began in June 1995, with a member design competition for a special QSL and logo. The QSL, with club call K2AA, will be issued for all contacts made during the year. The logo will be used for several applications including a special pin that will be given to members.

To encourage participation, SJRA has scheduled many special event stations. Four of these have been designated to honor silent key members who contributed so much to SJRA and the furthering of Amateur Radio principles. 13-14 January 1996, was dedicated to Ed Farmer, W2OSV; 13-14 April 1996, will be Walter Schmidt, W2EA; 18-19 September 1996, to be designated and 21-22 December 1996, to Ed Ludin, K2UK. These events will begin at 0900 on the first day and end at 2100 the second day; eastern local time. Bands 80, 40, 20, 15, 10 Meters plus VHF will be used. All QSLs received for a particular event will be entered into an appropriate album and presented to the surviving spouse.

All stations forwarding a QSL[1,3] will receive a special certificate with a likeness and brief history of the individual.

In furthering our theme "Friendship through Amateur Radio," a year-long SJRA 80th Anniversary FRIENDSHIP AWARD is open to everyone. Stations must submit a log showing contact with 26 SJRA members using one letter from each of the 26 letters of the alphabet. The selected letter must come from the FIRST letter of the call sign suffix i.e.: W2ORA would be "O," K2AA would be "A," etc. The program runs now through 31 December 1996, however, logs may be submitted anytime all 26 letters have been completed. Final date for logs is 31 March 1997. A special log is available for anyone submitting an SASE, (#10), to South Jersey Radio Association.[2] Completed logs may be forwarded to the same address.[2,3] Each contact shall show the letter of alphabet, date, time, call of contact together with the member's name, location etc. Throughout the year all SJRA members can be identified as they will be signing their call and adding /80 i.e.: W2—/80.

Another special event station will operate on 15 June 1996, as we go back to our Collingswood, NJ roots with a yesteryear hamfest for members and their families. It will feature a hidden transmitter hunt, left-footed CW contest, games for the children, and a catered picnic which will include visiting dignitaries. Contacting stations who forward a QSL[1,3] will receive a certificate designed just for the occasion.

The SJRA supports many activities, including weekly nets. On Sunday evening at 1900 hours the "Kids R Us" net for teenage and younger licensed amateurs, is followed by the "SJRA Swap Net." These are held on the SJRA repeater on 145.29 MHz. Monday night, at 2000 hours, on the same frequency, the regular "SJRA Monday Evening Net," where everyone listening is invited to check in. On Wednesday night, the "Slow Speed CW Net" is convened at 2000 hours on 28.150 MHz. Immediately following at 2100 hours the "SJRA Simplex Net" operates on 146.465 MHz and we close out the week with a simplex net on 28.400 MHz beginning at 2000. Visiting amateurs are welcome to check in.

Through SJRA and K2AA, a special program was developed in 1993 which takes Amateur Radio into the classroom. Presented to grades 4, 5 and 6, this program has introduced Amateur Radio to over 2,000 students. An amateur station is set up in each class. After a brief introduction, students are encouraged to talk with amateurs through the SJRA repeater or on 40 Meters. Students are provided with a K2AA QSL to send to the station which they worked. When the contacted amateur forwards a QSL, it is given to the student. A special certificate for that event is made available to any station requesting such who provided the usual SASE.[1,3]

Many SJRA members support the Elmer program, assist at the Bellmar, NJ training and testing sessions, contribute to ARES activities and continue to support many other amateur programs. Many amateur stations have contacted our special event operations: the Marlton, NJ Fall Festival, Medford, NJ Apple Festival and the Chatsworth, NJ Cranberry Festival to name a few. We will continue to

participate in these and other events that may be scheduled.

Eighty years is a long time, let alone continuous years, for an organization. To meet each month without interruption is a major accomplishment. We invite anyone visiting the greater Philadelphia, PA/Southern New Jersey area, to join us at any meeting, held the fourth Wednesday of each month at 1930 hours in the Pennsauken, NJ High School. An interesting meeting with speakers covering varied topics is presented each month. The K2AA Repeater, 145.290 MHz can provide any needed information.

New Jersey Governor Christine Todd Whitman has honored the South Jersey Radio Association with a proclamation noting the club's standing as the oldest continuously active Amateur Radio club in the United States. Also recognizing the many contributions of Amateur Radio in general, the governor has declared June, 1996 as Amateur Radio Month.

Come, join hands across the airways to make new friends, rekindle old friendships and further the interest of Amateur Radio.

Footnotes:

1. K2AA, c/o WA2CVJ, P.O. Box 1039, Marlton, NJ 08053.
2. South Jersey Radio Association Friendship Award, c/o W2ORA, P.O. Box 1026, Haddonfield, NJ 08033.
3. Those requesting certificates should forward a 9" x 12" with postage for 2 oz. **WR**

Mike Slepian, WB2LKO, assists students at Jaggard to make contacts with other amateurs.

SPECIAL EVENTS

Voice of America

The Piscataway ARC will operate member stations, signing/VOA, 6-7 April, from 0000Z-2400Z both days to commemorate the WWII operation of the Voice of America relay station, WBOU. Suggested frequencies: CW-Novice portions of the bands; Phone — lower third of the General portion of the 75- through 15-meter bands and the Novice portion of the 10M. RTTY operations on 80, 40 and 20 Meters.

ARRL affiliation

The Crystal Radio Club will operate W2DMC on 28 April, from 1500-2100Z, to celebrate the 65th anniversary of its licensing and ARRL affiliation. Operation will be in the lower 50 kHz of the General 40- and 20-meter phone subbands and in the Novice 10-meter phone subband. For certificate, send QSL and a 9" x 12" SASE to Thomas J. Nervegna, AA2RD, 13 Amanda Court, Monsey, NY 10952-4138.

Golden anniversary

The International Short Wave League will operate GB5ØSWL (QSL Manager is GØDBX) for the 1996 year to commemorate their 50th Anniversary. This call sign will be on all bands from 1.8 MHz to 144 MHz, with a change of operators/locations each month. We have members throughout the world and would like as many operators as possible to give us a call. Our usual call sign, G4BJC, is GX4BJC for this event.

Bicentennial

The Fort Herkimer ARC will operate KB2UYI, 6 April, 1400-1900 UTC to commemorate the town of Fairfield's 200th year. Operation will be in the 20-meter General phone, 40-meter Novice CW and 40-meter General portion, and 2 Meters at 145.110. For certificate, send QSL and an SASE to AA2AT, Madeline Loiacano, 96 Grove St., Ilion, NY 13357.

City of Sonoma

The Valley of the Moon ARC will operate WB6DWY on 21 April, 1700-2200 UTC, from the site of the Valley of the Moon ARC's hamfest, commemorating the City of Sonoma and the Valley of the Moon s rich historical heritage. Operation will be on 20 and 40 Meters at 7.045, 7.250 and 14.250 MHz +/-. For certificate send QSL with SASE to: VOMARC, 358 Patten St., Sonoma, CA 95476. **WR**

Politics and weather

Our column is meager this month due to unprecedented snowfall in the Washington area, and to sporadic shutdowns of the Government, including the FCC, due to the balanced budget controversy.

The first, week-long shutdown occurred in mid-November. A stopgap funding bill allowed resumption until 18 December, when a second shutdown occurred. It was lifted on 11 January, but was not really effective until 16 January, due to the "Blizzard of 1996" and a national holiday on 15 January.

Amateurs and the 76-77 GHz band

In mid-December the FCC proposed to amend Part 97 of its Rules to temporarily disallow amateur use of the 76-77 GHz band; which the three major U.S. automobile manufacturers have targeted for development and testing of vehicular radar systems for collision avoidance.

The Commission said: "We intend to revisit within five years the issue of whether the 76-77 GHz band can be shared with amateur radio operators or other users. If it were to become apparent that particular types of radio services or devices will not interfere with vehicle radar systems or if adequate sharing criteria can be established, the restriction can be relaxed.

"Although we do not believe that any significant harm will be caused to the Amateur Radio Service operators by disallowing their use of the 76-77 GHz band, we are also proposing to amend Part 2 of our rules to upgrade the status of the Amateur Radio Service in the 77.5 to 78 GHz band from secondary to co-primary with the government and non-government radiolocation services. This will ensure that amateur access to spectrum near 77 GHz is maintained without the threat of preemption by higher priority services. We believe that these proposals balance the need to protect vehicle radar systems from interference with our desire to foster amateur experimentation using millimeter wave technology."

Spread spectrum

In the February, 1996, issue of *QST* it is noted that ARRL has asked the FCC to relax federal regulations governing spread spectrum communications in the Amateur Radio Service.

The history and technology of spread spectrum is summarized very well in the *ARRL Handbook* (1996 edition). The technique has been known for about 50 years, and its application to Amateur Radio was examined in an article in the *Proceedings of the IRE*, in December 1959, "Poisson, Shannon and the Radio Amateur," by John Costas, W2CRR. Costas was with General Electric at the time; in 1965 he was elected a Fellow of IEEE (IRE became IEEE in 1963) "for contributions to communications theory and techniques."

In 1981 the FCC granted AMRAD (The Amateur Radio Research and Development Corporation) a Special Temporary Authority (STA) to conduct spread spectrum experiments. In 1986, the FCC authorized all U.S. amateurs to use specific spread spectrum techniques above 420 MHz. Numerous spread spectrum techniques exist, but amateurs are permitted to use only two, frequency-hopping (FH), and direct-sequence spread spectrum (DSSS).

Among the reasons cited by the ARRL for permitting more experimentation with spread spectrum are reduced power density per unit of bandwidth; reduction of interference to narrow-band systems; improvement of communication under poor signal-to-noise conditions; improved communications in selective fading and multipath environments; and the ability to accommodate more communication channels simultaneously in the same spectrum. *(One might add that use of spread spectrum might enhance 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 the first of February 1996.

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

Radio District	Group A Am Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
Ø	ABØAO	KIØAV		KBØVFH
1	AA1PL	KE1EA	N1WOJ	KB1BWP
2	AB2AA	KG2FN		KB2WXM
3	AA3NK	KE3VY	N3WTW	KB3BNF
4	AE4QB	KT4KE		KF4GNF
5	AC5GK	KK5WI		KC5SQT
6	AC6SH	KQ6DN		KF6BGO
7	AB7OR	KJ7UK		KC7PBF
8	AA8VV	KG8VF		KC8CGD
9	AA9RE	KG9FK		KB9MOU
N. Mariana Is.	KHØV	AHØAW	KHØER	WHØABE
Guam	WH2S	AH2DB	KH2PL	WH2ANP
Hawaii		AH6OK		WH6CZW
Amer. Samoa	AH8O	AH8AH	KH8CK	WH8ABF
Alaska		AL7QI		WL7CRO
Virgin Is.	WP2V	KP2CJ	NP2IU	WP2AIA
Puerto Rico				WP4SAF

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Subscriptions received by the 20th of the month will begin with the issue dated two months from the month of receipt, i.e., if we receive the subscription by April 20, your first issue will be June, which will be mailed to you in early May.

Worldradio is a two-way communication. Send in Amateur Radio information and news. Share your knowledge with your fellow amateur through ***Worldradio.*** We are most interested in your comments and suggestions. We would appreciate being placed on the mailing lists of amateur club bulletins.

usability to amateurs of UHF/SHF bands allocated to the amateur service on a secondary, non-interference basis — W4ZC).

Another development in spread spectrum comes from TAPR (Tucson Amateur Packet Radio Group). TAPR President Greg Jones, WD5IVD, announced formation of a Spread Spectrum Special Interest Group (SIG), chaired by Barry McLarnon, VE3JF. Jones said "The emphasis of this SIG is on the technology of spread spectrum rather than regulatory or political issues."

SIG discussion topics will include chipsets and modem products available in the marketplace, and their applicability to the Amateur Service; relative merits of direct sequence, frequency hopping and hybrids of these approaches; use of Code-Division Multiple Access and other multiple access techniques to build packet radio local-area and metropolitan-area networks; spectrum allocation and interference issues; and proposals for development projects, and information sources.

To subscribe to the mailing list, send an e-mail message to listserv@tapr.org with the following line in the body of the message:

subscribe ss FirstName LastName.

Overall regulation

As of 30 January, it appears that the much-debated bill to overhaul the Communications Act of 1934 will soon become law. The bill provides for continued existence of the FCC, since it must oversee the bill once it becomes law.

FCC to move

The following are excerpts from an item in the *Washington Post* for January 24:

"After years of resistance, litigation and delay the Federal Communications Commission has agreed to move to Southwest Washington from downtown. Construction is set to start March 1 on a new building the FCC will lease in the Portals project at 455 12th Street SW, according to the General Services Administration, which handles government real estate. The GSA earlier this month signed a supplemental lease agreeing that the FCC would rent 450,000 square feet in the complex for 20 years." Although Congress hasn't actually appropriated funds for the FCC to move, Chairman Reed Hundt said "We should do what we are told to do and someone will find the money for us." The FCC has about 1,750 employees spread among six buildings near 19th and M streets NW.

(It remains to be seen whether this ends the controversy concerning a new location for the Commission. The new site is south of the Agriculture Department complex, which is bounded on the north by Independence Ave., on the south by D Street SW, on the East by 12th Street and on the west by 14th Street —W4ZC). **WR**

Atlas Radio, Atlas Radio, wherefore art thou Atlas Radio?

Helen Noble, *Worldradio* Advertising Director

In response to our query in the March 1996 issue of ***Worldradio***, we have heard from many who ordered Atlas radios and have received nothing; three who actually received a radio — none of which worked satisfactorily; some who requested a refund and have not received one; and a few people who have received refunds. One writer stated he had been able to obtain a refund by having the credit card charge reversed, but he emphasized that there is a limited time for one to act in order to reverse such a charge.

One gentleman received very little support in pursuing his complaint from the California Attorney General's office. One gentleman was told by his post office there was "nothing" they could do.

Readers have sent us copies of a 31 January 1996 letter sent to Atlas customers from O.M. Radio, the text of which follows:

"As I am sure you may be aware, Atlas Radio Company has experienced many setbacks and delays in its attempt to develop and produce an Atlas 400X radio. Herb Johnson, the founder of Atlas Radio, has produced many thousands of radios in the past and is a distinguished and highly respected Ham Radio innovator. Herb has been left drained and exhausted by the experience and is deeply saddened by the disappointment of his loyal Hams around the world.

"I, too, was disappointed having loaned Atlas Radio Company tens of thousands of dollars. O.M. Radio, with which I am affiliated, had been considering the purchase of Atlas Radio for several months. After closely reviewing the books of Atlas Radio Company, O.M. Radio has decided it is not able to complete this transaction. I do not blame Herb Johnson for the failure of Atlas Radio Company and I hold no ill will. Herb honestly tried his best.

"However, I am well aware that you have placed an order (Atlas Order #xxx) for the Atlas 400X and have a deposit with Atlas Radio Company. I also know that you are expecting a radio. During the past year, O.M. Radio has had several radio projects underway, and is near completion of design on a new HF radio that will soon be available. Even though O.M. Radio has no obligation to do so, out of respect for Herb Johnson and all of the Hams waiting patiently, we would like to consider offering you a radio and honoring your deposit made for the Atlas 400X radio. *(In some cases, we are aware that full payment for the Atlas 400X radio has been made.)*

Specifications for the new O.M. Radio will be available soon. We are all very saddened about what has happened to Atlas Radio Company. O.M. Radio will keep you informed of our progress and the schedule with the HF radios. *Please Note: O.M. Radio is not currently accepting orders or deposits from the public for any radios. We will not accept orders until we are ready to ship the radio and we begin our advertising programs.*

"Regards and '73, Ken Hudson, O.M. Radio Company, P.O. Box 910421, San Diego, CA 92191-0421; Customer Service Number 619/535-1425; FAX 619/535-1603."

Worldradio has tried to follow up on "O.M. Radio" and neither San Diego city or county has a business license issued in that name. The fax number is the same as the Atlas fax number. The 800# which the "new" Atlas partners of late summer 1995 had installed is no longer valid, and the operator referred me to the message line answering machine number that is listed by O.M. Radio in the letters they sent out to Atlas customers. When I called the message line (several times) the message tape was full, so I could not even leave a message! When I called the telephone company, they had no listing for "O.M. Radio." **WR**

Oregon flooding

(continued from page 1)
a useful tool in this situation. "We are certainly going to concentrate on it in coming drills," Fillinger said. "I see it as particularly useful in a widespread disaster. "Packet reports remind me of my days in broadcast radio where we regularly received news off the teletype machines. In this case, packet was especially useful in keeping people informed about changing situations, such as mayors announcing whether their local water supplies were safe to drink."

Robert Burgert, KØPB, sent the news of the Amateur Radio operators'

Al (Sandy) Mikalow, K7OOZ.

involvement to all the local television and radio stations in the area. He reported:

". . . Since it started, the radio operators have been working from before sun-up until as late as 3 a.m. We were the ones calling for help for the desperate people in Vernonia. . . . There were no phones, but (Amateur Radio) was there providing communications between Vernonia and the outside world.

"Medical help and emergency supplies, food, clean-up materials and long lists of needs were sent via the ham bands. There were hams from Tillamook, Astoria, Portland . . . Washington state and many other locations involved . . . .

"A drop point at the Manning Village Market and one at the Tanasborne Safeway provided supply staging points with ham operators at those locations. We had two donated 24' U-Haul trucks, along with our own trucks shuttling supplies. . . .

". . . We were running short of gas and food money and a call went out on the 2-meter ham band. Before long donations were being dropped on a desk at the Manning store. More operators were needed and more showed up. We found a wind sock for a landing site for the Air National Guard helicopters. It just keep going. . . . When the local agencies got into position where they could help, we began a transition from our operation to theirs.

"When . . . (help is needed again) . . . the Amateur Radio operators will be

Robert Burgert, KØPB's mini-station on wheels helped to support part of the ARES net.

there, providing communications and whatever is needed."

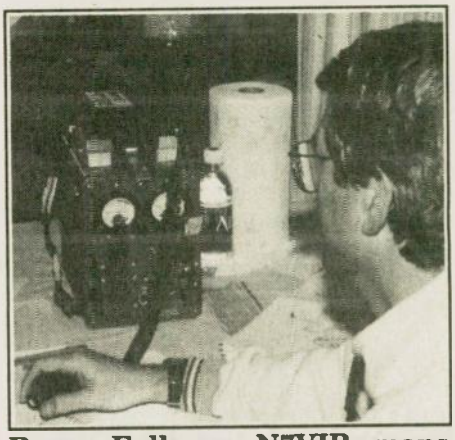
This disaster was like all others in that it highlighted areas for improvement. Fillinger cited three for special

Randy Silbaugh, KE7AF, gives communication support from a school in Mist, Oregon.

attention. Not surprisingly, all three involved better coordination, not technological enhancements—after all, he is president of a technology-oriented club. Amateurs need to work more closely with the Civil Air Patrol. "They can't fulfill their mission without coordinating with amateurs. They can't carry all the equipment they need when they're airborne to communicate with all stricken areas."

The flood affected areas in Washington as well as Oregon. This presented additional problems for TARC, which is concerned with five counties covering both states. Many members live in Washington but work in Oregon, for instance. Identification credentials issued by Clark County, Washington, often did not impress Oregon officials. "Roger McCoy, W7ADV, who is responsible for TARC's disaster-preparedness training, is working to improve coordination between the various political entities. He is planning a two-state exercise precisely to see where the conflicts are. "For example, Washington has a list of 2-meter frequencies to use in emergencies. Oregon has its own list. Obviously this presents problems."

SATERN members were on standby alert, ready to assist The Salvation



Roger Fallman, N7VIB, mans emergency communications in Vernonia.

Army in its disaster response. Although the army did open emergency shelters, it did not call on amateurs for help with communications. "They really don't realize how much help we can be. We need to work with their officers to show them the potential of Amateur Radio." Clearly the Technology Amateur Radio Club is serious about its twin goals of promoting technological sophistication and providing emergency service.

February's round of flooding is not the first the area has experienced. In addition, recent years have seen the eruption of Mt. St. Helens, numerous "silver thaws," and constant concern over the security of Columbia River dikes. "If we had an earthquake here, people would quickly appreciate the value of auxiliary power," observed Fillinger, naming yet another worry. "You always have to be prepared." WR

NEWSFRONT
(continued from p. 3)

Since 1987, the FCC has deemed as indecent all explicit references to such things having a prurient meaning. Unlike obscenity, indecency is protected by the First Amendment's free speech guarantee.

The high court's action, taken without comment, opens the door to prosecuting almost anyone who transmits indecent language during hours when young children may be listening in. This could even include transmissions made by ham radio operators if the FCC decides to invoke the rule.

The FCC has long held that a violation in any one service is no different that a violation in any other. For the FCC this Supreme Court decision could be what it has been waiting for so that they can at least remove the most egregious offenders from the air.

ARRL Board meets

The ARRL Board of Directors met in Savannah, Georgia on 19 and 20 January and took some rather interesting actions that will affect most United States hams.

1999 WRC

Perhaps the most far reaching was the decision to appointment of a committee to draft ARRL policy positions on questions to be addressed at the 1999 World Radiocommunications Conference issues to be studied include possible simplification of the licensing structure, agreement on licensing standards internationally, and consideration of Article 25 of the International Radio Regulations. These are the technical and operational rules governing the amateur and amateur-satellite services, including but not limited to the high frequency code requirement. Membership input will be sought on all issues.

Repeater coordination

There was not much movement on the creation of a single point of contact for the repeater coordination community. The ad hoc repeater coordination committee says that it will continue dialogue with the repeater coordinators' drafting committee and other interested parties, and report to the board at its next meeting any recommendations for regulatory change, and suggestions for improvement of the coordination process.

Awards

A number of awards were announced. First, Amateur Radio emergency service members from Oklahoma were awarded the ARRL Certificate of Merit, for their courageous efforts in providing critical emergency communication services to agencies responding to the Oklahoma City bombing.

David, VP2EHF, and Dorothea, VP2EE, Mann, were named as recipients of the International Humanitarian Award for 1995 for hurricane relief efforts.

The board also awarded Frank Bauer, KA3HDO, the ARRL National Certificate of Merit for his outstanding volunteer service as a member of the SAREX working group.

DXCC

A new procedure for the reporting of advisory committee recommendations was adopted. A committee will be assigned to review the DXCC program and make necessary recommendations in order to encourage broader participation, make the program more equitable, create better understood criteria for DXCC "countries," improve the process of reviewing requests for additions and deletions to the ARRL DXCC list and increase efficiency in the administration of the program.

Committees

The Board will also experiment with a new system of standing committee and board meetings during 1996. Committee meetings will be held in July and October, in conjunction with an expanded series of meetings of the full board. The consolidated meetings are expected to save the ARRL and its membership considerable amounts of time and money.

New UK prefixes

England's Radio Communications Agency has announced that as of April 1996, new amateur call signs will be issued using an the "M" prefix instead of the "G" currently used starting with MØ, for class A, and M1 for class B licensees.

The change will take place even if some of the "G" prefix calls remain unused. The same regional indicators as at present will be used, for example M for England, MM for Scotland, MW for Wales and so on. Holders of existing "G" prefix call signs and Novice call signs will not be affected by this change.

Club provides communications

During the "Great Blizzard of 1996," as the storm which hit New England on 6-7 January is being called, the Bethel Educational Amateur Radio Society of the Bethel Connecticut Middle School got the call to action from the City Office of Emergency Management. The students operated around-the-clock to provide backup communication for the town and acted as a net control station for 34 surrounding towns in the greater Fair-field county area.

The club maintained vital communication links with the area Office of Emergency Management in Bridgeport. They relayed weather information and prepared materials if emergency shelters were activated.

Using the call sign of their coordinator, Peter Kemp, KZ1Z, the group operated from the local fire department on both HF and VHF. They also have a club station at their school. A dozen students participated in the effort.

FCC denies license renewal

The FCC has acted to deny the application of Herbert L. Schoenbohm to renew his Amateur Radio licenses. Schoenbohm, who holds the call sign KV4FVZ had his application to renew designated for public hearing after the FCC received complaints that asked his application be rejected, based on a federal court conviction several years ago a charge that he had in his possession a counterfeit telephone access device.

The decision against Schoenbohm was issued on January 26th by FCC Administrative Law Judge Edward Luton. Schoenbohm was given the

usual thirty days to file a further appeal before the entire Commission. If they deny his renewal application, Schoenbohm's only option will be to take the matter to the Federal courts. Schoenbohm has been heard on the air to say that he will fight to retain his license even if it means going all the way to the Supreme Court.

If he fails to file in the required time period, the order becomes effective fifty days after its date of issue. Until that time, Schoenbohm is free to continue to operate on the air.

Astronaut hams marry

In a "first" for ham radio and for the United States space program, astronauts Steve Nagel, N5RAW, and Linda Godwin, N5RAX, were married on 29 December.

Steve and Linda flew together on STS-37 in April 1991. Both have appeared as speakers for ARRL at conventions.

Steve Nagel was the commander aboard space shuttle mission STS-55 in April 1993, and operated SAREX. Godwin, a NASA Mission Specialist, operated the SAREX during mission STS-59 in April 1994. As of this writing, Linda Godwin is scheduled to be aboard STS-76 in March.

SAT gateway back

The WD4ASW satellite gateway node is back in operation after installation of a new hard drive and transfer of program files from the defective drive. Due to problems in transfer, no attempt was made to save messages prior to the shutdown. The WD4ASW dial-in is area code 904/396-7114, with standard 8N1 defaults.

Hams help heart attack victim

A group of Boy Scouts that included several hams lived up to the Scouts' motto, "Be Prepared." As a result, the victim of a heart attack is alive to talk about his ordeal.

It all happened during a wilderness outing last August. Dave Smith of Saratoga, California, and his wife Janet were accompanying their younger son and other scouts on an eight-day backpacking trip into California's Yosemite high country, when Dave experienced chest pain.

Scoutmaster Paul Wesling, KM6LH, took Smith's vital signs and used Amateur Radio to relay the information to the Yosemite emergency response staff. Smith was rescued and transported by helicopter to Yosemite Valley and then to Modesto, California, where doctors determined he had suffered a mild heart attack.

Wesling says that ham radio is a standard part of his troop's outings. Both Wesling and Eagle Scout Rajeev Goel, KD6MXV, had VHF handheld radios along for the trip. As a result of their experience, Dave and Janet Smith are making plans to take one of the troop's Amateur Radio licensing classes. This way, they too will always be prepared.

"The Grid Square Pirates"

In DX, if you are looking for a VHF or UHF DX contact, keep an ear open for "The Grid Square Pirates." This is a VHF DX group created about 3 years ago, with the sole intention of stirring up much needed activity from rare grids during the major VHF contests.

The original Grid Square Pirate members were W3ZZ, WD8ISK, WA6GVC, ND3F and KP4XS. The group now includes KZ3H, WR3E, ND3A, as well as numerous other rovers, single operator mountain-toppers and those just interested in the concept. For more information contact KP4XS at his *Callbook*™ address.

Pirated calls?

KGØEI reports via packet radio on several pirated call signs he has spotted in recent days. KGØEI says that over 22% of the calls that he worked in the recent SSB Sweepstakes either have no address which matches the state given, are not available in *Callbook* ™ or listed in most recent Buckmaster CD-ROM.

Low power net

VHF weak signal enthusiasts are advised of a Midwestern U.S. net. It meets on 144.25 MHz on the first and third Sundays of each month, at 02:30 UTC. Net control is Chad Phillips, KGØMW, in grid square EN-13. Chad will take local check-ins first, than look to Minneapolis and then to Omaha. If you are DX to the Mid-Western United States or are a low power station, e-mail Chad ahead of time, and he will listen for you. His electronic mailbox is chad.phillips@ yebb.com

FCC funds low

FCC Chairman Reed Hundt says that telecommunications laws cannot be effectively overhauled and enforced without more money from Congress. Hundt told reporters on 18 January, that he would ask Congress to give the FCC 225 million dollars for fiscal year 1996. This is a 26 percent increase over its current budget.

Congress has provided the FCC with only 165 million dollars for fiscal year 1996. The FCC's 1995 budget was $186 million. The current 165 million dollar figure is an 11 percent decrease from last year. Hundt faces an uphill battle in a Republican-controlled Congress that wants to hold down federal spending.

Kantronics on the web

In ham radio industry news, Kantronics now has an e-mail account for customers to get technical support and service. Questions go to service@ kantronics.com. The company says that representatives will respond via e-mail. Kantronics now includes the RF Concepts line of products as well.

Need Monaco?

Laura-Marcelle Martinex, 3A2MD, in Monaco reports she is on every day between 1400 UTC and 1600 UTC on 14.175 to 14.180 MHz. QSL to her at: 73Bd du Jardin Exotique, 98000 Monaco.

•

Be sure to look for all of our April Fool's stories!

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You get excellent gain for solid, noise-free QSOs. On 440 MHz, it's a high gain ½ wave over ¼ wave radiator. On 2 Meters, it's a *full size* ¼ wave radiator.

Its tough *stainless steel* radiator is only 19 inches tall -- won't knock off when parking in your garage.

An extra powerful magnet holds it steady -- even at highway speeds.

You get 15 feet of coax with a standard PL-259 coax connector for your mobile rig.

You get a BNC adapter so you can also use it with your handheld!

Your MFJ-1724B is protected by MFJ's famous one year *No Matter What*™ unconditional guarantee.

DualBand 144/440 MHz Ground Plane

MFJ-1754 **$24.95**

Dual band ground plane antenna for 2 Meters and 440 MHz gives you extra long range on 440 MHz with a high gain halfwave over quarter wave radiator. On 2 Meters you get solid quarter wave performance. Mounts on 1 to 1½ inch mast with single U-bolt. Easy-to-tune.

1/4 Wave Ground Plane

MFJ-1740 **$12.95**

The MFJ-1740 brings up 2 Meter repeaters as well as any ¼ wave ground plane made!

You get easy tuning, low loss ceramic antenna insulator and strong lightweight aluminum construction.

Single U-bolt mounting for 1 to 1½ inch mast. Cutting chart included for 220/440 MHz. Made in USA.

MFJ Pocket Roll-Up™

2 Meter halfwave J-pole antenna

MFJ-1730 **$14.95**

Roll up this *halfwave* 2M J-pole antenna and stick it in your pocket! It's the perfect *gain* antenna for traveling.

Get home station performance on the go. Just hang your *MFJ Pocket Roll-Up*™ in the clear and plug the BNC connector into your handheld.

It's omni-directional and has significant gain over a ¼ wave. It does not need a cumbersome ground plane so it's convenient for indoors and works great with handhelds. Made in USA

Dual Band *flexible* Ducks

144/440 MHz flexible ducks for HTs

A. *High Gain FlexiDuck*™ **MFJ-1717, $19.95.** Enjoy dependable QSOs when other rubber ducks give you noise. High gain ½ wave on 440 MHz, full size ¼ wave on 2M. Won't jab you -- bends, twists, flexes with you. 15¾ inches.

B. *FlexiDuck*™, MFJ-1716, A. B. **$16.95.** Similar to MFJ-1717 Full ¼ wave on 440 MHz, efficient loaded ¼ wave on 2 Meters. 8¾ inches.

Shorty Duck™ for HTs

Add this *short*, 4¼ inch *ShortyDuck*™ to your 2M handheld for a Q-5 signal! Impedance matched for maximum gain. High-Q helical wound radiator.

MFJ-1718 **$12.95**

5/8 Wave 2 Meter Mobile Antenna

MFJ-1728B **$24.95**

For *maximum range* while mobile, use MFJ's *Maximum Gain*™ 5/8 Wave 2 Meter Mobile Antenna. You'll get the maximum possible gain of any single element mobile antenna!

Competitive 5/8 wave mobile antennas can't work any better -- no matter how much more they cost.

You get low SWR so your rig can safely deliver maximum power into your antenna. It's rated at 300 watts PEP so you can use any mobile rig plus a mobile amplifier.

You get a heavy-duty magnet mount that holds your antenna tight at highway speeds and a black magnet base that'll look good for years.

You get a stainless steel radiator that'll endure years of harsh mobile use and 12 feet of coax cable.

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Order MFJ-1728B with standard PL-259 coax connector and also includes a *free* BNC adapter for your handheld.

Glass Mount *Dual Band* 2 Meter/440 MHz

MFJ-1734 **$39.95** *New!*

The MFJ-1734 is the *best* glass mount dual band 144/440 MHz antenna in ham radio!

It's perfect for your dual band mobile. A free BNC adapter is included for your handheld.

You'll get a potent 2.6 dB of gain on 2 Meters and a thundering 6.3 dB on 440 MHz with low SWR. It handles 50 watts of power and includes 12 feet of coax, cleaning pad, and all mounting hardware.

A small 6 inch counterpoise mounted inside your vehicle lowers SWR and makes tuning easy. Tuning tool included.

A unique radiator mount lets you adjust the outside radiator for angled surfaces -- no tool needed. The radiator is easily removable to prevent damage to your antenna when you wash your vehicle.

It's easy to install on a glass window or other non-conductive surface.

MFJ-1738, $29.95, for 2 Meter, less counterpoise.

MFJ-94, $7.95, remounting kit for MFJ-1734 and MFJ-1738.

MFJ *dual band* 144/440 MHz Yagi

7 elements on 440 MHz . . . 4 elements on 2 Meters . . .$69.95

MFJ-1768 **$69.95** *New!*

Get *two* Yagis for the price of one . . . put two Yagis in the space of one with *single* coax feed! Get 7 elements on 440 MHz and 4 elements on 2 Meters.

MFJ's *exclusive* dual band balanced feed with *FerriteChoke*™ decoupling prevents pattern skewing and gives you low SWR. ¼ inch diameter driver elements give wide bandwidth.

This *National Bureau of Standards* design is optimized for maximum gain, high front-to-back ratio and clean symmetrical pattern.

Mounts vertically for FM/Packet or horizontally for SSB with single included U-bolt on 1 to 1½ inch mast or tower leg.

High strength 6061-T6 aluminum 5 foot, 1⅛ inch diameter boom. 2 pounds. Elements are electrically isolated from boom. Made in USA.

Portable 3 element Yagi for 2 M

MFJ-1763 **$39.95**

You can set up or take down MFJ's *portable* 3 elements 2 Meter Yagi in seconds! Elements simply screw into the boom.

You can take it with you wherever you go and have the "oomph" and directivity of a beam.

It's easy to store and sturdy enough to use as your home station antenna.

Mounts vertically for FM/packet or horizontally for SSB. *Center* or *end* mounts with single U-bolt. Great for packet/PacketCluster™.

It's compact 2¾ foot boom gives you a calculated gain within 1 dB of a four element Yagi with a boom nearly twice as long.

Extra thick elements maintain high gain and directivity over entire 2 Meter band. MFJ's *FerriteChoke*™ decouples feedline.

Elements and boom are made from strong lightweight aluminum and protected by MFJ's *Permanent Molecular Bonding Technology*™.

Weighs just 2 pounds. Boom is 30½ inches. Made in USA.

5/8 Wave Ground Plane

MFJ-1750 **$19.95**

For a low, low $19.95, you get a *high performance* 2 Meter 5/8 wave ground plane home station antenna -- you'll get the maximum gain of any single element antenna.

More expensive 5/8 wave ground planes can't work any better -- no matter how much they cost.

You get . . . shunt fed matching that bleeds off unwanted static and gives you low SWR . . . strong lightweight aluminum construction . . . low loss ceramic antenna insulator . . . MFJ's *RapidTune*™ radiator . . . MFJ's one year *No Matter What*™ guarantee. It mounts on 1 to 1½ inch mast with single U-bolt and is Made in USA.

MFJ-1752, $19.95, for 220 MHz .

HT Range Extenders

Telescoping antennas for handhelds

A. *Long Ranger*™ 2 Meter Halfwave, **MFJ-1714,** $16.95. For really long range this MFJ endfed halfwave is hard to beat. It outperforms a ⅝ wave on a handheld because the ⅝ wave needs a ground plane. The MFJ halfwave doesn't. It's shorter, lighter, has more gain and places less stress on your antenna connector than a ⅝ wave antenna. When collapsed, it performs like a rubber duck. 40" extended, 10½" collapsed.

B. *Dual Bander*™ for 2 Meters and 440 MHz, **MFJ-1712,** $14.95. Got a new dual band handheld or separate units? One antenna fits all. It's a ¼ wave for 2 Meters and a ⅝ wave with gain for 440 MHz. 7¼" collapsed, 19" extended.

A. B. C

C. *Pocket Linear*™ ⅜ Wave, 2 Meters, **MFJ-1710,** $9.95. Carry this pen size antenna in your pocket like a ballpoint pen. When you're using your rubber duck, on the fringe and noisy, put on the *Pocket Linear*™, extend it to 24½" and carry on your QSO. Has pocket clip. 5¼" collapsed.

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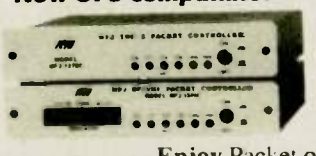

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Adventures on the nether band

Bob Stedman, K9PPW

After reading the article "Additional radio spectrum discovered," by Dick Sisson, W5ONL, ***Worldradio,*** April 1995, I felt inspired to investigate this new spectrum. It would be like the pioneers exploring the New World; there might be wonderful new opportunities for radio communications. But like all new discoveries, the Negahertz spectrum had its good side and its bad side.

The first major disappointment was the realization that there was no commercially available equipment for the new spectrum. I would have to homebrew something (horrors). A receiver would be the first logical piece of gear to put together.

Having had considerable experience in using and homebrewing VLF receivers that tuned as low as 8 kHz, I reasoned that if I could just tune a little lower, I would reach the Negahertz spectrum. One seemingly obvious way to do this would be to use larger capacitors and coils in the good 'ole regenerative receiver. However, after a few experiments, I was quick to realize that this would be a difficult task, to say the least, because not only were the capacitors and coils becoming larger, they were becoming enormous. Also, there was a major problem with the set screws in the tuning knob. Anyway, it was very interesting to be able to listen to the 60 Hz power lines.

Undaunted, my next idea was that perhaps an upconverter would do the job. I would upconvert a portion of the Negahertz spectrum to the Megahertz spectrum where I would be able to monitor all of the activity on those bands using an ordinary general coverage receiver. This seemed like a practical approach that would not necessarily require unusually large capacitors and coils. The basic idea, as most technical people know, is that a mixer produces both the sum and the difference of the input signal frequency and the local oscillator frequency. Also, if the mixer circuit had high enough dynamic range, it would not require a Negahertz bandpass filter at its input to protect it from overloading on strong signals.

According to the article in ***Worldradio,*** "best propagation seemed to coincide with sunspot minimums." Since we are now at or near a sunspot minimum (in 1996 A.D.), I reasoned that there should be very good DX conditions on the 10 N'eter (Negameter) band. Therefore, I chose a local oscillator tuning range of 2 MHz for the new receiver, and a conventional diode double balanced mixer for the mixer. The mixer would then provide up-converted 10 N'eter band signals to my trusty general coverage receiver. The formula for mixing is the conventional one:

Fif = Flo ± Fsignal

For example: if Fsignal = 28 Negahertz = -28 Megahertz, and Flo = 2 Megahertz, the Fif(-) = 30 Megahertz (using the negative sign of the above equation). The other product coming out of the mixer would be Fif(+) = -26 Megahertz = 26 Negahertz, which is automatically rejected by a conventional positive frequency receiver, and therefore not of concern. Thus, this upconverter should allow me to eavesdrop on 28 Negahertz to 30 Negahertz, by tuning my general coverage receiver from 30 MHz to 32 MHz.

The next unanticipated problem was the lack of a Negahertz signal generator to check out the newly constructed upconverter. Since I didn't want to get into the large capacitor and coil dilemma again, I decided that I would test it by receiving actual out-of-the-ground Negahertz signals. Again referring to the article, I found that I would need an antenna of negative length, and that it would have to be buried as deeply as possible.

I assumed that like Megahertz, Negahertz would also propagate in a vacuum at about 300 million n'eters per second. Therefore, I would cut a dipole for a length of 16.14 n'eet (negafeet) in order to resonate it near the center of the 10 N'eter band (29 Negahertz). Next unanticipated problem: the local hardware store didn't have any negative tape measures. How would I be able to cut the antenna to length? I solved this sticky problem by using an ordinary positive tape measure, extending it, placing the starting end of the wire at the 18 foot 2 inch point (which leaves a total of 2 feet of extra wire for making the four connections needed for a dipole), and cutting the other end of the wire at the 0 foot 0 inch end of the tape measure. Then the 16.14 n'eet dipole was constructed as normal dipoles are constructed, using ceramic insulators, RG-58 coaxial feedline, etc.

I went out in my back yard and dug a 17 foot long trench for the installation of the antenna. Due to the clay composition of our soil, I was only able to make the trench about 2 feet deep. At each end of the trench, I set a post for the attachment of the ends of the dipole and from the center, I made another trench at right angles to the antenna trench for use in bring the coax cable away from the antenna and over to the radio shack. When this antenna was finally built, these trenches were refilled with clay, and covered with sod. Incidentally, this is one of the most invisible antennas I have ever seen (not seen?); the village antenna ordinance makers should be well satisfied. Just don't forget to call JULIE (Joint Utilities Locating something...) before digging all those trenches.

Sorry about my wordiness; I'll try to wrap up this story as quickly as possible. Anyway, I plugged the coax from the antenna into the new Negahertz upconverter, and connected the upconverter to my trusty general coverage receiver, and started tuning from 30 to 32 MHz (28 to 30 NHz). I was immediately rewarded by the sweet sounds of dozens of CW and SSB signals, and many QSOs in process. I am now seriously considering building a transmitter for the amateur 10 N'eter Band, so that I can participate in all of this activity. However I have a dilemma. To whom do I apply for a license to use these bands? I seriously doubt that the FCC is the government agency responsible for the administration of this part of the spectrum.

73 and Good Nega-DXing. WR

A thought

If you ever find something you like, buy a lifetime supply, because they will soon stop making it. —Fullerton Radio Club *Smoke Signals*

PRODUCT REVIEW

Comet CA-HV multiband antenna

Gardner L. Harris, W6AXM

Some people are chocolate junkies, some like Jay Leno collect cars, still others collect guns. Me, I collect HF mobile antennas! I love HF mobile and have since I first got involved with it for Civil Air Patrol and MARS back in the late '50s and early '60s.

For me the problem has always been the need for efficiency combined with a reasonable profile that would not attract vultures to something that they might have thought was their new nest. Seriously, the biggest drawback to HF mobile has been both the overall antenna size and the inconvenience of having to stop the car to change coil taps, resonators or more lately something called something like a meandering wire.

Today's freeway driving doesn't really lend itself to stopping to do this and frankly I tend to flit between bands so often that I'd be stopping at virtually every rest stop just to change bands. So in 1974, when Herb Johnson's first Atlas, the 180 hit the market, I decided to purchase an antenna I first saw in 1959, which covered 10, 15, 20 and 40 Meters without doing anything but bandswitching the transceiver itself. Frankly, I loved it. With the tiny Atlas 180, being mobile became a real pleasure — a no-tune antenna combined with a no-tune radio! !

Now the HW-3 is a great antenna. It handles 500 watts PEP or 150 watts CW but when 40 or 80 Meter resonators are used to make it a 4 band device, it gets to be a pretty conspicuous appurtenance, needing to be guyed if speeds of greater than 40 mph are contemplated. I still have and use the venerable HW-3, particularly on long trips with the van. But on shorter trips with my smaller Volvo diesel station wagon or the even smaller 1964 Volvo 1800S sports coupe, I always felt as though the antenna was just too conspicuous.

Nevertheless the performance was so good that I used nothing else until fairly recently when Comet released their tiny HA-4S which was reviewed by Lew McCoy in the September 94 edition of *CQ Magazine*. So I bought one and found that it performed exactly as Lew said it would, adequate but not at the level I had come to expect from the Mobile-Mark HW-3. Furthermore the tuning was quite critical and affected by placement on the vehicle — primarily because it was so small. But half a loaf is better than none at all, right?

Enter the Comet CA-HV multiband antenna which covers 40 — 2 Meters. The instructions say that one can use 2 HF plus 6 and 2 Meters. With one of Comet's famous duplexors, it's actually possible to use it for both HF and VHF at the same time! In actual fact, if one purchases the accessory 20-meter coil, the antenna can be used for any 3 HF bands plus 6 and 2 Meters. Structurally the antenna is about 6 feet of beautifully finished chrome and plastic with the 40 Meter resonator placed on top. Six Meters is covered as a slightly shortened 1/4-wave. On 2 Meters it looks like a 5/8-wave device. Naturally on HF it's a toploaded 1/4-wave on the chosen bands. The HF coils have a small but negligible effect on the VHF SWR and Comet actually supplies typical SWR charts for virtually any combination of HF coils. When no HF coils are used there is a special screw-on device which restores the proper electrical length. Unlike the HA-4S this antenna was an absolute dream to tune up.

As with all my HF antennas, I chose to mount it on a bumper mount which is bonded to the main chassis. While the Mobile-Mark HW-3 mounts to a standard 3/8" x 24 threaded mount, the CA-HV, like many Comet antennas, screws onto an SO-239 type mount. In order to retain my existing Celwave mounting fixture, I removed the original 3/8"x 24 threaded socket and mounted a TFE insulated SO-239 in its place — a perfect fit. I tightened one nut, soldered on the coax, and I was in business all of which took 10 minutes. Next I decided which bands I was going to use. Because I don't have a 15-meter module for my Ten-Tec Scout, the options left to me were 40, 20 and 10 Meters. 20 Meters was tuned first because that's the module that was in the Scout at the time. I checked the existing VSWR and made one quick estimate, cut the tuning stub and ended up exactly in the center of the area of preferred operation, roughly 14.280. Next came 10 Meters. Well 10 didn't really need adjusting but I moved the tuning stub out by 1/4" anyway just to zero out the VSWR at 28.350.

Finally came 40 Meters. I checked the initial VSWR to find that it was minimal near the low edge of the CW band. Off came 1" of tuning stub which took the resonance point to roughly 7100 kHz — another snip and I had it dead-on 7230 kHz. Now while I did all the tuning by trial and error, Comet provides detailed cutting instructions including the amount the frequency will change as each tuning stub is adjusted. In addition, Comet antennas in general are designed for their series of mounting fixtures which accommodate virtually any mounting location including gutter, rear hatch, body and even some magmounts (which I personally don't recommend). Always try for the best body ground. You can't believe the kind of difference a solid ground makes.

The single complaint about the Comet antennas in general is not about the antennas themselves. The folks who write their instructions apparently do not have a great command of colloquial English. Transliterated Japanese often provides a fair amount of levity. Sometimes though some real confusion occurs thanks to the ambiguities thus introduced. However, on the positive side, Comet very thoughtfully provides a complete set

of spare tuning stubs for the CA-HV. So if, as they suggested, you should happen to cut one too short, just help yourself to another. The current factory suggested resale price of the antenna is $179.95 plus $27.95 for the 20-meter resonator. 30-, 17- and 12-meter resonators are not available but a resourceful ham could probably fabricate 12 or 17 Meters from the available 20-meter accessory resonator by removing some turns from the coil and then re-covering it with new heat shrinkable tubing.

Performance

I have thus far been quite impressed by the overall performance. While the CA-HV is several feet shorter and roughly one-third the overall diameter of the HW-3 there seems to be little difference in overall performance. While I did not make any definitive measurements, my definition of performance of "if I can hear them and I can work them — it's ok" definitely prevails here.

One must remember that this is not a high power antenna. The rating of 120 watts PEP appears reasonable. The Ten-Tec Scout causes no coil heating in "tune," but the Atlas 210-X makes them too hot to touch after 20 seconds and I wouldn't think of using the Atlas 350-XL for more than several seconds at full power. The Mobile-Mark antennas, on the other hand will easily handle 500 watts PEP and their single-band kilo-whips will take 1 kW CW for quite a while at resonance.

I think that the most noticeable difference for me was the obviously smaller available bandwidth. The HW-3 permits me to use all of the 20M phone band and most of the 40M band before registering any noticeable SWR on the Scout's front panel meter. With the CA-HV, I have roughly one half the bandwidth of the Mobile-Mark antenna.

On the plus side is the fact that at resonance, while the printed specs indicate that a 1.6: 1 VSWR is to be expected, the antenna provided me with no measurable VSWR at resonance (at the transceiver end of 17 feet of RG-58/U). That's as good as the Mobile-Mark and better than some other brands I'd prefer not to name here.

The bottom line regarding the CA-HV is that it's a great looking, great working piece of hardware. Were it not for the single inconvenience of having to remember to fold it over when pulling into my low-clearance garage, it would have been roof-mounted as are my 2M, 440 and 1.2 GHz antennas. The included fold-over accessory brings the antenna down to < 6" in overall height.

Is it worth the nearly $200 with the accessory 20M resonator? That's a question only the individual can answer, but for this writer, the answer is an unequivocal affirmative.

The CA-HV is available from most Amateur Radio and some Commercial Radio suppliers.

Gardner Harris is an Advanced Class licensee, who has been licensd since 1957. He is the proprietor of AXM Enterprises, a professional two-way radio dealership. WR

Awards

Great Lakes Award

Charles A. Lemarbre, N8LDY

The Michigan Amateur Radio Alliance (MARA) is proud to present "The Great Lakes Award." Set your sails and join us on a voyage through the Great Lakes chain. All licensed amateurs and shortwave listeners are welcome to apply. You may use any band or mode except repeaters. Contacts must have been made on or after 31 August 1991. There are 8 states and Canada to confirm.

Please send an SASE for your application and chart to: MARA/GLA, P.O. Box 670, Comstock Park, MI 49321-0670 and join us on the waves of the Great Lakes. WR

OFF THE AIR

CW contacts response

The "Ten Tips for CW Contacts" article in ***Worldradio's*** February issue was excellent. I can add two more:

1. End each transmission with a question. The other operator is not left hanging with nothing to say, and you will know whether he is really copying what you are saying. Be nosey.

2. Replace your tablet with a 3 x 5 note pad. Unless you are preparing for a code test or taking formal traffic, there is no reason to write everything down for posterity. All that writing is keeping your code speed down.

Viva CW!

Bert Schorlemmer, K5KWD
Llano, TX

"No" on vanity calls

Regarding your article about vanity call signs — good and bad, February '96, page 3. I believe an amateur should be allowed to choose his own call. There are so many to choose from.

But, I have a problem with someone using a deceased person's call. No deceased person's call should be reissued except to a bonafide club or for a repeater in that person's honor. Those that were issued during the '70s need revocation.

I also have problems with amateurs not properly IDing the FCC district (1-0) they are in when transmitting.

Because of these, I hope the vanity program does not become a reality; I hope it dies in total confusion.

R.W. Thimmesch, WA5NYG
Belle Chasse, LA

CW argument

Worldradio is the only publication I buy about Amateur Radio on any regular basis. I've always liked your coverage of disaster communications, and the diversity of columns.

I do have some observations I'd like to make on some things. First of all is the big CW argument. Let's face some facts:

1) CW is an Amateur Radio tradition.

2) CW is considered outmoded for government and commercial uses.

3) CW, by the virtue of its tonal nature and narrow bandwidth, *can* be more copyable than voice in very weak signal situations.

4) CW does not make better operators by being a mandatory requirement.

Better operators are achieved through instilling respect, good operating habits, rules, regulations, and band-use agreements. CW is a mode and a language, not a Golden Rule. If it is such a filter of bad operators, as some would have us believe, then I'd be very interested in their explanation of all the Generals, Advanced, and particularly Extras "busted" for malicious interference in the past 10 years. Also, let's not forget to ask them to also explain all the wonderful operating on 20 and 80 Meters. What about during major DX pileups both on voice and CW sections, how considerate and courteous are they? CW is a tradition, a mode, a language of communication, and that's all! Good and bad people can be found all over the globe in all races, religions, colors, creeds, economic levels, education levels and any other way we find to differentiate ourselves from others. Let's cut the CW salvation jive, shall we?

Secondly, a QSO is a conversation. Exchanging call signs and signal reports is a contact. All DXers, contesters, and publications should refresh themselves on this. By the way, I have been a DXer and do hold DXCC.

Lastly, when dealers jack up the price of their current stock to the price of new stock when the yen/dollar gets worse, this is simply greed. If there is some valid reason for this, I'd be happy to learn it. Oh, I must remind you that the ARRL may be our representative with the government, but that hardly means we have to agree with how they do it. I realize you did not say we had to.

Michael C. McCarty, KB8FNQ
Columbus, OH

Antenna laws

Two items of information in your ***Worldradio's*** February NEWSFRONT were of special interest to me. One was the Massachusetts antenna law and the other was CC&Rs cannot ban small antennas, on page 7.

I live in a restricted area of single family homes that prohibits TV or any other kinds of antennas. Our TV is by cable. The property association has been kicking this subject around (use of small antennas) for months. The latest report was they wanted to think about it some more.

If a law could be passed in Arizona such as Massachusetts and California, thinking and haggling could be eliminated. Is anyone aware of any action underway to initiate passage of a similar law here in Arizona?

Arthur C. Edwards, N7SPV
Sedona, AZ

"We all get heavier as we get older because there's a lot more information in our heads."

—*Rocking Chair Copy* —Clark County (WA) ARC

DAYTON hamvention® '96

✣ May 17, 18, 19, 1996 ✣

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Special Services

Lodging information and special award nomination forms were in our 1995 Program. A limited number of Handicap parking permits are available. License Exam by appointment only. For Form 610, call 1-800-418-3676
Call, FAX, Mail, or BBS for more information.

Bus service

Bus service will be provided between Hamvention, Air Force Museum, Salem Mall and Forest Park Mall parking areas. Many hotels/motels will have bus service for a nominal charge.

Returned Checks

A $25 service charge will be assessed on all returned checks.

Deadlines

In order to have time to return tickets to you, we must have advanced registration orders postmarked not later than May 3 (USA) or April 26 (Canada). Tickets will not be mailed before January 15th,1996. Ticket requests that are received **AFTER** the deadline will be processed and **HELD** for pick-up at the Hamvention Office in the Silver Arena. Tickets can be picked up beginning Thursday, May 16 at 8:00 a.m.

Flea Market

Flea Market Tickets (valid all 3 days) will be sold IN ADVANCE ONLY. No spaces sold at gate. A maximum of 3 spaces per person (non-transferable). Electricity is available in a portion of the last Flea Market row for $50 additional. Rental tables and chairs are not available in the Flea Market. Vendors ***MUST*** order an admission ticket for each person when ordering Flea Market spaces. Please send a separate check for Flea Market space(s) and admission ticket(s). Spaces will be allocated by the Hamvention committee from orders mailed by February 5. Please use 1st class mail *only*.

Notification of Flea Market space assignment will be mailed on or about **March 25, 1996**. Please indicate in the box below if you would like to attend regardless of Flea Market space assignment.

HAMVENTION Is sponsored by the Dayton Amateur Radio Association Inc.

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

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DX WORLD

John F.W. Minke III, N6JM
P.O. Box 310 Carmichael, CA 95609-0310

W-100-N

Congratulations to the following DXer for completing the necessary requirements for ***Worldradio's Worked 100 Nations Award***:

505. John C. Craig, KN6TN
25 January 1996

Agalega & St. Brandon (3B6)

According to *DX News Sheet* Barry, ZS1FJ, expects to hand out contacts from this one in May.

Bouvet Island (3Y)

After warming up with some operating from Agalega or St. Brandon, Barry, ZS1FJ, is planning a trip to Bouvet Island in 1997.

Transportation will be courtesy of the South African government to the Antarctic with a two-week stopover on the island. He expects landing permission from the Norwegian government. At least two other DXers will accompany him.

Malagasy Republic (5R)

Gerard, F2JD, should be on now from Malagasy Republic for a period of six months through September 1996.

There are other active calls that have been reported from this one which include the following:

5R8DA	21.278 MHz	1300 UTC
5R8DG	7.003 MHz	0245 UTC
5R8DQ	14.122 MHz	1400 UTC
5R8ET	21.245 MHz	0900 UTC
5R8JS	14.141 MHz	1615 UTC

On RTTY 5R8DG was working Europeans on 14.083 MHz around 1600 UTC on 14 January.

Uganda (5X)

Peter, ON6TT, will be going to Uganda and should be there for six months. Most of his activity will be SSB and he plans to join the major DX contests.

5X4F is very active from Uganda and has been on several bands. On 80 Meters you might take a listen between 3.500 and 3.510 MHz 2300 to 0400 UTC; 75 Meters between 3.787 and 3.799 MHz around the same times; and on 40 Meters between 7.004 and 7.007 after 0400 UTC. Other reports include 14.240 MHz at 1900 UTC, 18.069 MHz at 1000 UTC, 21.245 MHz at 1200 UTC, and 24.901 MHz at 1200 UTC. He has even been on 160 Meters; try near 1.824 MHz around 0300 UTC.

Another call was also reported in January, that being 5X1C on 20 Meters. On the 21st he was working SSB near 14.238 MHz at 2030 UTC and working RTTY the next day on 14.083 MHz at 1530 UTC.

Ghana (9G)

The call 9G5BQ was that of Steve Lieburg, PA3GBQ, during a recent visit to Ghana. He was to have operated from the station of 9G1BS. He was very active with the last contact reported in the DX newsletters on 14 January. Most of his activity was on CW with some SSB and RTTY.

Also active from Ghana has been 9G1YR who has been reported operating SSB on at least three bands. Try 3.784 to 3.790 MHz after 2330 UTC; 14.184 to 14.202 MHz, 1800 to 2100 UTC; and between 21.206 and 21.257 MHz after 1500 UTC.

Other calls reported include the following:

9GØARS	14.202 MHz	0800 UTC
9G1BG	14.181 MHz	1545 UTC
9G1BJ	14.184 MHz	1500 UTC
9G1BQ	18.125 MHz	1900 UTC
9G1BS	14.082 MHz	1445 UTC
9G1NS	14.184 MHz	2130 UTC
9G1PG	14.226 MHz	2100 UTC
9G1RL	14.215 MHz	2115 UTC
9G1SB	14.240 MHz	2300 UTC
9G1UW	18.159 MHz	1000 UTC

Rwanda (9X)

Mark, 9X4WW, should have returned to Rwanda by now after a visit to Belgium. *The DX Bulletin* reports that he had collected some 31,000 contacts prior to leaving for Belgium.

Scarborough Reef (BS7)

The ARRL Board of Directors at their meeting in Savannah, Georgia, approved a Membership Services Committee recommendation to add Scarborough Reef to the ARRL DXCC Countries List. The vote was 11 for, 3 against and 1 abstention. Scarborough Reef is added to the list based on DXCC Rules Section II, Point 2(a), Separation by Water.

All contacts made with Scarborough Reef on or after 1 January 1995, will be eligible for DXCC credit. The first accredited operation took place in April 1995. The DXpedition in 1994 did not qualify as a land-based operation.

Please do not submit QSL cards for credit before 1 April 1996. Cards received prior to that date will be returned without action.

Sable Island (CYØ)

425 DX News reports that Mike, VE9AA, Ken Scheper, WA8JOC, and Wayne, W9OEH, together with another Canadian DXer, are planning a DXpedition to Sable Island for the end of June. The expected call will be CYØAA.

They are looking for financial assistance and need $15,000 to cover expenses. If not enough funds are collected the DXpedition will be postponed until 1997. Send all donations to Kenneth S. Scheper, 5875 Cedaridge Drive, Cincinnati, OH 45247-7438; phone/fax 513/598-6887.

Liberia (EL)

Four calls were reported from this West African nation during the two-month period of December and January. The activity was on 15 and 20 Meters.

EL2AY	14.226 MHz	2125 UTC
EL2NC	21.040 MHz	1400 UTC
EL2NH	21.045 MHz	1400 UTC
EL2PP	14.247 MHz	2115 UTC

Amsterdam Island (FT8Z)

DX News Sheet reports that Mehdi, F5PFP, is planning to be on Amsterdam Island between November 1996 and February 1997. He is in need of some funds amounting to some $7,000. Donations may be sent to him at M.Escoffier, F5PFP, 23 Rue du Colombier, F-38540 Heyrieux, FRANCE. A better approach on this would be to send your donation to your favorite DX foundation, marked for this operation.

That way you will be assured of having a tax-deductable donation.

Sint Maarten (PJ7)

Bob Truhlar, W9LNQ, and his XYL Dot, N9ALC, will be operating as PJ7/W9LNQ and PJ7/N9ALC respectively,

from Dutch Sint Maartin 16-23 March. They plan on both CW and SSB on all bands, including the WARC bands.

Congo (TN)

Hazel, TN7OT, informs DXers that her radio is out of service and doubts if it will be repaired before she leaves the country in April. She will take care of her QSL chores when she returns home.

Belize (V3)

Belize is a popular spot to go for a mini-DXpedition, especially during the DX contests. During December and January these calls were reported:

V31DE	3.797 MHz	0215 UTC
V31JB	14.180 MHz	1400 UTC
V31JKU	14.091 MHz	1400 UTC
V31JU	21.083 MHz	1915 UTC
V31ML	7.003 MHz	0215 UTC
V31PC	21.234 MHz	1400 UTC
V31RA	14.038 MHz	2045 UTC

There was also V3BX, a call in the older format, that was reported in *DX News Sheet*. This station was working into Europe on RTTY around 1200 UTC near 21.082 MHz on 7 January.

Vacationing DXers, Art NN7A, and Mike NG7S, of the Northern Arizona DX Association, were on during the early part of February, signing with V31JZ and V31RL. In addition to operating from the mainland, Turneffe Island (NA-123) and South Water Caye (NA-180) were activated.

Namibia (V5)

The prefix for this one used to be ZS3 Southwest Africa. Several stations were reported recently and all quite active.

Almost all of the activity has been SSB, such as V51CM on 20 Meters near 14.240 MHz at 0700 and 2000 UTC; and 15 Meters between 21.273 and 21.313 MHz after 1730 UTC. He was also on RTTY near 14.084 MHz at 2100 UTC.

On 75 Meters at least two calls were found. V51BO was on 3.782 MHz at 2100 UTC and V51E on 3.785 MHz at 0415 UTC.

Other 20-meter activity included V51GB near 14.201 MHz at 0600 UTC, V51HK on 14.200 MHz at 2100 UTC, and V51VO on 14.185 MHz at 1945 UTC.

Seventeen meters was represented by V51BG on 18.142 MHz at 1415 UTC and V51HK on 18.125 MHz at 0800 UTC.

And finally on 15 Meters, V51CM, V51BG, and V51GB were reported on 21.206 MHz at 1730 UTC, and V51BO on 21.300 MHz at 1500 UTC.

Heard Island (VKØ)

The latest on the reorganization of the Heard Island DXpedition for the 1996-1997 season is for three weeks next January. Presently, there are 10 team members committed that include: Michel Sabatino, EA8AFJ; Willy Rusch, HB9AHL; Ted Algren, KA6W; Ralph Fedor, KØIR; Bob Schmieder, KK6EK; Bob Fabry, N6EK; Carlos Nascimento, NP4IW; Peter Casier, ON6TT; Arie Nugteren, PA3DUU; and Igor Harry Booklan, RA3AUU. An additional 10 members should be joining shortly.

425 DX News reports that the budget for the DXpedition is close to $320,000. Each team member will contribute $10,000 out of his own pocket. The remaining $120,000 is expected to be contributed by the various DX associations, foundations and individuals.

Kermadec Islands (ZL8)

A Kermadec Islands DXpedition, is still on schedule for an eleven-day operation early in May 1996. Acquiring the necessary funds for the operation, said to be $30,000, is their biggest priority right now.

Team members will include Ken

Holdom, ZL2HU, the team leader; Chris Hannagan, ZL2DX; Ron Wills, ZL2TT; Lee Jennings, ZL2AL; and Al Hernandez, WA3YVN. The team call sign will be ZL8RI and they will operate from Raoul Island.

All contributions may be sent to: The Kermadec DX Association, c/o Mr. Ken Holdom, P.O. Box 56099, Tawa, Wellington, NEW ZEALAND.

IOTA

DX News Sheet reports that Phil, G3SWH, and Chris, G3SJJ, will be on Les Iles Chausey (EU-Ø39) for 24 hours 23/24 March signing with F/G3SWH. This will be a CW only operation, 17 through 80 Meters.

Here are just a few of the many IOTA islands reported during January:

AF-053	Maskali Isl.	J2ØRAD	09 Jan
AF-064	Robben Isl.	ZS64RI	28 Jan
EU-035	Novaya Zemlya	RA1PC/1	30 Jan
EU-052	Kefallinia Isl.	SV8QJ	29 Jan
EU-055	Karmoy Isl.	LA4CM	12 Jan
EU-084	Lidingo Isl.	SMØDRB	09 Jan
NA-001	Andros Isl.	C6AGV	14 Jan
NA-006	Victoria Isl.	VE8KM	07 Jan
NA-049	Santa Catalina Isl.	HKØ/DF4UW	11 Jan
NA-055	Vinalhaven Isl.	AK1L	08 Jan
OC-006	Tasmania	VK7VK	12 Jan
OC-211	Margie Isl.	VK9XZ/6	25 Jan
SA-008	Tierra del Fuego	XQ8ABF	24 Jan
SA-012	Isla Margarita	YV7/I5DCE	13 Jan
SA-062	Coroa Vermelha	ZW6C	08 Jan
SA-068	Waakenham Isl.	8R1AK/1	11 Jan

DX News Sheet reports that Oleg, RØ/UR8LV, changes his location frequently, and often visits Russian islands such as Andreja Island, Bolshoj Island, Russkij Island, and Prawdy Island. On 11 January he was active from AS-042 on 40 Meters and the next day on 30 Meters.

425 DX News reports that during the recent Groote Eylandt (OC-141) DXpedition, VK8NSB/P made about 2,500 contacts with island chasers.

DXCC Applications

The DXCC Desk reports that the number of unprocessed applications at the end of December was 195 (33,157 QSL cards). During the month 314 applications (43,752 QSL cards) were received for endorsements and new awards.

Applications sent out at the end of the month were received about a week earlier. A few received prior to that time were waiting for paper records to be converted, or were being audited, and so had not yet been completed.

During 1995 a total of 6,044 applications (544,368 QSL cards) were received at the DXCC Desk. This compares to that of the previous year that totalled 8,187 applications (673,321 QSL cards).

DXCC Documentation

Documentation has been received and approved for the following operations:

3A/I1YRL	D2RU	VR2/DF8AN
3A/IK1OWC	DU1/SM5ENX	VU2/DJ9RB
3A/I2MOV	HI/DL1DA	XT2DP
3A/I1ZB	HSØZCJ	XZ1A
3A/I8FXT	HS/DF8AN	XY1HT
3W5FM	HS//KM4P	XZ1X
4B9CQ	J3J	XZ1Z
6Y5/DL1DA	J3X	ZA5B
7P8CW	J3Y	ZA9B
7Q7DC	TT8BP	ZA/PBØAIO
8Q7CW	TY8G	ZA/PAØ0HTR
9J2CE	VK9LX	ZK1DI
9N1AN	VK9LZ	ZL7CW
9N1SXW	VK9NM	ZL7PYD
9R1A	VK9XRS	ZVØTI
CN2CI		

Clubs

The Southern California DX Club has selected their choice of officers for 1996 as follows: President, Rich Bongeorno, WU6T; Vice President, Larry Shapiro, KJ6HO; Treasurer, Len Svidor, W6AUG; and Secretary, Shel Shallon, W6EL. Also elected as Directors are Mark Weiss, K6FG, Joe Locascio, K5KT, and Harvey Shore, K6EXO. Bob Karon, AA6RK, is the new Membership Chairperson.

QSL Manager Stuff

There are more and more QSL managers now who refuse to answer QSL cards received via the bureau system. This is unfair. Not every DXer can afford to QSL direct with SASE and funds — whether to the DX station or his represented QSL manager. That is why the QSL bureau system was created.

The argument used to justify not accepting QSL cards via the bureau system is the out-of-pocket expenses by the QSL manager. The manager must pay postage costs for the cards received via the bureau and the postage costs plus handling fees for the outgoing cards. This is unfortunate.

Personally, I feel there are too many unnecessary QSL managers out there. Why do we need QSL managers for garden variety DX? Are we all in a hurry to get our cards? So the bureau routes are slow; they sure help in the reduction of expenses.

There is another factor. Many DX stations do not want to be bothered with QSL responsibilities, regardless if they are compensated with postage costs or not. Thus we have QSL managers.

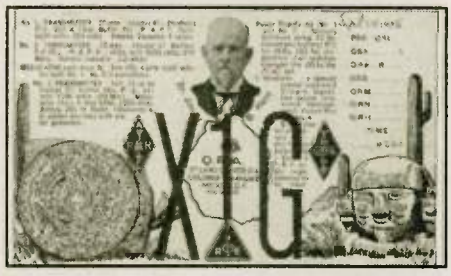
Maybe the QSL managers should be compensated for the bureau handling costs by the DX stations for whom they manage cards. So, to DX stations who use the services of a QSL manager, please employ one that is reasonable.

We also know of some individuals who operate as a DX station during the DX contests and also refuse to handle cards from the bureau. However, they doesn't complain about all the Americans who want to work them during the contests. The more the merrier! That is price one pays for being on the DX end in a contest.

Antique QSL department

Dick Rooney, W5VHN, submitted the Mexican QSL card for X1G, based on an SWL report back in 1935. The card is printed in black with the call letters printed in red.

The 5A1TZ card in our February issue brought some comments of interest. Dave Hutchison, W7WQR, writes: "While stationed in Tripoli at Wheelus AFB I was assigned 5A1TV and operated from downtown Tripoli from 1965 to 1967. In 1967 moved to the Communication squadron on base in which set up operation until I was forced by the Libyan government to send my equipment and license out of the country. I will confirm QSLs with SASE even though it's been a long time. I still have my log books from that period." Dave is now with the VOA at Delano, California.



Mike Saville, W7CFL, writes about another item of interest when licensed as a Novice in 1960 with KN4UXD in Augusta, Georgia. He put up a dipole for 40 Meters, with one end 30 feet in the air and the other to the fence. Mike writes: "On a Saturday night I called CQ on 40 Meters, fighting Radio Moscow and June QRM. A call came through on my BC-342 . . . 5AT . . .repeat QRZ . . . 5A2TZ. Hmmm, must be a mixup . . . a call from Texas maybe? Oh well, I got a 579 and Tripoli came through loud and clear."

Mike had a nice contact with 5A2TZ, who gave his name as John, stating

DX Prediction — April 1996

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

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

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	*(12)*	*14	*19	*(10)*	*15
12	*(16)*	*13	*16	*(10)*	*(14)*
14	*(21)*	*15	*13	16	21
16	*(23)*	14	*(13)*	18	25
18	24	*(11)*	*(13)*	17	28
20	23	18	23	*(15)*	30
22	19	22	28	*(10)*	29
24	*(17)*	*24	30	*(9)*	*27
2	15	*25	30	*(8)*	*22
4	*15	22	29	*15	*19
6	*(15)*	*20	27	13	*16
8	*(13)*	17	*22	*(11)*	*15

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	*(15)*	*(11)*	*19	*(10)*	*14
10	*(18)*	10	*16	*(10)*	*15
12	25	*13	14	16	17
14	28	15	*(14)*	18	23
16	28	*(13)*	*(13)*	19	*26
18	28	*(11)*	*(12)*	17	*29
20	23	19	24	*(15)*	*30
22	19	20	28	*(11)*	*30
24	*17	19	30	*(10)*	*25
2	*15	*(17)*	28	9	*21
4	*15	15	27	*14	*18
6	17	*(13)*	22	*(12)*	*15

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	16	*(11)*	*18	10	*15
9	*(17)*	9	16	13	*15
11	24	*14	15	17	17
13	28	*(13)*	*(15)*	*19	22
15	29	*(11)*	*(13)*	*19	*26
17	28	*(10)*	*(13)*	*18	*28
19	*25	*(13)*	*(19)*	16	*30
21	21	*(17)*	26	*(12)*	*29
23	*18	19	29	11	*28
1	*16	*(17)*	28	9	*23
3	*13	15	27	*8	*19
5	*18	*(12)*	22	*11	*16

that his mother lived in Augusta. He got the information and phone number and the signal faded away. Mike soon raised the other end of the dipole and never worked any DX again!

QSL Information

Art Hale, KE6TDY, informs us that his V73CO operation is over and he has left the Marshall Islands. Everyone who worked him should receive a QSL card via the bureau. Those who did not can contact Art at P.O. Box 2318, Alachua, FL 32615-2318.

A standard practice has been to send green stamps (U.S. dollar bills) for return postage along with direct QSL cards. This works out to be cheaper as the cost of a new IRC (International Reply Coupon) which costs $1.05. A single IRC is supposed to be exchangeable for one unit of postage, airmail return. The question is what is a unit of postage in these countries that require more than one IRC?

And, if sending green stamps, it would be a minimum of two. QSL managers will sell their unneeded IRCs if you can get them.

There are countries that prohibit the exchange of foreign currency, one of them appears to be India. So, when do you send green stamps and when do you not send green stamps? This is a judgment call.

Generally the western European countries will have no problem with the American dollars.

With the cost of return postage, whether in the form of IRCs or green stamps, this cost of exchanging QSL cards gets rather expensive. This is another good reason to use the QSL bureau system. Unfortunately, some countries have no QSL bureau.

Bert Lenny, N7SWU, corrects the QSL manager for FY5YE from AC5K to W5SVZ. The original QSL manager for this station became a silent key.

QSL addresses

5B4BD	—P.O. Box 4096, Nicosia, CYPRUS
9J2BO	—Brian Otter, P.O. Box 34554, Lusaka, ZAMBIA
A45ZN	—P.O. Box 981, Muscat, OMAN
BZ1LUV	—P.O. Box 2654, Beijing, PEOPLE'S REPUBLIC OF CHINA
CQ4I	—P.O. Box 150, 8702 Alhao Codex, PORTUGAL
EZ6DK	—P.O. Box 1, Okdepe 746340, TURKMENISTAN
RØ/UR8LV	—P.O. Box 9909, Kharkiv 310070, UKRAINE (Note 2)
UAØFDX	—Vic Komzuk, P.O. Box 55, 694900 Uglegorsk, RUSSIA
V85BG	—P.O. Box 373, MPC 3703, BRUNEI
VE8KM	—Ken Marianax, P.O. Box 110, Cambridge Bay, NT XØE 0C0, CANADA (See Note 1)
XU6WV	—P.O. Box 2011 GPO, HONG KONG
XV7SW	—P.O. Box 9, Hanoi, VIENAM
YF8XM	—P.O. Box 151, Ambon 97001, INDONESIA

YI1WN —P.O. Box 55072, Bagdad, IRAQ

Many thanks to the following contributors: W5VHN, W6EL, W6IBU, KE6TDY, W7CFL, KC7DA, N7SWU, W7WQR, W9LNQ, Western Washington DX Club (WAØRJY), Northern Arizona DX Association (W7YS), American Radio Relay League (K5FUV), *425 DX News* (I1JQJ), *The Ohio/Penn DX Bulletin* (KB8NW), *CQ Ham Radio, Radio and Communications* (VK9NS), *Long Skip* (VA3JS), *The Low Band Monitor* (KØCS), *DX News Sheet* (G4BUE), *QRZ DX* (N4AA), *Inside DX* (N2AU), and *The DX Bulletin* (VP2ML).

Effective 1 May I am retiring after 32 years with the California Department of Water Resources. I am proud to say that I was involved with the largest-ever water project and worked with the electrical design of the largest pumping plant in the world. This particular plant has 14 pump motors rated 80,000 horsepower each that lift water up and over the Tehachapi Mountains into Southern California.

Now I will have more time to play with my radio. 73 de John, N6JM.

Franz Langner, DJ9ZB, has been a participant in past DXpeditions, a visitor at DX conventions, and is author of a DXer's handbook, *DX World Guide*. ***—photo courtesy of DJ9ZB.***

QSL Routes

These QSL routes come from several sources and cannot be guaranteed. Please report any errors.

3DAØCA	—W4DR	KC4AAC	—NC6J
3A/I1YRL	—I1YRL	KC6JZ	—JE7RJZ
3D2KZ	—JA1KJW	KS9W/WP2	—KS9W
3D2OQ	—SM5BOQ	LU5E/P	—IK2HTW
3V8BB	—YT1AD	LU6Z	—LU6EF
3ZØOSP	—SP6YAT	LY96SD	—LY2ZO
4L4ND	—IK8SMZ	OAØMP	—OA4BTE
4L7AT	—IK8SMZ	OI6YF	—OH6YF
5NØPYL	—F2YT	OM7DX	—W3HNK
5N34RGP	—IK8SMZ	OM9AJP	—OM3CCA
5N35RGP	—IK8SMZ	P29VR	—W7LFA
5N9RGP	—IK8SMZ	P4/K2LE	—K2LE
5R8JD	—F6AJA	P4ØI	—K9UWA
5T5SN	—F5RUQ	P4ØMR	—VE3MR
5V7GL	—EA5WX	P4ØTR	—VE3MRS
5W1FR	—KB1CM	P4ØWA	—K9UWA
5W1NW	—IK2GNW	PJ7/N9ALC	—N9ALC
7Q7A	—JH1ORL	PJ7/W9LNQ	—N9ALC
7X4AN	—DJ2BW	PJ9Z	—W8UVZ
8P9DX	—VA3DX/VE3ICR	R1FJV	—RW3GW
8P9EN	—VE4GV	R3/WØYR	—AA9DX
8P9Z	—K4BAI	RKØQXY	—UAØKCL
9G5BG	—PA3GBQ	SØ1M	—EA7EL
9G5BQ	—PA3GBQ	SO2UN	—EA2JG
9K2YY	—KC4ELO	S21YE	—GØEHX
9K2ZC	—KC4ELO	S61YC	—AA5BT
9L1MG	—NW8F	S79JD	—F6AJA
9L1PG	—NW8F	S79NK	—DJ8NK
9M2TO	—JAØDMV	S79XC	—GØIXC
9M6P	—F6BFH	S92PI	—F6KEQ
9N1OM	—JI4POR	SUØWW	—JA3BOA
9N1SW	—JH1XUP	T30DP/T31	—VK4CRR
9N1UL	—JI4POR	T30DP	—VK4CRR
9V1YC	—AA5BT	T31DP	—VK4CRR
9X4WW	—ON5KT	T32BE	—WC5P
9X5TFA	—LA3T	T32Z	—N7YL
A35NW	—IK2GNW	T7ØA	—IK6RUM
A35RK	—W7TSQ	TG9IDK	—K4TT
A61AF	—N1QMM	TM9TEL	—F6KLS
A92GD	—K1SE	TN7OT	—AL7OT
AL7EL/KH9	—K4HQI	TO5M	—K9GS
AP2MY	—N9NC	TT8DJ	—F6FNU
BV9P	—KU9C	TU5A	—W8AEF
C31LJ	—VE3GEJ	UA3YH/KC4	—RW3XA
C5ØBI	—6W6JX	USØHZ	—W3HNK
CE9/GØNKZ	—GØSZO	V26AS	—YT1AD
CE9AP	—CE2LOL	V26DX	—KK3S
CP1/N9RPC	—K1SE	V31EV	—NSØB
CU2DX	—KB5RA	V31JZ	—NN7A
DF5WA/HI8	—DF5WA	V31RL	—NG7S
DL1GKG/HI3	—DL1GKG	V31TP	—WCØW
DL2GGA/HI3	—DL2GGA	V85HG	—JH7FQK
DU6/WB5LBJ	—W6IBU	VK7DI	—VK3UX
E21EJC	—HSØGOS	VK9CR	—DK7NP
EA4ENK/P	—EA5OL	VK9XY	—DK7NP
EA5AEI/P	—EA5OL	VP2EFO	—W8TPS
EJ/GØNHR	—G3OCA	VP2EY	—HB9SL
EJ/G3EEO	—G3OCA	VP2MDE	—W5ASP
EK/RU6HKB	—RU6HKB	VP2VDX	—KT6V
EXØV	—KL7H	VP9NND	—VP9KD
EY8XX	—GW3CDP	VQ9MG	—K7MG
F/G3SWH	—G3SWH	VS6WO	—K9EC
FOØZR	—K1RH	XT2JF	—N5DRV
FP5EK	—K1RH	XU1FL	—I8KUT
FT5XK	—F6KQD	XU6WV	—VS6WV
FY5YE	—W5SVZ	YA9XL	—F5TCN
GB5ØSWL	—GØDBX	YC1XUR	—F5NPS
GB6ØBBC	—(See Note 3)	YJØARE	—GØREP
HC8N	—AA5BT	ZA5B	—WA1ECA
HI3CVV	—DL2GGA	ZD9JP	—N5FTR
HKØ/DF4UW	—DF4UW	ZF1JT	—G3PJT
HKØ/K1WGM	—K1WGM	ZF2ON	—KN4F
HV4NAC	—IKØFVC	ZF2OP	—K3DI
IYØGM	—IØZKZ	ZK1DI	—DL1RV
J28ML	—F5LBM	ZP73Y	—ZP5WVY
J28RQ	—F5ORQ	ZP73Y	—ZP5WYV
JWØE	—US5MV	ZS64RI	—KA1JC
JY5SEC	—OE6EEG	ZW5VB	—PP5SZ
K2LE/C6A	—K2LE	ZW6C	—PT2GTI
K9BG/WP2	—K9BG	ZX6C	—PT2GTI

Notes:

1. Ken (see QSL addresses) has also been requesting QSL cards via the bureau.

2. This is his QSL manager's address, UR7LD. However, don't add the call to the address to avoid mail pilferages.

3. Please QSL via the RSGB bureau or direct to the individual operator.WR

> 12 STORE BUYING POWER! <

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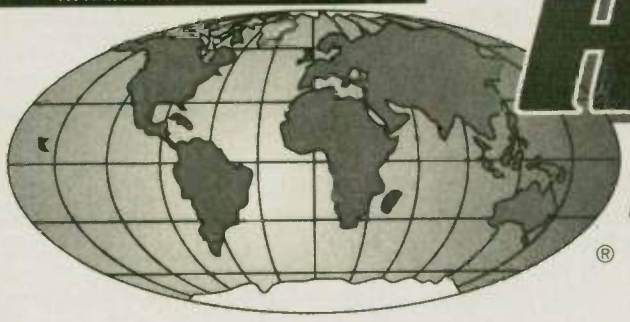

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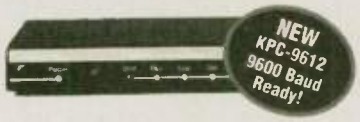

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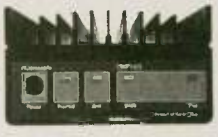

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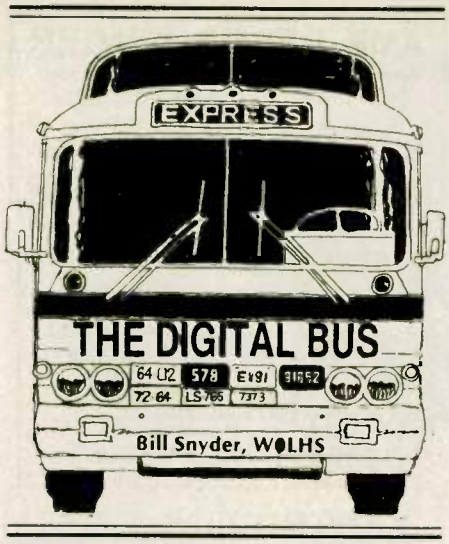

Over the years I've had a lot of hams tell me they would like my call sign, WØLHS, because phonetically they could say Lincoln High School or Lidgerwood High School, etc. I never became a full-time phone ham was because the best phonetic I could think up for LHS was "Lousy Ham Station." I tried it a few times and it caught on and I was Lousy Ham Station for good.

I have, in my bushel of friends on the bands, a few with calls I wish I had drawn. One is Bob Lawrence's W7VFR. What a nice call for a flyer: Visual Flight Rules. Not bad for Bob either; he worked a spell with the FAA back in the Dakotas. I've sometimes fantasized I had Bob's call and wondered what it would be like to say, "Aeronautical mobile WØ Visual Flight Rules flying under Instrument Flight Rules calling CQ."

During the 20 years I owned and flew my own aircraft, I used to work a little aero mobile on two meters with my handheld rig. In North Dakota I used to trip three repeaters when I would try to use one near my home. Darned how that little one-watter would get out from 10 thousand feet in the air.

Another neat call, and one I like, belongs to Rod Scribner's KA1RFD. RFD for Rural Free Delivery. Rod is a continuing contributor to the EAVESDROPPING part of this column. I want to publicly thank him for his input and also for the packet messages I get from him in Randolph, Maine. His call would be great for farmers who live in the country.

The late Bob Whempner, N4JPY, once held W9TNT back in the 1930s. Now that's a ham call for a guy with lots of power and big antenna farms like the late J. Roy Hunt, W6CNE, a Hollywood CINE cameraman, had in the 1930s. I once visited his shack and I was impressed with the magnitude of stuff. He and W5DEW, Mary Dosland, the "Texas Dew Drop," were two of the big TNT signals I remember from those pre-WWII days of AM 20M phone.

By the way, the Texas Dewdrop of those good old days, now lives a few miles from me in Moorhead, Minnesota. Mary married the late Goodwin Dosland, WØTSN, sometime during the 10 years he was the president of our American Radio Relay League, and "Dos" brought her to Moorhead. After his death she stayed and is still on the air.

To get back to call signs ending in TNT, I put the QRZ CD-ROM caddy in the player and looked for the TNT suffix. There were 42 lucky holders of a great call sign. The CD-ROM surely beats the old call book. You can look up by name, etc. and browsing it is always interesting.

Tales from "Sparks"

Here is an extract from a letter from Jerry Mulberg, W2MJP, in Riverdale, New York:

"Enjoyed your article in the January, 1996, ***Worldradio***. It reminds me of my job aboard ship in WWII as a radio operator in the North Atlantic and the South Pacific. I handled all the equipment in the radio room which was located right next to the bridge, and I reported all incidents directly to the captain of the vessel. I also had to use the radio direction finder and give the information gained to the skipper or the navigator if he was on watch.

"We did very little transmitting in those wartime days because we had to maintain radio silence while at sea. About the only transmitting was done in port and that was testing the emergency life boat equipment so we were sure it would work if we had to use them.

"I also had to copy all the news daily, so the crew and passengers would know what was going on in the world at war. We copied everything on a typewriter with a telegrapher's keyboard. It was known in the jargon as "mill." It did not have the lower case letters on it, and the numerals were all there, too. We had to copy what was known as the BAMS broadcast schedule every day, and then decode it as it was sent in five letter code groups. The information contained in the broadcasts was secret, and so we kept the code books locked up with instructions to burn them if we were attacked.

"Close to the end of the war I was assigned to a sea-going tug as the only radio operator. We towed two disabled Liberty Ships from Newport News to New York. Boy, was it rough duty, especially while passing the area around Cape Hatteras.

"By the way, my ham call, W2MJP, is my original call sign. It was issued way back in January of 1939."

When I received the letter from Jerry I was reminded of how a whole code was compromised by a couple of army CW operators doing dumb things without thinking. It happened when I had command of a radio intelligence platoon in our Signal Battalion during WWII. The job of the RI platoon was to monitor subordinate units and check for signal security violations, and also to give the Corp Commanding General and his staff a short cut path to the military operation intelligence. A side job in New Guinea and the Philippines was to provide the troops with a daily source of U.S.A. news. So, we really had our best CW operators assigned to the platoon.

The code compromise happened on the D-day for a small invasion of a Pacific island that held an enemy radar station. A regimental combat infantry team and supporting troops were dumped ashore on the target island after the U.S. and Australian navies had finished shelling the little chunk of real estate. Our RI platoon monitored the radio circuits during the entire operation and immediately teletyped what we heard back to the

message center where it was decoded and given to the combat intelligence staff in Corps Headquarters. That way the Corps Commander could follow what was going on quickly.

When the task force radio station opened up on the air with its parent division signal company back on the New Guinea mainland, the CW signals were good from both ends. Our monitoring operator was typing it all out as fast as the two stations were sending.

The parent operator started what was a forbidden conversation. It went something like this: "INT WO?" Translated that is "Whose operating?" The landing station operator came back with his initials to answer the question.

Then the parent station also sent his initials and the two apparently knew each other. It was a simple breach of signal security, and frowned on by the high brass. When all communications were in procedure groups and coded messages, clear text stands out rather loud and clear when used. Such things as operator identification with initials was strictly forbidden. The operators probably thought they were not being monitored and so dreamed they were getting away with such communications.

"HW WAS IT?" said the landing party in clear text.

"EASY DID IT," was the reply.

The two stations did a little more cryptic chatting and then suddenly the landing station disappeared right in the middle of a transmission. The parent kept calling the offspring, but there was no answer.

We teletyped the fact that the landing beach station was off the air to the Corps HQ. Everybody got instantly uptight over the broken link between the two units. People were speculating that the station had been hit by artillery or aerial bombardment.

Corps sent a man over to stand by the radio receiver and advise the brass what was going on. Time went by: one hour, nothing; two hours, nothing; two hours and 20 minutes the CW signals started in again. "WHAT HAPPENED?" said the parent.

"GENERATOR WENT OUT OF COMMISSION. MESSAGE FOLLOWING WITH ALL THE DETAILS." This was sent in the clear. The two ops managed to chat some more. The man from the Corps staff was having a fit about the two operators jawing on the CW circuit.

Then, about ten minutes after the circuit was renewed, came a long message in code. It was a real breach of signal security and gave us cause to have to change the code they were using as it was compromised by the stupidity of the operators. I remember, too, that the two ops had discussed the fact that both of them were National Guard members back in the states. If the enemy had been listening, and who knows if they were or not, they could have had a good chance to find out the unit number of the landing force unit and give them a key to break the code the division signal people were using.

So, that code had been compromised, and right away had to be withdrawn from use. It was caused by a simple thing like using clear text first, and then following it with a coded message containing the same information.

If you are interested in cryptography use during WWII, I suggest you read a book that should be available from most libraries. It's called *Bodyguard of Lies* by Anthony Cave Brown. It's exciting reading about the breaking of Hitler's Enigma coded messages.

EAVESDROPPINGS

IT SNOWED JUST ENOUGH TO TRACK A MOUSE . . . I'LL BE GLAD WHEN THE SNOW MELTS AND I CAN SEE MY ANTENNA AGAIN . . . USING E MAIL SURE BEATS USING PACKET . . . THIS BEAM WORKS BETTER WHEN THE SKIP IS IN GOOD . . . I LOOK AT THE WORLD THROUGH DX GLASSES . . . OUR COUNTRY IS FULL OF CHIGGERS, SCORPIONS, RATTLESNAKES, AND INSURANCE SALESMEN, BUT I LOVE IT. . . ENJOY EVERYTHING ABOUT HAM RADIO EXCEPT VOICE . . . MY ANTENNA FARM FEATURES A COUPLE OF VERTICALS AND A PUSH-TYPE LAWN MOWER . . . I WATCHED TWO RUSSIAN RTTY STATIONS TALKING TO EACH OTHER IN ENGLISH.

Thanks to KA1RFD and others for help in this column. Write me: Bill Snyder, 1514 12TH ST S, FARGO ND 58103-4134. My packet address is WØLHS@WØLHS.#SEND.ND.USA. NOAM. 73 and DIT DIT. WR

Looking for . . .

The board of directors of the San Gabriel Valley (California) Radio Club are interested in locating **David Hatt, KE6RSS.** He is believed to be enroute to the state of Texas. Anyone with information about his present location is requested to contact: Larry Macias, KE6IRG, Treasurer, 818/285-9281. WR

Computers & Basic Stuff

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BASIC Wig-Wag

One of the things I look forward to this time of year is reading Avril & Fooster's annual assessment of the State of Amateur Radio. This year was particularly interesting, because several organizations have been working toward closing down the FCC as a budget-cutting move and permitting a "free market economy" to rule who gets to use the radio spectrum and who doesn't.

In the past, you may recall, Avril & Fooster correctly forecast the loss of the 11-, 5-, and parts of the 1.25-meter amateur bands while, at the same time, predicting the gain of replacement spectrum. Five meters was lost to television's original channel 1, but we got 6M in return. Eleven meters went to CB, but the wide ten-meter band we got in return didn't make the loss seem so severe. And, of course, part of the 1.25-meter band was "commandeered" for a parcel service's radio link, but unused frequency just below the old band was subsequently set aside for amateur use.

The worry now is that portions of the amateur 75.5- to 81-GHz band may be turned over to radar manufacturers, all in the name of highway safety. It seems they want about 2 GHz of the band for anti-collision systems for cars of the future.

Avril & Fooster note that this band, and in fact a number of other bands above 50 MHz, are open, but not exclusively so, to "no code" amateurs. Technician class and above operators are currently permitted use of the following spectrum above 23 centimeters: 2300-2310 MHz; 2390-2450 MHz; 3300-3500 MHz; 5650-5925 MHz; 10-10.5 GHz; 24-24.25 GHz; 47-47.2 GHz; 75.5-81 GHz; 119.98-120.02 GHz; 142-149 GHz; 241-250 GHz; and all spectrum above 300 GHz.

Most amateurs, however, do not operate in these bands, and for good reason — equipment is not easily available, "homebrewed" equipment takes exotic components, a lot of expertise and a certain amount of finesse to get it to work right.

But there is one exception to the equipment problem — a tiny segment of the band where even common household items can be used as communications devices. This, according to Avril & Fooster, is where amateurs should be concentrating their efforts, to try to gain exclusive and permanent rights to this portion of the spectrum. They suggest the best way to gain a rock-solid foothold is to get more amateurs to use the segment now, and to require something more than mere technical knowledge for licensed operation there. They suggest a type of code test should be required for anyone wanting a license to operate at this higher frequency.

The band, according to them, lies between 4000 and 7000 Angstroms, which means it's in the visible part of the electromagnetic realm. The code they suggest is the old semaphore flag code, or something very much like it.

```
 10  CLS: PRINT "SEMAPHORE.BAS, BY KD5DL, 4/96: A=0
 20  PRINT "ENTER THE 4-DIGIT FLAG CODE"
 30  PRINT " (ENTER '9999' TO QUIT)": PRINT: PRINT
 40  DATA 1425,1325,1225,2125,2532,2533,2534,1314,1214
 50  DATA 2133,1421,1432,1433,1434,1213,1321,1332,1333
 60  DATA 1334,1221,1232,2134,3233,3234,1233,3334,5555
 70  RESTORE: IF A=0 THEN B=64 ELSE B=48
 80  X$=INPUT$(4): GOTO 140
 90  READ C: IF C=5555 THEN B=63: GOTO 120
100  B=B+1
110  IF C<>VAL(X$) THEN 90
120  PRINT CHR$(B);
130  A=0: GOTO 70
140  IF X$="2132" AND A=0 THEN A=1: PRINT "#";: GOTO 70
150  IF X$="2525" THEN B=32: GOTO 120
160  IF X$="3132" THEN B=126: GOTO 120
170  IF X$="2133" AND A=1 THEN B=48: GOTO 120
180  IF X$="9999" THEN END
190  GOTO 90
```


Code flags could be made from common linen bed sheets fastened to broomsticks (QRP enthusiasts could, of course, use handkerchiefs instead). Licensing here would typically fall under the already established VEC program.

Semaphore is a communications standard that has been around, some say, since Roman times. It was used primarily before the days of telegraph and wireless communications, and it was used by our military as recently as World War II.

Typically two flags are used, and their positions relative to the flag waver represent the letters and numbers of the alphabet. CQ, for example, is sent with the flag in the sender's right-hand held up at a 45-degree angle and the left-hand flag held straight down in front, followed by the right-hand flag held straight out at 90-degrees and the left-hand flag held up at a 45-degree angle.

Avril & Fooster may be right. Semaphore isn't all that difficult; there are no dots or dashes to memorize, no "noisy QRM" problems and, right now, no "Q" signals to learn (they might be inappropriate in a visual code anyway).

While we don't have time to go into the code itself (any good book on the subject will show how it's done), we can provide a computer method to decode what is sent. We feel that this will help the casual looker to get a handle on message content without actually being conversant in the "wig wag" code, as it is sometimes called. Eventually, we feel, both newcomers and old hands alike will come to accept the code, and will be ready for licensing provisions once they are established.

The way it works is that the receiving operator breaks the sender's field into three columns of five levels each. The sender's right-hand field is col-

umn one, his body is in the middle of column two and his left-hand field is column three.

The levels vary from 1 for the highest overhead, 2 to represent 45-degrees up, 3 to represent 90-degrees straight out, 4 to represent 45-degrees down and 5 to represent the lowest level the flag can be held.

In our CQ example, the flags are in column 1's second level and column 2's bottom (5th) level for the letter C. Translating that into column-level-column-level format, we get 1225. Likewise, Q is represented by column 1 level 3 and column 3 level 2, or 1332.

In semaphore, the right hand overhead and left hand up 45-degrees (2132) position tells the receiver that a numeral follows. What would normally be letters A through J convert to the digits 1 through 0, respectively. In our BASIC program, 2132 converts a letter to its corresponding number, and has to be used before each number. In other words, my callsign would be represented by six flag positions, not just five (e.g., 1421, 2125, 2132, 2532, 2125, 1432).

There's also a catch for incorrectly entered codes (and/or sloppy sending). If the column-level code doesn't recognize an appropriate signal, the program prints a question mark. As with missed characters in Morse code, maybe some sense can be made of a message if you know where missing (miss-sent) characters fit.

Of course there's no end to where this kind of signaling might lead, especially if amateurs gain exclusive use of a licensed visible-light band. We would have to do all the communicating for everyone else (without compensation, of course), and that would point out to everyone else just how valuable an asset amateur communications really are.

Perhaps, some day, the American Semaphore Relay League will propose something visible in the way of a band plan for flag users. Just try to envision what a semaphore repeater system might look like. (Or would that just lead to more congestion in our valuable and limited spectrum?)

Until next time, 1421, 2532, 2532, 1321, 2525, 3233, 1425, 2534, 2534, 1214, 1434, 2534, 2525, 1221, 1314, 2532, 2525, 2533, 1432, 1425, 2534.WR

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There seems to be something new and rather evil developing in ham radio. A new brand of law. I call it "Ham Radio Civil Law." It is also setting the stage for the destruction of the United States Amateur Radio Service.

I must ask that you go back about two years, about the time that this column first appeared. You may remember that one of the first stories we covered dealt with legal action taken by the Claremont (CA) Amateur Repeater Association. For months the Claremont group came up against a bureaucratic "brick wall" in attempting to get the FCC to act against several individuals who the repeater group felt was causing irreparable harm to the orderly operation of their repeater. Finally, in desperation, they turned to attorney Sid Radus who thought he might have an answer by using existing California state statutes against harassment and theft of property against those alleged to be bothersome to the Claremont repeater.

Radus eventually won injunctions against three area hams wherein the state court barred them from harassing the Claremont Amateur Radio Club, its officers, its members or the club's repeater. In essence, the state court said that it had the "right" to preempt federal jurisdiction and order these hams to not operate on several frequencies that their federally issued licenses gave them the right to use. Now, you would think that the FCC, on hearing that its authority had been challenged by a Superior Court in Orange County, California, would have immediately been up in arms. You would think that one of the lawyers in the commission's employ would have gone to his boss and said: " . . . hey look at this." You would think that the FCC would have written the judge to give him the kind of reprimand it has to others in years past.

Instead, the FCC simply rolled over and played dead! It said nothing. It did nothing. Not one letter was written to the judge to challenge the state's decision to usurp the FCC's ultimate authority in matters of radio communications. In doing nothing, it began a giveaway of its own power to regulate and to enforce the regulations it creates.

While on a personal level I happen to agree that our service has more than its share of malcontents, I still believe that it is for the federal government, and only the federal government to take any form of punitive action against them. Further, I believe that civil actions taken by a ham radio client while serving the immediate needs of that client, will, in the long term cause undue harm to the entire United States Amateur Radio Service. This weakens the case for total federal preemption over any and all aspects of electromagnetic transmission and communication.

By acting as they have, hams who take civil action against other radio amateurs based on state law are now putting all of us in jeopardy. Their actions put each and every one of us in the position where any state, city, town or municipality can (and will) enact its own rules and laws governing any aspect of communications law that they choose. Dealing with a federal bureaucracy is bad enough. I for one do not want to see 50 — or 500 — or 5,000 agencies all believing themselves to be a controlling agency over telecommunications.

The responsibility of punitive action against a ham who in any way violates the trust of his license must remain the sole jurisdiction of the federal government. It must remain so without any interference from state, city or local government. For Amateur Radio, the concept of "total federal preemption" is to be cherished and fought for. It is to the United States Amateur Radio service, what the Constitution and Bill of Rights are to all Americans. As such, I would rather see the alleged "bad hams" go unpunished than to have federal preemption challenged and diluted to the detriment of the nation's entire ham radio community.

I sincerely hope that one of these days the FCC finally develops the backbone to tell the states and municipalities to keep their noses out of the affairs of ham radio, lest they face the wrath of litigation from Uncle Sam. I hope that it will tell those attorneys who are trying to develop "ham radio civil law" to stop — and stop right now, before the FCC has a court order them to stop.

Most of all, I hope that the FCC will once again do what it used to do. It's for them to "pull" the licenses of alleged regulatory violators. If the accused wants to challenge the FCC, fine. Let him have his day before an Administrative Law judge or, if warranted, in a federal court of law.

At the FCC and in the ham radio community, it is my opinion that it's time to replace the lawyers with knowledgeable engineers who make decisions based on technology, not on the laws that they create to bend technology.

SERA on SPOC

Are the nation's frequency coordinators backing away from giving the American Radio Relay League the ultimate power to represent them to the FCC? This may be the case if a January, 1996, press release from the Southeastern Repeater Association means what it seems to.

While SERA says it supports the idea of a single point of contact, it backed away after the coordinators present at last October's national coordinators conference voted to have the American Radio Relay League take on the job without insisting on checks and balances. At that time, SERA was assuming that the drafting committee would write a proposal designating the ARRL as the SPOC.

Now the committee may have had a change of heart. While the committee has not yet made public its white paper on coordination policy, some inkling of the groups position can be found in the SERA press release: ". . . Apparently the drafting committee, which released the proposed National Frequency Coordinators Council organization documents felt that too many coordinators felt the same way SERA did. Their draft documents seem to go the direction of a SPOC made up of

the nation's coordinators, not the ARRL."

If this is true, then SERA says that it can support the concept. The question is, will the ARRL Board of Directors accept being subservient to the will of the coordination community?

Christmas 6 Meter opening

Mother nature gave hams a treat that began on Christmas Day, 1995 and lasted for almost a week. The 6-meter and 2-meter-bands, normally quiet at that time of year except for local FM operations went wild with DX. While reports from overseas were a bit sketchy, at least one UK 6M station was heard and worked in the northeastern United States. There are also reports of JA stations being heard in the Pacific Northwest but no confirmed QSOs.

Perhaps the most astounding report comes from a station in South Carolina. Ken Rameriz, KP4XS/4, reported over the *VHF Reflector* (an Internet remailer dedicated to all forms of VHF operation other than FM) that he heard at least 80 stations from across the United States and Mexico and had QSOs with many. This included stations as far away as Colorado, Oregon, and California.

Another exciting 6M QSO was reported by Dale Parfitt, WA2YPY, who contacted Arizona from Central Florida, while Bill Hudson, WAØKBZ, in Missouri had numerous contacts into New England and Florida.

As late as Thursday night, December the 28th, reports were showing up on the *reflector* indicating that single and double hop 6-meter E-layer contacts were taking place all across North America, into the Caribbean and into parts of Mexico. Early on Tuesday the 26th, postings began to show up telling of 700 to 1000 mile E-layer contacts on 2M SSB and CW as well. Most of these taking place north to south along the Eastern seaboard.

Reports filtering in late in the week indicated that similar conditions were taking place all across Europe and into Asia though few actual contacts were detailed. The opening seemed to end early on Friday the 29th, with no reports of any 6- or 2-meter E skip since then.

The sad part of it all is that FM users seemed totally oblivious to this truly amazing band opening.

Though word of it spread quickly within the VHF DX community, when it finally reached the bulk of VHF-FM users, most seem totally uninterested in the fact that their ten-watt radio had the ability to work the world, if they would only go to a simplex frequency and listen. Most seem to have stayed on their local repeaters and simply ignored the possibility of working some truly rare DX.

How easy would it have been to work some DX, you ask? Using a stock 10 watt PEP Yaesu FT-690 to a dipole in the attic of my condo — which is totally surrounded by mountains — I heard lots of W7, W8, W9 and WØ stations and actually made two contacts.

And here's the other kicker. While the majority of these QSOs took place on single sideband at the low end of the 6M band, several good DX contacts also took place on AM — on the old AM calling frequency of 50.400 MHz by hams claiming to have used 1950s era Gonset Communicators, Clegg 99ers and other older gear!

And almost everyone commented that this was the best mid-winter 6M opening in years. Some old time 6-meter enthusiasts say that Christmas Day 1995 sounded like any day at the height of 6-meter DX back in July of 1959!

ARRL asks for fewer spread spectrum rules

The ARRL has asked the Federal Communications Commission to relax its spread spectrum regulations to give Amateur Radio more opportunity to contribute to spread spectrum development. The League's request seeks relaxed restrictions on spreading sequences and greater flexibility in the use of spreading modulation.

The petition proposes that the FCC permit brief test spread spectrum transmissions and allow international spread spectrum communications between amateurs in the US and those in countries that permit their hams to use spread spectrum techniques. The current rules allow only domestic communication. The petition also asks for automatic power-control provisions to insure use of minimum necessary power to conduct spread spectrum communication and limit the potential for interference to narrowband modes.

The petition does not ask for any changes in frequency restrictions on spread spectrum emissions, the 100-watt power limit, or logging and identification requirements. In urging the FCC to adopt the changes, the League's petition calls the proposals the minimum necessary changes in order to foster spread spectrum experimentation in the Amateur Service.

Dayton is coming — Dayton is coming

By the time you read this, we will be about one month and counting until the "show of shows in ham radio" takes place in Dayton, Ohio. For the uninitiated, it is called the Dayton Hamvention and each year, close to 40,000 of us make the "annual pilgrimage to Ham Radio Mecca."

As usual, this writer will be there along with a host of other W6s who, this year, will not be "still in recovery" from the International DX Convention held in Visalia, California, the week before. That's because the folks in the Dayton Amateur Radio Association have changed the date of the Hamvention. It's now the third full weekend in May — specifically 17-19 May this year. If you want to drop by to say hello, look for me in one of two places. Either at the Media Relations Forum that I normally produce or host and at the ***Worldradio*** booth — handing out sample issues — saying hello — and losing my voice.

April is a funny month

Finally, I have to tell you. As you approach the month of April, all sorts of "strange" people seem to come out of the woodwork. I do not know if it is because April 1st is also "April Fools Day," or because in most places the "spring thaw" has begun. With the latter may come the melting of minds.

Need an example? Just a few days ago I received a phone call from a rather irate new ham. He was exceedingly upset because: ". . . only a few of the repeaters in his radio had a voice announcing the call sign. The rest had this dit dot noise that he could not understand." He wanted to know what: ". . . all the dit dot noise was about and why some repeaters had nobody to tell him the what repeater he was on."

No folks, I am not kidding. You cannot possibly joke about something like this. And it gets better — or worse — depending on your point of view.

After explaining that I was a mere mortal and had no magic power to make all of "the repeaters in his radio" identify with a human voice, I also took the time to also explain what the ID on a repeater was for; that its purpose is to legally identify the repeaters transmitter for the FCC and not for those using the machine to communicate. That the latter was merely a side benefit for some.

I also attempted to explain that those repeaters which have human — or almost human sounding voice identifiers usually have them in addition to a Morse identifier. In many cases the voice ID is the recording of some famous locally personality and is used by the system owner as an attention grabber for his system.

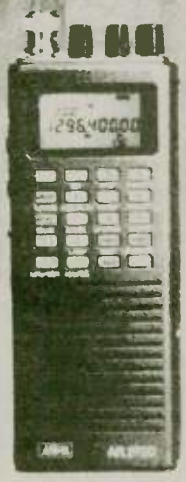
After some fifteen minutes of "Repeater Operation 101" I paused and asked if he had any comments or questions. His reply was kind of strange, but not beyond reason. He told me that he and other no-code hams feel that Morse-only identifiers put codeless Techs at a distinct disadvantage. That he firmly believes it to be "blatant discrimination against no-code hams" by higher class license holders who control most of the nation's repeaters.

As he spoke, you could sense the rage building within him. "If there is going to be a no-code license, then we have to be catered to," he said, just before hanging up.

Interestingly, almost two years ago, while at the Dayton Hamvention, I had a discussion about voice identifiers with a rather prominent ham involved peripherally with repeater frequency coordination. At that time I wondered out loud if a time would ever come when there would be so many hams who could not understand Morse code repeater identifiers that they would demand that it be replaced by voice. We both kind of laughed off the idea and went onto other topics of the day. Now, I cannot help but wonder how long it will be before the FCC receives a request for regulatory change asking that all repeater be forced to identify call sign and location in a human voice.

How did that old Red Buttons' song go? "Strange things are happening!" Maybe the irate no-coder who called, is far more representative of today's VHF and UHF ham, and not so "strange" after all. **WR**

The Latest From AOR Products



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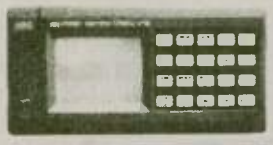

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Contest news

The winners of YLRL's 1995 Anniversary Party contest have been announced, and congratulations go to all the winners. First place in the phone section for North America went to Irma Weber, K6KCI, and the DX winner was Greta Hubacher, HB9ARC. Lia Zwack, WA2NFY, won first place in North America in the CW section, and Rosel Dach, DL2FCA, was the DX winner. Lia also had the highest combined score in both sections from North America and won the Corcoran Award, and Rosel was the DX YL with the highest combined scores and won the Hagar Award.

It's almost time for the DX YL to North American YL contest, which is also sponsored by YLRL. The CW section runs from 1400 UTC, 10 April, to 0200 UTC, 12 April 1996, and the SSB section runs from 1400 UTC, 24 April, to 0200 UTC, 26 April 1996. This contest is open to all licensed women operators, and DX YLs and North American YLs work each other. The exchange is the call sign of station worked; QSO number; RS(T), and ARRL section/VE province/country, and logs must also show the time and date in UTC, band worked, and power output. The phone and CW sections are scored separately, and logs go to YLRL vice president Carol Hugentober, K8DHK, 4441 Andreas Ave., Cincinnati, OH 45211. Complete rules will be published in ***Worldradio***.

Anyone, whether in the contest or not, who would like a YL contact from W1AW, will have a chance to catch a member of "The Terrific Trio," which includes Deb Clark, KB1AOV; Dot Burden, KA1LDS, and Linda Robinson, KB1BMO, during the SSB section. Known as "The Dynamic Duo," before Linda joined the group, they are now looking for one more YL to make "The Fab Four." Deb and Dot have operated W1AW during several past YL contests and Linda joined them for the 1995 Anniversary Party. They've made many interesting contacts and are looking forward to another good time.

YLRL

YLRL's new president Marti Brutcher, N6XDS, has announced a new membership drive for 1996. She's offering a $100 U.S. savings bond to the YLRL member who signs up the most new members this year, and she is asking for suggestions and comments from anyone who has good ideas on ways to increase the membership. Her goal is not just to increase YLRL's membership numbers but to reach the many YLs who are not presently a member of a YL group so that they can also enjoy the benefits of this group.

YLRL is for all YLs, no matter what class license you hold or how long you've been licensed. A prime example is YLRL's new editor Margaret Dunn, KC7LXS, who was licensed just after Field Day in 1995. Margaret was listed as a new member in the first issue that she edited, and she is getting rave reviews on the beautiful job that she did. YLRL is off to a great start in 1996 and YLRL members will be passing out membership applications at all the major and most of the smaller hamfests this year. If you'd like to get an application now, just write to YLRL Membership Chairman Phyllis Douglas, K7SEC, 701 North Camino Del Cordorniz, Tucson, AZ 85748.

Meetings

I'm not sure how many countries will be represented at the YL Worldwide Meeting in Berlin on 20-23 June 1996, but organizer Gertrud Szyza, DK8LQ, is very pleased with the number of reservations she has received. There will be quite a few attending from the U. S., and I know of several from Asia.

Ruth Geering, IT9ESZ

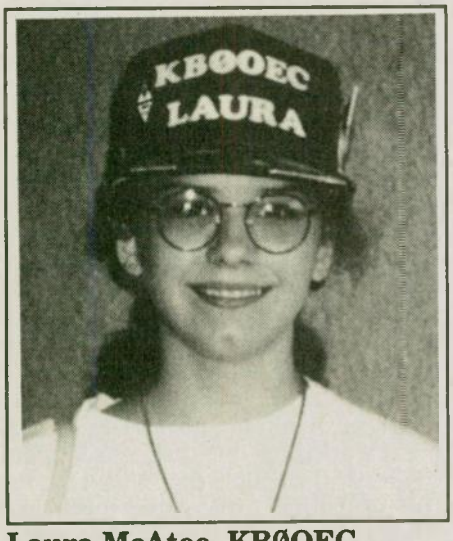
The YLRL Convention, to be held in Albany, New York, on 11-14 July 1996, is also going to be well-attended. The meeting will be held in downtown Albany at the Omni Hotel, and the convention committee has announced that there are two RV parks close by. Room reservations at the hotel must be made before 28 June.

The Women Radio Operators of New England (WRONE) will be holding their 40th anniversary Spring Party in New Ashford, Massachusetts, on 4 May 1996. They're hoping to have 100 members present.

The Texas Young Ladies Round-Up Net (TYLRUN) held its 41st annual meeting in Gatesville, Texas, on 15-16 September 1995, with Alma Lang, AB5BA, and Ann Beadel, N5GHS, as hostesses. There were 23 attendees, including Stacey Moore, KC5PQV, who was eight-years-old on 2 October 1995. TYLRUN officers for 1996 are President Julia Young, K5JFJ; Vice-President Carole Frye, KA5ZAL; Secretary/Treasurer Alma Lang, AB5BA, and Publicity Chairman Doris Anderson, K5BNQ. The 1996 meeting will be in Commerce, Texas, with Judi Jaksa, NØIDR, as hostess.

YLRL vice president Carol Hugentober, K8DHK, and her OM John, N8FU, held an open house for YLs at their home in Cincinnati, on 10 December 1995. It was scheduled for 2 p.m. until 5 p.m. but the last guests didn't leave until after 9 p.m. so it must have been fun.

The YLRL Forum at the Dayton Hamvention will be held in Room 2,



Laura McAtee, KBØOEC

on Saturday, 18 May 1996, at 2 p.m. This is the same room that it's been held in for the past four years, but there has been a time change. I will be the moderator this year so please let me know if you have something for the agenda. All YLs are cordially invited to attend. Also, let me know if you need more info on any of the activities listed above.

Updates

Ruth Geering, IT9ESZ, and Adrianna Parducci, IK5MEQ, were members of the Italian team that operated as 1AØKM from S.M.O.M. (Sovereign Military Order of Malta) in December, marking the first YL operation from that country. QSL via Francesco Valsecchi, IKØFVC, Via Bitossi 21, 00136 Roma, Italy. You may remember that Ruth also operated from the Vatican last year. She is hoping to be on from San Marino in May, which will be another first for YL operation.

Congratulations to Vi Barrett, W6CBA, who received the Jean Carter Memorial Award, from the Buena Park Amateur Radio Club, in appreciation of her many contributions to Amateur Radio.

Jensen Montambault, KS4ZQ, graduated from the University of Virginia last May, with degrees in Environmental Science and English. She joined the Peace Corps and is now serving as Community Environmental Promoter in rural Nicaragua. She has applied for a YN license and hopes to be on the air soon from Nicaragua.

Congratulations to Aola Johnston, ZL1ALE, who is the first ZL YL to reach the ARRL DXCC honor roll.

Laura McAtee, KBØOEC, is thought to be the youngest Extra Class licensee in Kansas. She is 13-years-old and is primarily active on 2 and 20 Meters.

Diane Ortiz, KA2GWM, invites everyone in the Long Island, New York, area to check into the LIMARC YL Net on Thursday evenings, at 9:00 p.m. local time.

Diane and Nancy Rosner, N2TKA, share net control duty and the net meets on the 147.375 MHz repeater, located on the Long Island Expressway, in Plainview. Diane's e-mail address is HAMYL @AOL.COM if you'd like more information.

Anny Schwager, DF2SL, can often be found on the Society of Wireless Pioneers Edelweiss Chapter CW Net. There are currently 15 members of the Swiss chapter and the net meets each Sunday on 7.027 MHz, at 10:15 a.m., local Swiss time. WR

Search And Rescue Communications

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

The State of Utah's Comprehensive Emergency Management folks conducted a two-day workshop last week concerning rapid disaster assessment and I was excited to attend and represent the county's Amateur Radio emergency group. It was also an eye-opening experience! I was impressed at how Amateur Radio is perceived by public safety agencies.

Without a doubt, communications is perhaps one of the most critical elements in emergency response situations. The ability to link decision makers with field resources demands close attention especially when you consider:

- Many dispatch sites are not located with transmitters.
- Many dispatch centers are linked with transmitters via microwave or dedicated phone lines that could fail and render the center "off the air."
- Many agencies do not have the ability (or know how) to switch to a simplex channel. If they have one, it has not been tested and coverage areas are unknown. (The rubber ducky syndrome!)
- If phones fail, public service agencies would not be able to directly contact service providers such as utility companies.
- Agencies with UHF equipment will not be able to connect with VHF equipment.
- Trunked, secure, and complex systems might require trained service people in order to reprogram or repair damage. These trained people might not be able to reach equipment to effect repairs.

I'm sure you could come up with additional scenarios such as trying to find radio service equipment and technicians and get them on location to repair antenna and feedline failures. One sheriff's officer at the course lamented that day-to-day "normal" problems are difficult to resolve (such as broken microphones, dead batteries, etc.) and that a long-term disaster was mind numbing.

A firefighter observed that normal traffic keeps their tactical channels busy and he could not begin to contemplate the radio traffic that would occur during a wide-spread event. An assistant fire chief pointed out that Salt Lake City cannot just call upon neighboring communities to provide engine companies or firefighters — the closest resources are Reno, Las Vegas, or Denver, both of which are at least a ten-hour drive.

The assessment course focused on doing a quick survey of critical facilities (hospitals, fire stations), transportation routes, and lifelines (utilities). Results of the quick survey are then fed to the incident commanders who allocate resources where the most good can be done. One example was that the assessment would allow dispatching fire crews to a damaged school to rescue 1,000 kids and bypass a burning warehouse where threat to life is less (albeit more spectacular with flames and smoke).

A common thread throughout the workshop was communications and how all this assessment information would reach the command post — especially if there was damage over a large area. I kept hearing "Amateur Radio" and public safety planners saying how important this resource would be in a disaster. What a difference a few years and some dedicated effort will produce!

Let me give you a little history. In the 1970s and early 1980s, the local Amateur Radio community was, to put it politely, "tolerated" among emergency responders. If we pressed, we could sit in the back of the room during a class and simply be quiet. Our opinions were not important and if we behaved, we might get to come play.

Larry Jacobs, WA7ZBO/N7JHF, put in considerable effort and made some inroads, but he didn't enjoy a whole lot of support from his fellow Amateur Radio operators. After a couple years of near-dormancy, ARES was revived again by Kelly Anderson, KD7OD, John Parken, KA7GZH, Richard Evans,N7PCE, and Bart VanAllen, KA7ZFD. It began with phone calls to others, announcements on swap nets, and simplex nets where these four were often the only checkins.

This leadership group decided upon certification levels, training plans, and shared a vision that Amateur Radio could become an important community resource. They decided that "good enough" was not OK. They met with public service providers and listened. They attended FEMA courses and began to attract a crowd of radio operators interested in doing a professional job of providing communications.

To say it was an uphill battle would understate the efforts. There were differences of opinion, opposition to decisions, hurt feelings, mending of fences broken decades ago, and continual effort. Bart, KA7ZFD, has been weekly net control for years and Richard, N7PCE, just finished his 400-page resource manual (second edition).

Was it easy? No. Have these efforts produced results? Yes. In the assessment workshop, one task was to identify critical medical facilities, schools, fire stations, and other facilities. While many of the participants wondered where to find information, two of us from ARES opened our resource manuals and began reading off the information. Others in attendance were impressed as we rattled off medical facilities less well known than the major hospitals.

When a school was selected for an on-scene command location, we turned to the "schools" section and provided location, cross streets, and a radio tactical call sign. All carefully prepared and contained in an ARES resource manual. I think Richard is now planning on an extra run of 100 copies for public service agencies — at their request! It may well become a cornerstone for damage assessment planning!

Besides operator training, resource manual, and weekly nets, the ARES group has installed antennas in all

major hospitals, most city emergency operations centers, the county EOC, and recently worked with the Utah Transit Authority (our bus service provider) to install a complete Amateur Radio station (VHF, HF, packet).

I was approached after the workshop by two school districts, an emergency dispatch center, and a utility all asking how they can have ARES work with them to get involved with the Amateur Radio network. One of the school districts began to realize their high schools have instructors and stations already in place and simply needed some help in coordinating these resources and training operators. It was very humbling to be sought out for an opinion and not simply treated as someone with a strange hobby.

Why do I tell you this? Because you can do it too! It cannot happen overnight. It cannot happen single-handedly. You will get discouraged. You will have to resolve internal conflicts. You will have to challenge your people to attain professional levels of training.

The other reason is that you, your license, and your radio are a valuable resource. You may be the link to save a life or relay to a firefighter that his or her family is OK, thus relieving the firefighter of the stress of worrying about his or her family. You might be able to provide a communications link to get vital information to decision makers or you might simply provide your neighborhood some comfort knowing they are not cut off from the outside world.

I've been accused of being too narrowly focused on emergency service and in missing out of the fun of the hobby. I enjoy an HF contact or a DX QSL card. I've been on packet for a long time. My CW is rusty but my RTTY gear still gets exercised regularly. My son, Zach, KC7GKE, and I set up stations at Boy Scout camps and church youth camps. It is all fun but not as rewarding as being trained and able to connect critical resources for public service.

Please take the time to get involved! Contact your local ARES group (or Skywarn group, or SAR group) and get involved. Regularly attend activities and training sessions and stretch a little. Take on a project or volunteer to set up a station at the next event. You can do it!

Who do you work for?

I just read an article urging communicators and volunteers to become members of their local police reserve or fire department reserve. There's nothing wrong with this, just consider what you want your role to be during an emergency. If you want to do police work, then do it and do it well. Attend traffic school, spend time on the range, and attend crime scene evaluation classes.

If you're tending toward being a volunteer firefighter, then work at being the best volunteer they ever had. If you want to be a communicator, that's where you need to focus. You cannot do it all! Consider your loyalty and where you'll do the most good. It's difficult to tell the fire chief that ARES needs you during the emergency. It's also not good to tell your ARES leaders that you'll play radio during fair weather, but when the big one hits, you're on the sheriff reserve.

Be careful when you join with many groups that will be in demand during an emergency. Be fair to yourself and to your group's leadership. When you make a commitment, be sure you will be able to contribute when the time comes!

Projecting an image

Some readers have asked my opinion on what communications people should wear during a response. In future columns we'll explore ideas for better ways to carry radio gear. What I will say now is the last thing you want to do is look like a police officer, paramedic, or member of any similar agency.

Yesterday a vehicle passed me. It had antennas, spotlights, a yellow raincoat hanging in the back seat, an amber light/siren bar on top, visor strobe lights, and fancy door decals that were very similar to those of a state agency. If you didn't look close, you would think this vehicle was part of a state emergency services agency. If you read the decal, you would discover the group was not quite official.

Before you strap on your web belt, attach your police-like radio case, handcuff case (with spare batteries inside), mace canister, extra-long flashlight, EMT belt kit, etc., decide on what image you want to project. Are you a communicator or a wannabe cop? Do you ever wonder what a sheriff might think if he or she saw you at an emergency scene. Would you be considered a communications resource or someone with a badge fetish? What's your role? Why are you there? What image do you want to project? Think about it before you dress up (unless it is Halloween).

Until next month, best wishes from Salt Lake City! WR

QUARTER CENTURY WIRELESS ASSOCIATION INC.

John G. Troster, W6ISQ

Surprise

In the February column I wrote a piece about editor Barry Wiseman, N6CSW. I said, quote, while he was living in Pismo Beach, CA, Barry met Lloyd Hutterman, W6IOY, now deceased, who became Barry's Elmer, unquote. Shortly after that issue came out, I had a phone call. "Hallo John, wanna know who this is? I'll give ya a hint. I'm calling from Pismo Beach and your statement of my demise was somewhat exaggerated," (to paraphrase Mr. Clemens), or something like that. Hey Lloyd, gosh, er, whew! I'm really glad to be wrong on this one. Apologies, and thanks for the call.

QSOs 72 years apart

Bob Baird, W9NN, sent an article from the Badger State *Smoke Signals* of January, 1996, telling of Bob's two QSOs with Al Khan, now K4FW. The first was on 17 November 1923. Bob's call then was U8CWR and Al's was 9BBI. Their second QSO was 17 November 1995, 72 years later! Bob's now W9NN and Al is K4FW. (See ***Worldradio*** QCWA column of July, 1994). The column pictured their QSL cards for both QSOs. Bob wrote on his '95 QSL,"72 years long time between QSOs! We should do it more often!" In case you are wondering whether Bob, with that "U" call, was located in Russia at the time of their first QSO, please be informed that the early U.S.A. calls were "U" for United States. Congratulations to these Old-Time operators who are both One Of Us, the Elite, The Proud, the Steadfast, the QCWA.

Thomas B.J. Atkins, VE3CDM, One of Us

O it's Tommy this, an' Tommy that, an' "Tommy go away,"

But it's "Thank you, Mr. Atkins" when the band begins to play,

The band begins to play, my boys, the band begins to play,

O it's "Thank you , Mister Atkins," when the band begins to play.

—*Tommy,* by Rudyard Kipling

When I first met Tom Atkins, I couldn't help but be reminded of that Rudyard Kipling poem. I was even more impressed later when I learned that Tom's father had served with Indian Army in WWI, and his brother-in-law with the Gurka Rifles in WWII! At that point, Tom seemed to have stepped right out of English history.

Our first meeting was in Curaçao several years ago at an IARU Region 2 meeting. Tom was Secretary of Region 2, clearly one of the hardest working fellows there. Now he's President of Region 2 and, if possible, works ever harder.

Tom was born and raised in Chester,

IARU Region 2 Logo.

England on the Welch border. As a boy he was always interested in radios and built crystal sets and small radios. He joined the Radio Society of Great Britain and became Receiving Station BRS-7280 while he was still in Public School. But WWII had started, so there was no thought of Amateur Radio.

Tom entered the University of Wales in 1941, and began studying law. He also met a young lady named Jo Evans, of whom you'll hear more later. He joined the equivalent of the US ROTC and fully expected to be called up shortly as a Second Lieutenant. However, the army happened to not need men at that time but sailors were needed, so in 1943 he was shipped off to Naval Officer's training.

During his navy training, Tom played rugby, was injured and put in the hospital, (those Englishmen play for real!) and couldn't graduate with his class. Instead he was re-assigned as a rank and file, able-bodied seaman, aboard lend-lease LST 427 and immediately went into training for the Normandy invasion. During the June invasion of Europe, his LST transported tanks, trucks and other heavy equipment from Southampton to France and returned with walking wounded. They continued this shuttle mission until November.

LST 427 was then refurbished for tropical weather and set sail through the Suez Canal for India. Interestingly, they carried an LCT welded to their deck! It made for a top heavy ship and obscured vision from the bridge. So, extensions were welded to the bridge to enable seeing out and around.

The ship arrived in Cochin, India, an advanced LST base, then re-loaded and sailed for the Burma invasion. After Burma was cleared, LST 427 sailed up river to Rangoon—another familiar Kipling line, "Can't you 'ear them paddles chunkin' from Rangoon to Mandalay." (*On the Road to Mandalay*).

The ship returned to Trincomalee, Ceylon, to load for the invasion of Malaysia, a major operation planned to cut the Malaysia Peninsula in half. However, the day before the invasion, the A bomb was dropped. The invasion carried on anyway, and the troops became occupying forces. After discharging their cargo, the British LST fleet sailed for Subic Bay, Philippines to return the lend-lease LSTs to the US. Then back to Singapore for a few months, wherein Tom was put in charge of a crew of Japanese prisoners and assigned to erect an audio entertainment system. Tom and the Japanese could not understand each other, but they could all read circuit diagrams, and that became their common language. Tom's LST 427 was later sailed to Bikini Atoll and was one of the ships placed in the harbor for the atom bomb test. It's now at the bottom of Bikini lagoon.

Tom returned to England on an aircraft carrier and went back to the University and law school. He joined the "Territorials" which is equivalent to the U.S. National Guard, and was assigned to a combat Infantry Battalion as a communications officer. He also re-met Jo who was studying to be a teacher, and a romance blossomed and flourished.

After the University, Tom went to work in his father's law firm and again developed his interest in Ama-

teur Radio. In 1950 he passed the amateur exam, but did not apply for a license because he had plans to emigrate to Canada. (Note that in England, an applicant first passed the exam, then in a separate application, requested a station license and call). Later, he acquired the call G4ABN which he still retains.

In 1951, Tom decided it was time to move to Canada. But first things first:

Tom Atkins, VE3CDM, (left) pictured with Noel Eaton, VE3CJ.

he and Jo were married and sailed west to the New World, penniless but happy, settling in Toronto. There Tom was hired as a management trainee in the Canadian Bank of Commerce. He also was commissioned in the "Territorials," the Canadian Army Reserves. Later he served in the Canadian Army and was assigned to the Signal Corps in the Second Armored Signal Regiment. Tom retired from the military with 26 years of service. (Beat me by one).

After two years at the bank, Tom accepted a position as Executive Assistant to the Director of Commercial Operations for the Canadian Broadcasting Corporation. He held various positions involving sales, on the way to becoming General Sales Manager. In '60, he joined a private TV and cable company and worked in the private sector in management positions. His last post was VP for Programming and Sales at Ottawa TV station CJOH before taking early retirement in '86.

When Tom arrived in Toronto, he bought a Hallicrafter S-38 to listen to amateurs and short wave. In 1968, he decided to get back into Amateur Radio, so took the exam and received the call VE3CDM. He went on the air with an SX-115 and Collins 32V2 and a dipole. Then he explored fast scan TV, and other modes, including, of course, two meter FM.

When he received his license, Tom joined the Radio Society of Ontario and ultimately became a Director and President. He came under the wing of Noel Eaton, VE3CJ, who became the Canadian Director of the ARRL. Tom was his Vice Director and later succeeded Noel as Canadian Director of ARRL. In 1989, the Canadians decided to separate from ARRL and form their own organization. At this time, two competing amateur organizations evolved. Of course, Tom was involved and finally in 1992, the two groups joined to form one amateur Canadian organization, the Radio Amateurs of Canada.

In 1980, while Tom was Vice Director of the Canadian Division of ARRL, he represented Canada at the IARU (International Amateur Radio Union) Region 2 (North and South America) conference in Lima, Peru. In the years that followed Tom became Treasurer of Region 2, then Secretary, then Vice President, and now, President. It's a post with wide international responsibility for representing, presenting and protecting Amateur Radio interests with the ITU (International Telecommunication Union) in Geneva.

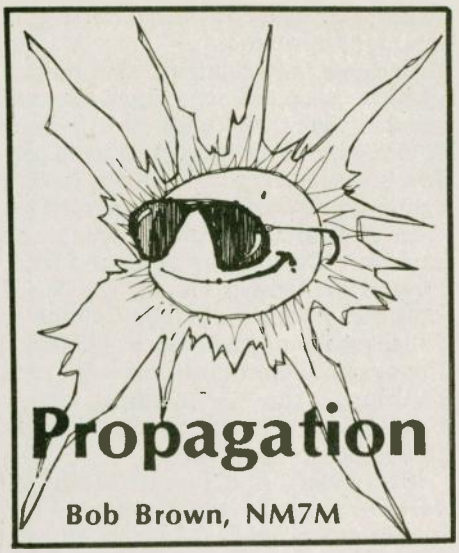
Tom's most memorable radio achievement is his involvement in the 1988 Canadian-Russian Trans-Polar Ski Expedition. At the time, Tom was President of the Canadian Radio Relay League and was pressed into service to negotiate acceptable communications agreements between the government of Canada and the USSR. He duly went to Moscow and negotiated the first reciprocal licensing agreement the Soviets made with any country, allowing Canadian and USSR amateurs to operate in each other's territory. Tom also secured a third party agreement for handling traffic during the crossing of the North Pole. He was one of the four signatories of this historic government agreement.

Because the scientists, as a matter of survival on the expedition, communicated with their bases via Amateur Radio, communications had to be perfect and continuous. Tom was coordinator of this Canadian-Russian effort. The expedition of nine Russians and four Canadians departed from Severnaya Zemlya, crossed the North Pole and finished at Cape Columbia, Ellsmere Island, a distance of 2000 kilometers. Communications were perfect during the four month's journey. Surely, this was the result of Tom's fine hand in the project.

Today you'll find Tom on 14 and 21 MHz with his TS-180, Hammond kW amplifier and a TA-33 beam, in constant contact with his colleagues in Region 2 via the Region 2 Network.

Tom and Jo have two married daughters. Shan's a Harvard MBA living with her husband and two sons in Northampton, NH, and Elizabeth is an executive in a Toronto advertising agency.

If you've gotten the impression Tom Atkins is a "dooer" dedicated to Amateur Radio, then you've read me right. From his position as President of IARU Region 2 , he continues to advance and protect the causes of Amateur Radio. You could rightly see Tom as Region 2's Elmer! QCWA is proud to claim him as One Of Us! 73 + 25, Jack, W6ISQ **WR**



The radio spectrum extends from extremely-low frequencies (ELF, <3 kHz), to super-high frequencies (SHF, 3,000-30,000 MHz). Our HF spectrum, 3-30 MHz, is only a small part of the radio range and we're pretty protective, even possessive about it. But we don't control our destiny, at least in radio terms, as signals in that range come to us from all directions and from a variety of sources.

The dense atmosphere overhead protects us from harmful radiation, in the ultra-violet, x-ray and gamma ray ranges. But, thankfully, it has a window where it is transparent in the visible range, letting sunlight through. You might think that the ionosphere protects us too but it's not all that dense. True, it does keep out radiation below the local critical frequency foF2 as I discussed recently but anything above that value gets through the peak of the F-region.

Of course, there are good and bad aspects to that. The bad side is that we can hear the sounds of solar flares when they erupt, even disrupting our QSOs with all the noise. And even though it is not exactly a matter of transparency, solar x-rays can get through far enough to affect our D-region adversely. But the good side of all this is that we can listen to the galaxy overhead, even other galaxies, and learn something of what's going on in the larger universe.

But we have other forms of radiation from below the F-layer peak, noise being a good example, and it can affect how we operate on the bands. Part of the radiation is man-made, what I'd call "The Sounds of Civilization," sort of like what the nearby Naval Air Station calls its jet noise, "The Sounds of Freedom." Myself, I don't object to either but I will say that I can give analytical expression to "The Sounds of Civilization," as shown in Figure 1; that's more than I can say for the other.

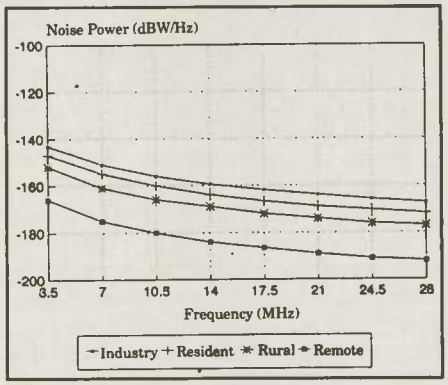


Figure 1.

Anyway, that figure shows the average man-made noise power that we'd hear in a bandwidth of 1 Hz, the decibel symbol dB meaning that the noise power in watts is compared in logarithmic terms to a standard power of 1 watt. The figure lists different circumstances; industrial, residential, rural and remote — and shows how noise power we hear falls with increasing frequency. Of course, the noise heard depends on the bandwidth in use so taking 1.8 kHz for SSB operation, the noise power at a operating frequency on one of those curves would have to be increased by 33 dB to get a noise power to compare with an incoming SSB signal.

One can well imagine that the highest noise curve would be found in some industrial center; in that regard, I know the receiver in my lab at the Big U had terrible sounds of QRN coming from it. And by the same token, a receiver would be very quiet at a remote, less populated location like here on my little island in the San Juans. But that's not always the case if I go down to the lower bands; like the breakfast food manufacturers say, it's "Snap, Crackle, Pop" a good part of the time and it has a definite stormy weather aspect to it.

That source of noise results from electrical discharges in the atmosphere, lightning strokes. The physics of lightning is one thing, and I don't know much about it, but the noise generated when a lightning stroke occurs is something that we're both familiar with. So the noise spectrum, like for any sort of electrical spark, is quite broad. Those frequency components in the lower part of the HF spectrum are propagated like any other signal, short distances in the day but far and wide at night when the D-region is not present. The high frequency noise components from a lightning stroke suffer less D-region absorption but may penetrate the F-layer if the frequency is too high. As a result, there's an upper limit to the frequency for the noise we receive within the ionosphere. From without is another matter and we'll get to it shortly. But let's look at the local aspect, when and where noise results from lightning strikes.

Lightning, of course, is part and parcel of thunderstorms and its occurrence was studied even before radio came on the scene or noise became a concern in HF communications. In broad terms, the results of those studies indicate that about 50,000 thunderstorms occur every day throughout the world or about 2,000 storms per hour. The data suggest that in going from thunder storms to lightning strikes, there are about 100 discharges per second.

The daily variation of thunderstorm activity has been studied by continents and the results for yearly activity show a peak around 14 UTC over Europe and Africa, about 20 UTC over America and 08 UTC over Asia and

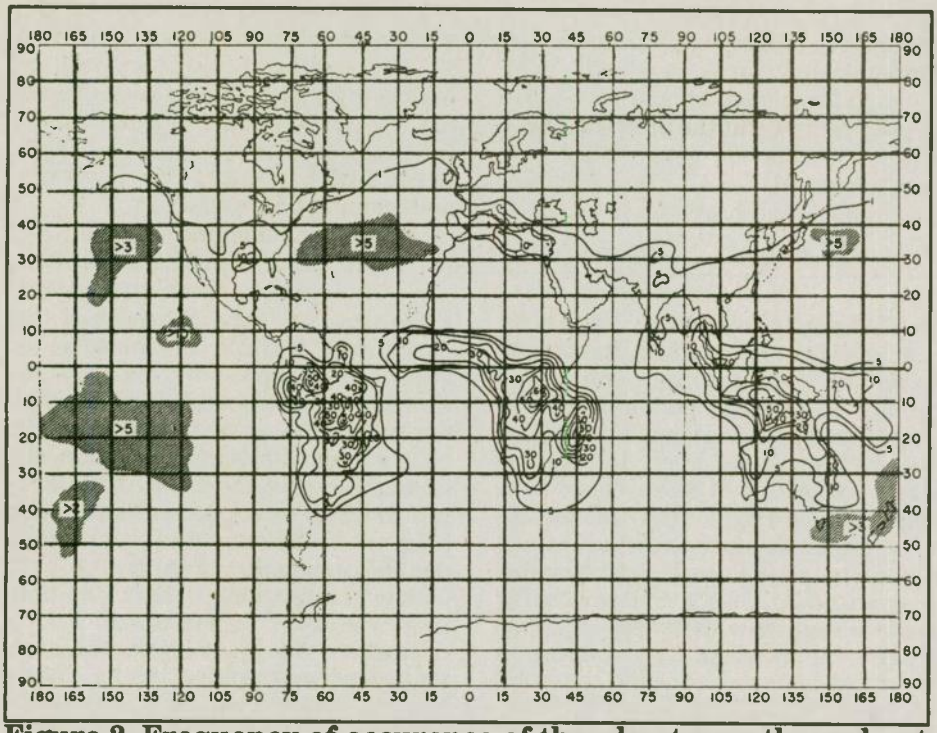


Figure 2. Frequency of occurence of thunderstorms throughout the world by season (December, January, February).

Australia. If the results for the different continents are summed, global thunderstorm activity has a broad peak around 17 UTC and a minimum around 03 UTC when the sun is over the Pacific Ocean.

The seasonal variation of thunderstorm activity is interesting, peaking at low latitudes (equatorial Africa and East Indies as well as the Caribbean and the northern parts of South America) during the summer months (June, July and August) and then moving southward in the winter (December, January and February), as shown in Figure 2. If you'd like independent confirmation of that shift, particularly toward South Africa, look at your QSLs from the region.

In my case, only 4% of the QSLs from stations in southern Africa were from contacts during their summer; the remainder were spread over the rest of the year with a strong peak during their winter (June, July and August). So most of the operators down there were hunkered down during all the "Donner und Blitzen," with their antennas grounded and rigs disconnected from the power lines or just couldn't stand the QRN.

That sort of QRN results from effects of atmospheric electricity and is called "atmospherics" or sferics, for short. It has been noted since the very first days of radio, even before when Marconi's spark transmitters operated down around 6,000 meters wavelength. In that regard, W.H. Eccles wroté an article in 1912 dealing with their daily variation as interference with spark communication, and another article in 1913 which tried to relate "strays" to local weather patterns.

But lightning discharges produce something more exotic that just the static crashes which distract us in HF operations. They also produce radiation at very low frequencies, from 1 to 10 kHz, which are called "whistlers." Those emissions are propagated through the ionosphere, along mag-

netic field lines going from one hemisphere to the other and can be reflected back to the hemisphere of origin, again and again. The higher frequencies are propagated more rapidly than the lower ones and when heard with a receiver, they have the characteristic sound of a whistle descending in pitch, repeating again and again.

At audio frequencies, the wavelengths are extremely long and the propagation of those waves through the reaches of the ionosphere and the geomagnetic field is quite different from the simple (?) features of magneto-ionic theory which apply to the HF spectrum. We won't get into that now but the long wavelengths involved have an interesting history connected with them. In particular, whistlers were discovered during WWI when a German scientist, Bark-hausen, was trying to tap Allied telephone lines in France. The lines, being extremely long and using a ground return, were natural antennas for the long wavelengths involved and Bark-hausen heard those exotic whis-tles from time to time, along with Allied military conversations. His scientific observations were published in 1919; later, he went on to become involved in vacuum tube electronics and there's an oscillation criterion bearing his name.

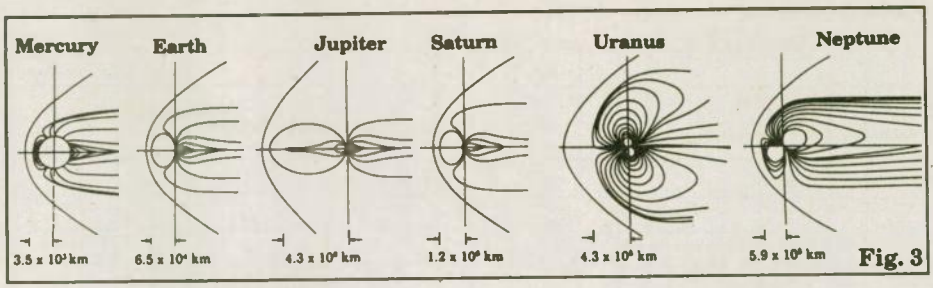


Fig. 3

While it's quite involved, the propagation of whistlers from one hemisphere to another depends on the presence of sufficient ionization along the magnetic field lines. In that regard, experiments show there is a high-latitude limit for the observation of whistlers so at some distance from the center of the earth, ionization on magnetic field lines is no longer sufficient to support whistler propagation. That distance, about 5 earth-radii, is not fixed but moves in and out with magnetic activity, as shown by whistler observations during magnetic storm conditions.

Some of those ideas were in the discussion of the magnetosphere, back in the December '94 issue of ***Worldradio***. The region or volume where whistlers are propagated from hemisphere to hemisphere is termed the plasmasphere and it is bounded on its outer limit, where whistler propagation fails, by magnetic field lines at the plasmapause. So those lightning bolts are good for something after all, telling us about the size of the reservoir in which ionospheric electrons are held on field lines, even supporting our HF propagation at night.

Now you know as well as I do that there's always a temptation to look at things in the terms we know best. In that regard, space scientists have been looking at other planets to see if they have magnetospheres like ours. And they do, there being more magnetized planets than unmagnetized ones (like Mars and Venus), having magnetospheres which range from tiny (Mercury) to enormous (Jupiter) when compared to the one surrounding the earth, as shown in Figure 3.

But the unmagnetized bodies like Mars and Venus have atmospheres and ionospheres produced by solar UV, just like here on earth. They, too, present obstacles to the flow of solar wind and the charges of the solar wind flowing past them induce currents in their atmospheres. And before you know it, there's a magnetic field regime from those currents in the vicinity of the planet and, voila, an *induced* magnetosphere. But without an atmosphere and a magnetic field of its own, our Moon is just a dielectric obstacle in the solar wind, carving out a cavity in the wind and having a wake behind it.

All of the earlier ideas can be taken to other settings or carried to extremes. I won't say the latter is the case but data from a fly-by of Venus, an unmag-netized planet with an atmosphere, suggests that some of the low-frequency emissions heard on the spacecraft actually had their origins in whistler-mode propagation from within the Venus' ionosphere.

And you thought QRN was a simple matter. Not that you want to lose any sleep about it but, if nothing else, the above discussion shows it is vast in scope and implications. All that because of the separation of charges and the potential differences which result! **WR**

Visit Your Local RADIO CLUB

ALASKA

South Central Radio Club. 8023 E. 11th Ct., Anchorage, AK. Meets 2nd Fri./monthly, 7 p.m., UAA Business Ed. Bldg., Rm. 220. KL7CC, (907) 338-0662 for info. Club rptr: KL7CC/R 146.97(-) PL 103.5 Hz. 2/97

ARIZONA

Arizona Repeater Association. P.O. Box 35758, Phoenix, AZ 85069-5758. Operates 20 VHF & UHF rptrs. in AZ. Meets 4th Thurs./monthly, 7:30 p.m., 1515 E. Osborne, Phoenix. Info: (602) 631-4879. 9/96

Cochise Amateur Radio Assn., (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. WA7KYT/R 146.76(-) rptr. 5/96

Old Pueblo Radio Club, (OPRC). P.O. Box 42601, Tucson, AZ 85733. Meets 2nd Wed./monthly, 7:15 p.m., Northwest Neighborhood Center, 2160 N. 6th Ave. (South of Grant). 2/97

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. Meets 2nd Sat./monthly, 7:15 p.m., Dept. of Emergency Mgmt., 130 W. Congress. Net Thurs. 7:30 p.m. 146.82(-), 146.88(-), 147.08(+), 448.550(-) & 145.15 Packet. 3/97

CALIFORNIA

Amador County Amateur Radio Club. P.O. Box 1094, Pine Grove, CA 95665. Meets 1st Thurs./monthly, 7:30 p.m., Jackson Sr. Cntr., 229 New York Ranch Rd., Jackson, CA. Info: call 146.835(-). 5/96

Amateur Radio Club of Anderson, (ARCA). Meets 2nd Thurs./monthly, 7:30 p.m. Amer. Legion Post #746, 1709 Bruce Dr., Anderson, CA. Net every Tue., 7:30 p.m. on 146.64. 4/97

Clovis Amateur Radio Pioneers, (CARP). P.O. Box 514, Clovis, CA 93613. Meets 1st Fri./monthly, 7:30 p.m., Clovis Sr. Cntr., 840 4th St. Info: (209) 298-7707, KE6TCY 147.675(-) PL 141.3 net Thur. 7 p.m. ARRL SSC 3/97

Contra Costa Communications Club, Inc., WD6EZC/R. P.O. Box 20661, El Sobrante, CA 94803-0661. Meets 2nd Sun./monthly (except May & Dec.), 7 a.m., Baker's Square Restaurant in Richmond, CA. Info: Ed Caine, KA6OFR, (707) 996-0962. 1/97

Downey Amateur Radio Club Inc., W6TOI. Meets 1st Thurs./monthly, 7:30 p.m., So. Middle Sch. cafetorium, 12500 S. Birchdale, Downey, CA. (Summer exception: contact Doug, N6WZI, (310) 929-1441). VHF net W6GNS rptr. 146.175(+) Thurs., 7:30 p.m. 5/96

East Bay Amateur Radio Club, Inc. Meets 2nd Fri./monthly, 7:30 p.m., Albany Sr. Cntr., 846 Masonic Ave., Albany, CA. Info: S. Primbsch, (510) 741-8227. 145.110 MHz. 6/96

Fresno Amateur Radio Club. Meets 2nd Fri./monthly, 7:30 p.m., Ernie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-). 11/96

Fullerton Radio Club, Inc., W6ULI. P.O. Box 545, Fullerton, CA 92632. Meets: 3rd Wed./monthly, 7:30 p.m., Sr. Citizens Ctr., 340 W. Commonwealth, Fullerton. Net ea. Tue., 8 p.m. 147.975(-). Info: Bob Hastings, K6PHE (714) 990-9203. 6/96

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.85(-). Meets: 3rd Fri./monthly, 8 p.m. at 1528 Esplanade, Rm. 110B, Chico. 9/96

Golden Triangle ARC, (GTARC). Meets 4th Mon./monthly, 7:30 p.m., Sharp Health Care Activities Rm., 25500 Med. Ctr. Dr., Murrieta, CA 92562. 6/96

Livermore Amateur Radio Klub, (LARK). Meets 3rd Sat./monthly, 9:30 a.m., City Council Chamber, 3575 Pacific Ave., Livermore, CA. Net Mon. 1900 on 147.12(+). For info: LARK Secretary, P.O. Box 3190, Livermore, CA 94551-3190. (510) 846-6513. 12/96

Marin Amateur Radio Club (MARC). W6SG. Box 151231, San Rafael, CA 94915-1231. Meets 1st Fri./8 p.m.; MARC Clubhouse Bldg. 549, HAFB, Novato, CA. (415) 883-9789 (Summer exceptions; contact Pete N6IYU, 924-1578). Sun. AM Club at Red Cross, San Rafael. 8/96

Motorcycling Amateur Radio Club. Meets 2nd Sat./monthly, 8 a.m., Lake View Cafe, 2099 E. Orangethorpe, Placentia, CA, at 91 Fwy/Lakeview. Info: Ray Davis, KD6FHN, (714) 551-2010 or (714) 551-1036. 2/97

Mount Diablo Amateur Radio Club. P.O. Box 23222, Pleasant Hill, CA 94523. Meets 3rd Fri./monthly, 8 p.m., Our Savior's Lutheran Church, 1035 Carol Ln., Lafayette, CA. Net Thurs. 7:30 p.m. on 147.06(+) 100Hz PL. Info: (510) 932-6125. 6/96

North Hills Radio Club. P.O. Box 41635, Sacramento, CA 95841-0635. Meets 3rd Tue./monthly, 7:30 p.m., Carmichael Elks Lodge, 5631 Cypress, Carmichael, CA. Nets Tue., Wed., Thur., 145.190(-)(162.2) and 224.400(-). Poc. Tim Lewis, KD6FWD, (916) 722-7037. 3/97

North Shores ARC. Meets 1st Tues./monthly, 7:30 p.m., So. Clairemont Rec. Cntr., 3605 Clairemont Dr., San Diego, CA. Info: (619) 224-1294. 9/96

Orange County Amateur Radio Club. Meets 3rd Fri./monthly, 7:30 p.m., Orange County Red Cross, 601 N. Golden Circle, Santa Ana, CA. 146.550. Contact Bob Buss, KD6BWH, (714) 534-2995. 1/97

Palos Verdes ARC. Meets 3rd Wed./monthly, 7:30 p.m., Community Rm., "Shops at Palos Verdes," 550 Deep Valley Dr., Rolling Hills Estates, CA. Info. Herb Clarkson, KM6DD, (310) 377-6342. Rptr. 145.38(-) PL 100. 11/96

River City A.R.C.S. Meets 1st Tues./monthly, 7 p.m., SMUD Bldg., Don Julio at Elkhorn, Sacramento, CA. License classes offered. For info contact Lyle, AA6DJ, (916) 483-3293. 9/96

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. & Stockton Blvd., Sacramento, CA. Info net at noon on rptr. W6AKR 146.91(-). Steve Cates, KC6TEV, (916) 391-7341 or Les Ballinger, WA6EQQ, (916) 393-4775. 10/96

Sacramento "Old Timers" Amateur Radio Society and Sacramento Valley Chapter #169 QCWA (Quarter Century Wireless Assn.). Meets 2nd Wed./monthly, 8 a.m., Lyon's Restaurant, 1000 Howe Ave. For info contact Paul Wolf, W6RLP (916) 331-1830. 10/96

San Gabriel Valley Radio Club, Inc. P.O. Box 88, Monrovia, CA 91017-0088. Meets 1st Tue./monthly, 7:00 p.m., Arcadia County Park, 405 So. Santa Anita Ave., Arcadia, CA. 147.765(-) PL 131.8. Info: (818) 285-9281. 12/96

Shasta Cascade Amateur Radio Society, (SCARS). 2124 Airstrip Rd., Redding, CA 96003. 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. 7/96

Sierra Foothills ARC. P.O. 3262, Auburn, CA 95604. Meets 2nd Fri./monthly, 7:30 p.m., Firehouse, 226 Sacramento St. Auburn. 28.415, 2/220m, Thurs. 7:30 p.m., 145.430(-) (PL 94.8) & 223.86(-). 3/97

Simi Settlers Amateur Radio Club (SSARC). P.O. Box 3035, Simi Valley, CA 93093. Meets 2nd Thurs./monthly (except Dec.), 7:30 p.m., Seventh Day Adventist Church Hospitality Rm., 1636 Sinaloa St., Simi Valley. Contact Ron, KD6VLM, (805)584-6737, 147.930(-) (PL 127.3). 11/96

Siskiyou County Amateur Radio Assoc. Meets 1st Sat./monthly, 10 a.m., rotates between Bob's Ranch House in Etna, CA and The Tree House in Mt. Shasta. For info: Al, WA6IHK, (916) 467-3255. 10/96

So. Sierra ARS. Meets 2nd Thurs./monthly, 7:30 p.m., Veteran's Hall, 125 East F St., Tehachapi, CA. Contact: Caroline, KD6KMN, (805) 822-5995. 147.06/224.42. 12/96

South Bay ARC. P.O. Box 536, Torrance, CA 90508. Meets 3rd Thurs./monthly, 7:30 p.m., Torrance Memorial Hosp., 3330 Lomita Blvd., Torrance, CA. Talk-in on WB6MYD rpt. 244.38(-). Info: (310) 328-0817. 7/96

Stanislaus Amateur Radio Assoc., Inc. (SARA). P.O. Box 4601, Modesto, CA 95352. Meets 3rd Tues./monthly, 7:30 p.m., Stanislaus Co. Admin Bldg. 145.39(-) (PL 136.5), 224.14, 440.225 (PL 136.5). 3/97

Tri-County Amateur Radio Assoc. P.O. Box 142, Pomona, CA 91769. Meets: 2nd Mon./monthly, 7:30 p.m., Covenant United Methodist Church, corner of Towne Ave. & San Bernardino Rd. in Pomona, CA. 11/96

Trinity Country ARC. P.O. Box 2283, Weaverville, CA 96093. Meets 2nd Wed./monthly, CD Hall in Weaverville, 7:30 p.m., Rptrs: WA6BXN 146.73(-) PL 85.4, W6HOR 146.925(-) PL 85.4. 10/96

United Radio Amateur Club, K6AA. L.A. Maritime Museum, Berth 84, Foot of 6th St. San Pedro, CA 90731. Meets 3rd Fri./monthly (except Dec.), 7:00 p.m. Monitors 145.52 Simplex 10 a.m.—5 p.m. 6/96

Vaca Valley Radio Club. Meets 2nd Wed./monthly, 7 p.m., Vaca Fire Dist. Stn., Vine St. in Vacaville, CA. Rptr. WD6BUS 145.47(-) PL 127.3. Dan Bissell (707) 446-7411. 5/96

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets 2nd Tues./monthly, 7:00 p.m., Victor Valley Museum, 11873 Apple Valley Rd., Apple Valley, CA. Talk-in 146.94(-), PL 91.5. Net Sun. 7 p.m. 146.94(-). 12/96

West Coast Amateur Radio Club, (WCARC). P.O. Box 2617, Costa Mesa, CA 92628. Meets 3rd Thurs./monthly, 7 p.m., Fountain Valley Sch. Dist. office, 17210 Oak St., Fountain Valley, CA. 145.440(-) PL 136.5. For info: Joe, KA6LPZ, (714) 963-4426. 9/96

Westside Amateur Radio Club. P.O. Box 11092, Marina del Rey, CA 90295. Meets 3rd Thurs./monthly, 7:30 p.m., Red Cross Bldg., 1450 11th St., Santa Monica, CA. Net every Tues., 8 p.m., 146.67(-). Voice mail: (310) 917-1100. 5/96

West Valley Amateur Radio Assoc. P.O. Box 6544, San Jose, CA 95150-6544. Meets: 3rd Wed./monthly, 7:30 p.m. (except Dec.) Cambrian Sch. Dist. Office, 4115 Jacksol Dr., San Jose, CA. W6PIY/R. Net Tue., 8:30 p.m. 147.39(+), 223.96(-). 10/96

Willits Amateur Radio Society, (WARS). P.O. Box 73, Willits, CA 95490. Meets 4th Mon./monthly, 7 p.m., Brooktrails Fire Dept. (northwest of Willits). Talk-in: 145.13(-), PL 103.5. 7/96

Yolo Amateur Radio Society. Meets 1st Tues./monthly, 7:30 p.m., Training Rm. of the Davis PD, 226 F St., Davis, CA. Contact Dave Nishikawa, KC6YFG, (916) 756-6375/Talk-in 144.430. 10/96

Yuba-Sutter Amateur Radio Club, (YSARC). P.O. Box 1169, Yuba City, CA 95991. Meets 2nd Tue./monthly, 7:30 p.m., Yuba City Police Bldg., 1545 Poole Blvd., Yuba City. 12/96

CONNECTICUT

Middlesex A.R.S., (W1EDH). Meets Tuesdays, 7 p.m., Adult Day Care Cntr., 32 Miner St., Middletown, CT. VE classes/exams; ARRL Service Club. Ctc: M. Harper, W1FYM (860) 633-6295, P.O. Box 5, S. Glastonbury, CT 06073. 3/97

FLORIDA

Gulf Coast ARC. P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., 3852 Prime Place, New Port Richey. WA4GDN rptrs. 146.67(-) & 145.33(-), serving all of Pasco County. 8/96

Indian River ARC, Inc., (IRARC). 597 Capri Rd., Cocoa Beach, FL 32931-3011. Meets 1st Thurs./monthly, 7:30 p.m., Community Church of the Nazarene, 400 Crockett Blvd., Merritt Island, FL. 3/97

Port St. Lucie ARA. Meets 1st Fri./monthly, 7:30 p.m., St. Andrews Church, Prima Vista Blvd., Port St. Lucie, FL. Contact: Roy Cox, KE4QJG, (407) 340-4319. Call in 146.955(-). 9/96

Saint Petersburg Amateur Radio Club. Meets 1st Fri./monthly, 7:30 p.m., Red Cross Bldg., 818 Fourth St. North, St. Petersburg, FL. Nightly net 6:30 p.m., 147.06(+). Rptrs. 147.06(+), 224.66(-), 444.475(+). Info: C. Wagner, KE4EYI, (813) 894-2393. 1/97

South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tue./monthly, 7 p.m., Public Library, 540 Fee Ave., Melbourne, FL. 6/97

Vero Beach ARC, W4OT. P.O. Box 2082, Vero Beach, FL 32961. Meets 2nd Thurs./monthly, 8 p.m., Emerg. Mgmt., Indian River County Adm. Bldg., 1840 25th St. Net Mon., 7:30 p.m. 146.64. 12/96

GEORGIA

Dalton Amateur Radio Club, Inc., (DARC). P.O. Box 143, Dalton, GA 30722-0143. Meets 4th Mon./monthly, 7:30 p.m., Magistrate Court Bldg., corner of Waugh St. & Thornton Ave., Dalton, GA. Info: Harold Jones, N4OTC, 706/673-2291. 3/97

HAWAII

Emergency Amateur Radio Club, (EARC). P.O. Box 30315, Honolulu, HI 96820-0315. Meets 4th Thurs./monthly, 7 p.m., Lincoln Elem. Sch., 615 Auwaiolimu, Honolulu. Nets: nightly 7:30 p.m., 146.88 & 146.80. Rptrs: 146.76(-), 146.80(-), 146.88, 146.98(-), 146.94(-). Info: (808) 595-6245. 7/96

ILLINOIS

Chicago FM Club Inc., (CFMC). P.O. Box 1532, Evanston, IL 60204. 146.76(-)(PL 107.2)/224.10/224.18/443.75 (PL 114.8). Ham help line: (312) 262-6773. Info net Tues., 9 p.m. on 146.76(-). Meets 3rd Wed./monthly, 8 p.m. 6/96

CHI-NET Amateur Radio Club. North & Northwest Chicagoland & Suburbs. Specializing in PACKET Radio and 220 Phone to further the fulfillment of Amateur Radio. Meets last Thurs./even mos. Info: (708) 307-8198 or Packet on 144.99 MHz or Voice on 224.24 MHz. 11/96

Dupage Amateur Radio Club. (DARC). P.O. Box 71, Clarendon Hills, IL 60514. Meets 4th Mon./monthly, 7:30 p.m., Holy Trinity Church, SE corner of Cass & Richmond, Westmont, IL. Net Sun., 9 p.m. on 145.25. W9DUP repeaters 145.25(-) (107.2PL), 442.55(+) (114.8PL), 224.68(-). 11/96

Fox River Radio League. P.O. Box 673, Batavia, IL 60510-0673. Meets 2nd Tue./monthly, 7:30 p.m., Old Bank Bldg., 900 No. Lake St., lower level, Northgate Shopping Ctr. & Rt. 31, Aurora, IL. 6/96

Hamfesters Radio Club, W9AA. P.O. Box 42792, Evergreen Park, IL 60805. Meets 1st Fri./monthly, 8 p.m., Crestwood Civ. Ctr., 139th & Kostner, Crestwood, IL. Nets: Sun. (local) 0100 UTC, 28.410 MHz; Mon. 9 p.m. 146.43 S., Packet Mailbox 145.65 MHz. Info: (312) 974-3291. 1/97

Peoria Area Amateur Radio Club, (PAARC). Meets 2nd Fri./monthly, 7 p.m., 1401 N. Knoxville Ave. Info: (309) 685-6698. Rptrs: 146.85(-) & 147.075(+). 5/96

The Starved Rock Radio Club, W9MKS. P.O. Box 198, Tabor St., Leonore, IL 61332. Meets 1st Mon./monthly, 7:30 p.m. Rptr. net 7 p.m. Wed./wkly., 147.12(+). 11/96

Wheaton Community Radio Amateurs, (WCRA). P.O. Box QSL, Wheaton, IL 60189. Meets 7:30 p.m., 1st Fri./monthly, College of DuPage, Glen Ellyn, IL. Nets Sun. & Tue. 8 p.m., 145.39(+) MHz. 440 MHz net on Tues., 8:30 p.m. on 444.475(+) MHz. RTTY Net Sun. 9:30 p.m. 145.31(-). 6/96

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. Rptr. 442.875(+). 4/96

IOWA

Sooland Amateur Radio Assoc., (SARA). Meets 3rd Tues./monthly, 7:30 p.m., American Red Cross Bldg., 1512 Pierce St., Sioux City, IA. Contact: Glenn Holder, KØTFT. (712) 239-1749. Call-in 146.97(-). 11/96

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7:00 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME. 11/96

MASSACHUSETTS

Quannapowitt Radio Assoc., Inc. 6 Savin St., Burlington, MA 01803. Meets 4th Fr./monthly, 8:00 p.m., (May & Nov. meets 3rd Fr.), at Lynnfield-Wakefield Methodist Church, Wakefield. Info: Jim Chamberlain, N1AKG, (617) 944-5098. 1/97

Wellesley Amateur Radio Soc., & Babson Wireless Club. Meets 1st & 3rd Thurs./monthly, 7:30 p.m., Tomasso Hall, Babson College Forest St., Wellesley, MA (Sept.- June) Talk-in 147.03(+). Info: J. Driscoll, NV1T, (617)444-2686. 12/96

MICHIGAN

Adrian Amateur Radio Club, W8TQE. Box 26, Adrian, MI 49221. Meets 1st Fri./monthly, 8 p.m., Civil Air Patrol Bldg., Lenawee Co. Airport, Cadmus Rd., Adrian. ARES net Sun., 9 p.m. 145.37(-). Info: Tom Parsons, N8QEW, (517) 263-5568. 3/97

Chelsea Amateur Radio Club, Inc. Meets 4th Tue./monthly, 7 p.m., Society Bank, 1478 Chelsea-Manchester Rd., Chelsea, MI 48118. 12/96

Eastern Michigan Amateur Radio Club, (EMARC). Meets 1st Tue./monthly, 8:30 p.m., Woodland Developmental Cntr., Kimball Township (Range @ Smiths Creek Rd.). Contact Frank Forsyth, N8XTO, (810) 987-3540. Talk-in: 147.30(+). 9/96

Edison Radio Amateurs Assoc. Meets 2nd Fri./monthly (Sept.-June), 7 p.m., Edison Western Wayne Div. HQ, 8001 Haggerty, Belleville, MI (So. of Ecorse Rd.). Net each Thurs., 8 p.m. on 145.33(-) and 442.80(+) rptrs. 3/97

Genesee County Radio Club, Inc. Meets 3rd Tues./monthly, 7:30 p.m., Genesee Area Skill Center, Torrey Rd., Flint, MI. (810) 634-6077. 2/97

MISSISSIPPI

Jackson Amateur Radio Club, Inc. Meets 3rd Thurs./monthly, 7 p.m., Am. Red Cross Bldg., Riverside Dr., Jackson, MS 39202. 10/96

MISSOURI

PHD Amateur Radio Assn., Inc. P.O. Box 11, Liberty, MO 64068. Meets last Tue./monthly, 7 p.m., Gladstone Comm. Bldg. (816) 781-7313, Volunteer Examiner Coordinator. 2/97

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 2nd Sat./monthly, bkfst. 8 a.m. & mtg. 8:30 a.m., Rae's restaurant, 2531 Wigwam at Pecos. Club info: Jim Frye, NW7O, (702) 456-5396 or Leona Wallace, WA6OHB, (702) 247-6450. 7/96

Wide Area Data Group, Inc. P.O. Box 3132, Sparks, NV 89432. Meets 1st Sat./monthly, 9 a.m., Jack's of Reno, 5485 Equity Ave., Reno. Info: (702) 356-8200. Call in on 147.30(+) MHz. 5/96

Sierra Intermountain Emergency Radio Assoc., (SIERA). Meets 2nd Tues./monthly, 7:30 p.m., Douglas County Lib., Minden. Contact: George Uebele, WW7E, (702) 265-4278, 147.330. 11/96

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover, NH 03820. (603) 755-2600/335-6643. Meets 2nd Sun./monthly, 7 p.m., Rochester Fire Dept. Training Rm. Talk-in: 147.57. 11/96

NEW JERSEY

10-70 Repeater Assn., Inc. 235 Van Emburgh Ave., Ridgewood, NJ 07450. Meets 1st Wed./monthly (except July & Aug.), 8 p.m., VFW, Valley Rd., Clifton, NJ. Rptrs.: 146.70(-), 224.84(-), 444.15(+). 10/96

Bergen Amateur Radio Assoc., (BARA). P.O. Box 304, Hackensack, NJ 07601. Meets 1st Sun./monthly, New Milford Elks Lodge, Patrolman Ray Woods Dr., New Milford, NJ 07646. Nets: 28.350 Mon. 9 p.m., 144.40 9 p.m. Wed. 5/96

South Jersey Radio Assoc., (SJRA). Pennsauken Sr. Hi Sch. at Hylton Rd. & Remmington Ave., Pennsauken, NJ 08109. Meets Jan.-Oct., 4th Wed./monthly, 7:30 p.m. (Nov.-Dec. 3rd Wed.). Talk-in: 145.29(-) rptr. Club call K2AA. 8/96

NEW YORK

Amateur Radio Assoc. of the Tonawandas, (ARATS). P.O. Box 430, No. Tonawanda, NY 14120. Meets 3rd Tues./monthly (except July & Aug.), 7:30 p.m., Sweeney Hose Co., 499 Zimmerman St., No. Tonawanda, NY. Talk-in: 146.955(-)rptr. W2PVL. 10/96

Genesee Radio Amateurs, (GRAM). N.Y.S. Civil Defense Ctr., State St., Batavia, NY 14020. Meets 3rd Fri./monthly, 7:30 p.m. 147.285(+) W2RCX. 12/96

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, 7:30 p.m. Info: Arnie, WB2YXB, (718) 343-0172. 2/97

Orleans County Amateur Radio Club, (WA2DQL). Meets at Emergency Management Office, West County House Rd., Albion, NY 14411, 2nd Mon./monthly, 7:30 p.m. 145.27(-) — WA2DQL. 12/96

PROS, Pioneer Radio Operators Society. Meets 1st Wed./monthly (except July/Aug.), 7 p.m., Sardinia Town Hall, Savage Rd., Sardinia, NY. Net 9 a.m. Thurs. 3853 kHz. 3/97

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. Fax: (516) 674-9600. Non-profit org. using Ham Radio to enhance the education of youngsters, nationwide. Join us — "Classroom Net", 7.238 MHz, 7 a.m. E.S.T. PSE QSL! 9/96

Suffolk County Radio Club, (SCRC). Meets 3rd Tues./monthly, 8 p.m., Bohemia Rec. Ctr., Ruzicka Way, Bohemia, NY. Talk-in: 145.21(-) rpt. Morten Eriksen, KA2UIU, (516) 929-6911. 4/96

Westchester Amateur Radio Assoc., (WARA). Meets 1st Wed./monthly, 7:30 p.m., Am. Red Cross Bldg., 106 N. Bway, White Plains, NY. Club net: 145.495(-) rpt. Tues., 7:30 p.m. Info: Dan Grabel, N2FLR, (914) 723-8625. 2/97

Westchester Emergency Comm. Assoc., (WECA). Meets 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains, NY. Contact WB2VUK (914) 631-7424 or WECA INFO LINE (914) 741-6606 for details. Talk-in WB2ZII/R 147.06(+) PL 114.8/2A. 10/96

Yonkers Amateur Radio Club, (YARC). Meets 2nd Sun./monthly, 10 a.m., 1st Pct., Yonkers Police Station, E. Grassy Sprain Rd., Yonkers, NY. Info: P.O. Box 378, Centuck Sta., Yonkers, NY 10710. (914) 963-1021. 146.865(-), 440.15(+). 10/96

NORTH CAROLINA

Stanly County Amateur Radio Club. P.O. Box 188, Stanfield, N.C. 28163. Meets 4th Thurs./monthly, 7 p.m. at Stanly Community College, Albemarle, NC. 5/96

OHIO

Ashtabula County ARC. Ken Stenback, AI8S (964-7316). County Justice Ctr, Jefferson, OH. Meets 3rd Tue./monthly, 7:30 p.m. County rptr., 146.715(-). 9/96

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly, 7 p.m., Municipal Bldg., Clyde, OH 43410. NF8E rptr. 145.35(-) and 442.625(+) MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS. 3/97

Firelands Area Rptr. Assn., (FARA). Meets 4th Tue./monthly, 7 p.m., Erie County Admin. Bldg., Sandusky, OH. WB8LLY rptr. 146.805(-). Net Sundays, 8 p.m. Info: FARA, P.O. Box 442, Huron, OH 44839. 11/96

Greater Cincinnati Amateur Radio Assn., (GCARA). Meets 4th Wed./monthly, 7:45 p.m., Cincinnati Museum of Nat. History, 1720 Gilbert Ave. Amateur Radio Station W8DZ. Info: WA8STX or (513) 563-7373. 11/96

Lancaster & Fairfield County ARC. Meets 1st Thurs./monthly, 7:30 p.m., American Red Cross, 121 W. Mulberry St., Lancaster, OH 43130. Info net Mondays, 8 p.m., K8QIK/R 147.03(+) rptr. BBS 145.53. 8/96

Northern Ohio Amateur Radio Society, (NOARS). Meets 3rd Mon./monthly, 7:30 p.m., Gargus Hall, Rt. 254, Lorain, OH. Info: rptr. K8KRG 146.70, DX alert rptr. 145.15. 10/96

Toledo Mobile Radio Association. P.O. Box 273, Toledo, OH 43697. Meets 2nd Wed./monthly, 7:30 p.m., Luke's Barn, Lucas County Rec. Ctr., 2901 Key St., Maumee, OH. Contact: Brenda, KB8IUP, 866-5928. 11/96

Van Wert Amateur Radio Club, Inc. P.O. Box 602, 1220 Lincoln Hwy., Van Wert, OH 45891. Meets 1st & 3rd Sat./monthly, 8 p.m. Call-in: 146.85(-). 2/97

OREGON

Central Oregon Radio Amateurs, (CORA). P.O. Box 723, Bend, OR 97709. Meets last Thurs./monthly, 7 p.m., Bend Sr. Ctr., 1036 NE 5th, Bend, OR. Net Sun. 7:30 p.m. 147.06(+) MHz. Info: (503) 385-1156. 6/96

Keno Amateur Radio Club. P.O. Box 653, Keno, OR 97627. Meets 3rd Thurs./monthly, 7 p.m., Keno Fire Stn. Rptr. 147.32(+) W7UFM. Info: Tom Hamilton, WD6EAW, (503) 883-2736. 11/96

Central Oregon Coast ARC. P.O. Box 254, Florence, OR 97439. Meets 3rd Sat./monthly, 9 a.m. for brkfst. Net, Wed. 7 p.m., 146.80(-). Info: 997-2323 or 997-4074. 1/97

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Courthouse, Rm. 310, Roseburg, OR. Info: W5PII/R 146.90(-) or (503) 673-1310. 6/96

Valley Radio Club of Eugene. Meets 1st Fri./monthly, 7:00 p.m., Lane County Red Cross chapter house, 150 E. 18th Ave., Euguene, OR. Info: (541) 484-0502. 12/96

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787, Butler, PA 16001-1787. Meets 1st Tues./monthly, 7:30 p.m., Boy Scout Cntr., 830 Morton Rd., Butler, PA. Call-in W3UDX/R 147.36(+). Net 10:10 p.m. nightly. 10/96

Mercer County Amateur Radio Club, W3LIF. P.O. Box 996, Sharon, PA 16146. Meets 4th Tue./monthly, 7:30 p.m., Shenango Valley Med. Ctr, Farrell, PA. Net, Thurs. 9 p.m. on 145.35(-) W3LIF, Digi. 145.01. 3/97

Mid-Atlantic ARC. Box 352, Villanova, PA 19085. Meets 3rd Thurs./monthly, 8:00 p.m., Radnor Mem. Libraray, Wayne, PA. Call Bob Haase, W3SA, (610) 293-1919. 147.06(+) WB3JOE PBBS 145.09. 1/97

Warminster Amateur Radio Club, WA3DFU. P.O. Box 113, Warminster, PA 18974. (215) 672-9985. Meets 1st Thurs./monthly, 7:30 p.m., Neshaminy-Warwick Presbyterian Church, Warminster, PA. Net on 147.69(-), 147.09(+), Wed. 8:30 p.m. and 28.450 Sun. 9 p.m. 4/96

RHODE ISLAND

South Coast Wireless Society. P.O. Box 1516, Westerly, RI 02891. Meets 4th Tue./monthly, 7:00 p.m., Pawcatuck Neighborhood Center. Info: Dean, N1SXL, (401) 539-0775. 6/96

TEXAS

Brazos Valley Amateur Radio Club, (B-VARC). P.O. Box 1630, Missouri City, TX 77459. Meets 2nd Thurs./monthly, 7:30 p.m., Sugar Land Community Ctr., 226 Matlage Way., 3 blks SW of Imperial Sugar Co. at HWY US-90A & Brooks St. (HWY 58) in Sugar Land, TX. Talk-in: 145.47(-), 442.5(+) rptrs. 7/96

Brownsville ARC (CHARRO). Meets 2nd Tue./monthly, 7:00 p.m., Confederate Air Force Hangar, Brownsville Airport in TX. Talk-in on 147.040(+). 12/96

VIRGINIA

Southern Peninsula Amateur Radio Klub, (SPARK). Meets 1st Tue./monthly Salvation Army Community Bldg., Hampton, VA. Repeaters 146.73(-), 449.55(-). VE Exam Info: (804) 898-8031, W4RTZ. 2/97

Virginia Beach ARC. Meets 1st Thurs./monthly (except July), 7:30 p.m., St. Andrews United Methodist Church, Tucson & Princess Anne Rds., Virginia Beach, VA 23462. 2/97

WASHINGTON

The Mike & Key Amateur Radio Club. Meets 3rd Sat./monthly, 10 a.m., Salvation Army Renton HQ., 720 Tobin St., Renton, WA. Talk-in on 146.82(-) rptr. Doors open at 9:30 a.m. 5/96

WEST VIRGINIA

Jackson County Amateur Radio Club. Meets 1st Thurs./monthly, 7:30 p.m., United Nat'l Bank of Ripley. Net Mon. 9 p.m. on 146.67(-) WD8JNU/R. For info: D. Tenant, N8ZYB, Rt. 1, Box 317, Cottageville, WV 25239. 6/96

Tri-State Amateur Radio Assn. Meets 3rd Tues./monthly, 7 p.m., The American Red Cross, 111 Veteran's Memorial Blvd., Huntington, WV. 5/96

WYOMING

Sheridan Radio Amateur League, 146.82. P.O. Box 7042, Sheridan, WY 82801. Meets 4th Thurs./monthly, 7 p.m., location varies; Saturdays, 8 a.m. at J.B.'s. Info: (307) 674-6666, WA7B. 7/96

WITH THE HANDI-HAMS

Robert Edward, WB5MJK
email: edward@winternet.com

HANDI-HAM Radio Workshop is a place where persons with physical disabilities can learn Amateur Radio in a completely adapted environment. Staffing the week-long session would be impossible without the help of volunteers. . . good folks who work as "Elmers" to share their hobby with others. Bobby Edward, WB5MJK, tells what it was like to be a volunteer. —Pat Tice, WAØTDA

The volunteer experience

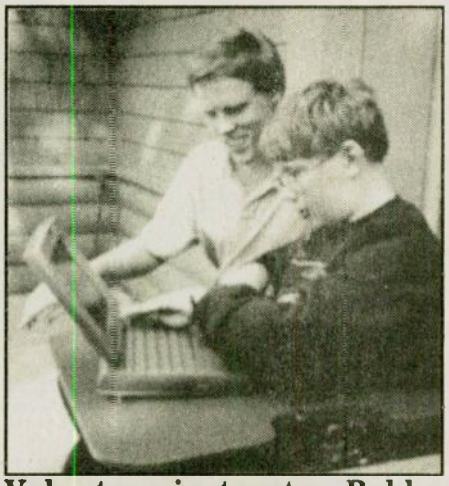
Working with disabled hams has always been one of my favorite activities in Amateur Radio. Since moving to the Minneapolis-St. Paul area, I have been privileged to get to know and work with Patrick Tice, WAØTDA, Sister Alverna, WAØSGJ, and the wonderful staff and volunteers at HANDI-HAMS. This summer, I was a volunteer instructor at the HANDI-HAM Radio Workshop (Radio Camp) at Courage North in Lake George, Minnesota.

Most of the campers at Radio Workshop go there for licensing classes. However, a number of campers participate instead in operating skills seminars and computer instruction. I spent most of my time teaching computer skills, but also taught several operating skills seminars related to computers.

In five days at the workshop, my fellow computer instructors and I covered a wide variety of subjects: screen readers and enlargers for the visually-impaired; voice recognition software and other aids for the mobility-impaired; operating systems; hardware installation and troubleshooting; packet radio; Amateur Radio software; and online communications. Much of the instruction was one-on-one, tailored to the individual needs and computer experience of the campers.

I made many new friends among both campers and instructors. Let me tell you about two of the campers I met:

Leigh Penny, KD6SVF, is from Carmichael, California. A writer who authored the February, 1996, Handi-Hams column, she came to camp this summer primarily to learn about computers. Although she owns her own computer, she had been using it only for word processing. During the week at camp, she learned the fundamentals of MS-DOS and Windows, operated packet radio, and worked with several share-ware and freeware programs.



Volunteer instructor Bobby Edward, WB5MJK, and student Jake Fitzpatrick, KC7GAX, practice the question pools.

Leigh's favorite program at camp was a shareware word processor called Mindreader. It watches as the user types and predicts words and phrases, displaying suggested choices in an on-screen window. One can then complete the desired word or phrase with a single keystroke.

Leigh was as delightful a student as anyone could ask for. She learned very quickly, and I always enjoyed seeing the gleam in her eyes whenever she grasped a new concept. Every night, long after classes were over, I found Leigh in the Courage North gymnasium (our computer classroom) honing her new skills on one of the computers.

Leigh's other big accomplishment at the workshop was her first-ever HF operating session. She worked the camp station, WØEQO, like a pro one afternoon. She was so popular that she created a small pileup on 20 Meters!

Jake Fitzpatrick KC7GAX, from Turner, Oregon, was attending his second Radio Workshop. Although he was in the General licensing class, he spent much of his free time working with his Macintosh PowerBook portable computer. I learned that he was using it to write a book about his camp experiences.

Because I am also a Macintosh user, I was able to give Jake many pointers about operating his computer efficiently. I also introduced him to programs that give sample amateur theory tests and teach Morse code. Now that he has them, I'm sure he'll be upgrading very quickly! Jake is currently active on 2 meter FM and packet. He also is on America Online, and enjoys e-mail correspondence.

If you are interested in more information about adaptive technology and software for people with disabilities, the HANDI-HAM organization may be able to help, and if you or your club want to help a person with a physical disability or sensory impairment learn Amateur Radio, contact:

Courage HANDI-HAM System
3915 Golden Valley Road
Golden Valley, MN 55422
(612) 520-0515 (Voice)
(612) 520-0577 (FAX)
handihams@aol.com WR

Richard Fisher, KI6SN

1940 Wetherly St. · Riverside, CA 92506
e-mail: KI6SN@aol.com

KC-1's special delivery

Huddled around a campfire on Field Day eve last June, a dozen-or-so QRPers craned to get a peek at the tiny board carrying N6KR's latest creation.

The Southern California premiere of the KC-1 was greeted with awe as Wayne Burdick put his tiny keyer/displayless frequency counter through its paces in the firelight. On a PCB platform no bigger than three postage stamps, the KC-1 was truly a marvel of modern solid state technology and Burdick engineering. And now it's available in kit form from Los Altos, California-based Wilderness Radio.

A PIC16C84 microprocessor is the brain of the operation, surrounded by a tiny handful of discrete components. There is no compromise to performance, though, given the small amount of hardware needed to get the KC-1 working.

It's operated using two subminiature push button switches, a keying speed adjustment potentiometer, and the radio operator's keyer paddle.

Communication to and from the board is by Morse code. Here's the smorgasbord of what the KC-1 can do:

Its keyer speed – smooth and linear, by the way – is adjustable from about 7 to 50 wpm with a board-mounted, panel-accessible potentiometer. The operator has a choice of two popular keying emulations: either Curtis B, or CMOS Super Keyer II.

The kit's two panel-accessible buttons are pressed into duty either one at a time, or together. One button (MSG) sends and accepts stored messages; the other (FREQ) reports the operating frequency or asks for a search frequency.

Pressed simultaneously, the buttons prompt the KC-1 to send "C," indicating the system is in COMMAND MODE, awaiting direction.

There's room for 50 characters of buffered memory, along with a provision for streamlining stored messages using a word-repeat macro. It is remarkable just how many messages – "CQ" and your call sign, QTH, etc. — can be stored in those 50 characters when memory-saving word-repeat is implemented.

A short press of the FREQ button prompts the KC-1 to send your current operating frequency in three digits. Say, for example, you're on 40-meter CW at 7.146 MHz. Press the FREQ button and you'll hear "146."

For rigs with uncalibrated VFO dials, the KC-1 is a gift from homebrew heaven.

OK, so you're up band and you want to slide down to the QRP calling frequency, 7.040 MHz. A long press of the FREQ button prompts the KC-1 to send "F," inviting the operator to tell the KC-1 what frequency to search for: in this case, it's "T4T," or 040. The KC-1 abbreviates the number zero to "T," and nine to "N." As you tune down frequency, the KC-1 will send "T4T" when you're nearing 7.040 MHz. Accuracy is about +/- 1 kHz.

If you'd like to use a handkey occasionally, there's a provision in construction to provide such an option.

The MSG button sends operator-imbedded messages. Press once for message No. 1; twice for No. 2, and so on. When inputting messages, if you run out of memory, the KC-1 lets you know with an "F," for FULL.

The KC-1's circuit is non-volatile, so removing power from the board will have no affect on stored messages or programming.

A keydown command — "K" — provides a ready means for rig tune-up. Tap the paddle, and keydown stops.

Send the letter "S" in command mode, and the KC-1 reports your current keying speed.

Sidetone is provided, however it's the operator's choice whether to toggle it on, or off.

There's also adjustable keying weight, QSK delay time and sidetone frequency pitch.

Conceivably, an operator-definable logic-level control function can be used to turn on and off a CW filter, or about anything else. In effect, it's an additional panel switch.

The KC-1 can be programmed for up to four different VFO offsets, making it great for use in multiband transceivers.

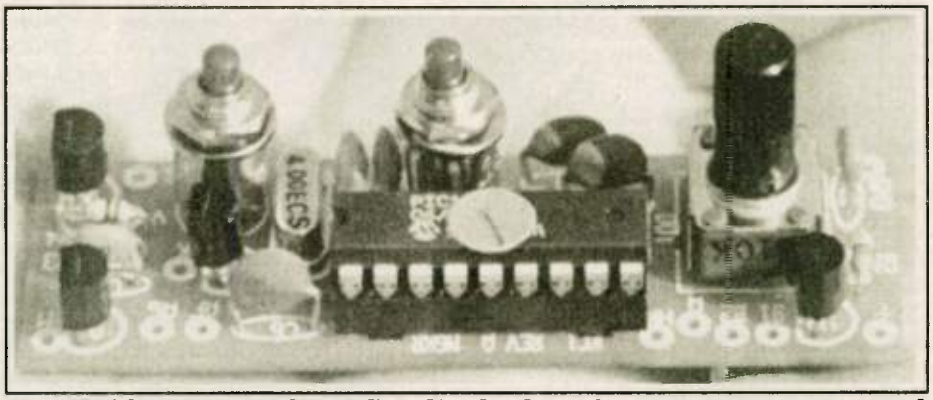
The price in energy consumption is minuscule. The K-1 draws between three and four milliamperes. Amazing. It's adaptable to both superhet and direct-conversion rigs.

The kit can be built in practically no time. Be forewarned, however, that the spacing between solder pads is very, very tight in many places. So great care is needed to prevent solder bridges. Beginning builders beware.

Here at KI6SN, the KC-1 was assembled in less than a half hour and worked the first time after being wired into a Wilderness NorCal-40A superhet transceiver.

On-air reports of keying characteristics have been just great, and it doesn't take long to become spoiled by the KC-1's many neat features.

The kit's manual, which is well



The Wilderness Radio KC-1 displayless frequency counter and electronic keyer. ***—photo by KI6SN***

written and easy to follow, gives step-by-step instructions for installing the board into the Wilderness '40A, as well as other popular transceivers: the NorCal QRP Club version of the NorCal-40A and the club's original NorCal-40, the Wilderness and NorCal versions of the Sierra, Oak Hills Research OHR-400, Heathkit HW-8 and HW-9, Small Wonders Labs' SWL XX-40 transceiver series, and the Gary Breed K9AY transceiver kits from A&A Engineering and 624 Kits.

Wilderness' guide to KC-1 construction is supplemented with a comprehensive user's menu, circuit details and troubleshooting tips.

The KC-1 can be ordered from Wilderness as a complete kit for $44.50. A partial kit, which includes the microprocessor, transistors, and 4.000 MHz crystal, is $24.50. Shipping charges are $2 in the U.S.; $3 for Canada and Mexico; and $5 DX. Orders within California add sales tax.

To order, or for more information, write: Wilderness Radio, P. O. Box 734, Los Altos, CA 94023-0734.

QRP ARCI'S 'four days in May'

"Less is more" have long been words of inspiration to many QRPers.

Not so, it seems, when it comes to the 1996 Dayton Hamvention, however. This year's QRP activities will include QRP Amateur Radio Club International's first ever "Four Days in May" QRP symposium premiering Thursday, 16 May, adding a full day of events before the opening of the three-day Hamvention.

According to QRPer Bob Gobrick, VO1DRB/WA6ERB, Thursday's programs are scheduled to cover topics ranging from radio design techniques and advances in wire antenna design to radio construction and operating practices.

Headquarters for the symposium will be Days Inn Dayton South at 3555 Miamisburg-Centerville Rd., in South Dayton. The event is being jointly coordinated by Gobrick, Paulette Quick, N9OHU, and Bruce Muscolino W6TOY/3.

For months, the committee has been soliciting papers for presentation. Among those submitting treatise are the Rev. George Dobbs, G3RJV, writing on the path to homebrewing; L.B. Cebik, W4RNL, on antennas and tuners; Paul Harden, NA5N, on his new QRP data book and how it relates to homebrew design; and Muscolino on helical wound antennas.

The remaining days of "Four Days in May" will include activities in the QRP Hospitality Suite, and the annual QRP ARCI Banquet Dinner Friday evening. All events will take place at the Days Inn South.

For more information and registration, contact Quick at (608) 263-9326, or via e-mail: plquick@facstaff.wisc.edu

QRP 'to the field'

If you're looking for a pre-Field Day warm up on a lazy Saturday, consider operation in NorCal's second "QRP to the Field" contest from 1300 UTC 27 April to 0100 28 April.

During the 12-hour operation period, participants can choose their best eight hours of continuous operation for highest score.

Rules: Operators may use a single transmitter on the air at one time. Once started, you must use the same power output and location categories.

Exchange: Signal report, and state/province/country.

QSO points: 1 watt or less on CW or SSB (10 points); 5 watts or less on CW or SSB (5 points); more than 5 watts on CW or SSB (2 points).

Multipliers: Field location (battery power and temporary antennas) x 4; home location (commercial power or permanent antennas) x 2; homebrew equipment x 3; commercial equipment x 2.

Final score: Band/mode QSO points x location x equipment = band/mode total. Add all band/mode totals for your final score.

Awards: "Top 10 Scores" certificates will be awarded to the 10 stations with the highest point totals. A "Participant" certificate will be given to stations making 20 or more contacts from a field location. Include a 9 x 12-inch envelope with three units of postage.

Reporting: Send logs, station and location description along with a summary sheet and a signed declaration to: Bob Farnworth, WU7F, 6822 131 Ave. SE, Bellevue, WA 98006. Deadline for entries is May 31.

QRP ARCI 'Spring QSO Party'

QRP Amateur Radio Club International is hosting its Spring QSO Party from 1200 UTC 13 April to 2400 UTC 14 April. A maximum of 24 hours can be worked during the contest period.

Contest exchange is RST, state/province/country, QRP ARCI number (non-members send power output).

Score 5 points for contacts with club members; 2 points for non-members on the same continent; 4 points for non-members on different continents.

Power multipliers include: 0-250 milliwatts x 15; 250 mW to 1 watt x 10; 1-5 watts x 7; QRO x 1.

To determine score: Points (total for all bands) x SPC (total for all bands) x power multiplier.

Operation is recommended on all recognized QRP frequencies, excluding WARC bands.

Logs must be received no later than 13 May. Mail to: Cam Hartford, N6GA, 1959 Bridgeport Ave., Claremont, CA 91711; e-mail: CamQRP@cyberg8t.com WR

"He who throws mud loses ground."
—Lake County ARS

Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

April is the month in which we find all of the MARS community looking forward to Dayton Hamvention and the MARS forum held there. The Dayton Hamvention has been moved to a later date than in the past. In 1996, the Dayton Hamvention will be held on the weekend of 17-19 May. This column has not become an advertising medium for the Hamvention, but this annual event has become very important for all of the MARS services. The All Service MARS Forum and the All Service MARS Information booth and display serve to bring awareness of MARS — the missions, the opportunities, and the personnel — to the large number of non-MARS visitors to the event. MARS members, too, benefit greatly by being given the opportunity to meet the MARS leadership and to discuss face to face issues of concern.

All MARS members and ALL interested persons — currently licensed Amateur operators or not — are invited to attend the All Service MARS Forum. This informative meeting reflects the three MARS organizations and features a keynote speaker from the host service who generally challenges all of us in our work as MARS members and as Amateurs in general. Last year's Army speaker, Colonel Arthur Maxwell, opened a number of challenges in terms of close integration of assets and operations in a seamless global communications system. Air Force MARS is the host this year and I can assure you that their program and speaker, as well, will offer all of us vital challenges for 1996.

Armed Forces Day will be observed by Military stations and their operators and by Amateur operators all over the country on May 17. Armed Forces Day communications exercises will be held and contacts will be made featuring, of course, the cross-band operations between Military stations and Amateur stations and the test messages in various modes of operation.

Questions have been raised about the apparent conflict in dates with Dayton and Armed Forces Day occurring during the same weekend. Are both events going to be held? The answer is a resounding "YES." Many operators plan to participate in both functions. Coordination of operations from Dayton into the Armed Forces Day arena can be expected.

The Army MARS In Progress Review (I.P.R.) conference which follows the Dayton Hamvention activities will be concentrating upon the goals set during the latter part of 1995 and which have become major goals for 1996.

Among these goals has been greater development and use of high tech modes of operation. The initials AMTI will become familiar throughout the MARS community even though it is, at present, an Army MARS project. The AMTI team is dedicated to research, development, and dissemination of new modes of operation under its banner of Army MARS Technology Integration (AMTI). This team was set up in CAM 75-95 sent to all Army MARS members in December 1995. The team membership was defined as:

A. Mr. Bill Morgan, AAA9HT, Special Staff High Tech Coordinator, as team leader.

B. All Special Staff Members working technology integration issues.

C. All State High Tech Coordinators and Research and Development Coordinators.

D. Other interested MARS members.

As a result of the interest and talents of such Army MARS members, Army MARS has already established an on-line file service from which any affiliate member may upload and download computer files utilizing the Internet File Transfer Protocol (FTP). This gives every Army MARS member access to the entire Army MARS' software library and near instantaneous sharing of technical data among technical project collaborators. Such data includes Vu-graph presentations, schematic diagrams, drawings, firmware loads, and specialized software.

AMTI has initiated a project designed to integrate Army MARS Worldwide Web space. This project will establish an overall architectural plan for Army MARS' web presence, coordinate the many cross-links within that space, develop technology pages which will provide a focus for dissemination of technical information to MARS affiliates, and develop prototype pages for other staff functions to customize for delivery of their focused information to the membership.

Experimentation began late last year on the use of the Internet Relay Chat (IRC) function to provide a mechanism for real-time digital nets that are not susceptible to radio frequency propagation conditions. Internet phone patch operations transmitting real-time digital voice are emerging as part of this activity. Extension of this IRC capability will occur via VHF and HF "wormhole" gateways to allow alternative means of Internet IRC access via the MARS radio system for use when local access has been disrupted.

Army MARS Chief, Robert Sutton has defined the mission of the AMTI team to be:

"A. Expedite integration of new technology into the Army MARS program.

B. Provide a mechanism for 'long distance' collaboration and coordination on technology integration projects.

C. Facilitate dissemination of tech-

nical information to the MARS membership."

The AMTI team leader, Bill Morgan, has observed that:

"1. Our Technology Integration mission can be described as the responsibility to coordinate the:

a. Pragmatic interconnection of existing capability in order to achieve synergistic benefits at minimum cost.

b. Innovative application of existing capability in order to multiply its utility and thus its value.

c. Visionary evaluation of emerging capability in order to maximize its potential and focus its development."

The coming years are certain to be marked by the forward march of Army MARS into all of the new technologies with the view to integrating existing technologies and using them in alternative or in new ways altogether. Modern radio can be adapted in hundreds of ways to become part of this new era. All Amateurs with any interest in the coming wave of technological advancement will find Army MARS an exciting organization to join.

You amateurs like me who are technologically inept, will also find the MARS program of innovation exciting and valuable. I am the type of member who gives those high tech experts an additional challenge. Since I don't intend to miss out on anything, they have to be able to make the software REALLY user friendly and make the new operating parameters understandable and easily usable by someone like me. That will be their real challenge. The technologies are out there and are being developed faster than one person can think.

By setting up the AMTI team, Army MARS will keep pace with all of this development. Why don't you keep pace with us?

Army MARS continues forward proud, professional, and ready. WR

Amateur "Hi"

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

Talking with MARS

Debbie Kirkbride, KA8YKK

My 9-year-old nephew Joshua is totally fascinated with ham radio. When he gets in my car he is the first to reach over and turn on the mobile rig so he may listen. I don't think it will be too much longer and he should be totally hooked. We even started teaching him the code. Talking to Grandma down in Clarkston, Michigan on the Bay City, Michigan 2-meter 145.31 repeater is a real thrill for him from his driveway in Turner, Michigan (about a 3-hour drive). He loves to come over and turn the dial on the HF rig and listen to distant stations announce where they're located.

Recently, when I had Joshua in the car, we had a nice conversation with Ken, N8XTN. I had mentioned to Ken that I hadn't heard him in a while. His response was he's been playing with MARS.

Boy, the look on Joshua's face was fantastic. I'm not sure he really believes in Martians, but I had a lot of explaining to do. WR

Auto electronic memory loss prevention

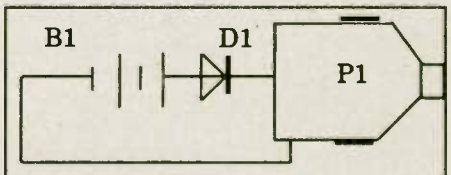
John Roank, WB9TQG

Here's a really simple gadget I can't take credit for: My auto mechanic told me about it.

If you disconnect the vehicle's battery on newer cars, digital clocks forget what time it is, and most electronically-tuned radios lose the contents of their memories. However, a 9-volt battery connected to a cigarette lighter plug through a diode, can easily prevent this type of "electronic amnesia."

Nine volts is enough to retain the memories. The diode isolates the transistor radio battery from the battery in the vehicle, and the cigarette lighter plug provides an easy means of making the connection to the vehicle's electrical system.

Before building this gizmo, check the *polarity of your cigarette lighter.* On most, the shell is negative and the center contact is positive. If yours has the shell positive, just reverse the connections to the plug. —Badger State *Smoke Signals*



B1: 9 volt battery
D1: Silicone diode — 50 PVI, 1A
P1: Cigarette lighter plug (see text for polarity caution)

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

10-10 Internet update

TENTEN-L, 10-10's Internet service has continued to grow. The files in the archives have also increased. As a service to those who accidentally erase the "Welcome" message, with its instructions on how to use system commands, the archives now contain a reference copy of that important document. If you are a subscriber to TENTEN-L, you can retrieve an updated copy. Send a message to:

LISTSERV@LEHIGH.EDU

with the text:

GET TENTEN-L WELCOME.MSG

If you are not a subscriber to the list, you can become one by sending a message to the same address with the text:

SUBSCRIBE TENTEN-L <firstname> <lastname> <call>

Note that you *must* put everything on one line of your subscription message.

Also note the importance of having the first name, last name, and call in order. TENTEN-L will now also produce a list of subscribers by call areas, each area in standard-form alphabetized listing by call. However, this list can only be accurate if you subscribe in good form, so that the machine can recognize you. Your welcome message will tell you how to get the subscription list.

Resubscribing vs. postponing

Suppose you did not subscribe in good order. Or suppose you are going to change e-mail servers. There is nothing wrong with — and a great deal right with — unsubscribing and then subscribing. All such messages go to the listserv address above. Remember that the e-mail server is a dumb machine. Once you unsubscribe, it instantly forgets you. Hence, resubscribing is really subscribing anew from scratch.

On the other hand, if you are going on vacation and do not want e-mail to pile up in your mailbox at your server, there is a better way. See your welcome message for instructions on postponing and resuming service. This does not take you off the list. There is really no "resume" command; instead you respecify how you want to get your mail. The standard is ACK, meaning that you get a copy of what you send in the distribution. That generally tells you how long it took the system to distribute your message.

New 10-10 service: WWW

10-10 has added a new service to TENTEN-L. You may access a large collection of information files via your WWW browser. Simply call up your browser and use this address:

http://www.lehigh.edu/lists/tenten-1

That will put you on the starter page, which will then direct you to various subject files. Just click or "enter" on the highlighted subject.

We added the WWW service to make 10-10 information accessible to nonmembers. Most, but not all, subscribers to TENTEN-L are already members or very active on 10. However, there are many hams who might find 10-10 information interesting and who might be future members. The World Wide Web is a natural avenue to make 10-10 information accessible to them.

We shall be adding a page of links to other amateur radio home pages over the coming months. Our home page will also appear as a link in other home pages. This courtesy of cross-listing makes WWW information more readily available to system browsers. It even attracts non-hams to Amateur Radio as they browse through all the activity information related to our hobby.

Each service — the TENTEN-L subscription list and its FTP archives and the TENTEN-L WWW home page— has its own unique niche in the information superhighway. One focuses on members and those already serious about 10-meter activity. The other concentrates on potential members and potential hams.

A recently published account stated that only 8% of Americans had heard of Internet and that only 3% had used it. Sounds pretty bleak, doesn't it? However, 8% translates into 20 million people and the 3% user group amounts to about 7.5 million folk.

Remember that while the sunspots are down, it is nice to have the Internet services — both the list and the WWW home page — to keep us interconnected and informed. When the sunspots return, there is no telling to what good uses TENTEN-L subscribers can put the list.

And our thanks to our host Jim Eshelman and Lehigh.edu, who provide our Internet connection, and to L.B. Cebik, W4RNL #41149, 10-10's coordinator of Internet services.

Meet Greg Fox, N9XBM #66459

Greg is one of our newer 10-10 members. What makes Greg unique as a 10-10 member is not only his age of 14 years, but the fact that he advanced from his first exam for Technician to Extra Class within one year! He quickly joined 10-10 and has shown his enthusiasm for Amateur Radio by having worked all continents on CW, by having worked 190 DX countries and his 1st in Indiana award in the 1994 ARRL 10-meter contest.

Greg operates a Yaesu 990 with a Mosely TA33 at 40 feet and connects to the local DX cluster. Greg's mother is Maura, N9ZFO and father is Wayne, N9XBO. Greg is an asset to the 10-10 organization.

The Queen is on the air

That's right, the Queen is on the air, the *Queen Mary* that is. Bill Marple, AA6ZW #62075, operates the ham station on the RMS *Queen Mary* from her berth in Long Beach, CA, on the

first Friday of each month from 0900-1300 PST (1700-2100Z). Bill checks in from the *Queen's* station, W6RO 10-10 #25000, on the 28.800 10-10 net and then scans 10-meters for contacts. If you would like a contact with the Queen, listen for W6RO the first Friday of each month.

New 10-10 Day Contest

The new ***10-10 Day Contest*** is finalized and will be held each year on 10-10 Day, October 10th (10-10). This is a natural, and why we have not had this contest in prior years is a mystery! It is a simple 24-hour sprint with the rules basically the same as any other 10-10 contest. Watch for details to be published in the *10-10 News* and in ***Worldradio*** prior to the contest date.

Information about 10-10?

If you would like information about 10-10 and how you can become a member and receive your very own unique 10-10 number, send $1.00 plus 2 first class stamps and an address label for the return of your information package to: Mike Elliott, KF7ZQ #54625, 10-10 Information Manager, 9832 Gurdon Court, Boise, ID 83704-4080. No SASE please as the information package requires a 9 x 12 envelope. You will receive a copy of the 8-page *Prospective New Member Brochure* which contains everything you want to know about the 10-10 organization, a listing of all 10-10 Chapters, their day, time and frequency of net operation and an application form. Also enclosed will be a copy of the latest issue of the *10-10 International News,* the 32-page 10-10 quarterly magazine.

If you have lost, or forgotten, your 10-10 number, the same as above to Mike will get you the information package along with your original 10-10 number.

If your membership in 10-10 has expired, send your dues ($10.00/year) to 10-10 International Net, Inc., 643 N. 98th Street #142, Omaha, NE 68114-2332. You will become an "ACTIVE" member again and receive all of the benefits of 10-10 including the quarterly *10-10 International News.* Remember 10-10 numbers are issued for life and your originally issued number is always yours. **WR**

Courses offered

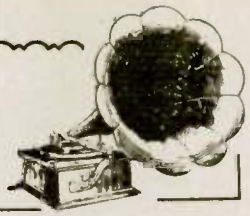
The Marin (California) ARC will be offering courses for people seeking entry level Amateur Radio licenses. These no code Novice/Technician FCC licenses allow use of UHF and VHF ham radio frequencies for local communication with handie-talkies. Such communication provides valuable assistance to the community in earthquakes, floods, and other emergencies.

The cost for this video course will be $35 ($25 for seniors or full-time students), payable to "MARC-N/T Class," P.O. Box 151231, San Rafael, CA 94915. Phone Chet Rice, WA6PAC at 415/461-0657 and leave your name, address, telephone number, which series you want to attend and any questions you may have about the course.

Classes will be held at the Kaiser Hospital Office Building 2 in Terra Linda (Monticello Road), California. Free course workbooks will be handed out. The Saturday classes will be all day, starting at 9 a.m.

Classes are scheduled as follows: Class 96B — 10, 11, and 18 May (VE test, 1 June); Class 96C — 16, 17 and 24 August (VE test, 7 Sept.); Class 96D — 15, 16 and 23 November (VE test, 7 December). FCC examinations will be conducted by volunteer examiners.

OLD-TIME RADIO



Code breakers

George Folta, W7KEG

"IT APPEARS THE PEACOCK WILL BE ON TIME. FAN HIS TAIL." This was Admiral Halsey's message to Admiral Mitscher to "get" the Commander of the Combined Japanese Fleet, fastidious Admiral Isoroki Yamamoto, architect of the attack on Pearl Harbor.

Yamamoto was inspecting bases in Bourgainville, an island in the Solomons, and he was noted for his punctuality. The Royal Australian Air Force No. 1 Wireless Unit of the Code Breakers had intercepted and decoded a message detailing a down-to-the-minute itinerary of the Japanese inspection team. Admiral Mitscher sent his fighters out to intercept. The Americans had planned their attack flawlessly; at the timed intercept point, Lt. Douglas Canning spotted the Japanese at his 11 o'clock high, and reported to the other 15 P-38s in the attack group. Above were six Japanese Zero fighters accompanying two Betty bombers, one of which carried Yamamoto. It was April, 1943. In the ensuing "dogfight" the admiral's plane was shot down. There were no survivors.

Who were these code breakers? They were people who could copy Morse code (CW) at 40-50 words per minute — a phenomenal rate. But they weren't super-human, they were just human. And thereby hangs a tale.

The Australian code breakers started with a young Royal Australian Navy midshipman named Eric Nave who, soon after joining the RAN in 1917, was told he had to study a foreign language. He had a choice of French, German or Japanese. Studying either of the first two paid 5 cents extra a day; studying Japanese paid 50 cents extra. He went for the big money, and a couple of years later was stationed in Japan to study in earnest. He bought blank phonograph records on which he recorded Japanese intercepts in slow time. This way he worked out the Japanese signal alphabet and was able to read their language messages and then their codes.

In 1925 he was assigned to the Royal Navy to organize interception on the China Station. Until this time interception of Japanese codes had been unsuccessful because the Japanese used 73 kana signs, a system of syllabic writing, and not the English alphabet of 26 letters.

The Japanese syllabary, dating from the 8th century, consists of a table of 47 phonetic syllables analogous to an alphabet of letters. These syllables or characters are written in either of two sets of symbols — katakana or hiragana, each of which may have several alternative forms. The katakana characters are derived from fragments of Chinese ideographs of the corresponding sounds and are usually used for foreign words and names. The hiragana symbols are complete cursive forms of Chinese characters of the same sound.

This Japanese writing could not be sent over a modern telegraph system, so a form of shorthand had to be invented which expressed a syllabary of 73 ideographs representing Japanese and Chinese sounds. The system was not perfect because a single kana ideograph (sign) might have different meanings, depending on the speaker's tone of voice. The correct one only became known by adding a Morse symbol after the meaning symbol.

Mr. Nave transferred back to Australia to set up a code-breaker group concentrating on Japanese consular messages and naval traffic in the Pacific. The famous consular message "East wind rain," is another example of interception and decoding by Nave's Australian top-secret signals intelligence organization to which Jack Brown, RAAF, was assigned in 1942. Here is Jack's description of his induction into the outfit.

"At our first briefing we were told we were to learn the Japanese Morse code," he recalls.

"I asked, 'How many years have I got to learn this?' " The answer was eight weeks!

"Then we were told Japanese Morse code was made up of 73 Chinese and Japanese sounds. We had to learn a triangular shorthand to write the symbols because there wasn't time to learn Japanese. We then had to translate the shorthand into English symbols so that it could be read by code breakers or linguists.

"The biggest shock came when we were told we had to be able to copy Morse code at 40 to 50 words a minute. That's almost twice as fast as top international Morse operators would send and receive at that time.

"I said, 'I've got no hope — that's out of my class.' The answer was: 'Did you see a guard out on the track? If you don't pass, that's how you will spend the war. You will never be posted to an RAAF base because you know too much.' "

Brown passed. In time he, and 23 other code breakers, dubbed the "FOREIGN LEGION," were the only Australian land troops with General Douglas MacArthur as he returned to the Philippines in 1944. MacArthur's intelligence chief, General C.A. Willoughby, was prompted to say after the defeat of Japan that "signal intelligence chopped two years off the war in the Pacific." End of story, but ample proof that anyone can learn to copy 20 words per minute.

Just because the U.S. Coast Guard has eliminated CW doesn't make the decision right for the amateur bands. The Coast Guard has select frequencies and, consequently, minimal interference. With the rapidly increasing world population, band crowding will increase. It's great to get more people interested in ham radio (I'm an Elmer), but finding an open spot on the voice bands on a weekend when a contest is in progress should convince one that there is no dearth of hams. Eventually, pressure will be put on us to give up part of our ham bands, and we'll all have to rely more on CW. Am I too pessimistic? Look around you. There are more and more cars, traffic signals, shopping malls, hams, and new services infringing into the frequency spectrum.

It has been suggested that advancing electronic technology will soon render CW obsolete. Perhaps the soothsayers are correct, but I remember in WWII when an ancient language, that of the Navajo Indian tribe, was used in voice communication. Major Howard Connor, 3rd Marine Division, said that were it not for the Navajos, the Marines would have never taken Iwo Jima. I believe there will always be a place for CW.

I vote to retain the CW requirements. Let those who rebel stick to the CB bands where the language is dreadful and good manners are virtually verboten. Come to think about it, maybe we should "up" the code requirements!

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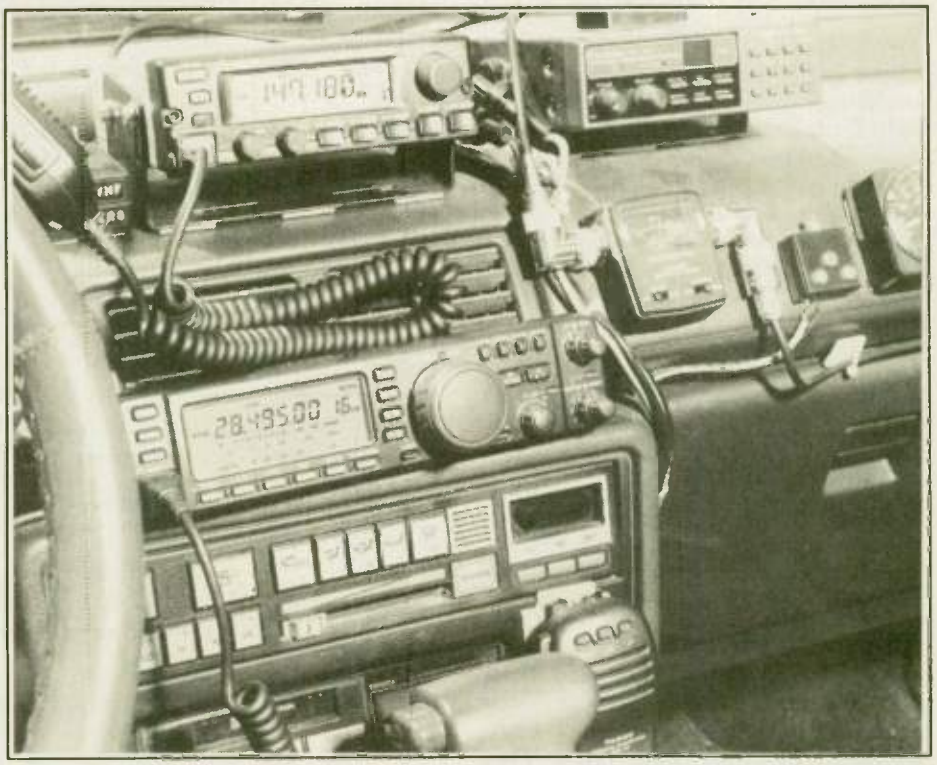
3. Bleakley, Jack, The Eavesdroppers, Australian Gov't. Pub. Service, G.P.O. Box 84, Canberra, A.C.T. 2601
4. Hoyt, Edwin P., The Glory of the Solomons, Berkeley Publishing Group, 200 Madison Ave., NY, 1990.
5. Miller, Ray A., The Japanese Language, Univ. of Chicago Press, 1967.
6. The Sydney Morning Herald, June 26, 1993. WR

STATION APPEARANCE

Jules Katz, KK6TR

*Send **Worldradio** a picture of your shack and the staff will choose a winner to receive a free one-year subscription to **Worldradio**!*

Stations will be judged by neatness (wires tucked away, etc.) and accessibility of equipment. Monetary value of equipment is not a consideration.



I am retired and live in a Mobile Home Park that permits no outside antennas. I knew this when I moved in and wasn't concerned because I did not plan to ham during my golden years, having disposed of my antiquated vacuum tube equipment. Then the bug hit me and I again became heavily involved in ham radio.

I assembled a base station but am limited because of my inefficient antenna systems. I tried loading the rain gutter on my home; that worked about as well as a dummy load. I tried a shortened indoor 40-meter dipole that radiated more RF inside the house than outside. I now use vertical antennas installed in a storage shed. Moving is not a viable option.

It occurred to me that even if I couldn't move my home, I could move my station, so I went "stationary mobile." Near my home is a road that rises to 8,000' elevation and at the 5,000 foot level is a clearing that looked like an ideal ham location. Tests indicated that even a mobile station would get out well. So I installed the following equipment in my station on wheels:

Bottom row: Yaesu FT-900/AT HF 100 watt transceiver. I operate at 50 watts to reduce the battery drain since I use this radio with the car stationary and the engine off, and I would like the car to start when I QRT. To the right of the FT-900 is a Radio Shack VHF SWR/PWR meter and a digital LED voltmeter to monitor the battery voltage.

Top row: ICOM IC-2000 VHF 50 watt transceiver. I operate at five watts which is adequate to hit the local repeaters and even adequate for simplex operation in many situations. This radio and the PRO-2025 scanner are used when the car is in motion.

I use a Hustler antenna with super resonators for the 10, 15, 20, 40, and 75 Meter bands for HF and a Larsen 5/8-wavelength antenna for VHF.

Because I am hearing-impaired it was necessary to install external speakers for the FT-900 and IC-2000 transceivers. Two speakers are mounted on the dashboard behind the steering wheel, one each for HF and VHF, and one speaker is mounted on the ceiling facing downward. The ceiling speaker can be switched between the two radios allowing me to use two speakers for each radio. The speaker control switches are barely visible behind the VHF microphone.

If I did not already have an HF base station, it would be easy to transfer the FT-900 from my car to my home. The remote control head is mounted on a quick release panel and the main unit is installed in the trunk with an MMB-20 mobile mounting bracket. I can remove the FT-900 from my car in just a few minutes.

I am on the air with a good signal and having a great time. WR

The Di-Dah keyer

Dave Evison, N6GKC

Although I've been a ham for over 40 years, I never really mastered Morse code. So, now that I'm a retired old geezer with impaired hearing, I find myself obsessed with mastering Morse, both receiving and sending. So, as many Amateurs do, I found myself practicing the code while driving about using the "dit dah" method of code practice. It finally dawned on me that I was actually cultivating a skill — *Morse by mouth!* The proverbial light bulb lit up in my mind: Why not design and fabricate a circuit that will transform the complex sounds of the dits and dahs into rectangular waves proportional to the dits and dahs, and then drive a relay to key the rig? Well, that's exactly what I did, and it worked perfectly. I've dubbed it the Di-Dah Keyer.

I believe the Di-Dah Keyer may well find application for the handicapped as the keyer can also be operated by whistling or even blowing into the microphone. In addition, by using a boom microphone, hands-free Morse operation is also possible. In any case, I've had a wonderful time with this little keyer, and I'm sure you will also.

About the circuit . . .

The first op-amp provides a gain of 100 to amplify the articulated "di-dahs" sufficiently to drive the second op-amp (also x100) to saturation. This technique eliminates the need for an additional clipper stage. Since articulated Morse has a relatively small duty cycle, the op-amp will tolerate such abuse just fine. The clipped waves are then rectified, filtered and sent to a comparator where proportional rectangular pulses are produced. VR1 adjusts the threshold of the comparator. The output of the comparator drives an NPN transistor relay driver.

In the prototype circuit, a Radio Shack 12V reed relay was used and worked just fine on 9V. Five-volt versions of this relay are also available and may be used in conjunction with a limiting resistor in series with the relay coil.

One section of U2 is not used. In the original design this stage was used for a clipper and saturating U2B eliminated the need for the clipper. A 741 can be used for U2A.

All parts can be obtained at Radio Shack (including an inexpensive microphone of the type supplied as an accessory for small battery operated cassette tape recorders). And, of course, the average ham junk box can also supply most of the parts. In any case, the total cost of the keyer should not exceed $20.

The prototype was built on a Radio Shack Multipurpose Printed Circuit Board (RS 276150). The board has plenty of room and will make construction quick and easy.

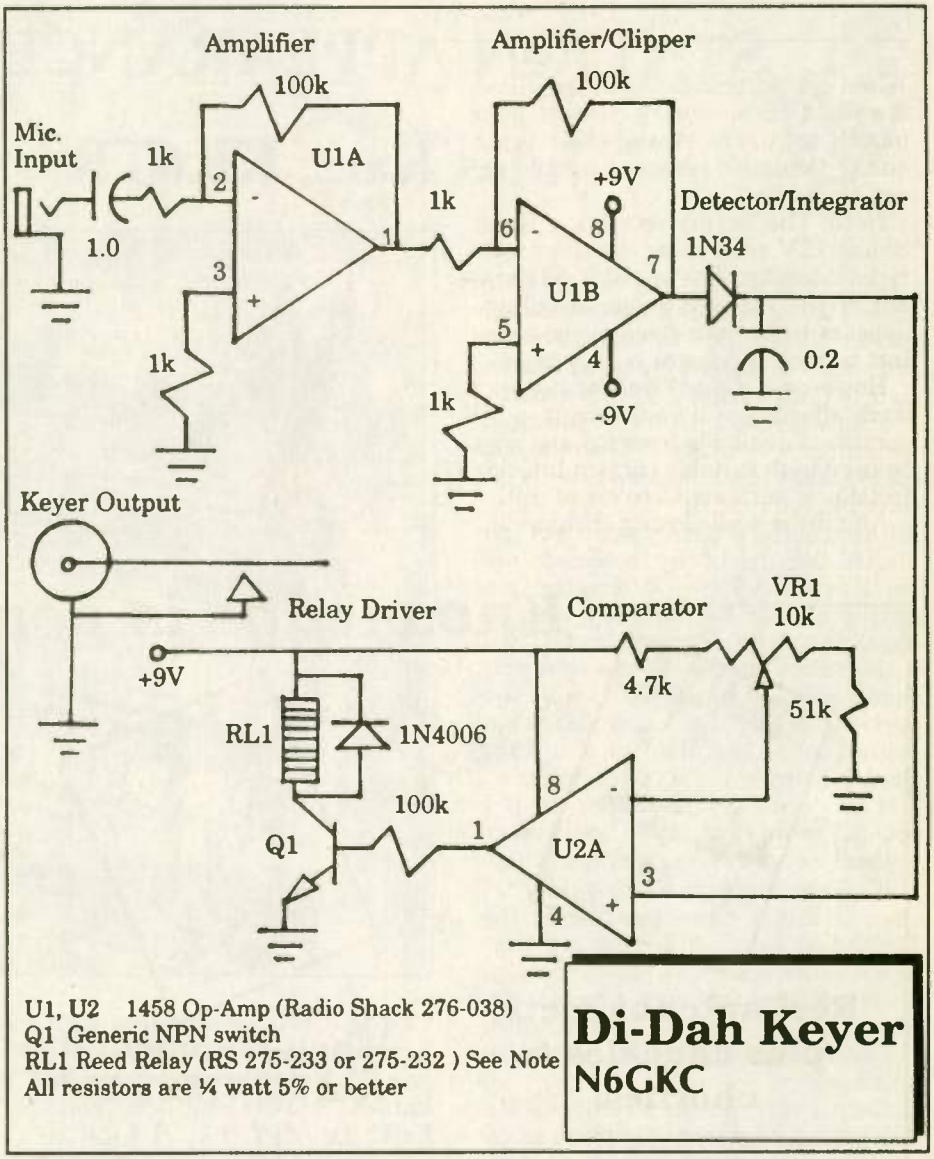
Checkout and adjustment

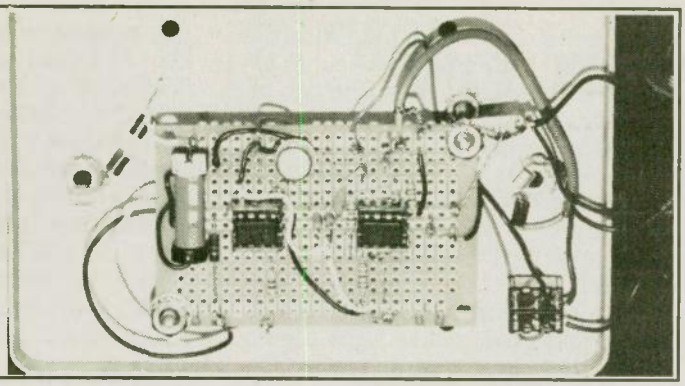
During checkout and adjustment, it is recommended that you key a code practice oscillator — not your rig!

1. Connect mike, code practice oscillator, and batteries.

2. Adjust VR1 while rapidly speaking a series of dits (di-di-di-di-di. . .). The adjustment is quite critical and the set level zone covers just a few degrees of VR1's rotation.

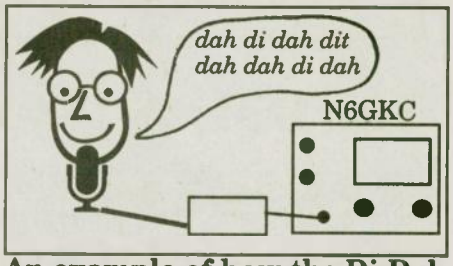
3. It is strongly recommended that you spend some time practicing using the code practice oscillator, before connecting the Di-Dah Keyer to your rig. The keyer is quite sensitive and critical of articulated code. You must form your dits and dahs clearly, and of course, character, word spacing and speed are up to you. If you articulate incorrectly or produce extraneous sounds, the keyer will respond accordingly. It may come as a surprise (at least it did to me) that when I thought I was articulating a series of dits in good form, the Di-Dah Keyer soon revealed otherwise.





The prototype built on a Radio Shack Multipurpose Printed Circuit Board (RS 276150)

The Di-Dah Keyer also provides the Novice and Coded Technician with a way to legally use "voice" on HF. WR



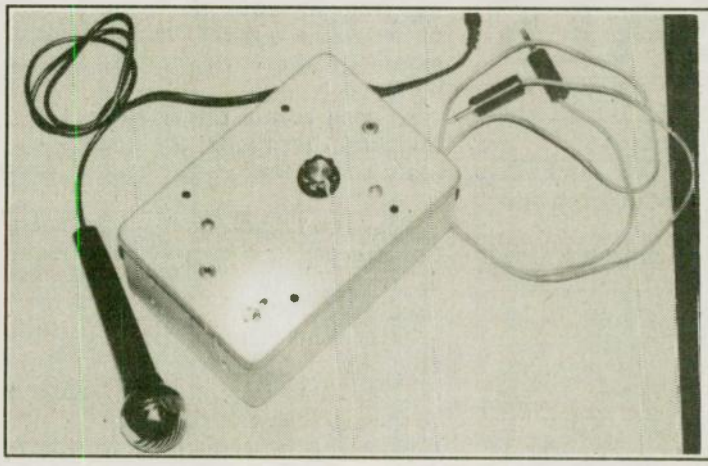
An example of how the Di-Dah Keyer works.

When speaking into the microphone, it should be held very close to your mouth to insure strong clear input and to minimize response to extraneous sounds.

Note: The keying relay is a Radio Shack 12V reed relay. In the prototypes it worked fine on 9V. A side benefit of the reduced solenoid voltage appears to be better action (less contact bounce and faster release time).

However, if the 12V version does not work effectively in your circuit, a 5V version is available from RS and may be used with suitable current limiting resistor in series with solenoid coil.

An off-the-wall closing thought . . .



The Di-Dah Keyer after it's been constructed. ***—photos by N6GKC***

AERIALS

Kurt N. Sterba

This article is introducing a new and novel antenna.

It is called "The Double Reversed Multi-Band and Broad-Band Dipole." For short it can be called the DRMBBBD. The antenna operates on the 20; 17; 15; 12 and 10 Meter bands.

While it is made up of two dipoles, it is quite important to stress that this is NOT a "stagger-tuned" antenna which has dipoles cut to the low end and the high end of a band. With the DRMBBBD both dipoles are cut to exactly the same frequency. The two dipoles we are speaking about here are fed, in the normal manner, via coaxial cable.

However, and note carefully, the dipoles are NOT center-fed but rather at the one-third mark of each dipole's length.

Since some may find the explanation complicated, please pay close attention.

A single 50-ohm coaxial cable coming from an antenna tuner is connected to the vertical terminal of a coaxial "T" adapter with three female ports.

At each end of the remaining two horizontal terminals are inserted coaxial connectors of the double male type.

Then, two dipole center connectors are attached (one each) to the horizontal arms. In this instance the units used were the Budwig HQ-1.

To explain redundantly regarding the two double male connectors (UG240), they connect the "T" adapter to the dipole center connectors.

Now, looking straight down (bird's eye view) you would see (on opposite sides of the "T" adapter) two wires pointed North (from the two dipole connectors) and two wires headed South. The two dipole connectors and the coaxial connector would be like an "H" with the "T" connector being the crossbar.

We will also refer to the assembly on the left and the assembly on the right. There will be a total of four wires attached. There will be one wire coming from each of the four ends of the "H".

Attach (solder) to the dipole connector on the North-Left a wire 12 feet long with some additional for wrapping through whatever end insulator you choose. That wire will run horizontally in the normal dipole fashion.

Attach another 12-ft. wire (see above) to the dipole connector on South-Right. That wire will also emulate the everyday dipole.

At the South-Left attach a wire (as above) except that this wire is 24 feet long.

At the North-Right attach a wire (as above) that is 24 feet long.

To review: North-Left, 12 ft; North-Right, 24 ft; South-Left, 24 ft; South-Right, 12 ft.

What you now have is two dipoles in parallel and reversed from each other. About now some are wishing there was a photograph or a diagram. Sorry, this is not the Children's Hour.

Here is how to check your work. With an ohmmeter there should be continuity (beep) between the coaxial cable center conductor and the far ends of each of the two 12-ft. wires.

There should be continuity between the shield side of the coaxial cable and the far ends of the two 24 foot wires. OK?

There should be NO continuity between the shield and the 12-ft. wires. There should be NO continuity between the center conductor and the 24-ft. wires. To make sure everyone "gets it" the centers of the two dipoles are separated by the few inches of the "T" connector and F/F adapters.

The two 12-foot wires run horizontally just like a dipole. The two 24-foot wires come down just like an inverted "V" antenna; that is the apex (pointed end) is up.

Adjustments: The antenna will have to be trimmed to resonance at (for) your location. Be sure to keep the exact 2 to 1 ratio of the long wire to the short wire. Whatever trimming is done to one dipole (one 12-foot section and the corresponding 24-foot section) will also have to be done to the other dipole. The angle of the lower wires will also affect the resonant point.

The flat-top portion is approxi-

mately 24 feet (two twelve-foot sections) which allows it to fit in areas where a regular 20M dipole (33 ft.) would not fit.

What to expect: With careful adjustments of wire length and angle, an SWR of 1.0 to 1 was reached at 14.200 MHz. This was confirmed with two different antenna analyzers, two commercial SWR reading wattmeters and a Bird Model 43. With the Bird and a 50 watt slug in the reverse position there was not even the tiniest slightest flicker at all at 14.200. Using eyeball interpolation in the space that shows one watt reflected, the readings were:

14.003 0.9W; 14.100 0.3W; 14.200 0.0W; 14.300 0.1W; 14.347 0.2W.

At each and every reading forward power was checked to assure exactly 50 watts output before reflected power was noted.

The feedline was 65 feet of very recently purchased brand name RG-8U.

Using the Autek Model RF-1 antenna analyzer, with a brand new battery just installed for the test, the following are frequencies, SWR and impedance:

20M			12M		
14.00	1.2	57	24.89	1.3	43
14.10	1.1	51	24.99	1.3	43
14.20	1.0	46			
14.30	1.1	44	10M		
14.35	1.1	43	28.00	4.3	201
			28.10	4.5	181
17M			28.20	4.6	158
18.07	3.1	31	28.30	4.7	138
18.17	3.0	28	28.40	4.8	120
			28.50	4.8	106
15M			28.60	4.9	91
21.00	2.8	135			
21.10	2.7	139			
21.20	2.7	140			
21.30	2.7	138			
21.40	2.7	135			

Ghost antenna

Ace Collins, K6VV

Wire strung up everywhere
And none of it would work.
So,
I used my little wizard bridge
To help me find the quirk.

Now, I twisted all the knobs
And watched the needle flick.
For,
I was sure that, after all,
This would do the trick.

With lots of calculation
And tearing of my hair
The
Data absolutely showed,
The antenna wasn't there!

While the SWR on the 10-meter band may appear excessive, as a practical matter, if properly matched, may be ignored. The difference between this condition and a perfect situation is truly undetectable by ear.

With an MFJ-989C antenna tuner an SWR of 1.0 to 1 was obtained on all bands.

It is worth mentioning again that the power reflected by the mismatch at the antenna comes back down to the tuner. The tuner has been set up to reflect that power back up to the antenna again. Except for the loss in the line (quite small with good line) all the power goes out the antenna.

There was no reason to use the tuner on 20 or 12 Meters.

So, what is the virtue of this antenna? If space (and/or neighbors) is a consideration the horizontal span is almost one-third less than usual for 20M, all bands 20 through 10 may be worked with only one antenna, coax feed and a transmatch.

Other points: It should be mentioned that the accuracy of the Autek analyzer's displayed frequencies is apparent from hearing the unit's internal oscillator in your station's receiver.

Various lengths of coax, singularly and in combination, were added to the 65-ft. run to see what effect they would have. Changes were minimal. Also, just to be certain, the original feedline was replaced with another brand new feedline and retested.

Reversing the wires, with the long wires horizontal and the short wires angled down destroyed the effect. Using just one dipole instead of both created massive SWR on all bands. Both dipoles are necessary. The ultra-bright have already figured out why.

Here's the last tip of the day. For the absolute purists, those who fret over what effect the transmission line may be having on the antenna, try this idea. Take the Autek antenna analyzer and connect it directly to the antenna. Raise the antenna to the height it will be. Look at the SWR reading through binoculars.

How well does it work? Just about the same as a regular dipole. DX has been worked. There is most likely (no doubt) room for further experimentation. Let me know of the changes you make.

(KNS will return in two months with word about true Quad gain figures vs. not-so-true figures foisted off on the ham public.) WR

Field Day prep

Mosey on down to your local radio club this month and get the gears grinding on the upcoming '96 Field Day activity. It's not too early to start your site and antenna plans. If you haven't tried some of the bonus features like solar, wind power, sat com, etc. then try it. It's great fun! See if you have someone in your area — club member or not — experienced with alternate power, off-beat modes, etc. and ask them if they would be interested in demonstrating their expertise during Field Day so others may learn about it.

Last year at our club we were all astounded at the 10 or so solar power QRP QSOs one fellow managed with several states on 80 Meters!

Speaking of QRP, I received a very nice note from Laci, DL2JTE, thanking me for a 7 MHz QSO with him. Laci explains he has been QRP on 40 Meters for 20 years and "marvel of marvels" has made his first EU/NA QSO. He was 549 at my QTH near Boston. Not too shabby for 20 mW on 7 MHz! These are the kind of contacts that really make my day!

Propagation still seems to be in the doldrums. Keep the faith, and remember that fall '96 should see some modestly improved propagation. Maybe we'll even get a decent shot at 10 Meters again!

If you know of an upcoming contest, state party, etc. please drop me a snail mail or e-mail.

Late March 'tests

(see March *Worldradio* for details)

•CQ WPX SSB 'test

23 March 00:00-24 March 2400 (RS+N)

•Alaska SSB/CW QSO Party

23 March 00:00-24 March 24:00 (RS(T)+city if KL7 or state/prov/country for non-KL7)

April 'tests

•Holyland 4X4 SSB/CW 'test

30 March 18:00-31 March 18:00 (RS(T)+ NR or area for 4X stns)

Q only Israeli stns. Q 1x each mode on each band (ok to QSO /m or /pstns when they change QTH. The 4X/4Z/m or/p stn changes call sign e.g. — 4X41JU can change to 4X42JU..... 4X45JU.... etc.) It is ok to work all 3 on each mode and on the same band. Score: Pts (2 for 160-40;1 for 20-10) x mults.

(Areas-HO8HF, HO8HD, HO8YZ are different areas. 300+ areas exist). Trophy, plaques, certs.

Single op all band/multi op 1 tx. Separate logs for each band and mode. Logs to: IARC Contest Mgr, Box 3003, Beer Sheva 84130, Israel. Administrative regions (each with numerous areas within them); AK, AS, AZ, BS, BL, HD, HF, HG HS, HB, JN, JS, KT, PT, RA, RM, RH, SM, TA, TK, YN, YZ, ZF.

•SPDX SSB 'test

6 April 15:00-7 April 15:00 (RS+NR or province for SP stns)

Q 1x per band SP, 3Z, SQ, SR stns. Q only Polish stns.160 — 10 Meters. Score-Pts (3 ea QSO) x (total provs-not per band, 49 Max). Single op/1band; single op/multiband; multiop or club w/1tx. Mult. ck list. ASCII floppy ok to SPDX Contest, P.O. Box 320,00-950, Warszawa, Poland.

Provs are: SP1-KO, SL, SZ; SP2-BY, EL, GD, TO, WL; SP3-GO, KL, KN, LE, PI, PO, ZG; SP4-BK, LO, OL, SU; SP5-CI, CS, PL, SE, WA; SP6-JG, LG, OP, WB, WR;SP7-KI, LD, PT, RA, SI, SK, TG; SP8-BP, CH, KS, LU, PR, RZ, ZA; SP9-BB, CZ, KA, KR, NS, TA(49)

•MARAK SSB County Hunters 'test

6 April 00:00-7 April 24:00 (RS+county/provs+state for U.S./VE or prov+country for others)

Q w/ fixed stns only 1x per band. Q w/mobiles each time they change counties. Qs w/ stns under a net control are invalid. Freqs. 3.880, 7.240, 14.270, 21.340, 28.340 w/fixed stns asked to work above these fqs. Score-

ITU Zones (not CQ Zones!)

For IARU and other contests, not for CQ contests

Prefix	ITUZ	Prefix	ITUZ	Prefix	ITUZ	Prefix	ITUZ	Prefix	ITUZ	Prefix	ITUZ
A2	57	F	27	W,K	6,7,8	T3Ø	65	VP8	73	3X	46
A3	62	FT8W	68	KC6	64,65	T31	62	VP9	11	3Y	67
A4	39	FT8X	68	KG4	11	T32	61,63	VQ9	41	4J,4K	29
A5	41	FT8Z	68	KH1	61,62	T5	48	VR6	63	4L	29
A6	39	FG	11	KH2	64	T7	28	VS6	44	4O	28
A7	39	FJ,FS	11	KH3-7	61	T9	28	VU	41,49	4S	41
A9	39	FH	53	KH8	62	TA	39	XE	10	4U(ITU)	28
AP	41	FK	56	KH9	65	TF	17	XF4	10	4U(UN)	Ø8
BV	44	FM	11	KHØ	64	TG	11	XT	46	4W	39
BY	33,42	FO(Clip)	10	KL7	1,2	TI	11	XU	49	4X	39
	43,44	FO	63	KP1-5	11	TJ	47	XW	49	5A	38
C2	65	FP	9	KX6	65	TK	28	XX9	44	5B	39
C3	27	FR	53	LA	18	TL	47	XZ	49	5H	53
C5	46	FW	62	LU	14,16	TN	52	Y2-9	28	5N	46
C6	11	FY	12	LX	27	TO5	9	YA	40	5R	53
C9	53	G-GW	27	LZ	28	TR	52	YB	51,54	5T	46
CE	14,16	H23	39	OA	12	TT	47	YI	39	5U	46
CEØA	63	H4	51	OD	39	TU	46	YJ	56	5V	46
CBØX	14	HA,HG	28	OE	28	TY	46	YK	39	5W	62
CBØZ	14	HB	28	OF-OH	18	TZ	46	YN	11	5X	48
CM,CO	11	HC	12	OJØ	18	UA-UI/	19,20	YO	28	5Z	48
CN	37	HH	11	OK	28	RA-RZ	29,30	YS	11	6W	46
CP	12,14	HI	11	ON	27	UA1(FJL)	75	YT,YU,	28	6Y	11
CT	37	HK	12	OX	5,75	UA-UZ2	29	YZ	28	7O	39
CT3	36	HKØ(M)	12	OY	18	UA9-UZØ/	20-26,3	YV	12	7P	57
CU	36	HKØ	11	OZ	18	RA9-RAØ	35,75	YVØ	11	7Q	53
CX	14	HL	44	P2	51	UJ-UM	30	Z2	53	7X	37
D2,3	52	HP	11	P3	39	UN-UQ	30	Z3	28	8P	11
D4	46	HR	11	P4	11	UR-UZ/		ZA	28	8Q	41
D6	53	HS	49	PA	27	EM-EO	29	ZB	37	8R	12
DA-DL	28	HV	28	PJ2,4,9	11	V2-4	11	ZC4	39	9A	28
DU	50	HZ	39	PJ5,6,7,8	11	V8	54	ZD7-9	66	9G	46
EA	37	I,ISØ	28	PY	12,13,1	VE,VY	2,3,4,9,	ZF	11	9H	28
EA6	37	J2/A	39	PYØ	13		75	ZK1-3	62	9J	53
EA8	36	J2	48	PYØ(T)	15	VK	55,58,5	ZL	60	9K	39
EA9	37	J3	11	PZ	12	VK(LHI)	60	ZP	14	9L	46
EI	27	J5	46	S2	41	VK9(W)	60	ZS	57	9M2,4	54
EK	29	J6-8	11	S5	28	VK9(X)	54	1AØ	28	9M6,8	54
EL	46	JA	45	S7	53	VK9		1S	50	9N	42
EM-E0	29	JD	90	S9	47	(C,K)	54	3A	27	9Q	52
EP	40	(Minami)		SØ	37	VK9(M)	56	3B6-9	53	9U	52
ER	29	JD	45	SJ-SM	18	VK9(N)	60	3C	47	9V	54
ET	48	(Ogasawara)		SP	28	VKØ(H)	68	3CØ	52	9X	52
EU-EW	29	JT	32,33	ST	48	VKØ(M)	60	3D2	56	9Y	11
EX	31	JW	18	SU	38	VP2	11	3D6	57		
EY	30	JX	18	SV	28	VP5	11	3V	37		
EZ	30	JY	39	T2	65	VP8(F)	16	3W,XV	49		

pts (2 pt for Qs w/ fixed US/VE stns; 5 pts for U.S./VE Qs w/DX.15 pts for Qs w/mobile /m stns (mobiles on site of conjunction of several county lines count for only one 15 pt Q, but do count for separate mults. for each county at conjunction)) x mults (different U.S. counties worked w/mobile or fixed stns). Plaques+certificates. Ck sheet for counties if > 100 Qs.Logs to: K8CW

•EA WW RTTY 'test

6 April 16:00-7 April 16:00

(RST+CQ Zone or prov for EA stns)

Q any stns not only EA, 1x per band, 80-10. Single op/1 band; single op/multi band; multi op/all band. Score-pts (10, 15, 20 — 1 own continent; 2 outside ur continent; 40, 80-3 own cont.; 6 outside ur cont.) x mults (DXCC countries+EA provs each band).

Trophy plate and certs. Logs-separate sheet per band to: EA1MV. EA Provs: A, AB, AL, AV, B, BA, BI, BU, C, CA, CC, CE, CO, CR, CS, CU, GC, GE, GR, GU, H, HU, J, L, LE, LO, LU, M, MA, ML, MU, NA, O, OR, P, PM, S, SA, SE, SG, SO, SS, T, TE, TF, TO, V, VA, Z, ZA.

•JA INT'L DX 'test-CW

12 April 23:00-14 April 23:00

(RST+NR/prefecture 01-50 for JA stns)

Q 1x/band. Q JA only. 14-28 MHz. NO WARC BANDS. Single ops 30 hr. max., multis 48. 10 minute rule. Rest period of at least 60 mins. Score — pts (1 for 20, 15; 2 for 10 M) x mults (prefectures per band). Single op/single band// single op multi band//multi op/multi band. 59 Magazine, PO Box 59, Kamata, Tokyo 144, Japan.

•EU SSB Sprint

20 April 15:00-18:59

(Both calls + NR) NO RS(T).

QSY rule — if you initiate a Q via CQ or QRZ etc., you can work only 1 station on that frequency and your next QSO or CQ, QRZ, etc. must be at least 2 kHz away. Single op only. Fqs.-14.250; 7.050;3.730. No suggestion from sponsors about how U.S. stns can work split. Free EU Sprint contest software is available from DL2NBU and or IK4EWK. I suggest you send some $$ for postage and packaging. TR by N6TR is easily adapted. Contact I2UIY pcortese@mbox.vol.it or above. Logs in 15 days via mail to G4BUO or in ASCII to eusprint@dl6rai.muc.de

•HB9 SSB/CW Helvetia 22 'test

27 April 13:00-28 April 13:00

(RS(T)+NR or canton for HB9 stns)

Q 1x per band, not per mode. CW-160 -10; SSB-80-10. Score- pts (3 ea Q) x cantons (1 pt per canton on each band) single op; multi op, 1tx. Certificates. Logs- separate log ea band to: HB9DDZ. 26 cantons: AG, AI, AR, BE, BL, BS, FRGE, GL, GR, JU, LU, NE, NW, OW, SG, SH, SO, SZ, TG, TI, UR, VD, VS, ZG, ZH.

•NE All Modes QSO Party

27 April 17:00-28 April 16:59

(RS(T) + st/prov/country or, for NE stns, county<93>). Q 1x per mode, per band. No satellite/cross band or repeaters.

Score-pts(1 for SSB/FM, 2 for CW/digital/video) x mults (total counties [max 93} or st/prov/ DXCC for NE stns). Single op, 1 transmitter only. 5 plaques — 1 plaque for top Novice/Tech or Tech+ in NE and 1 for U.S., 1 for top op U.S./DX/NE. Certificates. Logs to NE QSO Party, P.O. Box 375, Fort Calhoun, NE 68023-0375. WR

Stories wanted!

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 AMATUER "HI" contest. You could win a free year's subscription to ***Worldradio!*** Give it a try.

hamfests April

Alabama

The MARSHALL COUNTY ARC will hold its 5th annual "SandMountainFest" hamfest on 5 April (5-9 p.m.) and 6 April (8 a.m. to 3 p.m.) at The Albertville Recreation Center in Albertville; located 15 minutes from the Boaz outlet malls. Dealer setup on Friday from 1 p.m. (overnight security provided). Plenty of free parking. Large tailgate area. Admission is $3 (includes both days), under 12 years of age are free. Contact Marshall County ARC, P.O. Box 2811, Albertville, AL 35950 or telephone Buddy Smith, KC4URL 205/593-2516. Talk-in on 147.20(+) or 145.11(-).

California

THE LIVERMORE ARK is sponsoring an Amateur Radio/Electronics/Computer Swap Meet on 7 April from 7 a.m. to 12 noon at Las Positas College. Features include refreshments, free parking and covered spaces in the event of rain. Admission is free. Sellers pay $10 space fee. Talk-in on 147.045(+) PL 94.8 from the west and 145.350(-) PL 100Hz from the east. Contact Noel Anklam, KC6QZK, at 510/447-3857 eves. or leave message days at 510/783-2803.

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The 1996 INTERNATIONAL DX CONVENTION, hosted by the Southern California DX Club, will be held 19-21 April, at the Holiday Inn in Visalia, CA. Registration $50 in advance, $55 at the door. Features include the traditional convention patch, HF, low-band and DX oriented forums and technical sessions, Saturday banquet, Sunday breakfast, all programs, etc. To register, contact Don Bostrom N6IC, 4447 Atoll Ave., Sherman Oaks, CA 91423 and for general information, contact Rick Samoian, WB6OKK at 714/993-0713.

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The VALLEY OF THE MOON ARC will hold a hamfest on 21 April from 8 a.m. to 3 p.m. at the Sonoma Veteran's Memorial Bldg., 126 First Street West in Sonoma. Features include a full pancake breakfast ($5), forums include operating QRP station and display of homebuilt equipment, beginner's D.F. hunt and more. There will be an electronics swap meet with both indoor and outdoor spaces available. A walk-in VE session will be held for all license classes starting at 9 a.m. Admission is free to the hamfest. Ten-foot spaces will rent for $10. For information, contact Darrel, WD6BOR at 707/996-4494. Talk-in on 145.35(-).

Colorado

The AURORA REPEATER ASSOCIATION will hold its annual swapfest on 14 April from 8:30 a.m. to 2 p.m. at the Adams County Fairgrounds, 9755 Henderson Road in Brighton. For information contact Judi, WDØHNP, at 303/450-6910 or Jan, KA7TYU, at 303/699-1944 or write Aurora Repeater Association, P.O. Box 39666, Denver, CO 80239.

Delaware

The PENN-DEL ARC will hold a hamfest on 21 April from 8 a.m. to 2 p.m. (setup 6 a.m.) at the Nur Temple on Route 13 in New Castle, DE, 1/4 mile north of Rtes 13 and 40 intersection. Features include a certified skywarn spotter training class, ARRL forum (11 a.m.). Admission is $5 at the door (no advance). Tables are $15 w/ electrcity or $10 without, by reservation only with payment to: Penn-Del Hamfest '96, P.O. Box 1964, Boothwyn, PA 19061. Tailgating is $8 per space first come, first served. For information, contact Hall Frantz, KA3TWG at 302/798-7270.

Florida

The FLAMINGO NET and UNIV. OF MIAMI ARC will hold a tailgate swapmeet on 20 April from 7:30 a.m. to 11:30 a.m. in the University of Miami Parking Lot #102 (N.W. corner of campus). Although spot reservations are not required, please contact Bill, WA4TEJ, by mail: 73 Palm Ave., Miami Beach, FL 33139 or on the air Friday 7:30 p.m. on 10M, 29.044 MHz, 8 p.m., 28.444 MHz, with 2M also monitored for check-ins: 146.91(-), 146.86(-) and 147.21(+). A picnic will follow the swap at A.D. "Doug" Barnes Park, 3401 S.W. 72nd Ave.

Idaho

The LEWIS CLARK ARC, CAMAS PRAIRIE and CLEARWATER VALLEY ARCs will hold a hamfest on 27 April from 8 a.m. to 4 p.m. at the Lewiston Community Center, 1424 Main St., in Lewiston. Features include dealers, flea market, VE testing and refreshments. Admission is $3 at the door. Contact Dennis Burgess, KA7FAH at 509/758-5343. Talk-in on 146.96(-).

Illinois

The MOULTRIE AMATEUR RADIO KLUB will hold a hamfest on 21 April from 8 a.m. to 1 p.m. at the Moultrie/Douglas County Fairgrounds in Arthur. Features include a forum tent with events happening hourly. Admission is $4 over the age of 14. Tables will be $8 per 8' table. Tables will only be reserved if payment is received in advance. No VE exams this year. To reserve tables write M.A.R.K., P.O. Box 91, Lovington, IL 61937 or call for information at 217/543-2178 (days), 217/873-5287 (evenings). To reserve tables, write MARK, P.O. Box 91, Lovington, IL 61937. Talk-in on 146.655(-) and 444.275(+).

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The CHICAGO ARC will hold an auction on 28 April from 12:00 p.m. until all items sold, at DeVry Institute of Technology, 3300 N. Campbell Ave., Chicago. Before noon, bring you electronic stuff, equipment, parts, books, etc., we will sell it for you for 10% donation. For information, call 312/545-3622.

Kentucky

The KENTUCKY COLONELS ARC will hold a hamfest on 13 April from 7 a.m. to 1 p.m. (setup on the 12th, 2-5 p.m. and the 13th at 5 a.m.) at Knights of Columbus Hall, 911 Searcy Way in Bowling Green. Features include ham gear, electronic gear, computers, displays, VE testing (p/r required, 8:30 a.m.), food, plenty of parking. Admission is $5 for age 12 and over; tables $10 each (includes admission). For information, contact Leon, K4CIT, 502/842-5307. Talk-in on 147.33(+) or 146.85(-).

Michigan

The BLOSSOMLAND ARA will hold a hamfest on 21 April from 8 a.m. to noon (setup 6 a.m.) at St. Joe Kickers Sports Club, located on U.S. 31/33, 6 miles south of I-94 near St. Joseph. Admission is $3/advance, $4/door, tables $4/advance, $5/door. For advance tickets, tables, or more information, contact Blossomland Amateur Radio Association, 1051 Main St., St. Joseph, MI 49085; 616/982-0404. Facility is handicap accessible; trunk sales; exams. Talk-in on 146.82(-), 146.72(-) 131.8PL and 442.275(+).

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The SOUTH EASTERN MICHIGAN ARA will hold a hamfest/swap-n-shop/computer show on 28 April from 8 a.m. to 2 p.m. at Grosse Pointe North High School, 707 Vernier Rd. in Grosse Pointe Woods. An ARRL forum and VEC exam session will be held. Advance tickets are $4; tables are $10. Contact Thomas J. Orlicki, N8HLY at P.O. Box 646, St. Clair Shores, MI 48080; 313/527-3497 or e-mail STOSH@NVISION.COM. Talk-in on 146.74(-).

Minnesota

The ROCHESTER ARC will hold a hamfest on 13 April from 8 a.m. at John Adams Middle School, in Rochester. Fea-

tures include dealers, flea market, speakers and programs, VE exams (6 p.m. on Friday). Admission is $6. Vendor cost is $9 in advance, $11 at the door (setup time 6 a.m.). Contact Frank Ingram, NØMXN, 1627 5th Ave. SE, Rochester, MN 55904; 507/288-6569. Talk-in on 146.82(-).

The SMARTS RADIO CLUB will hold a hamfest on 27 April from 8 a.m. to 1:30 p.m. (setup Friday 6:30-10 p.m. and Saturday 6-8 a.m.) at Canterbury Downs in Shakopee. Admission is $3/advance, $5/door. Plenty of free parking. For information, contact Dave at 612/445-8071. For table info, call Tim at 612/474-9232. For advanced tickets send SASE to SMARTSFEST, P.O. Box 144, Chaska, MN 55318. Talk-in on 147.165(+) PL 107.2 repeater.

Mississippi

The TUPELO and BOONEVILLE ARCs will hold the Northeast Mississippi Hamfest and Computer Expo on 12 April from 6-9 p.m. and 13 April, 8 a.m. to 5 p.m. at the Mississippi Building of the Tupelo Furniture Market Complex, Coley Road, Tupelo. Features include all indoor hamfest/computer show, flea market, vendors, VE session, food, door prizes, free parking. Admission is $5, under 13 free when accompanied by adult. Tables $20. For information, contact Jack Ellis, KI5QV, Rt. 4, Box 198-B, Tupelo, MS 38801; 601-842-7255. Talk-in on 147.38(+). Ragchew on 147.24(+).

New Mexico

The ALBUQUERQUE ARC and the ALBUQUERQUE AR CARAVAN CLUB will hold a tailgate swapfest/flea market on 27 April from 7 a.m. until noon at St. Paul's United Methodist parking lot, 9500 Constitution, Albuquerque. There is no admission charge for buyers or sellers. For information, contact Chuck Opdyke, KC5GA; 505/858-0306. Talk-in on 147.06(+).

North Carolina

The DOWN EAST HAMFEST ASSOCIATION, INC., will hold a hamfest on 31 March from 8 a.m. to 3 p.m. at the Lenoir County Fairgrounds in Kinston. Features include dealers, vendors and flea market inside, tailgate facility outside. VE exams, walk-in only, starting at 11 a.m. Admission is $4 each or 3 for $10/advance; $5 each or 3 for $12/door; tables $10 each for 8 foot; electricity $5. Vendor setup Saturday p.m. and Sunday a.m. Contact Doug Burt, WB4UOU 919/524-5724. Talk-in on 146.685(-), 145.47(-) or 444.575(+).

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The RALEIGH AMATEUR RADIO SOCIETY will hold a hamfest/state convention/computer fair on 14 April from 8 a.m. to 4 p.m. in the Jim Graham Building located on the NC State Fairgrounds in Raleigh. Features include a reception, convention forums, homebrew, mobile HF installation and QLF contests. Admission is $5/advance, $6/door. Eight-foot tables with 2 chairs $10; 5 or more tables $9 each. VE exams (walk-in) at 9:30 a.m. Contact Rollin Ransom, NF4P, 1421 Parks Village Rd., Zebulon, NC 27597; 919/269-4406. Talk-in on 146.64(S).

Ohio

The ATHENS COUNTY ARA will hold a hamfest on 28 April from 8 a.m. to 3 p.m. at the City Recreation Center. Take the East Street exit on either U.S. Route 33 or U.S. Route 50 and look for signs to the hamfest. Features include a large flea market with both indoor and outdoor space, door prizes and good food. Admission is $4 a person. Free paved outdoor flea market space adjacent to the building for tailgaters. Indoor space is only available by advanced registration. Contact Drew McDaniel, W8MHV, 61 Briarwood Dr., Athens, OH 45701; 614/592-2106, 6-9 p.m. EST; internet: dmcdaniel1@ohiou.edu. For general info, write to Carl J. Denbow, KA8JXG, 63 Morris Ave., Athens, OH 45701; internet: cdenbow1@ohiou.edu. Talk-in on club repeater 145.15(-).

Oklahoma

The LAWTON FT. SILL ARC will host the OK ARRL State Convention/50th hamfest and computer fair on 12 April from 5:30-9:30 p.m. (for vendor/flea market setup); chili cookoff meal 6:30 p.m.; VE testing 7:30 p.m. and 13 April, from 8 a.m. (vendor setup 7 am.) at the Commanche County Fairgrounds in Lawton. Features include forums from the National Weather Service, MESONET, beginner and advanced packet, OKDX Society, Slow Scan TV, Amateur TV, along with a non-ham program. Admission is $4/advance, $5/door; tables $8/advance, $10/door; tailgate slots $10. Tailgate and table costs do not include admission. Contact Bob Morford, KA5YED, 1415 N.W. 33rd St., Lawton, OK 73505; 405/355-6120. Talk-in on 146.91(-).

Oregon

The UMPQUA VALLEY ARC will hold a hamfest and computer show on 27 April from 9 a.m. to 5 p.m. (Friday setup 2-7 p.m., Saturday 7-9 a.m.) at the Douglas County Fairgrounds, I-5 Exit 123 near Roseburg. Features include major vendors, static display of emergency communication vehicles, county and state search and rescue and Red Cross. Admission $5, vendor tables $12, booths $25, RV parking with electricity $10 per night, free parking. For information, contact Ed, W5PII at 541/673-1310. Talk-in on 146.90(-), 147.12(+), 449.00(-).

Pennsylvania

The APPALACHIAN AMATEUR RADIO GROUP will hold its annual hamfest and computer show on 13 April from 8 a.m. (vendor setup 6:00 a.m) at the Northern Lebanon High School in Fredericksburg. Admission is $4, tailgating $4, indoor tables, $14. On site VE tests, prereg. required. Food available. Reservations for tables must be prepaid. Send check to AARG, 105 Walnut St., Pine Grove, PA 17963; 717/345-3780. Talk-in on 146.64(S).

South Carolina

The AIKEN CONTEST CLUB will hold a hamfest/computer show on 6 April from 9 a.m. (vendor setup 6-9 a.m.) at the Aiken County Jaycee Fairgrounds, U.S. Hwy 1 North, 4 miles South of I-20. Features include tailgating, VE testing (10 a.m. to noon) at the Jaycee Hut, w/i only. Admission is $5, under 12 free. Tables are $7/advance, $10 after 30 March. Electricity (limited availability) is $5. Huge outdoor tailgating area $5 per space (includes admission). Contact Doug Glass, AC4WW, 127 Trailwood Ave., Aiken SC, 2980. 7602; 803/648-4754. Talk-in on 147.285(+), 145.17(-) and 443.400(+).

South Dakota

The HURON ARC will hold an amateur electronics swapfest on 27 April from 8 a.m. to 3 p.m. (setup 7 a.m.) at the National Guard Armory, SD State Fairgrounds, in Huron. Features include VE testing at 9 a.m., flea market, eyeball QSOs, and lunch. Admission is $3; tables $5. Contact Lloyd Timperley, WBØULX, P.O. Box 205, Huron, SD 57350; 605/352-7896 eves. Talk-in on 146.82(-).

Wisconsin

The MADISON AREA REPEATER ASSOCIATION, INC. will hold a swapfest on 14 April from 8 a.m. (3 a.m. setup for sellers with 6 or more tables, all others 6 a.m.) at the Dane County Exposition Center Forum Building in Madison. Features include electronic equipment and components, computer hobbyists and experimenters, new and used equipment. Admission is $5. Flea market tables are $12 each (does not include admission). For information on exihibitor booths, contact M.A.R.A., P.O. Box 8890, Madison, WI 53708-8890; 608/245-8890 (24 hrs). Talk-in on the MARA repeater, WB9AER, 147.15(+). WR

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

N4UAU Super CW Station

Ulbing Consulting announces a greatly expanded model of the Uncle Albert Keyer. The N4UAU is oriented to help the would-be or experienced ham master

CW to get a ticket or to upgrade by improving sending and copying skills.

How? The Super CW STATION

1. Sends and displays (translated on a 40 characters by 2 row LCD screen) random code as characters, 300 different common CW words or call signs for practice for the CW exam.

2. Copies and displays CW and the actual speed from your receiver making code practice more fun as you can listen and learn from W1AW broadcasts or real QSOs.

3. Is an external iambic keyer (2-40 wpm) with three message memories. The keyer displays the code sent and the actual speed.

Other features include:

- A built-in clock, calendar and alarm to remind you of your next sked.
- A built-in side tone oscillator with adjustable frequency (600-900 Hz).
- An on-board audio amplifier that can drive a small speaker.

The N4UAU CW STATION is available as an easy to build kit for $95. This includes the PC board, programmed chip and electronic parts. The PC board and programmed chip only may be obtained for $45. Shipping to the U.S. is included, Florida residents add sales tax. We can also help with soldering and enclosure parts.

For more information, send an SASE to Sam Ulbing, N4UAU, Suite 102-177, 5200 NW 43rd Street, Gainesville, FL 32606; or e-mail n4uau@freenet.ufl.edu

DSP-232 Multi-mode data controller

Advanced Electronic Applications, Inc. introduces the latest addition to its high-quality line of multi-mode data controllers — the DSP-232. AEA engineered the first DSP data controllers nearly five years ago. Now, AEA has combined the power of Digital Signal Processing (DSP) technology with affordability. The new DSP-232 offers DSP signal filtering, advanced modem performance, and cutting-edge features.

The DSP-232 offers all the popular modes: PACTOR, AMTOR, RTTY, CW, HF Packet, and 9,600 or 1,200 bps VHF Packet. There are 17 modems in all, including the two BPSK satellite modems. There are even high or low FSK tone pairs for international use. The DSP-232 was designed using the 32-bit Motorola 68340 as the host processor and the Analog Devices 2105 DSP Processor. This powerful combination allows the DSP-232 to handle new digital modes, like PACTOR II.

The new "TWIST" command allows you to optimize the 1,200 bps VHF modem performance.

The DSP-232's PakMail™ MailDrop facilities offer a standard 32K RAM for Packet, PACTOR and AMTOR messages. This mailbox can be expanded to 256K of allocated RAM. You have control over which call signs can leave messages in your mailbox.

Signal Identification and Acquisition Mode (SIAM™) is standard in the new DSP-232. AEA developed SIAM to automatically detect incoming Baudot, ASCII, AMTOR/SITOR, and PACTOR, signals, and with a few keystrokes switch to the recognized mode and start displaying data. There is also the ARXTOR command which detects AMTOR and PACTOR signals and switches to them.

The Gateway features enable the DSP-232 to operate as a node, reducing channel traffic and increasing throughput. As with the MailDrop, you have control over who uses your Gateway. Gateway also identifies TheNet, TCP/IP, and NETROM stations. There are two heard lists included with Gateway: one for stations heard and one for nodes. DAMA master-slave functions are also included for high traffic nodes. PSK (Packet Satellite) mo-

dems are included so you can use the satellites, ultimate nodes in the sky. GPS firmware allows you to track Automatic Packet Reporting System (APRS™) users, remotely poll and control GPS functions of the DSP-232, and interface with GPS, Loran, ARNAV, and ULTIMETER-II™.

With purchase of the DSP-232 you receive a detailed manual, two RX audio cables, one 2.1 mm power cable, one 8-pin radio connector, and one 5-pin DIN radio cable, one PC-compatible DB-9 male-to-female RS-232 serial cable, one wire loopback jumper, and one 5-pin DIN plug for FSK/AUX connections.

Suggested List price for the DSP-232 (32K RAM) is: $495.

For more information on the new DSP-232, call AEA's 24-hour Literature Request Line at 800/432-8873, fax to 206/775-2340, use the Hamnet Forum on CompuServe@76702,1013, or write to: AEA, P. O. Box C2160, Lynnwood,WA 98036.

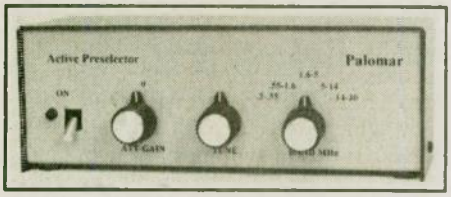
P-508 preselector

Palomar Engineers announces a new preselector for SWLs and medium-wave DXers. It covers 200 kHz to 30 MHz in five bands.

Its high-Q tuned circuits reduce cross modulation and receiver overload from strong out-of-band signals. A new FET-bipolar amplifier tolerates higher signal levels without overload to operate in today's high signal density environment. It also features continuous control of gain and attenuation. Connectors are SO-239 and it operates on 12V DC.

Model P-508 is priced at $99.95 plus $6 S/H. Model PS-90 AC adapter is available at $9.95. For further information, contact

Palomar Engineers, P. O. Box 462222, Escondido, CA 92029. Phone 619/747-3343, FAX 619/747-3346.



Revison 4.0 Firmware

Revison 4.0 Firmware is now available for the NIR-10 Noise and Interference Reduction Unit. The new firmware provides much improved NIR (Spectral Subtraction) and Dynamic Peaking (PEAK) noise reduction modes. It also features an AUTO mode when the NIR control is turned fully clockwise which provides an automatic adjustment of the noise reduction for best intelligibility based on the measured signal to noise ratio of the incoming audio signal. The PEAK function noise reduction level now can be continually varied, using the NIR control, to give the most effective noise reduction in that mode. The NOTCH filter has been changed slightly to eliminate the "nasal" quality sometimes given to "musical" voices.

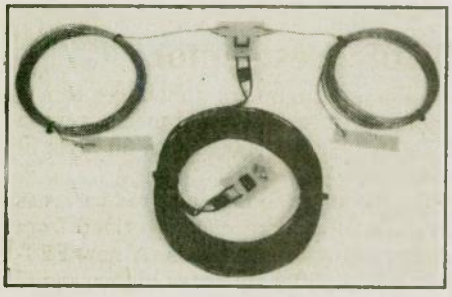
Price of the upgrade is $25. For information, contact JPS Communications, Inc., P.O. Box 97757, Raleigh, NC; 919/790-1011.

MFJ-1778 G5RV antenna

MFJ announces the MFJ-1778 G5RV antenna.

The G5RV is an efficient all-band antenna that can be used as an inverted vee or sloper, and it's even more compact. With an antenna tuner, you can operate all bands, 80 through 10 Meters and also use it on 160 Meters as a Marconi with a tuner and ground.

You get 102' of heavy-duty stranded copper wire (7 strands of 22-gauge wire that is equivalent to 14 gauge), and 32' 6" of high-quality, low-loss 450 ohm ladder-line with more than 50 percent air dielectric.



The ladder line is terminated on both ends with custom fiberglass insulator/strain reliefs.

The MFJ-1778 G5RV wire antenna comes with MFJ's one year unconditional guarantee.

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

Morse code software

AMECO Corporation has issued Version 2.0 of "The Complete Morse Code Instructor" learning software. Included are 5¼" and 3½" diskettes, a 32-page manual on learning Morse Code and a complete Software User's Guide.

The complete package (Cat. #107-PC) sells for $29.95.

Features in the program include:

- Works with any IBM PC/XT/AT or compatible computer.

- Easy user-friendly setup for both color or monochrome systems.
- On-line "Help" screen available for all features.
- Generates true random QSOs, similar to VEC exams.
- Sends in Morse code any external text file.

AMECO publishes learning software, code tapes and study guides that cover all the FCC license classes, Novice through Extra.

For further information call, write, or fax the AMECO Technical Sales Department: Donna L. Bates/Sales, AMECO Corporation, 224 East Second Street, Mineola, NY 11501; 516/741-5030, fax 516/741-5031.

Radio/Tech Modifications

Artsci is proud to present the new editions of its popular Radio/Tech Modification books. The Radio/Tech Modification books are great tools for radio repair technicians and Amateur Radio hobbyists who are serious about enhancing radio transceivers and scanners.

1996 brings editions 8A and 8B to the radio marketplace. These new editions cover the new radios announced in 1995 and all radios presented in the previous editions. The new page format simplifies the modifications and the illustrations are detailed and easy to follow.

Edition "A" contains modification information for Kenwood and Icom amateur radios and Uniden, Regency and Radio Shack scanners. The "B" edition completes the set with all the modifications for Alinco, Yaesu, Standard, Azden, RCI and other amateur radios.

The typical modifications presented in these new editions increase the radio's frequency transmit and reception coverage. The Radio/Tech Modification books are available nationwide. Visit your local radio store or neighborhood book store. Artsci will ship worldwide.

Each volume retails for $19.95. U.S.A. ship from California is $4. Artsci product information is available on the Internet: http://www.earthlink.net/~artsci or by writing Artsci, P.O. Box 1428, Burbank, CA 91507; telephone 818/843-4080, fax 818/846-2298, e-mail artsci@artscipub.com WR

Antarctica

KC4AAC at Palmer Station, Antarctica, is available for contacts every Thursday night after 0000 hours, UTC. Mark is also more than willing to hand out QSOs both in between and after phone patches are made for the personnel stationed at the base.

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***WORLDRADIO* ON CASSETTES** for the blind. For information, contact TOM CARTEN, K1PZU, 1602-Y King's College, Wilkes-Barre, PA, 18711. F397

CERTIFICATE FOR PROVEN TWO-WAY RADIO CONTACTS with amateurs in all 10 USA call areas. Award suitable to frame and proven achievements added on request. Send SASE to W6LS, 45527 3rd St. East, Lancaster, CA 93535-1802 to get data sheet. F397

EDITING A CLUB PAPER? Need one for your club? Interested in Amateur Radio public relations? Need some help? Amateur Radio News Service would like to hear from you. For info write SUSAN BIGGS, 9708 Skillman #107, Dallas, TX 75243. F397

AUTO-CALL MAGAZINE, official journal of the Foundation For Amateur Radio, a federation of over 80 clubs in the greater Baltimore/Washington DC area. Great coverage of FCC, ARRL, VEC, Public Service and club activities in the area. A must for those even passing through the area. For a sample copy write FOUNDATION FOR AMATEUR RADIO, P.O. Box 7612, Falls Church, VA 22046-7612. F496

WANTED REPLY COUPONS of all types, IRCs & others. Buy, sell, trade. JIM NOLL, P.O. Box 3410, Escondido, CA 92033. 396-397

HAMS — DO YOU NEED COMPUTER PRINTER ribbons? Lowest prices. Color or black. State your needs. Free information. HARCLY, P.O.Box 830, Coquille, OR 97423. 595-896

FREE HAM GOSPEL TRACTS. SASE, N3FTT, 5133 Gramercy, Clifton Heights, PA 19018. 894-1096

CHAVERIM-WESTERN USA AND MEXICO CHAPTER. Jewish amateurs and friends interested in our chapter or the Chaverim, contact KA6BJO, 2242 #N, Laguna Hills, CA 92653. 595-596

WANTED: ELECTRON TUBES, ICs, semiconductors. ASTRAL, P.O. Box 707WM, Linden NJ 07036. Call 800/666-8467.196-197

CLEANING MY HAM SHACK! Send 32¢ stamp for big bargain list. LEWALSKI, 3512 Moraga Blvd., #4103, Lafayette, CA 94549. 496

HAM RADIO REPAIR! Most HF radios repaired $116.00 plus parts. Hand held radios $72.00 plus parts. WARRC, JIM RUPP, Box 697, Grayland, WA 98547, 360/267-4011, AB7DR. 295-596

PLAQUES AND ENGRAVING FOR AMATEUR RADIO OPERATORS. Attractive wall plaques to detail your operating accomplishments. Any custom engraving. Great product list. SASE for brochure: KN3A-CAMELLIA TROPHY SHOP, 590-B Schillinger Rd., South, Box 96, Mobile, AL 36695. 1295-496

PERSONALIZED HOURLY HF SKY-WAVE PREDICTIONS from your city or town: SKYCOM v1.5 floppy disk for Apple Macintosh or IBM PC and compatible personal computers. Includes complete mathematical description of theory ($30). DX window v2.0 floppy disk circular projection world radio map centered on your QTH shows sunrise-sunset gray line for any time of interest. Includes feature which displays any of 400 prefixes on world map instantly. For all Apple Macintosh machines ($50). Satellite Predictions MACSAT 3.1, $50; P/H $5 N. America; $10 International. SASE for more info: ATTN: DX; ENGINEERING SYSTEMS INC., P.O. Box 939, Vienna, VA 22183. F397

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VE exam schedules

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

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

p/r pref. = pre-register preferred but w/i OK
p/r = pre-register only — no w/i

Worldradio, 2120 28th St., Sacramento, CA 95818. Please mark the envelope "VE Exams."

List the location (City), any information examinees should have (advance registration, etc.) and the name and telephone number of a person to contact for further information.

w/i pref. = w/i preferred to p/r
w/i = walk-in only

Date	City	Contact	Notes
Arizona			
5/11/96	Tucson	Joe, K7OPX 520/886-7217	
California			
5/23/96	Colton	Harold, AB6RN 909/825-7136 days or 909/685-6073 eves	
5/25/96	Culver City	Scott, K6PYP 310/459-0337 or Dave N3BKV 818/559-2572	p/r pref.
5/25/96	Escondido	Harry, WA6YOO 619/743-4212	p/r
5/25/96	Fairfield	Dick, AB6EY 916/791-0268	w/i pref.
5/07/96	Fremont (TP)	Greg, KJ6EP 510/791-6818	w/i only
5/25/96	Garden Grove	John, N6CTV 714/534-8633	p/r pref.
5/18/96	Petaluma	Dale, 707/762-9414	p/r pref.
5/25/96	Pomona	Don, WA6HNC 909/949-0059	p/r
5/18/96	Redwood City	Joe, KB6OWG 408/255-9000	w/i only
5/18/96	Sacramento	Lyle, AA6DJ 916/483-3293 or Phil, N6ZVA 916/338-3223	w/i
5/01/96	Sacramento	Jim, AB6OP 916/334-4887 or Larry, KD6OLN 916/361-2476	p/r pref.
5/11/96	San Pedro	Elvin, N6DYZ 310/325-2965	p/r pref.
5/08/96	Santa Ana	Red Cross, 714/835-5381 x140	w/i
5/11/96	Santa Barbara	Phil, KG6KB 805/962-8957	p/r pref.
5/18/96	Stockton	Mark, W6DKI 209/465-7496	w/i
5/11/96	Sunnyvale	John, KG6XF 408/255-9000	w/i only
Colorado			
5/11/96	Denver	Glenn, WØIJR 303/366-9689	p/r pref.
		All Colorado Exams 24-hour recording 303/360-7293	
Florida			
5/18/96	Melbourne	Bill, WB9IVR 407/724-6183	p/r pref.
Idaho			
5/11/96	Boise	Lem, W7JMH 208/343-9153	p/r pref.
Illinois			
5/18/96	Loves Park	Dennis, W9SS 815/877-6768	p/r pref.
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5/23/96	Villa Park	Lyle, WB7EED 708/325-5694	w/i pref.
Maryland			
5/28/96	Glen Burnie	Jerry, NU3D 410/761-1423	p/r pref.
Massachusetts			
5/24/96	Holyoke	Dave, N1MHP 413/592-4978	w/i
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5/03/96	Sioux City	Glen, KØTFT 712/239-1749	p/r pref.
5/31/96	So. Sioux City	Donna, NRØZ 402/494-2673	p/r pref.
New Jersey			
5/11/96	Cranford	24 hour hot-line 201/377-4790	w/i pref.
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5/08/96	Roseburg	Dick, AA7GC 541/672-7564	p/r pref.
Pennsylvania			
5/04/96	Erie	Norma, W3CG 814/665-9124	p/r pref.
Rhode Island			
5/09/96	Providence	Judy 401/454-6848 or Al, NN1U 401/231-9156 or	w/i pref.
Texas			
5/18/96	Austin	Jim, AB5EK 512/327-6184	w/i pref.
5/14/96	Houston	Harold, ND5F 713/464-9044	p/r pref.
Virginia			
5/25/96	Glouster	Harry, N4THN 804/642-3517	p/r pref.
Wisconsi			
5/04/96	Racine	Bob, WØWLN 414/886-8551	p/r pref.

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1916– SJRA started
1920 –SJRA affiliated with the ARRL and keeps right on going and going!

—See story on front page—

Five years ago, the SJRA held a 75th Anniversary dinner and it was attended by the following past presidents:

Top row (left to right): Miles Brown, W2PAU (1947); Alan Grossman, WB2BNE (1974); Joe MacMillan, W2FGY (1973); Bud Eastwick, N2AWC (1984); Tony Maugeri, W2SDO (1955); Wes Sammis, W2YRW (1954/90/91); Bruce Eichmann, KE2OP (1981).

Front row (left to right): Ed Ramming, AB2Y (1979/80/82/83/88); Joe LaMeivas, WA2WJL (1987); George Weilenmann, W2REB (1950/60); Fred Holler, W2EKB (1975); Sam Zollers, W2EWN (1956); Amor Klotzbach, N2FY (1966/1971); Frank Widmann WA2VYA, (1985/86). ***—photo courtesy of SJRA***

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Sun Valley, CA — Call plates and a stolen car

Visalia, CA — 46th Annual International DX Convention

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from the International DX convention

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Visalia, California

Photos: N6WR