

Dave Sumner, K1ZZ, ARRL Executive President

ARRL Forum

Norm Brooks, K6FO

If officials of the ARRL were not aware of it before, they heard about it at the ARRL Forum at the ARRL Southwestern Division Convention, Scottsdale, Arizona on October 10, 1987.

Division split

What? That the members in Arizona were not exactly happy with being part of the Southwestern Division. They asked questions like "What do Arizona and Santa Barbara have in common?" They wanted to be split away from California

ARRL President Larry Price, W4RA, explained that the geographical make-up of the divisions was established by the By-Laws. However, the Directors could make changes if they were so inclined. He noted that other divisions had long distances from one end of the division to the other.

He suggested that if the Arizona members would come up with a plan for reorganization, they should submit it to their Director, who would present it to the ARRL Board for a fair review. They answered that they didn't think any director would knowingly give up 3,200 members from his division.

Larry wouldn't buy that. He said he didn't believe that any Director or the Board would turn down any legitimate (please turn to page 3)

ARRL Southwestern Division Convention October 9-11, 1987

Sponsored by the Scottsdale ARC of Arizona, this convention was attended by amateurs from throughout California and Arizona. The event took place at the Safari Hotel. Honorary Chairman and Keynote Speaker was Senator Barry Goldwater, K7UGA; Southwestern Division Director Fried Heyn, WA6WZO, was the host.

Scottsdale, Arizona

Other ARRL officers present included: President Larry E. Price, W4RA: First Vice President Jay A. Holladay, W6EJJ: Executive Vice President David Sumner, K1ZZ; Vice President Leonard M. Nathanson, W8RC; and



Senator Barry Goldwater, K7UGA, was keynote speaker at the banquet.

Counsel Christopher D. Imlay, N3AKD. For more on this event, see pages 3, 14-15 and 18-19.

Amateurs aid hospitals

Joe Moell, KØOV

The importance of pre-planning was once again evident in Orange County, California, after the October 1 earthquake. Following pre-arranged plans, the Hospital Disaster Support Communications System (HDSCS) of Orange County was activated soon after the shaking stopped. Twentytwo ham members of the 60-member group checked in as they automatically went to their assigned hospitals. Some continued, and others were redirected to other hospitals by net control to balance the response.

All 29 hospitals supported by the HDSCS were checked within two hours of the temblor, either by telephone or in person. All hospitals had busy emergency rooms and most had unreliable telephones, but fortunately none suffered major structural damage.

The net continued operations for five hours following the quake, providing communications for the two Orange County hospitals which were temporarily cut off from the outside. In addition, the net handled interhospital messages between a HDSCS member hospital and two of its sister hospitals in damaged areas of Los Angeles County.

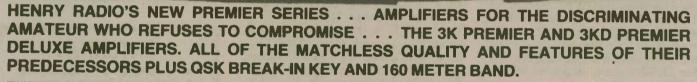
Primary net control for the HDSCS was the WD6BPT Rehab Radio station at St. Jude Hospital in Fullerton.

Eight months earlier, on February 3, HDSCS had assisted with communications when phones went out at St. Jude Hospital in Fullerton.

Just before 2 p.m., workers widening the street in front of the hospital accidentally severed the main telephone cable into the facility. For the next four hours, all external phone lines to the five-story hospital were cut off from the outside world. Telephones in a medical building across the street also failed.

Acting according to prearranged plans, HDSCS Emergency Coordinator April Moell, WA60PS, con-(please turn to page 59)





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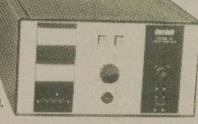
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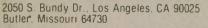
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2 WORLDRADIO, January 1988



Larry E. Price, W4RA, ARRL President

Photos by Armond Noble, N6WR



Roy Hejhall, K7QWR, Technical Advisor, ARRL Southwestern Division, is an authority on Motorola power field effect transistors. At the Southwest Division Convention, October 11, his forum on power FET's was highly technical, but delivered the message that power FET's will ultimately replace high voltage triode tubes in amateur transceivers.

ARRL Forum

(continued from page 1) proposal for selfish reasons.

At one point in the discussion, a member commented that it would be impossible to get anyone elected to national office from Arizona, as there are 12,000 other ARRL members in the division in California. Larry was able to defuse that argument quickly by pointing out that he, Larry, was elected Director from Georgia, where there are 3,000 members, with 12,000 in the rest of the division, mostly in Florida!

Of course, Fried Heyn, WA6WZO, Director of the Southwestern Division, was the host at the Forum. He introduced the other ARRL officials present at the head table: Larry Price, W4RA, President; Jay Holladay. W6FJJ, Vice President; Dave Sumner, K1ZZ, Executive Vice President: Wayne Overbeck, N6NB, Division Vice Director; Rod Stafford, KB6ZV, Director Pacific Division; and Jim Swafford, W7FF, Section Manager, Arizona.

The 220 MHz grab

When asked about the commercial interests attempting to grab 40% of our 220 MHz band, Larry answered that we are not likely to hear anything from the FCC on this, this year. In the meantime, he and other ARRL officials are going to make Congressional visits. Congress plays a key role, as they have oversight of FCC action.

The ARRL has exhausted all administrative solutions, but they're not (please turn to page 14)

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RMC Zimmerman, Deputy Director, Navy/Marine Corps MARS

False alarm

The article on page 3 of our December issue, "Contact lens alert," is apparently a hoax. Several of you have written and phoned us, kindly informing us of this. When we learn more about the facts behind this item, we'll let you know. Our apologies for the scare this may have caused among some of you.

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PUBLISHER'S MICROPHONE

STAFF

Contrary to what you may hear from other sources, Amateur Radio is NOT dying on the vine — the numbers and the rate of growth are just fine. Thanks go, of course, to the dedicated folks who are running the licensing classes. Is your club doing its part?

Recognition to our latest lifetime subscriber, G.E. McGrede, N5JDM, of Dallas, Texas,

Here's a product idea that may have a real market just waiting for it. We'll make our suggestion and see who markets it first. I'm talking about a lapel pin with one's call sign on it. The pin would be about 1" long and 1/4" high. small enough not to attract too much attention but big enough so fellow amateurs would recognize it. It would be a way to meet amateurs you don't know while standing in line at the bank or at the airport.

Received a nice letter from 86-yearold Marie Garrison, N5KGQ, of McAllen, Texas. That's one good thing about Amateur Radio - waiting for the next upturn of the sunspot cycle keeps you young.

Bob Laubach, KB3ND, of Mifflintown. Pennsylvania told us that when



his Telrex beam arrived from the factory, the wrapping around parts was made up of The Wall Street Journal and Worldrodio

Bob said his Field Day group has been using, with great success, 1/2-wave slopers. The wire comes off the tower at a 45° angle. Center conductor goes to the higher 14-wave and the shield side to the bottom quarter and aimed at the direction of interest.

He is also interested in loop antennas for 40 and 80 and would like to see some material on the bobrail curtain.

OK, Bobtail Boffins, send your experiences in to Worldradio so we can print it for him and others. Great antenna

If any radio club bulletin editors are reading this ... we'd appreciate receiving your club's newsletter. Please put us on your mail list

Also, when you start a ham class, drop us a note telling us how many students you have and we'll ship you a free sample copy for each student.

Possibly the drop out rate will lower if they read about all that Amateur Radio has to offer them.

We know that quite a few readers are retired career military. If you are one of them, drop me a note and I'll send you another publication you may enjoy. Free.

AEA has a nifty little 10M handheld. Will any manufacturer come out with the same for 20?

We're going to try to get to the 28th Annual Tropical Hamboree in Miami. Florida the first week in February.

Lots of amateurs come up to our booths at the various conventions we go to and tell us about the articles they are going to write for us. However, the old debil procrastination strikes a lot of them. Kindly watch a few less television shows and get those articles finished, please.

The ARRL's 10M Contest is mid-

December. Propagation sure is a funny thing. Why, a band can be dead a weekend before and a weekend after a contest but always magically seems to have ionized layers during the contest . . or is it that people are calling instead of just listening?

With Christmas coming soon, you might wish to make a present of a subscription to Worldradio. Certainly a gift worth more than the price!

I just released the button and am ready to listen to you.

-ARMOND, N6WR

Who is reading WORLDRADIO? You are, of course. But there are others. Here is a list of the DX locations in which WORLDRADIO currently has subscribers.

Australia **Ivory Coast** Argentina Japan Bahamas Malaysia Belgium Mexico Belize **Bolivia** Brasil British West Indies Canada Colombia Denmark Ecuador England Fiji Finland France **French Polynesia** Germany Guam Guatemala Greece Hong Kong India Indonesia Ireland Israel Italy

Netherlands Netherlands Antilles New Guinea New Zealand Nicaragua Norway Panama Philippines Pitcairn Portugal Puerto Rico Saudi Arabia Singapore South Africa Spain Sri Lanka Sweden Virgin Islands Yugoslavia Zimbabwe AL7 and KH6, too

Do you have an overseas friend you would like to send a radio-related gift, but are concerned about foreign postal regulations or customs charges?

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lite tracking function (normal *and* reverse modes) keeps you on target through a transponder.

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And to custom design your FT-736R station, choose from these popular optional accessories: Iambic keyer module. FTS-8 CTCSS encode/decode unit. FVS-1 voice synthesizer. FMP-1 AQS digital message display unit. 1.2-GHz ATV module. MD-IB8 desk microphone. E-736 DC cable. And CAT (Computer Aided Transceiver) system software.

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Fred Dietrich, NM6J, has a Ph.D. in antennas and works for a top defense contractor. If you've got a question, *he's* got the answer!

Pacificon

On a Saturday or Sunday in October, one could drive to the mountains, go to a ball game or just laze about the house. But there's an Amateur Radio convention and the program chairman has asked you to conduct a seminar. Naturally, you say yes.



Dick Letrich, WB6WKM. He helped Novices weave their way through the equipment on the market to enable them to make the right choice for their particular interests.





Lloyd Brubaker, WA6KZV, has been teaching ham classes since 1961. He tells newer teachers what he's found that works and what doesn't.

the ham spirit

You will have an hour, so you start to prepare. Let's see now ... an hour of talk takes about 9,000 words that's about the same number of words in seven pages of a magazine article with no pictures. Time to burn the midnight oil!

... and that's how hams show up to share their hard-earned knowledge with others.

What's your interest field? Well, if it's: propagation, angle of radiation, low-band antennas, RTTY, OSCAR,



Jan O'Brian, K6HHD, the better half of the "W6GO/K6HHD QSL Manager List," gave the straight scoop on how to *really* get a QSL from the rare ones.

ATV, FAX, repeaters, public service, emergency operations or possibly needing some good RFI-TVI help ... you'll find the answer at a convention.

This particular function — typical of the nationwide gatherings — was the Pacific Division Convention, held right in the heart of Silicon Valley.

The remuneration for the speakers? It's the little glow one gets when a fellow amateur says, "I really enjoyed your talk." -N6WR





Walt Miller, AJ6T, brings a lot of engineering knowledge to the forum but explains packet in a way that we can understand.



Mark Nelson, AA6DX, on the air from several DX locations, explained how to get your feet wet in contesting.



Rush Drake, W7RM, Northwestern Division ARRL Director, traveled from Washington to California to share what he has learned about DXing in 54 years on the air (and that's a lot!).

> Photography by Armond Noble, N6WR

Central OTH radar delayed

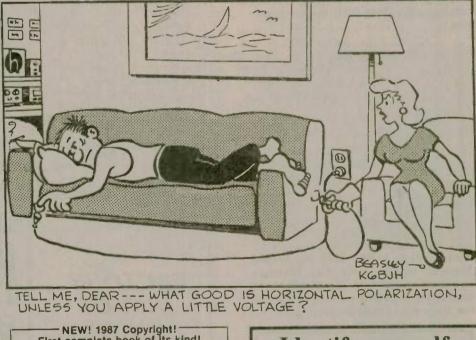
Local opposition from residents in North Dakota, South Dakota and Minnesota has delayed construction of the Central sector of the OTH radar. The Secretary of the Air Force decided in late May where to locate the receiver and transmitter.

Candidate sites for the receiver are Blanchard, North Dakota and Thief River Falls, Minnesota. Candidate sites for the transmitter are Wheaton, Minnesota and Amherst, South Dakota. The operations center will be located at the Grand Forks Air Force Base. Figuring the short building season in the northlands, this opposition has set back construction at least one year.

Col. James Lee, a radar system program director, said the Air Force received more than 800 letters from concerned citizens in these areas. Most opposition was a direct result of the large amount of rich farm land which would be taken out of production. Each site would require more than 2,400 acres of land (a square nearly 2 miles on a side). The Central radar will complement identical systems on the East and West Coasts and another that is planned for Alaska. The Central radar is designed to detect, track and provide early warning of aircraft and cruise missiles approaching from the south or from near-shore areas off the East, West and Gulf Coasts.

These four radars have similar sweeping operation in the 5 to 28 MHz spectrum. There is one big difference, however, that the ham community should note. The surveillance zone of the Central radar spans a 240° arc, which means the entire lower 48 states are in the path of this radar signal.

NJØB has an information letter describing this Central radar. The letter includes a photo of the receiving antenna, diagram of transmitting antenna layout, as well as an illustration of the backscatter propagation paths. For a copy of the letter, send \$1 for postage and handling to Keith Seaver, NJØB, Box 241, Portland, ND 58274.

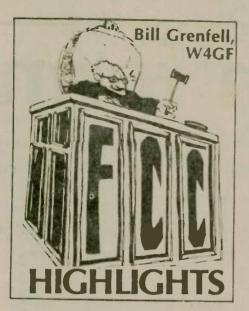


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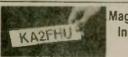
quotations.



The reallocation of the 220-222 MHz band to the land mobile industry is unnecessary and would result in underutilization of the band according to the Society of Broadcast Engineers (SBE) in their Reply Comment on FCC's General Docket 87-14 proposal. "The Commission's assumption that the land mobile industry needs this additional spectrum is unfounded," said the SBE. FCC has denied a request for re-consideration of its petition for use of 500 kHz of the 220-225 MHz band. filed by the Association of Radio Reading Services in Docket 87-41 last February.

On October 21, the FCC adopted a Memorandum, Opinion and Order dismissing five petitions for reconsideration of its 1987 Docket 86-161 Order expanding Novice operator privileges. Also included in the Order was denial of a request to permit Advanced Class Volunteer Examiners to conduct General Class examinations.

By its action on October 5, the three Region 12 Volunteer Examination Coordinators (VEC's) were advised by FCC that accreditation of all Volunteer Examiners (VE's) for the region had been cancelled ". . . because of widespread irregularities occurring in the Volunteer Examiner system in Puerto Rico." As of early November, an FCC official advised that the reaccreditation process for that area was already underway.



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The amendment to the Communications Act which permits FCC to delegate examinations for amateur operator licenses to volunteers also provices for delegation of monitoring amateur activities to amateur licensees. FCC's Field Operations Bureau has an agreement with the ARRL whereby necessary monitoring tasks are turned over to ARRL's "Amateur Auxiliary to the FCC's Field Operations Eureau." (QST, October, November 1987, page 14)

FCC has proposed to amend its Part 15 Rules to allow unlicensed RF devices to radiate as much as 50-250 mV/meter in all or part of the 902, 2390, 5650 MHz and the 24 GHz amateur bands. Currently such radiation is not permitted.

An FCC engineer advised that the user of a Part 15 device is required to correct any interference caused by the operation of the device. "Part 15 operators have no status. They will be required to take the device off the air." Original comments on this Docket 87389 rule making were due December 4, 1987, and reply comments by January 4, 1988. (W5YI Report, 10/15/87) FCC, RM6094 and RM6095, which request amendment of rule sections having to do with amateur operator license examination code tests: Amend Section 97.21/b) "to permit. but not require, telegraphy tests to contain all the letters of the alphabet, numerals 0-9, punctuation and pro signs" and Section 97.29(c) "to provide a telegraphy test period of a minimum of (rather than exactly) five minutes."

FCC's PRB-1 Declaratory Order has been used by a federal judge to decide in favor of a Sands Point, New York amateur licensee whose 86' antenna tower had been denied as a variance of a local ordinance which limits the height of accessory structures, including antenna towers, to 25 feet. The judge said that: "An absolute limitation of height affects (the amateur's) right to the full use of his amateur Extra Class beense and the license to use his property as an Amateur Radio station issued by the FCC." Now the amateur and the soning board must renegotiate his antenna height. (ARRL Letter, 10/07/87)

END-OF-MONTH LICENSE TOTALS

MICHIGH ICHALLS			
	August	1987	September
	42,914	Extra	43,214
	98,114	Advanced	98,147
	114,737	General	114,428
	90,675	Technician	91,633
	83,238	Novice	82,779
	429,678	Totals	430,201

Two petitions have been filed with

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 November 1, 1987.

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

Radio District	Group A	Group B	Group C	Group D
	Am. Extra	Advanced	Tech./Gen.	Novice
0	WC0J	KEØRG	NOIQG	KBØBHU
1	NN1R	KC1GT	N1FHI	KAIRDM
2	WA2U	KE2DA	N2HRD	KB2EMW
3	NM3D	KD3FF	N3FVR	KA3SHB
4	AB4EJ	KK4ST	N4RLG	KC4CCE
5	AA5DJ	KG5FC	N5LOT	KB5EOP
6	AA6FG	KJ6AJ	NGOVN	KB6UME
7	WG7Q	KF7EQ	N7KBH	KB7DAK
8	NZ8A	KE8OM	NRIXH	KB8DHW
9	NV91	KE9HB	N9GZU	EA9ZOJ
N. Mariana Is.	AHOE	AHØAC	KHØAI	WHOAAH
Guam	KH2G	AH2BR	KH2CZ	WH2ALF
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is		AH4AA	KH4AD	WH4AAF
Palmyra, Jarvis Is.	AH5A			
Hawaii		AH6IP	NHOMP	WH6BVD
Kure Is.			KH7AA	
American Samoa	AH8C	AH8AD	KH8AE	WH8AAW
Wake Wilkes Peale		AH9AC	KH9AD	WH9AAH
Alaska		AL7JH	NL7LO	WL7BPP
Virgin Is.	KP2T	KP2BK	NP2CG	WP2AFS
Puerto Rico		KP4OL	WP4MM	WP4HPX
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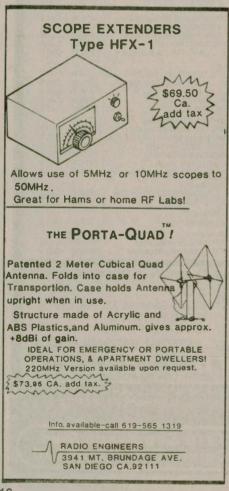
Bicentennial

In conjunction with National Bicentennial of the Constitution activities and the special "We the People" WAS Award, the Bethel Educational Amateur Radio Society (BEARS), will be operating KZ1Z (KZ200Z), on all HF frequencies, using SSB, CW, packet, RTTY and SSTV modes, in both the General and Novice portions of the bands, during the week of January 9-15.

QSL, with SASE, to: BEARS, Bethel Middle School, 1 School St., Bethel, CT 06801.

Hall of Science

The Hall of Science ARC will operate club station WB2JSM, a permanent Amateur Radio exhibit at the Hall of Science, on January 24, from 1500 to 2100 UTC to celebrate our 15th anniversary. SSB - 14.265,



21.365 and 28.365. CW - 21.135 and 14.065.

For certificate, QSL with large

Gold discovery

The El Dorado County ARC will commemorate the California gold discovery at Coloma by operating a special event station. The club will operate N6MYH from 1600Z, January 24 to 0400Z, January 25, to recognize James Marshall's discovery of gold in the tailrace of Sutter's Mill on January 24, 1848.

Operation will be in the lower 25 kHz of the 40, 20 and 15M General phone bands and the 10M Novice band. CW operation will be around 7.050, 14.050 and limited operation near 7.125 MHz.

SASE (44¢ or 1 IRC) to Arnie Schiffman, WB2YXB, 81-22 250th St., Bellrose, NY, 11426.

The station will be in the Ponderosa Campground and is the first year of an expected annual event. There is much enthusiasm on the part of the club members, and everyone expects to spend an enjoyable day along the American River.

Special QSL cards will be mailed to those sending QSL's and SASE's to the El Dorado County ARC, P.O. Box 451, Placerville, CA 95667; or N6MYH, 1073 Gold Hill Ct., Placerville, CA 95667. — Merv de Haas, WA6LYE



Cub Scouts from Springfield, New Jersey Pack 73, Den 4 (left to right): John Maudsley; Paul Gerber; Adam Seidel; Shaun Raviv; Eric Deutchman, WB2LMW; Adam Apirian; Scott Seidel, WA2WUX; and Chris Cariello. Amateur Radio station in background. (Photo by Ron Scull, WA2QNZ)



Cub Scouts on the air

Cub Scouts from Springfield, New Jersey Pack 73, Den 4 participated in the 30th Annual Jamboree On The Air (JOTA), an annual event sponsored by the World Bureau of the World Organization of the Scout Movement. The JOTA was held worldwide on October 17-18.

Thousands of Amateur Radio stations around the world invited local scouts to visit their homes and par-

ticipate in the operation of their ham radios. The ham operators established contact with other participating national and international ham operators who also had scouts visiting their "ham shacks." The scouts got a chance to talk to their fellow scouts hundreds or thousands of miles away. Typical information exchanged consisted of location, scout rank, name, hobbies, etc.

In Springfield, New Jersey on October 17, Amateur Radio operators Ron Scull, WA2QNZ; Eric Deutchman, WB2LMW; and Scott Seidel, WA2WUX, invited scouts from Pack 73, Den 4 to Seidel's home to participate in the Jamboree. After viewing the new videotape produced by the ARRL, *The New World of Amateur Radio*, the scouts got a first-hand experience with Amateur Radio.

Stations were contacted via 10 and 15M SSB in Minnesota-KDØCL, Montana-KA7HUO and Edmonton in the Province of Alberta, Canada-VE6BSC. Equipment used was a Yaesu 767GX and a 4-band vertical. The scouts of Den 4 talked directly with scouts from the other states as well as "Adventurer" Scouts in Canada.

Inspiring youngsters

LeRoy Ullrich, WAØLMK, and Arnold Sexe, WBØOPZ, demonstrated Amateur Radio at the junior high school for two days in their science classes. One day transceivers were demonstrated and Amateur Radio was discussed. On the second day the video from ARRL, Amateur Radio's Newest Frontier, was shown and the Archie's Ham Radio Adventure from ARRL was given to each student.

A sample code lesson was also demonstrated to show that code is not all that difficult to learn. -Worthington ARC

ICOM	KENWOOD YAESU
Figure Production List June Name Name Name Name Name Name Na	HF Equipment List Juns FT 39405/AT Gen. Cvg Xcvr S2249.95 Call S TS-9405/AT Gen. Cvg Xcvr 2049.95 Call S TG 3905/AT Gen. Cvg Xcvr 1049.95 Call S TS-9405/AT Gen. Cvg Xcvr 1049.95 Call S TG 390.94.71 Gen. Cvg Xcvr 109.95 Call S TS-4005/AT Gen. Cvg Xcvr 109.95 Call S TG 3405/AT Gen. Cvg Xcvr 109.95 Call S TS-405/AT Gen. Cvg Xcvr 1199.95 Call S TG 480.91 Gen. Cvg Xcvr 1079.95 Call S TS-405/AT Gen. Cvg Xcvr 1199.95 Call S TG 480.01 Gen. Cvg Xcvr 1079.95 Call S TS-405/AT Gen. Cvg Xcvr 1199.95 Call S TG 480.01 Gen. Cvg Xcvr 1079.95 Call S TS-4005 AG n. Wobik 42.30 MHz 899.95 Call S TG 480.00 Gen.050 MHz 679.95 Call S TS-711A All Mode Base 25w 899.95 Call S TT 2070RH FM Mobile 45w 439.95 Call S TM-250A FM Mobile 25w 299.95 Call S TT 7070RH FM Mobile 25w TB Call S TT 7070RH FM Mobile 25w TB Call
IC-37A FM Mobile 25w 499.00 Call S IC-3AT FM HT 339.00 Call S IC-03AT Deluxe HT 449.00 Call S IC-12 GHz IC-1271A All Mode 10w 1229.00 Call S IC-120 1w, FM, Xevr 579.00 Call S IC-12AT Deluxe 1w HT 459.00 Call S IC-12AT Deluxe 1w HT 459.00 Call S	TM:3530A FM 220 MHz 25w TH:31BT FM. 220 MHz HT 449.95 269.95 Call S Call S FTR:2410 2m Repeaters FTR:5410 70cm Repeaters 1249.95 1289.95 Call S JUN'S BARGAIN BOX SPECIALS-THIS MONTH ONLY YAESU FT:727R, 2m/70cm HT FT:726R FT:
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VE exam schedules

As a service to our readers, Worldradio presents a feature listing those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is two months in advance. For example, if your VE group is scheduling an exam for September, please have the information to us by mid July.

Our address is Worldradio, 2120 28th St., Sacramento,

CA 95818. Please mark the envelope "VE Exams".

List the location, and information examinees should have (advance registration, etc.) and the name and telephone number of a person to contact for futher information.

p/r = pre-register

w/i = walk-in

Date	City	Contact	Notes	Date
Califo	rnia			Mo
Jan 2	Burbank	W6JEP (818) 848-9340	w/i OK	Jan 1
Jan 2	Eagle Rock	WB6PSY (818) 710-1705	w/i	o tati i t
Jan 30		N6JFG (213) 258-9127		Nev
Jan 2	Van Nuys	(818) 988-7165		Jan 14
Jan 9	Apple Valley	K6BET (619) 244-6080	w/i OK	
		WB3KMZ (619) 240-2025		Ohi
Jan 9	Los Altos Hills	KG6XF (408) 255-9000	24-hr. p/r	Jan 9
Jan 9	Orange	KD6DA (213) 691-1514	p/r; 15 w/i	Jan 9
Jan 9	Palm Springs	(619) 347-4294		Jan 23
Jan 9	Vandenburg AFB	(805) 937-4220		
Jan 9	Santa Barbara	(805) 968-6364		Ore
Jan 9	Downey	(213) 869-6683		Jan 21
Jan 9	San Marcos	(619) 749-0276		
Jan 16	Palos Verde	(213) 644-2271		Peni
Jan 16	Carmel	KX6D (408) 624-2564	w/i OK	Jan 7
Jan 17	Sunnyvale	W6NLG (408) 255-9000	24-hr. p/r	
Jan 19	El Toro	(714) 951-0336		
Jan 20	Eureka	KB6FIW (707) 442-9245	w/i OK	Teni
Jan 21	Fountain Valley	(714) 775-6095		Jan 9
Jan 23	Hawthorne	(213) 316-2758		-
Jan 24	Napa	W6DNY (707) 224-1530	7-day p/r;	Texa
Jan 25			some w/i	Jan 9
	Montclair	(714) 983-1272		Jan 9
Jan 28	Long Beach	(213) 434-8278		
Colora	do			Utah
Jan 2	Littleton	NA 61 (000) 50 (0 (00		Jan 20
Jan 2	Denver	NAØL (303) 794-2432	w/i only	1/-
Jan 5	Denver	WØIJR (303) 366-9689	p/r pref	Vern
Florida				Jan 16
Jan 16	a Melbourne	WDOLUD (005) 504 CLOS	" OV	14/
an 10	Melbourne	WB9IVR (305) 724-6183	w/i OK	Was
Illinois				Jan 9
lan 9	Oak Forest	NEON (210) 449 0420	- CT	
Jan 21	Chicago	NF9N (312) 448-9432 W9WBY (312) 929-6550	w/i OK	Vine
1011 21	Cincago	W 9 W D I (312) 929-0350		Virgi
lowa				Jan 16
an 15	Sioux City	KØTFT (712) 239-3053	20 1	
Feb 26	SIOUX OILY	NF0N (402) 494-6070	30-day p/r;	Feb 6
60 20		141 014 (402) 494-0070	some w/i	14/:00
Kansas				Wisc
an 16	Olathe	NKAD (019) 764 6947		Jan 9
an 29	Kansas City	NKØB (913) 764-6347	p/r pref	Jan 9
an 29	Topeka	NC0M (913) 262-0631	p/r pref	
011 23	торека	NAØF (913) 828-3317	p/r pref	

Date	City	Contact	Notes
Monta Jan 18	ana Billings	N7ATT (406) 656-5776	w/i
New J Jan 14	U	WA2VQG (609) 546-7710	w/i OK
Ohio Jan 9 Jan 9 Jan 23	Maumee Columbus Milford	KU8B (419) 729-5245 K8NIO (614) 864-8370 AC8M (513) 831-4921	p/r pref
Orego Jan 21	n North Bend	WA7PHI (503) 756-6846	30-day p/r
Pennsy Jan 7	Levittown	K3TX (215) 946-1040 KY3J (215) 295-5787	w/i OK
Tennes Jan 9	SSEE Memphis	WD4LFD (901) 386-4375	2-day p/r
Texas Jan 9 Jan 9	Harlingen Midland	WA2VJL (512) 399-0328 KT5G (915) 694-9450	w/i w/i OK
Utah Jan 20	Salem	KF0Q (801) 423-2506	
Vermo Jan 16	nt Montpelier	WB1AJG (802) 433-6172	p/r pref
Washir Jan 9	ngton Pasco	NY7T (509) 297-4294	w/i only; call
Virgini Jan 16	a Richmond	WU4G (804) 798-5191	
Feb 6	Middletown	NC4B (703) 869-5241	p/r by 1/4; no w/i 30-day p/r;
Wiscor Jan 9 Jan 9	Fox Point Wauwatosa	KB9G (414) 351-5311 W9SNK (414) 781-8616	some w/i p/r pref 10-day p/r;

Radio gives him head start

How many people could say they had graduated from college by the time they were 19? Probably very few. Jonas K. Lodge, WB3EUJ, of Wilmington, Delaware is one of those few.

On June 1, 1986, Jonas received his college diploma from the University of Delaware at the age of 18 - a year after receiving his high school diploma from Sanford School.

This young electrical engineer attributes much of his academic success to his interest in Amateur Radio.

"I received my Novice ticket at the age of 8," Jonas says. "I upgraded to General two years later. I now hold an Advanced license.

"My first introduction to electronics was through Amateur Radio. I feel that starting in Amateur Radio has helped me get my degree and gave me a great advantage over my non-Amateur Radio classmates.

"Amateur Radio is now a part-time hobby as I work toward my masters degree in the field of RF microwave and composites." — Information submitted by Jonas K. Lodge, WB3EUJ

Vail code?

Samuel Morse, inventor of the telegraph, was born on April 27, 1791. Morse is often credited with devising the pattern of dots and dashes known as Morse code. But some say his partner, Alfred Vail, deserves the credit.

Morse wanted to assign every English word a different number and use a space to separate each numberword during transmission. An apprentice claimed that it was Vail who developed the "dash" to be used along with dots in an alphabet code. -Porter County ARC, Valparaiso, IN

MFJ'S BEST 300 WATT TUNER HAS A CROSS-NEEDLE METER THAT READS SWR, FORWARD



MFJ's best 300 watt tuner is now even better! MFJ-949C The MFJ-949C all-in-one Deluxe Versa Tuner II gives 95 you a tuner, cross-needle SWR/Wattmeter, dummy load,

A cross-needle SWR/Wattmeter gives you SWR, forward and reflected power - all at a single glance. SWR is automatically computed with no controls to set. 30 and 300 watt scale on easy-to-read 2 color lighted meter (needs 12 V). A handsome black brushed aluminum cabinet matches all the new rigs. Its

compact size (10 x 3 x 7 inches) takes only a little room.

You can run full transceiver power output -- up to 300 watts RF output - and match coax, balanced lines or random wires from 1.8-30 MHz. Use it to tune out SWR on dipoles, vees, long wires, verticals, whips, beams and quads. A 300 watt 50 ohm dummy load gives you quick tune ups and a versatile

six position antenna switch lets you select 2 coax lines (direct or thru tuner), random wire or balanced line and dummy load.

A large efficient airwound inductor -- 3 inches in diameter -- gives you plenty of matching range and less losses for more watts out. 100 volt tuning capacitors and heavy duty switches give you safe arc-free operation. A 4:1 balun is built-in to match balanced lines

Order your convenience package now and enjoy.

antenna switch and balun in a compact cabinet. You get MFJ 12/24 HOUR LCD CLOCKS -111 13:00

MFJ-107 \$9.95 MFJ-108 \$19.95 Huge 5/8 Inch bold black LCD numerals make these 24 hour LCD clocks a must for your ham shack. Choose from a dual clock that displays UTC

and local time or the single unit that displays 24 hour time. Mounted in a brushed aluminum frame, these clocks feature 5/8 inch LCD numerals and a sloped face for easy across the room reading. Both also feature easy set month, day, hour, minute and second functions that can be operated in an alternating time-date display mode. MFJ-108, 41/2x1x2

inches; MFJ-107, 21/4x1x2 inches. Battery included MFJ-962B VERSA TUNER III



MFJ-9628 S229.95

Run up to 1.5KW PEP and match any feedline continuously from 1.8 to 30 MHz: coax, balanced line or random wire.

Lighted Cross-needle Meter reads SWR, forward and reflected power in one glance. Has 200 and 2000 watt ranges. 6 position antenna switch handles 2 coax lines, random wire and balanced lines. 4:1 balun. 250 pf, 6 kv variable capacitors. 12 position ceramic Inductor switch. Smaller size matches new rigs: 103/4 x 41/2 x 14 7/8 inches. Flip stand for easy viewing. Requires 12V for light.

MFJ RANDOM WIRE TUNER

MFJ-16010 \$39.95 MFJ's ultra compact 200 watt random wire tuner lets vou



operate all bands anywhere with any transceiver using a random wire. Great for apartment, motel, camping. Tunes 1.8-30 MHz. 2x3x4 inches.

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REMOTE ACTIVE ANTENNA 54 inch remote active antenna mounts outdoor away from electrical noise for maximum signal and minumum noise pickup. Often outperforms longwire hundreds of feet long. Mount anywhere-atop houses, buildings, balconies, apartments, ships. Use with any radio to receive strong clear signals from all over the world. 50 KHz to 30 MHz. High dynamic range eliminates intermodulation. Inside control unit has 20 dB attenuator, gain control. Switch 2 receivers and auxiliary or active

antenna: "On" LED. 6 x 2 x 5 in. 50 ft. coax. 12 VDC or 110 VAC with 点 王 章 CROSS-NEEDLE

SWR/WATTMETER MFJ's cross-needle

SWR/Wattmeter gives you SWR, forward and reflected power -all at a single glance! SWR is automatically



computed -- no controls to adjust. Easy-to-use push buttons select three power ranges that give you QRP to full legal limit power readings. Reads 20/200/2000 W forward, 5/50/500 W reflected and 1:1 to 1:5 SWR on easy-to-read two color scale. Lighted meter needs 12 V. ±10% full scale accuracy. 61/2x31/4x41/2 inches

COMPACT SPEAKER MFJ-280 \$18.95 Mobile speaker. Tilt bracket on magnetic base. 31/2 mm phone

plug. Use with 8 and 4 ohm impedances. Handles 3 watts audio HANDHELD TELESCOPING

ANTENNAS WITH BNC MFJ-1710, \$9.95, 3/8 wave 2 meter. Pocket clip. 53/4" - 241/2" MFJ-1712, \$14.95, 1/4 wave 2 meter; 5/8 wave 440 MHz, 71/4" - 19" MFJ-1714, \$16.95, 1/2 wave 2 meter. End-fed halfwave dipole. Shorter,

lighter, more gain, less stress than 5/8 wave mounted on handheld. When collapsed it performs like rubber duck.



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ARRL Forum

(continued from page 3)

willing to let it go at that. They're going to keep pressure on the FCC through Congress. They are making this a maximum effort because in the long run, they don't want to indicate to the commercial interests that amateur frequencies are a good place to poach. He suggested that we amateurs, too, should be writing to our Senators and Congressmen if we have not already done so.

Novice enhancement

The expansion of Novice privileges seems to be working out well. There is much excitement and interest shown on 10M. Also, during the VHF contest there were a lot more people to work on 223.5, the simplex frequency available to Novices.

Federal fees

Questions were asked about the Forest Service charging for use of mountain tops for repeaters, and the like. The answer lies with the policy of the present administration — that users should "pay their way." For example, if the Coast Guard gives you gas or makes a tow, you are sent a bill.

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Region by region, the Forest Service has been filing notices of intent to charge fees for repeater sites. Actually, a lot of repeater owners have been paying such fees for a long time. ARRL will ask that those fees be kept as low as possible. Senator George Mitchell has a pivotal role in this, and has helped reduce some outrageous fees that were proposed.

Mexico and 420 MHz

At a WARC Convention in Geneva recently, Mexico proposed to take the lower portion of the 420-450 MHz band for commercial use. Of course, any country can make changes in its domestic use of UHF frequencies, as long as there is no international in-



California residente adri 6% sales tax. / UTCTRACK^{mi}ls a trademark of N H Enterprises. terference. In this case, they would have to coordinate with our FCC.

Any threat to change amateur regulations is a scary thing, and must be watched carefully. In this case, the Mexican proposal should have no effect on amateurs in the United States.

Call sign contractor

Lou McCoy, W1ICP, Technical Editor of CQ Magazine, asked if the ARRL had a plan of operation if it did become the Call Sign Contractor for FCC. Larry said the League felt that it did not have to file those details with the FCC at this time.

The League told the FCC that it, the FCC, should really do the job. But if the FCC insists on contracting the work out, then the ARRL should be the contractor because it is a national organization, and it is run by duly elected representatives.

As to details, Larry said he didn't want to be held to these figures, but that he thought the fees might be about \$25. Old-timers remember that the FCC once charged \$25 for a special call, along with the regular fee of \$9.

Larry believes that if you once held a now unused call, there should be a one-shot time (say, six months) that you would be able to get it back. After that, it would be up for grabs.

To keep workload down, we may be required to apply by groups, so all would not apply at the same time. Postmark dates would be important. Where two or more amateurs apply for the same call on the same date, their names would be drawn by lot. Better, applicants should make first and second choice selections.

The Hildebrand Case

The FCC has announced it will move against any amateurs breaking obscenity rules. Has anyone heard of this taking place? No one in the audience could respond to this question.

Members reported that volunteers in the Official Observer Auxiliary service are getting frustrated when they report citations for obscenities.

Somewhere along the line, the FCC is going to have to "put up or shut up!"

New ARRL building

A member asked for a progress report on the "new ARRL headquarters building." Larry Price said the intent was not a headquarters building, but to develop a visitors center, including a museum, souvenir shop, meeting rooms, etc. An architect's concept was shown at Dayton and put on the cover of QST.

Membership reaction was that we couldn't afford to finance this project out of existing revenue sources. Testing the waters showed that financial support was not present.

The League has embarked on a project to refurbish W1AW, checking the building's structure. Hopefully, this will be completed by 1989, in time for ARRL's Diamond Jubilee - 75th birthday.

See you at Disneyland

Fried Heyn, WA6WZO, announced that next year's Southwestern Division Convention would be held at the Disneyland Hotel, Anaheim, California, on Labor Day weekend. We'll see you there!

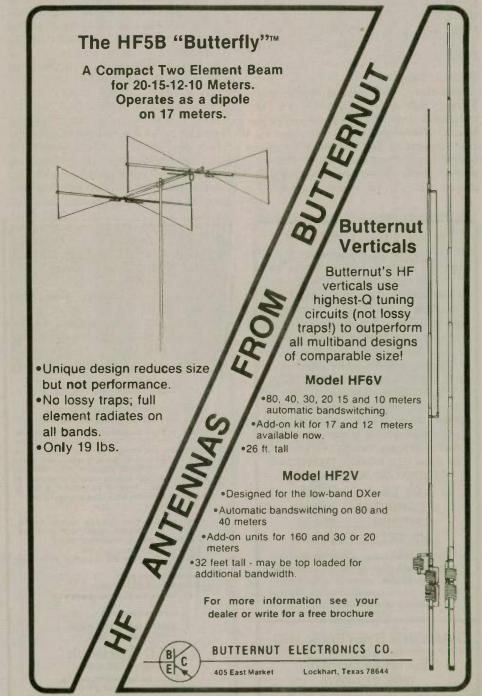


Look! I just won a one-year subscription to *Worldradio*! And I'm a life member already!





Anne Wright, N6BOP (center), sells hats and shirts with personalized calls.



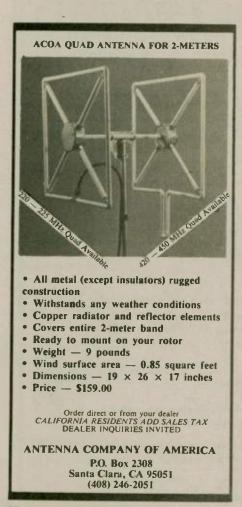
Hams at scene of Spokane fires

Kyle Pugh, KA7CSP

On Wednesday, July 15, Vern Wright, N7BGG, and Kyle Pugh, KA7CSP, were enjoying a cup of coffee at Ferraro's Donuts — their favorite afternoon rendezvous spot. Kyle noticed a billowing cloud of black smoke emanating from the northeast side of Spokane, Washington. After a few more minutes of coversation, Vern and Kyle left the donut shop. The time was 3:45 p.m. As Kyle drove south toward downtown Spokane, he noticed another large cloud of gray smoke south of town.

Soon after the Spokane Fire Department was dispatched to the northeast fire, Don Myers, WB7VSZ, received a phone call from the Spokane Chapter of the Red Cross requesting that an Amateur Radio operator be dispatched to that fire and to the Red Cross chapter headquarters. Joe Qualtieri, KE7PI, went to the fire site while Wayne Beasley, N7ICS, set up communications from the radio room at Red Cross HQ.

Don Landron, K811J, assisted at the fire south of Spokane, in the Hangman Hills area. This fire was much more



serious than the other one, threatening a nearby housing development and a golf course. In a matter of a few hours, close to 1,000 acres of dry timber and grassland and 24 homes went up in smoke, with a dozen or so other homes damaged.

At about 6 p.m., after arriving home and monitoring the Emergency Services repeater on 147.90/30, Kyle, an Assistant Emergency Coordinator, activated a standby alert on the repeater and acted as Net Control to help coordinate many hours of tactical, pointto-point communications on 2M that followed, involving over a dozen hams.

Also around this time, Jim Colville, WB7AVD, and Chuck Vyverberg, WB7NNF, went to locations near the fire to help a deputy sheriff with traffic control.

Emergency Coordinator Martin (Marty) Hibbs, WB7RBJ, proceeded to a local high school where the Red Cross set up an emergency shelter. Marty, aided by Don Myers, WB7VSZ, and Joe Qualtieri, KE7PI, who came from the other fire, reported the shelter was operational with food and medical supplies by 7:25 p.m.

Donations of food and clothing from people, and companies like McDonald's, Pepsi and Domino's Pizza kept pouring into the Red Cross, and food and assistance also came from the Salvation Army. The Sacred Heart Mospital offered shelter space.

Howard Platter, N7AMB, helped one family with shelter. Pete Killingsworth, KD7WZ, whose family was evacuated was kept informed by the Amateur Radio net. Fortunately, his home was undamaged.

As the hours ticked by, Barbara Walli, N7JGK, relieved Wayne, N7ICS, at the chapter at midnight, and Don Myers, WB7VSZ, and Dan Landron, K8IIJ, remained on duty all night with the Red Cross for communications.



World Radio History

At 7 a.m. the next morning, residents were tearfully escorted to their homes by the sheriffs. Bill Ingraham, KA7LFY, came on to relieve Don Myers at the high school shelter, and Bill Dahlin, KA7PID, relieved Dan Landron. The shelter was secured at noon.

Losses ran into the millions, with one insurance company having 12 destroyed homes with a potential loss of \$2.5 million. Fourteen fire districts fought the fire, and more than 100 residents were forced to evacuate, but there were no injuries. Officials said damage was higher than any other Washington fire in more than a decade. The fire story made national newscasts on the major television networks.

Thanks to all those above-mentioned hams who helped, and thanks to those who stood by the frequency ready to offer additional assistance if needed; you helped by keeping the frequency clear. Good job, all!

Solar-powered test

The Los Angeles County Sheriff's Department Disaster Communications Service (DCS) at the Malibu Sheriff's station conducted a 24-hour emergency exercise during the same period as Field Day last year -11a.m., June 27 to 11 a.m., June 28.

This was the second year the DCS Unit conducted the exercise, using only solar power for electricity. The solar panels were made by Arco Solar and were furnished to the Malibu Unit by Henry Radio of West Los Angeles. About 50 panels were utilized to provide power for the exercise. Large batteries were charged to provide power to the radios for nighttime use.

The exercise was held on the grounds of the Circle X Ranch, formerly owned by the Boy Scouts of America, and now a part of the Santa Monica Mountain Conservancy. The ranch is located about 55 miles from the center of Los Angeles and about 5½ miles from the Pacific Coast Highway.



New PK-232 Breakthrough

Six Digital Modes - Including Weather FAX

PAKRATT 232



A new software enhancement makes the AEA PK-232 the only amateur data controller to offer six transmit/receive modes in a single unit.

Model PK-232

- * Morse Code
- Baudot (RTTY)
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- * AMTOR
- * Packet
- * Weather FAX

\$319⁹⁵ AMATEUR NET \$379.95 AEA RETAIL

Your home computer (or even a simple terminal) can be used for radio data communication in six different modes. Any RS-232 compatible computer or terminal can be connected directly to the PK-232, which interfaces with your transceiver. The only program needed is a simple terminal program, like those used with telephone modems, allowing the computer to be used as a data terminal. All signal processing, protocol, and decoding software is in ROM in the PK-232.

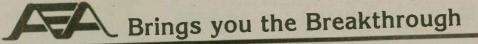
The PK-232 also includes a no compromise VHF/HF/CW modem with an eight pole bandpass filter, four pole discriminator, and 5 pole post detection low pass filter. Experienced HF Packeteers are reporting the PK-232 to have the best Packet modem available.

Operation of the PK-232 is a breeze, with twenty-one front panel indicators for constant

status and mode indication. The 240 page manual includes a "quick start" section for easy connection and complete documentation including schematics. Two identical back panel radio ports mean either your VHF or HF radio can be selected with a front panel switch. Other back panel connections include external modem disconnect, FSK and Scope Outputs, CW keying jacks, and RS-232 terminal interface.

The RS-232 connector is also used for attaching any Epson graphics compatible parallel printer for printing Weather Fax. Weather maps and satellite photos, like the one in this ad, can be printed in your shack.

Contact your local AEA dealer today for more information about the one unit that gives you six modes for one low price, the PK-232.



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MARS Forum

Norm Brooks, AAR9NI/K6FO

Larry Warren, AAA9A, Chief Army MARS, was the featured speaker at the MARS Tri-Service Forum at the Southwestern Division ARRL Convention at Scottsdale, Arizona, October 10, 1987. He represented all the MARS Chiefs — Army, Air Force and Navy/Marine Corps.

"It's difficult to keep from bragging when I'm talking about MARS," he bragged. "We had a MARS Chiefs' panel in Washington last week. We told each other where we were going, what we were doing right, and what we were doing wrong. Some groups are moving forward on one item, others on another. Overall it's a great picture.

"A year and a half ago, we asked ourselves what it would take to make ourselves look attractive at conventions such as this. What would cause people to stop at our booth? Today you can see our new display unit. It was delivered from the factory directly to here, yesterday p.m. It looks First Class! And I'm tired of looking second class.

"At the Dayton Hamvention last spring, Major General Overacker spoke to us. The Air Force audiovisual people made a videotape of his talk, and it is now in circulation. Try to see this if you can.

"Interoperability is very important to the Joint Chiefs. It should be working all over the world, but it is not. Some states are handling this well,



Larry Warren, AAA9A, Chief, Army MARS

but in others I get chills when I listen to the nets. In New Mexico there is a joint service net that meets once a week, and it is working well. It is just a check-in, but everybody gets to know everybody else and what capabilities they bring to the net. In other states, however, there is a parochial attitude that says, 'You're not going to come into my net on my frequency.'

"We don't need this attitude! We are going to publish a coordinated triservice paper. It will clearly state basic guidelines for interoperability that all can read the same way. It will be distributed down to the lowest level, which is where the problem seems to be.

"The Air Force has been active in search and rescue operations, and they're good at it. The Navy/Marine Corps has been emphasizing communications with things afloat, and they are excellent. The Army is landbased; that's why we're involved in TEXN. (TEXN is the acronym for Traffic Exchange Network. It provides a vehicle for the three services to exchange traffic.)

"In the Army, we have been struggling with procedures for use of Official Mail Stamps. The Air Force got into this three years ago, the Army one and a half years ago. The Navy will be changing last, and I hope they can benefit from the mistakes made in the other two services.

'As you may know, the Army



MARS surplus equipment procedures were investigated three years ago. This is now all behind us. We have a list of approved supply classes that we can requisition. However, we must be able to identify items within those classes.

"We have made a review of the IRS regulations. It looks like we must make a request for a rules change, as those regulations were written so long ago, they do not include Navy/Marine Corps MARS.

"The Navy has already appointed a National Emergency Coordinator. They're ahead of the other services — Army and Air Force will do the same. We want to put together some joint exercises. The scenario will be much like Night Tango, but will put TEXN into effect. MARS is an emergency communications system sponsored by the Department of Defense. Message handling is OK for our training, and it keeps us busy. But we should train under conditions that we will have to face in true emergency operations.

"We have heard nothing but good comments about the activity of all services during the Los Angeles earthquake. The people in California should be very proud of their ability to react. Nets were activated and were ready to roll.

"Thank you all for coming out. Stop by our booth; we're proud of it. It shows the world that MARS is going First Class."

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!

You're sure to chuckle with this month's AMATEUR "HI" submitted by Chuck Louda, KI6UT, of Liver more, California. Thanks Chuck!

Most amateurs, I think, who have not kept up with the hobby would be quite astonished with the tremendous advances made in Amateur Radio, such as micro-miniaturization, CPU's and packet. But not myself! Even the guy who allegedly let his computer run a CW contest for him while he was out mowing his lawn didn't phase me.

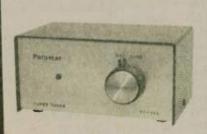
Back in 1957, as WA2ECL living in a large New York City apartment complex, I received my first TVI complaint from a guy going up the elevator with me. He said he had

DIRECTIONS Dlease send news and sictures to Worldradio heard that I was a ham and that I was jamming his television with my transmissions. I asked him why he was so sure it was me, and he replied that he "Heard my voice coming through his TV set."

So, way back in those "old days" with me running a two-tube 6L6 transmitter as a Novice, I not only had a rig that could send CW, but that could also allow those on the receiving end the ability to convert that code back to my original voice.



TUNER-TUNER™



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- Save those finals!
- Operate easier, faster.

Do you use an antenna tuner? Then you need the new Palomar Tuner-Tuner to tune up your tuner without turning on your transmitter. The Tuner-Tuner connects between your tuner and your rig.

Here's how it works:

- 1. Turn on the Tuner-Tuner. You'll hear a loud S9 + noise.
- 2. Tune your tuner until the noise drops out completely.
- 3. Turn off the Tuner-Tuner.
- 4. Start transmitting. SWR will be 1:1.

What could be simpler? You can tune up while listening to the other station call CO. No need to move off frequency to tune up. No need to cause interference while tuning. No need to operate your rig into anything but 1:1 SWR.

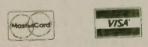
Users say:

"I cannot tell you how pleased I am with the Tuner-Tuner. What a fantastic product! I would recommend the Tuner-Tuner to anyone." — W06P

"It performed exactly as claimed. It represents one of those simple but clever ideas whose time has come." — CQ Magazine

"I picked up my Tuner-Tuner which I ordered through my dealer, and I am delighted with it. What a useful and clever invention!" — N4MNS

Order yours today! If you use a tuner you need a Tuner-Tuner.



Model PT-340 Tuner-Tuner only \$99.95 + \$4 shipping in U.S. & Canada. Calif. residents add sales tax. FREE catalog on request.



PUBLIC SERVICE

Amateur Radio saves a life

On August 5, while riding motorcycle mobile on Hwy. 20 going east from Bend. Oregou, Wally Blackburn, KTSEG and his wife came upon an automobile accident involving one fatality. One man, evidently killed instantly, was lying in the middle of the road and one very badly injured man was lying on the shoulder of the road. This car had just passed up the Blackburns at very high speed.

Running only 2W to a ¹/₂-wave antenna mounted on the motorcycle, all repeaters in the area were tried with negative results due to the low power and distance.

So, a Mayday call was transmitted on 146.52 and a YL Christine Boring,





At the scene of the accident

N7HLB, who was on a fire watch in a look-out some 50 air miles away, responded. "You are loud and clear."



with an official looking, 8 x 10 white parchment certificate printed with red, blue and gold ink (gold borders, gold again with red, white and blue shield, red light ning boits and blue type Looks good with original license or photocopy.

Area reserved for your license is pre-slotted for easy insertion. Your name and call are hand printed on certificate in calligraphy.

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Both certificates include postage and handling U.S. and possessions only U.S. license only.

Olympic View Graphics P.O. Box 1594 Poulsbo, WA 98370 she said and a 911 call was placed.

Thirty minutes later an Air Life holicopter arrived on the scene and rushed the injured man to a hospital in Bend. Just prior to the arrival of the helicopter, an off-duty nurse happened to arrive on the scene. After taking the victim's vital signs, she stated that he couldn't last much longer without proper medical care.

Mrs. Blackburn called the hospital a week or so after the accident and found that the victim, although suffering from many broken bones, was in stable condition.

Once again a person's life was saved through Amateur Radio.

Walk America, Florida-style

Guice Johnson, WA4LHO

On April 25, The Charlotte ARS displayed their community spirit in the true sense of Amateur Radio tradition by involvement in the March Of Dimes Walk America.

Twenty-five brave souls showed up at the appointed hour (7 a.m.) for a briefing by our club president, Arie Cook, K41B, and the planner and coordinator Guice Johnson, WA4LHO.]

The Walk America route was 12 miles long and to some of the walkers it seemed like 1,200. It started in Punta Gorda at Gilchrist Park, north across the Pease River to Port Charlotte, made a circuit through Port Charlotte, south through Punta Gorda and circled back to the park. Three of our members — Freda Begeal, N4OSK, Phylhs Davis, KA1JC, and Nelson Calkins, NSAYB — operated from the 'Sag' wagons, and at times they were quite busy giving rides to walkers with blisters, tired bodies and sore muscles. Fortunately, there were no serious injuries among any of the walkers.

At the award ceremony after the walk, the Charlotte ARS was presented a very nice plaque in appreciation for their valued assistance.

Florida ARES group kept busy

The Martin County ARA had their ARES members put to a real public service exercise on April 25.

The annual March of Dimes 10-mile "Walk-A-Thon" required 10 2M FM mobile units for communications, and across town in the Saint Lucie River, the annual "Blessing Of The Fleet"



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- * Requires 13.8vdc @ 500 ma. + color camera current

Just plug in your camera or VCR composite video and audio, 70cm antenna, 12 to 14 vdc, and you are ready to transmit live action color or black and white pictures and sound to other amateurs. Sensitive downconverter tunes whole 420-450 mHz band down to channel 3. Specify 439.25, 434.0, or 426.25 mHz transmit frequency. Extra transmit crystal add \$15.

Transmitting equipment sold only to licensed radio amateurs verified in the Callbock for legal purposes. If recently licensed or upgraded, send copy of license. Receiving downconverters available to all starting at \$59 (TVC-2G). WHAT ELSE DOES IT TAKE TO GET ON ATV?

420-450 MHZ

HEC TUNE

Any Tech class or higher amateur can get on ATV. If you have a camera you used with a VCR or SSTV & a TV set, your cost will just be the TC70 and antenna system. If you are working the AMSAT satellites you can use the same 70cm antennas on ATV

TC 70-1 ATV TRANCEIVER

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DX with TC70-1s and KLM 440-27 antennas line of sight and snow free is about 22 miles, 7 miles with the 440-6 normally used for portable uses like parades, races, search & rescue, damage accessment, etc. For greater DX or punching thru obstacles: 15 watt p.e.p. Mirage D15N or 50 watt p.e.p. D24N or D1010N-ATV.

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

PURCHASE AN AMP WITH THE TC70-1 & SAVE! 50 WATT WITH D24N-ATV \$499 All prices include UPS surface shipping in cont. USA



Public Service

(continued from page 20)

was parading 200 pleasure boats. MCARA provided seven 2M maritime mobile units for their communications.

NCS (Net Control Station) Bill Jochimsen, K4ZK, was assisted by eight amateurs along the Walk-A-Thon route. Traffic consisted in calling for the "Sag Wagon" to retrieve the lame and exhausted and to shuffle drinking water to various checkpoints.

With the "Blessing Of The Fleet", NCS Howard Dennewitz, W9OQN, on the parade commander's boat was assisted by six amateurs in providing maritime mobile communications.

All boats were decorated in Disney characters celebrating Disney's 15th anniversary in Florida. The 200 boats stretched out on the Saint Lucie River for well over five miles. —Howard Dennewitz, W90QN

If your club is involved in any emergency situations, send the story and pictures to Worldradio.

See your group in print and help your fellow amateurs with shared experiences. Your story may help others be better prepared.

gunummenen mener and an and **Cordless Phone - Link?** Feeling tied down to your microphone? American Lightwave introduces a fantastic kit that converts your cordless phone into a remote link!! Phone Link Use your rig from the kitchen, garden, garage Easy to build . . . one evening assembly time · Easily connects to your rigs mic and speaker jacks No mods to radio or telephone system . . . just plug in • MADE IN THE USA KIT PL-A ... High quality glass epoxy board with doc KIT PL-B ... Complete kit - board, parts, doc (less cabinet) \$30 We don't nick you for extra money NO SHIPPING CHARGES!!! Check, Money Order, COD: AMERICAN-LIGHTWAVE P.O. BOX 71684 Madison Heights, MI 48071-0684 or call 313-588-9007 COD only . . . add \$3

22 WORLDRADIO January 1988

Hams assist in nuclear exercise

Joseph M. Plesich, W8DYF

On November 19, 1986, members of the Steubenville (Ohio)-Weirton (West Virginia) ARC (SWARC) participated in a large-scale nuclear power exercise at the Beaver Valley Nuclear Power Station, in the southwest corner of Pennsylvania.

The Federal Emergency Management Agency (FEMA) and the Nuclear Regulatory Commission (NRC) recognize a 10-mile radius of the nuclear plant as an evacuation zone should an accidental release of radiation into the atmosphere occur. This 10-mile zone includes portions of four counties: Beaver and Allegheny in Pennsylvania, Columbiana in Ohio, and Hancock in West Virginia.

These major exercises are monitored and evaluated by the NRC and FEMA. Standards of compliance that assure a maximum degree of safety to personnel and livestock are the ultimate goal.

The Emergency Operations Center (EOC) is the control point central to the operations. It consists of a communications area and decision-making body. Communications are conducted by private phones in the largest of several rooms. RACES radio and sheriff dispatchers are in smaller rooms.

At 1830 EST, the emergency escalated to the "Alert" stage. This means a complete staffing of the EOC but no protective action. The notifications begin and George Puzzuole, K8QEW, Operations Officer for the Hancock County OES, was called at 1837 EST. (George also happens to be the Section Emergency Coordinator for the state of West Virginia.)

Upon arrival at the EOC, he noted

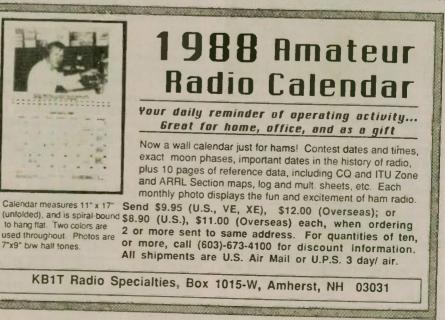
that the Public Information Officer and Police Staff positions were manned. Others are logged in as they arrive and are cleared by security. They include: fire personnel, communications officer (John Peterson, K8ZPR), rumor control, health and medical, state health and medical, Red Cross, schools and transportation, agriculture, RACES officer Merlin Rosenlieb, WB8PAM), and six message runners.

The "Site Area Emergency" (3rd level) and "General Emergency" (4th level) actions taken require protective action. Each has an SOP (standard operating procedure) to follow by EOC staff members. The intensity of the site actions vary according to recommendations of BVPS and/or FEMA, state and county authorities. The General Emergency is a total maximum commitment of all resources and personnel.

Field personnel doing decontamination, evacuation, route alerting, or any activity that might mean radiation absorption were required to wear dosimetry equipment and to take and record the readings every half hour. Seventeen RACES hams are Certified Radiation Monitors.

During the major exercise, Tom Sobel, KA8DXW, was assigned to the staging area. WB8PAM worked the RACES station and K8QEW was at the EOC. WB8PAM was assigned to the local hospital, KA8DXW went to a local school, and K8QEW ran the RACES station - WC8AAK - with WB8PAM.

At the Site Area Emergency, the EOC at the State Capitol in Charlestown, West Virginia was activated. The HF link on 3865 kHz was manned



by Bill Hunter, K8BS. A packet radio link on 145.010 was also established. Active in this link were: Tom North, WB8IFS: Emmett Earley Jr., WA8-USO; KA8AL; Greg Day, KC8JN; and Joseph Plesich, W8DYF. Francis Antinone, W8DRW, and Dave Shimko, N8BRN, monitored the local repeater on 34/94 in Weirton, which was used for all the local repeater communications. The 66/06 machine in Toronto, Ohio was on standby as a back-up repeater.

Other amateurs involved in the drill were: Robert Heupp, WD8RXN, who was assigned to the New Cumberland Fire Department, "during Route Alerting;" George Westling, KA8WNS, who was at the second "stage" decontamination center; and David Angelo, KA8YNH, who was assigned to a shelter in Weirton.



Herbert "Pete" Hoover III sits atop the unfinished American Red Cross "Images of Hope" float appearing in the 1988 Tournament of Roses parade New Year's Day in Pasadena, California. Hoover is the volunteer Amateur Radio operator inside the float sending messages of hope and peace to Red Cross societies worldwide. The float, funded entirely by contributions from Red Cross volunteers and staff, is the first in a series of year-round activities celebrating the 125th anniversary of the Red Cross movement.

Stations went into the General Emergency at 2150, and at 2305 it was announced that all protective actions had been completed and the EOC could be secured. EOC staff members were required to leave all messages and logs at their positions for FEMA and Power Company officials to review. A critique by the Power Company and FEMA will be scheduled in the future.

The Beaver County Power Station and the County Emergency Services were very appreciative for the involvement and service of the RACES radio amateurs. With appropriate adjustments dictated by the nature of the emergency, the emergency drill — as depicted here — will be typical of all future emergency drills in Hancock County, West Virginia.

Amateur aid during evacuation

Shortly after midnight on March 24, fire was discovered at a metal processing plant in Nanticoke, Pennsylvania. According to newspaper reports, the fire caused release of hydrochloric acid, sulfuric acid and other chemical byproducts over the area, located southwest of Wilkes-Barre. Between 14,000 and 16,000 people were evacuated from the area.

Luzerne County's ARES Emergency Coordinator Geoff Dent, KB3JK, was called by Luzerne County Emergency Management Agency at 1:45 a.m. By 2 a.m., the ARES Net was activated, and a telephone fan-out was bringing ARES members on the air.

Amateurs in ARES, Army MARS and Air Force MARS provided communications for government officials and the American Red Cross. While a local hospital and two nursing homes were being evacuated during the night, amateurs supplied communications between these locations and reception centers.

According to KB3JK, a major reason why things went smoothly is that local emergency planners had met recently to discuss evacuation plans for the Berwick Nuclear Generating Station in preparation for an upcoming drill. -Kay Craigie, KC3LM

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Every little bit helps

Fred "Al" Wasielewski, WA2VJL, of San Benito, Texas has been trying to increase awareness of Amateur Radio in his community through some library donations.

The material that Fred submitted included: Tune In the World with cassette; ARRL Tech./General, Advanced and Extra Class license manuals; First Steps in Amateur Radio; FCC (ARRL) Rule Book; and The First Fifty Years.

Fred writes, "There's a growing interest in Amateur Radio in San Benito. Hopefully, these books will encourage growth. I expect to inaugurate a Novice class at the high school in May or June."

Worldradio extends a big THANK YOU to Fred for his efforts at increasing public awareness of Amateur Radio. (Fred has gotten publicity for Amateur Radio through articles and photos in his local newspaper, as well.)



Thank you Amateur Radio operators and dealers for making RF Concepts the leading amplifier manufacturer in the USA. This progress has to be caused by our quality products, warranty and service.

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RF Concepts was founded by the two original co-founders of Mirage, Everett L. Gracey, WA6CBA and Kenneth E. Holladay, K6HCP. Call your favorite dealer for updates

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BOOK REVIEWS

Radio's First Two Decades

We're apt to take for granted our solid-state receivers, just as young people walking happily, listening via lightweight headsets to their favorite radio station, probably assume we've always had such devices.

There's a thrilling story to read, of men like Marconi who developed with tireless effort — one tiny step at a time, year after year — something dubbed "wireless."

Are you aware of why Hertz is honored by us every day? Ever hear of James Clerk Maxwell? We're eternally indebted to them and their colleagues.

An important book of 1942 has been re-published, *Radio's First Two Decades*, telling the exciting story of pioneering from the turn of the century to about 1923. It will add greatly to your appreciation of the radios in your home and your cars as well as the remarkable satellite relays of people speaking from other continents or out in space. And of course, TV itself.

This little volume would make a fascinating gift to a youngster or newcomer to our hobby/service. Oldtimers would enjoy being reminded of broadcasts in the early '20s: the Dempsey/Cartier fight or the returns of the Harding/Cox election. The world would never be the same once broadcasting had come of age.

ESTABLISH A HAM TESTING CENTER IN YOUR AREA

As of 1984, all ham radio license testing is handled by the amateur radio community itself. Teams of three Extra Class volunteer examiners (VE's) can now conduct all ham license upgrade examinations.

W5YI-VEC, the initial national VE Coordinator approved by the FCC, oversees the largest alternative (to the ARRL) testing program in the U.S. You can be a part of it by following the simple testing instructions provided.

Administering Technician through Extra Class examinations is no harder than administering Novice examinations — which VE's have done for decades. We offer...fastest VE accreditation, complete instructions, immediate testing...with testing fees (expense reimbursement) shared with the VE team.

Send an SASE today for a VE application if you are an Extra Class amateur and serious about conducting periodic amateur radio examination sessions in your area so that others may upgrade



W5YI-VEC P.O. Box #10101 Dallas TX 75207 [817] 461-6443

Let's get Amateur Radio growing again!

24 WORLDRADIO, January 1988

Perhaps we do take it all for granted. Radio's First Two Decades gives us a deeper appreciation of our "wireless sets" and the material heard on them. Also, some jolly good reading!

Many photographs and drawings are included. This volume is the first half of the original Radio From Start To Finish, the publisher wisely de-

Yagi Antenna Design

by Dr. James L Lawson, W2PV

Ham Radio ran a series of articles by James Lawson during 1980, about the developmental aspects of Yagi-type antennas. Lawson's objective was to develop design concepts for high-quality parasitic antenna systems for HF use.

He used a practical physical unit and model to compute its electrical properties. Using a computer, he developed and validated a wide range of experimental results. By using a practical antenna, Lawson was able to collect much data during his investigation of the performance of many Yagis with different spacings, parasitic elements and their dimensions.

Dr. Lawson became a Silent Key in 1982, but his book was ready for publication. It took ARRL about six years to ciding broadcasting is far from finished!

He has left us in 1923, after the travail of experiment delivered to the general public "radio boxes" available to all, while broadcast stations started springing up everywhere. We all know the rest of the story. (Cologne Press, P.O. Box 682, Cologne, NJ 08215 \$4.50 postpaid) — Lenore Jensen, W6NAZ

publish it and is now available through the ARRL and other bookstores.

The book is a gold mine for both the theoretical and practical aspects of HF Yagi antenna design. There is data for several designs each for 7, 14, 21, and 28 MHz. It covers preferred designs, radius scaling, taper corrections, boom lengths and element clamping.

There are two things about this book that are very unusual. Technically, chapter 4 is devoted to loops of onewavelength, to be used as either a parasitic or the driven element. But the fact that the book has no index makes it very unusual. The last chapter has an error in the front-to-back ratio curve indicators, which is readily apparent.

In any event, Dr. Hidetsugu Yagi and Dr. Shintaro Uda would be pleased with this book on their novel 1926 invention! - Peter Onnigian, W6QEU

Sailing With Ham Radio-

by Ian Keith and Derek Van Loan

Most mariners would love to obtain an Amateur Radio license and equip their vessels with ham radio gear. This 130-page book gives a broad overview of what it takes to put ham radio equipment onboard. Amateur Radio is, then differentiates it from marine single sideband. Too little detail here — we could use more detail about the actual ham bands and frequencies available, plus an update on the new Novice enhancement privileges.

The book starts out explaining what

The discussion of marine SSB ver-



sus ham was not necessarily accurate it's apparent the authors have never owned a properly operating marine single sideband set. They are not correct in indicating that only a few yachts have marine SSB.

Equipment costs for a marine SSB are not "double" that of ham equipment. There are also no telephone charges levied from the land station to the called party - this is included in the basic marine SSB rate. And there is absolutely no difficulty in reaching the marine operator - they are always there at the press of the mike button.

However, they do make one excellent statement: "The marine SSB owner does not become as technically knowledgeable as the ham," and this is indeed a fact. This is why marine SSB is so popular among non-hams you don't need to be technical.

Specifics

The authors offer a few pages on preparing for the General Class license. The material here is fairly accurate, but based on old testing standards. They've made no direct reference to the new streamlined testing procedures by volunteer examiners. Tremendous detail could be given to the prospective amateurs, assuring them it's now a lot easier to get an amateur license than before.

The chapters on electricity and magnetism were excellent. The diagrams were plenty, and the pictorials easy to understand. They also did a good job on the basics of antenna principles.

The discussion on grounding was good, but again too short. They made a good point of indicating that round wires don't work as well as braid for ground wires.

The authors indicate "unqualified success" in using their entire rigging as part of their antenna system without insulators. They poo-poo insulators as devices that could fail and are not effective when encrusted with salt. Agreed, all insulators should be cleaned, and only top-quality in-sulators should be used to prevent failure.

-However, using your entire rigging as an antenna system is foolish. Number one, it's dangerous. Anyone holding on to any of the other stays will get bitten by the transmitted RF! Second, RF energy coupled into an ultimately grounded rigging circuit will travel into other marine elec-

Subscribe now!

- See page 9

tronics. I have seen several SAT-NAVs, Lorans, and autopilots damaged by RF getting into their sensitive chips via ground currents.

Tuners

Lastly, while some manual tuners do a nice job of tuning up anything that's metal, the radiation pattern would be unpredictable and, at best, using the grounded standing rigging (to the marine electronics specialist) would be considered hokey.

There is nothing wrong with whips (which they do a fine job in talking about) or using backstays with quality insulators. They do a nice job talking about the advantages of dipoles and manual tuners. However, their statement that automatic tuners are "not a sensible choice" because they are only designed to "work with the rig that they are made for" is absolutely not accurate.

The new automatic tuners, both installed within the amateur equipment as well as those external marine-type automatic tuners, are logical choices for the insulated backstay antenna. Years ago they were not a sensible choice, but today they are.

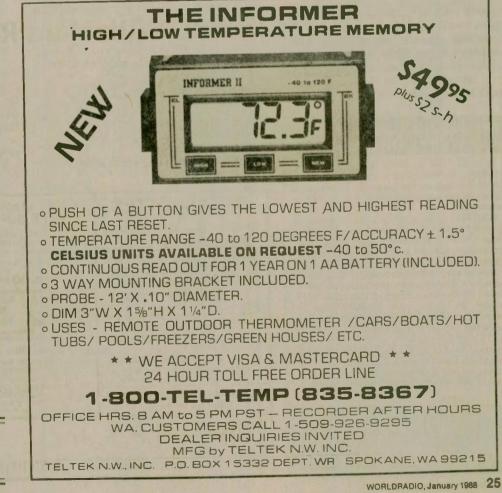
In fact, the Kenwood 440 transceiver's automatic tuner will tune up some surprising antenna configurations because of its superior circuitry. The ICOM AH-2 automatic tuner is great for insulated backstays. And the Stevens 1612 automatic tuner works with any ham radio or marine radio. It's obvious the authors were not knowledgeable on the latest developments in automatic tuners.

Their coverage of last year's radio sets is fine. There have been many new developments, so take this information and match it with this year's and next year's offerings.

Operations/procedures

Finally, their section on operations and procedures was very good. They gave some excellent examples on how to operate, and how to choose the proper bands. They also did a nice job on how to solder coax connectors, plus a nice glossary at the end of the book.

Unfortunately, there was no mention about using the Amateur Radio transceiver in connection with the marine radio service for emergency back-up communications. Let's face it any ham that is a mariner should have at his/her disposal all communications capabilities to signal other hams as well as the Coast Guard in time of an emergency. Today's (please turn to page 30)





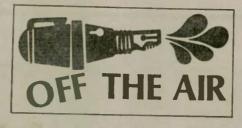
Dale Holder, KA0KDM

Young ham in Navy

Dale Holder, KAØKDM, of Hinton, Iowa, recently graduated from Boot Camp at Great Lakes, Illinois. He has now entered an electronics and computer school at Memphis, Tennessee.

Dale grew up hanging around his Uncle Glenn's ham shack, KØTFT. This is where his interest in electronics got its start. Dale got his Novice ticket when he was 16 years old, became a Technician at 17, and joined the Navy at 18. He's a member of the Sooland Amateur Radio Association in Sioux City, Iowa. Good luck, Dale!





A whole new world

After neglecting my radio for several months due to health problems, an "Elmer" — Glenn Hayes, WD4EXP — came to my assistance in rig repair and help in study for upgrading. I was able to take the "handicapped" test at home and passed the General Class exam. I am now glad to be on the air again.

It might encourage others to join the Amateur Radio ranks when I admit to being 86, and that I had never heard of Amateur Radio until I was 80 years young because life kept me very busy.

Widowed 10 years after marriage, I raised my two daughters alone, working until retirement from Illinois Central Railroad, as analyst clerk in the treasury department.

Amateur Radio opened up the world to me. It was the most fascinating mind-expansion a mortal could have. To date, I have all but two states for a WAS certificate - Vermont and Alaska. I have recovered my enthusiasm and thank God for it daily.

MARIE GARRISON, N5KGQ McAllen, Texas

'Ham responsibilities' - pro and con

Robert Hoover's comments ("Ham responsibilities," October, page 23) are well taken and deserve careful consideration. Having spent 15 years of 62 my career on the FCC staff, I had a unique perch from which to observe trends in the Amateur Service. I not only agree that the trend is seriously negative. but that the Service itself is in grave danger unless some effective national leadership develops.

The bottom line in assessing the future of the Amateur Service, as Hoover states, is the number of active amateurs. I would agree with him that the ARRL approach appears to miss the fundamental problem, which is why there is a general decline in the number of active amateurs, despite a recent increase in the number of new Technicians and Novices.

While amateurs can probably do more individually to ensure the future of the Service, it cannot do the whole job. The Amateur Service is wholly dependent on the U.S. government for its survival, but the government speaks out of both sides of its mouth.

START COPYING CW THE EASY WAY! **Start copying words instead of letters!** Master the standard exchange in just a few evenings!** **Gain on-the-air confidence quickly! ** THE QSO-TRAINERTM Code Course - For the ham who already knows the code. If you have been a ham for a while, tried the "traditional" random-letter approach to code practice, and still don't have the on-the-air confidence you'd like-this course may be exactly what you need. Easy-to-learn lessons on two 60-minute audio cassettes. Send \$14.95 + \$2.00 shipping and handling (IN residents add \$0.85) to:

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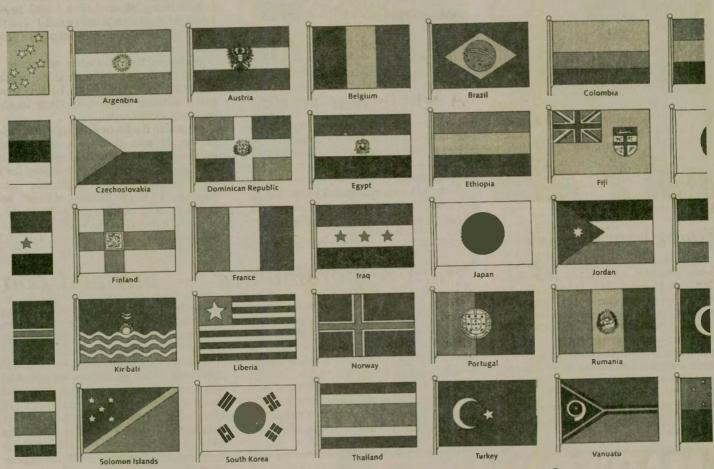
On the one hand, the FCC - using the excuse of lack of funds - has been whittling away at the Service for years. On the other hand, our military leaders have not only been stating and restating the great value of the Amateur Service to the national defense (see excellent remarks of General Overacker, page 52, August Worldradio), but DOD has made the Service an asset of the National Communications System. It would appear that the government would like to enjoy the benefits provided by amateurs,

but is unwilling to pay anything for it. In view of the consistently negative FCC policy, it is my belief that the main hope of survival of the Amateur Service lies with the military, particularly with respect to the retention of HF frequencies. However, the military cannot expect that with the waving of a magic wand it will be able to meet its requirements in a future national emergency. This requirement cannot be met except by comprehensive planning by competent personnel and the expenditure of government funds.

There are too many people at all levels of government who seem to look upon the Amateur Service as a volunteer fire department: a free emergency service by dedicated, competent people serving the public free of charge. While all Amateur Radio operations themselves ought to be provided on a no-charge basis, it is expecting too much that the competent planning required for natural disasters and national emergencies be provided on that basis.

To survive, the Amateur Radio Service needs a radical departure, with the emphasis going to club operation

(please turn to page 28)



With a Sony World Band Radio, each country clearly has its own voice.

Sony presents synchronous detection circuitry so you can enjoy clear connections with less interference.

Synchronous detection circuitry is a tiny mechanism with global proportions. It locks onto the frequency you've chosen and travels with it, letting you clearly hear one country at a time, with less interference all of the time. Which means if you happen to be listening to Ping-Pong from Peking, São Paulo soccer shouldn't break in.

Inventing the transistor radio was just the beginning.

Thirty years ago, Sony put the world on its ear with the very first transistor radio. In 1967, Sony unveiled the world's first integrated circuit radio, and then made history again with the shortwave transistor. Ever since then, Sony has been fine-tuning world band radios with world-famous technological advancements. Sony is the world leader that can put the whole world at your fingertips.

Only Sony has the kind of technology that lets you clearly listen to over 100 languages in 160 countries. Sony World Band Radio units around the



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world are clearly receiving air, marine, longwave and shortwave bands, with synchronous detection circuitry, quartz tuning and automatic search and scan.

When it comes to globe-trotting, you'll find any of our five World Band Radio units handier than a passport.

And you'll also find that you understand what's being said around the world more clearly than ever before.

World Band Radio. SO

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Off the Air

(continued from page 26)

rather than individual station operation. Not only is the cost of amateur gear escalating to the point where young amateurs are discouraged, but new zoning regulations as well as an increasing number of RFI problems seem to be an increasingly more significant factor inhibiting the growth of Amateur Radio.

Of course, the foregoing is my opinion; but I have talked with a number of people in and out of Amateur Radio, and I am pretty confident of my views. Whether I am right or wrong, however, Hoover's ringing of the alarm bell is welcome. Let's hope that someone in a position of national leadership hears it and acts and that we ourselves take stock and make our voices heard before our losses have reached the point of no return.

JOHN J. O'MALLEY, JR., KC3UU Washington, D.C.

I can't let the letter by Robert S. Hoover, KA6HZF, in October Worldradio stand unchallenged.

Hoover claims the League's program for attracting younger people to Amateur Radio is a "comic book." That's a bit like saying the Defense Department's answer to national security is the M-16. His statistics are equally fallacious.

If one were to identify a single aspect of the League's recruitment effort as being the most important, it would be one Hoover doesn't even mention: Novice enhancement. All the promotion in the world won't sell a deficient product, and there can be no serious question but that the Morseonly privileges previously available to Novices were insufficient motivation to push everyone we should want to join our ranks over the initial hurdle.

After just six months of experience with Novice enhancement, it's already proven to be effective medicine for

New hope for old gear

Skip Westrich, WB80WM

Ya say your Hammarlund just QUIT?

A few years back, during the post "Incentive Licensing" era, some old radio manufacturing companies went belly-up.

Many of their remaining parts inventories, however, were purchased by smart investors for resale purposes. Chassis parts, dials, knobs, what ailed us. Now we have a solid foundation on which to build, with such efforts as the new videotape, *The New World of Amateur Radio* — by itself a six-figure commitment by ARRL and the Amateur Radio industry.

Hoover's point about radio amateurs having an obligation to serve society is valid, as is the notion that more needs to be done to reach potential hams of all ages. But to claim that little or nothing *is* being done to ensure that our obligation continues to be met, is to deny reality.

DAVID SUMNER, KIZZ

Executive Vice President, ARRL Newington, Connecticut

special transformers, etc., made by Hammarlund are still available from Strux Corporation, 90 E. Montauk Hwy., Lindenhurst, NY 11757.

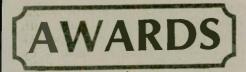
Arthur Cordell, K4HCS, is also in possession of a lot of the same material, including manuals as well.

So there you have it, you folks into receiver restoration and repair. With a little luck and some work, the "ole gal" can sing again!

-Massillon ARC, OH



KENPRO • KENWOOD • MIRAGE/KLM • MFJ • RFCONCEPTS • TEN-TEC • WELZ • YAESU & Many Others



Outstanding Teacher

Peter Kemp, KZ1Z, loves teaching. It is apparent in the way he lights up when discussing his students, his lesson plans, his colleagues and his history. He has taught in Bethel for over 16 years, and is clearly committed to offering his best to the Bethel school system and the community.

Currently Coordinator of Technical Education at the Bethel Middle School, Peter's courses include woodworking, drafting and electronics. The quality of his preparation for classes, and the energy and style with which he teaches are evident in his records and his professional involvement. Peter is one of those teachers whose students comment 30 years after graduating, "Do you remember Mr. Kemp...I had him for electronics... that was a great class!"

Students will also remember Peter Kemp for all those extra hours that don't show up on a paycheck or in a contract.

Peter organized one of the country's first educational Amateur Radio societies — BEARS (Bethel Educational Amateur Radio Society). These students have learned, studied and practiced to earn their Amateur Radio Novice licenses.

The students involved in BEARS and Peter's classes have communicated with Amateur Radio operators around the world, and have been part of communications networks during the 1986 Mexican earthquake, Hurricane Gloria and numerous space shuttle missions.

Peter uses Amateur Radio to synthesize many subject matters, geography, math, language arts, current events and foreign language study. His program is the forerunner of many across the country and he and the program have been the recipient of national recognition.

Dear Subscribers . . .

Please include your current mailing label with renewals, address changes, or any subscription problems. Should you receive a subscription as a club or hamfest prize and wish to extend an existing subscription, including your present label will help us give you faster, better service. Peter describes an effective instructor as "a resource, a motivator, a colearner, an educational manager." It is clear that those words describe him. The people of Bethel are lucky to have an educator of his calibre in their community, and Central Connecticut State University is proud to count Peter Kemp as an alumnus. The School of Education and Professional Studies and the CCSU Alumni Association are honored to present him with the CCSU Alumni Association Outstanding Teacher Award for 1986-87.

Kemp is a member of the Bethel Education Association, Connecticut Educational Association, National Education Association, Phi Delta Kappa, Association for Supervision and Curriculum Development, International Technology Education Association, Connecticut Industrial Arts Association, Connecticut Educational Media Association. He received 'his B.S. from Central Connecticut State University, M.S. from Western Connecticut State Univesity and Certificate of Advanced Graduate Studies from Southern Connecticut State University.

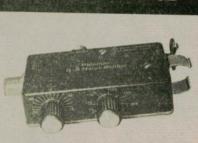
Peter is a Life Member of the ARRL. He was the 1983. Instructor of the Year, recipient of the Herb S. Brier Award, and the ARRL New England Division's Ham of the Year 1984.

A former Section Manager of Connecticut, Kemp has held many ARRL appointments. He currently is an Assistant Director in the New England Division. He is a member of the Candlewood ARA, Pioneer Valley Radio Association, AMSAT, 10-10, Century Club, National Radio Club, USATVS and Danbury Area Packeteers.





R-X NOISE BRIDGE

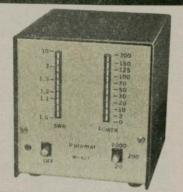


·Learn the truth about your antenna.

The Palomar R-X Noise Bridge tells you if your antenna is resonant or not and, if it is not, whether it is too long or too short. It gives resistance and reactance readings on dipoles, inverted Vees, quads, beams, multiband trap dipoles and verticals from 1 to 100 MHz.

Why work in the dark? Get the instrument that really works, the Palomar R-X Noise Bridge. Model RX-100 \$59.95 + \$4 shipping/handling in U.S. and Canada. California residents add sales tax.

SWR & POWER METER



•The only meter that shows PEP output directly, accurately, instantly.

Shows power and SWR on bright red light bars. See PEP and SWR while you talk! Automatic "hands-off" SWR reading. Power ranges 20-200-2000 watts. Works from 1-30 MHz. For 115-v AC. 220-v AC and 12-v DC models also available.

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Send for FREE catalog that shows our complete line of noise bridges, SWR meters, preamplifiers, loop antennas, VLF converters, audio filters, baluns, RTTY equipment, toroids and more.





Send Worldradio a picture of your shack and the staff will choose a winner to receive a free one-year subscription! Stations will be judged by neatness (wires tucked away, etc.) and accessibility of equipment. Monetary value of equipment is not a consideration. Benny Cobb, W5TWA, of Borger, Texas, wins the first STATION AP-PEARANCE of 1988 with this picture. We liked not only the neat appearance of Benny's shack, but also the finishing touch in the lower left-hand corner - a "Mug Rug."

W5TWA lists his station equipment as follows: (Bottom row, left to right) Kenwood SP-940 speaker, Kenwood TS-940S and Ameritron AL-80A amplifier. (Top row, left to right) Heathkit wind speed indicator, CDE rotator control, Kenwood HL-10 clock, Astron RS-20M power supply, Kenwood TM-2570A, Ameritron ATR-15 antenna tuner, Kenwood TS-130SE, Heathkit field strength meter, Kenwood PS-30 power supply and Santec HT-1200.



Never refuse a good offer! e.g. CQ, CQ, CQ.



Book Reviews

(continued from page 25)

modern Amateur Radio transceiver with all-band capabilities may easily be modified for emergency transmit on marine frequencies. It would have been nice to see these marine frequencies and modification details published in this book, too.

Generally speaking, "Sailing With Ham Radio" was a good attempt by some mariners to expose the general public to the lure of taking amateur radio out to sea. It generally does a nice job with the subject, and whets someone's whistle to put a set aboard.

However, to the marine electronics specialist or to the Amateur Radio mariner that regularly installs the equipment and services it, the book is not nearly detailed enough. But, since most mariners aren't technical, the book is on target. (Paradise Cay Publications, 1001 Bridgeway, #405, Sausalito, California 94965. \$9.95) -Gordon West, WB6NOA DX WORLD John F.W. Minke III, N6JM 6230 Rio Bonito Drive Carmichael, CA 95608

Activities Calendar

ACTIVITIES	Valendar
16-17 Jan	MRASZ Hungarian DX
	Contest (CW)
30-31 Jan	UBA/REF French DX
	Contest (CW)
06-07 Feb	RSGB 7 MHz Contest (SSB)
13-14 Feb	VERON PACC Dutch
	Contest
13-14 Feb	RSGB 1.8 MHz Contest (CW)
13-14 Feb	SRJ Yugoslavian DX Contest
Estimation ((CW)
20-21 Feb	RSGB 7 MHz Contest (CW)
20-21 Feb	ARRL International DX
	Contest (CW)
27-28 Feb	UBA/REF French DX
	Contest (SSB)

The above activities are all IARU member-society sponsored contests. Participation in those activities may lead to a few new ones for you.

DXpedition to Fernando de Noronha Island

Last September, the Natal DX Group of Brazil went to Fernando de Noronha Island for their second DXpedition to that island. The group – headed by Karl Mesquita Leite, PS7KM – included Marcilio, PS7BF; Carlos, PS7WB; Mauricio, PS7PC; and Fernando, PS7BY, who held the calls ZY0FKL, ZY0FMC, ZY0FCA, ZY0FCM and ZY0FRT, respectively.

The group operated from the hotel on the island and commenced operation at 1636 UTC, September 9, simultaneously with ZYØFKL and

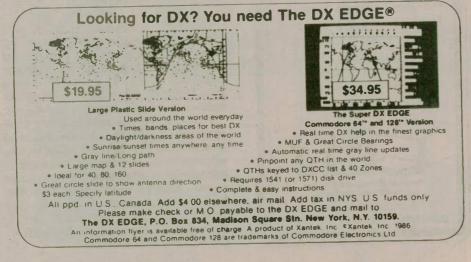


Left to right: Mauricio, ZY0FCM/PS7PC; Fernando, ZY0FRT/PS7BY; Karl, ZY0FKL/PS7KM; Carlos, ZY0FCA/PS7WB; and Marcilio, ZY0FMC/PS7BF. (Photo courtesy of PS7KM)

ZYØFCM, RTTY and CW, 15 and 10M. The first contact on RTTY was with I8AA, while PY2DGB was the first CW contact. This was reported to be the first RTTY contact from the island.

Unfortunately, propagation was very bad. A total of 1,200 contacts was made, including RTTY, AMTOR, CW and SSB, 10, 15, 20 and 40M.

Karl wishes to thank all those who directly and indirectly contributed to the success of the DXpedition, including the Brazilian Air Force, who provided the transportation. Karl also included a humorous little note regarding an incident at dawn, September 11. It seems they had some trouble during the night with their vertical antennas. Karl writes, "Early in the morning we discovered they were completely damaged, with no more possibility of being used. We had been visited by several horses, which had done the work during their night cavalcade!'



China (BY)

The WAZ committee at CQ finally defined the boundaries of Zone 23 regarding the Chinese provinces. The following provinces are included in Zone 23:

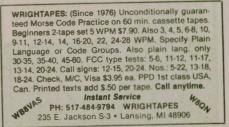
BY3GA-BY3LZ	Nei Monggol Zizhiqu
BY9AA-BY9FZ	Ningxia Huizu Zizhiqu
BY9GA-BY9LZ	Qinghai
BY9TA-BY9ZZ	Gansu
BYØAA-BYØMZ	Xinjian Uygur Zizhiqu
BYØNA-BYØZZ	Xizang Zizhiqu

The remaining Chinese provinces are located in Zone 24.

BY stations are being reported quite regularly now, including activity in the 40 and 80M bands. On 40M BY1QH was reported workable in southwestern United States on 7.006 MHz around 1300 UTC, along with BY4WNG on 7.001 MHz at 1300 UTC, and BY4RB on 7.006 MHz at 1215 UTC. The last two were worked from California. On 75M, BY4WNG showed on 3.794 MHz at 1430 UTC the end of October.

The most popular band for these stations is 20M, for both SSB and CW. The following list should give you an idea of when and where to look for a favorite BY station:

BY1QH	14.027	0100
BYIPK	14.193	0130
(please turn	to page 34)	







DX World

(continued from page 31)

	1	
BY1CKJ	14.028	0445
BY4AA	14.210	1600
BY4RB	14.024	0200
BY4SZ	14.174	0100
BY7SA	14.006	0030
BY8AC	14.024	0115
BY9GA	14.024	0045

Many have begun to show on 15M, with BY4RN worked on 21.205 MHz at 0130 UTC and BY8AC on 21.242 MHz at 0830 UTC.

The BY5 call area has also been reported, but only from the Europeans, who claim BY5RT near 14.195 MHz and 0830 UTC and BY5QA and BY5RA on 15M at times when the band is closed to our part of the world.

Inside DX reports that Mike Bragassa, NS7Z, should be returning from China mid-December. He had hoped to be able to operate from BY1QH during his stay.

Western Sahara (S0)

The Western Sahara DXpedition by the Lynx DX Group finally became a reality, coming on the air Sunday, October 18, around 1500 UTC. They signed with the call SØRASD and continued for about one week. The operators were EA2OP, EA2JG, EA2ANC and OH2BH. That's right! Martti Laine, OH2BH, who was reported to have made the final contact at 1600 UTC on October 25.

No count of the contacts has been received, but they did do a great effort considering that they were only using a TS-430S and simple antennas. As for DXCC credit, nothing has been decided as of yet at the DXCC desk. When it does count for a new country it should be retroactive.

As can be expected, other SØ calls have surfaced and are expected to be bogus. On November 3, a call SØDX was reported on 7.004 MHz about 0200 UTC with a big pileup. The operator gave the QSL route via DJ6SI.

Inside DX reports that a local resident of Western Sahara, Naama, is expected to sign with the call SØ1A with the equipment left behind by the Lynx Group from their SØRASD operation.

Egypt (SU)

Recently admitted to the IARU



(International Amateur Radio Union) was the Egypt Amateur Radio Society (EARS). Seventy-one membersocieties cast their votes, all in the affirmative. Egypt became the 126th member of the IARU.

Activity from this one appears to be on the upswing, including contest activity. Jim Neiger, N6TJ, spent some time at the shack of SU1ER during the October World-Wide DX Contest, which is the call of the Secretary of the EARS, Ezzat Sayed Ramadan. Also reported to be active in the contest was DF3CB operating from SU1MR.

Top band fans will be pleased to hear that PA3AXU/SU says he will be on 160M soon, and also states that he has received notice from the DXCC desk in Newington that his operation will count. We have already seen one report for this band with SU1MR reported on 1.829 MHz at 0418 UTC on October 23, although this may have been operation by DF3CB.

On 40M, other than activities of the above stations, SU1FN has been reported. Look for this one near 7.003 MHz after 0015 UTC.

Several DXers got burned with the SU1SK, who was giving IK8AUC as his QSL manager. Sorry, but Slim has struck again!

Bob Brannigan, W2EJG, sent us a note that Charles "Sig" Signer. WA9INK, now hs the call SUIEE. Long-time subscribers of Worldradio will remember WA9INK as the former DX Editor.

Pitcairn Island (VR6)

Guests at the October meeting of the Southern California DX Club were Irma Christian, VR6ID, her husband and her son. She was asked her background on her operation and that of other hams on Pitcairn Island. Irma first worked at the CW commercial station. She said that radio work is very important on the island. All licenses are issued from Wellington in New Zealand, although Irma was able to take her exam on the island.

There are presently five licensed amateurs on the island, which include the calls VR6TC, VR6YL, VR6KY, **VR6KB** and **VR6ID**

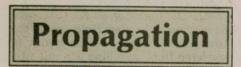
The DX reports of October activity only show two. Old standby is Tom Christian, VR6TC, was on 20M SSB a

Half-Square QRV-DX Monobanders



few times and was reported near 14.180 MHz around 0100 UTC. Also check 14.234 MHz at 0345 UTC.

Kari Young, VR6KY, seems to like 15M as she was worked near 21.287 MHz at 2030 UTC on October 23 and



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

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

JANUARY 1988

WEST COAST

					SO
UTC	AFRI	ASIA	OCEA	EURO	AM
10	(9)	10	12	(8)	12
12	(9)	10	12	(8)	(11)
14	(20)	9	12	(8)	30
16	25	10	18	(15)	35
18	24	(10)	(18)	(9)	36
20	20	(13)	23	(8)	37
22	(17)	25	28	(8)	36
24	15	27	32	(8)	29
2	11	23	31	8	16
4	11	12	16	7	14
6	(10)	(11)	14	7	13
8	(9)	10	(13)	8	12
CENTRAL USA					

					30
UTC	AFRI	ASIA	OCEA	EURO	AM
8	(12)	8	12	8	12
10	(11)	8	12	(8)	12
12	26	8	12	(8)	22
14	32	8	19	19	32
16	34	(8)	(17)	18	35
18	26	(8)	(20)	14	37
20	21	(8)	26	(9)	37
22	18	20	31	(8)	34
24	15	19	33	8	25
2	13	(10)	24	8	15
4	13	(9)	(15)	8	14
6	(12)	(8)	(13)	7	13

EAST COAST

					50
UTC	AFRI	ASIA	OCEA	EURO	AM
7	(12)	8	(12)	7	12
9	(11)	8	12	8	12
11	27	8	11	17	22
13	33	8	21	20	32
15	35	(8)	18	20	35
17	29	(8)	(19)	17	37
19	23	(8)	24	(10)	38
21	. 20	17	29	9	35
23	15	17	30	8	26
1	14	(9)	(15)	8	16
3	13	(9)	(14)	8	15
5	12	(8)	(13)	8	13

later in the month on 21.340 MHz at 2100 UTC.

The 1987 Callbook lists two other calls, but they are not Pitcairn residents.

Kampuchea (XU)

Seth, the operator at XU1SS, says the station is located right along the Cambodia-Thailand border and is restricted from installing any antenna over 7M.

Seth is reported to be looking for American stations near 14.165 MHz around 1200 UTC, Monday through Thursday, Also, check 14.220 MHz at 0600 UTC on Sundays. It is also reported that he can only afford to return about 15 cards per month, and relies on donations of "green stamps" to finance the QSL operations. We wonder how he goes about selecting the 15 cards that he will answer.

Tunisia (3V8)

Unfortunately, Craig Maxey, WB7RFA, did not get the chance to operate from Tunisia as planned. Craig had been given the call 3V8RFA and had planned operation last October. *DX News-Sheet* reports that he had been refused permission to operate from there, which also included Algeria. One of the countries had impounded his gear, but later returned it without the antennas.

DX News-Sheet also reports that Albert, IX1BZO, is looking into the possibility of a DXpedition to Tunisia in May 1988.

Checking the various DX newsletters we have a report of 3V8AQ on 7.005 MHz working the East Coast the end of September at 2250 UTC.

Are we spoon-fed DXers???

Much has been said about the lazy DXer who wishes to work his DX list or net style. Perhaps some of you will take offense at the title of lazy, and we will admit that we have worked some of our new ones that way. What we all use — or at least most of us — are those 2M spotting nets. And we think nothing of it, discounting the fact it is just another tool for the lazy DXer.

One concerned member of the Salt City DX Association (Syracuse, New York territory), voiced his opinion in the October issue of the group's monthly newsletter, regarding the VU4GDG Andamans DXpedition. We have edited a few of his (or her) comments:

"For some reason, the people who had the VU4 felt it was necessary to announce where the VU4 was listening every few seconds. Does a guy who has a TS930S, a KW, and a beam at 70 feet need another guy to tell him where to listen? If someone is going to operate your HF rig via 2M, don't even bother to turn it on. The whole affair on 2M over the VU4 degenerated into a contest to see who could find where the VU4 was listening and then shout it out over the repeater.

"We are not really helping anyone by taking away the operating ability that must be developed by doing things on your own. So many times I have heard some guys virtually spoonfeed DX to other guys. I'm not against helping the guy running an HW101 to a dipole, but the guy with a KW and a beam needs to develop on his own. Advice and tips are one thing, but this 2M stuff is getting carried away.

"But let's think about what DXing is all about. Getting in there and digging. Sharpening your listening skills. Being sneaky on CW. Let's not turn the 2M repeater into a device that will make us all a bunch of appliance operators who only know how to point the beams and shout when someone tells them to."

Really, isn't this 2M repeater spotting net just another form of list operation? Both operations tell you when to yell and shriek at the DX station, except the list style allows you a clear channel. Would you believe that some DXers condemn those who work DX via lists and nets, but think nothing of it concerning a 2M spotting net?

Antique QSL Department

We wish to extend our thanks to Carl McDaniel, W3HCW, of Williamsport, Pennsylvania, for this month's little gem. The call YR5VV was assigned to V. Vasilescu in Bucuresti, worked on 20M in 1939. The "winds of war" were about to blow then and we are not sure if the date was January 9 or September 1. The card arrived via the bureau and had green call letters.

The contact was made by Hiram R. Humphrey, W3OEV, who is now a Silent Key. Notice that the call in-





dicated is W8EOV. At that time, western Pennsylvania and western New York were included in the 8th call area.

"No mystery — here I am," writes Bernie Swedloff, K2SWZ. This is in reference to the W3EKK/VK9 QSL card that we ran in the October issue. Bernie had held the calls W3EKK and K2SWZ simultaneously, and as the FCC no longer allows holding two or more calls, Bernie retained his New Jersey call. We wish to thank Bill Soble, W3QXT, who also contacted us on Bernie's whereabouts.

QSL information

Dave Welker, WB3AMO, is looking for a QSL route for G4CDQ/ST2 for a 1983 contact he made on 20M. We checked the W6GO/K6HHD list for this one and found no entry. Perhaps



one of our readers can help Dave with this one.

QSL routes

A36PP -ZL4QS	C30W	-OH3TY
AP2SQ -W3HNK	C53FC/5U7	-KA1DE
AY5EIC -LU5EIC	C05GV	-W3HNK
AY9DUW -LU8DWN	CQ5QF	-CT1QF
C21NI -OH1RY	CR9BZ	-OH2BH
(See Note 1)	CS8UW	-WA3HUP
C30EBE -OH3TY	CT3FN	-HB9CRV
C30CAN -DF6EJ	CW2A	-CX2AAL



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- Air-core teflon dielectric coaxbalun and stainless-steel hardware at no extra cost
- traditional Blackforest craftsmanship

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For further information contact: H. J. THEILER CORP. P.O. Box 5369, Dept. 15 Spartanburg, SC 29304 Tel: (803) 576-5566

E12VNO	-NN50	V31AB
FH/G/FH4	EC	V44KI
	-F6FNU	V44NX
FK/JH4RH		V47Z
FTOWA	-JH4RHF	VE2LJ
FV7NDX	-F6FNU -F6AJA	VE7CR
FY5YE	-W5JLU	VE8 VE9MA
HBONL	-HB9NL	VK9AB
HB0/HB9N	L	VK9LB
	-HB9NL	
HC8DX	-K6VNX	VP2E/N
HD8CQ	(See Note 2)	VP2MU
HISDLA	-KT1N -HI8TL	VP8BNC
HLIASS	-JK1IAR	VP9AD
HL9MM	-KA6V	VS6DO
HX1HVI	-FF6URA	VU2TTC
I2VQD/IL3		VU2L
J28EV	-FD6ITD	VU2N
J79MD JW5E	-N4CRU	VU2Z
KA2HH/JD	-LA5NM	VU4GDO
	-K3LTV	W3WKP VP9
KC6CS	-JE1JKL	WB4PJV
KC6SZ	-JA6BSM	VP5
KC6VW	-JA6BSM	WY5LU/
KG4GN	-AA6AC	KH3
KH2F/KH4 KH9AC		XX9G
KH9AC KL7LF/KH3	-RIZA	YB3ASQ
KN8M/KHB	-K8CW	YB0DPO YE0S
KP2A	-NE8Z	Z24JS
	(See Note 2)	ZB2X
KP4FI	-NP4NX	ZD7JAM
LU5EVB/Z	-LU1DZ	ZD8RP
N3JT/HK0 OD5VT	-W2GHK -HB9CRV	ZD9BV
OFOBA	-OH2BAZ	ZF2JI ZF2KK/9
OH2BDA/	Onedra	ZF2KK/9 ZF2KN
OHØ	-OH2BDA	ZK1XO
OH2MM/		ZP5AA
	-OH2MM	ZP5PX
OH2BM/4U OHØAM	-онзкр -онзвн	ZY4OY
	-OH2BAZ	ZY5EG
	-ON5SQ	ZZ5TT 3A/DL5Z
P40A	-KAIXN	3D2RY
P40T	-KB2HZ	0122101
	-WA6OTU	3V8ZO
P40V	-WA6AHF	3X0HBR
	–K4PI –KC8YW	4C2C
	-N2AU	4K1AH
SORASD .	-EA2JG	4K1F
SUIMR -	-N6CW	*****
SAALE -	-KOLTM	4K0E
T30RY -	-OHIRY	
T32BA -	(See Note 1) -DL2ZAD	4N8N
	-DF6FK	4U42UN 4X75TA
	-WC5P	5T5NU
T77Q -	-IV3SUS	5Z4DU
	-TI2LCR	5Z4FA
	-DL7MQ	8P6RE
	-TISCBT	8P9AY
TJIDL -	-F6FNU -DK8SO	8P9HR
	-DK8SO -N2AU	9G1WA 9H3DX
TU4BR/5U7 -		9H3DX 9L1GG
TZ6VV -	-NOBLD	9Q5DA
	-NBOV	9Q5DH
TZORV -	-NBOV	9Q5TV
UM8MK -	-RA4HT	



/31AB	-K6BWX
44KI	-NODH
/44NX /47Z	-N8GCN
E2LJ	W4MGX VE3JDO
107003811	- VESJDO
ETCRW/	VETCOW
ETCRW/ E8 /E9MAD /K9AB	-VE7CRW -VE2BHC
K9AB	-ZLIAMO
K9LB	-VK2BCH
	(See Note 4)
P2E/N3J P2MU P8BNO	-VK2BCH (See Note 4) T-W2GHK
P2MU	-K8GG
P8BNO	
	(See Note 5)
P9AD	-W3HNK
SODU	-WASHUP
UZITU	-W8XM
TION	-N2AU -N2AU
P9AD S6DO U2TTC U2L U2N U2Z U4GDG /3WKP/ P9 P9	-W3HNK
U4GDG	-VU2GDG
/3WKP/	102020
P9	-W3WKP
W 67 0 441	
P5	-WB4PJW
Y5LU/	
H3 X9G	-N5DAS
X9G	-PA0GMM
B3ASQ	W7TSQ
BODPO EOS	-YCODPO
24JS	-YBODOG -W3HNK
B2X	-OH2KI
DTIAM	-ZD7AF
D8RP	G3IFB
D9BV	-W4FRU
D8RP D9BV 72J1 72KK/9	-K4IIF
2KK/9 72KN	-NU4Y
KIXO	-WB0JWC -KA7NLE -ON4WE
K1XO P5AA	-ON4WE
25PX	-W3HNK -PY4OY
(40Y	-PY4OY
40Y 5EG 5TT	-NZAU
STT DISTAN	-PY5TT DL5ZAB
DL5ZAE	-OHIRY
	(See Note 1)
8ZO 9HBR 2C 1AH	-DLSAB
OHBR	-DL5LAY
2C	-DL8AB -DL5LAY -XE2PQ
1AH	-UA4HOV
1.53	(See Note 3)
1F	-UQ2OC
OE	(See Note 3) UAIAFM
	(See Note 3)
8N 42UN	-YU8DPQ
42UN	-NA2K
75TA	-4X6LM
5NU	-F6FNU
	-KE4DA
4FA 6RE	-JA6XZS -KC3EK
PAY	-KICOW
HR	-K4BAI
1WA	-KC4NC
3DX	-DF2UU
	-N4DW
5DA	-KC4NC -KC4NC
5DH 5TV	-KC4NC -KC4NC
	-KCANC (See Note 6)
	ince more of

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 Andy Pfeiffer, 228 Trudeau Drive, Sarnia, ON NTS 4K6, CANADA
 P.O. Box 2095, LeLystad, 8203AB, TA3D TA4B **TJ1BP** TZ6MG **NETHERLANDS** WA5FFK/ HR5 -P.O. Box 303, San Pedro Sula, HONDURAS XE2GKG -Yasme Foundation, P.O. Box 2025, Castro Valley, CA 94546 -P.O. Box 392, GIBRALTAR ZB2IP 5L2GR -P.O. Box 313, Monrovia, LIBERIA 9Q2PK -P.O. Box 1226, Kinshasa, ZAIRE (See Note 7) 9Q5BG -P.O. Box 9824, Kinshasa, ZAIRE (See Note 8)

Notes

1. Do not use Callbook address. Use: Pekka Kolehmainen, P.O. Box 29, 21531 Paimio, FINLAND, Only contacts made by OH1RY at C21N1 are to be sent this route. 2. Applies for the recent CQ World-Wide DX Contest in

October 1987. As for QSL cards for all Soviet stations must be routed

via P.O. Box 88, Moscow, USSR, unless otherwise indicated. 4. Use 1986-87 Callbook address only

5. This QSL manager prefers IRC's instead of "green

stamps."
6. This applies for operations made November 8 through
the contacts should be sent direct to 30, 1986, only. All other contacts should be sent direct to P.O. Box 12646, Kinshasa, ZAIRE.

7. Gongo will accept QSL cards shipped via the bureau too!

8. Or you may ship your QSL card for 9Q5BG via F5JT.

Our contributors this month include W3HCW, W4KA, W2EJG, W1MGP, K1ZZ, W3QXT, K2SWZ, HB9NL, W9LNQ, WV4F, PS7KM, K6TS, WB3AMO, W6RGG, Salt Lake City DX Association (KB2G), Western Washington DX Club (K7ZR), Kansas City DX Club (ABØX), Southern California DX Club (NK6A), Long Island DX Bulletin (W2IYX), Inside DX (N2AU), Long Skip (VE3IPR), QRZ DX (W5KNE), DX News-Sheet (G4DYO) and The DX Bulletin (VP2ML).

Contests - other than the 160 and 10M ARRL tests - in December are slow, but come January things begin to pick up. In the next couple of months, some interesting DX should show on the bands. We hope you do well this coming year. Merry Christmas and the best to you in 1988! de John N6JM.

The deadline for news releases and special announcements is the 10th of the month, two months prior to issue date. Example: Deadline for the August issue is 10 June.



Early Reservation Information

• Giant 3 day flea market • Exhibits

- License exams Free bus service
- CW proficiency test Door prizes

Flea market tickets and grand banquet tickets are limited. Place your reservations early, please.

Flea Market Tickets

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

Special Awards

Nominations are requested for "Radio Amateur of the Year", "Special Achievement" and "Technical Achievement" awards. Contact; Hamvention Awards Chairman, Box 964, Dayton, OH 45401.

License Exams

Novice thru Extra exams scheduled Saturday and Sunday by appointment only. Send FCC form 610 (Aug. 1985 or later) - with requested elements indicated at top of form, copy of present license and check for \$4.35 (payable to ARRL/VEC) to: Exam Registration, 8830 Windbluff Point, Dayton, OH 45458

Hamvention Video

VHS video presentation about the HAMVENTION is available for loan. Contact Dick Miller, 2853 La Cresta, Beavercreek, OH 45324

1988 Deadlines

Award Nominations: March 15 Lodging: April 2 License Exams: March 26 Advance Registration and banquet: USA - April 4 Canada - March 31 Flea Market Space: Orders will not be processed before January 1

Information

Oeneral Information: (513) 433-7720 or, Box 2205, Dayton, OH 45401 Flea Market Information: (513) 898-8871 Lodging Information: (513) 223-2612 (No Reservations By Phone)

Lodging

Feservations received after Housing Bureau room blocks are filled will be returned along with a list of hotel/motels located in the surrounding areas of Dayton. The reservation will then become the responsibility of the individual.

HAMVENTION is sponsored by the Dayton Amateur Radio Association Inc.

Lodging Reservation Form

Dayton Hamvention - April 29, 30, May 1, 1988 Reservation Deadline - April 2, 1988

Name	and the second second	
Address		
City	State	Zip
Phone		
Arrival Date () Before 6 p Departure Date	om () After 6 pr	n
Rooms: () Single [) Double D) Double (1 be ouble (2 beds, 2	
Deposit required - Ro	om deposit must	be paid directly to e confirmation form

Mail to - Lodging, Dayton Hamvention, 1880 Kettering Tower, Dayton, OH 45423-1880

sent to you. Use canceled check for confirmation.

Advance Registration Form

Dayton Harnvention 1988

Reservation Deadline - USA-April 4, Canada-March 31	Dug totte trans		and the second sec	
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(PI	Name				
EASE	Address				
SES	City	State	Zlp		
FPI	How M	any			
EPARATE	Admission	_ @ \$8.00*	\$		
E	(valid all 3 days) Orand Banquet	@\$16.00**	9		
1	Women's Luncheon (Saturday)	@ \$6.75	9		
1	(Sunday)	@ \$6.75	\$		
	Flea Market (Max. 3 spaces)	\$23/1 space \$50/2 adjac			
	Admission ticket must be ordered with fica mar	\$150/3 adjac	ent \$		
	* \$10.00 at door				
'ld Radi	Make checks payable and o History ton Hamvention, Box 2	mail S.A.S.E. to			



One half of the Senile Net (back row, left to right): Art Kramer, K4FGL; Chris Christian, W5LQL; Bob Halbman, AJ9P; Dick Sanderson, WB5DWP; and John Biester, KB9YY. (Front row, left to right): Jim Mason, N5CML; Jerry Bennett, W4RAS; Paul Block, KB9IJ; Fritz Kohn, WA9OMC; and Charlie Davis, WB9YWL.

Senile Net

John Biester, KB9YY

This is not a story about great emergency services in an earthquake, flood or forest fire. Rather, this is a tale of radio friendships becoming person-toperson visits. There is nothing unusual about radio amateurs meeting each other at hamfests, conventions or during personal travel. However, when the majority of a net come together simply to meet and talk with each other, there is something unusual about the affair.

The Senile Net is not a young net either in length of existence nor in the ages of its members. The net actually began some 30-35 years ago and has continued with changing membership over the intervening years. At this time we have 18 regular check-ins five mornings a week between 1400 and 1500 UTC on 14.286 MHz. For many years now, this group has, in effect, secured a frequency for the International Handicappers Net which begins at 1500 UTC.

Last spring, one of the members — John Biester, KB9YY — decided he wanted to know more about the other members. He sent out a questionnaire and secured biographical information on everyone. The information was developed into a booklet and sent to each member. The cover letter suggested how great it would be if we could all get together in person sometime.

Surprisingly, that suggestion caught on and planning began last May for a "reunion" in Hot Springs, Arkansas,

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MPD-5 60-40-20-15-10M max-performance dipole 87 long \$95ppd MPD-2 80-40M max-performance dipole (specify 85, 95, 116°L) \$35ppd MPD-3 160-80-40M max-performance dipole (tr3 long) \$71ppd SSD-6 160-80-40M is performance dipole (tr3 long) \$71ppd SSD-5 160-80-40-20-15-10M space-saver dipole 71 long \$71ppd SSD-5 80-40-20-15-10M space-saver dipole (tr3 cong) \$71ppd SSD-5 80-40-20-15-10M space-saver dipole (tr3 cong) \$82ppd SSD-5 80-40-20-15-10M space-saver dipole (tr3 cong) \$82ppd SSD-4 80-40-20-15-10M space-saver dipole (tr3 cong) \$82ppd SSD-4 80-40-20-15-10M space-saver dipole (tr3 cong) \$82ppd SD-5 80-40-20-15-10M space-saver dipole (tr3 cong) \$82ppd
SASE for catalogue of 30 dipoles, slopers, and other unique antennas W91NN ANTENNAS 312-294-3414 BOX 393 MK PROSPECT, 56 6036

with KB9YY and Dick Sanderson, WB5DWP, working out arrangements. Net members are located in Florida,

Texas. Arkansas, Wisconsin, California and Oregon. Ten members and their wives gathered in Hot Springs on Oc-



Letter style on shirt is "Ivy Open" and on cap is "Sportswear."

Now you can wear and display your cali, name and your club name on a highquality T-shirt for only \$10.00. Your call, name and A.R.R.L. logo (if desired), printed on shirt front, with club name printed on shirt back. Shirts (sizes S,M, L,XL) are available in light blue, light yellow, beige (tan) or white. A.R.R.L. logo available in $2V_4$ " x 5" or 134" x 3" in red. Lettering is available in two styles — Ivy Open or Sportswear — and the following colors: black, royal blue, maroon, brown, green, red, or orange. For individual orders please add \$1.50 per item for shipping and handling. Club orders (would prefer quantities of 10 or more) are shipped postpaid.

Matching cap printed with your call and name has foam front and mesh back, is adjustable for size, and costs \$5.50. High quality golf shirts available,

printed one side \$14, both sides \$15. Make checks or M.O. payable to:

Anne Wright, N6BOP 2272 Kellogg Park Drive Pomona, CA 91768

World Radio History

California residents add 6% sales tax.



The other half of the Senile Net (back row, left to right): Georgia Sanderson; Jane Mason; Harriett Biester, KA9IBR; Lu Kohn; and Faye Bennett. (Front row, left to right): Margaret Kramer; Velma Christian; Irene Davis; Verna Block; and Gladys Halbman.

> tober 29-30, for two days of friendly visiting and nothing more. The informal affair was so successful that a repeat is already being planned for Pensacola, Florida for next October. And the pleasure of knowing what those voices look like has made the morning conversations on 20 meters much more interesting!

> The Senile Net is not a working net just a group of friends sharing conversation each morning. We all forget our questions, our answers, or to twist a knob or to flip a switch at various times. Those memory failures plus the ages of the group (ranging from 58 to 80 with only four under 65) led to the name we have adopted.

> We welcome anyone to check in with us any day. It is an especially good group to use while mobile because of the geographic spread of the net, which enables people to be heard by someone no matter where they are.

Improved test method

Roger reported four VEC exams so far this month. The club is doing well in its pass rate compared to the nation as a whole. A vivid physical demonstration was given of the newest method for passing the exam.

1) Letter each finger A, B, C, D.

2) Hit fingers against edge of table

3) Finger that hurts the most is the right answer.

4) If all hurt equally answer is "all of above."

5) If none hurt, answer is "none of the above."

6) If fingers fall off prior to completing exam, come back in 30 days and try again.

There is a 16.87% pass rate with this system. It is called the New Improved Bash Test Method.

—Anchorage ARC, AK

Visit Your Local RADIO CLUB.

ALABAMA

Birmingham Amateur Radio Club, Inc. (BARC) Meets at the American Red Cross Building 2225 3rd Ave. North in downtown Birmingham, Alabama 1st and 3rd Thursdays/monthly at 7:30 p.m. For info call Chuck Conkell, N4MLN, (205) 833-9555

ALASKA

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

ARIZONA

Old Pueblo Radio Club Meets: 2nd Wednesday/monthly — 7:30 p.m. Location: Franklin Building University of Arizona N.E. corner of 6th St. & Park.

Tucson Repeater Association P.O. Box 40371, Tucson, AZ 85717-0371 2nd Sat./monthly — 7:30 p.m., Pima Co. Communications Bldg., 2145 E. Ajo. Net Thurs. 7:30 p.m. 146.28/88 (146.22/82, 147.68/08, 147.70/10-PKT)

CALIFORNIA

Amador County Amateur Radio Club PO. Box 1094, Pine Grove, CA 95665, Pioneer Elementary School, Pioneer, CA • 1st Thurs/monthly 7:30 p.m. WA6WIY Rptr. — 146.835, 146.235. Net Tues. 7:30 p.m.

Associated Radio Amateurs of Long Beach, Inc. W6RO PO. Box 7493, Long Beach, CA 90807 Meets: 1st Friday/monthly — 7:30 p.m. Signal Hill Recreation Hall 1708 E. Hill St., Signal Hill, CA

Citrus Belt Amateur Radio Club 777 East Rialto Ave. San Bernardino, Calif. P.O. Box 3788, Zip-92413 Meets: first Friday/monthly—7 pm.

Coachella Valley Amateur Radio Club (CVARC) Columbia Savings and Loan Association Highway 111 and Highway 74 Palm Desert, CA 92260 1st Monday/monthly 7:30 p.m.

Contra Costa Communications Club WD6EZC/R PO. Box 661, San Pablo, CA 94806 Meets 2nd Sunday at 9:00 a.m. Hickory Post Restaurant/Lucky Lanes For info call Carl KA6OLK (415) 237-2621

Gabilan Amateur Radio Club

South Valley J.H.S. 385 IOOF Ave. • Gilroy, CA 95020 Meets: 2nd Thursday/monthly — 7:30 p.m. Talk-in 145.47-

Golden Empire Amateur Radio Society (VEC) P.O. Box 508 • Chico, CA 95927 Club call W6RHC — Repeater 146.25/.85 Meets at Esplanade House, 1526 Esplanade Room 101, 3rd Friday/monthly - 8:00 p.m.

The Hayward Radio Club, Inc. Fire Station #6 — 1401 West Winton Ave., Hayward, CA. Classroom in back of station. Meets: 3rd Friday/monthly — 7:30 p.m. For info contact Mrs. Elfy Griffiths N6DOC

Hilitop Amateur Masterlie System (HAMS) Informal mtgs. weekly/Mon. 5 p.m. at Shakey's Pizza, 12924 Washington Blvd., Mar Vista, CA. Meets 3rd Mon./monthly at Bicycle Shop Cafe, 12217 W. Wilshire Blvd., W. LA. Info, N6FD 213/823-0767

Kem River Valley Amateur Radio Club P.O. Box 1902 • Lake Isabella, CA 93240. Meets 4th Sat./monthly at 4 p.m. (Pot Luck). Veteran's Hall, Lake Isabella WA6UYW Reptrs.-146.085/146.685 224.22/Down 1.6 WB60DZ Reptr.-224.58 Down 1.6. Low-Level

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

North Hills Radio Club PO. Box 41635, Sacramento, CA 95841 3rd Tuesday/monthly — 7:30 p.m., Carmichael Elks Lodge 5631 Cypress Ave. • Carmichael, CA Net 145.19 Thur. at 8:00 p.m.

Radio Amateur Mobile Society

Meets: 2nd Tuesday/monthly — 7:30 p.m. Carmichael Elks Bldg. Cypress and Hackberry, Carmichael, CA Net Saturday a.m. 224.84 8:30/146.79 9:00

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

Sacramento Amateur Radio Club, Inc. Contact: Bob Lyman, KI6FT, (916) 726-2694 Meets Sacramento Blood Bank 32nd St. & Stockton Blvd., Sacramento, CA 2nd Wednesday/monthly-7 p.m.

Sacramento "Old Timers" Ham Radio Brkfst Club Meets 2nd Wednesday/monthly — 8 a.m. Carrows Restaurant near Watt Ave. and Hwy 80 exit For Info contact Paul Wolf, W6RLP (916) 331-1830

San Fernando Valley ARC inc. (W6SD) Meets 3rd Friday/monthly — 7:30 p.m. • Red Cross Bldg. 14717 Sherman Way, Van Nuys, CA 91407. Exams 8 a.m. 1st Sat./monthly • Pre-registration via P.O. Box 3151, Van Nuys, CA 91407

San Gabriel Valley ARC

Bowling Green Clubhouse 405 S. Šanta Anita Ave. • Arcadia, CA 91006 Meets: 1st Tuesday/monthly — 7:30 p.m., except Dec. W6QFK — Repeater 147.165/765

San Mateo Radio Club

Beresford Park Recreation Center 28th Ave. and Alameda de las Pulgas San Mateo, CA 94403 3rd Friday/monthly - 7:30 p.m.

Santa Clara County Amateur Radio Assoc. WoUW P.O. Box 6 • San Jose, CA 95103. W6UU 146.385 + Meets: Santa Clara County Service Center 1555 Berger Dr., Building 2 Auditorium 2nd Monday/monthly — 7:30 p.m.

Santa Clara Valley Repeater Society (SCVRS) P.O. Box 3085 • Sunnyvale, CA 95087 (408) 247-2877. 146.76(– 600 KHz), 224.26 (– 1.6 MHz), 444.60 (+ 5 MHz). 2 meter/220 net Mon. 9 p.m. • Mtgs.-3rd Fridays.

Shasta Cascade Amateur Radio Society (SCARS)

P.O. Box 664 • Anderson, CA 96007 Meets: 3rd Wed./monthly-7 p.m. at the C.D.F. Conf. Rm. on Grape St. near Parkview Ave. in Redding, CA. Net 146.64 Wed. at 8 p.m.

Sierra Foothills Amateur Radio Club P.O. Box 3262 • Auburn, CA 95604 Office of Education Bidg., 360 Nevada St. Auburn, CA Meets: 2nd Friday/monthly --- 7:30 p.m. Nets: Tues. 7:30 p.m. 28.443 MHz. Thurs. 7:30 p.m. Rptr. 145.43/223.86

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

Sonoma County Radio Amateurs, Inc. P.O. Box 116 & Santa Rosa, CA 95402 Meets: 1st Wednesday/monthly 7:30 p.m. Repeater frequency: 146.13/73 Contact person: Hank, W6DTV, 823-7885

South Bay Amateur Radio Association

Los Cerritos Community Center, Fremont, CA Dick Melcher, WA6MDI Call-in 147.615/015 Meets: 3rd Wednesday/monthly - 7:30 p.m.

Southern Calif. Amateur Transmitting Society (SCATS) P.O. Box 1770 • Covina, CA 91722 Meets: Cortez School 2226 E. Rio Verde Dr. • West Covina, CA 91791 1st Monday/monthly — 7 p.m. (coffee 6:30 p.m.)

Southern California Six Meter Club P.O. Box 448, Cypress, CA 90630 USB Net Tue., 8:00 p.m., 50.150 FM Rpt. Net Thur., 8:00 p.m., 52.28/88 FM Smplx Net Thur., 9:00 p.m., 50.300

Stanislaus Amateur Radio Assoc. (SARA) PO. Box 4601 Modesto, CA 95352 Stanislaus Co. Administration Bldg. 12th & H Streets • 3rd Tues./monthly — 7:30 p.m. 145.39 MHz WD6EJF, 223.68 MHz

Stockton-Delta Amateur Radio Club, Inc. U. of the Pacific, Rm 122 Kensington & Mendocino 2nd Wed. monthly, 7:30 P.M. Rptr. 147.165/765 Net Wed. 8:00 P.M.

Tehama County Amateur Radio Club 13620 Trinity Ave. • Red Bluff, CA 96080 Meets: 1st Friday — 7:00 p.m. Lincoln Street School Net Wednesday 8:00 p.m. 147.705 repeater

Victor Valley Amateur Radio Club P.O. Box 869, Victorville, CA 92392 Meets: Victor School Board Room, 6th & "A" 2nd Tuesday/monthly — 7:30 p.m. WA6EFW Repeater 146.34/146.94

Western Amateur Radio Assoc. **Cerritos Park East** 166th St. and Carmenita Ave. Cerritos, CA. 1st Tuesday/monthly 7:00 p.m. - 145.400

Yucaipa Valley Amateur Radio Club (YVARC) Gibralter Saving's Community Room 34880 Yucaipa Bivd., Yucaipa, CA 92399 Pres: Fred Schmidt KG6QN (714) 794-1244 Meets: 3rd Monday/monthly — 7:30 p.m.

CONNECTICUT

Tri-City ARC Groton Public Library Route 117 Groton, CT 06340 2nd Tuesday/monthly - 7:30 p.m.

FLORIDA

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

Platinum Coast Amateur Radio Society 1150 S. Hickory St., PO. Box 1004 Melbourne, FL 32902-1004 Meets: 2nd Monday/monthly at Melbourne Red Cross Taik-in on 146.25/85 or 146.01/61 rptr.

Sarasota Amateur Radio Ass'n, Inc. Meets: 3rd Tues./monthly — 8 p.m. on the 6th floor (board room) of the County Admin. Bldg. corner of 301 & Ringling Blvd. Club Rptr. W4IE, freq. 146.91/31, open to all. Phone patch *Up #Down. Welcome

South Brevard Amateur Radio Club P.O. Box 2205 • Melbourne, FL 32902 Meets 1st Tuesday/monthly — 7 p.m.

Melbourne Library, 2275 S. Babcock St. Melbourne, FL

HAWAII

Big Island Amateur Radio Club P.O. Box 1938 • Hilo, HI 96721-1938 Meets: 2nd Tuesday/monthly - 7:30 p.m. Helco Auditorium, 1200 Kilauea, Hilb Call in: 146.88(-) or 146.76(-)

ILLINOIS

Bolingbrook Amateur Radio Society P.O. Box 1429 Bolingbrook, IL 60439-7429 (312) 759-4747 • Call in 147.93/33 Meets: 3rd Monday/monthly — 7:30 p.m.

Chicago Suburban Radio Association (CSRA) P.O. Box 88, Lyons, IL 60534 Meets 2nd Wed./monthly — 8 p.m. Community Rm. Clyde Federal Savings & Loan Association 7222 W. Cermak Rd. • North Riverside, IL

Dupage Amateur Radio Club W9DUP Mid-America Savings and Loan 55th & Holmes (55th St. near RT 83) Clarendon Hills, IL • 4th Monday/monthly -- 7:30 p.m. Club repeater 145.250 -- 600 KHZ

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

North Shore Radio Club Karger Rec. Center--1850 Green Bay • Highland Park, IL 2nd Monday/monthly - 7:30 p.m. For info call (312) 945-0356 WB9FRM Repeater 147.945-600, PL 1B

Six Meter Club of Chicago - K9ONA Rptrs. 146.37/146.97 448.300/443.300 Info net - Tues. 9:00 p.m. 146.37/97 Annual Hamfest 2nd Sunday in June Santa Fe Park, Willow Springs, IL.

INDIANA

Fort Wayne Radio Club James Wolf, KR9U P.O. Box 15127 • Fort Wayne, IN 46885 The Salem Church Meets: 3rd Friday/monthly - 7:30 p.m.

Northeastern Indiana Amateur Radio Club P.O. Box 745, Auburn Indiana 46706 Meets: 2nd Tuesday/monthly — 7:00 p.m. at members homes Daily traffic net at 2300Z on 147.96/36 MHz, the WB9VDK repeater

MARYLAND

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

MICHIGAN

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

South Eastern Michigan A.R.C.

Meets: 1st Friday/monthly—7:30 p.m. Grosse Pointe North High School, Bidg. C, Cafeteria Commons. Fcr info contact: AK8I (313) 372-1252 W8FWC Rptr. 146.740/146.140

MISSOURI

St. Charles Amateur Radio Club, Inc. (SCARC) St. Peters Civic Center, St. Peters, MO I-70 and Salt Lick Road Meets: 4th Tuesday/monthly-7:30 p.m. WB0HSI Repeater 07/67

Heart of America Radio Club 211 W. Armour Kansas City, MO Meets: 3rd Tuesday — 7:30 p.m.

NEVADA

Frontier Amateur Radio Society (FARS) Meets: 1st Friday at the Fly-N-Chef at 7 p.m. Scenic Airlines Terminal, McCarran Airport, Las Vegas, NV • Net Mondays 7:30 p.m. 145.39 Info: Bob Herrell, WBSPTO, 541-6682

NEW HAMPSHIRE

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

NEW JERSEY

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

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

NEW YORK

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

Genesee Radio Amateurs (G.R.A.M.) ID fense State St. . Batavia, NY 14020 Meets: 3rd Friday/monthly — 7:30 p.m. 147.255 + W2RCX

Hall of Science Amateur Radio Club, Inc.

PO.Box 131, Jamacia, NY 11415 – HOSARC – 2nd Tuesday/ monthly – Hall of Science Building, 47-01 111 St., Flushing Meadow Park at 7:30 p.m. The tristates' only 3-band linked rptr. system 144.300 S/223.600 – /445.225 –

Radio Club of Junior High School 22 N.Y.C., Inc. 111 Columbia St. • New York, NY 10002 "At The Core of The Big Apple," QSLs invited. For info contact WB2JKJ and "The Crew" learning English thru Ham Radio at (516) 674-4072, 24 hrs.

Staten Island Amateur Radio Assn. (SIARA) PO. Box 495, Staten Island, NY 10314-0020 Meets 3rd Friday/monthly — 8:00 p.m. Rm. B-201, College of Staten Island, Sunnyside Club Repeater — W2CWW/R — 440.325/445.325

Westchester Amateur Radio Assoc. (WARA) Scarsdale Village Hall Scarsdale, New York Meets: 1st Wednesday/monthly — 8:00 p.m. For info call B. Dubbs, Pres. (WA2FSR) (914) 725-1191

NORTH CAROLINA

Raleigh Amateur Radio Society, Inc. (RARS) PO. Box 17124 • Raleigh, NC 27619 Meets: 1st Wed./monthly, 7:30 p.m. • First Presb. Church Club net daily, 8 p.m. on RARS 04/64, W4DW Annual Hamfest, 2nd Sunday in April

OHIO

Amateur Radio Fellowship, Inc. (ARF) N8HUN, Linda Delugach, Secretary P.O. Box 2486 • Streetsboro, OH 44241 Meets: 1st Sat./monthly at Kent Wally Waffle KA8PHO repeater 147.675/.075

Ashtabula County ARC Ken Stenback, AI8S (964-7316) County Justice Center, Jefferson, OH 3rd Tuesday/monthly — 7:30 p.m. County Repeater — 146.715

Northern Ohio Amateur Radio Society (NOARS) K8KRG/WB8JBM • PO. Box 354, Lorain, OH 44052 Meets 3rd Mondays/monthly—8 p.m. at Gargus Hall Info: George—W8ANM • (216) 933-2841 Ohio's largest general interest club.

PENNSYLVANIA

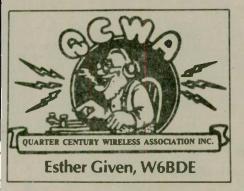
Mercer County Amateur Radio Club — W3LIF P.O. Box 996 Sharon, PA 16146 Meets: 4th Tuesday/monthly at 7:30 p.m. at Shenango Valley Medical Center — Farrell, PA Net — Thursdays 8:45 p.m. on 147.75/15 W3LIF/R

Penn Wireless Assoc. Inc. Falls Twp. Municipal Bldg. Trenton Road Fallsington, PA 19054 4th Monday/monthly - 8:00 p.m.

Warminster Amateur Radio Club PO. Box 113, Warminster, PA 18974 Meets: 1st Wednesday/monthly — 8:00 p.m. at St. Johns Lutheran Church, Hatboro, PA Net Wednesdays - 8:30, 147.09/69

UTAH

Ogden Amateur Radio Club P.O. Box 3353 Ogden, Utah 84409 Meets: 3rd Wed./monthly-7:00 p.m. at the Red Cross Bld., 20th & Washington



The Quarter Century Wireless Association convened in San Diego, California, October 30-31, where the organization's 40th anniversary was celebrated. Included in the 200 members attending were three charter members: David Talley, W2PF; Moe Joffe, W6PHE; and Robert Baird, W9NN. San Diego Chapter #14 hosted the convention, planning and presenting an excellent program which included speakers on items of topical interest, entertainment, a buffet breakfast and concluded with a banquet.

The QCWA Board of Directors consisting of its four officers and 10 directors at large, nine of whom were present, held their annual meeting on October 29 and 30 prior to the convention. Speaker at the banquet was Arch Kelley, KD6PH, who spoke on some of the effects of the atomic age in U.S. Navy operations. Kelley had served on the staff of Admiral Rickover who was

VIRGINIA

Southern Peninsula Amateur Radio Klub (SPARK) Meets: 1st and 3rd Tuesdays Salvation Army Community B dg. • Hampton, VA Operates 146/13 147/73 Repeater For info call 480-2346 or 851-5573

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

WASHINGTON

Mike & Key ARC K7LED Good Neighbor Center 305 So. 43rd Street Renton, WA 98055 Meets monthly on 3rd Sat. - 10 a.m.

WEST VIRGINIA

Jackson County Amateur Radio Club, Inc. D. Geneal Bailey, NK8P, Sec.-Treas. 113 Winters Dr., Ripley, WV 25271 First National Bank of Ripley Meets: 1st Thursday/monthly - 7:30 p.m.

The Kanawha Amateur Radio Club P.O. Box 1694 • Charleston, WV 25326 Meets: 1st Friday/monthly-7 p.m. South Charleston City Hall annex Repeaters 6.82 and 6.88

the father of the atomic submarine. Presentation of awards included:

QCWA's Hall of Fame Award, posthumously honored Vic Clark, W4KFC, for his outstanding contributions to Amateur Radio communications which earned him substantial favorable recognition at the national level. Regretfully, due to illness, his wife Hester, was unable to be present to receive his award which was accepted by John Kelleher, W4ZC, in her absence.

The QCWA Roll of Honor Award which recognizes a member who has made significantly substantial and documented contributions to QCWA, Amateur Radio communications and public service on a long term basis, honored Ethel Smith, K4LMB. Due to illness in her family, she too was unable to receive her award in person. It was accepted in her behalf by Stuart Meyer, W2GHK, for later presentation locally.

A QCWA Meritorious Service Award honored Viola Grossman, W2JZX, for outstanding service. Since she had become a Silent Key, the award was accepted on behalf of her family by John Weber, KA2IXW.

QCWA Certificates of Appreciation were awarded to Leo Meyerson, WØGFQ, and Gerhard Jacoby, DL3ME, for their service on the Board of Directors.

QCWA President's Award was presented to Herb Gleed, W6FQ, recognizing his 20 years of service as net control of the QCWA National Net.

A Resolution of Appreciation was presented to San Diego Chapter #14 and its committee chairmen for hosting the 1987 QCWA annual meeting and national convention. The committee was headed by Thurman Beach, W6OOX, Chairman and Jack Phelan, W6FH, Co-Chairman.

Additional awards recognizing QCWA's 40th anniversary included a replica of an original spark gap for

HAM RADIO

each of the 12 remaining charter members, three of whom were present.

A plaque was presented to Helen Schmock, W8GJX, the first YL member of QCWA (#793) who was first licensed in 1929.

A Meritorious Service Award was presented by San Diego Chapter to F. K. (Bernie) Bernardini, K6UV, their vice president.

Souvenirs for each conventioneer included scratch pads, pens and water glasses bearing the organization's logo and saluting its 40th anniversary. QCWA CELEBRATED ITS 40TH BIRTHDAY DECEMBER 5, 1987.

Leo Meyerson, WØGFQ, has been named by the QCWA Board of Directors to fill the vacancy in the office of director occurring when Hugh Winter, W5HD, was elevated to vice president. Meyerson had served on the board for many years and his term expired August 31. He did not accept nomination in the fall of '86 for reelection in '87 due to illness in his family. This problem has been resolved and he is now in a position to resume service to QCWA. His term of office in the new appointment expires in 1988.

Meyerson's major responsibility on the board has been the promotion and overseeing of the QCWA scholarship program which he initiated in 1977. In 10 years under his guidance, QCWA's scholarship fund has reached \$60,000 and become self-sustaining enabling scholarship awards totaling \$4,900 annually.

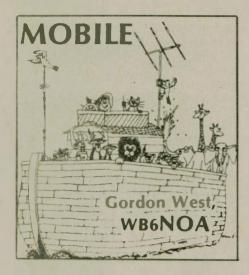
Big Bear Lake Chapter #164 is QCWA's latest addition to the family of active chapters. The charter was issued October 15, and officers include president, Don Grantham, WA6BCN; secretary, Richard Slepicka, K6IFN; and treasurer, James Nye, K6GCF. The new chapter will serve QCWA members in Big Bear country north east of San Bernardino, California.

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Mobile battery systems

Your solid-state mobile transceiver requires a healthy 12V source to operate. No longer is it possible to reliably use the cigarette lighter plug or your 12V fuse circuits for running that 50W VHF set or 100W worldwide transceiver. The voltage drop will create a garbled transmission on HF, and a VHF mobile unit that will literally "chatter" when you turn the engine off. If these symptoms sound familiar, read on! A little rewiring will do your mobile, mobile marine, mobile home and air mobile installation well.

It's fine to run your equipment off of the same battery that runs your vehicle or boat. On receive, your equipment draws less than an amp, and typical voice transmissions don't last that long. However, if you want to run your set-up on a separate battery, a dual battery system is not that tough to install. "Deep-cycle" batteries work well in this type of installation. Start your system out with two fresh "deepcycle" batteries rather than adding a

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ANUFACTURED BY Synthetic textiles,inc. (805) 658-7903 DACROFF IBA DUPONT REGISTERED TRADEMARK new battery to an old battery system. One deep-cycle battery will start your engine, and the second one will power your electronics. Because deep-cycle batteries give up current more slowly, they hold a charge longer than a conventional "maintenance free" battery and can outlast the starting battery by three to five lifetimes. (A starting battery is specially designed for



12V battery isolator with battery selector switch

heavy, quick loads with minimum voltage drop.)

If you decide to go ahead with two new batteries, find a spot close to your radio system for that second battery. Make sure it can "breathe," and make



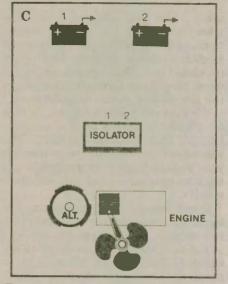


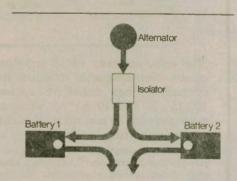
Figure 1 — One isolator, one alternator and two batteries. Installation: Isolator automatically selects lower charged battery to be charged first. Full battery cannot discharge to drained battery. Dedicated system, no flexibility, no emergency parallel or disconnect function.

absolutely sure that none of the battery gases can leak into the inside of your vehicle, airplane, boat or mobile home. Also make sure that it's not going to get wet.

Once you have physically bolted down the battery, lay out your new battery cable runs. Run a pair of #6's to where your radio equipment will be located. Any wire gauge lighter (higher #) may give you a substantial voltage drop, and will undo everything you are trying to redo. If the cable is not as large around as your thumb, it's undersized for most HF and 50W mobile units.

Terminate your new cable run into a nice circuit breaker panel. These panels are available at most RV and marine eletronic outlets.

You will also need two individual 20A fuses and fuse holders for both the black and red wire *at the battery*. Same thing with your existing battery system if you plan to tap off of it. We



Guest battery selector systems

42 WORLDRADIO, January 1988

always fuse our radio power feedlines where they meet the battery connections. This protects us in case the feedlines should become shorted or grounded out. This sometimes occurs when they pass through holes cut in the fire wall or engine compartment.

We fuse the black wire, too, in case of a bad connection on the negative lead of your starter system. The starter current could try to go through your radio's black wire system to get back to ground — and this we don't want!

Don't connect the wires yet to the battery. Also remove your existing red wire off your present battery.

The next step is to choose a battery isolator. The isolator allows you to connect your engine alternator directly to both batteries without fear of overcharging. It also insures that one higher charged battery won't discharge into the other lower charged battery. Using the isolator electrically isolates one battery from the other on discharge, but allows both batteries to be adequately recharged from your

BATTERY MONITOR	BANK 1	BANK 2
	VOLTS	CHARDING
POWER	12.0	HIDH
DN		MED
OFF	11.0	Low
		DYERCHARD
+Marine		and the second

Battery monitor measures voltage

alternator. Select only a professional battery isolator that is capable of handling up to 100 amps. See your local marine electronics outlet or RV store for these quality isolators. Don't try to get by with one that is too small in current capacity — it could overheat and cause a fire. (See Figure 1.)

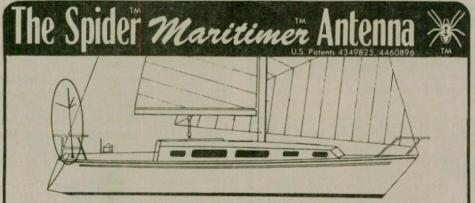
It's also a good idea to let a professional check out your alternator to insure it has the capacity to adequately charge both batteries, simultaneously. Most automobile alternators can handle this job without any problem.

It's also a good idea to wire in a battery monitor volt meter to keep track of the state of charge for each battery. Looking at its "resting voltage" will tell you a lot about how your two independent batteries are being charged. (See battery voltage photo.)

Finally, after your installation of your second battery is complete, double check all circuits. Don't take shortcuts and try to eliminate the black lead by using the chassis of your vehicle as a common ground. Use your vehicle's chassis as your equipment chassis ground. This will keep out stray RF.

Probably the biggest cause of transmit distortion is low voltage from insufficient power leads. Wire directly to your battery, using the battery end of your cables, for a good supply of "talk power." Wire in a second battery using a battery isolator if you want an independent radio system battery.

If you completely drain your big radio battery, you will have a fresh battery and plenty of alternator power to start the engine and charge it up again!



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Of all the things that an Amateur Radio hobbyist does, adding new equipment to his shack is probably the most exciting and rewarding. The decision to buy usually comes after a long period of catalog and advertisement study. Then, after you take the plunge and order that new piece of gear, and while you are waiting for it to arrive, you slip into a slight case of remorse. "Did I do the right thing?" you ask yourself a number of times, hoping of course that you did. When the gear arrives, you drop everything, hook it up and hope the beautiful black box will satisfy your anticipatory wishes.

Maybe that scenario doesn't happen to you, but it always does to me. So, when I recently changed transceivers I was immediately pleased with my new purchase. At the same time I added new software chips to a year-old Packratt-232, and again I was pleased.

For the last decade I have changed transceivers about every two years, whether I needed to or not. In doing so, I have been contributing to the trade deficit that everyone complains about. I am afraid to speak knowledgeably because when I look inside boxes that I thought were made in the USA, I discover they were manufactured overseas. My Xerox computer, for example, was made in Italy. I bought an American car and then discovered it was manufactured in

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Canada. It is a really good car, too.

My new transceiver is an ICOM IC-761. Now that I have had it for a few months, I can report on its operation. This is not a technical review of the machine; I'll leave that for the experts with laboratory equipment. I'll just hit the high spots of the things I like about it.

First, the 761 works great on RTTY. I installed the 250 Hz filters upon the recommendation of Jack Whitaker. W5HEZ. Jack helped talk me into buying the 761. Well, the RTTY and packet signals fit just perfectly into the 250 Hz filters, both the 170 and 200 Hz signals. When I punch the filter in, the signal strength level stays the same and the selectivity increases like it should. I got my first chance to check the 761 out in the CQ/RTTY Journal contest, and I was pleased with the way it worked.

The 761 is stable, the receiver is quiet, the readout dial is BIG, and the knobs and switches are in handy places. The only fault I can find with the panel is some of the toggle switches could use pilot lights to indicate on/off settings. Black toggle button settings are hard to see when the push button stroke is short. It is difficult to determine if they are on or off by just glancing at them. The filter button is a case in point.

The 32 memories are easy to use because they are all on one rotary switch. In my previous rig there were a bunch of push buttons to juggle and only 10 out the 40 memories were available at any one time. I have become a memory freak, and the 761 memories are really handy.

I miss the 10 Hz digit on the dial readout of my previous rig. I notice. however, that there is an extra digit on the LED block of the 761, so perhaps some enterprising ham will

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Add \$2.00 for shipping and handing. Ohio residents add 61/2% sales tax.

figure out how to modify the readout to add the extra digit.

The ICOM is a big, rugged-looking rig, and it runs cool as the proverbial cucumber. My pre-arrival anxiety is relieved, for it's a great rig.

My other addition was installing the Weather FAX chips to the AEA PK-232. I spent a number of enjoyable hours playing with the weather map reception feature, but it is a surprise command that really tickled my fancy. The command is SIGNAL and it is pretty slick. All you do is type "SI" into the computer and the PK-232 starts analyzing the signals you feed into it. It checks the baud rate and the type of signal it is looking into. Every few seconds it prints out on the computer screen the information on the signal, even saying "noise" when there is nothing into the unit.

When it reads out the analysis of the signal, you type "OK" and it starts decoding the signal for you. It reads ARQ, FEC, RTTY, etc., and it tells you if it is upside-down or not. This feature, along with a bit inversion command for decoding certain encrypted signals, is great for scanning the commercial as well as the ham bands. It should be great fun for SWL people to browse the high frequency spectrum.

ARRL visit

I recently took a tour of the ARRL headquarters in Newington, Connecticut. It was very enjoyable and the League staff was very hospitable. I recommend every ham take a vacation trip and spend a few hours at our organization's office. When you see the pile of DX cards being sorted for you, you'll realize what a tremendous thing DX really is.

I wanted to try working RTTY from W1AW, but they were in the process of installing new plugs on the RTTY equipment the day I visited there. Instead, I called three European hams



on CW, and by golly, all three went back to European stations. It was just like North Dakota DXing.

DX RTTY bits

Walter Skudlarek, DJ6QT, did RT-TY DX-fans another big favor by working from the Seychelles Islands as S79WS. Walter apparently had to observe quiet hours in his hotel, so the best hours to the USA were blacked out. But he did his usual fine operating job. QSL to his home QTH, but do not use the 1986 Callbook, as Walter's address was wrong in that year's edition.

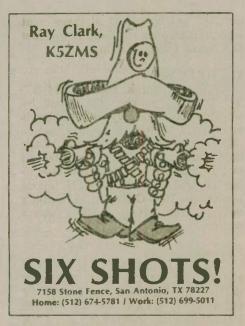
Eavesdroppings

I KEEP GETTING AN ERROR MESSAGE. BUT I DON'T KNOW WHAT IT MEANS ... TO STAY HEALTHY, STAY AWAY FROM HUMORLESS PEOPLE I'VE GOT A TERMINAL ILLNESS. IT'S A BAD CHIP IN MY TNC ... I'M SO BUSY WATCHING MY NEW BBS PASS TRAFFIC I HAVEN'T SHAVED FOR A WEEK ... GOT NO BOAT, GOT NO MOTORHOME. ONLY HAM RADIO ... YOU ARE MY THIRD RTTY QSO, IF YOU CAN CALL THIS A QSO ... THE AMP ARRIVED ON WEDNESDAY AND BLEW UP WITH A BIG BANG ON THURSDAY ... I'VE BEEN CALLING "CQ DAKOTA" FOR DAYS, SO I BELIEVE THERE ARE NO HAMS THERE ... I LIKE RTTY DX BECAUSE YOU DON'T HAVE TO DECIPHER DIALECTS AND CALL SIGNS LIKE ON SSB ... I MUST BE GETTING TIRED OF TYPING AS THE BUFFER BUG IS CATCHING//// CAUGHT UP TO ME ... I STILL LIKE

TUBES BECAUSE THEY GLOW IN THE DARK ... YOUR SIGNALS ARE S-8 ON THE STINGY SIDE ... **I SPENT 20 MINUTES TRYING TO** DECODE THE COMPUTER HASH IN MY TRANSCEIVER THOUGHT IT WAS DX ... MY QUAD IS PROBABLY THE ONLY ONE IN THE WORLD FED WITH ZEPP FEEDERS ... FROM HERE IT'S ONLY A HOP, SKIP AND YUMP TO NORWAY ... I HAVE MY SHACK IN THE ATTIC WHERE I GET NO QRM FROM THE FAMILY ...

Thanks to my helpers. I enjoy hearing from you. More about the packet message trial next time. 73 and happy DXing. Bill Snyder, WØLHS, 1514 So. 12th St., Fargo, ND 58103. DIT DIT.

WHEN PURCHASING GOODS. SAY YOU SAW IT ADVERTISED IN WORLDRADIO.



The F2 reported last month as being experienced during September and October continued into October and November. On October 11, we again had F2 activity into the Galapagos Islands with HC8VB (Roy Gould, KT1N, says he is only the QSL Manager for HD8CQ, not the other HC8's) bei g worked here around 2:20 p.m.

Pat Rose, W5OZI, in Junction,

Texas, did it the hard way, with a mag mount vertical on the tin roof of his house! He just moved and doesn't have his antenna and towers up yet. HC8VB was also worked by others in the area, including Tex Kennedy, N5TX/M5, in New Mexico on 6M on his way to Las Vegas.

In addition to that contact, Tex and Fred Fish, W5FF, also received a very pleasant surprise when they heard and worked Cliff Hubert, HP3XUH (ex-KH6JJI). Tex was Cliff's first QSO on 6M. Cliff is now active from Panama with a Yaesu FT-101E and FTV-650B transverter and a dipole! He is working on getting up a 5-element beam.

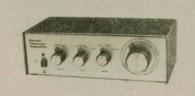
Cliff is also looking for information on converting his Dentron MLA-2500B to 6M. If anyone can help, drop him a line at this QTH: Cliff Hubert, Volcan, Chiriqui, REPUBLIC OF PANAMA. His present U.S. call is KA4MVK, which can be used for QSLing. He cannot get IRC's in Panama.

History was made on October 22, at 1537Z, when Eric, G2ADR (and four other G's and a GM), worked Dave Saul, A22KZ, in Maun, Botswana, for what appears to be the first ever G to A22 6M QSO. They also worked crossband to 10M and again on 6M at 1644Z. The apparent mode was TEP



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Can't hear the weak ones when conditions are bad? Receiver lacks sensitivity on 20, 15 or 10? Get the world famous Palomar preamplifier. Tunes from 160 to 6 meters. Gives 20 db extra gain and a low noise figure to bring out those weak signals. Reduces image and spurious responses too.

An RF sensing circuit bypasses the preamplifier during transmit. The bypass handles 350 watts.

Model P-410X (for 115-v AC) or Model P-412-X (for 12-v DC) \$149.95. Model P-408 (SWL receive only for 115-v AC) \$129.95. Add \$4 shipping/handling in U.S. & Canada. California residents add sales tax.

LOOP ANTENNA



Loops pick up far less noise than other antennas. And they can null out interference. Palomar brings you these features and more in a compact desktop package. The wideband amplifier with tuning control gives 20 db gain. Plug-in loops have exclusive tilt feature for deep nulls. Loops are available for 10-40 KHz, 40-150 KHz, 150-550 KHz, 550-1600 KHz and 1600-5000 KHz.

Model LA-1 Loop Amplifier \$84.95. Plug-in Loops (specify range) \$62.95 each. Add \$4 shipping/handling in U.S. and Canada. California residents add sales tax.



with perhaps an Es link.

Dave's home call is G4EKZ, and he has been on a teaching assignment there for nearly two years. He is scheduled to return to England in December. The equipment (IC-551D and Hy-Gain 4-element Yagi) was provided by the ZS gang.

Maun lies at 20° south, being ideally positioned for VHF TEP propagation into Greece. Malta and surrounding areas. Other stations near this area are Kosie, ZS3E, in Outjo, northern Namibia/southwest Africa and Stu, Z21FT. in Bulawavo. Zimbabwe. which has Ch. 2 TV and does not allow 6M operation, though several are listening on 6M. TE tests were organized by Ray Cracknell, G2AHU (ex-ZE2JV), who - working with Dr. Fred Anderson, ZS6PW - did extensive TEP research as reported some years ago in QST and other magazines.

As a result of these recent tests, Dave, A22KZ, has had virtually daily contacts through October with 9H1BT, 9H1CG and 9H1FL-Malta, as well as SZ2DH-Athens, Greence. He also reported hearing the 5B4CY beacon during many of these openings. Kosie, ZS3E, re-erected his 6M beam late in the month, on the 17th, and the next day, contacted CT4KQ and 9H1HL. He has since contacted 9H1BT and heard the SZ2DH beacon.

Much of this report is courtesy of Hal Lund, ZS6WB, who says they were out of range of most of this in their area, having only received the 9H1SIX beacon signal once for four minutes.

F2 and Es activity in this hemisphere continued on into November, with the first finding OA8ABT into N4EJW in Florida about 1 p.m. OA8ABT was attracted to the opening apparently by the New Orleans beacon. Reports filter in concerning activity between Central and South America and South America into the Caribbean. Gene Sykes, W4OO, reports that Arnie Polsbroek, PZ1AP, is active from Paramaribo with a TS-520 and transverter. He has had no QSO's yet but has heard the FY7 beacon (which is going off the air soon, as the beacon tender is returning to France), and Dave Hayden, W4WHK, who is in north Florida.

Just to show you all the activity is not in Europe, Africa or North and South America, the Pacific has been having some fair activity, I am told. The north/south TEP path seems to be heating up between the JA's and those in the Southern Hemisphere. Gil Sones, VK3AUI, reports Heard Island is activated on 6M and HF. Dave Shaw will be signing VKØHI through May '88, running a keyer on 52.17 with the receiver monitored during breaks in the keying cycle. He is using his TS-660 with the kever and Tokyo HiPower HL86 amp loaned by Gil. Due to severe winds, the 6M antenna is a groundplane and dipoles on HF.

Harry Schools, KA3B, has continued with his excellent coverage of 6M with two new reports of *The International 6 Meter Digest* for November, and December just out. The November issue covers 6M antennas, and December, 6M AM gear. Harry is a policeman and has little time to provide copies. You can obtain copies of these articles by writing to SMIRK, in care of me, for the same fee (\$3) that Harry would charge.

I believe those of you in the KH6/KL7/W6/W7 areas will be able to obtain your copies from Bob Hastings, K6PHE, of the Southern California 6M Club. For those of you in W1/2/3/4 land, Harry can provide you with information as to who will provide copies for you.

Joe Mancuso, KG6JDX, said his Greenland DXpedition was scrubbed, so he was not able to go. I have not heard the results of Dr. Rick Dorsch, NE8Z's DXpedition.

I see that Ameco is marketing 300Ω and 75Ω models of a high-pass filter for TVI problems. I am very glad to see someone come out with this, since Drake quit marketing their famous model some years back. There are also several companies marketing ferrite beads which are said to be excellent in helping to eliminate audio pickup in home entertainment devices. Check out the Amateur Radio magazines on these new products.

Speaking of new products, the IC-575 is still not out. Kenwood recently announced their new HF/6M transceiver — the TS-680S, which has the same functions as the TS-140S, has 100W on HF (50W on 10M) and 10W on 6M. It has a built-in preamp for 10 and 6M. The price I have heard is about \$1,000. It has extended receiver frequency range of 45-60 MHz. Delivery is slated for pre-Christmas period.

I recently was provided a listing of operators who were active on 6M in the mid-1950's. It was interesting reading. I stumbled upon the old call sign of someone very well known to us today, who has been active on 6M for some 30 years. Can anyone tell me the name and present call sign of W5GBH? I hope no one has a Callbook from the early 1950's.

That is all the news that will fit in print! See you on The Magic Band all of a sudden!

RE-USE PLASTIC CABLE TIES. IF THE TIE IS LONG ENOUGH, MAKE TWO WRAPS BEFORE CINCHING. WHEN NECESSARY TO CUT FOR MODIFICATIONS OR REPAIRS, THE REMAINING PIECE CAN BE USED AGAIN FOR A SINGLE WRAP IN THE SAME POSITION. -DAVID GUIMONT, WB6LLO; NSARC, SAN DIEGO, CA





10-10 annual business meeting

The 10-10 Annual Business Meeting was held in Long Beach, California, on November 8, in accordance with the bylaws; a number of business items were acted upon.

Morrie Goldman, W6EHM, 10-10 #4189, a Director of 10-10, reported on the progress of the amendment to the 10-10 Articles of Incorporation. In summary, Morrie reported that on March 18, 1987, the Board of Directors adopted a resolution to amend the Articles of Incorporation of 10-10.

At a general membership meeting on June 7, 1987, the resolution was presented to the members present and after discussion and changes, the Articles as revised were approved by the membership present. In August, a properly signed document was submitted to the state of California and on October 13, 1987, the approval from the state of California was received.

One of the most important changes incorporated into the revised articles was the language providing that the 10-10 International Net, Inc. will operate exclusively for charitable, educational and scientific purposes entitling 10-10 to exemption under the provisions of section 501 (c)(3) of the IRS code of 1954, as amended, and more specifically to promote interest in Amateur Radio communications and the advancement of the electronic art, making use of the reservoir of knowledge and experience represented within the membership of 10-10 for the benefit of all radio amateurs and the furtherance of the public welfare through Amateur Radio communica-



tions. Also to provide a scholarship fund for worthy students who are radio amateurs.

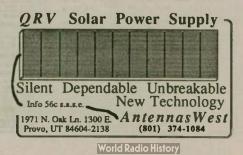
The approval of the amended Articles of Incorporation is particularly important in that now 10-10 can provide for a scholarship fund each year. At the November 8 annual business meeting, a motion was made and approved that 10-10 establish a scholarship fund and the treasurer, Gerry Gross, WA6POZ, 10-10 #21274, was instructed to open a bank account in the name of 10-10 International Net Scholarship Fund. The 10-10 Scholarship Fund will award two \$750 scholarships each year beginning in 1988.

The 10-10 Scholarship Fund will be administered by The Foundation For Amateur Radio (FAR), which administers scholarship funds for many other Amateur Radio organizations. In the year just completed, the FAR awarded 26 scholarships in the names of Amateur Radio organizations.

It is now possible for 10-10 members to send contributions to the 10-10 International Net Scholarship Fund. These contributions are tax deductible and will support a worthy cause. Checks should be sent directly to Gerry Gross, WA6POZ, 10-10 Treasurer, and should be made out to "10-10 International Net Inc. Scholarship Fund." Donations should not be sent with your dues to your District Manager but directly to Gerry Gross at 8145 Cozycroft Aventy Canoga Park, CA 91306.

Each issue of the 10-10 International News will note those 10-10 members who have made contributions to the Scholarship Fund. More information regarding the fund and how 10-10 members may recommend an applicant for consideration for receiving one of the 10-10 scholarships will be published in the 10-10 International News.

Let's get together and support this worthy endeavor. It is something that many 10-10 members have been asking for and now it is official. As a suggestion, chapters could make this a chapter project. Gerry says he can accept any amount no matter how large — or how small! Just think . . . if every one of you reading this column would



send just one green stamp (\$1) to Gerry, what a scholarship fund we could have. Instead of two scholarships each year, perhaps we could have several. How about it?

New 10-10 bylaws

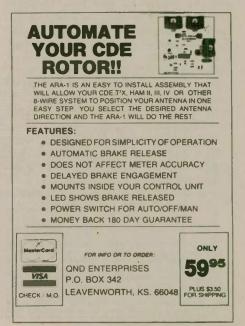
Norm Lefcourt, W6IRT, 10-10 #14981, reporting for the Planning Committee at the annual business meeting, stated that the suggested new bylaws are complete and will be published in the winter issue of the 10-10 International News. Norm promised that the new bylaws will correct and clarify many of the problems contained in the current bylaws. Norm stated that the class of membership is being clarified in that Family Members and Life Memberships will be covered as well as other classes of memberships. A proposal to increase the number of Directors has also been proposed, to better serve the membership.

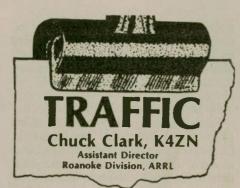
For those of you who may want a copy of the new bylaws before the next copy of the *News* arrives, send an SASE with 39¢ postage to Norm Lefcourt, W6IRT, 7713 Wilkerson Ave., North Hollywood, CA 91605. Copies will go in the mail at the same time as the *News* goes in the mail.

New members

During the first quarter of 1987, 10-10 enrolled about 1,500 new members. In July we added 650 more and in August another 740! With the deregulation, the influx of Novices and Technicians into 10M, and the better band conditions we are seeing today, who knows just how soon we will reach the 50,000 member number? We welcome all of our new members to

(please turn to page 59)





Paperwork

Traffic handling is essentially a means of relaying communications, normally written communications, and so it inevitably involves paperwork. Fortunately, none of the paperwork is required any more by FCC regulation. So the only paperwork necessary now is copying down messages to be relayed, and you don't even have to do that if you can carry the messages in your head or record them on tape for later playback to the receiving station. But that option of carrying the messages in your head isn't so good; it's almost certain to result in garbles.

Most amateurs who handle traffic extensively find it quite helpful to keep the same kind of records that was formerly required by the FCC and usually a bit more.

First is the station log, a record of times of operation, stations contacted and traffic handled. If operation is on a net, identify the net and the net control station. A note — such as "TCC, B" — might be made to identify the purpose of a contact made with an individual station on schedule and not on a net.

Traffic handled can be recorded merely as the number of messages passed, divided if desired into categories, originated, received, sent, delivered (see below). But most traffic handlers keep a file of all messages in their entirety for possible future reference, and occasionally are glad they did when a question arises about messages lost or garbled in transit, or when reference to a previous message clarifies a later one.

Your columnist keeps his message file on ordinary $8\frac{1}{2}$ " x 11" paper, typing in messages as they are written for transmission, and copying them on the typewriter for later relay or delivery.

-Join other Amateurs - help the physically handicapped be Licensed Amateurs



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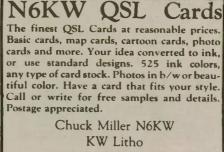
Messages of the usual length take up three or four lines of typing, and a line is left blank between messages. Following each message received on the air a note is made of the call of the station from which the message was received, followed by the date and time in a six-digit group, like this: K4XYZ 020630, where the first two digits are the day of the month and the last four are the time in a 24-hour format, where midnight is either 0000 or 2400, noon is 1200. With a digital watch or clock set to indicate time in the 24-hour format, you don't have to do any calculation, just copy four digits.

In the left-hand margin I make a pencil notation of the destination of any messages to be transmitted or delivered. For messages to be transmitted this could be the state, the net or the station to which the message is to be sent. The purpose of this note is to flag my attention when operating, in the hope that the message won't be overlooked. Messages to be delivered are marked "Deld."

When any messages marked to be sent are cleared, I make a note of the station receiving them and date and time as indicated above, then draw a circle around the notations, both the one in the left-hand margin and the one typed at the end of the message if the message was received on the air. This serves to indicate that the message has been cleared, and also is an aid for counting up the traffic totals for the records.

Messages that are originated on behalf of a third party have their destination entered in the left-hand margin as above, and when they have been cleared I record the station receiving the message and date and time as above, and circle both the notation in the margin and the date in the preamble of the message.

After a message has been delivered to an addressee, I note the date and time of delivery in the margin under the "Deld" note and circle that nota-



KW Litho P.O. Box 17390 Ft. Worth, TX 76102 (817) 332-3658 tion as well as the typed notation at the end of the message which I made when I received the message.

Counting traffic

Keeping records in this manner makes it easy to count up the totals at the end of the month. In fact, it's even easier when the totals for each page are counted as soon as all the traffic filed on that page has been cleared. I write the following letters at the bottom of the page: O R S D T GT, for originated, received, sent, delivered, total, grand total. It takes but a few seconds to count the figures for the page before filing it away to await the end of the month.

I also write at the head of each page the page number, the number I gave to the last message that started from my station, and the grand total from the previous page. It all helps keep things in order and moving smoothly.

Then at the end of the month it's easy to copy the totals from each page, add them up and prepare the report for the Section Manager (SM) or Section Traffic Manager (STM). Adding up the totals in the various categories should give the same result as adding the totals from each page, and both should agree with the grand total on the last page for the month. When they do so agree — and they usually do — the odds are quite high that all is in order. And when they don't agree, it usually takes only a few minutes to locate the error.

Categories of traffic

Categories of traffic have been around in one form or another for decades. Currently they have the following meanings:

Originated: messages first transmitted by radio from your station on behalf of someone other than yourself. Does not include messages you receive on a MARS net and refile as an amateur message.

Received: messages received by radio by any mode on any amateur band.

Sent: messages sent from your station via Amateur Radio.

Delivered: messages delivered by you addressed to anyone other than yourself.

All amateurs who handle traffic are encouraged to, and all Official Relay Stations are expected to make monthly reports to their SM (address on page 18 of any issue of QST), or to the STM. What good do they do? For the most part they are merely printed in QST two months later and then filed away. But they are sometimes used for statistical studies, by the staff of one or another of the three National

Traffic System areas for example, in the hope of improving service.

And if your total for the month exceeds 500, or if the total of originations plus deliveries exceeds 100, you will receive a card declaring you a member of the Brass Pounders League (BPL), even if you handled all the traffic by voice and never touched a key to "pound brass." Your call will appear in the BPL listing in QST for the month.

If you make BPL three times, you will receive a letter from ARRL HQ asking you to certify that the records are correct, and when you do so you will be sent a BPL medallion. You don't have to request any of the BPL awards; they are sent automatically when you qualify.

Logging nets

Net control operators need to keep more detailed logs, particularly if the net is a busy one. The details vary. They depend on the purpose and the procedure of the net, and on the net control operator's needs.

Typically, net logs include the calls of the stations that have checked into the net and the traffic each station wants to clear on the net. In addition, the net control operator may wish to note the location of the stations or the areas for which they can take traffic, the frequencies to which stations have been sent to clear traffic, and have some way of indicating that the traffic has been cleared. And the net control operator may want to have some way to note that the station has been excused from the net.

Because procedure varies so greatly from one net to another, no specific recommendations for logging are given here. What would work admirably on the Eastern Area CW net might not help much if you are net control on one of the phone nets that meet on 14,313 kHz. Instead, try to learn by doing.

listen to the net in progress, and work out a system of logging that enables you to keep an ongoing record of what is happening and makes it easy for you to see what you would need to know to make a proper and prompt decision when the occasion arises. And it doesn't hurt to ask good net control operators how they do it.

Net control operators almost always have one additional item of paperwork: making a report to the net manager after the session. The details of this report and its form vary with the net, and so you have to give net managers what they want in the form they want it.

The report should contain the net name, the date, the number of stations checking into the net and the traffic handled. But often the manager wants to know the calls of the individual stations that checked in, possibly in alphabetical order, how much traffic was listed, how much was sent, how long the net was in session, what area of what net each station represented, and so you have to learn the requirements from the manager.

How should you send the report? You can mail it. In fact, ARRL has a postcard form (FSD-210) for individuals making their monthly report to the SM. But we're communicators ourselves. Doesn't it make more sense for us to transmit our reports by radio?

Make up a formal message to the SM, the STM or the Net Manager, as appropriate, and put it on the net. It may reach its destination sooner, and it also may remind others that it's time to get their own reports out. \Box





We have had lots of cards and letters and even a couple of phone calls in the last several months. Looks like somebody is reading this column! Glad to have the feedback. This month we are going to explore methods of getting into QRP that do not require a second mortgage on the homestead, hocking the family jewels or selling the first-born male child into slavery.

There has been a lot of feedback from those of you who have read this column during the last several months. I received a very interesting letter from Bill Acker, in Dallas, Texas. Bill has taken a break from Amateur Radio for about 25 years and is just now setting up a station. He's in a dilemma as to choice of rig. antenna and accessories. It seems that in his 25-year absence from the hobby. things have changed a bit. The choices of gear are staggering and the prices even more so . . . that's progress.

One of Bill's major concerns (and also a frequent theme for others who have written and called) was the tremendous cost of new and used equipment. It is hard to justify spending between \$500 and \$700 on a single piece of equipment (namely a transceiver) just to pursue a hobby. I definitely know that feeling! Unless you are independently wealthy or can



figure some tax break angle for the IRS, the thought of spending up to several thousand dollars for a new station should make you pale.

QRP is fun. It is fun because it is a challenge. It becomes more fun (and more challenging) when you pursue it on a meager budget, conserving not only watts but dollars, your mental health, marriage and total net worth. With the proliferation of high tech dominating the Amateur Radio hobby, let's take time to look at some low tech solutions to enjoying QRP operation.

In my multi-part article on getting

the same set of Drake "Twins" for as little as \$350. Now that is a deal! Same goes for the Collins KWM-2 and 2-A transceivers. Why buy a brand new rig at three times the cost, when you can get on the air in style and have a lot of flexibility for a fraction of that new rig from Japan?

Don't forget ... while QRP is fun and challenging, there WILL be times you want or need to run higher power. Buying a used Drake or Collins rig can give you the best of both worlds at reasonable cost.

A good way to initially try QRP operation is to throttle back the main

 $L_1 \& L_2 = Amidon$

T-80-2 Cores

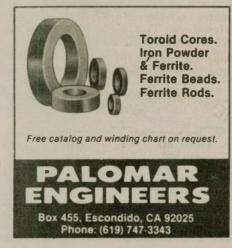
160M	80M	40M	20M	15M
L1 26 t 18 swg	L1 18 t 18 swg	L1 15 t 18 swg	L1 10 t 18 swg	L1 9 t 18 swg
L2 23 t 18 swg	L2 16 t 18 swg	L2 13 t 18 swg	L2 9 t 18 swg	L2 8 t 18 swg
C1 200p	C1 100p	C1 51p	C1 24p	C1 15p
C2 680p	C2 300p	C2 160p	C2 75p	C2 51p
C3 1000p	C3 560p	C3 270p	C3 150p	C3 100p
C4 2000p	C4 910p	C4 500p	C4 250p	C4 160p
C5 820p	C5 390p	C5 200p	C5 100p	C5 68p

10M; L1 8 t 18swg, L2 7 t 18swg, C1 10p, C2 39p, C3 68p, C4 120p, C5 51p

Table 1 — Tx output circuits

started, I had some suggestions on where to purchase used amateur equipment. Hamfests, dealers, estate sales, trading-post newspapers, Ham Trader Yellow Sheets, the various trader nets on HF, etc. are all good sources of used equipment. As long as the used gear is in good condition and of sound design originally, you will be able to pick up yesterday's state-ofthe-art rig for a fraction of the cost of a new rice box. Just because it doesn't have all the latest bells and whistles and isn't made by Orientals in Mexico, doesn't mean it won't fill the bill.

Case in point. The infamous R.L. Drake C-Line ... the R-4C receiver and its mate, the T-4XC transmitter. Just 10 years ago, you could easily sink over \$1,500 into this station and accessories. Today, at most hamfests and in the Yellow Sheets, you can find



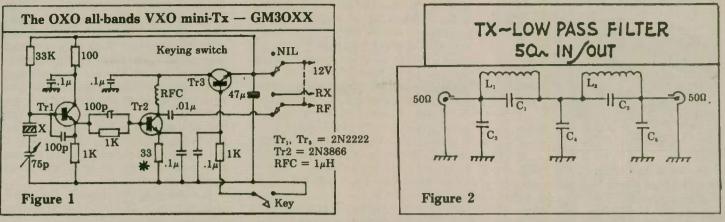
5W level. This is normally done by reducing the RF drive control or Mic Gain until the desired RF output is realized. No problem on CW (the preferred mode for QRP), but due to problems with ALC on many rigs, QRP SSB operation takes a little more effort and technical magic. Ade Weiss, WORSP's book The Joy of QRP details how to adjust (and in some cases modify) these older radios for QRP operation, both CW and SSB. It goes without saying that Ade's book should be a "must" for the QRPer's library.

station transmitter/transceiver to the

One of the most personally satisfying ways of pursuing the QRP hobby is to build the transmitter and interface it to an existing HF receiver. QRP transmitters are very simple to construct and use. The most difficult part is making it work with a receiver. A transmit/receive antenna changeover relay is needed along with muting circuitry for the receiver (this allows the receiver to be electrically "turned off" during transmit periods and prevents damage to the RF front end of the receiver).

R.L. Drake (again) made some fine receivers in the recent past. Probably the most famous is the 2-B, closely followed by the R-4B and R-4C series. Any of these receivers will interface well with a homebrew transmitter. I have seen prices on a used 2-B with matching Q-Multiplier as low as \$80 and as high as \$125. A used R-4B will run about \$150 and the R-4C maybe up to \$200, depending on the extras

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and crystals included for extended band coverage. Don't sell short the Kenwood R-1000 general coverage receiver, either. It has great potential as a ham station receiver that can be easily interfaced with a homebrew transmitter.

Once you have the receiver on hand, fully aligned and ready to go, it is time to think about a QRP transmitter to complete the station. Lots of designs have been published in the last few years in all the major ham publications. As a bit of a treat, I have secured permission from the G-QRP-Club to reprint the schematic and technical details of one of the best selling QRP transmitter designs in Europe. Ladies and Gentlemen, Worldradio proudly presents the OXO QRP transmitter, by George Burt, GM3OXX, of the G-QRP-Club!

Now, George is not your "normal" Scotsman. George happens to build some of the most beautiful homebrew gear that I have ever seen. The OXO transmitter is basically a threetransistor transmitter that can be packaged quite compactly. TR1 is a crystal oscillator which is DC and RFcoupled to TR2 (the final amp). The keying transistor, TR3, rounds out the active devices. Almost any layout technique can be utilized with this circuit.

Several variations of this circuit have appeared in other British magazines and SPRAT (the G-QRP-Club quarterly newsletter). Power output is about 1W. Care must be taken to adjust the TR2 emitter resistor for about 1W output. This assures that TR2 does not draw too much current and go into thermal breakdown. The oscillator section uses fundamental crystals (no overtone crystals, PLEASE!). Fundamental crystals for the popular QRP operating frequencies can be ordered from many stateside suppliers or from a supplier in SPRAT (info on G-QRP-Club included at the end of the article).

Do not fire this rig up without the proper PI output filter in place on the output. This assures that you will not get a "QSL" from the FCC for working more than one band at a time.

Figure 2 is a typical PI output filter using commonly available components. Values are shown for 80-15 meters. I have built my filters into metal throat lozenge boxes. Another method is to use double-sided PC material and construct an RF-tight enclosure to house the filter. Although I hate them with a passion, I have used RCA phono connectors and jacks to couple the RF out of the OXO and into the filter. These connectors have the advantage of being soldered directly to the PC board and flushmounted with the filter box. This minimizes their loss and the chances of a bad coaxial connection.

Well, now you have no excuse ... here is a construction project that even I can do right the first time. The ARRL Handbook and Doug DeMaw, W1FB's QRP Notebook both have excellent T/R circuits that will enable you to interface the OXO with your favorite receiver. I hope this moves some of you to pick up your soldering iron and do something "constructive."

I'd like to start a regular section at the end of each monthly column ... namely a mini-book review. The idea is to present books that I personally have found useful in the pursuit of QRP.

The first book that I highly recommend is the G-QRP-Club Circuit Handbook. This work is the *Best of SPRAT*, compiled by George Dobbs, G3RJV, from the pages of their quarterly newsletter between 1979



World Radio History

and 1982. There are loads of circuits covering all aspects of QRP homebrewing. Chapters cover transceivers, transmitters and receivers, station equipment (accessories), equipment modifications (for the HW-7, HW-8, FT-7 and others), and finally, circuit ideas.

The nice thing about the G-QRP-Club Circuit Handbook is that all of the circuits and modifications have been tested and work! No theoretical ideas or "This looks like it should work so we'll include it, too"-type material. My personal copy is a 1982 edition that has been sold out for a number of years. I distinctly remember helping George, G3RJV, and his wife, Jo, put the bindings on 500 copies of this handbook one evening in George's living room.

I think you will find this particular book interesting from the homebrewing angle. The OXO is in there, too. After the sellout of the original printing, the G-QRP-Club turned the handbook over to the Radio Society of Great Britain (RSGB), who now publish and distribute it worldwide. (please turn to page 59)



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Lil Paddle

I'm sure that seeing a woman's name on a technical column may start some teeth rattling among the more crusty curmudgeons of this audience. Before any of you misogynists go into apoplexy, let me point out that many of you two-letter types learned your CW at my knee.

During the era when the United States set out to win wars, I, as a civilian, was an instructor for the U.S. Army Signal Corps. I can't say at which base, for reasons that shall be revealed later.

I can copy code faster than Bill Eitel, am far to the right of Barry Goldwater and have climbed more towers than Bill Orr. (Lest you think I'm some sort of "Tugboat Annie," my boyfriend thinks I'm twice as pretty as Lenore Jensen.)

Let's get right down to some practical matters. I was talking to my oldest son the other night on 40M phone. (Although he runs a radio store, he is terrible on CW so I must go on phone to talk to him. It's awful to admit your own son is a lid, but that's the truth! The son from my second marriage turned out much better.)

Anyway, he was telling me about a customer who had accused him of selling a "no-good" antenna tuner. Upon questioning, it turned out the customer had some 75M nets he liked to check into and stations told him his signal was weak. Seems his antenna was a 30' piece of wire in the attic. Now lads, don't blame the poor little

RICHCRAFT ENGRAVING • Desk & Door Plaques • Name Tags • Club & A.R.R.L. Badges Plastic engraving for all occasions, reasonable and prompt. **CHUCK RICH (N7BCW)** 20758 Reason Rd. • Redmond, OR 97756 Tel. 1-503-548-6834 tuner in a case like that. You cannot make chicken salad out of chicken feathers.

If you are not at least a ¹/₄-wavelength on the band you wish to work. you will suffer for the effort.

Another oft-neglected item is the maximum importance of the ground in any form of end-fed wire. And, yes, good grounds are hard to come by in apartments. Alas, the only solution for our cliff dweller may be banishment to the purgatory that is 2M.

Speaking of grounds, there is some totally unmitigated balderdash in the radio (they called it wireless when I was a little girl) literature concerning grounds. For example, "If you are running a very short loaded vertical, the radials do not have to be as long as usual." Rubbish! More than ever, you need all the length you can get. In fact, the longer you can make the radials, in all circumstances, the better it is. Make them as long as you possibly can; the angle of radiation will lower.

Going back to tuners, if you should doubt the quality of the power transfer, here is how to test. (Kurt, you forgot this when telling about dummy loads.) Run the power output of your rig through a wattmeter into a dummy load. Then hook the feedline



to the coax input of the tuner. Take the single wire output and put that to the single wire post of the other tuner. Come out of the coax input to the wattmeter and then to the dummy load. Adjust the first tuner to see 50 Ω back into the transmitter, adjust the second tuner to see 50 Ω of the dummy load, and match between tuners. If there is any power loss, you would see it by subtracting the reading of the second meter from the first.

But enough about coax. If you really want a good signal go open-wire. (I suppose I'm dating myself when I talk like that.)

My son also told me about a customer who was very angry with him for several days because the customer claimed the purchased antenna was defective. It was discovered later that the customer had a short at the coax connector. Well, no idiot ever shorted open-line! The moral of the story is: before you open your mouth, ohm vour meter.

It is possible for open-line to open. Once a cute lieutenant I was seeing was sent on a free trip to the Caribbean, as the military station there was not being heard well at all, and the staff manning it couldn't figure out the problem. After examining things, the lieutenant found a break in the open-line to the antenna. (No one ever accused Air Corps T-Sergeants of being overly bright.)

Why do the manufacturers reduce the power input on solid-state gear when the SWR goes up? To protect the transistor. From what? From more current (forward and reflected together) going through the transistor than it can handle. How does this current show itself? In heat!

The big bottles are not immune to the SWR damage either. U.S. taxpayers were nicked for a bundle when several very expensive 30L1 amplifiers were shipped from Thailand to Japan for repair. (The Thai station signal had been unreadable in Saigon.)

A young officer was flown half-way around the world to check it out. It seems the NCOIC, instead of putting up two antennas - one for 4 megacycles and another for 8 megacycles, switching to one during the day and the other at night - decided to split the difference and put up one antenna for 6 megacycles. The result was more fireworks than usual during Tet.

You have seen the effect, so you may accept the cause. There is a way to absolutely prove reflected power is not radiated, but it is quite involved, so we'll save it for a later time.

If you have any antenna questions, send them in; they will be forwarded to me and you'll see the answe nere. [.]



A low-cost bubble etching system

Many of the projects featured in this column often require the manufacture of some type of circuit board. The simplest circuit board for the experimenter to make is the hand-wired type. This technique employs a perforated phenolic board with metal inserts or posts for soldering components.

Although satisfactory, often the home experimenter would like to "clean up" a pet circuit and make it into something that will last for a long time and be presentable to the scrutinizing eyes of friends. The obvious solution is to actually make a printed circuit board with copper-clad material.

As there are a variety of home circuit board systems on the market, it is relatively easy to lay out a circuit and transfer the etch pattern to the copper-clad circuit board. However, next it becomes necessary to actually etch the board.

Just about all of the current home circuit board manufacturing systems indicate that the board should be etched in a plastic tray, similar to those used in developing photographic pictures. The instructions indicate the need for frequent agitation of the board in the etchant. Well, I have been using this "recommended" technique for quite a while with various degrees of success. Besides that, watching a circuit board etch in a tray is just slightly more exciting than watching paint dry. So I decided to investigate the problem and see if I could improve my home circuit board manufacturing capability.

Having cut hundreds of boards in etchant, I have determined that the best results are obtained when constant agitation of the etchant is applied and the etchant temperature is elevated to approximately 120°F. This combination gives a constant dissolving rate over the face of the board and speeds the actual etching time.

By minimizing the time in solution, the resist-etch pattern on the board does not appear to be softened as much by the solution, hence improving the quality of the actual trace. Overall, if these two variables are controlled as indicated, one can obtain professional quality circuit boards quite easily.

Figure 1 illustrates the system that I use to cut circuit boards. A plastic freezer ice storage container was purchased from a supermarket and functions as the etchant tank. A second smaller plastic tray, which fits inside the etchant tank, is used as the circuit board carrier. A trip to the local pet store provided an aquarium air pump and plastic tubing to be used as the "bubbler." Finally, an electric "hot serving" tray with a glass surface was appropriated from my wife's collection of seldom-used appliances. Some plastic pieces were also made from scrap plastic found in the junk box.

The circuit board carrier tray requires a little work in order to make it useful for this application. First, the bottom of the carrier must be perforated with holes which will allow the air bubbles to pass. This was done with a series of $\frac{1}{4}$ " holes drilled into



the bottom. Be generous with the holes and insure that they cover the entire bottom area.

Next, slots were cut into the side walls of the tray. I made these slots about $\frac{1}{2}$ wide so that the boards could be canted in the solution. Put as many slots in to accommodate as many boards you desire to etch at one time. My system is capable of etching 11 boards at once.

To clear the bubbler mechanism, which will be glued to the tank bottom, cement plastic feet to the corners of the carrier to raise it about 1/2" off the tank bottom. Finally, a plastic



handle made from a strip of flexible plastic is cemented to the carrier.

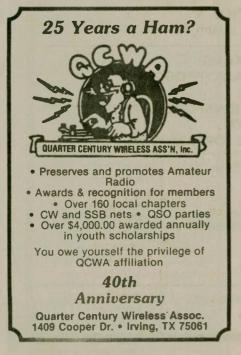
The bubbler mechanism is made from the plastic tubing. First figure out how many inches of the tubing will be on the bottom of the tank. Then, with about a .040" or .060" drill, perforate the tubing about every $\frac{1}{2}$ " the length of the tubing to be on the tank bottom. Two plastic separators were made to hold the tubing about 2" apart. The tubing is ready to be positioned on the tank bottom and cemented in place. I used regular super-glue for the cementing operations.

The system is now ready for use. The hot tray is not used to warm the etchant to temperature, but to maintain it at temperature during operation. Prior to putting the etchant into the tank, it is heated in its plastic container in hot water.

Once at temperature, it is transferred to the tank for use. A steady stream of bubbles should be observed over the entire length of the tank. Agitation should be vigorous but not violent. An air pump designed for at least a 10-gallon aquarium should be used; a slightly larger one might be considered as well.

I have also found that better etching is achieved if the boards are canted in their slots so that the bubbles roll up the copper-clad side of the board. My next carrier will have the slots cut on angles to insure this action.

When everything is ready, simply insert the boards into the carrier and place the carrier into the bubbling tank. With unused etchant and 1 mil thick copper clad, the boards should be etched within 10 to 15 minutes, and their quality should be superior to the slower tray method.



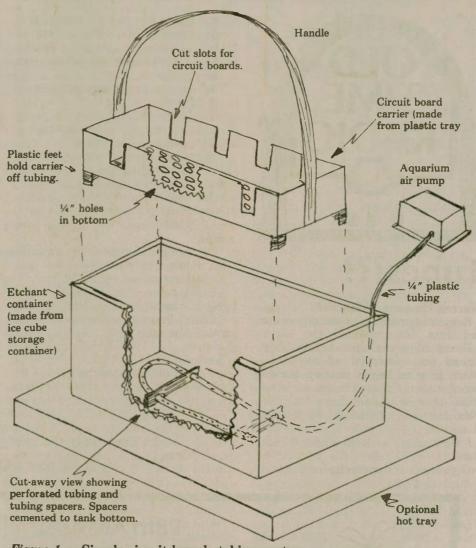


Figure 1 — Simple circuit board etching system

Finally, it was necessary to add some weight to the carrier to overcome the buoyant action of the bubbles. I used some small rocks cemented to the bottom side of the carrier. Do not use lead or other metal as the etchant will react with it. When the boards are done, the etchant is returned to its container, and the equipment is thoroughly washed and cleaned. That is it!

What is the cost of the system? If you don't buy the hot tray, it should be less than \$20. Actually, the etchant will stay sufficiently hot during the etching process even without the hot tray. That is all for this month. Good luck with your etching!

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Tubes???

Warren Horness, WBSOBF

Remember reading about dinosaurs and how they roamed the earth millions of years ago, before they turned into potential oil wells ... which in turn began putting horses out of business? Now I begin to realize what dinosaurs must have felt like when they were no longer needed on this earth ...

I went into the local Radio Shack store the other day. An attractive, pert young lady approached and asked

what I would like to buy. I told her I needed some tubes. "What kind of tubes?" she asked. "Two 12AX7's and a 6AV6," I replied, as shé led me over to the counter.

The counter had many accessories on it including a stock of differentsized plastic tubes, such as passthrough plastic tubes for leading an antenna wire into the shack.

"Those numbers are not familiar and there are no markings or numbers like those on these tubes," she said. I told her that if she would show me the tubes I could perhaps find the ones I need. "These are the tubes," she insisted.

"You don't understand, I continued. "The tubes I need are radio tubes."

"What are radio tubes?"

"Radio tubes, amplifier tubes, TV tubes . . . they are all the same," I said.

"I don't know what you are talking about," she said.

I tried a different tack. "They are a kind of an old-time transistor — they have seven or eight or nine prongs on

The world at your fingertips

them and they have a glass bulb on them and they glow from the filament lighting up when you turn on the power.

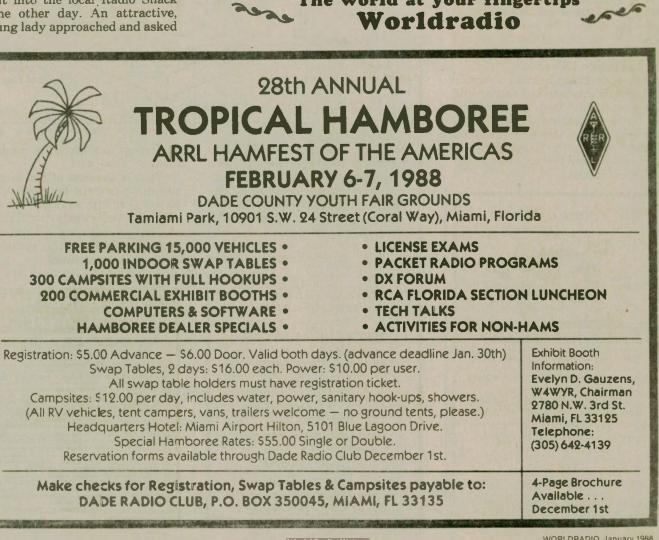
"We have nothing like that," she said with an apologetic tone of voice.

"You must have — they are listed in your catalog," I said, keeping my cool. "Show me." So I did. "Wait a

minute; I'll check in back." So I waited. She returned. "I think I found some that look like what you described, but none with the numbers you asked for. Sorry."

Yep, I'm a dinosaur, all right! I began life before there was much use of radio tubes; I have lived through the tube era, having fun all the while, making them do all kinds of things at my command; and now this is the post-tube era. Transistors, Mosfets, IC's and all their relatives are just great, doing things we never dreamed possible.

But there is something sad about being a dinosaur in the field of electronics, knowing you may never see a tube again!





ND QSO Party

The North Dakota QSO Party, sponsored by the Red River Amateurs, will be held 0000Z-0800Z and 1600Z-2400Z, January 16, and 0800Z-1600Z, January 17.

Operation: Work stations once per band and mode.

Exchange: Serial number and state/ province/country (county for North Dakota stations).

Suggested frequencies: *Phone* - 1.835, 3.905, 7.280, 14.295, 21.380 and 28.500; *CW* - 1.810, 3.540 and 35 kHz up from band edges; *Novice* - 25 kHz up from band edges.

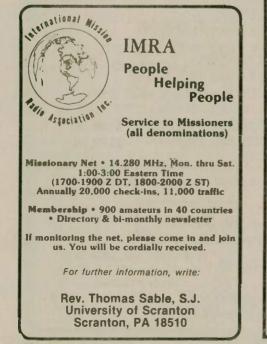
Scoring: Count 10 pts. per phone contact, 20 pts. per CW contact and 50 pts. per RTTY contact. ND stations add 1,000 bonus pts. for working five Novices. Multiply by number of states/provinces/countries worked per band and mode (max. 53).

Awards: Certificates and plaques. Mail logs by February 28, 1988 (include SASE for results) to Mike Beaton, KDØA, 2267 Flickertail Dr., Fargo, ND 58103.

Michigan QRP Club CW Contest

The Michigan QRP Club announces its 8th Annual CW Contest, to be held from 1200Z, January 16 to 2359Z, January 17. CW bands only, 160M through 10M (WARC bands excluded). Contest is open to all amateurs and all are eligible for awards.

Frequencies: 1810, 3560, 7030, 7040, 14060,



21060 and 28060 kHz; *Novice* - 3710, 7110, **21110 and 28110 kHz**.

Exchange: RST, QTH (state/province/country) and M-QRP membership number (non-members send power output).

Classes: A) Less than 1W output. B) 5W to 1W output. C) Over 5W output.

Scoring: Stations may be worked once per band for QSO pts. Member contacts are 5 QSO pts. each. Non-member contacts are 1 QSO pt. each. Multiply total QSO pts. (all bands) by the number of states/provinces/countries worked per band, for total points. Bonus points: Total points × 1.5 for 100% battery or natural power.

Awards: Certificates will be issued for the highest score in each state/province/country. Logs must contain: full log for each band; name, call, address, equipment used, power output and signature.

Logs must be received no later than March 1, 1988. Please send an SASE (or 2 IRC's) for results. All logs to: L.T. Switzer, N8CQA, 654 Georgia, Marysville, MI 48040. A set of one log sheet and one entry form are available for an SASE to Henry Kohl, K8DD, 1640 Henry, Port Huron, MI 48060.

Help the MI-QRP Club celebrate its 10th anniversary; join us in January.

YL-ISSB QSO Party

NEW!

The CW portion of the 1988 YL-ISSB QSO Party will be held from 0001Z, January 30 until 2359Z, January 31. The contest is open to all, but the primary focus is on member-tomember contacts.

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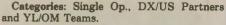
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Frequencies: U.S. General Class portions of 80, 40, 20, 15, 10 and VHF/UHF simplex.

Exchange: Call, report, QTH, name, ISSB# (if member), and YL/OM Teammate and/or DX/U.S. Partner.

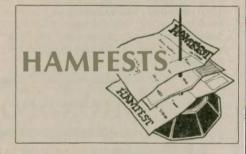
Times-out: Logs shall indicate two 6-hour rest periods.

Awards: Certificates for category and QTH winners

Scoring: 1 pt. for member-to-non-member QSO regardless of QTH; 3 pts. for member-tomember QSO within same continent; 6 pts. for member-to-member intercontinental QSO.

Multipliers (member-to-member QSO's only): A) 1 for each DXCC country, U.S. state, VE province, VK and ZL call district, full team worked and pair of partners worked. Also for QSO's with 15+ members on a second band. B) 2 for QSO with one's DX partner and for QSO's with 15+ members on a third band. C) 5 for maintaining an input of 250W or less throughout the party.

For more information and/or forms, send SASE to Bill Early, WA9AEA, Box 401, McHenry, IL 60050-0401.



Florida

The FORT MYERS ARC (W4LX) will hold its annual hamfest at Moose Hall, Park Meadow Drive, Fort Myers (just west of U.S. 41), on Saturday, January 23. Doors open at 9 a.m.

Forums, equipment exhibits, prizes and tables for ladies selling various items. Advance tickets are \$3 each; tables may be reserved for \$10 each. Breakfast served to "early birds;" lunch available on premises.

Talk-in on 146.28/88 (W4LX).

Tickets and table reservations available through N.M. Cornwell, Jr., Fort Myers ARC, P.O. Box 4814, North Fort Myers, FL 33918-4814.

The 8th Annual Citrus County Hamfest sponsored by the SKY HIGH ARC will be held January 30, at Inverness, Florida.

All functions will be held inside the 10,000 sq. ft. air-conditioned auditorium at the county fairgrounds, 4 miles south of Inverness on U.S. Route 41. The building will be open to vendors at 7 a.m. and open to the public at 9 a.m. Ham gear, new equipment, surplus items, rare parts and computers will be featured. Tables are \$5, not including admission. Admission is \$3 advance and \$4 at the door. XYL's admitted free with OM. Food and drink available.

Talk-in on 146.355/955.

For more information or tickets, call Bob Gordon at (904) 628-5045 or write SHARC Hamfest, P.O. Box 572, Lecanto, FL 32661.□



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

Tiny TNC-2

Pac-Comm announces a totally redesigned TNC-2 clone, which uses unmodified TAPR TNC-2 software.

This new Tiny TNC-2 uses an integrated circuit modem and simplified circuitry to insure reliability, size reduction and a much lower cost. This unit includes as standard features 32k RAM and 32k EPROM, RS232 and TTL compatibility, watchdog timer, modem disconnect header, switch selectable terminal baud rates and 12V DC operation.

The Tiny TNC-2 is approximately 50% the size of the original TNC-2. Along with the small size is the introductory price of \$109.95 plus tax and shipping, if ordered before January 1, 1988. This is not a kit; it's a fully

Commodore 64 power supply-

Engineering Consulting announces a new power suppy for the Commodore 64 computers which allows operation directly from 12V DC. The "DCPS" power supply allows amateurs already using the computer for various tasks to provide emergency backup and solar power operation. Of particular interest to owners of the

Super Com Shack (CS64S) repeater controller and remote base, the model "DCPS" provides instant operation from a 12V source, thus allowing the computer to be operated directly from batteries.

The "DCPS" delivers the required 9V AC at exactly 60 Hz and 5V at up to 2 amps. A crystal-controlled time base is used to divide a 3.58 MHz crystal to 60 Hz so that an accurate clock is generated for the computer's internal timers. The 5V DC is provided from a state-of-the-art switcher at 75% efficiency.

The "DCPS" is supplied cable ready to plug directly into the C64. If additional current reduction is desired, a simple jumper can be installed inside the C64 which will bypass the internal 5V regulator, allowing the highly efficient "DCPS" to provide the entire 5V reassembled and tested 1200 baud unit, ready for use on 10M and VHF.

For more information, call (813) 874-2980. To order, call 1(800)223-3511; in Florida (813) 874-2980. Pac-Comm Packet Radio Systems, Inc., 3652 W. Cypress St., Tampa, FL 33607.

quirement. With this modification, the C64 will operate with a current drain of 1 amp from the 12V battery.

The "DCPS" is available from Engineering Consulting, 583 Candlewood St., Brea, CA 92621; (714) 671-2009. The price is \$119.95 plus \$4 shipping.

DF simplified

TAB Books announces the first full-length book for the non-professional on the practical aspects of radio direction finding. Transmitter Hunting, Radio Direction Finding Simplified, by Joseph D. Moell, KOOV, and Thomas N. Curlee, WB6UZZ, is 323 pages with 235 illustrations. It is available from TAB Books

for \$17.95, Blue Ridge Summit, PA 17214. Written by two "T-hunters" experienced in both competitive and enforcement DFing, this book puts together for the first time a compendium of both tried-and-true and newly-developed methods of closing in on the

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target. There are careful reviews of commercially available DF sets and complete construction plans for inexpensive, easy-to-make homebrew equipment. There are even some "secret weapons" to put you ahead of the competition.

T-hunting (also called fox-hunting, jammerhunting, etc.) can help police the ham bands, assist in saving lives and be just plain fun. It's been around in one form or another for 70 years, and if you've never been out on a hunt. you've missed some real excitement. Getting started can be easy and fast. Even non-hams can go hunting - there's no need to transmit unless you're the hider.

The World Ham Net Directory

The World Ham Net Directory lists some 300 special interest Amateur Radio networks by name, by operating frequency and by time/day. Ham nets cover a wide range of interests: emergency communications, DXing, missionary work, foreign service, retirees, airline hams, weatherwatchers, traffic and much more.

The author, Mike Witkowski, is a ham band monitor of many years' experience. He edits the monthly ham band column in the bulletin of the Association of DX Reporters, pub-

Internal GaAS-FET pre-amp

Tired of being classified as "the weak signal" on 2M? Then try the HL-250V25 in your base station. The HL-250V25 is the newest of the high-powered VHF amplifiers for base station operation from Tokyo HY-Power Labs, Inc., the leader in HF, VHF and UHF amplifiers.

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Transmitter Hunting is easy to read with plenty of clear photos and drawings. Radio amateurs. SWLs and search and rescue volunteers and professionals will all find it valuable. It is available now at some local ham stores and through most bookstores. It can also be obtained by mail from Ham Radio Bookstore (operated by Ham Radio Magazine) and direct from the publisher.

Topics include: building quad antennas, marine DF equipment, loops for HF and VHF, the HAPPY FLYERS DF, maps and triangulation, writing hunt rules, hiding tricks and dealing with jamming.

by Mike Witkowski

lishes a ham bands DX newsletter, wrote the chapter on ham band DXing in the Howard W. Sams Co. book Shortwave Radio Listening With the Experts and, in cooperation with the ARRL, operates the incoming QSL bureau for ham band monitors.

The World Ham Net Directory is priced at \$9.95, plus \$1 shipping (\$2 foreign orders) U.S. funds only, and is available directly from the publisher - Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147

these two modules is combined to produce the ¼kW output level.

The HL-250V25 also provides an internal GaAs-FET preamplifier for pulling the weak signals in. The HL-250V25 requires 13.6VDC at 38 amps maximum for the 250W power output. For the ultimate in solid-state power amplifiers for 2M, you want the HL-250V25.

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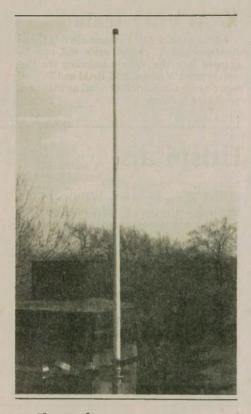
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Here is an antenna that puts you on the three most active repeater bands, including Novice 1.25M, with only a single cable.

The antenna is 5' tall and functions as a ¹/2-wave vertical dipole on each band. Features include low SWR. no radials required and easy installation because of SO-239 at its base. It is a simple staff antenna with patent-applied-for internal technology.

Cost is a reasonable \$69.95 + \$4.50 PH and includes an aluminum mounting tube for Ubolt attachment to brackets or chimney strap. For more information, contact: Ed Noll, W3FQJ, Sales Rep., Austin Custom Antenna, P.O. Box 75, Chalfont, PA 18914.

Contact Worldradio for hamfest prizes



KAM extra features

All Kantronics All Mode units (KAM's) and Kantronics KPC packet units will now be shipped from the factory, including the Personal Packet Mailbox, 32K RAM and TCP/IP Networking Compatibility - all as standard, no charge features.

Hospitals

(continued from page 1)

tacted Dave Browers, WB6RVM, on the ARES repeater. He notified the telephone company and Assistant EC Ted Kramer, NB6N. Ted became net control for the remainder of the emergency and set the call-up plan in motion.

A 2M base station was quickly set up at the hospital switchboard. It was used to place high priority outgoing calls through the autopatch on the K6QEH repeater at nearby Hughes Aircraft Company.

State law and hospital charters require that medical orders from doctors

QRP

(continued from page 51)

Check the ARRL book lists and the Ham Radio Bookstore, as they might carry it in the States. Although I do not have a good address for the RSGB, I am sure the latest issue of QST does. If all else fails, write directly to the RSGB and obtain a copy.

For all who are interested, the address for info about the G-QRP-Club Rev. George Dobbs, G3RJV, is:

In addition, current KAM and KPC owners can add the Personal Packet Mailbox and TCP/IP compatibility to their unit for the special price of just \$15. (32K RAM expansion chip available for an additional \$15.)

For more information, contact Kantronics, Inc., 1202 E. 23 St., Lawrence, KS 66046: (913) 842-7745.

to nurses either be written or verbally communicated directly. So it was important that direct telephone/radio connection be made between the outside doctors and the nurses at the hospital, with no intermediaries. The autopatch handled this task perfectly, eliminating the legal problem of orders having to be relayed by hams.

Regular HDSCS meetings are held at various hospitals to train the operators in the special requirements of hospital communications and to familiarize them with the different facilities. The group also participates the annual county-wide mass in casualty drill. Π

Aidan's Vicarage, 498 Manchester Rd., Rochdale, LANCS, ENGLAND OL11 3HE. If you write George, please be considerate enough to include something that will insure adequate return postage (IRC's, mint stamps, "Green Stamps", etc.).

That's a wrap for this month. I have a new address: 9 Vine St., Shavertown, PA 18708. If you write and desire an answer, please include an SASE. Till next time ... 73's es GUD DXing. Rich Arland, K7YHA

Share your knowledge with your fellow amateur and Worldradio reader

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10-10 News

(continued from page 47) 10-10 and hope you enjoy 10M and the 10-10 organization.

If you are not a member and are wondering what this "10-10 thing" is all about, you can receive an information package and a copy of the latest issue of the 10-10 International News, the official quarterly magazine of 10-10, by sending me a green stamp (\$1) to 18130 Bromley St., Tarzana, CA 91356-1701.

Briefly

10-10 has many things happening in 1988. A new scholarship fund, possibly new bylaws (if approved), contests and lots of local chapter activities. And with band conditions better, the chance of filling out those missing states for the Worked All States Award, picking up additional countries for the Countries Award or working that last continent for the Worked All Continents Award. I might even catch Africa, so I could get my WAC Award.

Watch the mailing label on your copy of the News as it will tell you when it is time to renew your membership. It is important to keep your dues current. Best 73, es cu next month.



The "Flying Horse" sets the standards!

Continuing a great 67 year tradition, we bring you three new Callbooks for 1988. The North American Callbook, the International Callbook, and the Callbook Supplement bring you accurate up-to-date QSL information on over 950,000 amateurs throughout the world.

The 1988 North American Callbook lists the calls, names, and address information for 478,000 licensed radio amateurs in all countries of North America, from Canada to Panama including Greenland, Bermuda, and the Caribbean islands plus Hawaii and the U.S. possessions.

The 1988 International Callbook lists 481,000 amateurs in countries outside North America. Its coverage includes South America, Europe, Africa, Asia, and the Pacific area (exclusive of Hawaii and the U.S. possessions).

The 1988 Callbook Supplement is a new idea in Callbook updates, listing the activity in both the North American and International Callbooks. Published June 1, 1988, this Supplement will include thousands of new licenses, address changes, and call sign changes for the preceding 6 months.

Every active amateur needs the Callbook! The 1988 Callbooks will be published December 1, 1987. See your dealer or order now directly from the publisher.

• Over 950,000 current amateur listings in all countries of the world • Telegraph Codes

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Radio

North American Listing

1988

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- Then & Now call changes Silent Keys Census of Amateur Licenses in all countries
- Standard Time Charts International Postal Information World-wide QSL Bureaus
- Table of Amateur Prefix Allocations Prefixes of the World Plus many other features.

Publication: Calibooks - December 1, 1987 Supplement - June 1, 1988	Including shipment to U.S.A. points		Including shipment
Single 1988 North American Callbook	\$28.00	\$29.60	\$30.00
Single 1988 International Callbook	30.00	31.75 -	32.00
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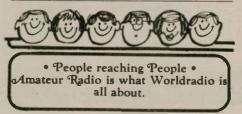
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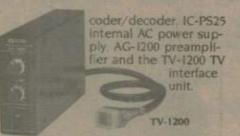
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