Worldradio

April 1981 • Year 10, Issue 10 • 80¢

Thinking ahead?

Lenore Jensen, W6NAZ

"There's no substitute for advance planning when it comes to disaster communications!"

That was the consensus of a soul-searching panel at the 6 January 1981 meeting of the Council of Radio Clubs, Los Angeles Area.

Led by Herbert (Pete) Hoover III, W6ZH, several leaders of Southern California radio amateur efforts described successes and disappointments of their 1980 efforts against fire, flood and earthquake.

Red Cross, Highway Patrols, Forestry, Police and Fire officials all had benefitted by Amateur Radio help. But frequent lack of official coordination, communication-wise, was noted. Therefore, each local effort seemed to "start from scratch." In case after case, local amateurs pitched in and helped where they could locate a need.

"We provided a service to others who needed our capabilities," commented Pete. "It is important to work with other organizations. We are not just there to wave the flag of Amateur Radio."

The panel members described cooperation with various agencies. Bob Dyruff, W6POU, SCM (Section Communications Manager) for Santa Barbara, California, told how constant drills have sharpened communication skills for the "AVERT" activities of his area. Joe Brown, W6UBG, SEC (Section Emergency Coordinator) of the huge Orange Section, mentioned that radio amateurs of his section had coordinated needs of shelter evacuees during flood and recent fires. EC (Emergency Coordinator) Matt Lee, WB6BWZ, shared experiences in creating a "statement of understanding" with the Department of Forestry.

DEC (District Emergency Coordinator) of Los Angeles, Bob Burns, N6ZH, explained how amateurs provided vital help during the February flood/mudslides when official organizations were unable to hear each other in deep canyons and "through" mountains. He also described the use of two repeaters — one for actual disaster work and the other for Amateur Radio coordination.

Los Angeles' SCM, Stan Brokl, N2YQ, urged all amateurs — especially ECs — to keep their SCM informed of progress. "It's hard for the right hand, sometimes, to know what the left is doing!"

In his role as volunteer coordinator of communications for the very large Southern California Division of Red Cross, Pete Hoover explained how advance planning should be used with that organization. Long before trouble strikes, each chapter must be approached with offers of help. A special welcome should be out for individuals willing to train to become regular Red Cross

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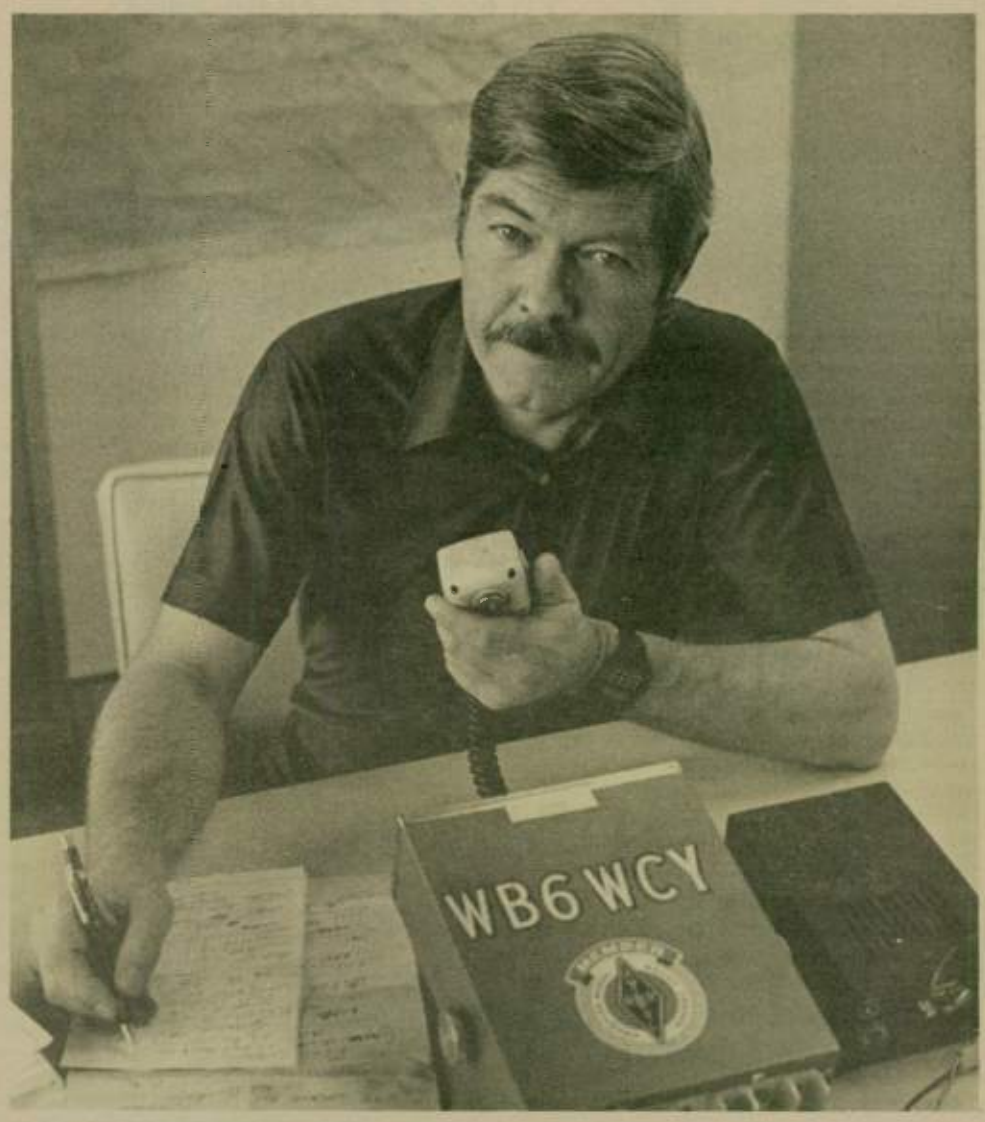

Bill Horsley, WB6WCY

Geothermal milestone

Submitted by Bill Horsley, WB6WCY

"CQ, CQ, this is WHISKY BRAVO SIX WHISKY CHARLEY YANKEE; WB6WCY calling from Brawley."

"WB6WCY, here is WB6QJJ in Palm Desert. The handle is Jim. What can I do for you?"

That brief exchange began an hour-long fulfillment of an ambition long held by Mono Power Company's Bill Horsley: to be the first in Southern California to power an Amateur Radio station by geothermally generated electricity right at the source. Mono Power is a subsidiary of Southern California Edison Company.

Bill did just that the afternoon of 20 November 1980 at SCE's Brawley 10 MWe geothermal steam-powered generation station currently under test.

Ray Cedillo, SCE's R&D project engineer for the Brawley project set up Bill in a small office just outside the control room and alongside the turbine. Using a 10-watt Heathkit FM transceiver, Bill's first two contacts were through the "Tramway Repeater" (145.49 MHz) high up on Mt. San Jacinto. The radio repeater is owned by the Palm Springs area Amateur Radio operators.

Inasmuch as Bill's antenna was inside the control building, the 80-mile reach to the repeater station made communication a bit scratchy. James Patteson, W6TB, in Palm Springs, suggested moving operations to the "Laguna Peak repeater" (147.75 MHz) owned by amateurs in the San Diego area. Another call was put out through the Laguna Peak facility and Bill spent 45 minutes making contacts with 25 Amateur Radio stations in three counties and two states.

After a brief description of the Brawley geothermal test facility, Bill offered a commemorative acknowledgement card to every

(please turn to page 9)

Dannals makes plea for funds

Norm Brooks, K6FO

Harry Dannals, W2TUK, president of ARRL, made an impassioned plea at SAROC on 3 January 1981 for the Amateur Radio community to come forward with up to $25,000, to be matched by the ARRL Foundation for a replacement satellite. As you recall, OSCAR Phase III went in the drink at launch.

Dannals said he has vowed to mention this at every Amateur Radio convention he attends until the funds are matched. "The future of Amateur Radio lies in space communications," he said. "Some of the magic you now see in today's commercial satellite work is but a small piece of what can be accomplished by Amateur Radio. We in Amateur Radio are not going to be deprived of our opportunity in space communications. We've done it before and we'll do it again."

Less paper work for antenna approval

The Commission has amended Parts 17 and 97 of its rules to simplify the procedures governing approval of antenna structures to be used by Amateur Radio operators.

The changes will allow for a reduction in the number of forms required to obtain approval for any such antenna structure which exceeds certain height limitations.

Currently, Amateur Radio operators obtain this approval by filing FCC Forms 610 and 714 with the Commission. The requests for approval are processed partially at the Private Radio Bureau licensing facility in Gettysburg, Pennsylvania, and partially at the Field Operations Bureau's Antenna Survey Branch in Washington, D.C. The change in rules will require Amateur Radio operators to file just one form for antenna approval with the Commission. The processing of this form will now be done completely in Washington by the Antenna Survey Branch.

In addition, the changes will provide a cost savings for the Commission due to the decreased workload in the Private Radio Bureau's Licensing Division.

The amendments are subject to the clearance of reporting requirements by the General Accounting Office. The Commission will announce the effective date of the rule changes in the near future.

Action by the Commission 8 January 1981, by Order (FCC 81-4). Commissioners Lee (Acting Chairman), Quello, Washburn, Fogarty, Brown and Jones.

For more information, contact Maurice J. DePont at (202) 632-4964. □

STAFF
Armond Noble, N6WR
Chris Wilson
Jeanette Inouye
David Tykol, WA6RVZ
Jack Schwartz, WA6TRZ
Norm Brooks, K6FO

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Worldradio (USPS 947000) is an international conversation. You are invited to take part. Our newspaper is written by its readers.

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

Our readers are participants — an alliance of active radio amateurs who are concerned with reality, who use radio as a communications tool. We ask your cooperation in helping us develop the skill, quality and full potential of Amateur Radio.

We are positively-oriented. We print all the news of this great activity, and particularly desire an input of stories dealing with the dramatic, the personal and humanitarian uses of Amateur Radio.

Worldradio needs your help to reflect the invaluable service of Amateur Radio.

Through **Worldradio** you can make contact with other individuals who share your interests.

Worldradio is an independent newspaper. It is not affiliated with any other firm, group or organization. Its pages are open to all. Permission is hereby automatically granted to reprint from this publication. If there is something useful, we wish to share it.

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West Coast UHF Conference

The 26th annual West Coast UHF Conference, sponsored by the West Coast UHF Society and Project OSCAR, Inc., will coincide this year with the 20th anniversary of OSCAR I.

The conference will be held at the Sunnyvale Hilton, 1250 Lakeside Dr., Sunnyvale, California 94086, 1-3 May. Room reservations can be made through the Hilton Reservation Service 800-652-1094, or direct through the Sunnyvale Hilton at 408-738-4988.

The conference schedule begins Friday night with registration and a no-host social in the hospitality room. Saturday starts early with registration beginning at 8:15 a.m., orientation at 8:45 a.m., technical sessions starting at 9:15 a.m. and continuing through 10:00 p.m., with a break for a cook-out barbecue luncheon and a break for dinner.

Prizes will be drawn Saturday at the close of the afternoon sessions. Saturday night will also include noise figure measurements for the home-brewer and commercial manufacturers. Sunday morning will be a show-and-tell of home-brew projects as well as antenna measurement tests.

Conference registration fee: $5 pre-registration and $8 at the door, which includes all technical sessions, noise measurements, and antenna measurement tests. The cook-out luncheon will be extra.

The conference sponsors encourage those interested to send an SASE for detailed information and pre-registration to: West Coast UHF Conference, P.O. Box 5283, San Mateo, CA 94402. □

Doctor wins antenna case

Bob McGarvey, WB2EVF

As a flag is to a flagpole, so an antenna is to a tower.

An Essex County, New Jersey amateur has won a court battle over his antenna and tower in which one of the points in the judge's favorable ruling was the flag comparison.

Dr. Ira Saber, N2IS, moved into Millburn several years ago and received a building permit for a tower. He put up a 65-footer, mounted his antenna and sat back, ready to work the world. Millburn is a suburban community in a hilly part of the state.

He soon discovered he had neighbors — irate ones. They blamed him and his tower for all television interference. When a storm damaged the antenna and Saber replaced it with a new one, the neighbors seized on the change to begin what was to be a legal battle lasting more than two years.

The Millburn Township Committee yielded to the neighbor's demands and voided the building permit, ordering the tower removed.

N2IS countered by appealing to the Federal Communications Commission, which checked his operation for RFI and pronounced it clean.

The case eventually landed in New Jersy Superior Court and last 3 December, after more than two years of legal sparring, the presiding judge ruled for Saber.

The Township Committee, in support of its action, charged the amateur operations were a public nuisance to the neighborhood and the township in general; that the original permit had been illegally issued; that the antenna had been changed, placing the tower in violation of a new ordinance limiting tower heights to 40 feet which was adopted after Saber had received his permit and erected his 65-foot tower; that the tower structure was weak and unsafe.

The judge ruled:

1. The Amateur Radio operations were not a public nuisance, since they could affect only a small neighborhood and had not caused any problems for fire, police or other municipal operations;

2. The original permit was legal and the fact it was issued by an employee of the building inspector's office rather than the inspector himself did not alter it.

3. Failure of the original antenna did not show the present structure was unsafe, citing expert testimony by structural engineers.

4. The antenna is to the tower as a flag is to a flagpole, not in any sense a structural part. A flag can be replaced without affecting the flagpole and the antenna can be changed without affecting the tower structure.

Don Carella, a member of the Tri-County Radio Association, gave expert testimony in Saber's behalf. Tri-County's membership covers the general area of New Jersey of which Millburn is a part.

I am indebted to Dick Nescot, WA2WDJ, of Clark, editor of the TCRA News, for sharing this good news.
— *The Home News* □

Radio Shack recall

The Consumer Product Safety Commission has announced a Radio Shack recall involving more than 150,000 test lead kits for electrical test meters.

The kits, sold nationwide in Radio Shack stores for $4.99, bear the catalog number 270-332.

The kits include probes that are used to test electrical current. However, the Commission says metal remains exposed when the probes are inserted into lead wire tips, creating a potential shock hazard to users. Consumers can return their kits to any Radio Shack store for a full refund.
— *Shore Points ARC, Absecon, NJ* □

INDEX

Tower maintenance

Norm Brooks, K6FO

"You probably wouldn't buy a tower if you knew its wind load figures at, say, 85 miles per hour!" These were the startling words that closed Clyde Blyleven's presentation at SAROC, Las Vegas, Nevada on 3 January 1981.

Clyde, WA6ONC/0, is in charge of the Tower Division, Hy-Gain Corporation. He was one of the featured speakers at SAROC, and gave a very informative talk on "Tower Maintenance," emphasizing tower safety.

Crank-up towers

Never climb a crank-up tower without first sticking a 2-by-4 through it. The entire weight of the upper sections is supported by the cables, and if one of them breaks, the tower will telescope down (but fast!). Remember that your climbing will put additional weight on the tower which might start things moving. And all this will not do your toes any good, if they are sticking into the tower.

Never grease a crank-up tower leg. The grease will collect sand and dust, which will grind away the galvanizing as the tower is raised and lowered.

Today's towers have winches with brakes. If you let go, everything stops. Old-style boat winches are found on some older towers. If you let go, and the ratchet doesn't hold, WHEEEEEE! If this happens to you, don't try to grab the handle. You can break a finger or an arm. If you have the old-style winch, replace it with the brake type.

Don't take the handle off a brake winch. Some of them release the brake when this is done. Don't put oil or grease on the brake. It's OK to oil or grease the shaft or the ratchet, though. Don't worry if the lifting cable shows some fray. Watch it, and if it gets to where eight or nine strands are frayed, replace the cable.

If you add a motor winch, don't remote control the motor from a point where you can't see if the tower is really going up or down. If the tower sticks for any reason and the cable slacks, and then the tower breaks loose, it could come slamming down. You *could* watch the tower through mirrors, if that is feasible.

Guying

The recommended guying point of a tower is eight-tenths of its height. For a 100-foot tower, the guys should be out from the base of the tower at least 50 feet. If you have a small yard, use addition guy poles — 8 to 10 feet high, set in concrete — to keep the guys at the recommended angle.

Use 2,000-pound test cable for the guys, and tension them to have a slight "give." If you have too much tension on the guys, you are adding to the compression weight that the tower must support.

Check the guy wires regularly for rust, even the so-called stainless aircraft cables. If the rust is slight, sand or brush it off and spray on Kosmoline. It is available from Standard Oil. It penetrates the cable without leaving a lot of surface film.

Kosmoline can be put on crank-up tower cables by wiping it on as the tower is being raised or lowered. One of the amateurs in the audience suggested a product called "Chain Life", obtainable at motorcycle supply houses, saying it did the same job.

However, if the rust on the guy wires is deep, you should replace them with new cables.

When using turnbuckles, use the end of the cable to run through the turnbuckle to keep it from turning. When clamping the ends of cables at turnbuckles or insulators, there is a right and wrong way to install "U" clamps. Use three of them, positioning them so the "U" is on the short (cut) end of the cable. Position all three this way.

Grounding

Drive an 8 to 10-foot copper-clad ground alongside the base of your tower, and solidly connect it to the tower. NEVER run a ground cable *through* the concrete base. Concrete has moisture in it, and if a lightning charge goes through a cable in concrete, the concrete will explode.

Resonance in guys

The question-and-answer period brought a lot of questions on how to break up guy wires with insulators so that resonance in guy wires would have the least effect on the pattern of the antennas. One point all agreed on — use high-quality commercial grade insulators. Don't jeopardize your investment with "cheapies."

Lew McCoy, who was in the audience, suggested using a dip meter to determine the resonance of a guy wire. Even if it is only 100 kc out of the amateur bands, that's enough. Resonant guys will affect the front to back and front to side performance of a beam. Check the pattern by having measurements made at a distant point as you rotate the beam. If the pattern is distorted, go after the resonant guys. Lew said to also loop the coax feed line through the dip meter and look for resonance there.

Lew pointed out that if inverted "V" antennas are used on the tower, just below the beam, the 80-meter "V" will affect the 20-meter performance of the beam, and that a 40-meter "V" will affect the 15-meter performance of the beam.

Lew ended his impromptu remarks on antennas by quoting "McCoy's Law" — If the thing works, leave it alone!

Clyde Blyleven, WA6ONZ, explaining an antenna detail during his discussion on towers at SAROC, 3 January 1981. *(K6FO photo)*

Tower life

How long should a tower last? In mild climates, it should last a lifetime. Near the sea, because of salt air, or in severe climates, because of ice loading, you must expect less.

How about aluminum towers? Aluminum has about half the strength of steel, but requires less maintenance. And aluminum corrodes in some climates.

Wind loading

Think of your tower and beam as a giant post hole digger. The beam is the handle, and the tower is the shaft of the post hole digger. High winds don't just blow a tower installation over. Instead, high winds "torque" the whole assembly as though it were trying to dig a post hole. This is why good towers are made with a lot of "W" shaped bracing.

This brings us to the remark quoted at the beginning of this article. Wind load figures are available for any tower you buy. Be sure to get them; your county building section will want to know what they are. You will note that these figures go down drastically as the speed goes up.

Thinking ahead?

(continued from page 1)

volunteers. "Working from within" is best, in order to build confidence in the ability of Amateur Radio to serve. Also, amateurs who qualify for the famous Red Cross insignia find easier crossing of police lines!

All agreed it's difficult to think ahead in times of normality. Each participant of the panel urged licensees to join a radio amateur team — be it ARES, RACES, Red Cross, or any club or repeater group seriously interested in public service — and do one's best to prepare *now*. Although many amateurs do come through when there is a need, infinitely finer work should be possible. Ideas heard:

"The least every amateur can do is to seek out his/her Emergency Coordinator and become acquainted. Why not invite that EC to speak at the next local club meeting?"

"Only 5 percent of the amateur population is now concerned with disaster work!"

"We need a simple plan of what to do in disaster . . . a specific frequency, with the local EC acting as focal point."

"Providing communications for parades, walk-a-thons, or any community event is great rehearsal for more serious work."

"Try hard to set up an Amateur Radio station in an official building *now* — don't wait for trouble."

"The Red Cross nationally has the frequency 47.42 MHz — and any amateur knows how many more are needed!

"The problem: *interface* with other services."

"Like the famous saying: *'There's no limit to what a person can do if he doesn't care who gets the credit'.*"

The earnestness with which these leaders examined the need gave assurance that better and better Amateur Radio service is to come.

Worldradio

Send your news to Worldradio at the same time you send it to other amateur publications and see who prints it first. We get the news out before anyone else.

AWARDS

Earn Achievement Award

1981 will be the 23rd year radio amateurs have had their own program to publicize Michigan and its products. As has been done for the past 20 years, the governor will award Achievement Certificates to amateurs who take an active part in telling the world of Michigan's unlimited resources, opportunities and advantages.

Certificates are awarded on the following basis:

1. A Michigan amateur submits log information and names and addresses (if possible) of 15 or more contacts made out-of-state or DX amateurs with information regarding Michigan.

2. An out-of-state amateur, including Canada, submits log information and names and addresses (if possible) of at least five Michigan amateurs who relate facts to him about Michigan.

3. A foreign amateur, excluding any resident of Canada, submits the call letters and name/address plus log information for at least one Michigan amateur who has told him about Michigan.

4. Only QSO's made during Michigan Week, 16-23 May, will be considered valid.

All applications for certificates must be postmarked by 1 July 1981 and mailed to Governor William Milliken, Lansing, Michigan 48902.

Examples of Michigan facts: **State Bird:** Robin **State Fish:** Trout **State Flower:** Apple Blossom **State Tree:** White Pine **State Stone:** Petoskey Stone

Spread the word to others about this award. □

'Bip' wins Hall of Fame Award

We congratulate Wilbur "Bip" Bachman, W6BIP, as a recipient of the club's Hall of Fame Award! The award was established last year to honor those members who have given long and dedicated service to the San Francisco Radio Club. This is the highest award the club can bestow on a member.

Bip received a scroll at the club Christmas party and will have his name inscribed on the Hall of Fame plaque. He joins four other members who were honored with the award last year: Bill Green, W6BYS; Fay Elzey, W6FAX; Wally Buckley, W6GGC; and Lammy Yeoman, W6URA.

— CCRC Circle, So. San Francisco, CA □

The day the sun disappeared

The Yakima Amateur Radio Club, W7AQ, will run a commemoration of "The Day the Sun Disappeared," which occurred on 18 May 1980 when Mount St. Helens erupted. Yakima, Washington, which is 80 miles northeast of the volcano, saw the sun disappear by 10:30 a.m. and did not see the light of the day until 7:00 a.m. the next morning.

W7AQ was celebrating its 50th year of existence with its hamfest that morning. At 8:38 a.m., word was received that the mountain had had a major eruption. At about 9:30 we watched a thunderstorm front approach out of a clear blue sky. Then the rain of dust started. Over 600,000 tons of volcanic dust fell within the city of Yakima alone. Everything was covered with a one-inch layer of dust and ash. Local and visiting amateurs provided emergency communications and handled information traffic for the next three days.

Commemorate with us from 1700 to 0200 hours UTC on 17-18 May 1981 UTC. Listen for W7AQ on 28.660, 21.370, 14.280, 7.285, and 3.940 for SSB. CW will be on 28.120, 21.130, 14.040, 7.140, and 3.740.

A special event QSL card will be available. Send a SASE to: W7AQ, Yakima Amateur Radio Club, P.O. Box 9211, Yakima, WA 98909.

For further information, contact Kenneth Zahn, KA7DWH, via the club address. □

'Fiddlers' Picnic'

The Alamance Amateur Radio Club — K4EG — will operate a "Special Events Station" at the Alamance County Historical Museum during the "Fiddlers' Picnic" fund-raising event for the museum.

The historic museum building is the birthplace of Edwin M. Holt, a pioneer in textile manufacturing in the South.

Operation will be on 16 and 17 May 1981, from 1600 UTC to 2300 UTC. Frequencies of operation will be 7.260 and 21.360 MHz on General phone.

An attractive certificate will be issued to those contracted on receipt of QSL and legal-size SASE. QSL to: Alamance ARC, c/o Gary Hills KA4KJI, 2416-C Huntington Rd., Burlington, NC, 27215.

For further inforamtion, contact Gary Hills, KA4KJI, at the above address. □

Hunting North or South Dakota?

Anyone hunting the states of North and/or South Dakota hearken!

The weekend of 30 May 1981, two special event stations will be on the air from one or the other, or both of these states. Which one (or both) will not be known until the day of operation. 80-10 meter operation is contemplated. SSB and CW modes will be used and 144.52 simplex FM will be monitored. Calls will be: W0YBV, CW; W0ANZ, SSB. (The event is being sponsored by the Central Iowa DX Association.)

Novice band operation is possible. Most CW operation will occur 25 kHz from the low end of the band and split frequencies will be used. Most SSB operation will occur in the General Class band.

QSLs will not be sent to stations flagrantly violating ethics of good operating or failing to respond positively to suggestions made by these special event stations. Stations calling on the transmitting frequency will not be answered.

QSL requests must be accompanied by an SASE or proper postage (or IRC equivalent). Cards should be sent to the Callbook address of either station.

County hunters attention! Enroute the site these two stations will operate mobile. The route will pass through several Iowa counties from Des Moines to I-29. From there, I-29 will be followed to the North Dakota-South Dakota line. Deviations in route will not be made. □

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Super Convenient. *Built-In VOX* with 3 up-front controls. *Built-In PTT* control at front and rear jacks. *Built-In Zero-Beat* switch puts you on exact frequency. *Built-In Adjustable Sidetone* with variable pitch and level. *Adjustable ALC* for full control from low power to full output. *2-Speed Break-In*, fast or slow speeds to fit operating conditions. *Built-In Speaker* eliminates desk clutter. *Automatic Sideband Selection*—reversible.

Super Design. *All Solid-State and Broadbanded*—from the pioneer, Ten-Tec. *Modular* plug-in circuit boards. *Functional Styling* with convenient controls, full shielding, easy-to-use size (5¾"h x 14¼"w x 14"d).

Super Hercules Companion. Styled to match, plus separate receiving antenna capability, plus transceiver front panel control of linear's bandswitching (one knob does it all).

Full Accessory Line including filters, remote VFO, power supplies, keyers, microphones, speech processors, antenna tuners—all in matching color.

Model 546 OMNI-Series C.... $1189.

HERCULES

Amateur Radio's first full break-in solid-state kW linear amplifier. With the reliability you'd expect from the pioneer in high-power solid-state technology—TEN-TEC.

All Solid-State. No tubes. Instead, HERCULES uses two 500-watt push-pull solid-state amplifier modules with an output combiner. Super solid.

Broadband Design. No knobs, no tuning. From the pioneer, TEN-TEC. For fast, effortless changing of bands. Super easy.

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Full Break-In. HERCULES puts the conversation back into high power CW operation—you can hear between every character you send.

Full Coverage. 160 through 15 meters plus four "AUX" positions for 10-meter conversion by owner and future band additions.

Full Gallon. 1000 watts input on *all* bands, 600 watts output, typical. Built-in forced-air cooling. Driving power: 50 watts, typical. Adjustable negative ALC voltage. 100% duty cycle for SSB voice modulation; 50% duty cycle for CW/RTTY (keydown time: 5 minutes max.) Continuous carrier operation at reduced output.

Full Protection. *Six LED status indicators* continuously monitor operating conditions and shut down the amplifier whenever any one exceeds set limits (the exciter automatically bypasses the amplifier under amplifier shut-down for barefoot operation). The six parameters monitored are: 1) overdrive; 2) improper control switch setting; 3) heat sink temp.; 4) SWR; 5) overvoltage/overcurrent; 6) rf output balance. *Two meters* monitor collector current, voltage, and forward/reverse power. And a highly efficient *automatic line voltage correction* circuit (patent applied for) eliminates the need for selecting transformer taps, prevents applying too high a voltage to final amplifier devices, becomes operative under low line conditions.

Super Power Supply. Provides approximately 45 VDC @ 24 amperes, operates on 105/125 VAC or 210/250 VAC. Tape wound transformer and choke reduce weight (50 lbs.) and size (7½"h x 15¾"w x 13½"d). Separate enclosure.

Super Styling. Designed to match OMNI, the HERCULES has the same height as OMNI, plus matching bail and matching colors. The front panel is simplicity in itself with two push-button switches (power and mode) plus two knobs (meter and bandswitch), and a "black-out" monitor panel (when unit is off, meters are unobtrusive). Amplifier size is 5¾"h x 16"w x 15½"d.

Model 444, HERCULES amplifier & power supply.... $1575.

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- SWAP MEET (Must be registered to have a table)
- HOSPITALITY ROOMS for NETS (Each Net must make its own arrangements with Hacienda)
- GOLF TOURNAMENT (Friday Afternoon)
- TRANSMITTER HUNT 146.52
- BANQUET (Roy Neal K6DUE, Speaker)
- ARRL CD APPOINTEES MEETING
- ARRL FORUM
- GRAND PRIZE (Pre-registration only)
- MARS

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ARRIVAL DATE _____ TIME _____ DEPARTURE DATE _____ TIME _____

CHECK ROOM TYPE DESIRED, INDICATE QUANTITY OF EACH TYPE

_____ SINGLE _____ DOUBLE (2 PEOPLE 1 BED)

_____ TWIN (2 PEOPLE, 2 BEDS) _____ SUITE

FIRST NIGHT'S DEPOSIT MUST BE RECEIVED 15 DAYS PRIOR TO ARRIVAL OR RESERVATION WILL BE CANCELLED. CONFIRMATION WILL BE MAILED UPON RECEIPT OF DEPOSIT. RESERVATIONS MUST BE RECEIVED BEFORE MAY 1, 1981

FRESNO AMATEUR RADIO CLUB, INC.
MAY 15-17 1981

SINGLE $26.00 TWIN OR DOUBLE $30.00 SUITE $80.00 AND UP

FRESNO HAMFEST P.O. BOX 783 - FRESNO, CA 93712

	BEFORE MAY 8	AFTER MAY 8	
FULL REGISTRATION	$18.00	$20.00	EXHIBITS, BANQUET, PRIZES, TALKS
DAILY REGISTRATION	5.00	5.00	EXHIBITS & TALKS ONLY – NO PRIZES
LADIES PROGRAM	7.00	7.00	

NOTE: ONLY FULL REGISTRATION POSTMARKED ON OR BEFORE MAY 8, 1981 ARE ELIGIBLE FOR PRE-REGISTRATION PRIZE. TO BE ELIGIBLE FOR PRIZES YOU MUST HAVE A FULL REGISTRATION.

NAME (For BADGE)	CALL	NO.		ADVANCE	DOOR
(1)			FULL REGISTRATION	18.00	20.00
(2)			PARTIAL REGISTRATION	5.00	5.00
			BANQUET ONLY	12.00	14.00
			LADIES PROGRAM	7.00	7.00

PLEASE PRINT

ADDRESS _____

CITY _____

STATE _____ ZIP _____

REQUESTS FOR CANCELLATION MUST BE RECEIVED BY MAY 8, 1981

I AM INTERESTED IN ____ OCWA ____ MARS ____ WPSS ____ WCARS

____ SWAP TABLE ____ TX HUNT ____ GOLF ____ RV SPACE ($5 PER NIGHT/NO HOOK UPS)

CHECK/M.O. FOR $_____ ENCLOSED. MAKE PAYABLE TO: FRESNO AMATEUR RADIO CLUB.
CONVENTION ADVANCE REGISTRATION CLOSES MAY 8, 1981.

Contact Worldradio for hamfest prizes.

Pacific Division Convention in Fresno

Amateur Radio operators will gather in Fresno 15-17 May 1981 for the ARRL Pacific Division Convention and 39th Annual Fresno Hamfest sponsored by the Fresno Amateur Radio Club, Inc., at the Hacienda Inn, Fresno, California.

Activities begin with the annual golf tournament Friday afternoon, 15 May, wine-tasting and ARRL night in the evening.

Saturday will feature technical sessions on computers, antennas, construction and ARRL matters. There will be a CD (Communications Department) appointees meeting with emphasis on emergency communications, and a Public Information Workshop for all interested amateurs. (Clubs should be sure to have a representative at this one.)

There will be meetings of the various MARS branches for those belonging to this part of Amateur Radio. Sharpen your CW for QLF contest (left-foot CW) and your hunting skills for the transmitter hunt on 146.52 MHz. The latest in Amateur Radio equipment will be on display, and the Mermaid Patio will be loaded with goodies on the swap tables. The ladies program features a luncheon and entertainment. The ARRL Forum will conclude a busy day of activities.

The Saturday evening banquet will feature Roy Neal, K6DUE, as the keynote speaker. The Wouff Hong initiation will take place at midnight.

Come and meet ARRL First Vice President Carl Smith, WØBWJ; Hal Steinman, K1FHN, of membership services; Doug DeMaw, W1FB, of the technical department, and Director Bill Stevens, W6ZM.

Tickets are $18 per person for all activities including the banquet if purchased before 8 May 1981, and $20 after. For those desiring to participate in technical sessions, commercial exhibits, contests, and swap tables, the price is $5 per person. Ladies program tickets are $7 per person.

Special rates for convention guests have been arranged with the Hacienda Inn. Make your reservation directly with the Hacienda Inn, 2550 W. Clinton, Fresno, CA 93705. Be sure to mention the ARRL Pacific Division Convention to get the special rate.

A talk-in station, W6TO/R; 146.34/146.94 will be available to assist those arriving from out of town. □

DON'T FORGET . . .
Include first and last names with call signs.

SANTA MARIA RADIO SWAPFEST

SPONSORED BY **SATELLITE AMATEUR RADIO CLUB Inc.**

June 14, 1981

WHAT: Top Sirloin BBQ/Beans/Salad/Salsa/Bread, Soft Drinks and Coffee.

Prize Drawings:
Grand Prize — VHF 2-meter All Mode Transceiver.
2nd Prize — Century 21 CW Transceiver.
3rd Prize — VHF Handheld ICOM 2AT Transceiver.
Special — Limited Ticket Drawing Clipperton 'L' 2Kw Linear. Tickets available at Swapfest.
Ladies'/Children's Prizes and many more.

NOTE: The winner of any transceiver or associated equipment must be present and produce a valid Amateur License.

ACTIVITIES: QLF and QBK Contests.
Swap Tables.
R/C Model Helicoptors
Club Sponsored 'T' Hunt.

WHEN: Sunday, June 14 (Flag Day), 10 A.M. to 4 P.M.
BBQ served at 1 P.M.

WHERE: Union Oil's NewLove Picnic Grounds, south of Santa Maria off U. S. 101 Highway.

PRICE: *Dinner and Drawings* — Adults $7.00, Children 6-12 $3.50, under age 6 is Free.

Extra Drawing Tickets — $1.00 each, or 6 for $5.00.

Swap Tables — $2.50 each (approximately 2' × 6').

BONUS: Buy your tickets by midnight March 31 and receive three extra drawing tickets free with each adult dinner ticket. Two extra drawing tickets with purchases between April 1 and midnight April 30, one extra drawing ticket with dinner ticket thru May 31.

TALK-IN: WR6ASW, 146.34/94, Santa Maria.

MAIL ORDERS AND INQUIRIES TO: Santa Maria Swapfest
1600 E. Clark #49
Santa Maria, Ca., 93455

ORDER FORM

Name_____ Call_____ ___Adults @ $7.00

Street_____ City_____ ___Child 6-12 @ $3.50

State_____ Zip_____ ___Drawing Tickets @ $1.00 or 6 @ $5.00.

Check/MO for $_____Enclosed. Make check or money order payable to: Santa Maria SWAPFEST.

15/10 meter skip survival

Ted Hommel, W7LFL

Do you understand the skip characteristics of 15 and 10 meters and therefore get all the enjoyment you can out of these bands? I hope this article will help many of the newer amateurs understand what is going on and to be more tolerant of the activities of these bands.

Interference (QRM) from other stations is basically either from propagation changes (reflection and refraction of radio waves) or ignorance of operators (all of us, to some degree). Intentional jamming of a signal by one amateur to another is so rare we can assume it does not happen.

Not quite all your long distance propagation will be due to sun radiation activated ionospheric skip, usually from the E and F layers, or due to "wind" activated ionospheric skip, known as sporadic E (happens in the E layer, written as E_S). Let us review these and see how they affect our operating.

Sun radiation activated ionosphere

The sun radiation activated skip is very regular and although the day-to-day variation may be great, it tries to follow a pattern. In the morning more stations from the East are heard; by evening more stations in the West are heard. Stations to the Southeast or Southwest will be stronger than stations to the Northeast or Northwest if you live in the mid-latitudes of the Northern Hemisphere. That is because there will be more ionization by the sun's radiation toward the Equator than toward the North Pole.

This also means the band will be open longer for Florida stations working Southern California than for Maine stations working Washington state. This is why, in the evening, a United States station will hear Australian stations long after Japanese stations have faded away. It all balances out since the stations in the northern latitudes get more use from the lower frequency bands such as 80 meters.

Now apply what you know. The time is near sunset and one station is to the east and one is to the west; which one will give you a long QSO (contact and conversation)? Usually the western one. Why only usually? Consider the following:

As the sun moves away from your area, the ionosphere gets thinner. Therefore your signal will need to leave your antenna at a more horizontal angle for it to keep skipping. The more vertical part of the signal will begin to penetrate the ionosphere. This horizontal and vertical is not the polarization of your antenna, but how long your signal will travel close to the ground.

Again, apply what you know. The time is again near sunset, one station is west and close, but the other is west and not as close; which one will give you the longer QSO? Usually the station farther away. There is more to this type of ionization, but this is enough to put the point across.

"Wind" activated ionosphere

If you have listened to 15 and 10 meters in the spring and summer, you know that on many evenings stations from the East, from a thousand miles away, come in like they were next door. This is sporadic E, E_S, an ionization of the E layer due to high winds at that level. Do not picture a major wind storm because this area is almost outer space, which is why the ions, these chemically and electrically active things, can exist like this.

Sporadic E will usually exhibit these characteristics: lasts for several hours (but minutes or a day of time is also possible); most common for a few hours after noon and at about sunset; happens about every day in June (Northern Hemisphere, 40° North), but only one or two days a week by September; more than twice as common for stations as far south as St. Louis, Missouri when compared to stations in New Hampshire; the ionized areas tend to move east and west.

It is also common for more than one ionized area, called clouds, to exist at a time. Each "cloud" will reflect only between certain geographical areas (technically the word *reflect* should be *refract*). The area of reflection can have very sharp boundaries. It is not uncommon to have a strong station disappear in a minute. If only one cloud exists, a whole band of activity can disappear; this is especially true at night when there is no sun radiation to act as a back-up. The ionization level of these clouds can be so strong that you can work stations only 200 miles away on 10 meters and once or twice a year, the ionization reaches such a level that frequencies higher than the 2 meter band (144-148 MHz) are reflected.

If you understand this you will see why a station you are working will disappear, (the cloud common to both of you disappeared or moved), and other stations in QSO have replaced him (a new cloud or one has moved). Also, if you understand this, you now know when and how to work all states on 10 meters (use E_S to work nearby states).

There are several ways to tell when an E_S cloud is forming or is existing. Some signs are: very short skip; evening skip to the east; skip stations on TV or the FM broadcast band; and S meter breaking strong skip signals from about 1000 miles away. E_S peaks in June, but can happen any time, any month.

Often when E_S is about to begin, ground wave stations that are not too strong will have multi-path flutter on them. That is the same flutter you get on your FM radio or TV set when a low airplane goes over your house (and you use over-the-air reception, not cable). The flutter will recycle every few minutes.

If you think sporadic E, E_S, is interesting then operation of the amateur six-meter band is for you. E_S causes more than 90 percent of the skip signals that exist there.

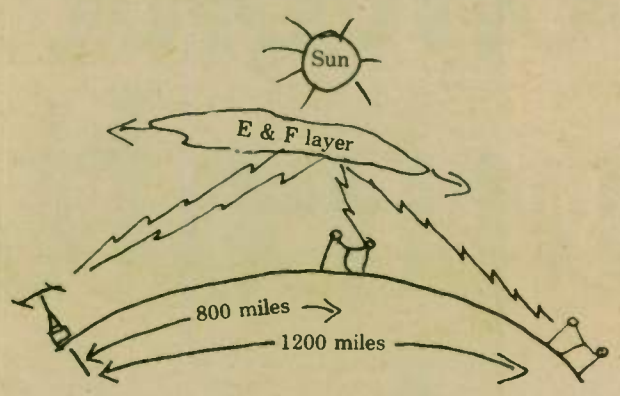
QRM, QRM, QRM

Now that you are an expert on propagation, consider and understand why the following QRM conditions can occur:

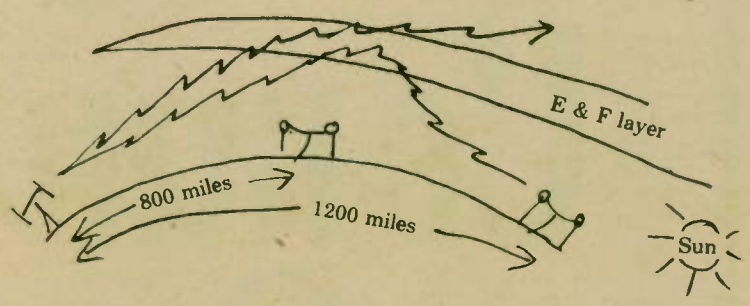
W9, Illinois, and W7, Utah, are in QSO. From Wyoming, W7LFL cannot hear either of them (too close). W8, Ohio, does not hear W9; they are too close. W9 is now transmitting and therefore, both W8 and W7LFL hear an open frequency. W7LFL, who cannot hear either W7 or W9, calls CQ and W8 answers. W7, Utah, hears both W8 and W9 and therefore suffers from QRM. This very common cause of QRM is close to unavoidable.

Consider this: early morning at W7LFL, who is working W5 to the south using E_S. Also on the same frequency but not hearing the just-mentioned QSO is W1, New England, working W4, Florida, using a dif-

(please turn to page 49)



During the afternoon, the closer stations get a good reflection.



In the evening, the ionization is not enough to return the signal down to the closer stations.

Quement Communications Department

Complete communications service under one roof.

Amateur, CB, commercial, installation and repair all in one department.

Bring all your communications needs to us. We will be pleased to assist you!

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SAN JOSE, PHONE 998-5900
Open Mon.-Sat.9-6

Contesters discover U.S. QSL Service

Laryl Myers, N7BMY

If you have ever worked anyone during a domestic contest you probably have a QSL card or two at USQS. In the last couple of months, many amateurs have decided to QSL their contest contacts via USQS. I am very happy about it and hope the growth continues so the bureau can serve everyone in a greater capacity. In the meantime, I find many cards on file that need to be claimed! Following is a list of calls that I have received cards for in just the last month. I have been listing calls every month here since October, so if you wonder how widely used the service is just look back an issue or six!

U.S. QSL Service is a bureau that handles QSLs going to radio amateurs who are in the USA or Canada (or who have those type call signs). USQS accepts cards to be put on file and/or forwarded for the small charge of 25¢ per 20. I appreciate it if the cards are sorted by call sign area (0-9); further sorting by suffix (N7AAA, N7AAB, etc.) is not required, but helpful. To claim any cards that come to USQS from other amateurs we require a **self-addressed stamped-envelope (SASE).** If you don't want to bother with filling out SASEs, I will put FIVE of them on file for you for $1. If you send them yourself, please be sure to include your call, print plainly and observe the new postage rates as they increase.

After doing a favor for some friends here locally, I find I am now offering to take your contest log (copy) and your blank QSLs and do all that "pain in the arm" writing for you. I will take a minimum of 200 QSLs and for 5¢ each, I'll fill them out and put them on file and/or forward them and also put five SASEs on file. I hope this will help you face the question of QSLing contest contacts. Please note — only QSLs for USA and/or Canadian type calls.

Hopefully everyone has survived April Fool's Day and now we can look forward to the end of winter. For those of us who enjoy working on 80 and 40 meters, it is the end of another year . . . sigh.

Before I list the calls for this month, I would like to thank all who have spread the word about our column and service, and those who have sent SASEs and QSLs for our service. The service is intended to help everyone and does not offer a profit for anyone. I organized what I thought to be a beneficial system for all, and from the comments I have received, I have succeeded. I welcome all comments.

One last remark: PLEASE PRINT PLAINLY!! Look over your filled-out QSL and be sure it is legibly written and complete. My best wishes until next month. 73, **Laryl Myers, N7BMY, USQS, P.O. BOX 814, Mulino, OR 97042.**

P.S. just for the records, I — Laryl — am not an OM but a YL!!

Unclaimed cards on file include these for:

W1AJR AD1Z K2RF VE3GPR
W1AQE KF2A W2RLV W3GQ
N1ARP WA2AGN WA2RYE VE3GTB
K1AS KA2AHE WA2RXB W3HDH
VE1AVX WA2ARC K2SX KB3HZ
AC1B N2BFG WA2TJL W3ICM
K1BV N2BL W2UBS WB3IET
WB1BXS N2BNB WB2UKO WB3IJZ
KA1BXW N2BNJ K2UVG WA3JXW
KA1CDW VE2BP W2XQ K3KDC
W1CTM KA2BSK W2YWK WB3LJC
KA1CVM WA2CNF N3ABO K3NOY
WB1DAR WA2CQC WA3AFS W3NZ
WB1DEU KA2CRL N3AJD AE3P
W1DIT WA2CYQ W3AJS AI3Q
WB1DVE KA2EAY W3AMQ WA3UQZ
KA1DZV VE2EFL N3AR AD3V
AK1E KA2EIE K3AVX WA3WQM
KA1EAN KA2EPK AB3B AE3Y
KA1EHR N2FS N3BJW W3YPS
WA1EXN KA2GGT WA3BKG K3ZMI
W1FDR W2GOB KA3BKQ KA4ABM
WA1FNU KA2GWO VE3BMP KC4AD
WB1FVO W2IMO WA3BUI WB4AEG
WB1FVS KA2IOV KA3CDB KA4AUR
W1GKE K2ITT WB3CFD K4AVU
WB1GOR KA2JCQ KA3CPR K4AWY
W1GXT WB2JGQ KA3CRR K4BFJ
K1JO WA2JXC KA3CUB N4BPG
W1JR AI2K KA3CWH KA4CIZ
K1NWE KA2KCV KA3DAG K4CLA
K1OX KA2KEI KA3DPQ N4CMS
K1PLR W2KF AI3E W4CNC
WA1POZ KA2KGZ WA3ESH WD4CRG
K1SLL KA2KRA KA3FSM AG4D
WA1TJE KB2M K3FY K4DDB
W1TRU WB2MVF WB3GCG WD4DHI
W1VWP N2OO K3GM N4DIT
K1WQU WB2REN W3GNM N4DJH
N4DMS KN5H N7CAS KA8IMD
N4DPG KA5HFB KL7CN WD8JCO
KW4E KA5HGE K7CRL W8JL
KC4FD K5HKG KA7EDH KA8KOH
WB4FSB KA5HNU KA7ENY K8KUH
WB4FTV WD5HNW K7ERQ KI8L
KA4GDX K5IA AB7F K8LDS
WB4GOG KE5J WB7FDQ W8LRL
WD4GUJ N5JJ KB7FF W8LRM
WB4IEM AD5K W7FN WD8MCH
WA4IIN WD5KBE K7GLL K8OQB
KA4IKH W5KL K7GNC WD8OWA
N4IN K5KV K7GQI WD8PFI
W4IRP WA5LIG K7GTK K8QJA
KA4IUS WB5LVL KA7GX WB8QOY
K4IVM K5ME AK7H KB8SO
WA4IYH K5MR KC7I W8TU
WA4JJZ W5NFS KL7IKV K8UNP
KA4JRY W5NR W7IRL WA8VLP
NA4K K5NW KL7JEF WA8VVU
KC4LA W5NX KL7JHD AI8W
WD4LZX VE5OI KL7JKS KB8WD
KA4MCM K5QJG W7JMA W8VVM
WA4MIY K5QQ K7KOT AJ8Z
KA4MVJ KM5R K7LYT KB9AA
ND4NBE K5RC AI7N KA9ADP
KA4NEC K5RQ K7NO N9AG
WD4NMF KG5U N7NR N9AOL
KA4OJI W5URD WA7NVT N9ATA
KB4OW W5VHR WB7OHF N9AWZ
W4OWY W5VKR WB7OKH AF9C
KA4PGG KJ5W NL7P W9DUB
KA4PKB NH6A K7PGL W9EBY
KC4PY K6AAW W7RLW WB9EVH
WA4QAL N6AED VE7SL KA9F
WA4RLL WB6ALC WA7UZL KA9FDL
K4RYH KE6B AA7W KA9FXK
WA4RXX AH6BK KB7W K9GTQ
KJ4S N6BZA WB7WBZ W9GW
KA4SAA KN6C W7WPR WD9HDR
WD4SCH N6CT WB7WVP K9HWL
KA4SDS K6CZY K7WWP KA9IDP
WB4STF AG6D KD7Z WD9ITL
W4TMR WB6DBH K7ZOK KA9ILM
AA4U N6DY KA8ABU WD9IUZ
KV4U KH6EH KA8ACS WD9JFY
WB4UBS WD6EWG N8ACW K9JU
WB4URW KD6FJ KB8AE WA9KRG
N4UZ KB6GG N8AHH K9LVK
ND4V KA6GTY N8AHL WA9MCJ
WA4VVO KH6ILU WA8ARS K9NR
N4VY WA6JUL K8BQI WA9OBR
W4VZB KA6JUR KA8BXA AG9P
KM4W KA6JWZ WB8BZH W9RE
NB4X W6KVA W8BZY WB9RKY
WB4ZLK W6LED KF8C WB9RYP
W5AC WA6LHD KA8CAB W9SWM
VE5ADS WA6LOW W8CCI KB9TJ
KC5AX K6LPL K8CW WB9JJY
WB5AZI WB6LUZ AI8D WB9TKR
AE5B N6NB W8DBL WB9UBR
KA5BFQ W6NWS K8DCR WB9UNY
K5BKO WA6NXE KA8DOA WB9UZT
N5BLK KI6O WB8DOD WA9WIF
W5BQ WA6OJT KC8E K9WTF
KE5C WA6PJJ KA8EBG AK9Z
N5CAS KS6Q KA8EHA K9ZO
N5CEM N6QA K8EW KF0A
KA5CNO K6RN AG8F N0ABE
WB5CWI W6SYY WB8FUS N0ALG
WD5DEA W6SZN KD8G N0BKH
KA5DIU WA6TIM W8GBR WD0BRL
WA5DTK KB6XP W8GP WD0BWH
N5DU KB6ZV W8GZF W0CJG
KC5DZ KA7ADY KA8HNJ KA0CNN
WD5EAE W7AVV KI8I KA0CTJ
KA5EWZ N7AWA K8IFC WA0CZS
WD0DMM K0FVF KB0NL WB0UCP
KA0DPH KA0GFA WB0ODS WB0UXI
WA0DXZ WD0GFA W0QNP WB0VKI
AA0E W0GV K0RF WB0VLK
AE0E WD0HAR WB0RXF WB0VYU
WD0EAM W0HMA KB0S WB0VYY
WB0EFV AB0I K0TBB KC0W
KA0EGE KA0IQM W0TIV WA0WJX
WB0ELJ WB0KIN K0TMH WA0WWW
W0FXG KB0KS AG0U AE0Y
KA0FBZ

Geothermal

(continued from page 1)

station contacted.

Comments from all the participating stations were highly enthusiastic and complimentary to both SCE and Union Oil Company, the steam supplier.

In addition to Palm Desert and Palm Springs, other areas communicated with were: San Diego, Campo, Imperial Beach, El Cajon, La Mesa, Santee, Julien, Coronado, Lakeside, Oceanside, Indio, Holtville and Yuma, Arizona.

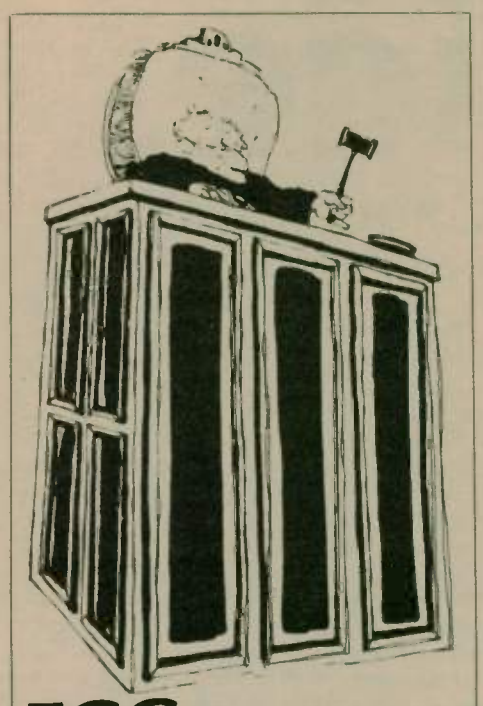
John Baker, N6ATV — a junior high school teacher in Coronado — was thrilled to have an "alternate energy event" to relate to his students. Bill (N6DMH), a retired steam-propulsion mariner, strongly related to the mechanics of the project.

The Palm Springs area amateur stations showed keen interest in SCE's wind-powered generator. They expressed the hope that a similar Amateur Radio event will be staged when the wind machine starts up.

At the 20 January meeting of the Edison Amateur Radio Net (employee Amateur Radio Club of the Southern California Edison Company), President Bob Siddoway, WA6NXI, appointed Bill WB6WCY to the task of organizing an all-band "wind-driven" QSO party for Saturday, 28 March 1981. By then, the wind-park area should have its complement of wind, and both the Bendix-Schachle 10 MWe generator and the Alcoa "Derrius" 500 KWe generator should be fully functioning.

The wind-park is located near Palm Desert, just east of I-10 in Riverside County, California.

If a foreign amateur visits your area, do a picture story for Worldradio



FCC HIGHLIGHTS

Bill Grenfell, W4GF

FCC is closing several offices and a monitoring station due to its reduced budget. Beginning with the 508 personnel level of a year ago (March '80), the Commission's Field Operations Bureau will suffer a pro rata decline down to a 438 personnel level as of the end of Fiscal Year (30 September) 1982. However, the five currently-in-office FCC Commissioners have allocated three more positions from their own staff complement to the Field Operations Bureau to keep the end of Fiscal Year '82 personnel ceiling up at 441 people. Half of this loss is due to budget cuts imposed upon FCC under the Carter administration, and the other half will be the result of added budget cuts imposed by the Reagan administration.

While recommendations from the U. S. Congress could cause changes, as this was written FCC had planned to close its field offices at Cincinatti, Pittsburgh, Little Rock, Saint Louis, Savannah and Washington, D.C., and the monitoring station at Anchorage. (The three positions given up by the Commissioners prevents the additional loss of a three-person field office.) FCC's total loss of personnel will be about 300 people. In addition to the cut in personnel, the Bureau will lose a very substantial amount of other object money (such as for supplies, equipment, travel expense, etc.), which will result in further curtailment of the times and places amateur operator license examinations will be given. There will be a cut in the number of regularly scheduled examinations at field offices and other locations, and in the special examinations at hamfests and conventions. However, where no official travel expense is involved, such special examinations may be given at locations of fully staffed field offices.

•

Beacon operation on 10.125 MHz by amateur experimental licensee Mark Pressman, N4DR/KK2XGH, has been authorized by FCC's Office of Science and Technology for "propagation studies" (20 February 1981). Power is 20 watts and operation is between 8:30 and 10:30 p.m. EST. A longer operating period can be expected later.

•

Possible marine use of the 220 - 225 MHz band was ruled out by the FCC when it adopted its January 29th Order in General Docket No. 80-1, confining the inland waterways communication system to 216-220 MHz. The Order release date was 11 March. A Notice of Proposed Rule Making was issued last year which proposed 216-225 MHz for the system. Although FCC called the inclusion of the amateur 220-225 MHz band a typographical error, there was some suspicion that it was a trial balloon. In any case, the amateur response was to file numerous strong protests with the Commission.

•

Amplifier modification instructions to add the 10-meter band are being furnished by some amateur amplifier manufacturers. All of those I recently contacted require a copy of the amateur's license before they will provide the information. Where additional parts are required, most of the manufacturers will furnish them. Sections 2.1001, 2.815, 95.509, 97.72, 97.76 and 97.77 of FCC's rules in effect prohibit manufacture (and sale) of transmitter amplifiers capable of any significant amplification between 24 and 35 MHz. It was scheduled to automatically expire 28 April, 1981. FCC has ordered deletion of the auto-expiration clause from those rule sections which, in effect, continues the prohibition indefinitely. It is feared that amendment of the rules to provide for the 10-meter band in type accepted amplifiers manufactured for genuine amateur use would provide a loophole whereby manufacturers of illegal CB-type amplifiers would defeat attempts to penalize them in the courts. So, any relief from this restriction is not likely for some time.

•

The 160-meter band rule amendment removing most of the present power and frequency limitations has been drafted and is slowly moving on its way to the Commissioners for consideration.

•

ARRL's talk about a petition to expand some of the HF phone bands has resulted in receipt of a number of comments at FCC, in spite of the fact that the League has not yet filed it with FCC!

•

Availability of FCC's new amateur tower clearance form may be delayed for a long time, according to an FCC official. Approval of a new form is apparently a long and tedious process at FCC. In the meantime, the old procedure will prevail. See Section 97.45 of the Amateur Radio Service Rules for the procedure. All antennas over 200 feet high, and many within four miles of an airport runway, may require a clearance before erection.

An FCC judge revoked the K0MGQ amateur station license of Jerry J. Wells, Pueblo, Colorado, and suspended his Advanced Class operator license for the remainder of its term. The judge concluded that Wells had operated on 27.550 MHz in violation of the amateur rules.

•

FCC appearances on amateur convention programs may be reduced by the Reagan administration's budget cuts. Private Radio Bureau participation may well be limited to the ARRL National, Dayton and SAROC conventions.

•

Rumors persist that the private radio bureau chief may leave FCC. From *HR Report* (2/30/81): "The . . . Bureau's sometimes controversial chief, Carlos Roberts, is reported by the Washington rumor mill to be planning to leave the FCC to join a major communications firm." The Private Radio Bureau is responsible for amateur rules and licenses.

•

An amateur station power limit of 2000 watts PEP input to the final amplifier when using SSB (A3) is proposed in the "plain language" rules (AR Rule 31 - present rule 97.67). Also, proposed plain language rule 97.310 provides that FCC would measure power output with a radio frequency power meter in your antenna transmission line and multiply that measurement by 1.25 to determine the peak envelope power input.

•

Transmission of the amateur station call signs of both stations engaged in a two-way exchange of communications would be required by each station at the end of the exchange, as proposed in the "plain language" rules Section 97.41 (11/18/80). This is not in accordance with FCC's proposed amendment of Section 97.84, Docket 80-136 (03/31/80), which proposed to require transmission of the other station's call sign only at the end of an exchange of international third party communications. Contrary to the note in proposed "plain language" 97.41(b), Docket 80-136 did not propose the requirement set forth in 97.41 (b)! □

Jamming is a worldwide problem

Bill Kennamer, K5FUV

Recently I had the opportunity of listening to a tape of the JA6HOZ/BY operation from China, which took place last August. The tape was made in Japan, and a quick listen through shows that jamming and bootlegging is not entirely an American problem, but exists all over the world. The volume of the music suggests it had to come from Asia, so sickies aren't limited to the United States alone.

However, the circumstances of this particular case are particularly alarming. In this case, government officials were listening in to the goings-on. Needless to say, they were not favorably impressed.

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

It's quite possible that displays such as this in certain countries could set the cause of Amateur Radio back for years. Dr. Vince Thompson, K5VT, recently commented that the reason his recent operation from Burundi was 99% CW was to prevent the government there from hearing any potential jamming that most likely would have occurred had he attempted to work SSB.

Obviously malicious interference of one type or another is a problem, and it's not going to go away soon. But perhaps each of us could help in some small way. Of course, the first is obvious — simply, don't contribute to the problem yourself. Next, if jamming or malicious interference seems to be persistent, why not call your friendly FCC monitoring station and ask them to listen too? Below is a listing of phone numbers for the FCC monitoring stations. We can't guarantee results, but if just one of these turkeys was busted, perhaps some of the rest of the sickies would slow down to a bearable point.

FCC monitoring stations

Allegan, MI	616-673-2063
Anchorage, AK	907-243-2153
Belfast, ME	207-338-4088
Douglas, AZ	602-364-2133
Ferndale, WA	206-354-4892
Ft. Lauderdale, FL	305-473-9845
Grand Island, NE	308-382-4296
Kingsville, TX	512-592-2531
Laurel, MD	301-725-3474
Livermore, CA	415-447-3614
Powder Springs, GA	404-943-5420
Sabana Seca, Puerto Rico	809-784-3772
Waipahu, HI	808-677-3954

— *Great Falls Area ARC, MT* ☐

Amateur Radio Call Signs

Amateur Radio operators have continually expressed an interest in what are the latest call signs which have been systematically assigned. To further our policy of making the new call sign assignment system public, a list of the last call sign issued, by group, for each radio district and non-contiguous area is published. The following is a list of the last call signs assigned as of 1 February 1981.

Radio District	Group A	Group B	Group C	Group D
0	KI0H	KB0VU	N0CIH	KA0KJK
1	KC1F	KA1NX	N1BIM	KA1GOB
2	KK2H	KB2WU	N2CHL	KA2LHO
3	KC3L	KB3NS	N3BQZ	KA3HAU
4	NJ4C	KC4WP	N4EEF	KA4TJL
5	K05X	KC5GT	N5CTW	KA5KXS
6	KV6F	KD6QO	N6DYT	KA6OMB
7	KG7A	KB7TT	N7CHS	KA7JQJ
8	KK8L	KC8AI	N8CJW	KA8MCJ
9	KE9H	KB9VC	N9BYW	KA9KEG
N. Mariana Is.	AH0A	AH0AA	KH0AC	WH0AAE
Guam	AH2K	AH2AH	KH2AO	WH2ACT
Johnston Is.	None	None	KH3AB	WH3AAB
Midway Is.	None	AH4AA	KH4AC	WH4AAF
Hawaii	NH6I	AH6CK	KH6LN	WH6ANX
Amer. Samoa	AH8A	None	None	WH8AAK
Wake Wilkes Peale	None	None	None	WH9AAA
Alaska	NL7T	AL7BS	KL7LU	WL7APC
Virgin Is.	KP2B	KP2AC	NP2AH	WP2ACK
Puerto Rico	NP4E	KP4BZ	NP4BV	WP4BTG

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The S-4...$349.00
With 12 button touch tone pad...$399.00
With 16 button touch tone pad...$419.00
S-40 matching 40 watt output
13.8 VDC power amplifier...$149.00

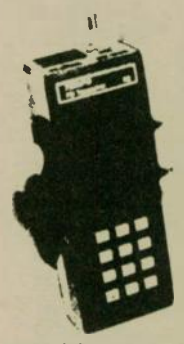
Tempo S-I

The first and most thoroughly field tested hand held synthesized radio available today. Many thousands are now in use and the letters of praise still pour in. The S-1 is the most simple radio to operate and is built to provide years of dependable service. Despite its light weight and small size it is built to withstand rough handling and hard use. Its heavy duty battery pack allows more operating time between charges and its new lower price makes it even more affordable.

Tempo S-5

Offers the same field proven reliability, features and specifications as the S-1 except that the S-5 provides a big 5 watt output (or 1 watt low power operation). They both have external microphone capability and can be operated with matching solid state power amplifiers (30 watt or 80 watt output). Allows your hand held to double as a powerful mobile or base radio.

S-30...$89.00* S-80...$149.00*
*For use with S-1 and S-5



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With an S-2 in your car or pocket you can use 220 MHz repeaters throughout the U.S. It offers all the advanced engineering, premium quality components and features of the S-1 and S-5. The S-2 offers 1000 channels in an extremely lightweight but rugged case.

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S-20...$89.00

Specifications:
Frequency Coverage: 440 to 449.995 MHz
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Power Requirements: 9.6 VDC
Current Drain: 17 ma-standby 400 ma-transmit (1 amp high power)
Antenna Impedance: 50 ohms
Sensitivity: Better than .5 microvolts nominal for 20 db
Supplied Accessories: Rubber flex antenna 450 ma ni-cad battery pack, charger and earphone
RF output Power: Nominal 3 watts high or 1 watt low power
Repeater Offset: ± 5 MHz

Optional Accessories for all models

12 button touch tone pad (not installed): $39 • 16 button touch tone pad (not installed): $48 • Tone burst generator: $29.95 • CTCSS sub-audible tone control: $29.95 • Leather holster: $20 • Cigarette lighter plug mobile charging unit: $6

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Drive Power	Output	Model No	Price
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10W	130W	130A10	$189
30W	130W	130A30	$199
2W	80W	80A02	$169
10W	80W	80A10	$149
30W	80W	80A30	$159
2W	50W	50A02	$129
2W	30W	30A02	$ 89

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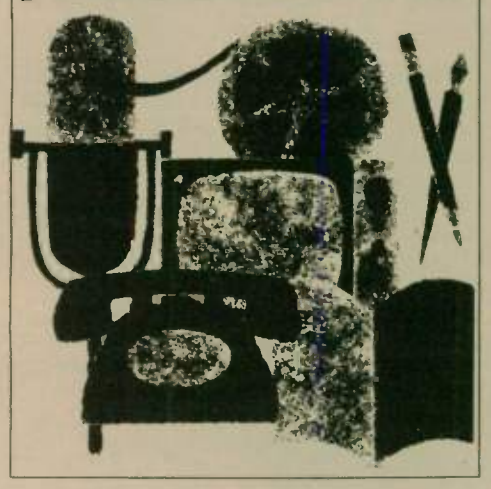

Gert Pond — symbol of the American character

In our November issue, page 14, we ran a story about Gert Pond, W7KOY, XYL of Kenneth Pond, W7MAE. She was recently brought before the public eye again — on the nationally broadcast show called "The American Character", which features Norman Vincent Peale. Dr. Peale's message follows:

"When I say the word 'hero,' can you picture a middle-aged woman in a wheelchair, crippled by arthritis? You might if you lived in Phoenix and knew Gert Pond. Gert doesn't get out much, but she stays in touch with her friends — in fact, with the whole world — through her 'ham' radio.

"For example, she was listening when two engineers had motor trouble in the desert. They weren't carrying enough water to survive the hot day, but they did have a radio set. When they called for help, they reached Gert — and were rescued.

"During the past three years, Phoenix has suffered through a series of floods, each more devastating than the one before. Bridges have been washed out, streets hidden under deep water, and entire communities washed away. Through each new emergency, Gert has worked her radio constantly . . . going for days and nights without sleep . . . listening for distress calls . . . directing disaster volunteers . . . relaying messages from stranded people . . . and notifying public officials of crisis situations. When she was named Arizona's 'Amateur Ham Radio Operator of the Year', Gert modestly said "I like doing something to help in my own small way."

"Gert Pond of Phoenix — a wheelchair hero, always in touch with The American Character." □

Priest represents Easter Island

On 8 August 1980, the Genesee Radio Amateurs (GRAM) honored Father David L. Reddy, CE0AE — a Franciscan priest who is stationed on Easter Island in the Pacific Ocean. Fr. Reddy is the only station on the tiny island, located 2,000 miles west of Santiago, Chile.

CE0AE taught school at Bishop Timon High School in Buffalo, New York during the '60s.

The event was several years in the making, according to Thomas Rosica, W2GIR, GRAM program chairman. Approximately 90 people from the West New York area (Buffalo, Rochester, and Toronto, Canada) attended. Slides and movies of Fr. Reddy's activities were shown.

The homemade native pearls which Fr. Reddy brought with him were raffled off; the proceeds from this and donations taken at the meeting enabled GRAM members to give Fr. Reddy a "good financial send-off in typical amateur tradition." Fr. Reddy returned to Easter Island on 25 September 1980.

In talking to Mary Ann Crider, WA3HUP — the priest's QSL manager — Tom W2GIR learned (on 8 January 1981) that Terry Appleton, W4GSM, was going to visit Easter Island in February 1981 to assist Fr. Reddy in getting up a new tower and antennas, so that he will once again be operational, with a good signal. □

Shown here are, from left to right: Leo Heiland, N9TE, GRAM president; Fr. Dave Reddy, CE0AE, in native garb; and Tom Rosica, W2GIR, GRAM program chairman and newsletter editor.

American relives Russian trip

'No matter what the Russians showed me, it was the biggest dam, the tallest building, the deepest lake, the most powerful — just whatever — in the world!" This was one of the many comments Leo W. Fry, K8PYD — manager of the 8th Area QSL Bureau — made on Russia when he spoke recently at a Recognition Dinner sponsored by the Triple States Radio Amateur Club. Shortly prior to the dinner, Leo had completed a 12,000-mile trip through Soviet Russia, visiting Russian amateurs whom he had contacted from his home in Columbus, Ohio. He had taken several Russian language courses at Ohio State University in preparation for the trip.

Regarding the Russians' view of Amateur Radio, Leo said, "They consider it a highly competitive 'sport', and not a hobby or a service." An amusing slide showed "el president" of the Moscow QSL Bureau — the famous Box 88 — who bore a great similarity to former Premier Khrushchev, and who is not even a radio amateur, but a "party member."

Two big items in demand in parts of Russia, K8PYD stated, were "jeans" and "windshield wiper blades." Automobile parts are so scarce that cars come without wiper blades; they usually follow later, or owners take the blades with them to avoid pilferage.

Visits to Russian "on-the-air" friends' shacks indicated mostly home-brew or military surplus equipment, but one slide was outstanding. There in a Russian home, proudly displayed by a Russian amateur, was a Drake transceiver! It seems this Russian had paid a visit to America, and that was what he took back in his luggage!

"Don't drink the water," is a comment Americans hear on any trip overseas. This is very good advice for a Russian tour, said Leo. To indicate the seriousness of that statement, he added, "One group we ran into were all wearing diapers!"

K8PYD had some interesting comments on the "language barrier." "They said my spoken Russian had a south-central Asian accent!" Many Russians know German better than English, according to Leo, although English is now becoming predominant in the schools.

The best bathtub in a hotel warranted a special slide, since if that was the best, one would hate to see the rest. Leo observed that monthly or bi-weekly baths seemed to be the norm. He added that the commode in the picture was the only one with a seat, in that stop-off point. Many of the pipes ran full of rust when first turned on.

Leo concluded by saying that conversations with Russian amateurs were very confusing since one minute it sounded like they were anti-Communist, and the next, very much pro-Communist. He said he thinks many only belong to the party for the "fringe benefits."

— Triple States RAC (OH-WV-PA) □

AF2L appointed as representative

Bob McGarvey, WB2EVF

Michael Karp, AF2L, of Matawan, New Jersey, has been appointed to a two-year term as the Second District representative to the Emergency Communications Advisory Committee of the American Radio Relay League. The appointment, already effective, was announced by the league general manager, Richard Baldwin, W1RU.

Mike, who is trustee of the Old Bridge repeater, was a founder of the Old Bridge 2-meter traffic net. He is a former net manager of NJN and is a net control for both NJN and NJPN.

— The Home News □

The Ossian Connection

Lloyd Dawson, WD9EWT, of Ossian, Indiana, spent his summer running phone patches . . . hundreds of phone patches. What made the patches something special was the fact that the station he ran them for — KC4USV — is the McMurdo Sound Antarctic Station and the patches were the only link home for the 80 Navy personnel wintering over at the station.

Antarctic winters are so severe that most of the time is spent underground (undersnow, really) in their mini-city. On the surface, the gale winds blow continuously and the temperatures dip to -50F or lower during the long winter night.

Below the snow, the men kept in touch via radio . . . and Amateur Radio was their link to home. From February to October, 80 men were stationed at McMurdo. During the summer, the population jumps to about 1,500. During the winter there are no mail flights in . . . the physical isolation is as complete as possible!

Lloyd became involved with McMurdo by answering a CQ on 20 meters. He ran a patch and then another, and decided to get up the next morning and do it again. Because his signal was so strong, they began to rely heavily on Lloyd for their patches. Ultimately, he was spending up to four nights a week, from 2:00 a.m. to 5:00 a.m., running patches for the men. He ran from 4 to 12 patches a night and is still running patches for the summer population at McMurdo . . . though at a somewhat relaxed pace.

None of the radio men at McMurdo had Amateur Radio licenses. They were authorized to operate there under special authorization. By the time the men returned stateside, all indicated they were going to get involved in local radio clubs and work for their tickets.

To show their appreciation for his long hours, the men carved a mahogany plaque in the shape of Antarctica and had it engraved for Lloyd in New Zealand. It was presented to him at a Kiwanis Club supper in Bluffton in November. (One of the operators is from Bluffton.)

Congratulations to Lloyd for his efforts! This activity is a fine example of the best Amateur Radio has to offer. Lloyd didn't have to spend his nights helping 80 strangers . . . yet, he chose to do so.

Having fun with this hobby is only part of the picture. If you have a skill and capability and don't use it, you are cheating yourself and others — and the skill is being wasted.

Lloyd has a skill and chose to use it constructively to help people. In the long run, Lloyd and people like him are helping all of us.

Thanks, Lloyd!

—Hamsplatter, Fort Wayne RC, Indiana

Short trip shows students the world

By Gene Ghiotto
Submitted by Violet Barrett, W6CBA

While the rain kept most area residents indoors during the last week of January, a dozen Mulberry School fifth graders took a short trip and, in the process, found out what the weather was like in Oklahoma City.

The excursion took them to the home of Violet Barrett, an East Whittier City School District employee and the president of the Rio Hondo Amateur Radio Club, where the students received the Midwestern weather report via the airwaves.

The youngsters were among the 90 students taking part in a week-long look into Amateur Radio operation that included licensing procedures, equipment use and identification and, for most of the students, their first long distance conversation over the "ham" radio.

It took a little longer than usual for Barrett to make the connection with K5LIL in Oklahoma City. But once they were in communication, Barrett and her long-distance correspondent, Ed, carried on a two-way conversation that eventually included the 10- and 11-year-old youngsters who met the challenge with varying success.

As the students and Barrett looked out the window at the increasingly ominous skies, Ed's voice crackling through the speaker boasted of a temperature "close to 50 degrees with bright, sunny skies and only a few clouds."

There was an attempt at an international hookup with a radio operator in England but Morse code signals would not have been as exciting as the voice from Oklahoma, according to Barrett.

While it all looked like fun and games to the children, the serious side of Amateur Radio operation was also explained.

"During the Vietnam war, I was among several West Coast ham operators who made regular calls to the hospital ship *USS Sanctuary* off the coast of Vietnam," said Barrett.

During the calls she would patch together a radio signal with the telephone line so wounded servicemen could reassure local relatives who only knew there had been an injury, but not its extent.

Barrett also told the students about the emergency radio network set up by the various Amateur Radio clubs in the area.

"We (Rio Hondo members) are part of a network of ham operators who are ready to offer our service during any type of disaster, such as a major earthquake," she said.

While fifth grade may seem early to be learning of a hobby that could run the enthusiast into thousands of dollars, Barrett said she and her husband have purchased their equipment over years of Amateur Radio involvement.

For Mrs. Barrett, that involvement dates back 33 years to the first radio set she owned as a junior high student.

The use and knowledge of radio equipment also aided her in getting her first job as a dispatcher in the Los Angeles office of the Federal Bureau of Investigation.

— Whittier Daily News, CA □

Emily Woolf, KA8LOU, demonstrates Amateur Radio to several of her classmates.

KA8LOU shares hobby with classmates

Jay C. Abbott, KB8TC

Meet Emily Woolf, 9 years old, Grand Rapids' newest and youngest Amateur Radio operator. Just after the first of the year, Emily received her Novice license, KA8LOU, from the FCC and within a week's time had already been in contact with fellow amateurs in five states.

Just last week — thanks to her instructor at Meadowlawn Elementary School, Bob Philipps, himself an amateur operator, WB8ZAU — a station was set up in the classroom and she now has the opportunity to share her new hobby with fellow classmates.

Emily says she became interested in Amateur Radio after watching her father Bill, KB8GO, and mother Susan, WD8REB, operating the family ham station at home. The first time she took the Novice examination, she failed by only two questions.

Determined to pass, she enrolled in a Novice class given by Bob Czachorski, K8XL, and this time she passed with flying colors. Emily says she will continue her studies and ugrade her license. □

Growing old is simply mind over matter. If you don't mind, it don't matter.

— Random Radiation, Pacific Amateur Radio Guild

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Pick any antenna other than a Larsen — one with a regular unplated stainless steel whip. Apply a 100 watts of power for a minute or so. Then turn off the power and feel the antenna . . . carefully. It'll be hot — hot enough to raise a blister.

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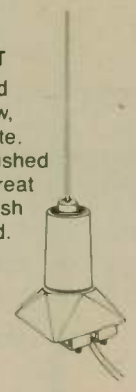
Heavy duty magnets make this mount a real grabber that stays put at all legal vehicle speeds — yet can be removed in a jiffy to foil the ripoff gang. Rubber-like outer coating decreases the chance of harm to the paint finish. Comes with coax and plug factory assembled.

TRUNK LID MOUNT
A "no holes" trunk lid installation with a low, streamlined silhouette. Easy on and off. Finished in high chrome for great appearance. Car finish completely protected. Coax and plug included.



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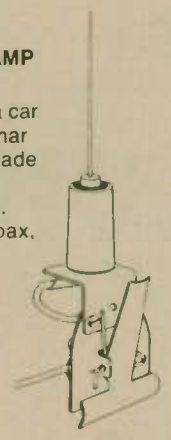

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AMATEUR RADIO IN PUBLIC SERVICE

Boiler blows up

On 4 January 1981, Mt. Sinai Hospital boiler blew up and many patients had to be transported to homes and other hospitals. It was a Red Cross disaster function which started for our Amateur Radio operators about 10:00 p.m. and lasted until about 5:00 a.m. We had two Base Stations — one at Mt. Sinai and one at the Red Cross.

The amateurs who helped during this emergency were: Jerry Smith, K8AJG; Everett Chitester, WA8EYF; Glenn Christman, WD8OMW; Roy Stype III, WB8BZX: Mark Woodworth, WD8KHU; Glenn Fenzel, WB8CDA; Rollie Courtad, W8DH; Jeannette Chitester, WD8OPS; Melanie Padich, WD8OPT; Len Holmes, W8MCD; Frank Denton, Jr., N8BGK; John Leeder, K8TIA; Karl Beckman, WA8NVW; and Steve Posner, WB2QET.

Special thanks go to Richard Wells, K8SCI, for enabling us to use the '85 repeater. He had to go down and repair it and standby the whole time. Thanks, Rich!
— *Wobbly Oscillator, Euclid, OH* □

Elks donate generator

On 17 January 1981, the Bishop (California) Elk's Lodge, No 1603 — as part of their continued effort towards community service — presented the Bishop Amateur Radio Club with a 2250-watt gasoline-powered generator. The generator will be used by the radio club to power their radio equipment during a major catastrophe when all power and communications have been destroyed.

Members of the Amateur Radio Club donate their time and equipment during disasters, but have been hampered by a lack of an emergency power source. An appeal to Bishop Elk's Lodge No. 1603 resulted in the funds to acquire the generator.

Mr. Jim Doherty, of Joe's Garage in Bishop, donated the freight charges to ship the generator to Bishop.

The Bishop Amateur Radio Club conducts periodic training sessions to continually improve their emergency communication response. Meetings have been held with personnel from the Bishop Police Department, Fire Department and the Inyo County Sheriff to explain the capabilities of the radio amateurs to establish communications with Red Cross, civil defense or any required outside aid.

Pictured here with the club's generator are, from left to right (back row): Ellis Faubus, Jim Cox, Will Milligan, Ed Olcott and Mac Macartney. In the front row, left to right, are: Cal Turner, Russ Adams, Jim Doherty, Tom Vetter and Dan Gaddis.

IMRA turns 18

Rev. Michael Mullen, WA2KUX,
IMRA Vice President

IMRA (International Mission Radio Assocation) has come of age. Now 18 years old, it has reached its majority and finds itself healthy and loaded with merit because of its good works. Hundreds of letters from missionaries all over the world have testified to this. Through the years, it has supplied these men and women with Amateur Radio gear so they can communicate with loved ones back in the states. It has also conducted a net on 20 meters for missionaries every day of the week except Sunday. "I have been truly surprised at the number of generous radio amateurs who have given of their time and talent to help missionaries, and it does not make any difference what church they belong to," said Warren Mulhall, WA2BPV. He is the president of IMRA.

Warren, now serving his second term in office, has devoted himself to helping missionaries for more than 10 years. He works with the Army Communications Systems and designs radio rigs for military-type vehicles — both track and wheel. In this job, he has traveled to Europe six times in the past two years, and to many cities in this country. However, much of his spare time is given to helping missionaries by fixing radio gear for their use.

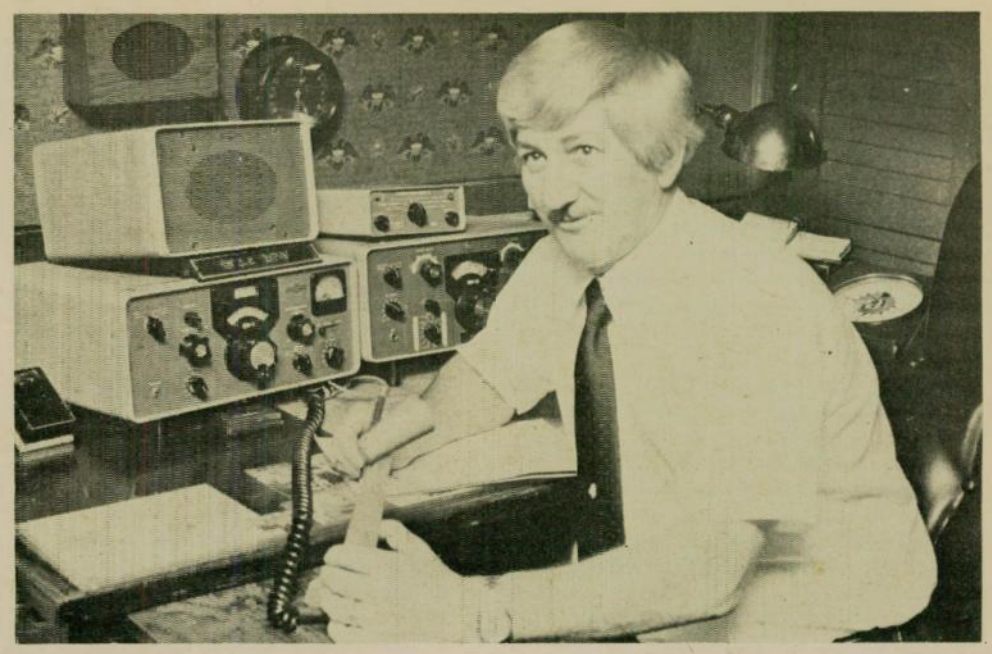
IMRA began as a small group of Catholic priests and brothers who were radio amateurs. About 50 of them gathered in Hudson, New Hampshire in 1963 to form an organization to aid missionaries in communications. Within a few years, the group had extended its membership to laity as well as clergy and changed its name from the Catholic Mission Radio Association to the International Mission Radio Association, opening its ranks to missionaries of all denominations. It established itself as a non-profit organization incorporated in the State of Rhode Island, formulated a constitution and by-laws, elected a Board and officers, gathered together every two years for its conventions, and kept its members informed through publication of a bi-monthly newsletter. Now the organization boasts of 450 members living in 40 countries — doctors, businessmen, lawyers, clergymen, housewives, scientists, blue collar workers, etc.

IMRA supplies Amateur Radio equipment to missionaries no matter what their denomination. The only things required are that they have authorization from their church, are working overseas, and are licensed as amateurs in that country. The material is given on loan to the missionary and must be returned when he or she returns to home base.

In the last 18 years, the organization has loaned equipment to many missionaries. This is possible because many of the members, in making out their wills, bequeath their rigs to the organization to be used as it sees fit. IMRA also furnishes them with medical supplies. In this operation, it works closely with MARCO, the Amateur Radio association of the medical profession. MARCO consists of 650 dedicated professionals involved in medicine and health care, including doctors from 35 countries. Such things as incubators, wheel chairs, X-ray machines and medicines are sent to missionaries on a regular basis. The gifts to them from IMRA, in the fields of both radio and medicine, total about $25,000.

The organization has conducted an Amateur Radio net for missionaries ever since its beginning. The frequency used is 14.280 MHz. Between 40 and 50 operators check-in daily, Monday through Saturday, 1400-1500 Eastern Time. (This is 1800-1900 GMT Daylight Savings Time and 1900-2000 GMT during Standard Time). On an annual basis, IMRA now reports about 11,000 check-ins and 5,000 pieces of traffic handled.

IMRA is proud of its record of public service. For example, when an earthquake shook Nicaragua in December 1972, causing untold havoc in and around Managua, the net handled more than 13,000 pieces of health and welfare traffic in one month. The Nicaraguan government has designated it as the official emergency channel and almost all the U.S. radio amateurs worked through that frequency. In September 1974, when Hurricane Fifi roared through Honduras, almost 4,000 pieces of traffic came out of the net. A few years ago, during the disaster of the Guatemala earthquake, the net was loaded with traffic. Because its people are trained in handling traffic, IMRA has proven its value in times of natural disaster.



Warren Mulhall, WA2BPV, president of the IMRA, is now serving his second term in office.

All amateurs are welcome to help out in this work. Those who have the time and inclination are cordially invited to assist in linking missionaries with their families or friends. The best way to find out how the net operates, is to listen in a few times to one of the sessions. You will discover the IMRA net is really a family affair. The net controls are well-trained and efficient. At the same time, courtesy is extended to everyone. You will be addressed by your first name, and not just by your call sign. Also, you will not have to wait a long time before you are recognized. Most importantly, you will not be publicly humiliated by a net control drill sergeant who will take you apart if you make a mistake. Since the net also handles stateside traffic, in addition to overseas calls, it is a good place to meet your friends and then move off to another frequency.

Anyone desiring further information about the organization should write to Br. Bernard Frey, WA2IPM, Box 192, Garrison, New York 10524. □

HARC active during 'train wreck'

Jay Kuperman, WA3IFY

I would like to take this opportunity to wish everyone a healthy, happy new year.

We are pleased to announce that 1980 was a banner year for the Holmesburg Amateur Radio Club (HARC) and we are looking for 1981 to be even better.

HARC was very active in Civil Defense Communications (OEP) during 1980, including participating recently in a simulated train wreck in the Wissahickon area of Philadelpha, Pennsylvania. Approximately 15 members of HARC, stationed at various locations, were involved in this prepared emergency exercise. Using repeater 146.685, Tony Musero, K3UKW, was net control.

The originating telephone call, alerting the community to the "train wreck" was made on a handie-talkie by Richard Sambenedetto, WA3AOP, who is also a city fireman with Engine #56. The other man in the photo is Mr. LaBoutier, City Coordinator between ambulances and the Fire Department.

The "150 casualties" were taken to nearby hospitals. EPEX '80, as this exercise was called, was fully coordinated by WC3AAK. □

Impromptu code saves life

Submitted by Ero Erickson, KA9DYS

At first, James Zerilli thought the groans and taps coming from the other end of the phone line were part of a joke.

But the St. Clair Shores police officer quickly realized the caller needed help, and he devised a tapping system to find out where the caller lived.

The simple code was a lifesaver for a city councilman who had suffered a stroke and lost his voice.

"All I could think of while it was going on was that if I couldn't get the information from him, the guy was just going to lie there and die," said Zerilli.

Zerilli told the caller to tap once for yes and twice for no, and then he asked yes-or-no questions to determine what part of the city the man lived in, said Sgt. James Bell, who listened in on the call.

Did he live in the southern part of the city? Tap.

Did he live on Colony Street? Tap-tap. How about California Street? Tap.

"We just lucked out. He lived on one of the main streets," Bill said. "If he had lived on an odd-ball one, we could have been there forever."

Next, Zerilli turned to blocks. Did the caller live in the 20000 block? Tap-tap. Nine questions later, Bell learned what block the caller lived on. Then he told the caller to tap the last number in his address. The reply was six taps.

Then the two officers turned to a house-by-house index of the surburban Detroit town to find that 55-year-old Councilman Casper Frederick was the resident at 19916 California Street.

— Chicago Tribune, IL □

Emergency Communications info

In conjunction with the Prince William Chapter of the American Red Cross, the Ole Virginia Hams will set up a "Simulated Emergency Test".

The Red Cross will designate certain buildings as "Emergency Shelters" and have their personnel report there in person. The Ole Virginia Hams will provide the Emergency Communications required between the designated "shelters" and the Red Cross Chapter Headquarters in Manassas.

In addition, the Ole Virginia Hams will provide Emergency Communications between Red Cross Chapter Headquarters in Manassas and other city and country officials, hospitals, police, fire and rescue officials as requested by Red Cross and other city/county officials.

This will be more than just checking in on the repeater from one's home. Radio amateurs will be requested to actually GO TO the designated shelters and other designated points, and establish communications with Red Cross Chapter Headquarters and/or other officials.

Much has been said about what the Amateur Radio community could actually do in an emergency, but officials remain skeptical. Red Cross officials do know what the Amateur Radio community can do. It's the other city/county officials who have not actually seen what can be done. Here is a chance to really show the value of the amateur community. The old Chinese saying of "One picture is worth ten thousand words" can be paraphrased, "One demonstration is worth ten thousand words, when done properly."

It is strongly suggested that TWO operators, in addition to anyone willing to act as messenger between the communicators and the officials, be assigned to each designated station. This gives everyone — Novice as well as Technician, General, Advanced, and Extra operators and those interested in Amateur Radio in general — a chance to participate.

—Ole Virginia Hams, Manassas, VA □

Christmas toy-a-thon

The 12th annual Lincoln Amateur Radio Club/KLIN/Salvation Army Toy-A-Thon, held on 7 December 1980 in Lincoln, Nebraska, was an overwhelming success, with call volume up 65 percent over the 1979 effort. Nearly 3,000 new and used toys were picked up by Lincoln Club members after donors answered the on-the-air appeals on local radio station KLIN and called in donations.

Thirty-five mobile units traveled 848 miles during the eight-hour (9:00 a.m. to 5:00 p.m.) event. Collected toys were distributed to needy families by the Salvation Army.

The Lincoln Toy-A-Thon was originated by the Lincoln Amateur Radio Club, which negotiated agreements with both the Salvation Army and radio station KLIN for their participation and assistance.

The call and frequency used were WR0AEV, 146.25/85. The calls of the 51 amateurs who participated in this activity follow: WD0ACV, W0AYM, KA0AYY, WD0CKL, WB0DGF, WD0DMS, KA0DWG, KA0DWJ, KA0DWK, WD0EGK, K0EK, KA0ERQ, KA0ERR, WD0EZI, WD0FGV, WD0FGZ, KA0FHX, WD0FNV, WD0FSV, WB0GAK, KA0GDG, WB0GGT, WD0GKA, WD0GKD, K0GND, KA0GON, KA0IAE, KA0JQF, KA0JLT, KB0KA, W0KBS, W0MYT, K0NB, K0NE, WA0OYT, WA0QJK, WB0QQS, WB0RHX, WB0RJJ, WB0ROG, WB0RRK, WB0UHZ, K0UJU, WA0WRI, WB0WWA, WA0YPY, WB0YYE, K0ZR, WB0ZUY and WA0ASM.

In addition to these 51 amateurs, 17 non-amateurs participated! □

Please send **NEWS** and **PICTURES** to *Worldradio*

Rx for a Bad Day

Is it one of those dull gloomy days when even the birds are walking, and it's not a fit day to go out and put up that new sloper or inverted vee antenna you wanted to try? DX isn't coming through yet because the MUF isn't right, some jerk squirrel keeps kerchunking the repeater or plays tunes on the Touchtone® so that two meters isn't fun. Maybe the wind played havoc with your beam last night and now it looks like a limp pretzel or some modern art object, or maybe your rig blew up in the middle of a QSO or just before that sked with a rare station in some far off land.

Any fool knows all these things aren't going to happen to you at once. But if it is 'one of those days' maybe you can just forget the whole mess and brighten your and someone else's day a little by taking some time to think of a fellow ham you admire and respect to nominate for Dayton's "Amateur of the Year Award" for 1981. No, it's not too early to think about it. It does take a little time and effort to nominate some one for "Amateur of the Year."

What is the stature of this individual that we seek for recognition each year at Dayton?

First, he or she will be a well-respected person in the community; a leader, not only in amateur radio activity, but in civic activity as well. He will probably be licensed for at least 10 years or more for it is long term overall excellence in amateur radio that we are looking for.

His contribution to amateur radio may be in any of the hobby related areas. Possibly his greatest contribution is in the engineering field of our hobby, or his expertise may be in antenna design, some new type of modulation or an improvement to existing design, etc. Maybe he has contributed greatly to improvement of amateur regulations or possibly his contribution is the legal field of our hobby, a very important one these days. Get the idea? In short, an outstanding individual and amateur.

In 1974, another award was established, the "Special Achievement Award." This award is just what it would seem to be — an award for one-time special event or specialized activity by an amateur or group of amateurs. This activity may be in the engineering field — QRP — DXpeditions —net activity — emergency work or any one-time outstanding activity related to the amateur radio hobby.

Nominees for both of these awards may be from anywhere in the world, not just the U.S.A.

So! Don't just sit back and say, "Gee!, somebody ought to nominate that guy for "Amateur of the Year." Don't wait for George to do it. Give us all the details you can gather, especially activities that are directly attributable to him or her.

All nominations are carefully reviewed and are saved from one year to the next for future consideration and to allow some nominees to develop to their full potential. All nominations are considered for both awards, and the awards will be presented at the 1981 HAMVENTION Banquet.

So, have you nominated some one in the past? You may want to renominate him with update on recent activities or just send in update information on his latest accomplishments.

Do it now! Besides you may win a set of free tickets to the "HAMVENTION" for your nominee and yourself.

For more information or nomination blanks (not mandatory) write to the address below:

HAMVENTION
P.O. Box 44
Dayton, Ohio 45401
Attention: Awards Committee

or

Bob Roettele, W8UNV
Awards Chairman
1299 Hanes Road
Xenia, Ohio 45385

American Radio Relay League

J.A. "Doc" Gmelin W6ZRJ
Past Director, Pacific Division, ARRL
Honorary Vice-President

In my last column I discussed some of the problems that have been created by the League's proposal to expand the 40-meter phone band and make new sub-band assignments in our soon-to-be-opened 10 MHz band.

As I explained in that column, phone band expansion and assignment of sub-bands are not new matters, but rather, subjects of controversy that have a long and complex history.

This can be shown by a discussion of proposed and completed phone band expansion in the 20-meter band, perhaps better than with any other amateur band used in the United States today.

In order to best show the complexity of any proposed expansion of the 20-meter band, I will illustrate proposals for expansion of the 10-meter phone band.

My first amateur operation some 33 years ago was on the 10-meter band, and proposals to expand the phone band downward were the first I ever heard about. Then, as now, the 10-meter band extended from 28.0 MHz to 29.7 MHz, with the phone band running from 28.5 MHz to 29.7 MHz. It should be pointed out that the CW band — then as now — runs from 28.0 to 29.7 MHz, the full extent of the 10-meter band; but that CW is rarely found above 28.5 MHz, as CW and phone operation tends to be in separate segments of the amateur bands.

In fact, on the 10-meter band, CW operation has always been pretty much below 28.3 MHz, and the segment 28.3 to 28.5 MHz — in all my years of amateur operation — has been considered a "foreign" phone band.

This has led to some problems over the years, especially since the advent of amateurs using transceiver types of equipment, where the transmitter and receiver track together.

Of course with such equipment, one listens where he is transmitting and this causes a problem in the case of DX stations operating on frequencies below 28.5 MHz, and listening in the "American" phone band above 28.5 MHz.

This is "the way it was" when I first started operation on the 10-meter band, although hardly any phone operators used transceiver type of equipment at that time. Everyone would crowd in the frequencies 28.5 to around 28.550 MHz segment with their transmitters, listening to a DX phone station in the segment around 28.450 to 28.5 MHz on their receivers.

Of course, in a way, this was an advantage to the U.S. amateurs, since at least the DX station was clear of the pile-ups of U. S. amateurs. There was pressure even then to expand the U. S. phone band down to about 28.3 MHz so "we could work the DX stations on their own frequencies."

Proposals to expand the 10-meter band at that time were mostly due to this reason rather than from a need for frequencies to accommodate more U. S. amateur phone operation. In my experience, the 10-meter band has never been overcrowded, except for that U. S. amateurs tend to do most of their phone operation on this band between 28.5 and 29.0 MHz. The 700 kHz above 29.0 is usually pretty much "wide open."

In fact, some who have interests outside of Amateur Radio, and who would like to acquire use of frequencies in the 10-meter band, point out this 700 kHz segment above 29 MHz is only lightly used by amateurs and is not really needed. Yet, we have had pressure over the years to expand the U.S. phone band, even though there is still plenty of space available for phone operation by U. S. amateurs.

Of course, the difficulty with expanding the 10-meter phone band down to work the DX "on their frequency" is that DX stations will just move farther down to avoid the big pile-ups from U.S. amateurs. And who can blame them? Sometimes the "dog-eat-dog" competitions of DX pile-ups have caused DX operators to "pull the big switch."

Thus, the expansion of the U. S. 10-meter phone band will only cause DX stations to move down into what is now mostly CW and RTTY operation. Generally, if the U. S. phone bands were moved down farther, there would always be a foreign phone band lower in the band, unless phone operation in the United States is moved all the way down to the bottom of the band.

I have used the 10-meter band as an illustration of the fact that one major thrust of phone band expansion is the desire to work DX on "their own frequency." It is not the only reason there is pressure for phone band expansion.

Moving back to the 20-meter phone band problem, which is what I started out to talk about, there is a second reason to pressure for expansion of the phone band — the phone band on 20 meters is very crowded.

Amateurs who work 20-meter phone listen in on the frequencies 14.1 to 14.2 and find vast spaces with very few, if any, signals at all. Why can't they use this available space? And who can blame those who suffer from heavy QRM for wanting to use "open" frequencies? In fact, many say, "To heck with the foreign phone. To heck with the movement into the CW band."

Many phone operators would like to see the phone band opened up to include the entire amateur bands because of overcrowding, letting the various modes segregate themselves, or perhaps seeing some modes slowly fade from use.

Perhaps this would happen. It is also possible the bands would be divided by a process of what might be called "natural selection", with sub-bands for DX, CW, RTTY, etc., established by agreement instead of by regulation.

The basic problem with bands such as 20 and 40 meters is that these are bands of limited frequency which can be used for long-range communications, while wide bands such as 6 or 2 meters are limited in use for long-range work.

It is difficult to justify a need for more space for general amateur use, when we have a band of 4 MHz (such as 6 meters) with very scattered use.

The League's Board of Directors is aware of all problems of phone band expansion, and tries to achieve the best balance of band use for all radio amateurs. Amateurs who wish to work DX will, of course, use bands such as 40, 20, 15 and — to a limited extent (during high parts of sunspot cycle) — 10 meters.

Amateurs using several different modes will want to work on each of these bands, and it does appear that specific band segments may be the best way at present to achieve a system where all amateurs using these different modes can enjoy operations, even if they must put up with QRM.

Just how to best achieve balance and remain fair to all is the main part of the problem. Trying to achieve this balance of operation puts the League's directors in the middle. Phone operators take the directors to task for giving support to CW operators; CW operators do the same because the directors appear to favor phone operators; users of other modes blame the League for not encouraging more amateurs to use "their" particular mode of operation.

Many operators on specific modes seem to have the idea that "their" particular mode should be the only kind of operating amateurs should be practicing.

Another problem facing the League's Board of Directors involves the several classes of amateur license now available in the United States. What privileges should each class have? Should there be sub-bands by license class, as there are now?

There is constant pressure on directors from some circles to expand the band allotments for General and/or Advanced Class amateurs; to give the Extra Class any new phone band expansion; and to eliminate different classes of license altogether.

Having served in the "hot seat" as a director of the ARRL, I know how difficult it is to decide what proposals the League should make to the FCC and what position the ARRL should take on any proposals for rule-making from the Commission.

It is impossible to please everyone, but we can hope League members will at least try to look at all viewpoints before deciding what they would like to see the League do in matters of phone band expansion.

The problems caused by any U. S. expansion can be complex for the many reasons discussed above. Whatever is done will inevitably make at least some radio amateurs unhappy with the League, even if no real harm is done.

The problems are particularly difficult for 40 and 20 meters, since these bands *(please turn to page 26)*

OFF THE AIR

Comments on the NNN

To: Armond Brattland, K6EA

Haven't written for awhile, but have been busy. Wanted to write about the NNN (National Novice Net).

I have been trying to check into it, but I've not been able to hear any net control, either with my TS520 or my R-1000 general coverage receiver. I've written KA5CTK (Walter H. Green, Jr.) several times and sent SASEs with them, expressing opinions about the net, but he's never replied to any letter I've ever sent.

The main net problem remains the inability to locate net controls who can be heard over a wide area, or relays who can be heard. Unless the net can solve this problem, and it has failed to so far, the net should be cancelled. I think a QST should be put out on the net frequency to the effect that unless support improves by, say, 1 July 1981, the net will be cancelled. Six months should make it plain whether or not NNN will get any help.

The net's a good idea but it is — or should be — apparent to those who read **Worldradio** that the net has minimal support from those it was supposed to help, and even less from higher class licensees.

Getting back to KA5CTK — in my last letter, I suggested he make a schedule on SSB so we could discuss the net, but he never replied.

I passed my General test in September 1980. I've three continents and 12 states confirmed so far on SSB. I'm trying for WAS/WAC on phone. I've WAC/WAS on CW, but haven't sent in for the certificate yet.

I'm a member of 10-X International #30612 and a charter member of the Fresno chapter.

Gary Payne, WD6BJK
Fresno, California

To: Gary Payne, WD6BJK

Yours of 15 January indicates you have a General license; congrats! Now you should have no further interest in trying to kill off any attempts to build, or operate Novice nets. You can go on General bands!

The party you mention is a gentleman in Texas, retired from the Navy, very busy in MARS activities. He took over NNN with limited time, so most likely, he did not have time to also combat your negative letters. There are others who would like to carry on a Novice training net on 15 meters, so your suggestion is entirely out of line — it would surely not help them. It has been suggested that they carry on in a manner similar to "ARTS" without net controls. If you are interested enough to check into "ARTS", you can learn how they operate. However, if your purpose in checking in is not to handle your traffic, but merely to try and break them down, they do not need your "help."

Your letter does not indicate that you carry on any traffic net activity now as a General licensee, but expresses an interest in SSB. There are SSB traffic nets that operate in your area. If you have a sincere desire to be helpful, you can write to the communication department of ARRL and learn about such General licensee traffic nets. You are in an area where (the Northern California Net/NCN) no doubt could use your help, if you have developed the CW capabilities to carry on in such type of section nets. If not and you wish to boost your capabilities, there is a daily net for such training that operates on 3598 kHz at 0430Z. Likely you should be able to hear such net. However, again — if your purpose is not to handle traffic, but merely to be critical and try to tear down the efforts they make to keep a net going, they do not need you.

Since your letter to me does not indicate an interest in traffic nets, it is fruitless to continue this discussion about such nets. It is unfortunate that the fine gentleman in Texas did not have time to continue with Novice nets on the Novice bands. I can only hope that someone comes along, among those who have written, to take over. Also, until I've learned that you, as a General licensee, are actually an active member and handling traffic on some traffic nets, it is hard for me to believe you have such an interest.

Such an interest is closely related to a desire to be in a position to render public service — some wish to enter into that field of endeavor, others do not. It is entirely up to you, and I shall not be critical of your desires. We have only been back here (in Long Beach, California) a few days; have much to do here and shall be out of this state again by the time of the Fresno activity —

sorry about that, as I've attended many enjoyable Fresno activities in years past!

Sincerely,
Armond-K6EA □

Alaskan couple is eager to share their experiences

11 February 1981

My wife, Damaris, KL7JAH, and I, WB0BAY, are enroute for an extended visit to the South Pacific area. Tonight we are flying to Papeete, Tahiti and plan to make stops in the Cook Islands and Fiji also, before arriving in Auckland, New Zealand on 28 February. Both of us are interested in sailing and wish to let it be known, through **Worldradio**, that we would like to help crew a sailing vessel in the South Pacific. Our tentative plan is to fly from Christchurch, New Zealand to Brisbane, Australia on 24 March; but we are very flexible and could meet a boat anywhere near our path of travel.

We have our own 10-80 meter and 2-meter ham gear with us and would be happy to utilize it aboard a boat.

We can be contacted through VK4AND on 28.855 kHz every day from 1900-2100Z, or receive correspondence at:

1) General Delivery, Chief Post Office, Cathedral Street, Auckland, New Zealand; or 2) c/o Veli Berger, 32 Surrey Road, Burnie, Tasmania 7321.

Here is some information about ourselves. My wife is 36 years old, and I am 30. We both are teachers — she elementary, and myself secondary math. We have taught together in the small Eskimo village of Shungnak, above the Arctic Circle. Both of us enjoy the remote Arctic bush and can appreciate isolation for extended periods of time. Damaris has, in the past, worked as a professional cook. Most of my experience with larger boats has been with motor fishing vessels in southeast Alaska. We are both in good health and anxious to experience new things, people and places. I think we could be a real asset for a boat needing two additional crew members with radio equipment.

Also, we have put together a slide presentation relating to bush subsistence lifestyles throughout Alaska — contemporary and traditional — among the Indians and Eskimos, including hunting, fishing, trapping, dog teams, wildlife, etc. We would be happy to present this program to any radio clubs or groups of amateurs in New Zealand or Australia that would be interested.

Our home address is:
Art and Damaris Mortvedt
General Delivery
Manley Hot Springs, Alaska 99756

Perhaps any correspondence for us should be sent there also, so that it could be forwarded on to us with our other mail. Our itinerary may change.

Sincerely,
Art, WB0BAY & Damaris, KL7JAH □

Art Mortvedt, WB0BAY, sits atop a cliff in Alaska, above the Arctic Circle.

He's proud to be a 'ham'

I have been amused by the controversy regarding the term "ham".

Having been in and out of "ham" radio for over 25 years, I can say that, at least here in the East, "ham" has been a most honorable term and one to be proud of.

I am enclosing my QSL card, which is a reproduction of a drawing by Mr. Ron Dembosky, "Pigartologist".

Keep up the good work.

With best wishes for the new year and 73,

Sincerely,
Eugene M. Hoenig, M.D., WB3FTJ
Newton Square, PA □

"HAM RADIO"

73 DE WB3FTJ
GENE HOENIG, M.D.
717 Amherst Circle
Newtown Square
Pennsylvania 19073
(Delaware County)
U.S.A.

Write to show your concern

I am addressing this open letter to all amateurs concerned with the proliferation of intentional interference on the amateur bands. An alarming number of operators seem to have forgotten, if indeed they ever knew, the purpose of Amateur Radio.

During the past five years, I have again become active on the HF bands. I have been dismayed with the alarming increase of deliberate and malicious interference being caused by a lunatic fringe. It has become difficult to find a rare DX station or net operation not being subjected to intentional QRM, and with each passing year the harassing seems to intensify. Polite — and impolite — on-the-air pleas do not seem to reach those causing the problem. Some, in fact, appear to enjoy the resulting vituperation, especially if they provoke profanity, obscenities or racial slurs. It must be noted that, to their credit, most net control stations and operators attempt to ignore such sabotage.

Even in our affluent, permissive society, one can only wonder at this waste of expensive equipment, energy and expertise, and at the enormous affront to the greater majority of considerate, law-abiding amateurs so adversely affected. Since self-regulation has failed, vigilante action is inappropriate. Neither have been effective. Surely more drastic measures and recourse are in order if we, the majority of amateurs, are to continue enjoying our great hobby.

As I understand it, the FCC is currently understaffed and underfunded to take action unless willful interference is proven to occur with emergency communications. If true, this is a sad impasse indeed.

While I abhor bureaucratic expansion, in this case it may be the best and only solution. I believe there is a real need to review the function and responsibility of the FCC to regulate and control amateur communications and, if necessary, the agency should be funded, staffed and equipped to firmly deal with this cancerous growth. Additionally, the role of official observers and other monitors need revitalizing as by granting further authority to cite offenders.

Constitutional guarantees are clearly involved, — those of the offending minority, as well as the majority of amateurs. But the rights of this minority should not, and must not, be allowed to take precedence over the welfare and rights of the majority.

Copies of this letter are being sent to major amateur publications and to my two senators and representative. If you feel as I do that the time has come for relief from this problem, I urge that you write similar letters to your elected representatives.

Respectfully,
James Simmons, W7KVV
La Grande, Oregon □

A letter of thanks to all amateurs

Dear fellow amateurs:

Rehab Radio has been in existence for over three years now at St. Jude Hospital and Rehabilitation Center in Fullerton, California, and has been more than successful. Amateur Radio has proven to be an effective therapeutic tool. Our station, WD6BPT, has received a lot of attention, but the focus needs to be turned around. That's the reason for this letter.

I have a need to thank all of you at "the other end" who have made Rehab Radio work. Amateurs are supposed to be communicators, and that you have all been . . . but you have transcended the airwaves — you've communicated to our patients that you cared. That has been a most powerful message!

Our program came into being, due to the efforts of the wife of Silent Key Carl Young, WB6ECW. She wanted others to receive the enjoyment and relaxation her husband had received from the hobby. Dr. Phil McFarland, WB6RIE, intervened with our administration to get our original antenna up on the roof. Operators like Bob Templeton, N4AOJ; Jim, WD9SVE; Sam McDonald, WD8PCV; Bill Champagne, VY1AU; Arch Harris, VE7DOG; Eli, K2YSP; and others, have sent individual cards to patients. Erland Belrup, SM7COS, has sent stamps for our patient collection and books on Sweden. That extra bit of motivation and inspiration to work in therapy has resulted after QSOs with disabled amateurs such as Jesse Wilkerson, K0GZR; Elliott Chang, KH6CPW; and Jim, WB7YTF; who were willing to share their experiences. When Ray Hook, WA6JJV, told a patient she had a "sexy voice", her morale and self-image were lifted for the remainder of her hospital stay.

These are, unfortunately, just brief examples — but I hope you *all* understand how much your contacts and follow-up QSLs have meant. You've been attentive to names and comments from patients. You've shown interest in them as people and have been willing to share about yourselves. You've all been credits to the hobby.

Thanks so very much. Please keep listening for us.

My very best of 73,
April Moell, WA6OPS
St. Jude Hospital & Rehab Center
Fullerton, California □

STATION Appearance

Now here's an amateur who's proud of his call sign. And no visitor is likely to forget it for some time.

This is a nice neat installation, clean and orderly like a SAC (Strategic Air Command) communications center. Not only does it look nice, it must sound nice too. Look at the external large speakers. Audio quality is far improved over the little speakers in the tin boxes.

We'll let Norm tell a little about himself and his station:

Most of my equipment explains itself. As you can see, I have a little bit of the old and the new. The old Hallicrafters will still hold their own with the new stuff. With the 41 tubes and three fans, it makes a nice shack heater, and somehow you don't mind paying the electric bill. Who puts a price on pleasure?

My favorite position, however, is in front of my Yaesu twins — the FL and FR101D with two VFO's, FSK, RTTY and complete 10-meter FM. It makes hamming a lot of fun. DX is my favorite notch for right now. My cards and awards are not displayed on the walls, but very neatly arranged in display books, so if I cannot trip and drag someone downstairs to the shack, I can at least show off my efforts.

I am 58 years old, married, and have five children. I'm retired, so have lots of time to enjoy Amateur Radio. Tho only thing I would like to comment on is: Have you ever slowly scanned the bands and made note of how few tuner uppers there are on the CW bands compared to the voice bands? Is it because there are fewer of them or does the CW operator value his spectrum more?

Thanks for letting me visit with you. I think you are filling a void in Amateur Radio.

Sincerely,
Norman Burnett, WB7RDO
Pendleton, Oregon

Norman Burnett, WB7RDO

(Editor's note: Having Pendleton up in big letters is helpful. Sometimes, while sending Sacramento in CW, one can forget where he is. Having one's own QSL card up on the wall helps. As for Norm's comment about CW band, such is the domain of gentlemen. N6WR) □

Lew McCoy explains Handbook stand

Norm Brooks reported accurately on my talk at the SAROC convention, about the Handbook. However, there are a couple of points I would like to comment on, if possible.

As I said at SAROC, any inventions of any headquarters employees — and I am speaking of the technical staff — goes into the public domain, meaning that the device cannot be patented by someone else. Probably very few know of this rule. This is service to the membership in the finest tradition of ARRL — and this was a point I was trying to make. Stop and think for a second. If a company has an exclusive on a patent, they can set their pricing accordingly. Lord knows what the ultimate transmatch or the monimatch would cost if a single company had exclusivity!! So you see how the members profit. In my speech, I never intended to leave the impression of sour grapes about that point.

Also, in being critical of the Handbook, my point is to make the membership aware and for them to take constructive action. Write to ARRL headquarters if you find something lacking in any of the publications and be sure to send a copy to your director. But be constructive in your criticism. After the talk, I wrote to ARRL listing the errors and ommissions I found.

In my travels around the country, I would encounter much praise of what the League was doing — and plenty of flack. My standard answer was — "If you don't like the League, how would you like working for an organization you often disagree with!!" That is the position most headquarter employees find themselves in many times.

While I was critical of the handbook, it should be pointed out that regardless of what I or anyone else says, it is still the best handbook around — bar none. But it can be improved, and my point is — that is your job as a League member.

From my viewpoint, and I had nearly 30 years at ARRL headquarters, there are many things wrong with the League — but also many things that are right. For some reason that I never understood, ARRL always seemed to wind up in an adversary position with FCC. During my tenure, there was only one small segment of time — about two years — when ARRL had what could be called good relations with FCC. In all too many instances, the FCC has been forced to take the initiative in instituting changes beneficial to Amateur Radio.

On the other hand, the ARRL has been the prime — if not the only — moving force in defending amateur frequencies; 220 MHz is an outstanding example of this (along with loads of other frequencies).

I may have had my differences (minor) with Dick Baldwin, the General Manager of ARRL. But I know of no single individual who has done more to preserve the amateur frequencies (WARC) than Dick. If you were going to judge on a score of 0 to 10, you would have to come up with one helluva higher number than a "10" to rate Baldwin's performance.

In these hectic times, you would have to look long and hard to find someone as capable as Baldwin — our General Manager.

Oh, I am going to continue to be critical — and what is more important, you should be too. It is your organization — it belongs to you; not to the gang back in Newington, not to the directors, nor to the President and his bevy of vice presidents — but to you, the member.

Sincerely submitted,
Lew McCoy, W1ICP/5
Silver City, New Mexico □

(please turn to page 45)

Amateurs go to the dogs

Teresa Dall, KA0CDO

The All-American Sled Dog races were held in Ely, Minnesota on 17 and 18 January 1981.

Communications between the starting line and checkpoints were handled by several Amateur Radio operators using 2-meter handhelds. Communications were organized by Ted Gustafson, WB0TDV; Terry Jackson, WB0JRH; and John Lindbeck, WB0CGM, as net control.

The sled dog races were divided into different classes: the 3-dog (3 miles); the 5-dog (5 miles); the 7-dog (9.8 miles); and the unlimited (16.5 miles), with amateurs from various surrounding areas reporting contestant numbers and times as they passed by the checkpoints.

The following radio amateurs participated: John Ryder, WD0AKT; Gwen Ryder, WD0AKS; David Olson, WB0UHP; Harry Wold, WD0CEX; Cyril Von Wald, KA0BFT; Arthur Johnson, Jr., WB0JMG; Lucia Johnson, KA0BYZ; Teresa Dall, KA0CDO; James Dall, WD0GVW; John Lindbeck, WB0CGM; Theodore Gustafson, WB0TDV; Terry Jackson, WB0JRH; Julius Zaccagnini, AA0U; Robert Curtiss, N0BTR; and James Peterson, WB0VJI.

The weather was beautiful, and it was a very enjoyable outing for all. □

Happy Flyers

HAMS & PILOTS

"THERE IS NO LIMIT TO WHAT YOU CAN DO – IF YOU DON'T CARE WHO GETS THE CREDIT"

INTERNATIONAL COMMANDER, Hart Postlethwaite, WB6CQW
1811 Hillman Ave., Belmont, California 94002 (415) 341-4000

International Vice Commander, Paul Hower, WA6GDC
Box 2323, La Mesa, California 92041 - (714) 465-5288

115 lives saved in 1980

The Civil Air Patrol received credit in 1980 for saving the lives of 115 persons — the highest number for a single year in history, so far as is known. The highest number of persons saved by members of the Civil Air Patrol in any previous year was 91 in 1978. Prior to that, the highest number for a single year was in 1968 with a total of 78.

The number of emergency service missions on which Civil Air Patrol was engaged in 1980 was 1,175. This is more than in either 1978 or 1979. However, the number of flying hours in 1980 was only 14,424. For 1978, the flying hours were 24,800 and in 1979 were 18,340. The breakdown of the 1980 figures indicated that 649 "finds" were accomplished in these 14,424 hours. It also revealed that when all the volunteer ground and search base crew time was included, a total of 25,726 man-days were involved.

When you realize that the Civil Air Patrol is but one of the many volunteer Search and Rescue (SAR) groups that are involved throughout the United States, you can get a glimpse of the great number of people hours. The average citizen has very little knowledge of all that is involved in our great volunteer groups. Many are of the opinion that when a plane goes down, a camper is lost in the wilderness, a child disappears, national disaster strikes, etc., some agency with paid individuals will respond. Far from the truth, in most areas. It is to the credit of the humanitarian attitudes of the volunteers that they so willingly share whatever talents, work and money they can for the good of others.

As most of our regular readers know, many of the members of the HAPPY FLYERS do belong to these various search groups. Janie and I both belong to the Civil Air Patrol, as well as the Sheriffs Air Squadron. Vic Borgnis, WB6EVH, of Squadron #1 is very active in the Coast Guard Auxiliary (both air and water). Mike Flaherty, WB6UVW, is very active in the leadership of the Red Cross. Some of our Canadian Squadron #7 are members of their country's SAR teams, as are the radio amateur pilots in our New Zealand Squadron. The 25,726 man-days mentioned above, multiplied by eight hours each, equal 205,808 women/man-hours of volunteer work. It is fairly obvious that a great number of volunteers are continually needed to continue the very valuable work that is performed daily. When you stop to think about it, nearly every kind of talent is needed: dog handlers, scuba divers, backpackers, typists, cooks, kitchen help (KP), communicators, radio maintenance people, pilots, observers, paramedics, file workers, logistics people, those experienced in vehicle and plane maintenance, ELT monitor and alert set-ups, DF ground and air teams, teachers with expertise in many different fields, etc. The list could go on and on.

An old saying known to most is that a chain is only as strong as its weakest link. As you read our column each month, you may have felt that you really had nothing that would be useful. Not so! In Search and Rescue, we need each link in the chain to succeed. Often, this means weeks and months of sheer boredom and organizational frustrations — waiting to be called on an actual emergency. This boredom and frustration, when punctuated by the adrenaline-producing sensation when the real need arises and you are called, will make all your efforts worthwhile. I, personally, have never saved a life, even with the number of ELT finds we have made. However, when Grady found that little girl in San Diego with a DF I had built, and the training I had provided him — *I felt as good as if I had done it myself!!!* Frankly, Janie and I were almost walking on a cloud every time we thought about it for months. We still feel good whenever the story comes up. We also feel a part of the other 25 lives that have been saved since then by others using techniques, equipment or training provided by the HAPPY FLYERS and us.

Hate to sound like a preacher, but — give some thought to becoming involved in your local area with one of the SAR groups. Most of the groups are in great need of help. It has been said that volunteer/charity work has been on the wane for years. We have many who are more "gimme" than "what can I do". Strangely enough, the giver of a gift can most often receive more pleasure in giving than some recipients do in receiving the gift. Visiting with a social worker once, I was asked why I did so much volunteer work. The honest answer was that I enjoy doing it. Some people go to a library for relaxation, while others would rather fly their plane around the pattern. If those same two people reversed their roles, they might not find any relaxation at all. The nice thing about SAR is that we need people like you to do the thing YOU like to do, with us. Out on a ground search in the freezing cold, hot food and good coffee are more than a convenience; they are vital. Your ability to help provide something you think so simple — such as cooking — may make an enormous difference in the outcome of that day's search. It is hard to think well when you are cold and hungry.

First picture of an ELT monitor installation. The repeater uses the call of Bill Cathcart, WA2IBM. It is located on a hill in the southern part of the San Francisco Bay Area, near San Jose. Arrangements are underway with the FAA and the CAP for proper utilization of ELT reports. Remote controlled DF will come later. and will be easy with their special micro-processor control unit. Details will be published later.

WA2IBM ELT monitor installed

For the last several years, the HAPPY FLYERS have been providing Collins 121.5 AM rack-mount tube type, base station receivers to various repeater groups for the ELT Monitor and Alert program. All of these receivers have come from AIRINC, the company which provides the nationwide communications links for the Commercial Airline Industry. In the beginning, they charged us $15 each for their surplus receivers, but when they discovered what we were doing with them, they ceased charging for them.

One of the conditions we placed on sending one to a repeater group, is that you promise to put it up at your site within 45 days of receipt. Secondly, your group must pay the UPS delivery charges. The final requirement is that you send us a picture of the receiver INSTALLED at your repeater site. There is no charge for the very nice Collins receiver.

We are proud to publish the first picture of one of these ELT monitor installations. We would like to compliment the members of WA2IBM/6 rpt, on the speed of their installation and response. Less than a month elapsed between their first inquiry about a receiver and the receipt of this picture. Sadly, this is not the first installation of these donated receivers, just the first picture! Some of the receivers have been in use for a couple of years. Other receivers are still not yet installed at a repeater site and still repose in someone's garage. We would like to encourage those of you who have an ELT monitor installed at your repeater site to send us a picture for publication. It does not matter who you received the receiver from — we would still like you to share the installation picture with other interested parties.

Some have built their own ELT receivers. A number have reported ELTs and even assisted in finding them. Would appreciate your sharing this information with others. Perhaps it will encourage more to install them. If we get enough installed, it won't be long before a life will be saved by someone. Be sure to include the call letters and names of those in the pictures you send so that the helpers can be identified. You might feel a little bashful about having your picture in a worldwide paper, but think of it as another part of your service. It may cause someone to install one, and that might be the one responsible for saving the first life.

An apology

I am entering the Stanford Hospital this afternoon for a CAT scan and myelogram, preparatory to my planned surgery. I will continue the series on the ELT installations next month with more schematics and detailed explanations. We are trying to put as much information as possible in **Worldradio** (and perhaps **73**), to minimize the need for correspondence. Most volunteers are very busy — partially due to the volunteer work and partially due to the nature of their personalities that cause them to work very hard at many things they do. The volume of mail Janie and I receive is unreal. We do the best we can to answer them as soon as possible. However, of late our life has been one crisis after another. Some of you have been very patient with the delays.

We did receive a very nasty post card from one individual who claimed he had written three times. I could not find any other letters prior to the nasty one, however. I still have been unable to answer even the nasty one. I will write him from the hospital. Hopefully, my operation will be over by the time this is printed. If they have to graft bone, they tell me I will be greatly restricted for months. This may mean I will be unable to type answers to you.

If you need information badly, you might consider phoning after 5:00 p.m. The cost is very low at night, we are late people, and you can get the best explanations when you are able to ask for proper clarifications. My home phone is (415) 341-4000. I would be very happy to talk to you any day, after 10:00 a.m. I expect to have answered all correspondence received prior to the operation.

Skylane 21DF stolen

Bud Kirsch, WB6MVE, was driving by San Carlos airport on 8 February and noticed our airplane was not in its parking space. He heard me on the air and asked who was flying the plane? Janie went down to check, and sure enough, it had been stolen. She then spent awhile in the police station.

As it turned out, the plane was apparently stolen the night we returned from our trip to Baja on 19 January. It is difficult to describe how one feels when you discover your entire plane is missing. The FAA, police, and the FBI were all involved, and the plane was located about three weeks later at Livermore, California (well, most of it). It seems the thief or thieves needed the avionics, etc., more than we did. We had not completely unloaded the plane from our trip either. If we had thought about the plane being stolen, I am sure we would have taken everything, even though we were very tired.

One interesting thing — the special HAPPY FLYERS DF, and our DME were not stolen with all the other gear. I assume it was because both were custom-engraved with our names and ham calls on the front. I paid $20 to a professional engraver, and in retrospect I must say that certainly was cheap insurance. I might consider having bold, pretty engraving put on more of my radio gear??

Squadron #1 changes

Reading the newsletter from Flash Allen, WA6SCM, editor for San Francisco Bay area Squadron #1, I note that an interesting change is proposed. With the energy crunch, and the economic problems associated with flying, they are considering changing to a flying activity once every 90 days. FAA requirements state a pilot must make his required landings every 90 days to act as pilot in command with passengers. By having the fly-ins every 90 days, our members can maintain readiness for national emergencies and mercy flights, as well as have the financial assistance of those who go along and share the costs.

We will keep you informed, and would appreciate hearing from other squadrons as to the frequency of your fly-ins. I do know the Canadian Squadron does very little flying in the dead of winter (for obvious reasons). □

Hope we can serve you. Your comments and suggestions are welcome.

Chris Wilson

Amateurs search for plane

Submitted by G. Manning, K2RRR

At 6:45 on the evening of 11 February, during a driving rainstorm, a Lockheed Jetstar belonging to Texasgulf, Inc. crashed onto a remote peninsula jutting into the Kensico Reservoir while attempting a landing at the fogbound Westchester County Airport in New York. All eight persons on board were killed.

Shortly thereafter, radio amateurs of both the Westchester Emergency Communications Association, Inc. and the Westchester County Office of Disaster and Emergency Services took part in the search for the downed aircraft.

Ed Poccia, KA2IPK — with the search party — was one of the first on the scene of the crash.

Standing by in an emergency net on WR2AIS were the following: Allan Sniffen, WB2IXR; Fritz Boigris, KB2O; Roy Schwarz, N2RS; Amy Katcher, WA2SIA; Dave Meyerson, WB2OXM; Eugene Rubenberg, W2IIX; George Manning, K2RRR; K2ZBI; Joseph Bruno, WB2VVS; Philip Fiol, WB2BMC; Willard Smith, K2CFX; Sanford Fried, N2SF; Ed Poccia, KA2IPK, Jeff Scherzer, N2BRQ; and Harold Katcher, WB2HQK. □

ARRL

(continued from page 19)

are limited in frequency space, highly desirable for long range operation, and already highly used and crowded in all modes — at least in the U. S. segments.

We encourage League members to study all aspects of any proposed phone band expansion, make their best judgement from a personal and overall viewpoint, and then make their opinion known to their League director. Be aware that your ARRL Board of Directors is trying to reach the best balance of band use for all radio amateurs. □

If a foreign amateur visits your area, do a picture story for Worldradio

All are invited to League division meeting

The Northern Virginia Amateur Radio Council (NOVARC) announces LPM 81, the ARRL Roanoke Division's League planning meeting scheduled for 9-10 May 1981 at the Tyson's Corner, Virginia Ramada Inn.

LPM 81 offers an excellent opportunity for individuals and clubs to play an active role in planning the future activities of the ARRL through their directors and vice-directors.

LPM 81 is not a hamfest in the usual sense, but an exchange of ideas with your League officials for the purpose of improving and strengthening our national organization.

Sponsored by Roanoke Division Director Gay Milius, W4UG, and Vice-Director John Kanode, N4MM, LPM 81 is a great opportunity to express your opinions to those who make it happen.

You don't have to be a League official to attend. Everyone is welcome. For details, write to NOVARC, P.O. Box 682, McLean, VA 22101. Mark your calendars for 9-10 May and help us shape the future of Amateur Radio. □

If you think you have TVI troubles

Guglielmo Marconi needed police protection from people who threatened to kill him because they thought his radio waves were harmful. The frightened people complained that the radio signals were passing through their bodies and making it impossible for them to sleep. A wealthy woman charged that the waves made her feet itch. A German man publicly made plans to go to England and shoot Marconi, but he was turned away by British authorities.

The hostility toward the inventor came after years of being ignored. In 1894, the 20-year-old electronic pioneer coaxed his crude equipment to send a signal a few feet across his room. Next year his signals spanned the length of his father's home in Bologna, Italy. When Marconi patriotically offered his invention to the Minister of Posts and Telegraphs, he was snubbed.

Marconi packed his equipment, and with his Irish mother, sailed to England. Surely, he thought, the world's greatest maritime power could use ship-to-shore communications. British customs officials ignored his frantic efforts to explain that his radio was not a bomb. The delicate instrument was damaged by their forcing it open.

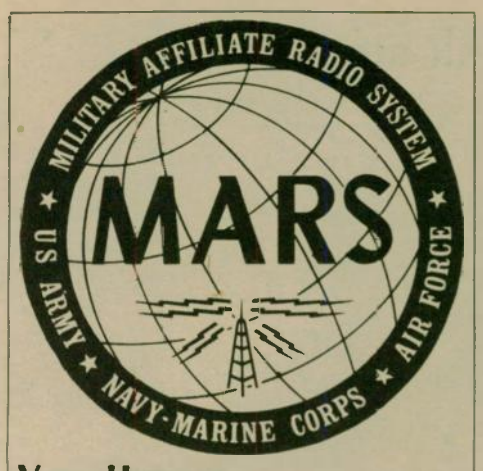
The following year, a family friend helped him gain the attention of the British postal authorities and he demonstrated that he could send a signal from the General Post Office to a nearby building. The press and public showed no interest in the feat.

Marconi then constructed a bamboo tower that thrust his transmitter 90 feet into the air and sent his wireless signals nearly two miles. He had built something too big to be ignored and the press took notice. Years later, he sadly observed, "The calm life is over."

The publicity aroused fears in a previously indifferent public about the possible harmful effects of radio waves. A flood of crank mail — some containing threats on his life — came pouring in. Guarded by police, Marconi moved his operation to Wales in 1897. Soon he was transmitting signals out 25 miles, then to 150, and in 1901 had spanned the ocean with his wireless signals.

It was more than two years after this that the public outcry diminished enough for Scotland Yard to withdraw the police guards protecting the man who developed radio for the world.

— Ham Hum □



Vern Hansen,
WB6UWQ/AAA9W

NAVMARCORPS MARS SSTV Network

Thomas F. Pollock,
NNN0PPG/NNN0RUH

Slow Scan Television (SSTV) got underway officially in 1966 when Mr. Capthorne Macdonald, N0ZJP, demonstrated SSTV performance he had developed to members of the FCC and Navy Marine Corps MARS. He obtained special permission to use certain amateur and Navy frequencies. He recruited amateurs and Navy Marine Corps MARS operators, who built equipment and set up nets to further develop equipment and procedures.

Pictures were exchanged around the United States and with N0ICE in Antarctica over an 18-month period. Reports of the findings were submitted to the FCC which, along with the recommendations made, were used as a basis for the directive in 1968 authorizing SSTV activity on certain amateur bands.

The morale value of this new mode of communication was dramatically illustrated in 1967 when Mr. Macdonald arranged a phone patch along with picture exchanges between a Navy man in Antarctica and his wife and children from his home in Boulder, Colorado. The news media were present to record the event; the time they were available turned out to be an hour or so earlier than when the Antarctica station could get the best signal from Colorado. To illustrate the flexibility of the system, arrangements were made with an Alexandria, Virginia MARS station to relay through a phone patch. He had the option of receiving through the patch or direct, depending which had the best reception. Excellent results were obtained. The only problem encountered involved the younger child not recognizing his father when he saw him for the first time with a heavy beard.

This incident is more dramatic when it is realized that this family had been separated many months and the event occurred during the "winter over" period when there are no aircraft flights scheduled for a six-month duration of darkness and foul weather. During this time, the only communications other than official message traffic is by phone patches and RTTY MARSGRAMS.

When the FCC authorized SSTV on the amateur frequencies, the Navy nets became inactive until 1972, when the current SSTV Specialty Network was established. The National Net has met since that time on Saturdays and Sundays for one hour beginning at 2200Z on 13,975.5 kHz. Some of the highlights of the operations are as follows:

In 1974, pictures were exchanged between net stations and the *USS New Orleans, LPH7* during the SKYLAB III space recovery operations in the Pacific.

In 1976, the first picture of a new-born young lady was transmitted to her proud father who was "wintering over" in Antarctica.

In 1977-78, Navy SSTV activity expanded by the formation of region nets in three of the NAVMARCORPS MARS regions. These included New England, Southeast United States and the Midwest areas.

During net operations it became apparent that a formal system of reporting picture quality was needed. After considerable testing, the R-S-V system evolved. R for readability (1-5), S for signal strength (1-9) as in the past, and V for video (V1-5). V-5 is closed circuit quality; V-4 is a good picture with some interference or multipath; V-3 a readable picture with considerable interference; V-2 partly readable picture; and V-1 no picture.

In 1977, SSTV was included for the first time in the Annual Armed Forces Day Communication exercises with cross-band operation with the amateur operators. Plans are being formulated to include SSTV again this year. The date and frequencies have not been published to date, but Armed Forces Day is usually the third weekend in May and the frequencies of the Navy SSTV stations are usually just below and above the 20-meter amateur bands. The schedule of events is usually published in the April issue of **QST**.

There are plans for one station for SSTV in Washington, D.C. and another on the West Coast. While it may not be shown in the **QST** article, Navy SSTV stations will monitor 10 and 15-meter amateur SSTV calling frequencies, if propagation so indicates, in order to permit wider coverage.

As we say in the business — "SEE YOU ON SSTV." □

Are your rotators cold?

Don Blount, WB0PVM

A suggestion for antenna rotators which have apparently frozen or just quit working during sub-zero temperatures. Replace that "non-polarized" electrolytic capacitor in the control unit with a good quality AC motor starting capacitor of about 88 to 100mfd. It may be larger than the original and may have to be outboarded. It really works.
— *Mankato, MN ARC* □

MARS — what is it?

MARS is the acronym for the Military Affiliate Radio System. This MARS is over 50 years old, having been constituted in November 1925 as the Army Amateur Radio System (AARS), by a few far-sighted members of the U.S. Army Signal Corps.

At the onset of World War II (when Amateur Radio operations were suspended for the duration), 5,600 of the approximately 60,000 FCC licensed Amateur Radio operators were members of the AARS. During 1946, the AARS was reactivated, and in 1948 it was expanded to include the U.S. Air Force and renamed the Military Amateur Radio System. In 1956, it was given its present name.

During 1962, it was expanded to a tri-service program under Department of Defense (DOD) control, along with the activation of the U.S. Navy-Marine Corps MARS on 1 January 1963. By 1975, this tri-service program had grown to over 14,000 volunteer members.

The mission (purpose) of the MARS program is to provide: 1) DOD sponsored emergency, unclassified communications on a local, national or international basis as an adjunct to normal communications. 2) Auxiliary communications for military, civil and/or disaster officials during emergency conditions. 3) A potential reserve of trained radio communications personnel for military service, when needed, by promoting the study and experimentation in radio communications and electronics. 4) A means to handle morale (third-party) and other authorized record and voice communications traffic for U.S. Armed Forces, and authorized U.S. Government civilian personnel stationed throughout the world.

In essence, it is a combination of ARES and NTS rolled up together and expanded to operate on a worldwide basis.
— *BARC's BARK, Boulder, CO* □

Attention, Kenwood owners

Jayson Ferron, KA4NRO

To all owners of the Kenwood TR2400.

If you are active in CAP or MARS and would like to use your radio on the frequency 143.500-143.900, follow these following steps. (Kenwood states in the owners manual that the radio only goes from 148.495-143.900.)

1. Press down at the same time the MS (button) and the No. 4 (button). Display will go blank.
2. Punch in the numbers 300. Display will show 300.
3. Turn the offset switch up to 5600. Display will show 300.
4. Push down the "norm/rev" switch to the "rev" position, (new radio lock) and keep held down. Display will read 2900.
5. Turn the offset switch to -600. Display will read 2900.
6. Release the "norm/rev" switch. Display will read 3.500.
7. You can now put it in memory or scan to any frequency from 143.500 to 148.495. However, if you scan past 143.495, you will have to go through the above steps. Also, you can use any of these frequencies in the way you would use regular frequencies in the radio.

— *Florida Skip* □

Roof-rain gutter antenna

Jerry Wetzel, W3DMB

While living in an apartment building in South Carolina, I was subject to the usual restrictions often encountered — no outside antennas! A 2-meter ground plane on the balcony took care of the VHF problem but 15, 20 and 40 meters were still eluding me.

I tried an "invisible wire" antenna but it was also invisible to those birds that insisted on flying into it!

Finally I thought of the rain gutter that ran around a small section of my roof. The gutter was made of aluminum and was also fairly new. So . . . standing on the balcony railing, I used an awl to punch a small hole to accommodate a sheet metal screw. I then used a small piece of hook-up wire to go from the transmatch to an alligator clip to the screw.

Using the HW-8 QRP rig, I found that it loaded up great on the 15, 20 and 40-meter bands . . . resulting in QSO's. I worked W3s,W8s,W7s,VKs,JAs,VE7 and VE8s, as well as Gs and DLs.

My experiment was successful, prevented frustration, reduced stress, and made a ham happy! It resulted in many QSO's from brother amateurs who wanted to know how to make a "roof-rain-gutter antenna"!
—*The Sine of the Times, Indiana, PA* □

New 2-meter direction.

A compact transceiver with FM/SSB/CW plus...

TR-9000

The exciting TR-9000 2-meter all-mode transceiver combines the convenience of FM with long-distance SSB and CW in a very compact, affordable package, ideal for mobile installation. With its fixed-station accessories it becomes the obvious choice for your ham shack.

TR-9000 FEATURES:

- **FM, USB, LSB, and CW**
  All the popular 2-meter modes.
- **Extended frequency range**
  Covers all 2-meter Amateur frequencies as well as MARS and CAP frequencies (simplex and any repeater split) between 143.9000 and 148.9999 MHz.
- **Digital dual VFOs**
  With selectable tuning steps of 100 Hz, 5 kHz, and 10 kHz, convenient for each mode of operation.
- **Digital frequency display**
  Five, four, or three digits, depending on selected tuning step.
- **Scan of entire band**
  Automatic busy stop and free scan.
- **Five memories**
  M1-M4...for simplex or ±600 kHz repeater offset. M5...for nonstandard offset (memorizes transmit and receive frequency independently).
- **SSB/CW search**
  Sweeps between 0 and 9.9 kHz around the selected frequency in 100-Hz steps, while the main knob selects in 10-kHz steps. Easy way to find SSB or CW activity.
- **UP/DOWN microphone**
  "Beep" sounds with each frequency step. (Supplied with TR-9000.)
- **Effective noise blanker**
  Suppresses pulse-type noise on SSB and CW.
- **Improved receiver front-end characteristics**
  Low-noise, dual-gate MOSFET and two-stage monolithic crystal filter.
- **RIT control**
  Receiver incremental tuning, to tune only the receiver slightly off frequency in the SSB/CW mode. Functions on memory, also.
- **RF gain control**
  Threshold-type control, permitting accurate S-meter readings on SSB/CW and FM modes.
- **CW sidetone**
  Enables monitoring of keying during CW operation.
- **Automatic AGC selection**
  AGC time constant selected automatically with MODE switch (slow for SSB and fast for CW).
- **HI/LOW power switch**
  10 watts/1 watt RF output on FM/CW. Always 10 watts on SSB. Improved power module for reliable and stable linear RF output.
- **LED indicators**
  VFO A/B, RIT, ON AIR, and BUSY.
- **Rear-panel accessory terminals**
  Key, memory back-up voltage, tone input, standby, external speaker, DC supply voltage, and antenna.
- **Compact size**
  Only 6-11/16 inches wide by 2-21/32 inches high by 9-7/32 inches deep.
- **Adjustable-angle mobile mount**
  With quick-release levers for easy removal.

More information on the TR-9000 is available from all authorized dealers of Trio-Kenwood Communications, Inc., 1111 West Walnut Street, Compton, California 90220.

KENWOOD
...pacesetter in amateur radio

Matching accessories for fixed-station operation:

- PS-20 power supply
- SP-120 external speaker
- BO-9 System Base...with power switch, SEND/RECEIVE switch for CW operation, backup power supply for memory retention (BC-1 backup power adaptor may also be used for this application), and headphone jack

Specifications and prices are subject to change without notice or obligation.

Hear there and everywhere.

Easy tuning, digital display, professional quality

R-1000

The R-1000 is an amazingly easy-to-operate, high-performance, communications receiver, covering 200 kHz to 30 MHz in 30 bands. This PLL synthesized receiver features a digital frequency display and analog dial, plus a quartz digital clock and timer. Its easy-single-knob tuning and high sensitivity, selectivity, and stability make the R-1000 a favorite amongst Radio Amateurs, shortwave listeners, engineers, maritime communicators, and others who demand high quality in a general-coverage communications receiver.

R-1000 FEATURES:

- **Continuous frequency coverage from 200 kHz to 30 MHz**
  Receives shortwave, medium-wave, and long-wave bands.
- **30 bands, each 1 MHz wide**
  Easy-to-use band switch with large knob.
- **Five-digit frequency display and analog dial**
  Accurate digital display with 1-kHz resolution and illuminated analog dial with precise gear dial mechanism.
- **Built-in quartz digital clock with timer**
  Precise 12-hour clock with AM and PM indicators. Timer turns on radio for scheduled listening, and even controls a recorder through remote terminal.
- **Up-conversion PLL, wideband RF circuits**
  Provide exceptional performance and easy operation without the need for band-spread, preselector, or antenna tuning. Excellent sensitivity, selectivity, and stability.
- **Step attenuator**
  0-60 dB in 20-dB steps. Prevents overload.
- **Three IF filters for optimum AM, SSB, CW**
  12-kHz and 6-kHz (adaptable to 6-kHz and 2.7-kHz) filters for AM wide and narrow, and 2.7-kHz filter for high-quality SSB (USB and LSB) and CW reception.
- **Communications-type noise blanker**
  Eliminates ignition and other pulse-type noise. Superior to noise limiter.
- **Recording terminal**
  For external tape recorder.
- **Tone control**
  For desired audio response.
- **Built-in 4-inch speaker**
  For quality sound reproduction.
- **Dimmer switch**
  Controls S-meter and other panel lights and digital-display intensity.
- **Three antenna terminals**
  Wire terminals for 200 kHz to 2 MHz and 2 MHz to 30 MHz. Coax (SO-239) terminal for 2 MHz to 30 MHz.
- **Selectable operating voltage**
  AC voltage selector for 100, 120, 220 and 240 VAC. Also adaptable to operate on 13.8 VDC (with optional DCK-1 kit).

More information on the R-1000 is available from all authorized dealers of Trio-Kenwood Communications, Inc., 1111 West Walnut Street, Compton, California 90220.

HC-10 Digital World Clock

- **Two 24-hour displays with quartz time base**
  Right display: local (or UTC) hour, minute, second, day. Left display: month, date, world time in various cities, memory time (QSO starting time), and time difference (in hours from UTC).
- **Time in 10 cities around the world**
  Plus two additional programmable time zones.
- **"TOMORROW" and "YESTERDAY" indicators**
- **Memorizes present time**
  And recalls later, for logging purposes.
- **High accuracy**
  ±10 seconds/month

KENWOOD
...pacesetter in amateur radio

Matching accessories:
- SP-100 external speaker
- HS-5 deluxe headphones

Other accessories not shown:
- HS-4 headphones
- DCK-1 easy-to-install modification kit for 12-VDC operation

Specifications and prices are subject to change without notice or obligation.

DX WORLD

John F. W. Minke III, N6JM
6230 Rio Bonito Drive Carmichael, CA 95608

Activities calendar

04-05 April	Polsk (SP) DX Contest (CW)
04-05 April	Hong Kong Activity Days
11-12 April	ARRL International EME Contest
11-12 April	USSR International Gagarin Cup Competition (CW)
11-12 April	Common Market DX Contest
18-19 April	Polsk (SP) DX Contest (Phone)
18-19 April	YL ISSB QSO Party (Phone)
25-26 April	Helvetia 26 Contest
25-26 April	King of Spain Contest
09-11 May	USSR CQ-M Contest
09-11 May	RSGB WAB HF CW Contest
23-25 May	**CQ Magazine** Worldwide WPX Contest (CW)

W-100-N

Less than half of last month's total of applicants was processed this period. But the applications are still there. Congratulations go to the following amateurs for completing the requirements for the Worked 100 Nations Award:

103. N5ANA Kenneth Ruffner
104. VK3NSY Ron W. O'Grady
105. WD8CRY Richard A. Moran
106. WA6BSS Bill Boots

Ron, VK3NSY, holds an Australian Novice Class license and made all his contacts on the 10 and 15-meter bands SSB. With Ron's application, Australia is in second place with applications for this award.

East Malaysia (9M8)

9M8PW maintains a schedule with his manager at 0930 UTC. Look for 9M8PW or G4DXC near 14.255 MHz; upon completion of the schedule, Paul will stand by for callers.

Club station 9M6VW is operated by Ismail, who is a new amateur found at 1430 UTC on 14.226.

In the VK9NS Net, (formerly the P29JS Net), 9G1JV/9M6 has been a check-in at 0700 UTC on 14.220 MHz.

West Malaysia (9M2)

There is more activity from West Malaysia than that of the eastern section. 9M2RN is regular at midnight UTC working into Sunday morning on 28.670 MHz. He has also been found on 14.203 MHz at the same time period.

Tan Yew Hock, 9M2FR, is another active station and can be found around 21.370 MHz from 0100 UTC. He has also been reported on the same band as early as 1000 UTC.

Look for Grahame Parsons, 9M2GZ, who has been worked on 14.240 MHz at 1200 UTC. You CW fans can try 9M2KG on 14.025 MHz at 1815 UTC or Chow Wai Cheong, 9M2CF, on 14.019 MHz at 1100 UTC.

Tanzania (5H3)

Pat, 5H3AA, is usually near 21.280 MHz from 1930 UTC. Listen for that British accent of his in locating him.

Of the 17 licensees in Tanzania, the majority are not nationals. Karl Schmidt, 5H3KS, removed to Nigeria where he is signing 5N0KWS; Fred Walliser, 5H3FW will be leaving in May; and Rev. Louis Tardiff, 5H3JR, is on leave for six months.

Meanwhile, you can catch 5H3PA on 28.550 MHz around 0900 UTC. John has also been found near that frequency at 1900 UTC. You may also catch Fred, 5H3FW, before he leaves on 14.005 MHz around 1700 UTC.

Botswana (A22)

Never underestimate the power of youth. Mark, A22ZM, who is only 16, is quite active working stateside amateurs near 21.308 MHz from 1900 UTC, and the Europeans and Asians near 21.235 MHz from 1400 UTC.

Mark has also been found as early as 1800 UTC working the stateside deserving DXer. Check around 21.290 MHz for the same times. Mark uses Raymond Ross, KA2GNJ, as his QSL manager, (20-21 Linden Street, Ridgewood, NY 11385).

Malawi (7Q7)

Isadore Black, WA4SKE, was reported to have gone to Malawi at the end of February. He was to have operated with his own call at the station of 7Q7RM. As it is now the end of February, I have not heard anything. Maybe he is late — or it is just another rumor. There have been lots of those lately.

There is another report that OR5IG will be there in July or August, operating on CW, mostly 15 meters, with some 80 and 40-meter activity.

Annobon (3C0)

This also may just be another rumor, but *The Long Island DX Bulletin* reports the possibility of a DXpedition to Annobon this spring. That is all there is to report on that one at this time.

Macquarie Island (VK0)

VK0DB on Macquarie Island keeps a daily schedule with W. Latham, ZL3AFH/A, on 3.615 MHz at 0800 UTC. As the Macquarie Island station is not yet a DX type, I don't know what your chances are of working him, especially if there is a pileup of calls. Perhaps your chances are better with working ZL3AFH/A on Campbell Island.

Campbell Island (ZL/A)

When ZL3AFH/A is not busy running his schedule with VK0DB, most likely you can find him on the low end of 20 meters working CW from 0700 UTC. If you don't work CW, try SSB on 14.320 MHz from 0900 UTC.

The operator is a member of a meteorology team where he is a photographer.With his approaching winter, he is apt to find more time to operate as his lighting conditions will not be the best for photography. He expects to be there through October. QSL cards may be sent via A.E. Law, ZL2HE.

Albania (ZA)

Here we go with another rumor! Frank Turek, DL7FT, is reported to have a license to operate from Albania and is expected to be there this summer. He will operate for one week on 10, 15 and 20 meters, crystal-controlled with one frequency on CW and possibly two frequencies on SSB. So far, this is only a rumor. Let's hope this one materializes. When was the last time you worked a ZA?

Cook Islands (ZK1)

Victor Rivera, KA7HRK, operates from the South Cook Islands as ZK1CG. He runs an IC-701 with a TH6DXX tri-band Yagi. In addition, he has five-element single-band arrays for 10 and 15, plus dipoles for 40 and 80.

There is a possibility of a DXpedition to the North Cook Islands in the near future. North Cook Islands is referred to as Manihiki Islands in the older DXCC lists, where South Cook Islands were referred to just as Cook Islands.

In addition to ZK1CG on the bands, you might come across Malcolm Ellis, ZK1BD, who has been found operating CW on 14.022 MHz from 0600 UTC.

Whichever station you may work, don't use surface mail to the Cook Islands as it takes four to five months to get there.

Kingman Reef (KH5K)

Around mid-April there is to be a DXpedition to Kingman Reef. The group will consist of George Carleton, AD0S, Bill Zachman, W6TPH, and a third member. The group is set to leave from Hilo on or about 31 March on the 38-foot sea-going ketch *Banyandah* with Jack Binder, KB7NW, as skipper. Jack has provided the transportation for past DXpeditions that icluded Mellish Reef and Spratley Island.

An all-band operation is planned with most of the activity on 10, 15 and 20 meters. Prior to their Kingman Reef stop, they will be on Palmyra Island for about six days from approximately 8 April.

From Kingman Reef the group will sail on to Western Samoa, where the crew will return to United States about 1 May. The *Banyandah* will refit and be joined by D.H. Mead, VK2BJL; S.R. Chambers VK2BKD;and R.W. Wright, ZL1AMO, for a short trip to Tokelau.

Bhutan (A51)

Pradhan, A51PN, has been found on the DK9NE Net that operates on 21.155 MHz from 1100 UTC, and the W7PHO Family Hour on 28.575 MHz at 0130 UTC. Claude Sirat, F6CKH, also maintains a schedule with A51PN on 28.577 MHz at 1000 UTC.

If you work Pradhan, when sending him your QSL card it is most advisable to send it via registered mail: H.N. Pradhan, P.O. Box 166, Thimphu, Bhutan, via India.

South Sandwich Islands (LU)

LU3ZY should be active until this November and is operated by Carlos, who is an officer in the Argentine Navy. He tries to be on 20 meters daily near 14.210 MHz at 0100 UTC. Try looking for him Mondays and Thursdays.

LU3ZY has also been found on frequency as early as 2200 UTC and has been known to be elsewhere on the band. Your QSL requests may be sent via LU2CN.

South Shetlands (CE9)

The South Shetlands have seen much action lately, with the efforts of VP8AEO/CE9. He has been found near 14.220 MHz from 0200 UTC and puts a good signal into Northern California. The operator is Neil, who was formerly CE9AF.

You probably already recognize this fellow. Noted for his excellent signal out of Finland, he can be found on the bands operating from some rare locations such as ST2FF/ST0 in the Autonomous Southern Region of the Sudan. And, if not on the bands, Martti Lane, OH2BH, can often be found for an "eye-ball QSO" at a DX convention. Also shown here is the antenna system at OH2BH. *(Photos courtesy of OH2BH).*

Two operators — Juan Giaquinta, LU1AF, and Alberto Silva, LU1DZ — were to have also been operating from the South Shetland Islands as LU1AF/Z, most likely on CW.

Bahrain (A9X)

There are a few stations from Bahrain that will hand out contacts to the deserving. Paul, A9XDA is active near 14.217 MHz from 0400 UTC. Also, look for A9XDD, who is a check-in to the DK2OC Net on 28.750 MHz at 1200 UTC. If you don't like nets you can find A9XDD on at other times and has been found on 28.601 MHz at 1015 UTC. 80-meter buffs might find A9XCE on 3.505 MHz around 0200 UTC. As this fellow likes CW, try also 14.021 MHz at 0300 UTC, or 28.020 MHz at 1400 UTC.

A9XCW has been reported on 28.746 MHz at 1330 UTC. One should be able to land one from this country with all this activity, but it will take some listening. I still need this one, although I did work Bahrain several years ago when they were using the MP4B prefix. The station just would not send me a QSL card.

Central African Republic (TL8)

Bill Harrison, TL8WH, advises that the following calls are valid from Central African Republic: Tony Nement, TL8CN; Gigi, TL8CR; John Montague, TL8JM; TL8RP; and TL8WH. Both TL8JM and TL8CR are inactive.

Bill can be found on Saturdays at 2300 UTC on CW around 3.511 MHz. Another station in the above list — Tony, TL8CN — has been active on 10 meters. Look for him around 1100 UTC near 28.540 MHz. He has also been found on CW on 14.010 MHz at 2130 UTC. Tony roams to other bands too, and is bound to be found at no specific hour.

TL8RP has been reported active and has been found on 28.565 MHz from 1200 UTC. Delta DX Association, W5RU, is QSL manager for TL8CN, TL8JM and TL8WH, while TL8RP uses the services of Andre Boersma, F3EA.

Liechtenstein

The Wiesbaden Amateur Radio Club is off again this spring for their 6th annual DXpedition to Liechtenstein. The DXpedition will be conducted from 23 May through 31 May and will use the call sign DA1WA/HB0.

This year the operating modes will include CW, SSB and RTTY on all bands; CW and SSB on 160 meters; OSCAR Mode A; and 6-meter to 10-meter cross band operations. American Novice contacts will be attempted on 3.725 and 21.120 MHz between 0000 (2400) and 0200 UTC.

The QSL manager for this DXpedition is Dr. H. Jakobljevich, DJ0LC. Stateside QSL cards may be sent via: **Mr. Stephen Hutchins, P.O. Box 4573, APO New York, NY 09109.**

Rare counties

Chris Hursta, KA9FCZ, is active from Richland County, Illinois. He probably is the most active amateur in the county on CW. Chris will be willing to schedule anyone needing his county in the Novice bands. Write to Chris at 729 North Walnut, Olney, IL 62450

The West Georgia Radio Society is planning to activate Heard County, a rare county in Georgia. The dates set for this are 21 and 22 March, but unfortunately, I received this information too late to get this out on time. If you receive Worldradio early this month (the April issue), check 28.525, 21.325 and 14.225 MHz for N4WQ. There will be a special QSL for all contacts made. Send your QSL to **Aaron Walker, N4WQ, 3734 Paul Street, Douglasville, GA 30135.**

Now, what is all this county stuff? That's not DX! Perhaps, but we do have readers that are DX to us and probably could use the information. That is why we need sufficient lead time for all information sent to us.

Novice band DX

Glenn Trout, KA4NTP, takes exception to my recent comment that most of the DX activity is absent from the Novice frequencies. Glenn reports that he has worked at least 54 countries on the Novice bands. These include the Republic of Guinea, Luxembourg, Balearic Islands, Corsica, and the Isle of Man, to name a few.

Evidently, my point was missed. These stations found in the Novice bands were there to work the Novices. I doubt very much if the DXpedition stations would be found there. What I was trying to get across is that if you truly desire to be a DX'er, it is time to upgrade; you will then be able to work anything you can hear without restrictions.

OM KA4NTP did not say how long it

took him to work the 54 countries. But, I bet if he were not restricted to the Novice band, he would have had DXCC by now.

Down under DXer

In the last issue, recognition was given to Steve Behman, KR6O, for working and confirming 200 countries in 200 days. Well, here is another accomplishment for you.

The *DX News Sheet* reports that John Woodings, VK6AJW, licensed since 12 May 1980, has worked 261 countries with 199 confirmed. He also worked DXCC in 29 days, with his award dated 8 August 1980. This report was as of mid-February. Now, that is quite an accomplishment for a beginner — in fact quite an accomplishment for many seasoned DX'ers.

Clubs

New officers of the Southern California DX Club include Tom Hoyne, N6NI, as president; Steve Orland, AA6AA as vice-president; Perry Esten, W6PN, as secretary; and Irvin Emig, W6GC as treasurer. The directors include Jim Stevenson, KM6B; Dave Gardner, K6LPL; and John Browning, W6SP.

160 meters

Bill Hatcher, KP4KK/DU2, says he has worked 14 countries from the Philippines on 160 meters — mostly those of Europe. Bill is on daily near 1822 kHz from 2200. Other stations on that band from his area include N4ADJ/KH2, VS5RP and VS6DO.

Mick Bazley, VK6HD, is on daily from Western Australia between 2130 and 2150 UTC on 1802 kHz on even dates and 1807 kHz on odd dates. Mick listens at 1825 kHz. Unfortunately, those times are of no use to stateside 160-meter fans.

Here is a listing of other DX stations that have been reported in various newsletters. All times are UTC and frequencies are, of course, in kiloHertz:

UT5AB	2254	1860
UF6VAZ	0100	1852
UO5AP	2330	1854
CM1RH	0500	1810
HH2VP	0500	1802
YV1NX	0400	1828

DX report

Another DX newsletter, which should be of interest to our Canadian readers is published by Alan Leith, VE3FRA. *DX Report* is published bi-weekly with subscription rates $16 per year (26 issues). Outside Canada and the United States the rate is $24 per year.

Details may be obtained from Alan at 10 Fairington Crescent, St. Catharines, Ontario, L2N 5W3, Canada. Alan's DX editor experience includes five years as editor of CANAD-X *Long Skip*.

Ray Hoare, VK9RH

Ray Hoare, VK9RH, of Norfolk Island, is a Silent Key. Jim Smith, VK9NS, formerly of P29JS fame, has Ray's logs and cards and would like to clear up any requests for VK9RH QSL cards. Please send your cards for VK9RH to Jim Smith, VK9NS, P.O. Box 103, Norfolk Island, Australia 2899.

Antique QSL Department

The VK2ME is not an amateur QSL card, but rather the Australian equivalent of the BBC. This card was submitted some time back by Al Miller, VE7KC. Old-time amateurs will remember VK2ME, VK3ME, G5SW and others, all short-wave broadcast stations.

Back on 17 July 1936, Mal Geddes, G2SO, worked HAF6J in Budapest, Hungary. Mal received a report of RST 559 on 20-meter CW. Mal now signs ZE3JO. Wonder whatever happened to HAF6J?

You may have worked a TU2 in the Ivory Coast, but have you worked a ZD4 in the Gold Coast? Jack Harkins, W5CPI, grabbed ZD4AB back in 1947 on 14 MHz CW. Gold Coast is now on the deleted country list and has been there for over 24 years. As the land itself did not disappear from the map, you will find it has been replaced by Ghana.

QSL Routes

A9XCW	—DL2CB	EC6DP	—LA5NM
A35JL	—K9AUB	ED2PIN	—EA2ADU
C5ACO	—W2TK	EL8BH	—SM3BU
DA2AL/LX	—KA3B	FG0AYO/FS	—W2KN
EA8ZI	—SM5IWC	FG0FOO/FS	—N6RA
EA9GT	—WA2JOC	FM7AV	—F6BFH

FO8GW	—K6FM	VP8AOE/CE9	—G4DSE
FP0GG	—F6DPP	VQ9NN	—AA6AC
FW0VU	—DL2RM	W2BBK/PJ7	—W2BBK
GB2RN	—K2FJ	W2WYP/DU2	—WB0MSZ
HC7MD	—K8LJC	W5JMM/SU	—KA5AZT
HM0I	—JL1UDC	W5JW/KX6	—W5JW
HM0U	—JA6HNK	W8DNC/6Y5	—W8TPS
HP2XSG	—WB2DCP	WA2LUC/OX	—KA2AEC
HZ8ZZ	—DK2OC	WB9TIY/VP2A	—WB9TIY
J6LRC	—N2ATX	WD5FTP/5N4	—WB5ZAM
K4BF/CN8	—K4CIA	WP2ABZ	—NP2AF
K4II/PJ7	—K4II	YZ9CRM	—YU2HDE
K8MFO/6Y5	—W8TPS	YZ9LM	—YU2LM
K8ZH/6Y5	—W8TPS	ZF2AD	—K3MBF
K9MK/VP2A	—K9MK	ZD8RCA	—W8BLY
KC6DX	—W5UR	ZK2JL	—K9AUB
KC6MW	—JR1AIB	3B9ZV	—5T5NC
LA1RR/5T0	—LA1RR	4N7NS	—YU7BPQ
N4TO/KP4	—WB4OSN	4S7MX	—SM3CXS
OA8CP	—N4CQ	5H3FW	—DF4TA
OE2VEL/KH8	—OE2DYL	5N6ATT	—K4PVZ
T3AT	—G3XZF	5N6ENU	—WA1ZFS
T30AC	—WB6FBN	5N0WRA	—DF3FN
T30AT	—G3XZF	5W1DC	—DL2RM
TG9EW	—I0WDX	6U0KK	—K2FV
TG9XGV	—K4CLA	8P6CQ	—W2LZX
TI0HE	—TI2FAG	8P6KY	—WB4RRK
TL8CN	—W5RU	8P6NX	—W0SA
VK7AE	—W5ACE	8Q7AQ	—DL7AM
VK7EA	—WD4NBX	9J2WS	—W4LF
VK9NYG	—VK6NE	9M8PW	—G4DXC
VP1CBT	—J11CVC	9Q5AH	—DL5EW
VP2VEJ	—WB3KGY	9X5AB	—ON8RA
VP2VGF	—NP2AF		
VP5GCM	—NP2AF		

CN8EM	P.O. Box 482, Casablanca, Morocco
EC9AR	P.O. Box 100, Melilla, Spain
KX6SS	Keith R. Merrick, P.O. Box 654, Majuro, Marshall Islands 96990
S83TAR	P.O. Box 750, Umtata, Transkei, South Africa
SV0BP	Mark Carlson, P.O. Box 314, APO New York, NY 09291
TJ1AY	P.O. Box 1228, Yaiunde, Cameroun
W5VTH/KH8	P.O. Box 8, Pago Pago, American Samoa 96799
YC2BSF	P.O. Box 088, Semarang, Indonesia
5B4JA	P.O. Box 1723, Limassol, Cyprus
5H3PA	J. Zelst, P.O. Box 20104, Dar-es-Salaam, Tanzania
5N9GM	P.O. Box 1488, Kaduna, Nigeria
6U25YP	P.O. Box 1533, Khartoum, Sudan

This month's column has been brought to you through the support of K2TV, KA4NTP, N4WQ, WB4ZNH, W5CPI, K6HDD, KB7HB, W7KVV, KA9FCZ, DA2AL, OH2BH, VE3FRA, VE7KC, ZE3JO, *The Long Island DX Bulletin, DX Report, The DXers Newsletter, The DX News Sheet,* and *The DX Bulletin.* Mni tnx es gl DX. de John N6JM. □

DXpedition to a disappearing island

The Bowie (Maryland) Amateur Radio Club plans a mini-DXpedition to Tangier. No, not Tangier, Morocco, but Tangier Island, Virginia - a small piece of land in Chesapeake Bay.

Each year the club operates from a remote island from which no amateur activity has taken place. This year's site has been featured in national magazines, and it has been predicted that eventually the island will disappear due to erosion.

Operation will get underway at 0000Z on 23 May (22 May local time) and continue through 1500Z 25 May.

Frequencies will be: 40 kHz up from the bottom on CW, 80 through 10 meters; 7125, 3725, 21125 and 28125 in the Novice bands; and 3895, 7245, 14305, 21380 and 28590 SSB.

As usual, the club will issue an island certificate to commemorate the event. Amateurs working the station, N3GR/4, should send a large SASE and a QSL card to John Rouse, KA3DBN, P.O. Drawer M, Bowie, MD 20715.

Anyone who worked last year's expedition, K3PI/3 on Garrett Island, can still obtain a certificate by sending a large SASE and QSL to KA3DBN. □

Book Review

Radio Amateurs Conversation Guide

The authors of this useful book are Jukka, OH1BR, and Miika, OH2BAD, Heikinheimo. The book is 90 pages of useful QSO phrases in English, German, French, Italian, Spanish, Portugese, Russian (phonetic) and Japanese (also phonetic). Chapters are each specific parts of a QSO: 1. Starting a QSO; 2. Tnx for the call; 3. Report; 4. Name, QTH; 5. Equipment; etc, etc. Also included are foreign phonetics and numbers (Nightmare Alex's call in Russian is KANSTANTIN SIEM ZINAIDA RAMAN!) which can make you sound VERY sophisticated on the low end of 20 meters!

Those who would dazzle their DX friends with linguistic loquaciousness can buy the book (published by Transelectro Oy, Helsinki, 1980) from Transelectro-America, 2301 Canehill Ave., Long Beach, CA 90815, for 10 green stamps.

— *The Totem Tabloid, Washington* □

Don't forget the Soviet Union

Bob McGarvey, WB2EVF

If you are working for your DXCC, don't overlook the Soviet Union. I know how things are when conditions are right and you hear a lot of them coming in. You figure you've worked a number of them and who needs more from one country, even if it is a cross-section of a major part of the world.

Dick Nescot, WA2WDJ, of Clark, New Jersey, editor of the *Tri-County Radio Association News,* has reworked an article that appeared in the September 1980 issue of the late **Ham Radio Horizons.** The result is a chart by means of which you can quickly determine by its call just where a Soviet station is located and whether or not it counts as a country.

In all, there are 18 countable countries in the European and Asiatic Soviet autonomous republics.

They are: European Russia, Franz Josef Land, Kaliningradsk, Asiatic Russia, Ukraine, White Russia, Azerbaijan, Georgia, Armenia, Turkoman, Uzbek, Tadzhik, Kazakh, Kirghiz, Modavia, Lithuania, Latvia and Estonia.

— *The Home News* □

Have you signed the crying towel?

Jane Johnson, K3RIH

Carol Baxter, K3RSL, was only 15 when she got her General Class ticket. During her teens, she enjoyed the many friendships that developed through Amateur Radio. During those years, 10 meters was a favorite band.

Carol used to tease the radio amateurs when they groaned about their continuing antenna problems, and would say she would lend them her "crying towel". Finally the joke became a reality. She bought 12 yards of continuous linen toweling and hemmed each end.

The crying towel was taken to meetings, hamfests and amateurs' homes; each time, she issued the invitation to sign the "crying towel". When she returned home she would trace the names and calls in colorful liquid embroidery. Soon one-upmanship began and various amateurs began to draw pictures and cartoons on the towel along with their signatures.

Carol is married now, and has a couple of kids. The crying towel is now a historic story of hundreds of amateurs. Still active as an amateur, Carol will turn up with the towel now and then, and it always draws a crowd. Those who have signed it patiently look through the hundreds of signatures and proudly point theirs out to friends. She always has a pencil handy because there is inevitably one more amateur wanting to sign in.

There are some Silent Keys on the towel now. At a recent meeting of the Delaware County Amateur Radio Association, a new member decided to sign the towel. As he carefully finished the last letter of his call sign he glanced at the name and call next to his own. It was that of a now deceased friend who had given him his start in the hobby many years before.

Carol Baxter, K3RSL, watches as Nick Leipold, K3NL, signs her crying towel. (*Photo by Jane Johnson, K3RIH*)

"Funny that I decided to sign right here, isn't it?" he murmured as he traced his friend's call with his fingers.

Another time, Carol came in clutching her colorful armful, only to be greeted by a hooting ham, "Oh, not the crying towel again!" But just as quickly, he pulled it from her arms and demanded, "Where's my name? Where's my name?"

The crying towel has become a chronicle of Amateur Radio history and has taken on a life of its own. Strangers have rung Carol's bell and explained they are amateurs who have heard of the crying towel, and wanted to sign it.

Fathers and sons have signed it. Husbands and wives have signed it. Three-member amateur families have signed it.

One thing is certain. When Carol shows up with the crying towel, amateurs gather round, pens in hand. □

AMSAT OSCAR K6PGX

Dr. Norman L. Chalfin

W6VIO space commemorative

Voyager II, the interplanetary spacecraft now approaching Saturn, will make its closest approach to the planet on 25 August 1981. In celebration of the event, the JPL Amateur Radio Club will again have a commemorative operation during which SSTV photos will again be transmitted on one or more of the following frequencies: HF bands — 14,235, 21,340, and 28,680 kHz. There will be CW transmissions on 30 kHz above the bottom edge of the bands 80 through 10 meters. SSB will be used on 14,285, 21,360 and 28,680 kHz. Listen on these frequencies for announcements of other frequencies to be used. OSCAR, 2-meter FM and SSB, and 220 MHz transmissions are planned, and ATV may again be used.

Color SSTV is being discussed at this time and may be used. We will so advise in this column if the project materializes.

So, get your gear in order for the JPL Amateur Radio Club station, W6VIO's Voyager II Flyby commemorative. The station will be on the air for contacts during the commemorative period beginning Saturday, 15 August, through Sunday, 30 August.

After its encounter with Saturn, the Voyager II spacecraft will follow a trajectory towards Uranus with an expected arrival in January 1986. Then it will continue on to Neptune, arriving in September 1989.

SYNCART

The acronym SYNCART identifies a Synchronous Amateur Radio Transponder — a low-power linear multiple access communications repeater currently under development for operation in the amateur satellite service. The repeater package and its accompanying antenna are designed to be integrated onto a "host" synchronous communications satellite with a minimum of interface problems. At this writing, no host has been identified but a number of possibilities exist.

The SYNCART, when in operation, will provide a communications transponder which can be used by Amateur Radio operators for educational training in schools, communications over paths that would otherwise be unusable, emergency communicaitons, and other public service functions. The system will be usable for a variety of single and multiple access experiments using small Amateur Radio stations as Earth terminals. One experiment will provide a tone access system which will advise amateurs that a message has been left in the codestore for the individual calling.

As an educational tool, the SYNCART will provide a ready demonstrator for satellite access and pointing of antennas for access. The instructor will have a resource for astronomy, communications, physics, electronics, mathematics and meteorology studies. The SYNCART will be an active space communications system.

In times of emergency, the small ground station will have access to a communications medium which would not be affected by power outage, and which can be accessed by portable battery-powered, solar-powered or wind-powered radios. The location of the synchronous package would be such that access would be possible from anywhere in North or South America. No mountains would obstruct the communications path. Thus, public service organizations would have an open communications path when all other channels are out of service. Several bands have been under discussion.

When the SYNCART proposal was first put forward in 1973, the 2M-70 cm repeater frequencies were proposed. Some recent experiments in Northern California in the 2-meter and 23 cm regions have resulted in considering the use of the latter range in a synchronous amateur communications package. Suitcase ground stations could easily be devised to take advantage of such systems.

OSCAR 7 will be operated in Mode C (the low power version of Mode B) in the event of some difficulties and in the hope of reducing the drain on its batteries.

OSCAR 8's schedule will vary; experiment days will be on Wednesdays, and alternate Mode A and Mode J operation will begin on UTC Tuesdays.

The meeting of the AMSAT Board of Directors is being held in the AMSAT lab at Goddard the weekend of 17 April. If you plan to attend, contact Martha Saragowitz at AMSAT headquarters — (301) 589-6062 — for full details.

SETI

These letters are the acronym for the Search for Extraterrestrial Intelligence. Besides the signals which are produced by Earth radio stations and satellites launched from Earth, the sky is filled with radio noise. The sun, Jupiter and other celestial bodies generate strong radio emissions. Quasars, pulsars and radio galaxies are among the identified sources of radio noise. Even what may appear to be empty space is characterized by a constant detectable radio noise spectrum. The program SETI will be looking for signals that are noticeably different from known natural sources of radio signals. It is a joint Ames/JPL project to search for radio sources which appear to have some observable pattern that might suggest an intelligent origin.

The project will involve very large radio telescope arrays which will scan the skies day and night over long periods to detect signals that may have originated as far as 1,000 light years away.

There are a number of scenarios that describe the possibilities of detecting targets by an all-sky search strategy combined with looks at nearby stars.

In the absence of any knowledge at present of any intelligence but our own, scientists are loathe to speculate on what they may find. Therefore, there are few assumptions being made. The search would be made in the "microwave window" between 1 and 100 GHz, if searches are made in space. The Earth's atmosphere narrows the window to about one-tenth that size.

OSCAR orbit predicts

The latest orbital prediction charts are available from Project OSCAR, P.O. Box 1136, Los Altos, CA 94022. They cover OSCARs 7 and 8 for the three-month period of April through June.

AMSAT satellite report (ASR)

An SASE will bring you a copy of AMSAT's newest publication, the *AMSAT*

Satellite Report. The SASE should be sent to Satellite Report, 221 Long Swamp Road, Woolcott, CT 06716.

Because AMSAT is evolving in new and fascinating ways, there exists a need to both foster growth and nourish the roots. And the satellite user community in which our organization is rooted has itself grown in numbers and interests. In fact, it has grown to the point that there is now clearly a recognizable need for a high-quality newsletter to focus on current news in your special area of interest.

This is your newsletter. You'll find the content light but informative. Our editorials will (we hope) be incisive, yet not especially profound. And our "snapshots" of you, the members, will be cordial and frequent. Above all, *ASR* is designed as a mirror of the user community. *ASR* is thus positioned to reflect your views and interests as never before. *ASR* will read like a small-town newspaper for we, the amateur satellite users, are in fact a community.

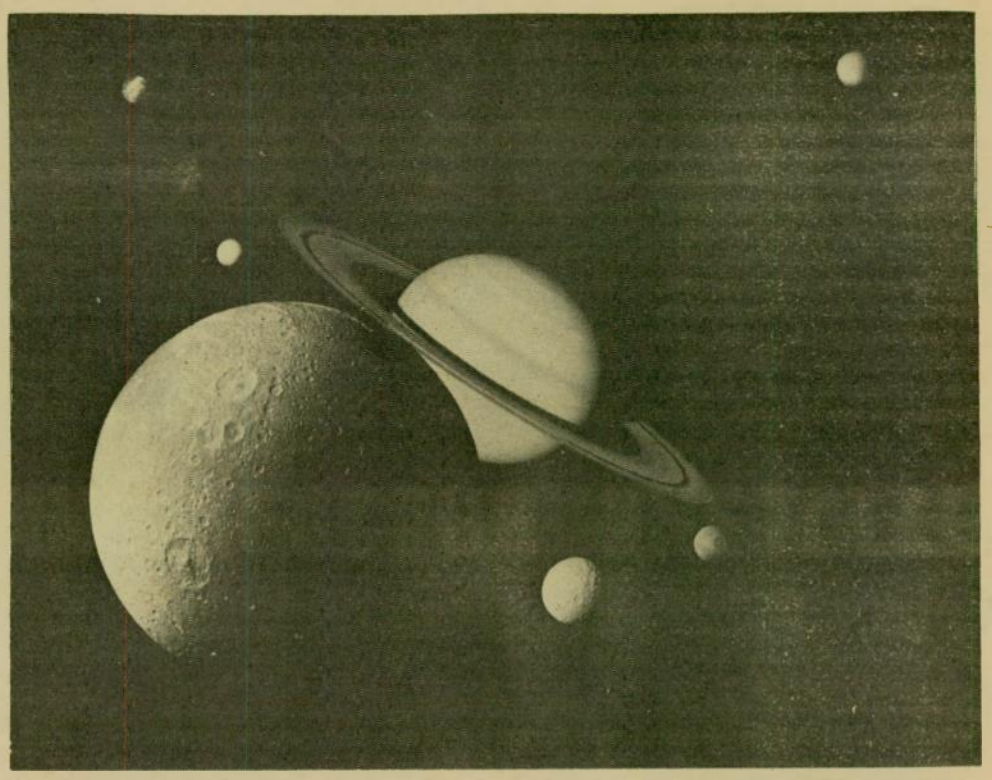
So sit back and read of your friends and colleagues and get to know them and AMSAT a great deal better!

AMSAT may be viewed in many ways. It is often convenient to describe the organization as functioning in three interwoven realms: technical, operational and organizational. By one estimate, 95% of members' activities are within the latter two realms. This is the emphasis of *ASR* because of the recognized need to provide timely information to those whose main enterprise in amateur satellites is operating and supporting the organization. To this 95%, then, *ASR* represents a unique conduit to the types of information most valued: current operational and organizational information.

But how does *ASR* relate to *ORBIT*, AMSAT's flagship publication? The *ORBIT* flagship does very well in its treatment of complex or lengthy matters in a concise, paced manner. But since *ORBIT* is a bi-monthly it cannot hope to remain up-to-date on certain issues. To many interested in staying on top of events (especially those rare DX stations that too often are missed), *ORBIT* is not the solution.

Don't the HF nets carry all the current news? The nets can carry only the most superficial elements of current news. And too often the rigors of propagation and interpretation take a toll in reduced accuracy. So *ASR* clearly supplements the nets with more details and the assured accuracy inherent in a record (written) communication.

Thus *ASR* is precisely positioned to serve *you*, the active or would-be satellite user. □



This montage of images of the Saturnian system was prepared from an assemblage of images taken by the Voyager I spacecraft during its Saturn encounter in November 1980. This artist's view shows Dione in the forefront, Saturn rising behind, Tethys and Mimas fading in the distance to the right, Enceladus and Rhea off Saturn's rings to the left, and Titan in its distant orbit at the top. The Voyager Project is managed for NASA by the Jet Propulsion Laboratory, Pasadena, California.

Share your knowledge with your fellow amateur and Worldradio reader . . .

The Midwest RTTY Net

Well, it has been awhile now, and we still need liaison stations for the Midwest RTTY Traffic Net. The QTC (number of messages) is building up to where we need a station to come up from the NTS to pick up the traffic. I would like to see liaison stations from the area nets come up and get the traffic, as we are in session when the PAN is still in session. We do have one station from the Northwest RTTY Net coming up; the skip has not been to our favor yet. We may have to go to setting up sked for the area, but we need the station in order to get it done.

The Midwest RTTY Net January report was QNI 185 and QTC of 65, and that included a lot of first-timers to the net. We hope we get the same ones back for February. I have been informed that the station in the EAN area is planning on testing the net for very large volumes of traffic to see if a RTTY net can handle it. We can, but we will need the station on frequency to be able to do the job, so let's be getting ready now for the challenge of RTTY nets to handle large numbers of messages.

A bit of a test came on 14 February when a station reported QNI with 25 for 2RM, six for 7 RN, five for 6 RN. We had the test and came out good on it; so the traffic is there from time to time, and as the net gets to be known in the NTS circles, we hope to be of more service to the NTS system.

Hope to see you on the Midwest RTTY Net. 73's Bill Wright, K4YZU. (NOTE: The net meets on 3630 kHz at 0330 UTC daily.) □

CLUBS

Hamming in Brazil

Tania Miller, WB9TKC

The Marissa Amateur Radio Club has a new member from Brazil: Gerardo A. Vale, PT7WVF. He is an exchange student at the Coulterville, Illinois High School and speaks Portuguese and Spanish as well as English. His father is president director of an industrial company that makes 200 different products in South America.

Gerardo's first interest is in being a doctor or surgeon; second interest is in Business Administration and he also enjoys the field of electrical engineering. When he returns to Brazil in March he will take entrance exams for one state and one federal university.

In Brazil there are class "A", "B" and "C" licenses. You can begin in class "C" from 14 to 18 years of age and operate CW on 40, 20, 80 and 160 meters. In class "B" you can operate 2, 40, 80 and 160 meters in the phone portion. Class "A" can operate in all bands, 2, 10, 15, 20, 40, 80 and 160 in CW and phone. You can obtain the class "A" license only after one year in class "B".

Their 2-meter repeaters have 600kc splits with PLL for those with autopatch. A group of 10 or 20 amateurs buy the repeater and these are the only users. Radio clubs also have 2-meter repeaters but without autopatch, because then, anyone can dial it up.

Gerardo talks across his entire state via his handi-talkie. They use only FM on 2 meters, no sideband.

In Fortaleza (city) there are two clubs: Labre, PT7AAC, with a membership of 2,000 and Casa do Radio Amador do Ceara, PT7CRC, membership of 1,500 (Amateur Radio Club of Ceara). Ceara is the state. You can have an associate membership in both clubs or just one, but you need to be a full member of one club.

Brazil has CW and phone contests. During the Pope's visit in Fortaleza, Gerardo and his dad PT7GAV, helped the police on HF and VHF with security for the Pope via radio for three days. Then they had a contest during his visit to Brazil.

Every Saturday they have a meeting on the beach in a restaurant, eating and talking about radios, new contacts, etc. Once a month, the clubs have a dinner and meeting.

Amateurs there help friends, too. When new amateurs do not yet have radios or antennas, equipment is loaned to them until they get situated. Clubs have their own radio stations and box numbers for amateurs to write to the clubs.

Brazil's department for Amateur Radio licenses is DENTEL, the Departmento of Telecommunications.)

Gerardo, his family and clubs welcome Amateur Radio operators who want to talk to them from the United States. Any radio amateur going to Brazil is welcome to call Gerardo and to visit his city and state. Year-round weather there is 83-86°, making it easy to enjoy the many beaches and interesting sights. □

Kerchunk

The KERCHUNKERS (Des Moines chapter) meet each day when the repeater is not in use. To qualify as a kerchunker one must show his skill by pressing the microphone button long enough to activate the repeater but not long enough to I.D. or be identified. To be a certified kerchunker, one must follow this procedure successively until the mike finger fatigues or someone wants to use the repeater.

Be careful to kerchunk when you know no one is listening, so that legitimate repeater users will not be irritated and put an anti-kerchunk device on the repeater.

By being a Certified Kerchunker, one can do the following:

1) See if your transmitter can access the repeater.
2) See if the repeater can hear your transmitter.
3) Enjoy the excitement of hearing the squelch tail.
4) See if the repeater is "up."
5) Use the repeater without having to talk to anyone.

It is a real thrill to put your license, your rig, and the repeater to use by kerchunking and be sure to complain when the repeater is "down."

The KERCHUNKERS are not taking any new applications for membership; we have too many members now.

(By I. AM. Dumb, Chief Kerchunker)

— Static Sheet, Des Moines ARC □

Contests . . . why?

Ron Koczor, K9TUS

For every avid contester, there is probably an avid contest hater. For the majority of amateurs, however, contesting may simply be a somewhat puzzling and incompletely perceived activity which is to be tolerated while it clutters up the bands periodically. Many amateurs — including a lot of beginners — cannot fathom why someone would sit at his radio for 36 hours (with minimum breaks) working a contest. Sounds too much like work!

Well, it is . . . if you are serious about it. Like any other aspect of this hobby (or any hobby), to be good at something takes a personal commitment. On the other hand, you can participate in this activity without being serious.

Serious or not, there are two basic reasons why contest operation can be good for you and our hobby. First, contest operation allows you to improve your operating efficiency. Working on the air in a leisurely ragchew situation is certainly fun. But it doesn't help you become efficient. Efficiency in a radio operator implies speed and accuracy. If you are ever called upon to operate under emergency conditions, you will need both speed and accuracy . . . someone's life may depend on you! In some situations, you may get only one chance to copy a piece of information which is vital. You have to be able to be fast and accurate. Contesting allows you to determine just how good of an operator you are. Can you make 60 QSOs per hour? Even if all you exchange is call sign, state and signal report, 60 contacts per hour is beyond most radio amateurs.

Yet 60 per hour is only marginally acceptable for contesting. 100 to 120 per hour is considered "good." To do that consistently requires good ears, excellent coordination and attention. (Hearing the station is one thing; you also have to record the information.) You have to think quick!

Very few people are born contesters and fewer still can work 120 QSOs per hour their first time. Contesting is a learned skill. By participating, you learn crisp operation — no wasted words, no wasted motion. You learn how to listen, how to

If a foreign amateur visits your area, do a picture story for WORLDRADIO.

organize your thinking and how to operate. In an emergency, listening, organized thinking and crisp action are the keys to success.

Even if you increase your operating efficiency from 10 contacts per hour to 40, you've helped yourself, haven't you?

The second reason contesting will benefit you is that you will learn the capabilities of your station. Most of us never use our equipment to its full capacity. Operating a contest will point out to you the weak links in your gear. Equipment layout can make a tremendous difference in the effectiveness of your communication system. Do you want to learn how effective your antenna system is? One weekend of contesting will give you more than a log full of signal reports and personal observations and comparisons. You'll learn which areas of the country and the world you can work into and which you can't. You'll learn about propagation in a way no book can teach you.

If you really get into contesting, you'll begin experimenting with ways to make your station more effective . . . and you'll learn something technical in the process!

In short, contest operation allows you to evaluate and improve both your personal operating and your station's effectiveness. A secondary benefit is that, in just a few contests, you'll earn your WAS, WAZ, or DXCC awards.

That's the why of contesting. The fun of being "Number 1" is a factor . . . as is the keen edge and excitement of competition. The main benefit, however, is the overall improvement in the skill level of the radio amateur population.

In an emergency, that is of overwhelming importance!

— *Hamsplatter, Fort Wayne RC, IN* □

Letters to newsletter editor

Tania Miller, WB9TKC

Our club grew to the point where 250 newsletters were not quite enough for all our members and our "guests," too. To alleviate the problem, we sent out postcards asking that those who had been getting the newsletter for some time, subscribe to it for $5 a year or perhaps take an Associate Membership in the club for $10 per year (one-time initiation fee of $5). The response helped our situation with both subscribers and new members, but we found this gem among our audience:

"Dear Editors:

I just received pages 1 and 2 of the October/November *MARC Harmonics* and want to tell you how very much I enjoyed reading them. I can only imagine how interesting the other pages must be.

Also, I should acknowledge the dun from WB9TKC. If only I were in more comfortable financial straits, I would be delighted to generously support *Harmonics* and the Marissa Amateur Radio Club, its membership (collectively) and any of its enterprises.

But unless you are able to take U.S. food stamps, it will be impossible for me to make any other type of financial gifts. It appears that if I can do without breakfasts and lunches for three out of four weeks, I would be able to satisfy TKC's dun.

Please let me know if food stamps will be OK, as I've already managed to go without eating anything at all for the last seven days and it's not bad — only at night whilst I'm trying to go to sleep, I'm especially aware of the hunger pangs. Also, the grumbling from my stomache* tends to keep me awake.

I'm experimenting with making a suitable meal by soaking the one sheet of *MARC Harmonics* in a mixture of tomato catsup and water, letting it dry in the sun and eating it like a cracker of sorts.

I'll let you know the results if I'm strong enough to write again. If you don't hear from me, you'll know the experiment failed. Check "Silent Keys" in **QST**.

73,
Buddy Massa, W5VSR
New Orleans, Louisiana

*Spelling correct: it's a new word that implies an ache in the stomach."

For information on how to get your club listed in this column, plus receive many other benefits, write to Dave Tykol, WA6RVZ, Club Liaison, Worldradio, 2120-28th Street, Sacramento, CA 95818.

VISIT YOUR LOCAL RADIO CLUB

ARIZONA

Metropolitan Amateur Radio Club
J.C. Penny Restaurant, El Con
Tucson, AZ
Call in on 34/94 K7CC/R
Every Saturday morning - 8:00 a.m.

CALIFORNIA

Contra Costa Communications Club, Inc.
PO Box 661, San Pablo, CA 94806
Amateur VHF/UHF club and repeater
For info. call WA6KQB (415) 222-1523
Meets 2nd Sun. 9:00 a.m. Hickory Post

East Bay Amateur Radio Club
P.O. Box 6014, Albany CA 94706
Salvation Army Bldg., 36th & Rheem,
Richmond (415) 525-6200
2nd Friday/monthly — 7:30 p.m.

Fresno Amateur Radio Club, Inc.
P.O. Box 783, Fresno, CA 93712
Meets; 2nd Friday/monthly — 8:00 p.m.
Wawoha Middle School; 4524 N.
Thorne; Fresno. W6TO/R 146.34/94

Lake Elsinore Valley Radio Club
Wildomar Elem. Sch. (corner Palomar Rd. & Central)
Take Baxter Rd. turn off 71 Freeway
Monitor 146.55 simplex
3rd Thursday/monthly — 7:30 p.m.

Marin Amateur Radio Club (Founded 1933)
Coop Meeting Room
71 Tamal Vista Blvd.
Corte Madera, CA 94925
1st Friday/monthly — 8:00 p.m.

Mt. Diablo Amateur Radio Club, Inc.
PO Box 23222, Pleasant Hill, CA 94523
Meets: Grace Presb. Church, 2100 Tice
Valley Blvd., Walnut Creek, CA 94595
3rd Friday/monthly — 8:00 p.m.

Nevada County Amateur Radio Club
Financial Savings & Loan Community Room
205 S Church Street — Grass Valley
2nd Monday/monthly — 7:30 p.m.
(916) 265-5958 for information

North Hills Radio Club, Inc.
St. Michael's Episcopal Church
2140 Mission Ave.
Carmichael, CA 95608
3rd Tuesday/monthly — 7:30 p.m.

San Gabriel Valley Radio Club, Inc.
Bowling Green Clubhouse
Arcadia County Park, Arcadia
1st Tuesday/monthly — 7:30 p.m.
(except June & December)

Satellite Amateur Radio Club, W6AB
PO Box 1615
Vandenberg AFB, CA 93437
1st Thursday/monthly — 8:00 p.m.
Building Z1160, Vandenberg AFB

Sonoma County Radio Amateurs, Inc.
3400 Chanate Road
Santa Rosa, CA 95406
Red Cross Building
1st Wednesday/monthly — 8:00 p.m.

Stockton Amateur Radio Club
University of the Pacific, Room 238
2nd Wednesday/monthly — 7:30 p.m.
Club repeater net roll call:
Wednesdays 8:00 p.m. — 147.165/765

CONNECTICUT

Tri-City ARC, Inc.
P.O. Box 686, Groton, CT 06340
Meets: Groten Public Library
Rt. 117, Groten, CT
2nd Tuesday/monthly — 7:30 p.m.

GEORGIA

Atlanta Radio Club
Box 77171 Atlanta, GA 30357
1st Thursday/monthly — 7:30 p.m.
Community Rm./Perimeter Mall Shopping Center
Call (404) 971-HAMS Net Sun. 9:00 p.m. 146.22/82

Columbus Amateur Radio Club (CARC)
David Nulty, N4ATI, Secretary (404) 687-3272
The Quonset Hut next to Food Stamp Center
Buena Vista Road at the "Spider Web"
2nd and 4th Thursday/monthly 7:30 p.m.

ILLINOIS

Illiana Repeater Systems, Inc. (IRS)
Palmer Amer. Nat. Bank Comm. Rm.
Danville, IL
3rd Monday/monthly — 7:00 p.m.
Call-in WB9YJF/R 146.22/82 "Super 82"

INDIANA

Allen Co. Amateur Radio Tech'l Society, Inc.
P.O. Box 10342, Ft. Wayne, IN 46851
Allen-Wells Chapter House • Amer. Red Cross
1212 E. California Rd., Ft. Wayne, IN 46825
3rd Tuesday/monthly — 7:30 p.m.

Fort Wayne Radio Club
Ron Koczor, K9TUS
2512 Glenwood Ave., Fort Wayne, IN 46805
The Salem Church
3rd Friday/monthly — 7:30 p.m.

MICHIGAN

The Eastern Mich. ARC (EMARC)
St. Clair County Comm. College
Student Center Building (Cafeteria)
Port Huron, MI (313) 364-9640
1st Tuesday/monthly — 7:30 p.m.

SE Michigan Amateur Radio Assoc. (SEMARA)
PO Box 646
St. Clair Shores, MI 48083
South Lake High School
1st Friday/monthly (excet July and Aug.)

MISSOURI

Heart of America Radio Club
3521 Broadway
Kansas City, MO
3rd Tuesday/monthly

NEW JERSEY

Delaware Valley Radio Association
Villa Victoria Academy
River Road (NJ 29) at I-95, Trenton
(609) 882-2240, call-in 07/67
2nd Wednesday/monthly — 8:00 p.m.

Glouster County ARC, W2MMD
PO Box 370, Pitman, NJ 08071
American Legion Post
Delsea Dr., Rt. 47, Clayton, NJ
1st Wednesday/monthly — 8:00 p.m.

Old Bridge Radio Assoc. (OBRA)
Cheesequake Firehouse — Route 34
Old Bridge Township, NJ
Daily 8 p.m. Net on 147.72/.12 MHz
3rd Thursday/alternate (odd) months 8 p.m.

NEW MEXICO

Eastern New Mexico ARC
First National Bank, Clovis
Box 206 • Clovis, NM 88101
(505) 763-6960/356-5993
2nd Tuesday/monthly — 7:30 p.m.

NEW YORK

Genesee Radio Amateurs, Inc. (GRAM)
PO Box 572, Batavia, NY 14020
State Civil Defense Center, Batavia
(behind NYS School for the Blind)
3rd Friday/monthly — 7:30 p.m.

Long Island Mobile ARC
H.B. Thompson Jr. High School, Syosset
Ken Denston, WB2RYC
(516) 379-6463/call-in 25/85
1st Tuesday/monthly — 8:00 p.m.

Staten Is. Amateur Radio Comm. (SIARC)
Northfield Savings Bank (side entrance)
Richmond and Castleman Avenues
Call KA2CUS (698-2006) or WA2KQN (981-0372)
3rd Thursday/monthly — 8:00 p.m.

OHIO

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

C.A.R.S. (The Clyde Amateur Radio Society)
Gary A. Kauffman, WB8MUG, Secretary
2nd Tuesday/monthly 7:30 p.m.
Community Rm., City Building, Clyde, OH
Repeater 147.075/.675 MHz

NOARS (Northern Ohio ARS, Inc.)
P.O. Box 354, Lorain, OH 44052
K8US (216) 988-2345/near OH T.P. Exit 8
3rd Monday/monthly — 7:30 p.m.
K8KRG/R 146.10/70 — 144.55/145.15 — 449.8/444.8

OREGON

Clatskanie Amateur Radio Club
Route 2, Box 553
ClatsKanie, OR 97016
ClatsKanie Grade School Library
2nd Tuesday/monthly — 7:00 p.m.

PENNSYLVANIA

Radio Assoc. of Erie, Inc.
PO Box 844
Erie, PA 16512
John Lindvay, WB3IFD

TENNESSEE

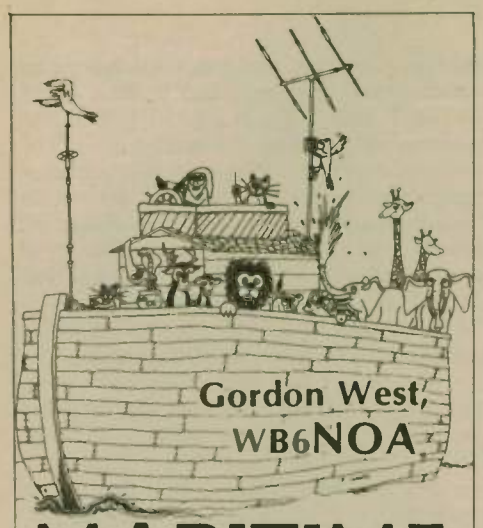
Lakewood Amateur Radio Club
Harvey Cross, W4PKM, Activities Mgr.
Rt. 8 Box 460, Morristown, TN 37814
State Area Vocational School
Last Thursday/monthly — 7:30 p.m.

VIRGINIA

Southern Peninsula Amateur Radio Klub (SPARK)
P.O. Box 9029, Hampton, VA 23670
Call Steve Silsby, WA4BRL (804) 599-6877
VEPCO Bldg. (Pembroke and G St.)
1st and 3rd Wednesday/monthly

WASHINGTON

Seattle Wash. Area Mike and Key ARC
305 S 43rd St. (across from VG Hospital)
Renton, WA 98055
The Good Neighbor Center
3rd Saturday/monthly — 10:00 a.m.



MARITIME MOBILE

High-seas high-frequency highjackings

The figures are startling. One out of three maritime mobile Amateur Radio stations uses a bootleg call sign. Well-meaning Amateur Radio operators are contributing to this illegal operation on the high seas.

"Here's all you do, George, to use this equipment. Once you are beyond the three-mile limit, just consider yourself in international waters, and anything goes. Here, look through the Callbook and come up with a call sign that's not issued, or missing. Go ahead and start using that call sign, and no one will be the wiser. Even if they do catch on, how are they going to get you?"

The word is out. They are catching on. There is a way of dealing with the bootlegger who is using Amateur Radio equipment without the proper license.

Equipment

Let's first examine this issue of mariners abusing the Amateur Radio frequencies. Why are so many mariners looking to Amateur Radio? First of all, the equipment is significantly lower priced than conventional marine single sideband equipment. Marine SSB equipment runs about $5,000 installed to cover frequencies from 2 MHz to 22 MHz. The equipment is generally crystal controlled, and the few channels offered allow the mariner ship-to-ship and ship-to-shore communications. Those ship-to-shore communications for telephone calls can get expensive, too. Most high seas phone calls will run anywhere from $5 to $10 for just a few minutes of air time.

Although the mariner may own a $200,000 yacht, the expense of a marine single sideband and the phone call charges may cause him to think twice about what type of radio he may wish to put aboard. The mariner has heard about the tremendous range of Amateur Radio, and the fact that there are maritime mobile nets that will handle his phone calls free of charge.

The mariner is also lured into bootlegging Amateur Radio call signs when he finds out about the fabulous new ICOM 720 transceiver. This is a wonderful rig for high frequency operation. It's truly designed for the mariner — full Amateur Radio band coverage on transmit and receive, and full shortwave coverage on receive for picking up Coast Guard broadcasts, maritime freuqencies, and weather FAX broadcasts.

You know what happens next. One wire gets cut, and presto, that fabulous rig now takes in on both transmit and receive any frequency from the broadcast band through 29.990 MHz. It will even run duplex to work Coast Guard frequencies, high seas marine operator frequencies, and other maritime frequencies.

Drake and Collins equipment also plays the same games with just a wire or two changed here or there. The ICOM 720 is just the latest version — not intended for this purpose, but probably the easiest to serve the purpose of illegally operating on maritime frequencies as well as Amateur Radio frequencies — transmit and receive.

FCC rules require all marine transmitters to be part 83 type accepted. Although synthesized equipment is available for maritime use on maritime frequencies, the Amateur Radio transceivers just mentioned don't carry part 83 type acceptance.

Call sign bingo

How are mariners bootlegging call signs? In a recent survey (which I will tell you about in just a moment), 50 percent of the mariners checking into Amateur Radio maritime mobile nets were using call signs not issued in the latest directory. Twenty-five percent of the mariners operating illegally on high frequency were using voice with only Novice Class privileges. The remaining 25 percent were using voice on high frequency maritime mobile nets with only a Technician Class license. I imagine that, mixed in with these figures, are maritime mobile operators using "borrowed" call signs from Amateur Radio friends.

Bad news for bootleggers

It finally had to come to a head. Warnings about the use of phony call signs or the use of call signs from another country were going unheeded. In December of 1980, a new organization was formed to protect our Amateur Radio frequencies from encroachers. Headed by Thurman Smithey, N6QX, the Committee for Legal Maritime Mobile Amateur Radio Operations is taking action on illegal maritime operations on Amateur Radio frequencies.

"The purpose of this organization is an all-out effort to search out, expose, and remove from operation on the Amateur Radio bands those illegal operators of Amateur Radio equipment known to be proliferating aboard cruising boats — principally sailboats," comments Thurman Smithey.

This new committee is working closely with seven popular maritime mobile nets that facilitate in traffic handling and phone patches. They found 27 percent of all calls were from illegal stations. Here is the breakdown:

Net	Calls Checked	Not Issued	Novice	Technician	"Questionable" Total	"Questionable" Percentage
Seafarers	106	19	7	6	32	30.2
15M Pacific MM	34	1	0	0	1	2.9
20M Pacific MM	21	3	2	4	9	42.9
Maritime Mobile Service	6	2	0	1	3	50.0
Manana	8	1	1	1	3	37.5
Confusion	1	0	0	1	1	100.0
California-Hawaii	2	0	0	0	0	0.0
No Net	3	1	0	0	1	33.3
Totals	181	27	10	13	50	27.6

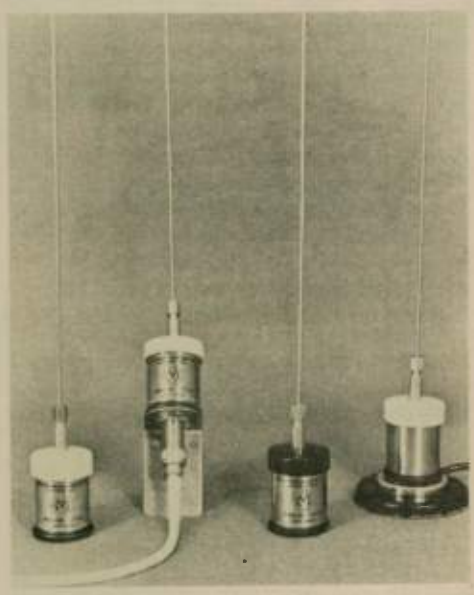
How are they able to verify that a call sign is a phony call sign? The actual operation of their "double checks" is still classified, but it must be assumed that home computers, Callbooks, and — most important — up-to-date FCC files, assist them in determining call sign authenticity. You say no one has access to the latest FCC files? Don't believe it — all one has to do is go down to the local FCC office and ask to see their latest microfiche file for any particular radio service they have in mind. These files are generally within 60 days of being absolutely correct and updated. It's not hard at all!

Suspected bootleggers are now carried on a list of questionable call signs. Stations appearing on the air with a questionable call sign are interrogated. If it appears they are operating illegally, they are so informed and no further transmission will be made to the now-found-out pirate station. Each net will receive a list of questionable call signs.

"Emergency traffic will always be accepted from any maritime mobile station, regardless of license status," comments Thurman Smithey. "In an emergency, we will take any measure to communicate with a ship at sea."

Pass the word — this committee has plenty of support, and is aiming to eradicate the tremendous number of illegal maritime mobile operators. Are we picking on the maritime boys exclusively? Unfortunately, yes. Statistics indicate it is the maritime mobile station who abuses the Amateur Radio frequencies the most with illegal call signs.

I think this committee is going to put a stop to that. If you have information for this committee, or would like to assist in their objectives, write Thurman Smithey, N6QX, 56 Center Street, Chula Vista, California 92010.



220 MHz line of marine and mobile antennas from Metz.

No more 220 MHz threat

There was a time when the 220 MHz band was threatened by the creation of new maritime mobile frequencies. Some say it was a typographical error from the FCC. Others speculate that the Commission may have tried to pirate these frequencies from under us, thinking we weren't looking.

We were.

If you are active on 220 MHz, put your mind at ease. On 29 January 1981, the FCC allocated frequencies below 220 MHz for the Mississippi inland waterway communication system. The exact frequencies allocated for this system are 216 MHz through 220 MHz.

If anyone is going to have a problem with interference, it won't be Amateur Radio operators. It may be television viewers to TV Channel 13!

This new maritime radio system will

serve primarily tugboats, towboats, and barge operators traversing the Mississippi. It is anticipated that this frequency allocation will be divided up into low power "on board" channels for barge to tug communications, as well as public coast and private shore communications for marine telephone calls.

Radio amateur benefits

How would you like to see more 220 MHz synthesized transceivers? This new maritime band just might do the trick. Depending how the FCC authorizes the channels, manufacturers might very well produce a synthesized rig either for mariners, or for Amateur Radio operators. With more than one service to sell to, chances are we would see lower priced 220 MHz gear. The reason prices are so high, and gear so scarce, for 220 MHz PLL transceivers is that we are just about the only country using the 220 MHz band for Amateur Radio.

Some antenna makers have already jumped on the MHz band wagon. Metz Communications, Corner Route 11 and 11C, Laconia, NH 03246, presently manufactures VHF and UHF marine antennas. They now offer 220 MHz stainless steel commercial base-loaded antennas for both the amateur 220 MHz band, as well as new marine 220 MHz band.

The new maritime band is bound to add equipment and accessories suitable for Amateur Radio use. □

Dial SHIP for help

The U.S. Department of Health and Human Services has launched a toll-free telephone system through which seafarers can locate the nearest Public Health Service hospital, outpatient clinic, contract physician, or emergency health services. The 800 number is part of the Seafarers Health Improvement Program (SHIP), a collaborative effort involving the Public Health Service, other federal agencies, and the maritime industry.

The round-the-clock telephone service is provided from the PHS hospital at Nassau Bay, Texas, to eligible seafarers anywhere in the continental United States. Callers from within Texas should call 800-392-SHIP to obtain the service. Elsewhere in the United States, callers should use the 800 number plus 231-SHIP. Service is not yet available in Alaska, Hawaii or Puerto Rico.

— *Catholic Maritime News, Florida* □

Couple sails for South Pacific

By Joyce Swanson
Submitted by Richard Randall, K6ARE

Leona and Carl Wallace took off for the South Pacific in early March.

They won't fly in a jet and they aren't taking a cruise on a luxury ocean liner. Instead, they are outfitting their own 44-foot sailboat for the trip that could take up to two years.

Stops along the way include Costa Rica, the Galapagos Islands, Pitcairn, Pago Pago, Australia and maybe New Zealand.

They talked about the trip in an interview aboard their boat, berthed in the San Leandro Marina.

It's a trip that is the envy of many of their sailing friends and causes some concern for their children.

Carl, K6YEO, is a retired electrical technician for the Lawrence Livermore National Laboratory and Leona, WA6OHB, taught first and second grade in the Livermore School District before she retired in 1978. Carl retired in June 1980.

One might think that two people who plan to go on a two-year cruise have been sailing all their lives. But Carl didn't begin sailing until 1971 when he tried out a 14-foot Sunfish in American Samoa. Leona was hooked when she went to a boat show in San Francisco.

"We've only been married eight years," Carl explained. "I started with the Sunfish and Leona was entranced by it. That's why she agreed to marry me."

"I'd been looking for a good-looking bachelor with a boat," Leona confirmed.

They worked their way up from the Sunfish to a 24-foot sailboat. In 1977, the plans for the long cruise became more definite and they ordered the larger boat from Taiwan.

"We couldn't afford the American boats," Carl said. Their boat is called the Malaga, which in Samoan means "voyage."

They sold their house to pay for the boat and are planning a garage sale to get rid of all the unwanted household things they can't take with them.

Carl and Leona started talking about the cruise at least a year before purchasing the boat. Leona took an early retirement to learn celestial navigation and French. She will need the French for some of the planned stops, she said.

Leona traced their proposed route on a world map, "Australia — that's as far as we had anything planned. We'd like to go to New Zealand but I don't want to go through the Tasman Sea."

The Tasman Sea is a particularly hazardous strip of water, she said.

For Carl, the trip isn't out of character. He's been a nomad much of his life, he said, and the cruise is an extension of his wanderlust. But for Leona, who has never traveled very far, the trip will be completely new.

When asked if her children worried about her safety, Leona said yes.

"I'm not a bit worried myself," she said. They both agreed that sailing knowledge and skill helps people feel safer on the water.

In preparation for the trip, Leona canned different kinds of food and put the

(*please turn to page 43*)

WITH THE HANDI-HAMS

Bruce L. Humphrys, KØHR

I have just returned from a delightful trip to California where, among other things, I had the pleasant experience of talking to members of the Fresno Amateur Radio Club about the HANDI-HAMS System. It's always a treat to talk to radio clubs — but even more when the members are so attentive and active in Amateur Radio!

After showing a movie about Courage Center, and our HANDI-HAM slide show, I demonstrated some of our adaptive devices to help make Amateur Radio easier for persons with handicaps. Believe me, there's nothing magic or complicated about these devices (one was the Puff 'N' Sip keyer; the other was our Beam Direction Indicator). Both devices can be duplicated by almost any amateur for less than $10 (even if you buy all the parts new — RETAIL!). But what really caught their imagination — and apparently turned on their "high power" button — was the fact that all HANDI-HAM services are provided to our students and handicapped members at no charge to them. Maybe we should take a few inches of space to explain how this is so, and also to follow the case of a "typical" HANDI-HAM student.

We recruit many of our students and handicapped members by "word of mouth" — an amateur who (for example) reads this column might know someone down the street who has a handicap and send us the referral. We contact the other person (and the fellow who referred him!) with our little "spiel" on what Amateur Radio is about and how we can help him become a radio amateur.

If the fellow signs up as a student, we set the wheels in motion to provide him/her with: 1) instructional material — either in print or cassette format; 2) code practice tapes, key, oscillator; 3) a personal one-to-one radio amateur counselor to help him/her study.

We monitor the student's progress and send along any additional material which he and his one-to-one think appropriate. When the student and his one-to-one feel he's ready, we'll provide him with a receiver to listen in on the ham bands (subject to availability, of course).

We'll help his one-to-one along the way, too. There are usually questions on how to teach a particular thing to a person with a disability, and we can give advice or provide teaching aids. Also, we'll help the student line up a volunteer examiner when the time comes to take the test. If necessary, we can petition on his behalf for a special examination schedule. We can alert the FCC field office overseeing his examination to any special considerations he may need (like taking an examination in which there are circuit diagrams, if he's blind; or how to administer a code exam to a deaf applicant).

When the handicapped student passes his exam, we can loan him a transceiver to actually get on the air. Again, his one-to-one will help him set up a station and make that important first contact.

All along the way, the Courage HANDI-HAM System acts as a vital support organization. The work is done by the student, but help is given to make his entry into Amateur Radio easier.

How on Earth can we possibly do this for nothing? Well, we can't . . . it costs a great deal of money. But we get support from many sources: HANDI-HAM members and non-members alike will sometimes send in a contribution of cash or equipment; businesses will also contribute equipment and/or money; volunteers all over the world give valuable time and energy working with our students or building adaptive equipment; foundations have given us grants to operate and expand our services. You see, the System is unique: we are able to provide Amateur Radio educational services to persons with handicaps all over the world using resources available all over the world!

Our big job is coordinating the educational progress of our students; ensuring that our handicapped members are able to enjoy this great hobby to the fullest; and making sure we have enough funding to make all this possible. If you need help — or can provide help, of any kind — we want to hear from you!

Why not a HANDI-HAM net?

Many people have asked me if there is a HANDI-HAM net somewhere. No, there's not. There are several fine nets around which have many handicapped amateurs check into them — the ACB Service Net and the International Handicappers Net come immediately into mind. Also, around the upper-Midwest we have a Piconet All Day Watch where most of the net controls, and many of the check-ins, are handicapped members of the HANDI-HAM System.

But there is no HANDI-HAM net, — and we probably will never have one. Here's why: One of the great attractions Amateur Radio holds for a handicapped person is that this is a "blind" hobby! Yessir . . . if I'm sitting at my rig talking with an amateur on the other side of the world, he doesn't know I'm handicapped unless I choose to tell him. For that matter, I'll bet most of our readers don't know whether or not I am handicapped! You see, it just doesn't make any difference. The important thing is that I'm a radio amateur and I'm using my skills as a communicator to fill my leisure time and provide service to my community . . . just like all the other radio amateurs!

All too often, we've overheard amateurs comment along these lines, having just been told that the amateur they're in contact with is (blind, deaf, paraplegic, quadriplegic, take your pick!):

"Gosh — it's just TREMENDOUS that you're doing such a GREAT JOB, being blind and all; fine business there — it's just TERRIFIC that you're able to work on Amateur Radio so good . . . "

Shucks . . . why shouldn't a handicapped person be able to operate just as well as a non-handicapped person? These days, technological advances make the operation of an Amateur Radio station a virtual piece of cake. Amateurs are people who have demonstrated their skill in operating and communicating — not pushing knobs or buttons! Obviously, it takes great personal courage to overcome a severe handicap and excel in electronic communication. But, gee whiz, let's not gush! The handicapped ham you talk to earned his license the same way you did. he deserves credit for doing that — and that fact makes you EQUALS.

Now, then . . . the Courage HANDI-HAM System encourages its members to experience the complete range of communications opportunities open to amateurs. Checking into a "special net" is certainly an appropriate and interesting activity for some of our members. And, to be certain, these nets play an important, vital role in the whole scheme of amateur communications.

But the System is going to shy away from a net which identifies its members as handicapped operators. Not because such a net wouldn't have any important reason for being, but because we want our membership to be involved in radio as **HAMS** — not HANDICAPPED hams. □

QLF QLF QLF

QLF! Do you know what QLF means? Old-time telegraphers would send QLF to an operator whose sending was really bad. It means, "Why don't you start sending with your foot?!? Implying, of course, that the poor guy had been sending so badly, he'd probably do better sending by foot!

But sometimes, sending with a foot is the only way someone can enjoy this wonderful hobby of Amateur Radio. Take the case of Gene Konop, WB9IBA (now a Silent Key).

Gene was severely handicapped from cerebral palsy. He lived in a nursing home in Rice Lake, Wisconsin. The cerebral palsy affected his body so completely that he couldn't even speak. He found, however, that he could send Morse code with his right foot.

Gene got his amateur license with the help of the Courage HANDI-HAM System, and members of the System helped him get on the air with that special foot key (pictured in pamphlet put out by the System).

Through the HANDI-HAM System, Gene was able to "talk" to his brother in Missouri every week until his death.

There are lots of men and women with handicaps who would enjoy this wonderful hobby. All they need is a little help — and that's where the Courage HANDI-HAM System comes in. But in order to provide help, we have to have help.

This organization consists of handicapped and able-bodied amateurs dedicated to bringing the excitement of Amateur Radio to persons who otherwise could not make it. The organization provides educational material, close personal supervision, loan of equipment and special devices to allow station operation by the handicapped.

If you want more information, write: Courage Center, 3915 Golden Valley Road, Golden Valley, MN 55422. The organization needs to obtain equipment, working or not, as well as donations to keep it going. Courage HANDI-HAM System now serves about 1,000 people worldwide.

Perhaps you have friends, neighbors, relatives, etc., who are seriously handicapped! Their life might be brightened by being able to operate an Amateur Radio station. Many people who are blind, have missing limbs, are unable to speak, confined to bed or wheelchairs have received a license. They have been given a new lease on life by being able to communicate and make new friends around the world.

Contributions are tax deductible and some idea of what a little bit of money can do is as follows: $10 basic Novice package; $15 helps provide a special device; $25 provides basic General student package, etc. □

Please
send **NEWS** and **PICTURES** to
Worldradio

A house to fit his needs

By Wally Page
Submitted by Hal Justice

Was providence guiding wheel chair-bound W. E. "Whitey" Abbott, retired Champion Papers foreman, as he designed his hilltop home and added his own warm air solar heating system?

He couldn't have known a decade ago that he would have open heart surgery, lose the use of his hips and legs, and be unable to move around his house without the motorized help of his wheelchair.

Abbott and his wife bought a lot to build a house on one of the tallest hills overlooking Lake Junaluska. That's because he is an Amateur Radio operator. He's licensed K4ZZH.

Ten years ago or so, he got his hands on some surplus stressed concrete beams. "I designed the house around those beams," he recalls. He pulled the arch out of them by weighting them with 50 gallon drums filled with water and with plywood forms laid an 8-inch-thick concrete floor, 30 by 52 feet for the house floor.

The floor hangs without pillars over a basement that houses a machine-filled workshop, garage and pool room/den. The basement floor and walls are of concrete.

Abbott is an engineering genius. Mechanical things grow in his mind. He had a high school education and natural aptitude when he went to work for Champion Papers in 1930. He became chief metal department foreman and later was coordinator of outside contractors.

Efficiency led him to build a one-story house and to use the plywood of his concrete forms for other construction needs and finally, for the roof. He set up a woodworking shop in the basement, bought an old pool table and used parts to build a fancy new one.

He built bookshelves with walnut doors for the den. He designed footstools, built them and shipped them nationwide.

When Abbott built his house, fuel was relatively cheap. "There was no need for a solar system when I built. When electricity cost more about 1976, I got to thinking about it. I read books. I've studied from one end to another."

He decided that 11 tons of concrete beams and untold tons of concrete floor and walls could absorb solar heat during the day for release at night. Today, his system is working, raising air temperature in the basement 20 or 30 degrees or more to be soaked up in the mass of concrete and released slowly to the living area above.

Abbott designed his solar collector, an 8-by-12 foot flat box with fiberglass top to let the sun shine in. The box is foam insulated and angled at the winter sun.

"I did most of the work in 1978," Abbott recalled. "I built every bit of it. That was a job."

The collector is pop-riveted and metal-screwed together. "I bought the aluminum out of a scrap yard. Partitions cause the air to flow along a 48-foot pathway inside the collector and over aluminum fins that provide several hundred square feet of surface for the sun to heat."

W.E. "Whitey" Abbott, K4ZZH, enjoys living in this solar-heated home, which he built before being confined to a wheelchair.

A blower in the wooden tool house he built moves cooler air from the basement to the collector and sun-heated air back to the basement for heat storage.

A brother, Sam, attended a solar heating course at Haywood Technical College and conferred with him, but Sam didn't have time to build his own solar heating system.

"Smoking killed him," Abbott said, "and it just about got me, too."

Abbott's solar system was little more than complete when he was hospitalized for a major heart artery problem. His surgeon said he was a poor risk as a result of his smoking. He underwent open heart surgery. He lived, but he is paralyzed and unfeeling from his waist to his toes.

For weeks, he was in a hospital bed. He was cheerful, though, and he talked regularly, by 2-meter Amateur Radio to friends all over Western North Carolina.

Abbott went home a little sooner than most folks would because his wife is a registered professional nurse who could work with his special needs at home. She works, too, as visiting nurse, seeing to the needs of ailing Champion employees.

The cheerful Abbott had a determination to use his skills to adapt to life without working legs.

He bought a motorized wheelchair. He designed a ceiling-mounted hoist to lift him from wheelchair to bathtub. He set up his Amateur Radio equipment next to his bed, and adapted his "ham shack" of radio communications receivers and transmitters to his situation.

Faster than the average person can walk, Abbott whizzes around the house he designed, enjoying the heat system he built.

He can go from radio shack to kitchen to bedroom to bathroom to living room to spacious patio overlooking Lake Junaluska and out into the backyard in his battery-powered chariot. Providence somehow arranged for all of that to be on one level.

But he can go to the basement a floor below, too. He didn't know he'd someday be a wheeelchair sitter, but he engineered and personally built into the Abbott home an elevator large enough for his wheelchair and another person, too.

Abbott brags a bit of his pool-shooting prowess and looks wishfully at the now unused pool table he repaired. He may yet engineer a way to conquer that problem, too.

Meanwhile, he spends much of his days at his Amateur Radio desk continuing his associations with other amateurs in this area who know him personally and with still more radio amateurs around the world to whom only his voice is familiar.

A big antenna atop a tall pole beside the hilltop house beams his voice into conversations with men and women of many countries, in Antarctica and on ships of the military and freight lines at sea.

He's belted to a wheelchair, but his face smiles. He's constantly on the go and his mind is in flight around the world.

— *The Mountaineer, North Carolina* □

The Exchange

Armond Brattland, K6EA

The Exchange

Dictionary definition: "Interchange — give and take — one thing in return for another." Isn't that what **Worldradio** is all about? *If there is something useful, we wish to share it.*" What about Novices? Dictionary: "New at what he is doing; beginner." You mean LICENSED Novice of course, but many thousands were never licensed as Novices — they were Technicians, Conditionals, Generals and became Advanced and Extra Class. You don't mean perhaps the many thousands of Novices who failed, or are failing to operate as Novices, their only interest being to obtain Generals. Perhaps you would wish to exclude even those who operate as Novices for only several months, prior to acquiring Technician or General licenses?

Clearing away thousands of such amateurs clears up much of the reason for this change. This column will continue to print items of interest to amateurs, including Novices, and doing everything possible to help Novices. Let us start by saying, when you hear someone falling all over themselves, on other than Novice bands, just say, "He is a beginner" — don't say, "Novice!"

Let us hope the Novices who write about wishing to trade keys for microphones will also be back to help other Novices after acquiring Generals. If all such statements received during the four plus years I've been writing this column were placed end-to-end, it might lead to doubtful conclusions about expecting such help; but it's a long road, if there be no turns. Now and then, in some traffic net, a former Novice makes himself known by "flashing" his former call — they are back — HELPING! Within a cross-section of persons, a certain number are inclined toward helping others — radio amateurs are only a part of such proportion. With such thought in mind, we learn to swallow discouragements.

Where there is life, there is hope! (this could also be reversed)

A medical miracle was reported within news columns during -22°F weather in Northern Minnesota this past December. A young woman, not dressed for such weather, tried to walk several miles from a stalled car, collapsing a few feet from a farm home. Found the next day, she was literally FROZEN STIFF. She was put into a car, like a piece of wood, and taken to a small hospital where doctors — in the finest tradition of their profession — sought to find life. The body — even the eyes — was like ice. Finally after hours of probing, a feeble pulse of less than 12 feeble beats per minute was discovered. It was reported she suffered no serious side effects.

Per Illustration — the National Net and International Net each have a pulse; **letters are being received.** There may be an "undertaker" standing by, casting out gloomy aspersions against chances for recovery. If there were some unguarded moment, he would — with glee — try to deliver an infamous "coup de grace." But many others, even the "undertaker", continue to say, **"It is a good idea!"** An "idea" should be "spiritual", without need of a pulse. The idea merely awaits the time when someone will take hold and "blow the breath of life" into it!

Could this be the one?

General licensee Kenneth Hand, WB2EUF/AAR2AT/MARS, is a busy man as Assistant Section Communications and Section Traffic Manager. He checks into many traffic nets. He writes:

"I read your monthly column in **Worldradio** with much interest — can you tell me the latest times and dates when the Novice Net is on the air? As of now, are there any volunteer net control stations on the East Coast in the United States?

"I think your idea of an International Novice Net is a great idea. I have often thought how helpful it would be for Novice-licensed maritime mobile operators to be able to pass message traffic back and forth between their family and friends via an International Novice Net, using the national message traffic system. I think it would also be most helpful for maritime mobile operators licensed as General Class to use this Novice net, especially after unreliable attempts at trying to make phone patches. We know CW will get through when SSB will not, and I imagine maritime mobile stations at sea operate under severe time restrictions.

"I like CW and enjoy operating such mode, although I also have SSB gear, which I use on the phone nets, QSOs and skeds with my sister and OM as well as other amateurs. I have seven children and my youngest son, Michael, is 13 and became a Novice last March. He is very interested in message handling, but it seems there are not many slow speed Novice nets.

"The newly elected SCM approves of my plan to open a slow speed net for New York and Long Island for Novices-Technicians, or others who are interested. I hope to have such net in operation soon.

It will be called New York and Long Island Slow Speed Net, or just NLS, as it once was called. There have been efforts in past years around here to operate a Novice net, but it failed for lack of interest and lack of NCS volunteers. I see the need and will try to make the effort and hope for success in the adventure.

"Can you tell me the calls of NCS, times and frequencies of operation across the United States of active NNN stations, as of 1 January 1981? If possible, I would like to volunteer for the NCS spot for the East Coast, USA. I am active most every day on traffic nets — mornings and afternoons, when home, on 80 and 40 meters, but 15 meters has greater potential, especially for maritime mobile operations. I cannot find any such nets in the Net Directory, or otherwise — **no maritime mobile CW net or nets!**

"It is so much easier to get a Novice license, and they could then operate on the air, rather than merely having a rig aboard their boat — to be able to use it ONLY in case of emergencies or danger, where it is a matter of life or death. Also, the slow speed of operation would make it easier to copy during poor conditions and through QRM.

"I am located on the end of Long Island, out in the ocean — about 125 miles east of New York City. I have a good spot to be able to work maritime operators, either from my beam or dipole. It should seem like a good idea, if maritime mobile operators knew that such a net operates — they might avoid the delay and extra time it sometimes takes on the National Traffic System. They would only have to monitor the Novice frequency at net time — no waste of unnecessary time while standing by, such as happens on SSB maritime nets.

"It would be a good idea for Technicians — having the advantage of 2 meters to establish relays via 2 meters and CW as they approach ports and coastlines. These are just a few thoughts I had while reading your column. I would like to know what you think? Thanks — 73 and Happy New Year — KEN, WB2EUF"

Good to hear from you Ken!

You have my letter now and know that your hopeful letter bounced back and forth twice between Minnesota and California, or it would have been used in the last issue. It is the first action taken for a number of months, by an East Coast traffic handler, that brings tidings concerning the idea of a National-International Novice Net. Good luck in setting up your slow speed net also — may I comment? Choosing a short snappy net designation helps, especially if those checking in use it, rather than making the net operation sound like a QSO. Novices, or others still learning code while checking into CW traffic nets, should be encouraged to use the net designation rather than the NCS call. It not only advertises the net and makes it a snappy sounding net, but — it's absolutely legal!

On 15 meters, it is not possible to have enough net controls so that all can hear each other. If operations can follow a similar check-in, as used by ARTS (Amateur Radio Telegraph Society), eventually such a net can operate without regular NCS. Stations checking in should know that the net frequency must be kept open for calling — thus, **stations with traffic should, without being told, check out the frequencies above and below the net frequency, QSY to other frequencies, handle their traffic and come back to the net frequency.** Even Novices who cannot operate on ARTS at present should listen and learn about such methods of operation. 7060 kHz at 1330Z and 3550 kHz at 0130Z is listed in the ARRL Net Directory. On the West Coast, 7060 at 1400Z and earlier. All should know that traffic net frequencies are ABOUT or near the stated frequency. A short note, received from one prospective net member, indicated he set up on the proposed net frequency but could not hear the net and ended thus: "If I can't hear the net on the net frequency, guess they don't need me." He had not considered the position of a net control, wherein local QRM on the stated frequency made it impossible to operate there. Among those who handle traffic, some have ample savvy — **if it could only be spread out!**

Note that ARTS is set up for **emergencies, traffic and weather;** very active manager is William Bonnell, W5TI, of Ft. Worth, Texas. The founder is Hubert Williams, W5UH, of New Mexico. Both have terrific signals, both have calls which have been in Callbooks for a long time. For additional information write them. This has been covered before in this column; also in the Traffic column. It bears repetition, so pass it along and learn by listening to their operations!

What frequency should NN/IN use?

NN/IN stands for: National Net-International Net. A letter from Steve Brunt, KA6LTJ: I have been following your Novice column in **Worldradio** for several months now. I think NN/IN is a good idea but using 21.150 MHZ is a poor choice of frequency for a net. Center band is where everybody wants to work. I think the NN/IN should be at about 21.190 MHz. Much of the time, the top of the Novice sub-band is deserted. (Steve is not alone; others have expressed the same opinion — to go up to the top, or down to the bottom of the band.)

Peter Sutter, WD6GHZ — an active global sailor — said: "I guess your suggestion of 21.15 MHz is as good a maritime CW frequency — my experience is that QRM there is about the same as any part of that Novice band." BUT, Peter suggested a very low frequency. Others in the past suggested trying another frequency in the 15-meter Novice allocation, UP or DOWN!

My comment has been: If NN/IN never handled traffic, or acted as an exchange-

meeting place for stations seeking to handle traffic, most any frequency would do if it were advertised and established. But if we picture NN/IN becoming a busy traffic handling net, **where would half a dozen, or a dozen stations go to find space, except back toward the middle of the band?** If very many go up above 21.190, they have only 10 KHz — likely they may not only QRM each other, but the 21.190/net frequency as well.

If a low spot is chosen near the bottom, and the same thing occurs, they must go up toward the middle — **so stations end up trying to handle traffic near the middle of the band, right where you say there is the greatest amount of QRM.** If everyone used the net designation NN/IN and made contact with those willing to take their traffic and move out, surely there would be a better chance to keep 21.150 reasonably clear, unless Novices deliberately QRM to try to break the net down. As net operatations continue, eventually in over-crowded bands, it's got to sink in that such manner of operation is one way to lessen the over-crowding. As operators learn the value of traffic training, and as the frequency is advertised, the net should grown in numbers and usefulness. I will say no more about net frequencies decide; but **bring traffic to the net** — make it a QTC (HAVE TRAFFIC) net!

Did you ever ride in a Model K Ford?

There is slight chance you might own one, but — do you remember that Henry Ford brought out a 6-cylinder automobile ahead of the Model T? If you do, surely you are an old-timer, or know automobile history! Ford was not concerned about Amateur Radio; he was more concerned with his low financial state after venturing into the large car field. It took the Model T to restore his dream of having a popular car. The fact that "T" owners later had to devise iron straps with padlocks to save their spark coils had not bothered Henry at that early date.

If you now own a Model T spark coil, it's a good conversation piece; perhaps you can also rig it up to keep dogs from messing up the corner of your house. However, if you are now a licensed amateur and used such a coil, or any other method of spark gap, at you licensed amateur station during the time it was legal, you may be eligible to join an exclusive group of old-timers in the Ozone Club.

As previously mentioned in **World-radio,** Ralph Hasslinger, W2CVF (original call-2CVF) at 28 Warren Place, Glen Rock, NJ 07452, "dreamed up" such an organization. If you can't understand why it was named Ozone Club, you may not be eligible. However, send your application to Ralph and let him decide. Give your name, present call, birth date, telephone number, a word about your original spark equipment, and your **original licensed call.** Don't give any early bootleg call you used, for there is no way Ralph can check that out in the early government Callbooks or station lists!

The statement given above seems to be Ralph's intent, per letters I've received from him, and it is noted the roster he included shows at least four who gave bootleg calls, which no doubt they will be amending. It is also his intention that this club be founded on the operation of early spark gap amateur stations that were then licensed, leaving those early commercial spark gap operators intact within the Society of Wireless Pioneers.

In Ralph's letter and application, it is stated: All should be considered life members. There should be no officers, dues, fees, or assessments, but you must have operated a licensed amateur spark station when such was legal, and presently be licensed as an Amateur Radio Operator. Seemingly, the applications are rolling in — far above Ralph's expectations. He mentions that the paper work presents a problem; he would appreciate it if present members mail applications directly to prospective members. He added, "So far, the youngest member is 71, the oldest 87 years of age. I'm beginning to think that Amateur Radio would not exist today if it were not for Mr. Ford, his spark coil, and 'Mr. Quaker' and his oatmeal box." Nets? Yes; can you imagine — SSB on 21,435 kHz Mondays, at 1800 GMT, until further notice. There is a CW net at 2130Z on 21030 kHz. Ralph hopes that members will start local nets soon on SSB and especially CW! □

Novices work Australia cross-mode

Bob McGarvey, WB2EVF

Three Central Jersey holders of Novice licenses got one of the greatest thrills they'll ever experience when they worked Australia cross-mode. They were gathered at the home of Bob Schweitzer, KA2FOV, in North Brunswick for one of their weekly radio get-togethers and were listening to CW right at the center of the 15-meter Novice sub-band when it happened.

Ivor Stafford, VK3XB, and Mavis, his YL, VK3KS, came on the band running sideband phone to give American Novices a chance to work the big continent "down under."

Bob Ashburner, KA2KCD, of Milltown, and Bob Steffano, KA2KQU, of Franklin, were the other happy participants.

The three Yanks banged out their messages in Morse code and Ivor and Mavis answered on phone. The Australians were coming in here 55 and gave the CW signals 569 reports.

Equipment used was Schweitzer's Kenwood TS520SE and four-element Cushcraft on a 50-foot tower.

All three Novices are proteges of Harry Pollins, W2GXX, of North Brunswick.

Cross-mode is perfectly legal, in spite of any folk tales you may have heard. And many foreign amateurs working phone in bands where American Novices are limited to CW are perfectly willing to make U.S. contacts.

The lucky locals will get QSL cards from Melbourne, Australia, if I know Ivor and Mavis.

— *The Home News* □

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There are three kinds of people in the world:

Those who make things happen.
Those who watch things happen.
Those who ask what happened.
What group are you in?

Sheboygan County ARC, Wisconsin □

.....

Couple sails

(continued from page 39)

canning jars in cloth bags to prevent breakage. All the appliances are kerosene because kerosene is readily available anywhere in the world, Carl said.

They can carry up to 200 gallons of fresh water, and plan on refilling that supply frequently.

The crew consists only of Leona and Carl. Although many friends have asked to come along for parts of the cruise, the couple will be the mainstay of the trip.

"We're not making an elaborate crew list," Carl said. "The two of us are going and others will join us for a holiday along the way."

In fact, not everyone could or would want to make such a trip, he said. "Some people can't get away from their cars, televisions."

There are no sailboat parking lots or campgrounds to stop in overnight so they will sail both day and night with an alternating night watch, Carl said. Their boat is a ketch, which means it has two masts, and the rear mast can be used almost like a rudder, he explained. That makes it easier to control the boat.

The Wallaces seem relaxed and excited at the prospect of their trip and promised to stay in touch with friends back home as they make their way to the islands of the South Pacific.

— *Tri-Valley Herald California* □

TRAFFIC

Chuck Clark, K4ZN
Assistant Director
Roanoke Division, ARRL

Coherent CW update

Just after last month's column went to the printer, a letter arrived from Ray Petit, W7GHM, saying he is no longer supplying coherent CW equipment. Ray adds that a "definitive article" on CCW will appear in an early issue of QST. One hopes it won't be obsolete by the time it appears, for this is a brand new field and who knows what will come next?

Also, Ray says that reprints of the *Coherent CW Newsletter* may be available from Charles Woodson, W6NEY, 4523 Tolman Hall, University of California, Berkeley, CA 94720.

Italian earthquake

Pete Skorupsky, WB2IQJ, sings what has come to be the theme song of just about every emergency relief operation of late — the dirge about how too many amateurs seem to try to ruin everything, how it often becomes one big mess, particularly when it's something that requires using 20 meters to handle the traffic. And of how "everybody and his brother" jumped in and tried to help, often compounding the chaos.

In this case there was the additional problem of the prohibition of handling third-party traffic internationally by Amateur Radio. As Pete put it, "The ARRL tacitly assumed the FCC and governments would exercise their wisdom and eventually notify the League of its actions. Italian amateurs realized that without prompting, neither government knew or cared to act in a timely way. It appears that each waits to be the last to know the results of the initiative taken by others."

Then, of course, there was the problem of the infantile among us who get some kind of sadistic satisfaction from disrupting emergency communications: "The harassment went from nuisance to being chased off frequency, perpetually asked for signal reports, told to get off the air, being given unsolicited weather reports for five minutes in the middle of emergency traffic. Not one of my 21 outstanding emergency messages could get through. I ran up a whopping phone bill with Italy at $7 a shot.

"I will probably be unfriendly with the hams that told me that their Century DX Certificate was more important than my imagined emergency. I will probably not talk to the hams that said 10-10 numbers were more important still. This circumstance binds me in disbelief!"

The refrain of the song is always the same, too. What is needed is a dependable organization ready to act when needed, not something set up on the spot. "In my opinion, it would have been far more effective and orderly to have channeled traffic via NTS, having skilled operators relay the high volume between continents. This did not happen until late in the emergency."

Apparently, few amateurs seem to know that NTS even exists, or if they know that, they don't realize that it exists for this precise purpose. When they want to inquire about someone in a disaster zone, they get on 20 meters (or 75 if it is nearer to home) and try to fight their way through the pile-up on the emergency net frequency and see if they can get someone to give them a patch, only to be told that all the phones are out. "Then can someone contact Susie Cue in Winterbottom?" All they would have to do is to put a formal message on the NTS net in their section.

Pete makes no mention of using CW, and in this case it probably would not have been possible to staff enough stations in Italy to be of much help. But whenever it has been used in emergency communications, it has proved its usefulness abundantly. Having a CW channel operating provides a clear circuit for important messages to be moved in and out of the disaster area more rapidly and more accurately than is possible under the conditions usually encountered on the phone bands. In addition, such messages are less likely to be heard by the curious, so tend to be more private. While all amateurs should, theoretically, be able to understand the Morse code, most who are "reading the mail" will be listening on the voice bands. The operators on the CW bands are less likely to be the kind who will disrupt the operation, and, furthermore, there is a lot more room in the CW bands. Making plans to have a CW circuit available is something every emergency coordinator should attend to.

The Italian earthquake also showed the need for preparedness over there. Pete says, "Initially, an Italian amateur would receive one or two 'locate and advise' inquiries, drop his microphone, and literally run out to locate and advise single-handedly. Message exchanges closely resembled any conversation on the telephone. After a while, texts and formatting were standardized. The advent of government casualty lists made matters run more smoothly. An instant-presto ARRL Disaster Communications Operations Guide sent to the Italian amateurs would have helped tremendously. Will the ARRL have one ready for the next emergency? (Hint.)"

One must not be too hard on the Italians, however. Not being allowed to handle traffic on a routine basis, they have no real way to prepare for such emergencies. It is sincerely hoped the initiative of the Swedish and other northern European amateurs mentioned here last month will spread, and that before long there will be an International Traffic System, allowing at least the handling of amateur-to-amateur-to-amateur traffic, so that the routes and procedures will be ready when needed.

One bright spot: 569 pieces of traffic went by RTTY. If it is ever possible to use the "green keys" to handle emergency traffic, it's stupid not to do so. While not 100 percent error-free, it is at least equal to any other mode on this score, and can move traffic at 60 or 100 words per minute for hour after hour. Anyone who can type can learn in a few minutes how to punch tape to send a message or to send it direct from the keyboard, making it much easier on the operators. And in cases like this, where language and proper names of unfamiliar spelling are a problem, the teletypewriter is a wonderful solution.

20-meter phone nets

Most international disaster traffic, like that in connection with the Italian earthquakes, goes on 20 meters, and by voice.

Most likely it will go, at least to some extent, on one of the nets operating between 14,275 and 14,325 kHz. While a few of them do occasionally handle formal traffic using ARRL procedures, they are the exception. You may be confused by what you hear if you are not familiar with how things are done on 20 meters. It's a good idea for any traffic handler to listen from

time to time, as it may become necessary to move there without notice should an emergency arise.

The trouble is, you won't find their procedures described in traffic handler's manuals. There is no organization that takes responsibility for standardizing those procedures, as is done by the ARRL Communications Department for nets of the National Traffic System, with the advice of the three NTS area staffs.

If you listen awhile, though, you should soon be able to understand how it works. Some expressions might be misleading to those who think only in NTS terms, but a little listening should clear that up too. One thing you will appreciate, however, is how much easier it is to be net control on one of the NTS nets, where disciplined operators are the rule. The net control's job on some of these nets sometimes seems more like that of an animal trainer in the circus.

For the benefit of those whose traffic education has come entirely from ARRL sources, a short glossary is given at the end of this month's column; this should make it easier to grasp what is going on while listening to 20 meters.

It is not official; in fact, there is nobody nor any organization designated to make any official listings of this kind. These are merely lists of what is actually being done. Even the ARRL's own procedures are voluntary, simply based on the agreement by some amateurs that this is the way we do it. And there are plenty of amateurs who will let you know in no uncertain terms what they think of ARRL and its procedures!

20-meter phone net glossary

One-way. A telephone call by an amateur on the net to a third party. Usually the amateur requesting it will remain on the net or will check back in shortly. In many cases, a formal message might be more practical, but few of these nets handle them.

Two-way or Push-pull. A phone patch.

Haul. Long-distance phone call. "Will you take a haul?" means: "May I place a collect call to the person whom you wish to contact?"

Long haul, short haul. This often needs to be defined more accurately; how far away is a person before it's a "long haul"? But in practice, the distinction is not too important these days, as long-distance rates no longer vary much with distance. Calls clear across the country often cost less than calls within one's own state — evidence that the phone companies usually have more clout with state regulatory boards that set the rates within the state than with the FCC, which regulates interstate rates.

Traffic. Any communication other than checking with Net Control. Includes formals, informals, phone patches, and anything stations go off frequency to handle.

"Call your traffic." Call the station or area (for example, "CQ Miami") that you want. If you get an answer, move off net frequency. On these nets, it is the stations themselves rather than Net Control that handle this. The net control station's function is mainly that of deciding who may use the net frequency at a given moment.

List. A record of stations who have checked in with traffic. The list is kept by Net Control, so that if any station checks in that can take the traffic, Net Control can hook them together and send them off frequency.

"Do not list." Used by a station that does not wish to wait to see if someone shows up to take traffic.

"Recheck." Used by a station returning to the net after being unsuccessful in contacting another station off net frequency.

"Contact." Used by a station who hears another station with whom communication is desired. Normally, Net Control will allow the two stations to immediately select a side frequency and move off.

"Relay." Used by a station to tell Net Control someone is calling whom Net Control apparently does not hear.

Mickey Mouse. A maritime mobile station. "Mickey Mouse 3" is a maritime mobile station in ITU Region 3 (South or West Pacific or Indian Ocean). It should be used only for stations outside the territorial waters of any nation. □

Off the Air

(*continued from page 23*)

Did you work this station?

Guadeloupe, French West Indies
12 February 1981

Dear friends:

We concluded operations as FG0FOK today. We made 9,000 QSO's with amateurs in 150 countries. All bands were worked 10 through 80 meters, half SSB and half CW.

Our QTH was on a cliff overlooking the sea on the northern tip of Guadeloupe. We rented a house there for a month and had a very good QTH. Iris's sister Clara (wife of Bern Crowell, W7PSD) visited us for one week.

Just about every fourth station worked would not include the ending K with the call. For example, we NEVER signed our call just once, we always gave the call two or more times so it would be clear the K was part of the call. This helped, but not enough. Once an amateur thought the call was FG0FO, it was almost impossible to get him to change. Even after sending our call correctly at 10 words a minute, most amateurs would come back with the same wrong call.

We do not intend to use a call ending in K ever again if it can be avoided. At our next stop, which will be Martinique, we will use the call FM0FOL.

Please tell everyone that if they have an FG0FO QSO in their log, it was us they worked and the correct call was FG0FOK.

73 es 88,
Lloyd Colvin, W6KG
Iris Colvin, W6QL □

How technical should we get?

KA6EVN (Charles Colin), in a letter to the editor in the February issue of **Worldradio**, calls for the use of words which are "common knowledge to the common folk" in material written for new amateurs. He cites as an example: "rotate until you get a null," and suggests that such a phrase might better be substituted by "rotate for a minimum signal."

What OM Colin would have us do is to set the art of writing back several thousand years. Rudolph Flesch and others have taught us that comprehension is enhanced by reduction of the number of words and/or syllables in a sentence, among other factors. Colin would like us to "write around" words which he and others find a bit unfamiliar.

A principle of technical writing, as Colin rightly states, is to find your audience and write to its level of competence. We who write for the radio amateur have a dual task: we must impart specific information — but we should also (and at the same time) broaden the general Amateur Radio knowledge of the reader. Hence, if we use the world "null" or the word "synthesizer" and the reader does not know exactly what it means, the process of looking it up is part of his ham education. There are enough electronics dictionaries available at low cost; one should be part of every radio amateur's library, at any rate.

Let me give an example which I find more interesting and livelier that Colin's. Would you rather have me use the word "kerchunk" in an article, or should I write "a random (perhaps malicious) pulsing signal causing a repeater to key up." And what about "key up" — should I say, instead, "turn its transmitter on?"

Finally, his use of the term "jargon" troubles me. I know that this is mistakenly, and commonly, used to mean "technical talk." My dictionary, however, tells me the preferred definition of "jargon" is "a confused, unintelligible language . . . " Other adjectives such as "strange . . . barbaric . . . outlandish . . . hybrid" are also used. Radio technical and semi-technical terms ain't jargon. 73.

Sincerely,
Julian N. Jablin, W9IWI
Editor, 220 Notes
Skokie, Illinois □

Gain and directivity are NOT the same thing! Before you advocate boiling me in transformer oil, let me explain.

Pattern and directivity are the same thing, but gain has nothing to do with either. And, as we say, the proof of the pudding is in the dBs.

For example, at the VHF-UHF conferences, some of the guys will bring sophisticated test gear from the labs where they work, and your tears begin to flow. The references are set up and you quite proudly hook up that 27-element zanger. Along comes some junior high school kid with a piece of welding rod run through his skateboard and he beats you out! Wha' hoppen?

You had tested your antenna at home and your friend read from his S-meter as you rotated it. That was directivity, not gain.

Gain is only a measurement — in this case, over something else, such as a dipole. Unless you go "A-B" against something else you are using as a reference, there is no gain.

Yes, you can have front-to-back and front-to-side pattern, and it can be quite impressive. But in the forward direction, a much less ambitious array could have more power radiated for the same amount of power sent into the coax.

Where is the flaw in what we've been led to believe? First, the matching system could be awful, and there have been some commercial antennas that were just that.

Then, you may say, with all those elements there must be the problem too. Elements do not gain make. Boom length is where gain comes from. Then, if the manufacturer wishes to dazzle us in something resembling the horsepower race, he sticks in more elements — usually where they don't belong.

Do not be snowed by elements. And do not be snowed by wild claims. Here is the scoop. If you have a three-element Yagi and you want to add 3dB, you'd add two more elements, making it a five-element Yagi. Should you want to pick up another 3dB, you would have to add four more elements. At this point you have a nine-element Yagi. You want to add another 3dB? Add eight more elements! This is, of course, assuming that spacings and element lengths are correct for what you are trying to do.

If you're really interested in seeing reality, you can model antennas in the 420 band. Find a couple of empty acres, take some binoculars and put a field strength meter out as far as you can. Who knows, you may find that the best antenna is a two-wavelength circular driven element with a quad reflector, a Yagi director, and a quarter-wave vertical for second director. With that, you will have to stay out in the country.

To an aside for a moment, and then we'll answer a serious question. An advertisement for an antenna tuner says "Tune out SWR at the transmitter." Trash, I say, pure trash.

An antenna tuner located in your shack can do nothing to fix up the "mess at the top." If you have a big glop for an antenna, the only thing the antenna tuner does is keep the rig from turning into a cook stove. (We are speaking of a coaxial fed system.) If you have an open-wire system, you have a lot of magic at your disposal. However, do not tape open-wire feedline to your tower as you do coax. That is not the way to get a QSL card from Ruritania.

Then we heard from a manufacturer of a shortened antenna taking us to task for saying they were not as good as full-size antennas. Hue and cry went up. (You remember hue, that was near phu-bai).

Such an outcry. So I checked with my oracle. I explained the case to him as I found him in his cave at Mount Rose. he pulled out his slide-rule (no kid, he), and as I sat at the feet of the master with rapt attention I heard (his voice echoing in the cave), "Until the laws of physics are repealed," (there was a clap of thunder) "and aperture and capture area are for naught," (lightning flashed) . . . . I listened for the wisdom . . . "a short stick is a short stick!" How deeply profound! He drew on the side of the cave with a rock and explained that as size decreased, so did signal at the other end, and at the same ratio — assuming, at best, that reactance could be balanced out and resistance-matched.

As I prepared to leave, he handed me a piece of folded paper saying, "However, if your manufacturer friend should ever be able to load up a watchband so it radiates as well as a full-size dipole, call this number in Langley, Virginia. He'll never be able to patent it and can't say he invented it, but the U.S. Treasury will pour a lot of money into his hat."

Someday I hope to understand what these mystics mean.

A long letter was received from Jack Lo Monaco, WA1YYK.

Jack finds that some of his antennas (as measured with the Palomar noise bridge) show zero reactance but resistances of from 20 to 35 ohms. Jack has a tuner, but would rather go direct as an academic challenge. What should he do, he asks.

Two ways to go. First is the actual physical placement of the antennas.

Height above ground plays a far more important part than most people give it credit for. If at all possible, raise the antennas. Possibly re-positioning them would change things. When taking readings on the beam, take the readings at various rotating points and you may see quite a bit of change if you have power or telephone lines going by your backyard. Having the four antennas, which you described, so close to each other can cause interaction. Greater separation may be in order, possibly running them at right angles to each other.

Before I forget, a lot of this may be over-academic as the transmitter itself can vary widely from 50 ohms, not only from band to band but within a band itself. In order to determine which direction you really want to go, you may wish to measure the transmitter itself. This is getting more precise that one out of a thousand even think about.)

For example, tying the sloper off on a support of a different height may make enough difference. (I hope you are using nylon instead of wire for the support.)

You said the Yagi showed 50 ohms on 10 and 15, but 25 ohms on 20 meters. I'd leave well enough alone on that one. To my knowledge, no one has ever gotten a tri-band Yagi to look great on all three bands, (I'll entertain rebuttals.) As element spacing makes up part of the impedance picture, the spacing can only be correct for one of the bands; the others will have to be some sort of compromise, and hopefully, the gamma or whatever will bring it close enough. This is why the purists go to the mono-banders.

But now we get into something else. Before we can claim any degree of accuracy for these measurements, the instrument either has to be at the feedpoint itself, or at the transmitter, where the length of coax must be multiples of a half-wavelength — verified by the noise bridge — at some specific frequency that the entire system is peaked for. Also, have we verified the 50 ohm spot on the noise bridge? Was the zero accurately calibrated? Judging from your meticulous pursuits, Jack, I can assume in your case yes; but I mention it as just a little warning for others. I hope this has been of some help. Let us know the results.

On to another point — I wonder how many of you have tried this? On your SWR bridge, swap the leads and see if the readings are the same turned around. If not, you've got some tweaking to do.

If you have any questions, send them in. Next time we'll talk about what the

(*please turn to page 50*)

CONSTRUCTION

Chuck Clark, K4ZN
Assistant Director, Roanoke Division, ARRL

Correction

Thanks to Joseph Sabo, KB7NU, who wrote to say he had built the keyer described in January and installed it in the case of his Ten-Tec KR6 which had recently quit. The LU322B IC that needed replacement is no longer available, he was told, so he built a new keyer to put in the box.

He was kind enough to write to call our attention to an error in the schematic in the January article: the dit and dah contact terminals are incorrectly identified, the dit should be the dah and vice versa. This applies only to the schematic. The circuit-board terminals are correctly identified, but they were reproduced at the wrong scale. They are not actual size, nor are they twice actual size as the legend states, but somewhere in between. Sorry about that.

Silent tune-up

One big nuisance on the HF bands is caused by tuner-uppers. It seems that some amateurs must spend most of their time tuning their rigs, putting a carrier on the air and disrupting the communications of others trying to use the frequency. Many amateurs are convinced that at least some of it is deliberate; amateurs who are opposed to some particular activity use this means to express their disapproval. This department has no solution to offer to that problem, although sometimes there's the temptation to design a model airplane and load it with explosives and make it home in on the tuner-upper!

But for other tuning, much can be done to make it less of a problem. Find a spot where your signal won't cause trouble. You don't usually have to be on the exact frequency on which you plan to operate, 5 or 10 kHz up or down is ordinarily just as good. And if you're operating single sideband, you won't cause anyone any problems if you put your carrier right on top of someone else's. Tune in another station on your receiver, then spot your own carrier zero-beat with that other station. Nobody will hear you when you put your carrier on the air to tune. I've done it many times and have yet to hear a complaint.

Much of the blame, however, must be laid at the door of the manufacturers of amateur gear. Most of the rigs are not designed with efficient tune-up in mind. And the instructions contained in the manual don't help either. They insist the procedure outlined must be followed, often adding that otherwise the rig may be damaged and warning that such damage is not covered by the warranty. Then there are several controls to be adjusted while the carrier is on the air, and if there is a transmatch or other antenna coupler, this has to be adjusted for a 1:1 SWR; at least, too many of us think so. Finally, there are no scales, so you have to turn the knobs and watch the meter each time you tune up. There's no way you can record the settings for next time.

This problem is just about unique to us on the HF amateur band. Most other services operate on fixed frequencies. Those that don't, such as the Maritime Mobile Radiotelegraph Service, are required to have any dial settings needed for tuning recorded and available to the operator, so there's no need to make all that racket twiddling dials and watching meters. In actual practice, most services that often change frequency simply turn a switch and they are on the new frequency — much as we do on VHF.

No tune-up

Fortunately, newer equipment using solid state components is being built with no tuned circuits to be adjusted. You just set the rig to the frequency you want, and put it on the air. Solid state components are low-impedance devices — power transistors generally operating at lower impedances than the usual 50 ohms, which has become the standard output impedance in the Amateur Service. High-impedance devices like tubes are most easily matched to 50 ohms by tuned circuits, and so we have them in tube transmitters. But effective low-impedance tuned circuits are not so easily constructed. Instead, the output circuit is usually an impedance-matching network plus a low-pass filter to clean out the spurious outputs (the "spurs").

If you are feeding a resonant antenna matched to a 50-ohm line, or a non-resonant antenna such as a log-periodic or terminated rhombic, you can carry the no-tune-up right through, and you should never make a single squawk on the air. Yes, you can feed a terminated rhombic directly from a 50-ohm output without any transmatch, despite the fact that its impedance is 800 ohms. Use two 4:1 step-up transformers to give you a 16:1 impedance step-up and your 50-ohm output is matched to the rhombic's 800 ohms.

Silent tune-up

But most other antennas will not let you take full advantage of the no-tune-up capability of the new rigs. You will have something to adjust to match the antenna and transmission line to the transmitter. But that can be done silently, too.

Several devices are available to measure the characteristics of an antenna system, but the most popular at present seems to be the noise bridge. By adding measured amounts of capacitance and resistance to the antenna circuit, and adjusting the bridge for a null in a receiver, the instrument gives a direct reading of the resistance and reactance the antenna presents to the output of the transmitter. By proper insertion of inductance and capacitance into the circuit (normally it can be done with just one inductor and one capacitor), the antenna-circuit impedance can be transformed to the 50 ohms non-reactive load the transmitter wants to see.

The only problem here is that this involves a lot more engineering than most of us want to do, even if we could do it. But if the noise bridge is modified somewhat, it can serve admirably to enable us to tune the antenna circuit without putting a signal on the air. Instead of adjusting resistance and capacitance in the bridge to measure the circuit's characteristics, we use the bridge to adjust the transmatch itself until the load presented to the transmitter is what the transmitter wants.

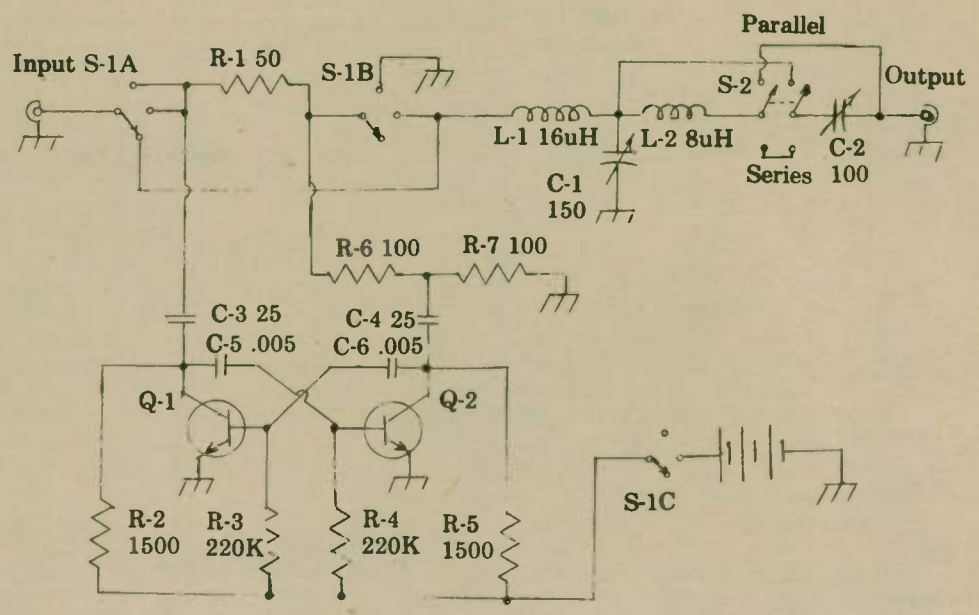


Figure 1

Figure 1 shows a circuit I used to match an antenna to a Heath HW-7 QRP CW transceiver. It is not presented as a suggested design for a matching network, but merely to show how the noise bridge is included in the design. The particular components shown are simply the ones that happened to be on hand when the matching network was needed, and that served to match the particular antenna that was being used, a horizontal V 135 feet per leg, fed through a 120-foot length of TV twin-lead with a 4:1 toroid balun at the transmitter end to couple to the coax output.

L-1 and L-2 are toroid coils, 47 turns number 24 wire on T-87-2 core and 29 turns number 22 wire on T-75-2 core, respectively. S-2 switches from series to parallel to extend the range of variation of the reactance of L-2 and C-2. The reactance of an inductor and a capacitor in series is less than that of either alone, and is zero at resonance. The reactance of an inductor and capacitor in parallel is greater than that of either alone, except

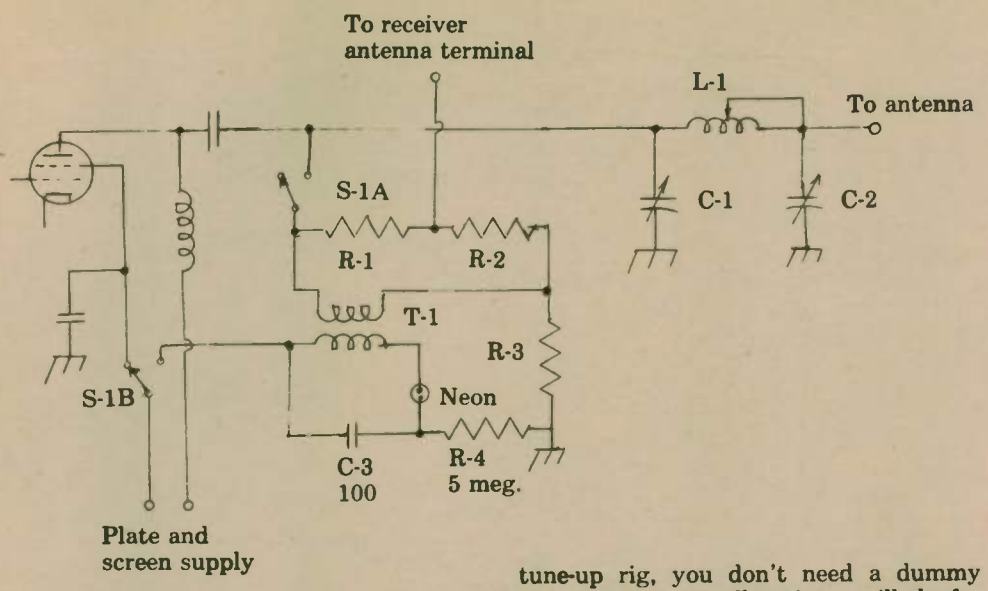


Figure 2

near resonance where it becomes highly resistive. This method of switching gives a wide range of variation, but I don't particularly recommend it for general use, as its adjustment can be tricky. It is presented here merely as an example of a matching circuit.

The main point of discussion is the noise bridge — the left-hand part of the diagram. When S-1 is in its upper position, the dummy load R-1 (in our case it was the parallel 100-ohm 2-watt resistors furnished for the purpose with the HW-7) is switched in for tuning the transmitter. On the second point, the noise bridge is in the circuit. Q-1 and Q-2 and the associated resistors and capacitors form a multivibrator that generates an audio signal with harmonics all through the HF part of the spectrum. To tune the antenna circuit, you simply adjust C-1 and C-2 until the noise is no longer heard in the receiver. Then switch to the third position — you're on the air and nobody heard you tune up.

While this particular model was used with a QRP rig, the principle is applicable to any power level. Use a "Cantenna" or "Big Dummy" for R-1 in the same circuit if you run high power. If you have a no-tune-up rig, you don't need a dummy antenna, so a small resistor will do for R-1.

The principle can also be applied to older types of transmitters as shown in *Figure 2*. R-1, in this case, is equal to the desired load resistance of the output tube, the plate voltage divided by twice the plate current. Thus, if you're running 160 watts, 800 volts at 200 milliamperes, the load resistance is 800 divided by 0.4, or 2000 ohms. R-1 would then be equal to 2000 ohms. A small resistor could be used, as the noise bridge is not used when the transmitter is feeding power to the antenna. R-2 and R-3 are equal to each other, and best results are obtained when they are about equal to R-1. In this case, a neon bulb is used to generate the noise for tuning, but a multivibrator oscillator would work as well. Adjustment is the same as for the circuit of *Figure 1*. No dummy load is needed, because the transmitter output is tuned at the same time as the antenna circuit. If S-1 is switched to the right, you can adjust C-1, C-2 and L-1 for the best null, then switch S-1 to the left and you're ready to go.

Palomar Engineers has recently announced an antenna matcher that includes a noise bridge. It's something that should have been done long ago. Maybe when a few more manufacturers get the message, there will not be so many tuners uppers on the air.

Parts for antenna couplers

Home-builders can't go to the radio store any more and pick up parts over the counter. This is particularly true of variable capacitors. If you find anybody who stocks them, the price will be exorbitant — 20 or 30 times what they are worth. They are going the way of the vacuum tube, it seems.

Fortunately, however, variable capacitors do not burn out like tubes, and are much more rugged too. As a result, there are still plenty of them around if you know where to look. Old broadcast receivers are a good source. World War II "boat anchors" are another. These old substantial rigs often are not suited to use on the amateur bands today, except possibly as CW transmitters; but they can be a good source for parts.

In addition, many surplus dealers also stock variable capacitors, either removed from junked military gear or unused parts intended for replacement purposes in equipment now obsolete. Fair Radio Sales in Lima, Ohio, for example, stocks capacitors from a few picofarads to 5-gang 400-picofarad units, and in voltage ratings from receiving to 5kV or more for transmitting. And at reasonable prices, too. □

How to build a fine wire antenna

Mike Maloney, AC5P

In these times of inflation, using smaller wire for antenna installations can sure have its advantages. The price per foot of wire decreases rapidly as the size, and thus weight, is reduced. One is likely to have a sufficient amount of small gauge wire within easy access and not even realize it. Small power transformers, relay coils, etc. may contain all the wire you will need for several antennas. Measuring the diameter and weighing the coil of wire (making allowance for the weight of the coil form) and using the copper wire tables in the handbook with a little math will give you a good estimate of how much wire you have on hand. For example: if your wire measures .020 inch diameter and weighs only 4 ounces (¼ lb.), the copper wire table indicates this is size #24 and is 800-plus feet per pound. So with only ¼ pound, you should have over 200 feet available.

The big drawback in using small wire is the reduced mechanical strength and increased chance of breakage. Making sharp bends and soldering weakens the wire even further. This is true of any size wire. If there were a method of eliminating the stress and tension on wire antennas and the connection to the feed line and antenna ends, the chance of breakage would be slim or none. Is this possible? Enter monofilament fish line nylon. This line comes to the rescue in a variety of sizes and test strengths. It is many times stronger than copper wire of the same weight. It has very little stretch below its test rating and is also a good insulator. It is readily available at stores everywhere, and — very important — it is cheap. It is an ideal material for taking the stress and strain off your antenna wire. See *Figure 1*. The main tension is on the nylon monofilament line, with little or none on the wire itself.

In laying out the antenna, select a line larger in diameter than your wire. Tie the fish line between two supports about three feet off ground with a tension equal or greater than you plan to have when the antenna is raised to its full operational height. Be sure to have plenty of line going past the point where the antenna wire will end so the line will reach to the tie down support, wherever or whatever that may be in your case. Slide the plastic pipe center insulator (feed line strain relief) to the center of the line. Use a short length of nylon to wrap and tie the pipe to keep it from slipping either way. Measure each side of center the length necessary for the wire. Mark the the fish line at these points (where the wire ends) with a piece of tape.

In stringing the wire on the fishline, start at a point about five inches from the end of wire coil or spool and secure this to the nylon line using Dacron or nylon thread or a finer fish line. Uncoil the wire alongside the fishline for about six feet. With coil or spool in hand take about six to ten turns around the nylon and secure with thread, as before. Continue this procedure, working towards the tape on the line (where the wire will end). Tie the wire and line at the last point about one or two feet from the end. Allow the wire ends to dangle down as they will. This will allow the antenna wire ends to be trimmed for resonance (minimum SWR) when the antenna is raised to its operating height. No end insulators are necessary. The air and nylon will be sufficient. How about that! How nice to have no strain on the wire ends, thus no breakage.

Back at the feed line center point, carefully clean about three inches of the varnish or insulation off the ends of the wire. The feedline is separated and stripped back about one inch. Tape the feedline tightly to the plastic pipe below the stripped portion to hold it in place while connecting the wire

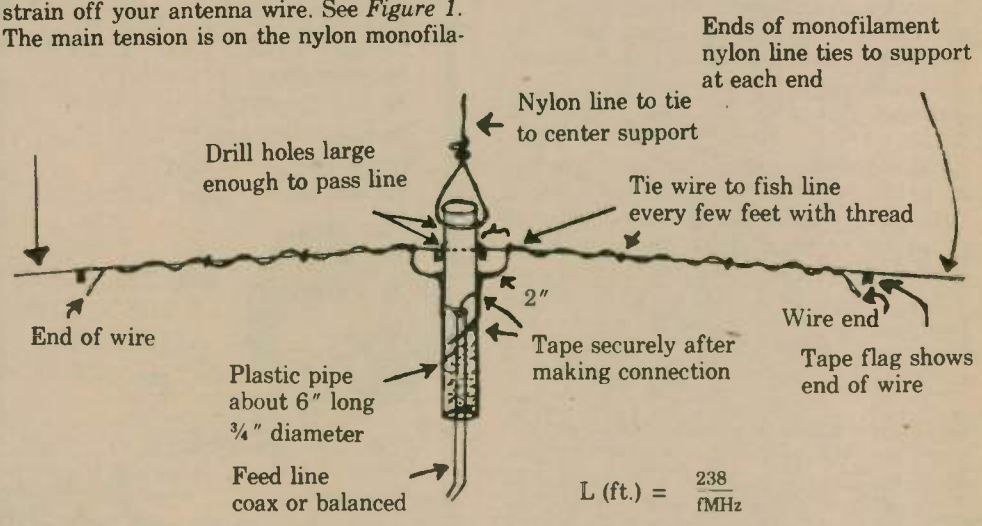


Figure 1 — Details of the fine wire-no strain antenna. L = feet *each side* of center for simple dipole. Check with your local gas company for plastic pipe scraps. Black polyethylene pipe works very well in any weather.

to feedline using the wire wrap method. I don't bother to solder here, as this is more likely to make the wire brittle and cause it to break. Clip off any excess wire. Keep each side of antenna and feedline on opposite sides of the plastic pipe as you wrap it up tightly (no pun intended) with electrical tape. Leave a little slack loop in the antenna wire above the tape. The tape weatherproofs your connection and also takes the strain of the feedline weight off the connection. Wonderful!

Incidentally, a very fine tape to use outdoors and in hostile climates is Scotch #23 or Plymouth Plyvolt (no liner) HV, self-fusing insulating tape. The beauty of this tape is that when applied properly (stretched), it self-fuses; that is, it welds to itself, providing a super seal bond that will not peel or unwrap in the weather.

I hope this method of using small wire for antennas will be of use to those making their first antenna and those wanting to try something different. It is fun. Good luck. □

A coax connector tip from Illinois

"What is the proper way to install a PL259 coax connector? As many times as I try, I always get those little copper hairs sticking out."

The reason the copper hairs keep sticking out is because they are not tinned. Pull the braid tight to the form then put a solid but thin coat of solder all over the braid. This will keep all the strands together, and is much easier to work with. Then screw the connector on the cable and solder the center conductor first. Next solder the barrel part using the little hole on the side to feed in more solder. (I prefer propane torch for this part, but be quick.) **Two rules to follow: 1. Solder the part, not the iron. 2. Solder always flows toward the heat source.**

— Ham Gab, Burbank, IL □

Getting back to nature

Ray Peterson, KA2HXV, has become a pioneer on Staten Island in the coming technology of solar energy. Ray's station is totally powered from the sun. All equipment is solid state and operates from a 12-volt car battery, which is deep-charged by a solar panel mounted on the roof of his home.

Ray started thinking about solar power last summer as he was enjoying the sun on his patio. He then saw the article by John Halliday, W5PIZ, in the August **QST,** describing his efforts to reclaim some of the abundant energy from the sun. A letter to Halliday elicited a friendly note in response in which a net on SSB on 14,280 kHz±, Saturdays at 2200Z was suggested.

Ray inquired of four corporations and three for information on solar panels. He finally settled on a panel from ARCO Research.

While awaiting delivery of the panels, he finished a room in his basement to serve as a ham shack. Finally, the panel arrived and, with the help of Ed Madison, WA2HQA, it was installed in a south-facing direction on the chimney of Ray's home.

The panel can provide 33 watts to the system and has an open circuitry voltage of 20. Maximum charging current is about 2 amperes at 12-14 volts. The storage battery is from Sears, rated at 80 ampere-hours, bought specially for this purpose.

Ray built a distribution panel to provide current to his HF and 2-meter FM gear. Both input and output currents and voltages are metered on the panel and the entire system is protected with a 10 amp. fuse.

(please turn to page 50)

Skip survival

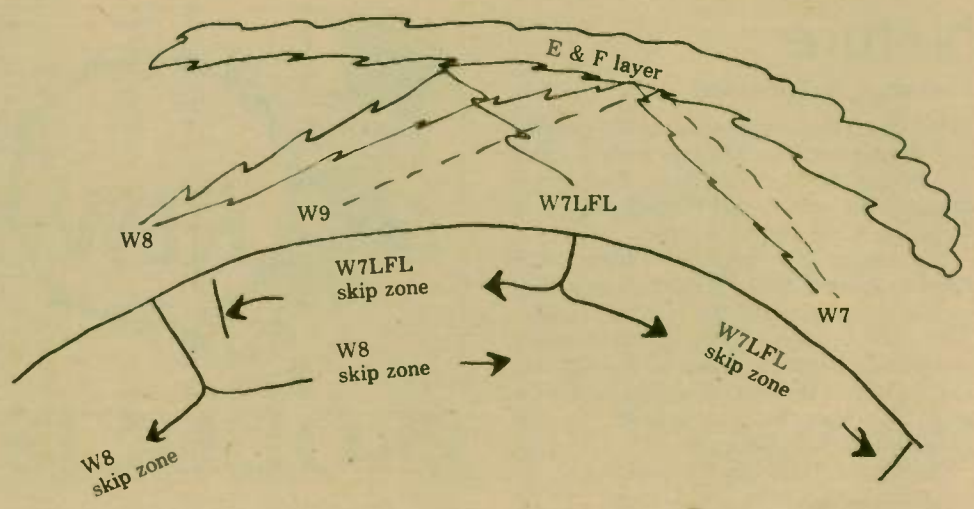
(continued from page 7)

ferent E_S cloud. As the morning progresses, the ionosphere is sun radiation activated between these two QSOs over a period of 30 minutes and then all four stations can hear one another. QRM, yes; avoidable, no.

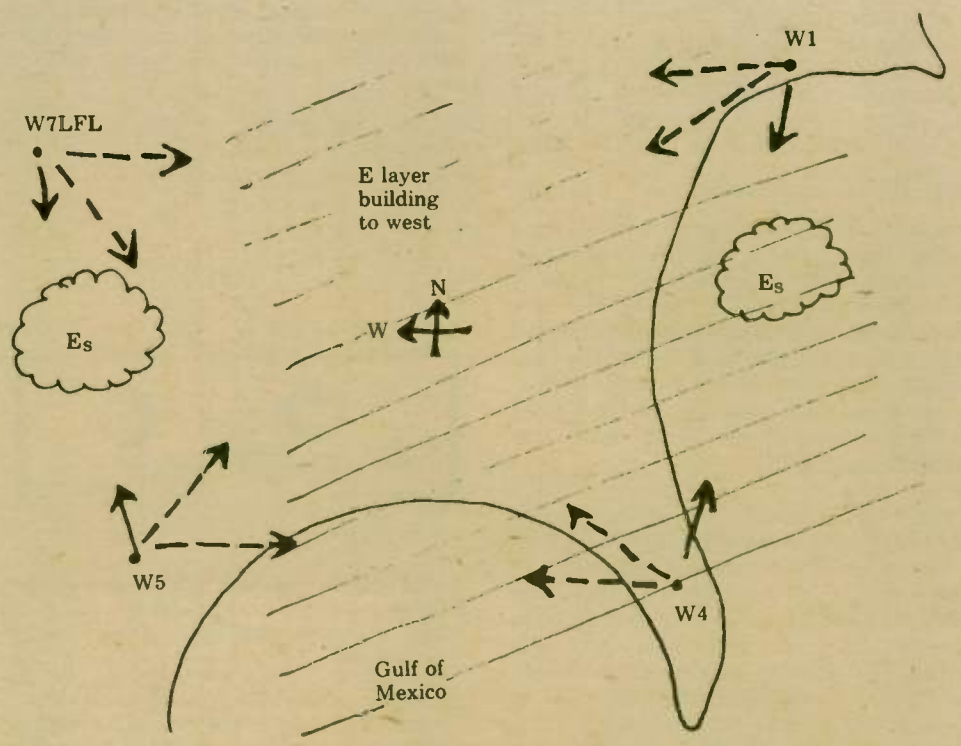
Some QRM is avoidable. If you have called CQ three transmissions in a row and did not get an answer (assume the band is open), then you most likely are on top of a station that is too close for you to hear. So you move to another frequency. This is especially true near sunset, when the minimum skip distances may be in excess of 2,000 miles.

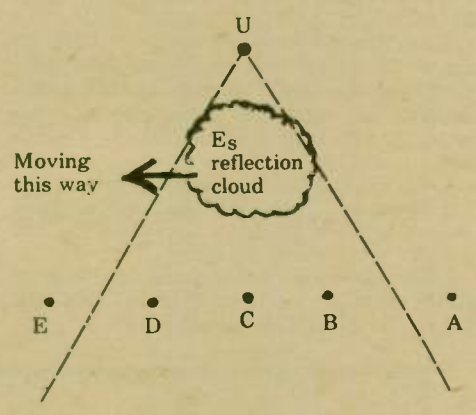
If you are a Novice and the 15 meter Novice band is full, do not slide "almost" on top of a weak station and call CQ. Just because you own an 80 Hz wide CW filter, the other station may not, and as conditions change you may ruin his QSO. Instead try another band or just listen for a while and you will be able to call a station at the end of his QSO.

If I call CQ, more than one station may come back to me. I pick the one who is RST 599 and you, who were only RST 329, are ignored. Does that mean you, thinking that you were not heard, should call CQ on this frequency? If you do and if Kilowatt Sam, who lives 50 miles away from me answers you, then I will have lost my QSO because my contact can hear Sam better than me. Or what if conditions change, and they will, and I wipe out your contact with Sam? Where will you be then? Of course, these things cannot happen because you now understand these bands.



When W9 is transmitting, W7LFL not hearing QSO will call CQ. W8 hearing only W7LFL on clear frequency will answer and cause QRM at W7.





Station U loses contact with A and now hears B, C and D. Soon, station U will also hear E.

As morning goes to midday, the E layer will do what the E_S clouds did earlier. With the E layer building because of the sun, the two QSOs will QRM one another.

Contact Worldradio for hamfest prizes.

Nature

(*continued from page 49*)

Seven fused circuits provide outlets for gear and accessories. There is also a series diode to prevent the battery from discharging through the solar panel during periods of darkness, when output is zero.

The system also provides current to a lighting system; thus Ray's station is completely independent of the electric mains.

He plans to make a demand-supply analysis to better understand the system. Ray feels that the station could operate for about one week with no output from the panel in that unlikely event.

The bottom line? Ray figures that at the current electric rates, (and rising all the time), payback time will be about three years. This is neglecting energy tax credits on income tax.

All in all, Ray is very pleased with his system and would be happy to talk about it to anyone interested.

— *SIARA News, Staten Island, NY* □

Aerials

(*continued from page 46*)

loading knob on tube-type transmitters really means. Any comments will be welcomed. Any favorite tricks of yours will find a place here. However, if you're going to tell us how you load up the metal clip on your pen, and that as it sits in your pocket, you work Europe on 80 with 3 watts from your basement in San Diego at noon local time, send it to 23 Skidoomagazine!

(Kurt N. Sterba is obviously nom de plume. Kert said his true identity has to be protected as he works with a lot of hams. He doesn't want them needling him with, "I know more about antennas than you do." Such may be true, but he comes cheap. Like all of us, he does have feelings and was hurt by the letter that came in saying it was doubtful if he could get a Larsen 5/8 mag mount to load up on 2 meters. Kurt says it does just fine on his convertible.) □

PRODUCTS

Shortwave/longwave tuner

Designed to enhance reception throughout the 10 kHz through 30 MHz spectrum, this new shortwave/longwave antenna tuner boasts the widest frequency coverage of any tuner on the market.

The wideband tuner preselects desired signals while reducing or eliminating intermodulation, crossmodulation, images and desensitization from unwanted signals.

Front-panel switching allows push-button selection of two antennas and two receivers, while a front-tuning dial permits signal enhancement.

Guaranteed to improve reception on any shortwave or longwave receiver, the wideband tuner sells for only $59.95 plus $1.75 shipping and handling. Order toll-free by calling 1-800-438-8155 or by writing Grove Enterprises, Inc., Dept D, Brasstown, NC 28902. □

Standard keyboard catalog

A 24-page catalog of standard keyboards is now available from George Risk Industries, Inc.

Bulletin KB-20 includes data on the company's Model 753, 756, and 771 Standard Keyboards, plus a variety of new models ranging from 10 to 98 keys. Featured are the new Process Control Keyboard with serial I/O for industrial control system applications, user-programmable ASCII keypads, and a full complement of keyboard enclosures and accessories. Off-the-shelf models include low-cost units for hobby-educational use and keyboards suitable for a variety of prototype, limited production, and specialized applications. Rugedized versions for heavy-duty industrial and military applications are offered.

Free copies may be requested from George Risk Industries, Inc., GRI Plaza, Kimball, NE 69145. Or call toll-free 800-445-5218. □

New 5dB gain mobile antenna

Avanti Communications has recently modified its 5dB gain on-glass mobile antenna designed for use in two-way and Amateur Radio communications.

The new ¾ meter 410-512 MHz AP450.5G features a straight 30″ whip with a small center-positioned phasing coil. By popular request, the former loop section has been eliminated and replaced by a small, sleek coil measuring only 1½″ in length and a maximum diameter of ⅜″, making it the smallest UHF 5dB gain whip and phasing coil combination on the market.

As with each of Avanti's on-glass communications antennas, the new AP450.5G offers improved performance, requires no holes to be drilled, features shorter installation time, and requires no metal ground plane, thus allowing it to be used in many more applications than conventional mobile antennas.

For more information contact: Avanti Communications, 340 Stewart Avenue, Addison, IL 60101. (312) 628-9350. □

Five-mode keyboard

A five-mode sending terminal newly introduced by Curtis Electro Devices offers keyboard origination of Morse, ASCII and Baudot codes in addition to being a paddle keyer, code practice generator and contest memory unit.

Called the KB-4900, this unit blends the power of a microprocessor with the ease of analog controls and indicators.

Features include a 256-key sending buffer and a 256-key soft-sectored message memory with up to four callups. The two-key lockout and fully debounced keyboard offers all domestic, European and many commercial prosigns for CW, all Baudot characters, and upper and lower ASCII communication characters. Automatic line-length control, word wrap-around, hold and backspace make sending easy and error-free. All LTRS and FIGS shifts are automatic in the Baudot mode.

Analog controls (pots) are provided for speed, weight, pitch and volume together with meter displays of Morse speed and buffer status. Output is via mercury relays for the keyline and PTT (or KOS) line. RTTY output is a loop switch.

The message memories include three fixed preambles (CQ, CQ TEST, ID and QRZ) plus up to four programmable memories. An

automatic serial number can be inserted in any memory or the buffer for contests. An optional real-time clock inserts 24-hour time in the buffer of memory, also.

The code practice mode generates either true random (no answers) or pseudo-random five-letter Morse groups in eight lists (with answers). Character spacing can be expanded for easier learning.

Powered by either AC or +12VDC, the KB-4900 measures 12″ × 8½″ × 4½″ and weighs 5 lbs. It is priced at $379.95 FOB the factory.

For detailed specifications, write Curtis Electro Devices, Inc. Box 4090, Mountain View, CA 94040; (415) 494-7223. □

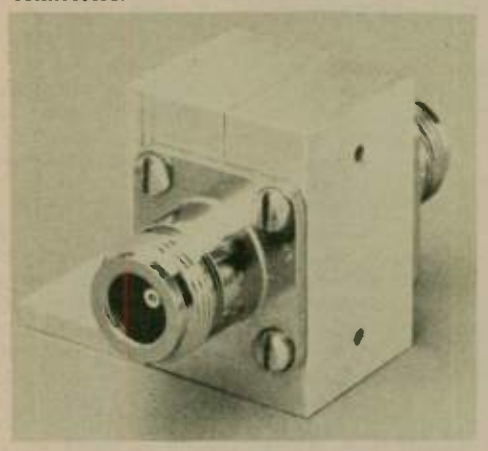
ZAP TRAPPER™

The new ZAP TRAPPER™ (Patent Pending), introduced by PolyPhaser Corporation, significantly outperforms previous lightning protection apparatus for communications antennas, cable and equipment, according to Roger R. Block, PolyPhaser president.

The new ZAP TRAPPER™ impulse suppressor utilizes controlled atmospheric technology. "This process is field-proven in the telephone industry and assures a micro-second response to lightning impulses, plus multiple impulse suppression which is especially critical for the protection of today's solid-state communication equipment," Block stated.

"Typical air-gap type arrestors will shunt the first of many impulses within a single strike safely to the ground, and then become useless due to contact vaporization for the remaining impulses." In effect, Block remarked that "arrestors" — or air-gap devices — do little more than provide a sense of false security beyond the initial energy impulse.

PolyPhaser's ZAP TRAPPER™ installs quickly, directly into the transmission feedline, and is available with either type N or UHF connectors.



Specifications: Type N

— Bandwidth	.1 MHz to 1000 MHz.
— Insertion loss	0.1dB Max. @ 1000 MHz.
— VSWR	1.15:1 @ 1000 MHz.
— Impedance	50 ohms constant.
— RF Power	Up to 750 watts.
— Turn on time	1 micro sec. (approx.)
— Turn on voltage	280 VDC
— Typical surge	10,000 amps.

For more information, contact PolyPhaser Corporation, 1500 West Wind Blvd., Kissimmee, FL 32741. Telephone: (305) 846-1807. □

Professional 2-way catalog

A catalog which describes their new line of professional 2-way mobile and base antennas is now available from Avanti Communications, Addison, Illinois.

Spotlighted are the glass-mounted mobile antennas which feature a revolutionary technical advancement over the ¼ wave and gain type "ground plane" mobile antenna.

Exclusive "on-glass" impedance coupling design requires no damaging holes to drill at installation time, no expensive patch jobs at resale time. Easily installed in minutes without tools, these antennas adhere directly to the glass and cannot mar vehicles.

In addition to cutting noise and static, there are no external electrical connections to corrode and detune. Patented impedance coupling unit stays weather-safe inside the vehicle.

On glass mobile antennas are available for VHF Low Band 30-50 MHz, a 3dB gain VHF High Band model for 144-174 MHz, a 3dB gain VHF model for 220-225 MHz, and 3 and 5dB gain UHF models for 410-512 MHz.

Also described in Avanti's new catalog: a heavy duty collinear base station VHF high band antenna for 144-174 MHz; a 10-meter amateur switchable polarity beam; Moonrotor rotator; a low-pass TVI filter; dipole antenna; coaxial switch boxes; tri-band scanner base station; and mobile monitor antennas.

Additional copies of Avanti's new catalog can be obtained by contacting Avanti Communications, 340 Stewart Avenue, Addison, IL 60101. (312) 628-9350. □

Mini-Reader

Digital technology has brought the price of code reading down to earth, and increased the capabilities and features of the new Kantronics Mini-Reader™.

In a package the size of a hand-held calculator (5.75″ by 3.5″ by 1″), the Mini-Reader reads and displays Morse code, radioteletype (at any shift or standard speed), ASCII computer language, computes and displays code speed, automatically tracks Morse code speed from 3 to 80 wpm, maintains lapse or real time on a 24-hour clock, and contains both an audio frequency counter (0-79 kHz) and a 250 Hz audio filter.

All it takes is a Mini-Reader, 8 to 18 volts of DC power (available with adapter option for $9.95, suggested retail), and any ham or general-coverage receiver.

The Mini-Reader opens a world of Morse conversations, amateur radioteletype exchanges, UPI and AP news bulletins, official weather bulletins and warnings, ship-to-shore calls, special maritime bulletins and on-the-air computer exchanges.

Although the Mini-Reader is a computer, absolutely no computer knowledge is required for its simple five-button operation. Hook-up is achieved with two simple cables completely external to your receiver.

And the price is one of the Mini-Reader's best features because it comes wired, tested and warranted for a full year* and does what much more expensive units do for only $314.95, suggested retail price. If you have 12 volts DC available at your operating station, absolutely nothing else is necessary for you to begin monitoring hundreds of fascinating exchanges.

The Mini-Reader is used by Amateur Radio operators, shortwave listeners and boating enthusiasts and has commercial and industrial applications as well. The Mini-Reader is even used in monitoring foreign traffic by official United States government agencies.

You can increase the capabilities of your receiver for less than ever before. The Mini-Reader is built with the high-quality engineering, components and craftsmanship that Kantronics is recognized for, and it is available at nearly 50 dealerships in the United States and abroad.

For the name of your nearest Kantronics authorized dealer, call (913) 842-7745, or write to Kantronics, Incorporated, 1202 East 23rd Street, Lawrence, KS 66044.

*The full-year limited warranty is contingent on certain requirements, such as following manual instructions, and has some limitations. Copies available on request. □

Scanner filter

For scanner hobbyists, professional communications listeners and other VHF monitors who are plagued by interference, the new SCANNER FILTER from Grove Enterprises, Inc., will bring welcome relief to metropolitan listeners.

SCANNER FILTER is designed to tune out TV and FM broadcast interference, eliminate receiver images, reject shortwave IF feedthrough and receiver desensitizing from front-end overload.

The common aggravation by aircraft images on high-band police and fire channels, 2-meter amateur repeaters being heard in the federal government spectrum, and mobile telephone tones and signals paralyzing reception are gone.

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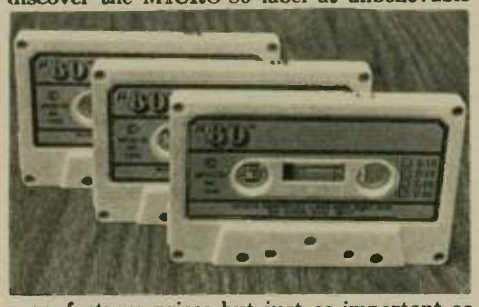

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As Bill Gosney, president and co-founder of MICRO-80 states, "Why settle for less when the best cost no more! At MICRO-80, cassettes are our No. 1 business — we are experts in the field, distributing a superior product and destined to be the largest mail order supplier in the microcomputer industry, if we aren't already!"

MICRO-80 cassettes are the No. 1 choice of serious programmers and software houses throughout the world. MICRO-80 computer grade cassettes are fast becoming the standard for public school districts, colleges and universities throughout the country where digital applications require the most reliable product.

"If you're tired of tape dropout or no-loads, have had it with inconsistent quality and design, or disgusted with inflated prices, obviously you're not utilizing MICRO-80 cassettes", Mr. Gosney states.

For further details about MICRO-80 products and services, write MICRO-80 Incorporated, W-2665 North Busby Road, Oak Harbor, WA 98277. □

Super Log II

Whether you're a ragchewer, contester, award hunter or DX operator, the all-new SUPER LOG II is the radio operator's ultimate dream come true! Expertly created by MICRO-80 programmer Joe Richey, this "machine language" software is compatible with both the TRS-80 and Model I and Model III computer systems.

How many times have you had to search through all your logs trying to find a record of a particular contact made? If you're an award hunter or DX operator, you already know the nightmare of sorting through all those QSOs, trying to satisfy various award requirements. If you're a contester, we don't need to remind you of the awesome task keeping an accurate and legible log, to be able to determine if a contact is a duplicate or not. Now you can eliminate all those frustrations and enjoy keeping a log once again.

SUPER LOG II will instantaneously retrieve information about a previous contact with its special "lightning search & sort" routine. The speed and versatility of SUPER LOG II will most certainly overwhelm you!

SUPER LOG II initializes popular column headings found in conventional radio operator logbooks: date, beginning and ending QSO times, call sign worked, QTH, RST sent and received, mode and frequency of operation, and a special section is reserved for entering comments relative to the contact made.

If you act now, all customers purchasing SUPER LOG II will also receive FREE from MICRO-80, the very popular Amateur Radio program, SUPER DUPER II, thus making this software duo-pack one of the best buys ever offered radio amateurs. With this program, the operator can keep calls sorted by band or mode. The computer immediately alerts you to duplicate contacts as they occur and allows the option to delete them from the log. Now contesters can eliminate the drudgery that has taken the fun out of their competitive hobby!

Both SUPER LOG II and SUPER DUPER II can be yours today — both programs for the price of one, only $16.95 prepaid.

For further details about MICRO-80 products and services, write MICRO-80, Inc. W-2665 North Busby Road, Oak Harbor, WA 98277. □

Ding Dong, Texas

The second annual Ding Dong, Texas Funexpedition will be held 2 and 3 May for 24 hours beginning at 1800 UTC on 2 May — a Saturday. Operating frequencies will be 7.275 MHz, 14.280 MHz and 21.380 MHz. The call sign KI5K will be used.

An 8" by 10" certificate will be awarded upon receipt of a QSL card and a SASE, which should be sent to P.O. Box 1141, Killeen, Texas 76540.

Ding Dong, located in Bell County, is a historic stagecoach stop and Lampasas River crossing site in central Texas. □

Tin plate QSL card

A multi-color 5 × 8 QSL card made of tin-coated steel will be awarded to all stations working amateurs from the Tin Plate Capitol of the world — Weirton, West Virginia, USA. The special event, sponsored jointly by the Steelworkers Amateur Radio Association and Steubenville Area Amateur Radio Club, will be held 1 May through 10 May, coinciding with the annual Steel Mark Month.

An exchange of signal reports with any of the stations calling CQ TIN PLATE, followed by your QSL and mailing costs sent to Tom Hannen, WD8IIA or RD1 — Box 161 P, Weirton, WV 26062 will bring your Tin Plate QSL card by return mail.

The cards will be encased in a clear plastic display holder as well as an outer mailing envelope, supplied by National Steel Corporation for this special event. U.S. send 30¢ in postage; foreign stations send $1.60 in U.S. currency or the equivalent in IRC's.

Suggested frequencies will be the low end of the General Class portion on all the HF bands, 80-40-20-15 and 10 meters, Phone and CW. 6 and 2-meter contacts will also be honored. K8QEW will monitor the West Virginia Phone Net 2200Z each night on 3990 kHz.

Eastern Area Army MARS members may contact any Weirton member via the WV Army MARS Nets. □

Dogwood Festival QSO party

The annual Dogwood Festival celebrated in Fairfield, Connecticut will also be observed on the air by members of the Greater Fairfield Amateur Radio Association with a Dogwood Festival QSO Party on Saturday, 16 May 1981.

Members of the club will operate on six amateur bands with the club call WB1CQO and explain the significance of the festival, which marks the blossoming of the 30,000 pink and white dogwood trees in the town of 55,000 persons.

WB1CQO will be on the air 16 May from 1300-2200 UTC, or 9:00 a.m. to 6:00 p.m. EDST. A special commemorative QSL card will be available to confirm each QSO.

Dogwood Festival stations will operate on these SSB frequencies: 3.975, 7.235, 14.330, 21.420 and 28.710 MHz. FM operation: 146.55 simplex.

Special QSO's will be sent upon receipt of a self-addressed, stamped envelope or IRCs to QSL manager Grace von Stein, KA1JT, 248 Euclid Avenue, Fairfield, CT 06432 USA.

Fairfield's Dogwood Festival began in 1936, although the original trees were imported from Japan in 1895 and earlier. Thousands of visitors flock to see the pink and white blossoms in full bloom during May. □

Florida QSO Party

This is the 16th annual Florida QSO Party, sponsored by Florida Skip. All amateurs worldwide are eligible and invited to participate. The contest will be held on 16 and 17 May 1981. Schedules follow: Saturday — 1400-1900Z (10:00 a.m.-3:00 p.m.). Sunday — 0001-0500Z (8:00 p.m.-1:00 a.m. EDT); 1500-2300Z (11:00 a.m.-7:00 p.m. EDT).

Conditions of entry: Each entrant agrees to be bound by the provisions of this announcement, the regulations of the applicable licensing authority, and the decision of the Florida Skip Contest Committee, which are final.

Valid contacts: All amateur bands may be used. ALL stations will use separate logs for phone and CW. Phone and CW are separate contests. A station may be worked once on each band and each mode. Neither crossband nor crossmode contacts (phone to CW or vice versa) will count for contest credit. Florida stations may work other Florida stations, but for contest points only. Out-of-state stations may not work each other for contest credit. Contacts made on repeaters do not count for credit.

Entry classes: Florida stations will be divided into two classes. Class "A" stations are those operating portable (under FD rules) or mobile or emergency power and running 200 watts or less (CW or PEP phone) inside Florida but outside of their home counties. Class "B" stations are all other single operator stations operating in Florida.

Exchange: Florida stations send signal report and county of operation. Out-of-state stations send signal report and U.S. State, Canadian province, or country.

Suggested frequencies:
CW — 3555, 7055, 14055, 21055, 28055
Phone — 3945, 7279, 14319, 21379, 28579, 50.2, 146.52

Scoring: Florida stations count one point per QSO with out-of state or other Florida stations. Multiplier is the sum of states (49 maximum), provinces (12 maximum), DX countries (27 maximum) actually worked; maximum multiplier is 88. Out-of-state count two points per QSO with each Florida station. Multiplier is the number of different Florida counties worked (67 maximum). Score is the product of QSO points and multiplier. Florida Class "A" stations ONLY multiply score by 1.5 to obtain total.

Awards: Certificates — phone and CW — to: the top single-operator score in each state, province, DX country, and each Florida county. There will be five plaques awarded to: high single operator out-of-state phone; and the Florida club with the highest aggregate score.

Disqualifications: At the discretion of the contest committee, stations and/or operators may be disqualified for improper reporting, excessive dupes, errors in multiplier lists, unreadable logs, obvious cheating, etc. Anyone disqualified in this year's Florida QSO Party will be barred from the contest next year.

Reporting: Phone and CW entries are to be SEPARATED. Along with legible logs in chronological order, a summary sheet is required with each entry. 200 QSO's or more supply dupe sheet. The summary sheet must contain claimed score; number of QSO's; multiplier; station's call sign; entry class and number of Florida counties; power source for Class "A" entries; county; state; province; country; call signs of all operators/loggers if multi-op; name of club, if part of a club aggregate score; name and address typed or printed in block letters; and a signed declaration that all rules and regulations have been observed. Include a 15¢ stamp for contest results from a future issue of Florida Skip.

Entry deadline: All entries must be received on or before 15 June 1981. (Late DX entries will be accepted within reason.) Mail all entries to: FLORIDA SKIP Contest Committee, P.O. Box 501, Miami Springs, FL 33166. □

Michigan QSO Party

The 1981 Michigan QSO party will be sponsored by the Oak Park Amateur Radio Club, W8MB. Phone and CW are combined into one contest. Michigan stations can work Michigan counties for multipliers. A station may be contacted once on each band/mode. Portable/mobiles may be counted as new contacts each time county changes.

Operating times are as follows: 1800 GMT on Saturday, 16 May to 0300 GMT on Sunday, 17

May; and from 1100 GMT on Sunday, 17 May to 0200 on Monday, 18 May.

Exchange: RS(T), QSO#, QTH, county for Michigan; state or country for others.

Scoring: Multipliers are counted only once. *Michigan stations:* 1 pt. per QSO × (states + countries + Michigan counties) on phone. Each CW contact is 2 pts. per QSO. KL7, KH6 count as states. VE counts as a country. (Max. Mult — 85). *Non-Michigan stations:* QSO pts. × Michigan counties. QSO points as follows: 1 pt. each Michigan Phone QSO and 2 pts. each CW contact. Five (5) pts. each club station contact (W8MB). Max. Mult.-83. VHF only entries: Same as above except multipliers per VHF band are added together for total multipliers. No repeater contacts allowed. Five (5) points for each OSCAR QSO. Five (5) points for each W8MB contact for both Michigan and out state.

Suggested Frequencies: **CW** — 1810, 3540, 3725, 7035, 7125, 14035, 21035, 21125, 28035, 28125; **Phone** — 1815, 3905, 7280, 14280, 21380, 28580; **VHF** — 50.125, 145.025.

Awards: Only single operator stations qualify. **Michigan trophies:** High Michigan score, High Michigan (Upper Peninsula) score, High aggregate Club Score. **Plaque:** High VHF only entry. High Mobile. **Certificate:** High score each county (Min. 30 QSOs). **Out-state:** High out-state trophy and certificates for high score each state and country.

A summary sheet is requested showing the scoring and other pertinent information, name and address in **block letters**, and a signed declaration that all rules and regulations have been observed. Michigan stations include club name for combined club score. Party contacts do not count toward the Michigan Achievement Award unless one fact about Michigan is communicated. Members of the Michigan Week QSO Party Committee are not eligible for individual awards.

Decisions of the contest committee are final. Results will be final on 31 July 1981 and will be mailed to all entries. Mailing deadline is 30 **June 1981** to: **Mark Shaw, K8ED, 3810 Woodman, Troy, MI 48084.** □

6th Annual SOWP CW QSO Party

The Society of Wireless Pioneers (SOWP) will hold their 6th Annual CW QSO Party on National Maritime Day, 22 May, 1981. The party will start Thursday evening, 21 May, and will run for the full 24-hour GMT period.

There are no formal requirements except an exchange of name, membership number and QTH. Suggested frequencies are 55 kHz (±5 kHz) up from the low end of each amateur band. Novices should operate in the center of each Novice band.

Members who can only participate part-time are requested to make their calls on the even hours during the period. To optimize long distance contacts, it is suggested that 10 and 15 meters be used from 1400Z to 2100Z.

The call for the party will be CQ SOWP. A special certificate will be available to all members who contact a minimum of 10 other members during the period. Requests for the certificate must include a list of stations contacted, dates, times and membership numbers of the stations contacted. In addition, an SASE must be included. Logs should be submitted to the Society's Senior Vice President Manuel "Pete" Fernandez, W4SM, 129 Hialeah Road, Greenville, SC 29607. Requests must be submitted not later than 15 June 1981. □

Minnesota

The North Area Repeater Association will sponsor the state's largest swapfest and exposition for radio amateurs and computer hobbyists on 30 May at the Minnesota State Fairgrounds in St. Paul. Free overnight parking of self-contained campuers on 29 May

Talk-in on 16/76 and 52. Exhibits, booths, and prizes. Admission: $3. For information or reservations, write Amateur Fair, P.O. Box 30054, St. Paul, MN 55175. □

South Carolina

The Blue Ridge Amateur Radio Society will hold its annual hamfest this weekend of 2-3 May 1981 at the American Legion Fairgrounds, Hwy. 25 bypass, in Greenville, South Carolina.

Features will include FCC exams, to be held at Greenville Tech. on Saturday from 10:00 a.m. to 3:00 p.m.; dealer exhibits, inside flea markets, overnight RV parking, chicken/pork plates, and prizes. Motel rooms can be reserved at the Ramada Inn, 1-800-228-2000.

For more information, write to: Blue Ridge Amateur Radio Society, 200 Walker Sp. Road, Taylors, SC 29687. □

Tennessee — Virginia

The first Tri-Cities Hamfest will be held at the Appalachian Fairgrounds, Gray, Tennessee on 2 and 3 May 1981. Bristol, Johnson City and Kingsport Amateur Radio clubs are co-sponsoring this fun-filled event with forums, dealers, flea market, and RV hookups. Starts at 9:00 a.m. Saturday and ends 4:00 p.m. Sunday. For information or reservations, contact Tri-Cities Hamfest, P.O. Box 3682 CRS, Johnson City, TN 37601. □

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If you should receive duplicate issues some month, and one of them has only your name, call and address, and no computer number, you have been selected to pass the extra copy on to a ham who may be interested in seeing the paper. Pass it on.

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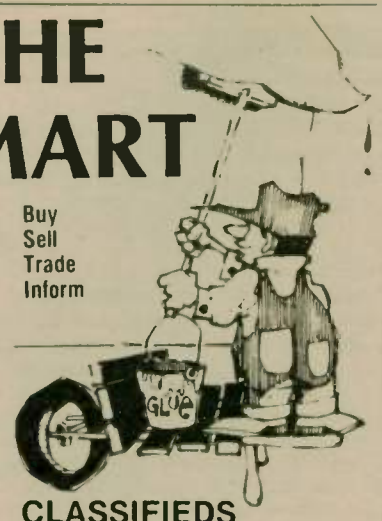

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