

Worldradio

Year 21, Issue 8

February 1992 • \$1.25

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Apple Valley, CA — USNR
V6 program, 1942

Bakersfield, CA — Christo
umbrella special event

Florida Keys ARC —
Reflections of radio
waves

Lawrence, KS — Barebones
crystal set

Salt Lake City, UT — SET

Scottsdale, AZ — HF Antennas

Springfield, NJ — Scouts worldwide

Western Pacific, aboard RCCL's *Viking Serenade* — Solar
journey



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Sacramento, CA 95818
or
P.O. Box 189490
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Worldradio

Year 21, Issue 8

February 1992 • \$1.25

Solar journey

(part one of two)

HARVEY S. LAIDMAN, N6HL

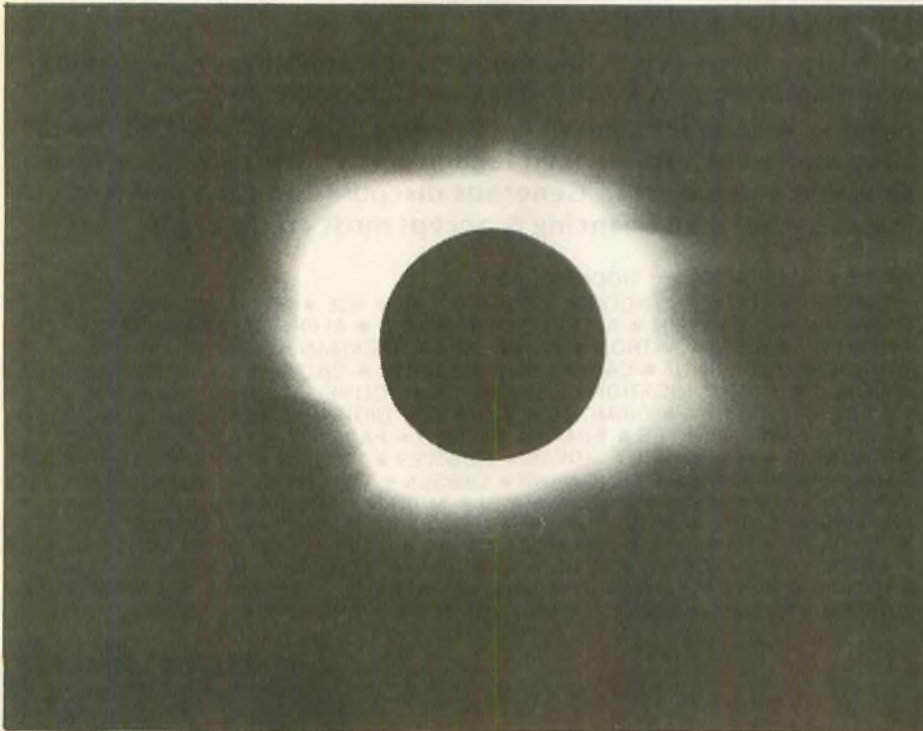
On July 8, 1991, 1,200 sturdy souls boarded the M/V *Viking Serenade* to keep an appointment with destiny. The next few days would bring great joy or dismal failure. Only the gods and maybe Willard Scott knew for sure.

The Great Eclipse of July 11, 1991, was unique. It is true that there are more solar than lunar eclipses, but since the sun is so much farther away than the moon, a solar eclipse is visible in a much smaller area on Earth. In fact, a total solar eclipse is likely to be visible at any given spot on Earth only once in about 400 years.

The Earth is mostly water, so many eclipses occur over water and where obscuring weather conditions may be

present. The maximum time that the moon can possibly cover the entire disk of the sun is seven minutes. This eclipse had nearly seven minutes of totality, not likely to happen again until the year 2400.

The path of totality extended from daybreak just west of the Hawaiian Islands to sunset along the Amazon in Brazil. Eclipse watchers gathered on the Big Island of Hawaii and at the resorts of Mexico and the Baja Peninsula. The eclipse was scheduled to visit Hawaii in the morning and Mexico at around noon. One Hawaiian entrepreneur chalked off meter squares of his tennis court and rented these standing spaces to tourists. Eclipse T-shirts and baseball caps were selling at a fine pace.



The solar eclipse of 1991. (Photo by Harvey Laidman, N6HL—510mm lens F4.5 1/60th, 400 ASA color negative)

On the bridge of the *Serenade*, meteorologists poured over charts and satellite maps. The ship had the advantage of being able to perhaps outmaneuver the weather. From the evening of July 10 on, the weathermen were at the helm. The atmosphere on the vessel was tense. Below the third level, four tons of caviar and 6,000 frozen lobsters were stored to nourish the observers. The 10,000 horsepower engines vibrated with determination.

Amateur Radio operators meet

Thickly encased in their life preservers, the passengers oozed down the narrow companionways toward their lifeboat stations for the mandatory lifeboat drill. Burdened with his equipment, Tom, KE9SJ, struggled with his transceiver and antenna. At the awkward, highly visible intersection, fellow Amateur Radio operators introduced themselves to Tom, and stood for a moment amazed that they had shared this common quest. Then they moved on, leaving Tom still snared in his feedline.

Later, a group of hams met on the top deck to install the station. We all had dreams of taking equipment with us, but we were discouraged by the amount of paperwork required: permission from Royal Caribbean, licenses from the Bahamas and Mexico, permission from the ship's captain and staff. Tom had taken the time to do all this.

Bonded together by their scientific interests, the passengers were not the usual cruisers and they were happy to be among others who understood their interests instead of asking them to "guess my sign," or "Is my moon in Virgo?" Indeed, the hams in this group were often met with: "What's your handle?" "Negatory, Good Buddy." A voyage to greater understanding by the perpetually misunderstood!

But it is often the case that those who seldom look up from their calculators wear their hearts in their pocket protectors. It would be awhile before the "ice" was broken. In ill-fitting suits and cockeyed-knotted (please turn to page 14)



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HF antennas

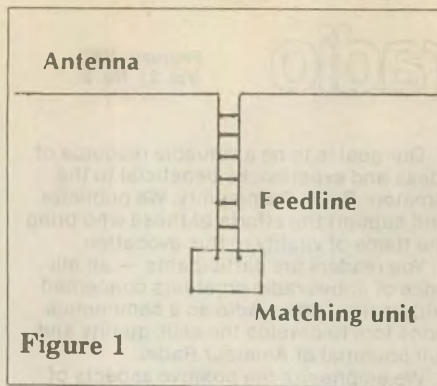
NORM BROOKS, K6FO

At the Southwestern Division ARRL Convention at Scottsdale, Arizona, on October 12, I was happy to be able to attend two forums on HF (high frequency) antennas. Each was to be moderated by a recognized authority on the subject. I wanted to attend both forums to see if there were any contradictions that I could leak to Kurt Sterba. I guess they were one step ahead of me, because they cooperated so completely that there could be no contradictions or duplications.

The first forum was headed by Jim Stevens, KK7C, of Antennas West. The other expert was Lew McCoy, W1ICP. You may recall that Lew spent a career with the ARRL, retiring as a technical editor. He then took a "retirement job" with *CQ* magazine, where he is a technical representative. These two gentlemen then acted as backup for each other throughout the two forums.

Multiband techniques

One of the earliest multiband antennas was developed in the 20s and 30s. It is shown in Figure 1. The flattop was as long as your lot would allow. The center was fed with a feedline with spacers made of wood boiled in paraffine. We didn't have coaxial cable in those days. The matching unit consisted of coils and capacitors used to tune out the unwanted reactance brought about from the antenna being



too long or too short for the operating frequency. This setup is efficient and is as good as anything we have today. When this antenna is a half wavelength high (e.g. 130 feet for 80M, 65 feet for 40M, etc.) the take-off angle is 30 degrees. To get a lower takeoff angle for DX work, the antenna would have to be much higher. (e.g., a full wavelength high to get a 15-degree takeoff angle.) More on this later.

At this point Lew McCoy offered a statement from one of his articles: "An amateur should build his antenna as big and as high as possible. If it stays up, it wasn't big enough or high enough." Jim pointed out that "Lew's Law," though correct for a DXer, might be counterproductive if your goal is to check in to a relatively local net. For such communication it would be better to have a lower antenna that puts lobes almost straight up, which would then be reflected down to nearby points.

Multiband antennas

Jim displayed his commercially made multiband antenna. It consists of a flattop which can be any reasonable length. It is fed by twinlead which changes to coaxial cable. The wires are all insulated, not only for safety, but to eliminate charged particle noise when the wind blows across the antenna. The conductors are stranded for flexibility and to prevent kinks. In some areas a bare antenna wire, if stranded, would soon develop corrosion between the strands. When the wind moves the strands, the corrosion acts like a semiconductor, generating noise in received signals and possibly RFI when transmitting. Insulating the antenna conductor prevents this.

If any length of flattop on the multiband antenna radiates, why not pick a "good" length? What happens when the flattop is 102 feet long? It becomes the antenna developed by the British amateur Louis Varney, G5RV.

The G5RV antenna

The 102 ft. flattop divides up into three quarterwaves on each side on 20M. This would give a lower radiation angle than a dipole on 20M. If this (please turn to page 16)

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PUBLISHER'S MICROPHONE

We first enshrine some names for
posterity. Many centuries from now,
when archaeologists uncover and read
this issue of *Worldradio*, they will say,
"Ahhh, there were wise people in the
20th century." The latest to join the
Worldradio Super-Boosters (lifetime
subscribers) are:

Jennifer Horne, N4WXZ, Herndon, VA
Eric Koch, NF0Q, St. Charles, MO
Steve Fogleman, KF7YT, Douglas, AZ
Gregg Rawson, KC6KFJ, Ontario, CA
Fred Osterman, WA6GSC, Yorba Linda, CA
David Schultheis, WB6KHP, San Jose, CA

In the December issue, a gremlin at-
tacked the call sign of Oakland, CA's
Stanley Northey—it is W6MO.

Walking around with heavy hearts
because clerical ineptness has pre-
vented them from being listed in a
timely manner (ruffles and flourishes
please to compensate) have been:

Francis Whittier, WB1CXX, Madison, ME
James Ballard, K0OGU, Kansas City, MO
Paul Rhoads, WB6TUT, Vancouver, WA

Now comes a new program which we
feel will be of great benefit to Amateur
Radio. As you know, many of our
fellow amateurs need an extra nudge to
encourage them to participate in the
activities (clubs, Field Day, public ser-
vice, local hamfests, etc.) that so many
others almost take for granted.

Even some who go to clubs, if the
club is too large, may feel like part of a
nameless, faceless crowd. The idea here
is to bring things down to a manage-
able level. Here's the procedure:

Send *Worldradio* (2120 28th St.,
Sacramento, CA 95818) a stamped,
self-addressed envelope. Write your
ZIP code in big numbers. We will then
send you a gummed label for every

amateur in your ZIP code, at the cost of
\$1 per ZIP code.

We have to pay the computer house
for the extraction of your neighbors
and one of our young ladies has to do all
the work. Make a copy of the names
and addresses that we send you so you
can do a followup.

Then find a local coffee shop or other
convenient establishment that has a
meeting room in the back and invite
the amateurs in your ZIP to a Saturday
morning monthly get-together. (This
may well bring some nearby amateurs
who you've never met out of the wood-
work.)

Each of the five-number ZIPs repre-
sent a local post office station, all with
their distinctive names, which you
might want to adopt as identity for
your group. For example: 95818, where
Worldradio has its offices, is "Broad-
way." The adjacent one, 95816, is "Ft.
Sutter."

Should your individual ZIP (usually
averaging 10,000 homes) have few

amateurs, you might want to add to
your label request an adjacent ZIP
code. In this case, include another
dollar.

We believe that this will accomplish
many things, like bring out more peo-
ple to help each other raise antennas,
facilitate carpools to area hamfests, in-
crease fellowship, and create a larger
and closer pool to draw from for
emergency work.

Take it upon yourself to make up
some postcards or letters to your near-
by amateurs and make meeting ar-
rangements with the local coffee shop.
Volunteer to be the action-man in your
ZIP. Drop a note to us and tell us how it
is working out—we'll print your story
here and it may well prove to be inspira-
tional to others.

Into the mailbag . . . a critic said we
are too West Coast and should do more
on the East Coast. Whenever I hear
that, my answer always is: send in
something from your area and we'll
print it.

One letter said, "Most hams do like
photo and darkroom work." If that's
so, I wish they would send in more pic-
tures of what's going on.

Another suggestion was that we do
more on fox hunts, like they have in
Europe—that is, hidden transmitter
hunts (DF) on foot.

Many would like to see more about
AMSAT-OSCAR and satellites. Me,
too. That is our future.

Also, we've received requests for
amateurs to write up reviews on the
equipment they have.

More on RTTY, AMTOR, packet
and digital would please many.

Okay, let's see some fingers flying
from the knowledgeable in those fields.

—Armond, N6WR

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Yellow umbrellas spanned the Tejon Pass in Southern California.

Christo umbrella special event station

JACK SHERMAN, W6KAS

Sunflowers, dandelions, yellow mushrooms—umbrellas! Huge bright yellow umbrellas scattered all over the hillsides. Over the weekend of October 11, 12 and 13, 1991, Christo Creations and his version of art, decorating the landscape using 1,760 yellow umbrellas, drew one million people to view this phenomenon. Located on a 19-mile stretch of the Tejon Pass through the mountains between Los Angeles and Bakerfield, California. These huge um-

brellas could not fail to capture the attention of the world. Symbiotically, and simultaneously, 1,340 blue umbrellas appeared in Japan.

To assist in telling the world of this event, hams from the Bakersfield community, under the leadership of Micky Hicks, WO6T, set up a special event station. This special event station was staffed mostly by new hams, some of whom had never before even operated a station. Soon they learned to act like pros in fielding rapid contacts across the nation and the world. This special event was a great introduction to what can be done with very few of the so-called necessities. We worked with only generator and battery power and no extra amplification. Bands worked were 2M simplex, ATV (by Terry, N6TFG), SSB and CW on 10, 15, and 20M.

I am sure these new Hams are now anxious to upgrade and be able to work the world in their own homes. Each station contacted will be receiving a picture QSL commemorating this once-in-a-lifetime event. □



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Scouts worldwide

Boy Scouts from Troop 73 and Cub Scouts from Pack 73 of Springfield, New Jersey, participated in the 34th annual Jamboree on the Air, or JOTA, an annual event sponsored by the World Bureau of the Scout Movement. The Jamboree on the Air was held worldwide on October 19 and 20, 1991. Thousands of Amateur Radio stations around the world invited local scouts to visit their homes and participate in the operation of their radios. The operators established contact with other participating national and international ham operators who also had scouts visiting their ham shacks. The scouts got a chance to talk to their fellow scouts hundreds or thousands of miles away. Typical information exchanged consisted of location, scout rank, name, hobbies, etc.

Springfield scouts took to the woods and set up at the Watchung Reservation in Mountainside, New Jersey, on October 19, 1991. Springfield Emergency Management staff members Scott Seidel, WA2WUX; Marc Lepore, N2GIH; Ron Scull, WA2QNZ; Paul Hawryluk, WB2ITW; Adam Seidel, KB2KOQ; Eric Deutchman, WB2LMW; Jeff Katz, WB2DCV; and Marc Marshall, KB2KEC set up a temporary outdoor radio station. A portable generator was used to power the station and scouts gathered around the radio to participate in the Jamboree.

Stations were contacted via 10M SSB in New Mexico (KA5VFU); Gulfport, Mississippi (N5QZK); Overland, Kansas (KB0JNK); West Palm Beach, Florida (N4ZWC); and W5DDC at the Mount Bayou Scout Camp in central Louisiana. The scouts talked directly with scouts from other states as well as to scouts in other countries. The scouts were able to talk to amateurs in Bulgaria (LZ2WM); Albania (ZA1QA); and Blackwood,

Wales (GW0MAW). Equipment used was a Kenwood TS-430S and a long-wire Windom antenna. A packet radio

computer station was also set up by Marshall and used to exchange information via computer. □



Scouts learn soldering as well as operating during JOTA in Missouri.

JOTA in Missouri

Getting scouts talking on the air during October's annual "Jamboree-on-the-Air" (JOTA) is one thing, but we thought getting a soldering iron into their hands might accomplish even more.

Members of the Kimberling Amateur Radio Club (KARK) took "show and tell" beyond the stations they provided at the annual JOTA outing at Mill Creek Campground on Table Rock Lake in Missouri's Ozark Mountain vacationland. Here, Mark Duple,

K0ONB, encourages a tentative step toward understanding more about Amateur Radio for some Missouri area Scout Jamboree campers.

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

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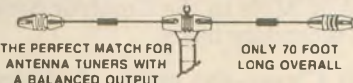
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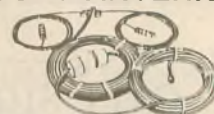
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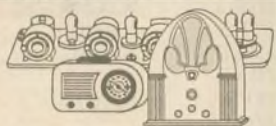
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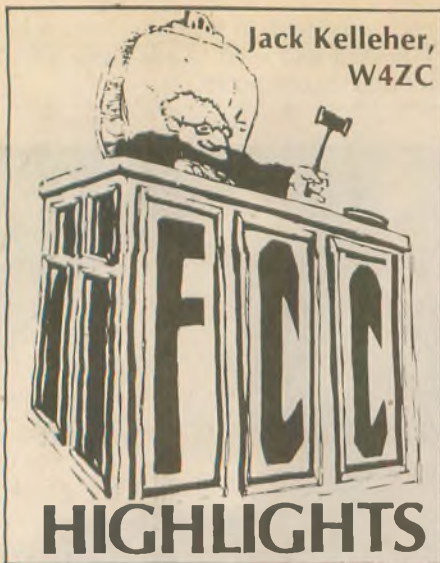
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Jack Kelleher,
W4ZC

Digital audio broadcasting

On October 31 the FCC announced an agreement with the Executive Branch that the US will seek an allocation for satellite and complementary digital audio broadcasting at 2.3 GHz, specifically at 23.10 to 23.60 MHz.

In ITU Regions 2 and 3 (Region 2 is the Western Hemisphere; Region 3 is the Pacific basin) amateur stations are allocated 23.00 to 23.10 and 23.90 to 24.50 MHz on a shared basis. These are US domestic allocations on a secondary basis; the ITU allocation is 23.00 to 24.50 MHz to the Amateur Service on a secondary basis.

Tech Class—the entry of choice

The FCC has released amateur licensing figures for the end of September—the end of the federal fiscal year—and the pendulum has swung strongly toward the Technician license being the gateway of choice into Amateur Radio, ARRL EVP David Sumner, K1ZZ, said.

In the 12 months beginning October 1990 there were 38,363 new amateur licenses issued and 30,825 upgrades.

Both figures represent increases over the previous year as well as earlier years. For comparison, in the 12 months beginning October 1989 there were 26,134 new licenses issued and 29,699 upgrades.

During September 2,407 new amateurs were licensed—the lowest number since February. However, Sumner said: "The backlog of unprocessed applications at the FCC in Gettysburg, Pennsylvania, grew by more than 1,200 during the month, suggesting that the dip is more the result of that than of flagging interest. Looks as if no-code Technician was the way to go, doesn't it?"

Potential interference from ISM devices

The FCC has issued a Notice of Inquiry seeking input on radio noise generated by industrial, scientific and medical equipment (ISM). The NOI, released November 6, 1991 (ET Docket 91-313) asks if it is "desirable and feasible" to harmonize FCC rules with the international standards for ISM equipment.

The FCC defines ISM equipment as that designed to generate and use RF energy to perform some work other than telecommunications. Examples include dielectric heating used in sealing plastics; induction heaters for welding pipes; medical diathermy and electrosurgical equipment; industrial microwave heaters; domestic microwave ovens; ultrasonic cleaning equipment; and medical diagnostic equipment.

The purpose of the FCC NOI is twofold: to gather information useful in establishing positions with regard to CCIR (International Radio Consultative Committee) and CISPR (International Special Committee on Radio Interference) activities in this field, and to aid in formulating changes to FCC regulations if it becomes necessary or wise to conform to international standards. (*the ARRL Letter*, 11/14/91)

More on 216-225 MHz

In June of 1991 the ARRL filed a petition with the FCC seeking a secondary allocation for the Amateur Service at 216-220 MHz, proposing that amateur access be authorized only for point-to-point fixed operation on a non-interference basis. One objective was to reaccommodate those amateurs displaced by the reallocation of 220-222 MHz.

The petition was more or less invited by the FCC when they rejected the ARRL's Petition for Reconsideration of the 220-222 MHz reallocation. At that time the FCC said the ARRL could make a specific proposal supporting how it might use 216-220 MHz without causing interference to existing users or to TV channel 13 operations at 210-216 MHz. The FCC accepted the petition for rulemaking and assigned it RM-7747. (*The W5YI Report*, 11-1-91)

Recently, in Reply Comments to RM 7747, the ARRL emphasized that Amateur Service fixed-station access to 216-220 MHz can work. It described

Amateur Radio Call Signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of December 1, 1991.

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

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
0	AA0GK	KF0VT	N0QEA	KB0JRY
1	WY1W	KD1FO	N1KPS	KA1ZLR
2	AA2HK	KF2FG	N2ORL	KB2NVP
3	WT3M	KE3AD	N3LAC	KA3ZNR
4	AC4LT	KO4NG		KD4HJB
5	AB5DA	KI5VS	N5XOD	KB5QPV
6	AB6HN	KM6MT		KD6DJY
7	AA7LP	KG7WQ	N7VBP	KB7OHN
8	AA8FM	KF8QR	N8RCI	KB8NFV
9	AA9CJ	KF9GW	N9NHV	KB9HJD
North Mariana Is.	AH0K	AH0AI	KH0AN	WH0AAQ
Guam	KH2V	AH2CN	KH2FM	WH2AMU
Johnston Is.	AH3D	AH3AD	KH3AG	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii		AH6LQ	WH6DM	WH6COS
Kure Is.			KH7AA	
American Samoa	AH8D	AH8AE	KH8AI	WH8ABA
Wake Wilkes Peale	AH9A	AH9AD	KH9AE	WH9AAH
Alaska		AL7NT	WL7AL	WL7CDF
Virgin Is.	NP2T	KP2BZ	NP2EV	WP2AHL
Puerto Rico		KP4TC		WP4KTA

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the TV industry's opposition to the idea as "inflammatory" and "unsupported," and welcomes further discussions with maritime communications interests that operate in 216-220 MHz.

The key use of the 216-220 MHz portion would be for packet network links. The ARRL wants the FCC to require coordination of all ham operations in 216-220 MHz, with the League as "sole database administrator and coordinator" which will know the exact location, telephone number and system configuration of every station operating at 216-220 MHz. This information is supposed to help the ARRL quickly identify and resolve interference and to assuage the fears of other services, notably the TV broadcast industry.

Separately the ARRL petitioned for the FCC to disallow repeater and auxiliary operations at 222.0-222.150 MHz, to protect the band for "passive lunar reflection stations" (moon-bounce) and propagation studies, among others, in effect, to create a sub-band for weak signal communications. Some repeaters will have to move, the ARRL told the FCC, and others, especially in southern California, "may not be able to move and may have to go off the air." (*The W5YI Report*, 12-1-91)

First-ever "ham on ham" probe of VE testing

A four month "ham on ham" undercover sting of Los Angeles area Amateur Radio training schools and volunteer examiners have netted evidence of what the FCC calls possible widespread "irregularities." Ten VEs have been decertified and a probe of at least one training facility has been undertaken by the FCC.

Dave Morse, WW7K, who heads up the Los Angeles Amateur Radio FCC Auxiliary, says that his group, acting in concert with the Field Operations Bureau of the FCC, began the first of its kind investigation last summer with undercover operatives equipped

with recording devices to capture exactly what was said in a given examination session.

As a direct result of the "ham on ham" probe by the Los Angeles FCC Auxiliary group, the Commission has initiated its own investigation of the Volunteer Examiners who performed testing for an organization known as the California Amateur Radio School. It has established an official case file on each VE, and has sent each a letter demanding answers to specific questions. The letters threaten license revocation if any fail to fully comply. The *Westlink Report* contains a copy of one of the letters. (*The Westlink Report*, 11/27/91) □

6M band plan

The Western Washington Amateur Relay Association (WWARA) is still trying to come up with a 6M FM band plan via the democratic process. SERA and MACC, two huge coordination organizations, have endorsed the 1.7 MHz offset plan originally presented by the Columbia Region Six Meter Association. CRSMA represents 6M users in Washington, Oregon and British Columbia.

The American Radio Relay League directors, however (with the exception of Northwestern Division's Mary Lewis, W7QGP), chose to approve a 500 kHz split without debate, the recommendation of their VHF Repeater Advisory Committee (VRAC) and Karl Pagel, N6BVU, of the Southern California Repeater and Remote Base Association.

South Eastern Repeater Association, Inc. president Carter Cogle, K4ARO, says, "The new ARRL 6M band plan is totally unacceptable and SERA will not accept it."

Whit Brown, WB0CJX, of the Colorado Council of Amateur Radio Clubs, Inc., (and MACC Coordination Committee Chairman) objected to the way the League Directors "voted to adopt the VRAC/SCRRBA 6M plan upon being told that there were no objections

to the plan." He contends there were objections and he so notified Karl Pagel, N6BVU of SCRRBA.

The Mid-America Coordination Council which represents coordination efforts and band-planning interests in thirteen states has unanimously voted to support and adopt the 1.7 MHz CRSMA offset "as technically and transitionally superior to the mosaic 500 kHz plan conceived by SCRRBA."

There were a few who have agreed with the 500 kHz offset, but these appear to be users who already are using the 500 kHz offset.

WWARA has now distributed a voting card to interested parties "to help us better understand your vote." The ballot must be returned by December 15th . . . only one band plan may be voted for. Results of the vote choosing a 6M band plan will be announced the first week of January, 1992 by WWARA.

Where does this leave the amateur community? Well, there is certainly a difference of opinion on 6M channelization. Neither the ARRL, SCRBBA, SERA, MACC, WWARA or anyone else have the authority to declare any plan as the sole standard. FCC rules leave it up to the amateurs. Our guess is that the decision will probably be made by the marketplace who must build the radios. That is if any equipment manufacturers feel there is potentially enough 6M users out there to make their investment worthwhile. So far, like 900 MHz, they have not. (*W5YI Report*, 12/1/91) □

CQ Bookstore

CQ Communications, Inc. announced that the CQ Bookstore has been sold to J. Craig Clark, NX1G, of Rindge, NH, where it will be operated as the Ham Radio Bookstore.

Clark was formerly Associate Publisher of *Communications Quarterly* and, prior to that, was Assistant Publisher of *Ham Radio Magazine*. Current plans call for refining the book marketing and distribution process, as well as satisfying the book needs of the computer and electronics hobbyist.

Ham Radio Bookstore has also been named by CQ Communications, Inc. as the exclusive wholesale distributor for CQ Books and Buyer's Guides. Retail sales of these products will continue to be handled by CQ as well as the Ham Radio Bookstore.

The new address and phone numbers for the Ham Radio Bookstore, effective late December, 1991 are: P.O. Box 209, Rindge, NH 03461-0209; 603/899-6957; FAX 603/899-6826; Orders: 800/457-7373. □

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Simulated emergency training

ROBERT A. EDER, N7RLJ

As part of the nationwide simulated emergency test (SET) coordinated by the American Radio Relay League on October 19, 1991, the Salt Lake County Amateur Radio Emergency Service (ARES) was asked to write the script and scenario for the drill taking place in the Salt Lake City area. Participating in this drill were the state of Utah, Salt Lake County, West Valley City, and the Utah Civil Air Patrol.

Utah hit by large asteroids

The script scenario described a bombardment of almost the whole state by asteroids, large meteorites, which usually burn up in the earth's atmosphere. While such an event is highly improbable, the resulting damage and injuries would be very similar to other natural or man-made disasters. The drill, therefore, prepared participants for the effects of any disaster. In the script's hypothetical situation buildings were destroyed; fires started; power outages occurred; and some major transportation arteries, such as the I-215 and I-80 freeways, were severed by large craters, road accidents occurring as a result of this damage, including one that caused a radiological spill.

Salt Lake County ARES members were called upon to utilize teamwork and innovation in message handling. Several members were sent to operate radios in various local hospitals that had permanent antennae. Others were sent to Salt Lake International Airport to report on the damage and check with the FAA control tower and report back to the State Emergency Operations Center. Still other hams were sent to a center set up by the West Valley City Fire Department, where they were asked to relay messages involving the coordination of the volunteers as well as health and welfare and priority precedence traffic.

ARES members were given assignments that required the sending and receiving of formal traffic where the



ARES members gather at lunchtime to critique their simulated emergency training event.

word count and identification of both the original sender and ultimate receiver needed to be carefully documented. Additionally, some hams found that their assignments could be performed successfully only when they acted in concert with other hams, thus requiring coordination and teamwork between several hams.

The exercise, held on a Saturday morning from 8:30 to 12 noon, was unique insofar as it tried to integrate Civil Air Patrol communications, both airborne and on the ground, with those of the state and counties. Members of the CAP, who were also members of ARES, or who held Amateur Radio licenses, were assigned to fly in Civil Air Patrol aircraft and communicate with the other agencies participating.

Among the important lessons learned in the Loma Prieta earthquake in California two years ago is that failure to communicate by radio between various emergency services

organizations caused long delays in determining the best allocation of scarce rescue resources. This simulated emergency test (SET) in Utah specifically tried to provide training in this area.

The drill's scenario and station tasks were drawn up and written on very short notice by Richard Jorgensen, KG7PY; Claude Grant, KG7PJ; and Robert Eder, N7RLJ, all members of Salt Lake County ARES. The writers drew up tasks for each participating station, with each station being assigned five to seven tasks to perform,

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and each task requiring communication with participating stations.

Jorgensen, KG7PY, began the drill with a call to stations to check in. He then presented the emergency scenario. Each participating station was then directed to pick up instructions and tasks at one of three central locations throughout the Salt Lake Valley.

Grant, KG7PJ, reminded all participants that since a casual observer or listener might mistake the drill as a

real emergency, stations were to begin and end each transmission with the statement, "This is only a simulated emergency test." In this way, Grant and Jorgensen hoped to avoid anything occurring similar to the flap resulting from Orson Welles' radio dramatization of the *War of the Worlds* in 1938 when thousands of listeners panicked at the realistic radio presentation of aliens invading large urban areas such as Salt Lake City.

The drill occurred on the first Saturday of Utah's deer hunt, and this probably reduced the number of ARES members participating, according to Grant and Jorgensen. Members participating included John Dinkleman, KC7AW; Bart Van Allen, KA7ZFD, ARES assistant emergency coordinator; John Parken, KA7GZH, ARES senior assistant emergency coordinator; and Graydon Jensen, N7RXL. □

Reflections of radio waves

CLARENCE ZORNES, W9TAL

Sir Robert Watson-Watt, a Scottish physicist, was born in Brechin, Angus on April 13, 1892, and was educated at the University of St. Andrews. He taught there from 1912 to 1921 and during his stay at the university he was greatly interested in the reflections of radio waves.

It was known that they were reflected from ionized layers in the upper atmosphere. Kennelly-Heaviside had made clear that this was what made long-distance broadcasting possible. It was established that reflection was sharper as wavelength decreased and in 1919, Watson-Watt had already taken out a patent in connection with radio-location by means of shortwave radio.

Though the technology is rather complicated, the principle is simple. Radio waves travel at an accurately known velocity, the velocity of light. A pulse of microwaves can be sent out and upon striking an obstacle and being reflected, will return to the sender. The difference in time between emission and reception can be converted into distance and the direction from which the reflection is obtained is the direction of the obstacle.

By 1935, Watson-Watt, as a result of continued experiments, had patented improvements that made it possible to follow an airplane by the radio-wave reflections it sent back. The system was called "Radio Detection and Ranging" (RADAR).

Research was continued in secrecy and by the Fall of 1938, the time of the Munich surrender to Hitler, RADAR stations were in operation. By the time

of the Battle of Britain in 1940, RADAR made it possible for the British to detect oncoming German planes as easily by night as by day and in all weather including fog. The German planes found themselves consistently outguessed and, with all due respect to the valor of the British airmen, it was RADAR that won the Battle of Britain.

The principles of RADAR had been worked out in Germany during the 1930s. However, it is reported that Hitler and Goering decided that it was fit only for defensive warfare and that since the German armed forces would never have to stand on the defensive, RADAR might be better ignored. By

the time that they learned their mistake, it was too late.

American electrical engineers had been working on RADAR systems as early as 1931 but Watson-Watt's labors and the wartime pressures had given Great Britain the lead. In 1941, Watson-Watt visited the United States and helped the Americans complete the job and set up RADAR systems of their own. In 1941, American RADAR at Pearl Harbor detected the oncoming Japanese planes, but the warning was tragically ignored.

In 1942, Watson-Watt was knighted.

RADAR has developed a myriad of peacetime uses since World War II, and especially important now is its use in the detection of violent storms. —Florida Keys ARC □

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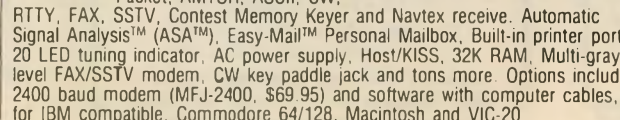
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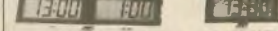
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Solar journey

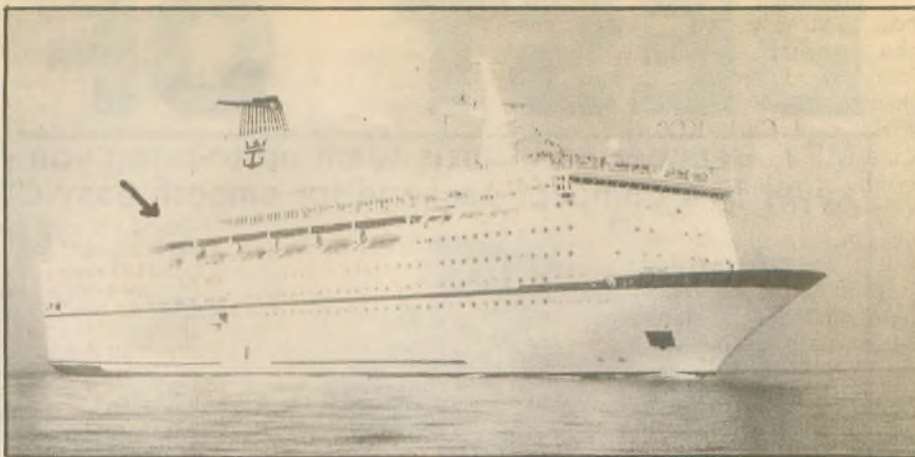
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neckwear we sat uneasily at the evening feast, searching our Medallions De Veau for an excuse to go back to our cabins and read *Scientific American*.

Groups were on board from Chicago's Adler Planetarium and UCLA. Each had a raft of speakers on a wide variety of scientific subjects—black holes, oceanography, ornithology, global warming, radio astronomy, astrophotography. Tom was asked to give a presentation on Amateur Radio. It was well attended.

Radio astronomers reported on their ongoing study of distant quasars as a method of measuring continental movements and perhaps predicting earthquakes. In conjunction with our passing over a major fault line, scientists revealed their studies of areas within these ocean faults where the Earth's crust is regenerating and strange life-forms dwell.

The meteorologists drew the greatest crowds. After the seminar, the otherwise shy "eclipsoids" dogged them into the casino and braced them against the craps tables trying to penetrate their foggy percentage



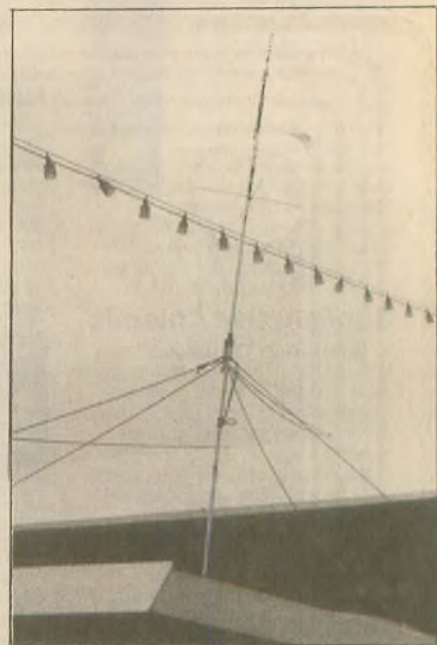
The M/V *Viking Serenade*. The operating station was set up just behind and beneath the smokestack (arrow). (Photo courtesy Royal Caribbean Cruise Lines)

predictions. The ship's radio officer, with studied nonchalance, posted predictions of weather fronts received courtesy of the National Weather Service on a 13 MHz AMTOR link.

The station is on the air!

Tom, KE9SJ; Bryant, KK6KQ; and Bruce, N8LXS, had fabricated a mount for the R5 vertical. Luckily, Captain Lemankis was making an inspection of the rear of the ship. He summoned the Bosun on his hand-held transceiver and the R5 was placed high and in the clear, lashed down with ropes. The TS-440 was placed on a table on the rear promenade. It was decided to give out QSO numbers: a few pencils and log sheets were rounded up and we were on the air. Radio conditions weren't great, but we had a boost from that R5, high and in the clear over water. We were soon working small, determined pileups.

We vowed to make these contacts more than just contest-like exchanges and we tried to impart some information about the event that we were hoping to see. Tom never expected this much interest as he watched Bruce pile up the contacts, filling page upon page of the log book. Tom's club, the Amateur Crosslink Repeater Club, had generously agreed to supply the QSLs. We joked that they had started as large, commemorative cards, but due to the number required had shrunk to postage stamp size!



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Antennas West

See and Hear the Difference

7⁹⁵

The small group of amateurs drew a medium-sized crowd of astronomers who did what they do best—observe. Tom talked to his pals back in Chicago, Bruce to Cleveland, Harvey, N6HL, and Carl, KC6NPY, to Los Angeles. We ran a few patches to the delight of the passengers and made good use of packet networks across the country. To those who didn't realize that we were on a 900 ft. floating hotel, we reported that we were each given shipboard duties: Bruce was to stand watch in the forward beer cooler; Harvey was to hand out tracts in the casino; Carl was to be the captain's champagne tester; and Tom was to man a suntan-lotion spatula at poolside. This was more than just autographs and sunglasses, friends!

There was still quite a bit of tension in the air. We tried to keep it light and have some fun. The night before the eclipse, we ventured into Cabo San Lucas.

Anyone have a key?

Tom hadn't brought a key along! Perhaps there was a station on in Cabo that had an extra key. The PA system announced that due to weather conditions, the meteorologists allowed about three hours ashore. Upon our return, we would im-

mediately sail for our rendezvous with the center line of totality. Anyone not aboard at 2100 would be abandoned. We set off for Cabo in motor launches.

After purchasing some T-shirts and a rubber lizard, we entered the lobby of the local hotel. We discovered a dazed looking fellow with a hand-held radio. It turned out that he knew of a group of hams set up in a motel across town. It seemed like we could make it, so we set off at about 1945. We had visions of Bencher Paddles and Vibroplexes and we didn't notice the ocean disappearing in the distance.

We were hopelessly lost by 2030. Every alley looked the same to us. We had left the main part of town, and the streets were dark and sleepy here. The Great Communicators had forgotten to bring a hand-held radio! Finally we knocked on the nearest door and had the good fortune to meet a kindly American woman with a broken arm. She was forever after referred to as "Our Lady of the Broken Arm," patron saint of the solar journey. She delivered us to the dock in her Volkswagen Thing and we just made the last shuttle boat!

The innocent sleep

Tensely, we moved along the buffet table at half-past midnight. Here we calmed our nervous stomachs with

forty varieties of cheese, red and black Beluga caviar, Sushi and exotic fruits. To make our dreams sweet, we topped it all off with black forest cake, cherries jubilee and profiteroles in hardened sugar topped with warm chocolate fudge. To add to the bleak hardships of our mission, the seas turned restless and rolled us about in our bunks like rock tumblers.

Strangely, our dreams had similar plots! We were called before a tribunal of judges. The jurists were different in each dream, but they seemed to represent earth, wind and sky. We stood accused by the astronomers (represented by Tycho Brahe with his metal nose) of wanting no solar flares and a quiet sun. The muse of Radio, represented by Heinrich Hertz in a celluloid collar, accused us of wanting an energetic sun and disrupting worldwide communication! Luckily we were saved from being keelhailed by Gary Cooper who arrived with a hundred letter carriers with bags of QSLs from our supporters. When they upended the bags, the QSLs turned into lobsters ridden by tiny ladies with broken arms. We arose early the day of the eclipse having slept fitfully.

Pick up next month's Worldradio and listen to N6HL's description of the totality of the eclipse and the conclusion of this "solar journey."

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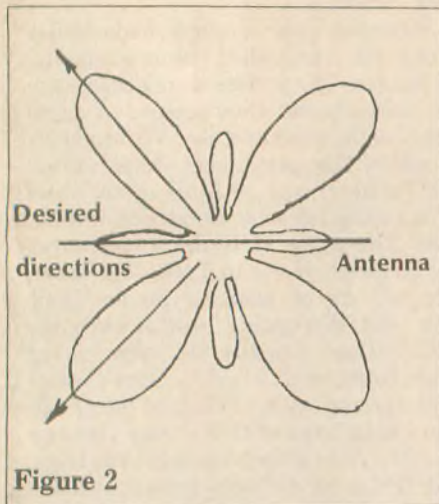
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HF antennas

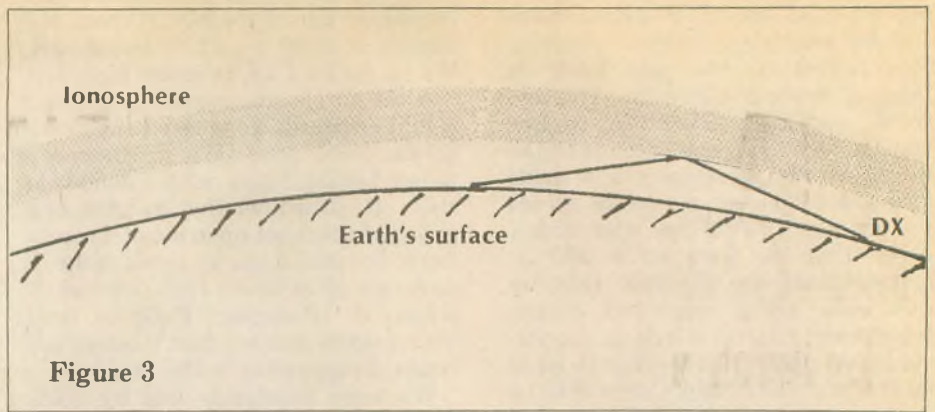
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antenna were 30 feet up, the horizontal pattern would be as shown in Figure 2. With careful placement, we could aim one lobe at North America, another at South America, etc. Also,



at 30 feet, the vertical pattern would be about 10 degrees better than that of a plain dipole.

How would you feed this antenna? First with a halfwave of open wire (about 450 ohms), then change to 72



ohm twin-lead. The neat thing about this antenna is that it also resonates near the 40 and 80M bands. You can use your transmatch (antenna tuner) to make the antenna look resonant to your transmitter.

Balun

Jim said he found that whether or not a balun makes a difference in an installation depends on the way the antenna is installed and the quality of the ground system. You don't notice you have a problem until you start using high power (over 600 or 700W). Baluns are used only to take RF off the outside shield of coaxial cable. Actually, RF on the shield doesn't hurt anything, unless it causes RFI into the power wiring or the telephone system. Jim's antennas have a voltage balun made of a large ferrite bead around the coax and covered with insulation. This method eliminates having two connectors, which are the biggest trouble-makers in a coaxial cable system.

Grounding

Grounding provides an escape path for static electricity, lightning being the most threatening form. There is nothing you can buy that will prevent direct lightning hits, but you can take care of pulses of static electricity, which are very destructive and come

much more frequently, by having a path for static bleed-off.

Next, there is the RF ground. This becomes part of the antenna system. It is not wise to use the power company's ground. It is seldom as low as the 10 ohms it should be. It will bleed off the static charges, but when it comes to handling your RF signal, it merely distributes it into the power wiring of the house, setting you up for RFI problems. If you want to have fun chasing the devil, work with grounds.

DX antennas

If you want an antenna for 40 and 80M to work DX, the criteria are altogether different. Gain is insignificant. The whole notion of DX is based on radiation angle. See Figure 3. Let's define DX as over 1,500 miles. The ionosphere is about 200 miles high. Your signal reflects off the ionosphere. From the figure you can see the kind of angle you must have to get there. If you can get a low angle of radiation, you're going to work DX.

How do you get a low angle of radiation? One way is to lengthen the wire. On one Field Day, Jim put up an antenna three quarters of a mile long. He could talk to Brazil, but nobody in the US could hear him. Another way is to use two elements. Even with the elements relatively close together, they put a null overhead which causes a lower angle of radiation on the sides.

What else can you do to get a low angle? Polarization. A quarterwave vertical would have a lower angle than a dipole halfwave antenna. A vertical, even a quarterwave, is omnidirectional. The problem is that you must feed against ground. The ground isn't

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perfect, and the high current point is low to the ground. These are the Butternut type verticals. You may ask, "Wouldn't it be nice to get the current up higher?" Yes it would, so you go to the Gap type vertical or the Cushcraft R series, where they get the current higher in the antenna. When the high current point is higher in the vertical antenna, the radiation angle drops.

80M contest antenna

Lew McCoy told about a wire loop antenna developed by Paul Carr, K4PC. It is an adaptation of the well-known 8JK antenna. It is supported at four points, up about 40 to 50 feet, by poles or trees. Remember that a dipole at 50 feet on 80M gives most of its radiation straight up. This arrangement provides a usefully lower angle to work 80M DX. Paul's concept is a loop antenna in an 8JK configuration. Figure 4 is a view looking down on the antenna. This antenna produces a 45-degree radiation angle. This is a multiband antenna. It can be used on all the higher frequency bands, even the 12 and 17M WARC bands, using a transmatch. This is an ideal antenna for Field Day.

The transmatch

Lew McCoy coined the word "transmatch" many years ago.

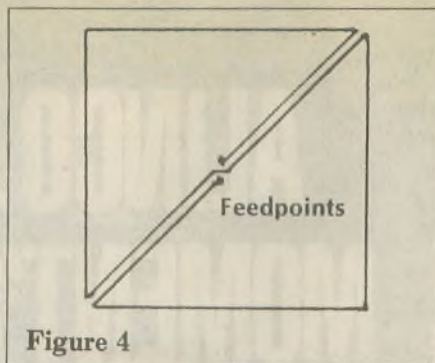


Figure 4

There's a story behind this.

Hams had always built their own feedlines, usually of open wire. World War II came along, and coaxial cable was developed for military use. After the war the hams latched onto coax. It is excellent for most uses. The characteristic impedance of the first lines was 70 ohms, but for some unknown reason, it was switched to 50 ohms. The 50 ohm line became a standard. In the 1950s television interference (TVI) truly threatened Amateur Radio. The ARRL sent Lew to every city that had lowband television to give a demonstration for TV servicemen and amateurs on how to clean up TVI. We hams had to go to completely shielded transmitters. Every ham wanted a band-switching transmitter. With a completely shielded transmitter, it is difficult to switch bands.

Back in 1933, Art Collins had invented the pi-network tank circuit. This circuit lent itself to a 50 ohm input. Manufacturers began using this circuit. When solid state came along, if the standing wave ratio (SWR) was too high in the load presented by the antenna, the transistors would go into a runaway state and blow out. So the manufacturers developed protective circuits to shut down the transceiver if the SWR was too high. Today's transceivers start to turn off at about 2:1 SWR. What the hams needed was an antenna that presented a 50 ohm,

load at any operating frequency. There is no such thing. Lew developed and publicized the transmatch, which is the Collins pi-network with adjustable components. It simply matches the impedance of the antenna feedline to the 50 ohm load the transceiver is looking for. Hams call the transmatch an antenna tuner, but this is a misnomer. You cannot tune an antenna from the transceiver end of the coaxial cable, but you can match the impedances with transformer-like action, hence "transmatch."

Kurt Sterba

Responding to a question from the floor, Lew McCoy said, "I want to state right here and now that I am *not* Kurt Sterba. I think he is a very interesting writer and is pretty factual 99 percent of the time."

Quad vs. yagi

Lew McCoy has always contended that the quad antenna has a lower angle of radiation than the yagi for the same boom height. Computer modeling will show a two to four-degree difference. A quad will open a band earlier and close it later. He related how Paul Overhultz made some recent tests, using a yagi vs. a quad. He reported recently in *Communications Quarterly* that he made 25 contacts to two different DX locations and couldn't notice any difference between the two kinds of antennas. Lew's argument with this testing is that if you're going to do something empirically, you should do it for years rather than for a month or two.

To give an example, Lew said he worked for the CIA for several years monitoring radio transmissions from Russia. He had logged 3,000 Russians, and so did Don Mix, separately. They matched their reports and found that the quad consistently opened the band earlier and closed it later. We're talking about 10 to 15 minutes each time. In the intelligence community, this amount of time is a big thing.

Ham-Pro antennas

Lew said he just did a review on Ham-Pro, the new line of antennas that has the double gamma match. He said, "These monoband antennas are absolutely beautiful and excellent. They claim 8.9 dB gain for four



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ANNE WRIGHT, N6BOP

2272 Kellogg Park Dr.

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elements and I believe every bit of it. I recommend them for two reasons: First, the gain is actually way above that of other popular commercially made amateur antennas; and second, they are so well built."

Effective aperture

The most efficient antenna made is an ordinary dipole. It's 97 to 98 percent efficient because its only loss is in the ohmic loss in the wire. The gain of an antenna is based on effective aperture. This is sometimes erroneously called "capture area." Take a dipole and fold it down into an inverted V, and you eliminate some of the effective aperture, thus reducing the gain. Someone in the audience asked about the Isoloop. Lew responded that the Isoloop is a terribly small antenna and thus has a very poor effective aperture compared to a dipole. In theory, the smallest possible antenna can be as efficient as a big antenna, if you can get the power into it. The difficulty of getting power into a small antenna goes back to Ohm's Law. It's more mechanical than electrical. The Isoloop has a beautifully welded capacitor to reduce ohmic losses. Jim reported that Isoloop has come out with a new model, without the welded joints, that ought to work better. He said he thought the Isoloop idea has a lot of potential, as there are a lot of us who are stuck with poor locations and can't put up large antennas. To realize that potential, however, will be a major engineering achievement.

Mobile

Jim described the magnetic mount for the Hamstick mobile HF antennas. The mount is a triangular aluminum base with three huge strong magnets. When the three magnets are fastener to a car roof or trunk lid, they form three capacitors that total 1600pF—more than enough to effectively couple the base electrically to the car. He claims that this coupling is actually

better than drilling a hole in the car and scraping the paint off around it!

For a good HF mobile installation, Jim suggests raising the car on a lift and bonding all the loose metal pieces

to the frame with copper braid strapping. This will reduce body losses from about 10 ohms to about one ohm, which will allow more power to go into the antenna. □

Silent Keys

Theodore Knowlton, W6ORA

We have just learned of the passing of Theodore Knowlton, W6ORA, last January 3, 1991. He'd been a ham for over 40 years. He served in the Army as a Radio Operator from 1944 to '46 in the South Pacific. He was also very active in the Navy MARS program.

He leaves three adult children and his wife, Ruth, and he is sadly missed. —Information submitted by Ruth Knowlton. □

apologize for any anxiety this may have caused.

In addition to being an active amateur for nearly 65 years, W6DTJ was a life member of SBE (Society of Broadcast Engineers). He was interested in amateur astronomy, and he built his own six in. telescope.

He was a mason for 32 years in the Tahama #3 Masonic Lodge; he was also a member of the Ben Ali Shrine and Scottish Rite since 1976.

And he was a member of the Ben Ali Amateur Radio Club. Mr. Bennett will surely be missed by many. □

Error

There was an error in last month's Silent Key listing. Russell Bennett's call sign was W6DTJ, not W6DTU. Also, he was 79, not 89, years old. We

Even the slightest error, especially in a call sign, can change one's destiny! Please be sure, when submitting material, to type or print clearly, especially names, call signs and facts involving numbers. TNX, *Worldradio* staff.

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Product Review

JPS NIR-10 Norse interference reduction unit

RICHARD BELCASTRO, WV9B

The JPS NIR-10 is a digital software processor (DSP) designed to remove disturbing noise and distortion from phone QSOs and allow extreme selectivity on CW QSOs.

I was driven to consider the JPS product because, first, I am in a townhouse with a limited space vertical and, secondly, the 40 and 80M bands are hot when I go on the air (0500 Zulu and later). Both of these situations mean a lot of white noise, which oftentimes makes sustained QSOs very difficult.

I ordered the product during the holidays and received it about three weeks later due to a backlog of orders. The conversation I had with Don Scott, Marketing Manager of JPS, was very enjoyable. Don was very knowledgeable about the product and the DSP business. This is the company's first Amateur Radio product. Don essentially promised a money-back guarantee, so how could I refuse?

Three weeks later, out of the box came this narrow black box of sleek design with two switches, two knobs and two lights. Packaged with the product was a very professionally produced 30-page booklet divided into: 1) Quick hook-up overview; 2) DSP techniques and associated schematics and; 3) Detailed user information.

The product has three modes: NIR (Norse Interference Reduction) for phone; bandpass for CW, and bypass. The unit contains its own 2W amplifier and is designed to be in the circuit all the time. The unit is installed between the headphone jack and an external speaker.

Using the JPS NIR DSP:

Setup

First the unit is set up between the headphone jack and the outboard speaker. The transceiver volume is set for peaks indicated by an occasional blinking of the PEAK lamp on a given QSO. Volume is then controlled by the volume control on the NIR unit. It is important not to overdrive the DSP.

Bypass mode

In the bypass mode the DSP mode is bypassed and the audio is simply going through to the speaker via the internal 2W amplifier in the DSP.



NIR Mode

This mode is used for voice. The NIR level is controlled by the level-control knob, which increases the signal-to-noise ratio. If the S/N ratio is very low in the first place, the signal of course can become unintelligible or difficult to interpret as you increase the NIR level to its maximum. But for the average typical noise condition of the 40, 80 and 160M bands, the results are amazing.

In fact, it truly allows QSOs that are otherwise impossible without the NIR unit because the signal was deeply buried by the noise level.

Bandpass

The bandpass mode provides a wide, medium and narrow bandpass filter function (as narrow as 200 Hz) with control of the center frequency over the complete bandpass spectrum (300 Hz to 3400 Hz).

The JPS NIR-10 did the job as described in the spec sheets and the advertising literature. It is especially valuable to me because I use a top loaded shortened vertical in a limited space, which is quite a noisy scenario. The price was worth it to me. For you, I can only mention that JPS offers guaranteed satisfaction.

The JPS NIR-10 has made many QSOs and even just listening much more enjoyable. It has also facilitated some QSOs, which in bypass mode were not possible.

In the bandpass mode it is capable of selecting a single CW QSO from a group of CW QSOs, without touching the VFO. In listening to a station with three interfering QSOs, I was able to select each of them with full quieting by using the narrow bandpass setting and the center frequency control.

Since this review was written a major upgrade in the unit has been released: a notch filter function, usable in either bypass or NIR modes, and when active, eliminates any tones which last longer than three milliseconds. It removes tune-ups (any number), foreign broadcast heterodynes, and even takes the tone from CW and RTTY signals. All NIR-10 owners are included in the JPS database, so previous owners were notified of the upgrade on July 1, 1991. Future upgrades will be handled in a similar manner.

For further information, contact JPS Communications, 5516 Old Wake Forest Rd., Raleigh, NC 27609; 919/790-1011. □

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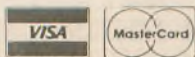
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SPECIAL EVENTS

Voice of America 50th Anniversary

The Kern County Central Valley ARC will operate W6LIE on February 27 through March 1, 1992 to celebrate Voice of America's 50th Anniversary.

Operation will be on the following frequencies: *SSB*—3.855; 7.235; 14.245; 21.335; 28.335 and 28.535 MHz; *CW*—3.535; 7.035; 14.035; 21.035 and 28.035 MHz; *Digital*—3.065; 7.065; 14.065; 21.065 and 28.145 MHz.

For a special QSL card send an SASE to W6LIE Special Event, P.O. Box 743, Bakersfield, CA 93302. □

Spacecraft Commemoration

The Ames ARC will operate K6MF on March 1 and 2, 1992, to commemorate the 20th anniversary of the launch of Pioneer 10, the first spacecraft to Jupiter.

Operation will be on 7.280, 14.280, 21.380, 28.480 and 145.585 simplex. Hours of operation will be from 1700Z to 2400Z.

For QSL send an SASE to ARC, P.O. Box 73, Moffett Field, CA 94035. □

Yuma Crossing Day

The Yuma ARC will operate station WZ7V on February 29 as part of the annual Yuma Crossing Day celebration of Yuma area historical sites.

Operation will be in the General portions of the 10 and 15M bands, and in the Novice phone portion of the 10M subband from 1600-2300Z.

For a certificate, send QSL with a 9×12 SASE to WZ7V CBA or George Scott III (KA7PVJ), 2408 Greenwood Ave., Yuma, AZ 85364. □

Snowmobile Festival

The Wexaukee ARA will operate Special Event Station WD8KUS on February 1 and 2 to celebrate the Snowmobile Festival in Cadillac, MI.

Operation will be on 7.245 (± QRM), 28.345 (± QRM), and 146.98R (-600). Hours of operation will be from 1400Z on February 1 to 0400Z on February 2.

For a certificate send a QSL with a 9 × 12 SASE to Wexaukee ARA, P.O. Box 163, Cadillac, MI 49601. □



Amateur "Hi"



Ever had a funny or strange experience with Amateur Radio, either on or off the air? If so, type it up (or print neatly) and send it to us for

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

This winning tale is told by Johanna Richards, N7NGS, of Rock Springs, WY.

Wyoming winter blizzards can be treacherous and unpredictable. It was during such a blizzard on November 2, 1991, that my husband, WO7P, boarded an Amtrak train on a snowy Saturday to journey from Denver, Colorado, to Rock Springs, Wyoming. Upon inquiring as to the arrival time, the only information that the train station had was that the train was three hours late; that meant that the train would arrive at 8 p.m., but it was already 8 p.m. and no one knew where the train was, except for me.

My husband was carrying his radio aboard the train and called me to say that the train had just pulled out of Rawlins, Wyoming, about two hours away. "The storm has made it necessary to travel very cautiously, and this has caused the five-hour

delay," he said.

So my daughter, N7NGT, and I bundled up and braved the negative-30-degree weather to scrape the windows, warm the truck, and drive the icy roads into town and pick up WO7P. The railroad tracks run about a mile away from the "airport," which is situated on top of a hill that is about ten miles out of town, and as my daughter and I drove into the train station at 10:15 p.m. my husband looked out of the train window and called on his radio, "N7NGS, this is WO7P. I think I can see the airport from the window now."

I walked inside and told the waiting passengers, "My husband has a ham radio, and he told me he could see the airport from the window now," whereupon a cold and frustrated gentleman traveler looked my way and said, "Lady, you are in the wrong place!" □



Floyd Soo,
KF8AT

STATION APPEARANCE

Send Worldradio a picture of your shack and the staff will choose a winner to receive a free one-year subscription! Stations will be judged by neatness (wires tucked away, etc.) and accessibility of equipment. Monetary value of equipment is not a consideration.

Winners will also receive a top quality, Laserjet-printed copy of the DXCC and WAS BeamHeadings list (a \$15.95 value) compliments of Jack Hurray, W8JBU.

Floyd Soo, KF8AT, in Mt. Clemens, Michigan, shares his station with us.

I have been an avid SWL since the mid-sixties. I started with the Pilot II, then the Heathkit SB-310. I was in junior high school at the time and did not really want to study any more than I needed to for school. So I did not get licensed until January of 1988.

I've been very active on all the HF bands on voice as well as CW. My favorite bands are 20M and 75M. I'm



Floyd Soo, KF8AT, at his station in Mt. Clemens, Michigan.

also very active locally on 2M and 440 with voice and VH packet.

My love of Collins equipment started in 1965 and hasn't waned! I am very active with the Collins Collector Association and have responsibilities as one of the net control stations for the Collins User Net.

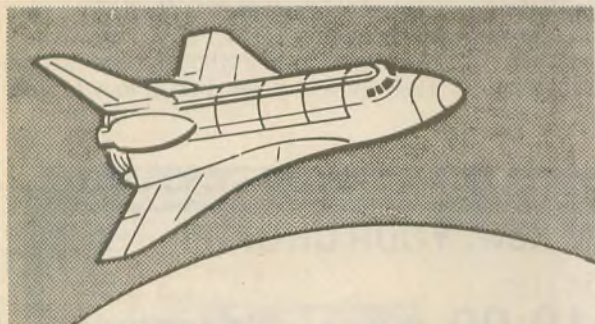
I am fortunate enough to be able to combine my video production business with a couple of video-ham radio projects. My KWM-2 video has been very

popular and more is on the way!

It wasn't until I grew up and became a ham that I was able to afford the Collins equipment. I only have a few pieces of gear, but I sure do enjoy working on them as well as operating them!

My station includes: Collins KWM-2, 30L-1, 75S-3 and 32S-3; Heathkit SB-310 receiver; Kenwood and Motorola VHF/UHF equipment; Trac electronic memory keyer with Vibroplex paddles; CDE rotator; MFJ cross-needle SWR bridge; Nova-Tech Pilot II aircraft SW receiver; Commodore C-64 and Digicom 64 for packet. Antennas: Mosley MP-33 tribander; 80/40M fan dipole; Diamond X-500 dualband base antenna; quarter-wave VHF ground plane. □

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NEC For Yagis 1.0 provides highest-accuracy analysis of Yagi designs with the professional-standard Numerical Electromagnetics Code. NEC For Yagis 1.0, \$50. Coprocessor, hard disk, and 640K memory required.

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Brian Beezley, K6ST1, 507-1/2 Taylor, Vista, CA 92084
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The right to operate

I read with interest your report, "Forum Highlights from Scottsdale," in the December issue. Frankly, I am surprised at what is implied by Ms. Henton in her presentation. She seems to be saying that most amateurs who are presented with an interference problem by a neighbor take an aggressive stance on the complaint. I find this hard to believe. I think that more often than not the amateur is eager to resolve the problem but the neighbor's attitude is one of not having any other solution but for the amateur to get off the air.

The amateur has first got to enlighten the neighbor that he or she has as much right to operate as the neighbor has to his electronic devices. This is probably the reason the FCC is involved in so many of these fiascos. The amateur, in desperation, tells the

neighbor to contact the FCC regarding his privileges and, lo and behold, the neighbor realizes that this guy is for real. Negotiations are always easier and more productive when both parties have something at stake. All too often the offended neighbor feels that he is in control and Mr. Ham is beholden to him for the privilege to operate.

Another factor which can be involved in supposed Amateur Radio interference is the issue of antennas and their height or visibility. I have been away on vacation and had interference complaints lodged on my answering machine upon my return. Obviously, I was handy and therefore at fault. The reference to power is an interesting one. I think most hams run with power commensurate with what they are attempting to accomplish. If you want to have a weekend schedule on 20M with the East Coast, then most of the time you will need 800 to 1200W on SSB. Conversely, a quick chat on 10M after work probably is manageable with a transceiver.

Each year when I renew my ARRL subscription I am asked to donate something for other League activities. This year I believe the request included WARC. I always try and include something for the League's legal activities, as I know there are a lot of hams out there who need league assistance in resolving either antenna height disputes or RFI problems. Even with the advent of PRB-1, I question whether or not hams have sufficient tools at hand to really develop a good defense against some of these issues.

No one that I am aware of has put

together any kind of reference list of material available for amateurs to look to for case situations on either RFI or antenna height issues. In my opinion it would be a great service to Amateur Radio for somebody to publish some form of compendium on this which could be used as a starting point in establishing the issues. If what Ms. Henton says is correct then perhaps amateurs would be less reactive if they and their neighbors better understood each other's position.

BRUCE W. BUTLER, W6OSP
Napa, CA

An open mind

It's amazing how closed minded some people are—people who, you would think from their expressed background, would be the most interested in learning and exploring new ideas and concepts. Is the idea that maybe the electromagnetic field surrounding the current-carrying conductors, transducers and radiators in our world might be causing stress in cell growth too much for some minds to comprehend?

More and more facts surface every day that prove this point, but I guess it is ridiculous to expect the electrical and electronics industry to try to find answers regarding this. It would be like expecting the tobacco industry to admit that cigarette smoking is bad for your health. (You *do* believe that cigarette smoking is bad for your health don't you?) Yes, I know, there are lots of people who have smoked all their lives and not died of cancer, just

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like there are a lot of us who have sat, stood, and lain around, near, under, over, in, and with some pretty heavy-duty electrical and electronic equipment and haven't suffered (we hope). Instead of immediately jumping up and yelling "Stupid," why don't we look a little deeper. Most "environmentalists," people who care and are looking for a better, safer, cleaner way of living, get their ideas and facts from engineers, scientists, the medical field, etc. They don't just make these things up because it sounds like a "young publicity-seeking know-it-all" (and probably in poor health too) thing to do.

One of the best bumper stickers I have seen goes like this: "The mind is like a parachute, it only works when it's open." The human body (including the brain enclosed within) has been developing for thousands and thousands of years. Electricity has been around for a bat of an eyelash in comparison. If you have taken the time to read what is being reported about the effects of EMR-RFR on the human body, then you know it is young tissue (fetus through mid-teen years) which is the most affected. These are the people who are going to be taking over the caretaking of this planet. Those of you who are 80 or so lived your first 15 years with *no* TV, microwaves, and high-tension power lines. Those of us who are 40 or 50 grew up in a world where there was comparatively little of this. And those of you who are 20 or 30 had some. But look at what the person who is born today or even five or 10 years ago is living in, especially in an urban area. Maybe lowering the legal power limit to 100W would be a good start to lessening the subtle, but real, dangers. (Oh boy, will that get a response from the big boys on the block.)

I like my computer, TV, solid-state transceiver, and all the other things modern living offers. I like most things that run on electricity, but I hate nuclear power because of the waste. There is so much bad woven in with the good that we as a species are going to have to be careful with what we do with our living space. When I was growing up, and much more idealistic, I was sure that technology could solve any problem that came up.

I'm older and I hope wiser now and I know that there are limits to what we can do. One of the most important things we *can* do, however, is to start with, and keep, an open mind.

GARRY PARRISH, AA6GW
Fremont, CA

Relax

Enough already! I must protest. I have just read the second of what I hope is not a series of continuing articles where John E. Gercken, KA9EPO, under the banner of "etiquette," commits what I think is a serious injustice against many fellow hams. John's articles were entitled, "Are you a Lid—on CW?" and "Are you a Lid—on Phone?" in the November and December 1991 issues, respectively. In my opinion etiquette has been the bane of sensible society ever since it was first contrived by idle aristocrats who had nothing better to do, and believe me we don't need the product of idleness in our hobby. Ham radio is supposed to be fun. It's great! It helps us relax while it develops our minds and skills. It teaches us patience and contributes to our knowledge of the planet and its diversities. It comforts shut-ins, and helps develop camaraderie, lifelong friendships and professional abilities. So who needs the etiquette that John described in his articles? As he sees it, most hams today qualify as lids, but he is simply not correct. In my opinion, lids are people in radio who willfully disobey laws, rules and regulations. Lids operate with

power higher than the legal limit, radiate signals outside the bands, deliberately interfere with communication (emergency or otherwise) and frequently make fun of people. Some of them even say dirty words. These are violations of law and have nothing to do with etiquette.

John says hams who use Q-signals on phone are lids. Nothing is further from the truth. Every other hobby or profession has its own language and so do we. Q-signals, along with other peculiar abbreviations, belong to us as hams. Where is it written that we can't use them on radiotelephone simply because they were originally intended for CW? Look at all the wonderful things originally intended for the space program that we now enjoy in our everyday world. I have encountered lots of hams who speak Q-signals—many of them outstanding radio hobbyists noted for their technical and civic achievements as well as rescues and other wonderful things. Some of them, now departed, were in fact heroes. How can anyone call them lids? Besides, verbalizing Q-signals during phone contacts helps one remember them whenever he (or she) decides to work CW.

One day somebody, perhaps in the ARRL offices or a radio club somewhere, decided that three CQs and three call sign repetitions would be the proper and only way to send out a CQ on CW. Personally I like three CQs followed by one call sign, twice in a row with three and three on the third and last. That seems to work best for me

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most of the time. That's the point—whatever works. If enduring twenty CQs threatens to put anyone asleep he or she should tune on and if no one else is calling CQ by the time that person scans the band and returns to the first operator calling CQ, things should be ready. Incidentally, I have made many three by three CQ calls without successful contacts while the redundant CQ caller scores almost every time. As I say, whatever works. Sure I get sensitive about it, but I know someday that operator will come around if and when he or she observes that shorter

calls may be more efficacious. It's that simple.

And the phonetic alphabet! Now this is something that is really worth a laugh. I have been a ham for only 52 years and already it has been changed five times. Why bother learning the current one when experience warns you it will probably change again? During the 30s when I learned my first phonetic alphabet for ham radio the study was easy. In the year 1939 when I enlisted in the army as a radio operator, they expressed delight in having a "trained" radio operator join

them, but they distressed me somewhat by insisting I learn a new phonetic alphabet, theirs. Then in 1942 we "highly trained" radio operators had to unlearn our now embedded alphabet for still another—one that was modified so as to be acceptable by the British, our English-speaking ally. Now we had all the radio operators in the English speaking world using the same phonetic alphabet. What could be better? Then, in 1946 or thereabouts, with the war over, it changed again. And after that, again. Why? We had a good thing going, especially in the



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event of inter-agency emergency activities, but it was scrapped. Now John complains that the military operators he encounters sometimes become confused apparently because there are again separate alphabets for military and civilians. Why? I always thought the military considered ham radio to be a resource. I don't think military radio operators are lids. Maybe the guys who keep changing things unnecessarily are the lids.

What is wrong with saying, "destinated?" The meanings of words change all the time through popular usage. We used to "couple" various stages in equipment. Now we "interface" them. The word, "access" is a noun, but we've made it a verb when we "access" programs in our computers. And the word, "intercourse"—now there's a good example. That one used to mean to talk with somebody or meet someone, depending on its word modifier, but now it usually means something entirely different. Who is the silly one and who has the bad habits? Why should anyone be called a lid because he is progressive in his or her own language?

Of course there are times when rigid discipline and absolutely prescribed radio procedure are a must. Net operation and message handling cannot succeed without them. But for the average QSO (pardon me, I used a Q-signal), such rigidity is not necessary and is, in many cases, even burdensome. Those of us who enjoy ham radio, making friends, telling stories, exchanging ideas, discussing plans, laughing on the air and saying "Hi" are not lids and we certainly are not "glorified CBers," as John and some others insist.

Enjoying our hobby. Complying with the law. Avoiding the kind of etiquette that may be classified by some of us as pure meatballism does not classify us as lids. CBers? Even they should not be slurred in our intercourse with each other. (There's that word again.) It's true that when one tunes the 2M band and parts of 10M it does sound like the CB band with remarks like, "There's some guy higher up and he's bleedin' all over ya . . ." and "Yeah man, yo' lil' ole' five watts, ho ho, is makin' the trip in fine style." Those CBers who have worked hard and joined our ranks as licensed amateurs are

not lids because they continue using their old terminology. We have to realize these men and women love the hobby as much as we do and they are actually undergoing a metamorphosis. As they communicate with us they'll absorb our time tested phraseology. Who knows, they may even help us improve it. Now what kind of a message of confusion are we sending these reinforcements to our embattled ranks in the war to keep frequencies when we display our own displeasure with one another because of frivolous notions about what our phraseology should be?

Donation challenge

It was brought to the attention of the membership of the Stockton-Delta Amateur Radio Club that *Newsline* is financially in imminent demise. Bill Pasternack, WA6ITF, is the founder and producer of *Newsline*, which is heard on repeaters around the country. The membership decided to make a contribution in the amount of \$25 to the *Newsline* fund.

A club member also challenged others to match his personal contribution. Several members agreed to match his challenge, others said that they would send what they could. All agreed to dedicate their personal contribu-

In a way, the FCC has let us down in the philosophy of its examinations. It has sections dealing with laws, theory, circuits, practice and more, but there is nothing on the subject of "nice." We need about 10 or 15 questions on "nice" in all license class examinations, including the Extras. However, since the FCC shows no interest I can only close this with an admonition my dear old grandmother used to give us as children: "Go play, children. Enjoy. Don't fight. Be nice." 73sss.

BILL McCracken, W6IGN
Newark, CA

tions in behalf of W6SF.

SDARC is over 55 members strong. We are an ARRL, Red Cross, and San Joaquin County RACES affiliated club. It is our intent to do what we can to help keep *Newsline* on the air. We challenge other ARCs to match our basic contribution, as well as to make personal contribution challenges.

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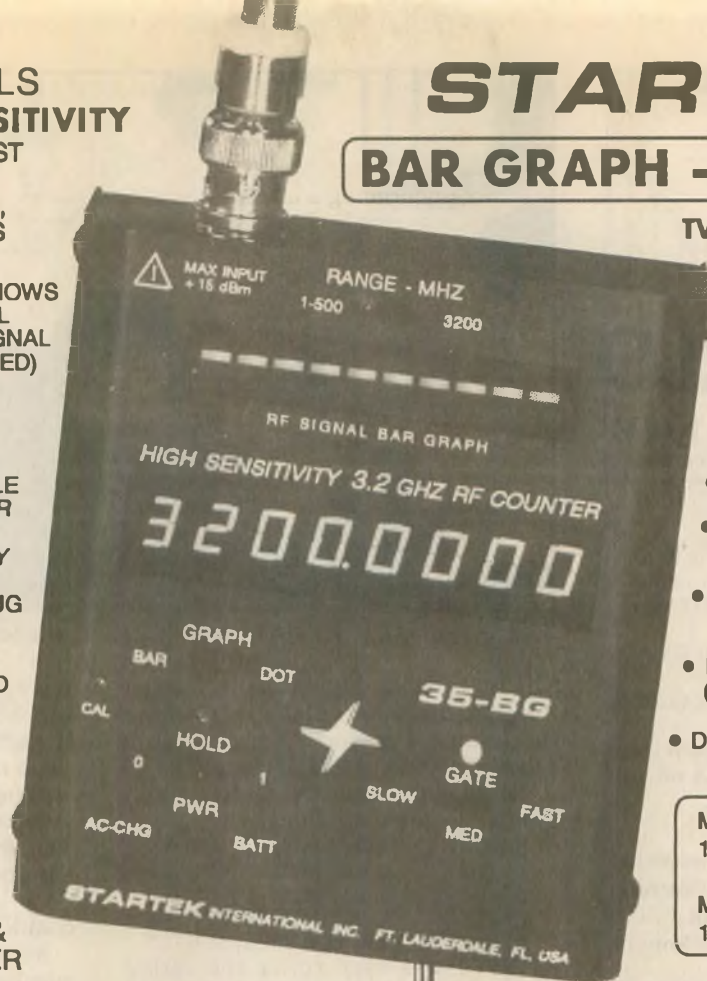
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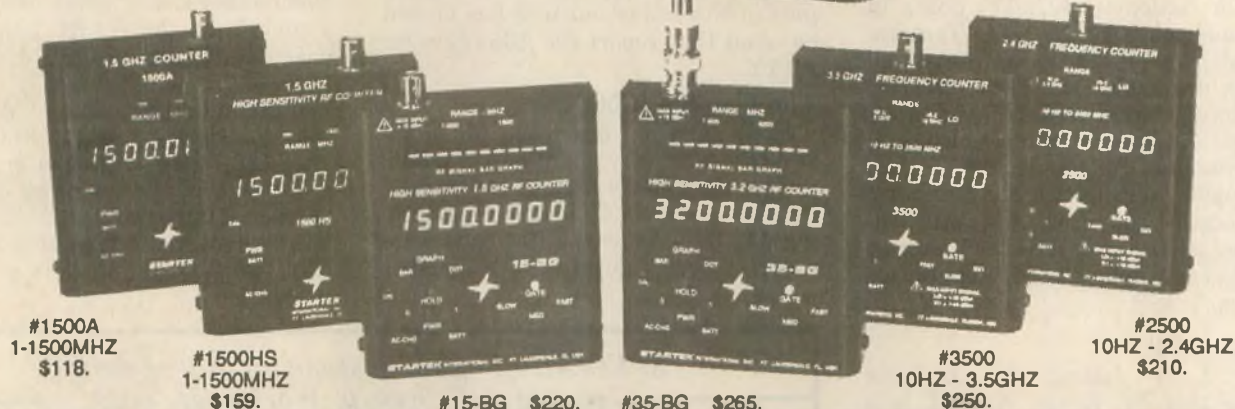


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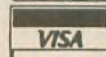
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- 25-26 Jan. UBA Belgium Contest (CW)
- 15-16 Feb. ARRL International DX Contest (CW)
- 07-08 March ARRL International DX Contest (SSB)
- 28-29 March CQ Worldwide WPX Contest (SSB)

Refer to your favorite contest section in *QST* or *CQ* for details on upcoming DX contest activities.

W100N

The following DXer was awarded *Worldradio's* Worked 100 Nations Award during this past period:

416) Roland H. Dinsmoor, N6JQL; Nov. 19.

Victor Nedenew, RC2AF, poses in his hamshack with his XYL, Tamara, and cat, Boy. Victor is a professional cinema dramatist and film director. He is interested in organizing an international Amateur Radio association, "Cinemanike," for movie and TV professionals, scriptwriters, directors, cameramen, soundmasters, etc. Interested parties may write to Victor at P.O. Box 6, Minsk 220050, Republic of Belarus, USSR.

Tonga (A35)

The *Long Island DX Bulletin* reports that Fr. Kevin, A35KB, is a regular in the DX net that meets on 14.226 MHz from 1000 UTC. A35KB is located in the Ha'apai group



Victor Ledenev, RC2AF, and XYL, Tamara

(OC-123) and has also been reported on 7.089 MHz around 0630 UTC working the east coast of North America. Also, check with the 14.222 MHz net.

Other calls reported active from Tonga include the following:

A35CP	14.201 MHz	1245 UTC
A35MX	7.002 MHz	1145 UTC
A35RG	14.027 MHz	0800 UTC
A35TE	14.075 MHz	0400 UTC
A35XJ	24.897 MHz	2345 UTC

A35VJ was very active the earlier part of November but now has moved on. And that report for A35TE is for RTTY.

The Gambia (C56)

Brian Coyne, operating as C56/G40DV, was very busy on all bands giving out The Gambia to the deserving. He is now in Guinea-Bissau signing J5AUA. At least three calls were reported active during the November

Worldwide DX Contest which included C56A, C56B, and C56N. Refer to the QSL routes if you worked on of these calls.

Reported around December 1 was a station signing C56/OH2BPW who was active on the WARC bands. We have no other information on this one.

Saudi Arabia (HZ)

Active from Dhahran is HZ1AB who has been very active recently. For a contact on the WARC bands listen near 10.101 MHz around 1330 UTC or 18.148 MHz at 1800 UTC.

If you need this one on CW we suggest you check 14.003 to 14.025 MHz after 1300 UTC. This station has also been on 40M working the deserving between 7.007 and 7.032 MHz. He has been reported at 0315, 1345 and 2115 UTC.

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Running to almost 300 pages, the book is richly illustrated with pictures from the author's personal archives and it tells you the story of what it is like to be a super-DXer, why anyone should want to become one and how a globetrotting DXer finds life in moments of triumph and everyday toil. Everything told the way only OH2BH can relate it to the amateur fraternity.

Read all about how these DX countries were born and embark on an armchair trip for an all-

time first or major DXpedition to exclusive places such as *Annobon Island, Western Sahara, Market Reef, Southern Sudan, Revillagigedo* and *M-V Island* — the island that brought East and West together for their first-ever joint DX operation.

Sense the heat and excitement of being at the production end of that pileup that you once worked for a new one. Go to *Jarvis Island* and *Conway Reef* with today's prominent DXers and examine the profile of "a complete DXpeditioner" as Martti depicts the people with whom he was traveling to all those rare spots.

Maybe the author is also able to pinpoint the real causes of malicious interference always experienced on the DXpedition frequencies as was the case with the 3Y5X operation, and much more. "Where Do We Go Next?" is a must on the bookshelf of every deserving DXer and anyone who would like to become one.

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On SSB HZ1AB has been worked between 14.190 and 14.236 MHz, usually in the DX nets. The early part of November he was found on 75M around 1400 UTC on 3.799 MHz.

HZ1HZ is another call active from Saudi Arabia and has been reported on 3.500 MHz at 2100 UTC, 7.006 MHz at 2200 UTC, 21.006 MHz at 1530 UTC and 24.903 MHz at 1345 UTC. Both HZ1AB and HZ1HZ were active in the November Worldwide DX Contest.

Operating from the American Embassy in Riyadh is 7H1AB, having been reported as follows:

14.010 MHz	2100 UTC
21.009 MHz	1245 UTC
28.007 MHz	1330 UTC
28.510 MHz	1515 UTC

DX News Sheet also reports a 7Z1IS on 24.951 MHz around 1445 UTC working Europeans.

Micronesia (V63)

Formerly the Eastern Caroline Islands, Micronesia has been represented by the following calls, frequencies and times.

V63AO	14.226 MHz	1500 UTC
V63CJ	14.224 MHz	1015 UTC
V63DX	7.007 MHz	1200 UTC
V63JC	7.181 MHz	0700 UTC
V63JH	28.505 MHz	0015 UTC
V63YL	21.262 MHz	1115 UTC

Anguilla (VP2E)

VP2EQ is the call sign issued to the Anguilla Boy and Girl Scouts Amateur Radio Station. QSLs for contacts made prior to November 1, 1991, may be sent direct to VP2EXX. Contacts made since that date must be QSLed via the operator's announced route. There is no QSL bureau for Anguilla, reports John Rouse, KA3DBN.

Macao (XX9)

We have seen only two calls reported from this one recently. On 20M near 14.226 MHz, XX9AS has been reported often, usually after 1300 UTC.

DX News Sheet also reports an XX9AW on 12M SSB near 24.960 MHz around 1245. Note that Macau, along with Hong Kong, will cease to exist as a DXCC country in a few years.

Kermadec Islands (ZL8)

Ron, ZL1AMO, is actively working toward a DXpedition to Kermadec Islands this March. Transportation has been arranged and he is presently seeking financial assistance to cover an estimated \$20,000, a cost that is more than Ron can handle. According to *QRZ DX* donations may be sent to the following: ZL8 DXpedition, c/o Mike Maples, K4ADK, 7809 Cadillac Drive SE, Huntsville, AL 35802; or ZL8 DXpedition, c/o INDEXA, Bill

Jennings, P.O. Box 607, Rockhill, SC 39731; or Kermadec DXpedition, c/o Ron Wright, ZL1AMO, 28 Chorley Ave., Massey, Henderson, Auckland 1208, New Zealand.

Tristan Da Cunha (ZD9)

ZD9BV and ZD9CO frequent 21.313 MHz between 1800 and 2100 UTC, according to *QRZ DX*. ZD9BV will also make CW contacts on the same frequency.

Western Malaysia (9M2)

The Long Island DX Bulletin reports that 9M2NA is in Kuala Lumpur on a one-year assignment. He is reported to be active on CW about 10 kHz from the lower end daily from

1200 to 1500 UTC. However, we have seen no reports for this one.

Other calls reported from Western Malaysia include the following:

9M2AM	1.826 MHz	2330 UTC
9M2AX	3.501 MHz	1445 UTC
9M2AX	7.002 MHz	2315 UTC
9M2DM	3.794 MHz	1415 UTC
9M2DM	14.240 MHz	1645 UTC
9M2FR	14.010 MHz	1130 UTC

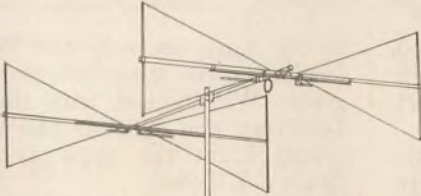
9M2AX has also been active on the WARC bands. Try 10.101 MHz at 2330 UTC or 24.896 MHz at 1700 UTC.

Eastern Malaysia (9M8)

Eastern and Western Malaysia count as separate DXCC countries, but they count only as one nation for

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SCORING: Your final score will be the total number of nations worked per mode. You may count a nation only once per mode. An example of scoring: If you work Japan on CW and SSB on 20M, the point value would be two points. If you work Poland on CW on 10M and 20M, the point value would be one, as a nation can only be counted once per mode.

MISSIONS: All entries must be submitted on official DXathon entry forms or a reasonable facsimile or computer printout with nations listed in alphabetical order by prefix, and should include call, date, time, band and mode for each entry. Use separate sheets for each mode. QSL cards are not required. In addition, a DXathon summary scoresheet should be filled out with your score totals on it. As a matter of interest, include the total different nations worked, regardless of mode. You may count Estonia, Latvia and Lithuania as separate nations for the whole year. All entries must be postmarked no later than February 28, 1992. Entries must include your call, name, address and be signed with a declaration that the contacts were complete two-way contacts. Mail all entries to: *Worldradio*, 2120 28th Street, Sacramento, CA 95818, USA. All participants will be listed in *Worldradio*. Decisions of the DXathon committee will be final. The committee has the right to disqualify an entry for violation of the letter or the spirit of the rules. By submitting an entry, the participant agrees to abide by the decision of the committee. Awards: Will be given based on the number of entries. 100-point minimum must be accumulated to be eligible for an award.

RULE CHANGES: Rules may be modified over the years to reflect feedback from the participants. Please send copies of this notice to your DX friends. Send 52¢ business size SASE to *Worldradio* for entry forms and nations list.

the W100N award. They are included in separate continents, the eastern part in Oceania and the western part in Asia.

Only one call has been reported this past period: 9M6HF on 28.010 MHz around 0130 UTC. During the November Worldwide DX Contest 9M6NA (OC-133 on Labuan Island) and 9M8DX were active.

IOTA

A. Belousov, RV3GJ, informs us that a DXpedition to Waygach Island is being planned. This island is located

in the Kara Sea near the Yugorskij Peninsula. No other information was given. We checked with the IOTA Directory and it looks like this one would count the same as Novaya Zemlya (EU-035).

During the latter part of December, Rick Dorsch, NE8Z, operated from Siesta Key signing NE8Z/1G4, and Lido Key, signing NE8Z/1D4. Both count as Florida State West group (NA-034).

If you worked VK4VD the early part of January, you now have Srad-broke Island (OC-137). This was the ef-

fort of Bill Horner, VK4CRR, who informed us early in December of his intentions. Please QSL direct only with return postage or donations via 26 Iron Street, Gympie, QLD 4570, Australia.

Active from Manus Island (OC-025) is P29KDE. Try 28.480 or 21.180 MHz. No times were given.

EU-119	Morzhovets Island	4K3OLL
	14.030 MHz	0345 UTC
NA-010	Cape Breton Island	VE1CWH
	21.261 MHz	1815 UTC
NA-027	Newfoundland	VO1SA
	21.260 MHz	1930 UTC
NA-034	Anna Maria Island	KM4RX
	21.260 MHz	1800 UTC
NA-142	Dauphin Island	K1RH/1D3
	14.260 MHz	1900 UTC
NA-168	Grand Island	KB5KYO
	21.260 MHz	1900 UTC
NA-169	Tatoosh Island	N7UJN
	14.264 MHz	0130 UTC
OC-139	Kangaroo Island	VK5VK
	14.260 MHz	1900 UTC
OC-142	Fraser Island	VK4CHB/P
	21.260 MHz	1900 UTC
OC-157	Banda Island	YE8V
	28.450 MHz	2230 UTC

Mike Streeter, KB5KYO, writes that he made 721 contacts in 47 different DXCC countries during his 2½-day DXpedition to Grand Isle recently. Mike says, "NA-168 was a lot of fun, in spite of the sand and water in everything and the mosquitoes about the size of B52s."

Mike also states, "The main motivation for doing it is the kick of working a pileup, which is not practical for most people because rare DX locations are usually difficult and expensive to operate from."

Oblasts and other Soviet activity

Active between September and January was the special call sign of EM3W commemorating the 50th Anniversary of the Moscow Battle. QSL requests should be sent via UZ3AYR at P.O. Box 32, Dolgoprudny 1, 141700 USSR. For contacts made on RTTY send your requests via WB2RAJ, who also handles QSLs for RTTY contacts made with UZ3AYR.

Conventions

Further word from the Western Washington DX Club is that they have reserved the weekend of July 24 through 26 at the Holiday Inn in Renton (not the Sheraton as stated last month).

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DX Prediction — February 1992

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

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

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	(14)	*14	*19	(11)	*18
12	(13)	*14	*18	(11)	17
14	(20)	*14	*17	(16)	33
16	(28)	*14	*25	20	*37
18	30	14	22	(16)	*39
20	31	22	(25)	(13)	*40
22	27	*30	32	(12)	*40
24	23	*32	36	(11)	*36
2	*20	27	36	11	*28
4	*16	18	28	11	*24
6	(15)	17	24	*13	*21
8	(14)	*15	21	(12)	*19

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	17	(11)	(18)	*11	*19
9	16	11	*17	(11)	*18
11	33	11	17	17	25
13	*38	*12	*32	*23	*31
15	*41	(12)	27	*24	*35
17	*41	(11)	23	*22	*38
19	*35	(11)	(21)	17	*40
21	*29	(21)	(30)	13	*40
23	*22	(21)	35	*12	*33
1	*20	(14)	25	12	*33
3	*18	(13)	22	11	*24
5	*17	(12)	(19)	11	*21

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	(17)	12	19	*11	*19
10	(17)	11	*18	(11)	*18
12	(26)	11	*17	(17)	25
14	35	*15	*26	23	*34
16	39	(14)	25	22	*37
18	*39	(14)	22	19	*39
20	*32	(21)	(25)	14	*40
22	27	25	32	(13)	*39
24	*23	(21)	37	12	*32
2	*21	(15)	30	11	*27
4	*19	(13)	24	11	*23
6	(18)	(12)	21	11	*20

The Holiday Inn in Visalia is full for the weekend of April 10 through 12 for the International DX Convention. According to *QRZ DX* there are still vacancies at the Sundance Inn 209/732-6641, Lamplighter 209/732-4511, Best Western 209/732-4561, and the Astri 209/627-2885. The Southern California DX Club is running the show this time.

QSL help

Romeo Rushenko, UB5APW, offers to help with obtaining QSL cards from the Soviet Union and offers his services as a QSL manager. For more information contact Romeo at P.O. Box 59, Lipova Dolina 245950, Ukraine, USSR.

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A61AD	-WB2DND	CY0SAH	-VE1CRK
AA5K/NH0	-JH4WEE	D68GA	-N6ZV
AT4W	-N2MM	EA8EA	-OH4MM
AZ1DSR	-LU7DWL	EA9EA	-FA7LQ
C31SD	-CT1AMK	ED5URB	-EA4KK
C42A	-YU4YA	EF5MPR	-EA4KK
C56A	-OH6E1	EN3W	-U23AYR
C56B	-OH6LK	FM6A	-F6HMQ
C56N	-N27E	FO0SAS	-JG1DDF
C56G40DV	-G40DV	FR5GL	-F6FNU
C6A/W91LY	-W91LY	ES4PL	-FG4BG
C9RAB	-NN4M	FY5FA	-F6GNG
C9RZZ	-SM7DZZ	FY5FO	-F6BYZ
CN2JP	-WA8LJY	FY5FP	-ON4ZD
CN8AD	-DL3ODN	FY5YJ	-1K2HTW
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CR7D	-CT1DIZ	GD4UOL	-G4UOL
CT3M	-CT3FE	HC5M	-CT1BOH

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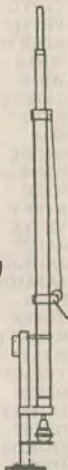
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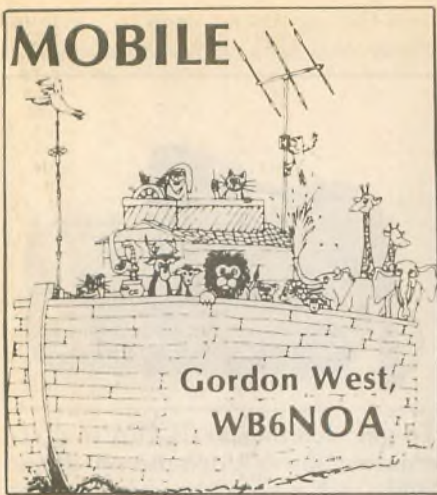
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HS0ZAI	—KM1R	T32LN	—VK4CRR	5V7AK	—OZ1LLC	8R1K	—OH2BH
HZ1HZ	—N7RO	T11C	—N6TR	5V7JG	—F6AJA	9J2AA	—I2ZZU
I15ONU	—I5KKW	T12LAK/HP4	—F6FNU	5V7RC	—OZ1LLC	9K2WR	—N6UXB
J28FO	—F6FNU	TM0P	—F6AUS	5W1JU	—JA6ZEF	9K0ZZ	—9K2RA
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J6LSC	—N9AG	U00Z	—U7AGPI	EO3ADS	—P.O. Box 52, Serpukhov 142200, USSR		
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J68AE	—WB8ENR	V47NAM	—VE2HAR	H18A	—Aki Nagi, P.O. Box 3272, Santo Domingo, DOMINICAN REPUBLIC		
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OH0BC1	—OH2BC1	YV5/K3UOC	—W1AF				
OK1IA1/YA	—OK1IA1	YX5LA	—YV5ARV				
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PJ9A	—OH6FT	ZF2QZ/8	—KG6ZQ				
PT8ZCB	—DL9OT	ZF2RB/8	—KG6ZQ				
R50DPK	—UZ3DYD	ZK1XP	—JA1OEM				
RH0E	—W5BWA	ZP0Y	—ZP5JCY				
RO6/RB5FF	—DF8BK	ZS0Z	—ZS6BCR				
RT1U	—UT4UXW	3D2NO	—J11NJC				
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One SSB for both ham and marine?

For maritime mobile operation, a single SSB transceiver that could double as both a marine single sideband boat radio and an amateur high frequency SSB ham rig would certainly be nice. In fact, there are many SSB transceivers out there that work quite well with both Amateur Radio and marine radio channels stuffed into the 100 memory channels.

Part 80 of the FCC Rules and Regulations makes it quite clear that a ham rig modified for marine SSB use is *not allowed*. CFR 47, Part 80.203: "Each

transmitter . . . must be type accepted by the Commission for Part 80 operation."

High frequency Amateur Radio rigs do not carry Part 80 type acceptance. Ham rigs are intended for variable frequency operation, and the marine radio service is a channelized operation. Part 80 marine radios must also meet tougher emission standards than the typical amateur rig, and these more rigid standards are what make a marine SSB HF transceiver cost almost twice as much as the typical ham rig for the same power output and the same general frequency range.

So how about using one of those new marine Part 80 HF transceivers on the ham bands? This makes pretty good sense. The ham rigs can be any type of transceiver, so long as their output falls within good engineering practice and the receiver does not exceed FCC Part 15 limits. And since the new marine SSB transceivers usually offer up to 100 channels of free-wheeling programmable memory, plus a "channelized" VFO scheme, a Part 80 HF marine SSB could be put aboard a boat and licensed as a type-accepted marine transceiver for HF Marine SSB, and double as a dandy HF SSB ham rig.

CFR 47 Part 97.11: "Stations aboard ships or aircraft. (b) The station must be separate from, and independent of, all other radio apparatus installed on

the ship or aircraft, except a common antenna may be shared with a voluntary ship radio installation." In an effort to better understand this rule and in my effort to stop the tide of the illegal use of ham rigs on marine SSB frequencies, I contacted an FCC engineer on the East Coast who interprets this rule as it would apply to a *commercial* vessel that would require "sparky" to maintain a radio watch, and not play around on his required SSB by dialing into the ham radio service. The FCC engineer did not see the relevance of this rule to one who has an equipped recreational boat that merely has a Part 80 SSB onboard to stay in touch with other mariners and shore stations, and wants to use that same equipment for ham operations.

Since the installation of a Part 80 radio is a voluntary option for the pleasure craft owner, who is to say whether or not that installed Part 80 radio was intended to be used only on marine SSB, or the amateur bands as well? Our FCC engineer casually agreed. So here's where we stand:

- Ham rigs cannot legally transmit on marine SSB.
- Marine SSB *could* be used on the amateur bands if it was intended and installed as a ham rig.
- FCC Part 97.11(b).
- FCC Part 97.307 emission standards (easily met with any marine Part 80

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DISCOVER

type-accepted transceiver).

• FCC Part 97.403, safety of life and protection of property. (Anything goes in an emergency.)

Until we get a definitive answer from the Commission on a Part 80 marine rig aboard a voluntary equipped vessel being used for amateur operations, we'll assume that a Part 80 marine rig should only be used on the ham bands in emergencies.

What marine radios work on the amateur frequencies? Almost all do. Some need to be slightly modified, but the following manufacturers of Part 80 type-accepted marine radios all have synthesized transceivers with "dial up" capabilities to most ham bands: Furuno; Harris; Hull; ICOM; Kenwood; Motorola; Raytheon; SEA; and SGC.

Without exception, each of these manufacturers produce equipment that could be operated pursuant to specific FCC Part 97 rules on 20, 17, 15 and 12M.

Not many marine transceivers operate on the amateur 10M band. While their literature indicates they receive up to 29.999, most rigs cut off at about 26 MHz on transmit. The



This Kenwood marine SSB, with ham capabilities except on 10M transmit, is a TS-140 in disguise.

popular Kenwood TKM-707 tunes 10M on receive but won't transmit above 27.999.

The popular ICOM M700 won't go above 23 MHz, transmitting or receiving. But the M800 works quite nicely on the entire 10M band.

The new SGC SG2000 HF SSB was specifically designed for both ham and marine radio use. It covers all bands, plus 10M, on both transmit and receive.



The new SGC2000 is specifically designed as an amateur and marine combination rig.

Another matter is low sideband on 40, 80 and 160M. The new SGC has the lower sideband kit already built in. But this is not necessarily the case with SEA units or Hull units. Here the LSB kit is an optional extra—to the tune of over \$300!

On the popular ICOM M700, the Amateur Radio lower sideband function is built in but is not marked on the front panel. Simply rotate the mode selector switch one more click to the left, and the ham transceiver switches over to LSB. In the marine radio service, LSB is not utilized for the ITU frequency plan.

If the Part 80 marine transceiver features dial-VFO capabilities, you

turn the big tuning knob in 1 kHz increments to QSY. If you need to split 1



To get this marine ICOM to go to amateur lower sideband on 40 and 80M, just rotate the mode switch one click to the left of USB.

kHz, most Part 80 marine rigs also feature a receive RIT. Or, just ask the other ham station to come up a few Hertz to get on a 1 kHz step with you.

Some keyboard-entry rigs feature an up and down arrow QSY. This marine radio operates similar to your ham rig where you change frequencies off the microphone. It's a great way to go.

Some rigs, like the ICOM M700, only allow for discrete frequency entry into available memory channels. In order to have "QSY-ability," store in memory consecutive frequencies, such as 14.275, 14.276, 14.277, 14.278, etc. If you get someone in between your memorized channels, just have them move up a couple hundred Hertz.



These marine Part 80 SSB radios all work well on amateur frequencies too.

If you're thinking of buying a marine radio for ham radio use, make sure it has full transmit and receive capabilities on 10M, plus ham capabilities on the other frequencies, plus lower sideband on 40 and 80M. I'm not aware of any current marine radio that doesn't offer USB SSB on most of the amateur bands.

If you're thinking of buying a ham radio and clipping some diodes to use it on marine SSB out of its memory, *don't!* The rules are clear that amateur gear being used to transmit on the marine band is taboo. Do it the other way around, and stay within the laws.

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The AL-80A covers 160-15 meters (10 meters with license), including MARS and WARC. You could spend over twice the money for a legal limit amplifier twice the size -- and all you'll get is an additional 1/3 S-unit -- a difference you won't ever notice.

Tuned Input lets your rig deliver full output

The Ameritron AL-80A uses a direct switched, 100% shielded pi-network tuned input circuit so even the fussiest solid state transmitter works flawlessly with it.

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You get the Eimac® 3-500Z transmitting tube with an estimated life of 20,000 hours ICAS. The AL-80A is built on a rugged steel chassis. It has a separate RF compartment that's fully shielded to keep RF from leaking out. This keeps RFI and TVI to a minimum.

A superb RF design and layout, a Hi-Q tank circuit and commercially rated power components gives you nearly 70% plate efficiency over the entire operating range. This puts the power into your antenna instead of heating up your amplifier.



Ameritron AL-80A \$1095 Suggested Retail

result is a clean signal without flat-topping.

Gutsy Heavy-Duty Power Supply

The guts of the AL-80A is its heavy heavy duty power supply. A 22 pound transformer using a high silicone steel core, computer grade capacitors, heavy duty bleeders and ten 3 amp, 1000 V power rectifiers give you a stiff 2700 volts fully loaded. Some amplifiers using two 3-500Zs use a light power supply so they can't give much more power output than the AL-80A.

Step-Start Inrush Protection™

The AL-80A special Step-Start Inrush Protection stops damaging inrush current with a start up sequence that's easy on your tube and power supply components.

Multi-Voltage Primary

Too high line voltage stresses components and causes them to wear out. Too low line voltage causes a "soft-tube" effect -- low output and signal distortion.

The Multi-Voltage Primary in the AL-80A lets you compensate for too high or too low line voltage so you get the longest component life and peak operating efficiency -- regardless of line voltage.

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Grid current of the 3-500Z is monitored continuously by one meter. Grid current gives the best indication of overall performance.

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These 3 rugged linears all use a super heavy duty hipersil® power supply capable of 2500 watts!

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AL-1500 \$2625 Suggested Retail

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Ameritron's 3CX1200A7 linear



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Remote Coax Switches



RCS-8V \$149 Suggested Retail

RCS-8V, DC-UHF 5 KW Coax Switch.

Replace 5 coax feedlines with one with this Ameritron Coax switch. Weatherproof box mounts outdoors on your tower or mast. Attractive control unit sits on your operating desk. Low SWR to 450 MHz. Low loss. Rated at 5 KW to 30 MHz. 1 KW at 150 MHz.

RCS-4, \$134.50. 4 position HF switch.

RCS-4 \$134.50 Suggested Retail

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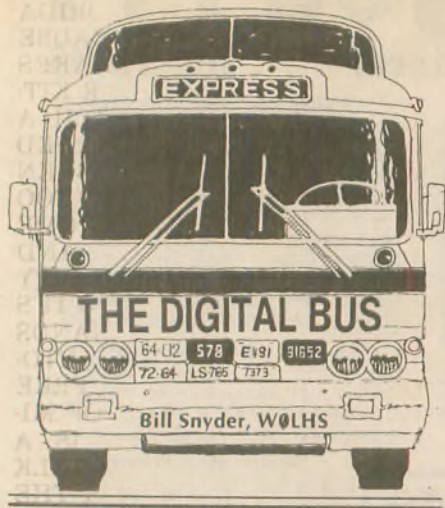
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Junque Mail

I received considerable mail regarding my December column. In that issue I took a whack at the junk messages that clutter up our bulletin board system. Roger, KG7RW, writes from Arizona: "I couldn't agree with you more. I just checked into the local BBS and 14 of 23 messages were junk — 'happy stuff,' recipes, jokes and other such trash."

Bob, WW6L, had this comment: "The Northern California Packet Society's BBS organization, the NCPXN, agreed several years ago to discard all bulletins originated over nine days prior to receipt at the BBS. This has gone a long way toward solving the problems you describe. The other intervention here is that all @USA bulletins are held for review. Those that are inappropriate are killed. If one SYSOP in 10 took the trouble to do such screening, the problem would be solved. However, those SYSOPs would be widely and roundly cursed for 'censorship.' Remember, it's only a hobby, except when there is an emer-

gency—such as the Loma Preita earthquake!"

In answer to my comments about a message on my BBS which originated in a New York BBS and announced to the world, via @ALL, that it was open for business (and then went on to describe all its gear, antennas, etc.), Bob quoted an unknown author: "One cannot outsmart a fool, for a fool's options are not limited by logic or reason." He was referring to those BBS SYSOPs that let such a message be relayed all over the country. Yes, fellow packeteers, junk mail is a problem, even in North Dakota.

Country hunting

Roy Crosier, KE0UQ, who lives in Kansas City, Kansas, has a hobby-within-a-hobby that he would like to have expanded. He collects printouts (including header lists) of the incoming personal packet messages that he receives from around the US. At the moment he is trying for a VHF "WAS," although Roy is aware that no organization at the present certifies such a collection for an award. And Roy envisions county hunting as an outgrowth of his hobby.

Roy says his friends tell him it's a silly idea, but I don't think that way. It might just be what packet radio needs to juice up person-to-person communication via 2M. The 10M band has its Ten-Ten Club, so why not county hunting on packet? I'd rather see my BBS fill with personal county hunter messages than the plethora of "jokes" and "for sale" junk traffic that has been plugging it up.

Roy had this suggestion: "If packet county hunting was to catch on, it would certainly be easier for the mobile units giving out the counties. They would only have to go to the county needed, connect to a forwarding BBS, then unload their list of stations wanting that county from a laptop computer! If it were to be a two-way QSO,

the stations needing the county could forward their messages ahead of time and store them in a BBS near the needed county. The mobile unit would then connect, download and return the formatted message. (Roy also suggested that a standard format for county hunter messages be developed.)

I hear a lot of local North Dakota and Minnesota packeteers complain there is nothing going on, so they don't bother to read the junk mail on the board. And a lot of them shut down their packet stations because of lack of interest. So why not start worldwide county hunting? It might be fun! If you wish to comment, send a packet message to Roy. His packet address is KE0UQ @ WB0AEX.#EKS.KS. USA.NOAM (or NA if you're old fashioned).

Many readers of this column have tried sending an international packet message to Marty Mullican, G0NKN (a Yankee from Nebraska), now stationed in jolly old England. It's easy to do. Just address a packet message to G0NKN @ GB7ZPU.#21.GBR.EU, enter it in your local 2M bulletin board and let the auto forwarding packet system do the work. If you're lucky, and everything works properly, your message will arrive in Marty's packet computer in a few days. Marty will then return an answer to you via the same packet channel. Also, he vows he will QSL if you are chasing something like a packet mail DXCC.

Over the past few years, Marty and I have been corresponding via the packet mail route. Our success rate has been pretty good, although I sometimes think we have lost a message or two in the station-to-station relaying that takes place through many bulletin boards. Marty has the same suspicion. The other day I received packet mail from him in which he outlined some simple procedures that will improve our success ratio to him. Here are some extracts from it:

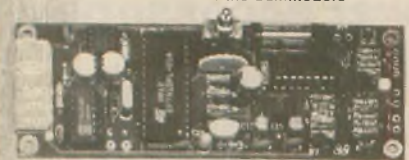
1. Please sign your messages with your *full and complete* hierarchical address! About one third of the transatlantic packet mail I receive does not contain a packet address in the message. Sometimes, while the mail is being forwarded, the "headers" are deleted and it is impossible to figure out how to address the return message.

2. Use .USA.NOAM instead of .USA.NA as the country and continent designators in your address. The European HF Gateways prefer .NOAM for identifying North American traffic — I'm not sure why, that's the way it is.

3. Keep the text length under one kilobyte per message. If you need more, divide the message into separate parts and number them "1 of 3," "2 of 3," "3 of 3," etc. Put the numbers in the

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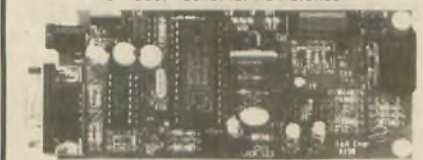
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
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title for easy identification.

4. Remember, my offer still stands to QSL with any non-GBR.EU station who sends me a message.

5. Cheers to all and LONG LIVE the MIGHTY CORNHUSKERS!

The .NOAM designator for North America about which Marty speaks was proposed a while ago in a message to SYSOPS from Tom Clark, W3IWI, one of our packet system gurus. As I write this, I have been looking at the message headers on a stack of message printouts, and I'm surprised that only a few BBS operators have changed from NA to NOAM in their own header information. On the message I received from Marty there were only two "NOAMS" listed in the 12 USA stations that handled the relay. There were additionally three relays in England and two in Canada in the heading. Examining message headers always intrigues me. I always read each message with the RH command so I can track the course of incoming mail. Our packet mail certainly does get around!

So, dear readers, take Marty's advice and type in your complete hierarchical packet address as the last line in the body of each message you send. And shoot off a message to Marty that will do a little international traveling via packet radio. If you wish, let me know when you send him a message. My address is W0LHS @ W0LHS.ND. USA.NOAM, so have at it. If it all works, you'll get an answer from me, too.

Roger, KB4GBS, a BBS SYSOP, packets from Florida: "I have a lot of users that never get any personal messages. Some are new to packet and some not so new, but the only thing they get to read is junk mail. They must enjoy it, for they keep coming back often."

The same is true here in Fargo, too. Try as I do, I have never been able to


get local users to spread their wings by sending traffic to other hams around our country. I see local users check in, run the directory, and check out. A couple of our locals are ham-gear flea-market traders, but even they are not as active as they once were.

Eavesdroppings

TALKING TO YOU ON RTTY WAS WORTH MY TRIP TO FLORIDA FROM CALIFORNIA ... TAKE CARE OF YOURSELF WHILE I TAKE CARE OF ME... A DILEMMA IS GETTING UP REAL EARLY IN THE MORNING AND ACCIDENTLY DROPPING YOUR ONLY TOOTH BRUSH IN THE TOILET ... I AM BEGINNING TO THINK THIS RIG HAS A TIME BETWEEN OVERHAULS OF ABOUT ONE HOUR ... I NEED THE STATE OF WYOMING FOR WAS, BUT I DON'T THINK ANYONE LIVES IN WYOMING WITH ELECTRICITY. THERE MIGHT BE AN OLD HAM WITH A DYNAMOTOR AND A SPARK SET OR HAM WITH A HORSE ON A TREADMILL HOOKED TO A GENERATOR, BUT CERTAINLY NOT ONE WITH A COMPUTER! ... I'M ANSWERING YOUR MESSAGE THAT GOT STUCK UNDER A PILE OF PAPERS IN A DRAWER AND JUST SURFACED AFTER SEVEN MONTHS ... IT'S HARD TO GET GUYS TO TURN OUT FOR HIDDEN TRANSMITTER HUNTS WHEN THE TEMPERATURE IS WAY BELOW ZERO ... I HAVE BEEN WONDERING THIS QUESTION: WHEN ZERO GOES BELOW WHERE DOES ZERO GO? ... FB ON YOUR AGE, OLD TIMER, YOU HAVE MORE FARADS IN YOUR CAPACITOR THAN I DO! ... I'M NOT INTO CONTESTING BECAUSE

NOBODY SAYS ANYTHING FUNNY ... I DIDN'T GO TO FLORIDA AGAIN THIS WINTER BECAUSE MY WIFE IS AFRAID OF SNAKES ... FB ON PAINTING YOUR KITCHEN. BUT IF YOU WATCH A MONITOR THAT AIN'T TURNED ON, I THINK YOU'VE BEEN SMELLING THE PAINT WAY TOO LONG ... I JUST GOT HOME FROM THE HOSPITAL AND FOUND A SINK FULL OF DIRTY DISHES ... MY WIFE SAYS IT'S IMPOSSIBLE TO HOLD HANDS WITH A HAM IN AN AUTOMOBILE BECAUSE HIS FREE HAND IS ALWAYS FULL OF MICROPHONE ... PACKET IS A NEW WAY FOR HAMS TO TALK TO EACH OTHER AND SAY THE SAME OLD DULL THINGS ... MY HUSBAND HAS TO HAVE THE MOBILE RIG ON EVERY TIME WE GET IN THE CAR. I THINK IT'S TO KEEP THE OTHERS FROM TALKING ABOUT HIM ... I GOT A NEW TRANSCEIVER FOR CHRISTMAS SO ONE OF THESE DAYS I'VE GOT TO READ THE INSTRUCTION BOOK ... 73 AND KEEP IN TOUCH.

Thanks to the following for their input: N4LNT, K0OV, K6KZF, W0HAH, WT6X, W0VUQ, WF0V, K9ZZ, KE0UQ and W0ML. Write me, Bill Snyder, 1514 South 12th Street, Fargo, ND 58103. My packet address is W0LHS @ W0LHS.ND. USA.NOAM. 73 de Bill. DIT DIT. □

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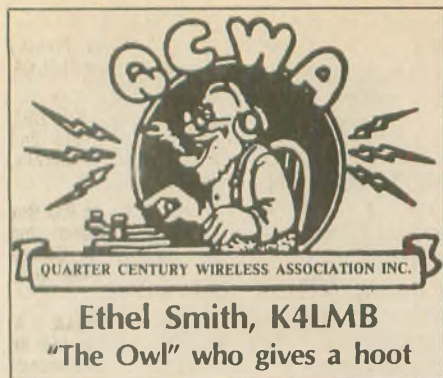
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Ethel Smith, K4LMB
 "The Owl" who gives a hoot

New QCWA headquarters

The transition of QCWA headquarters has been completed and everything is now running smoothly in Eugene, Oregon, under the new management of Jim Walsh, W7LVN. Thanks to the fine efforts and cooperation of former General Manager Ted Heithecker, W5EJ, the November/December *Hot Line* went into the mail from Oregon in mid-November. The Winter issue of the *Journal* was produced at the new Headquarters and mailed in mid-December. Everything has been kept right on schedule in spite of the enormous logistics involved in the move. Emphasis now is on getting out the Spring issue of the *Journal*. The deadline for input is February 15. Send material to QCWA headquarters, 159 East 16th Street, Eugene, Oregon 97401; 503/683-0987.

New directors

At the Canton Convention, four new directors were seated on the national board of directors. Art Miligan, W8KW, and Bill Stevens, W6ZM won their seats in the last election; John Weber, KA2IXW, was appointed to fill the vacancy left when Director Lew McCoy, W1ICP, was elected to the office of Vice President; and John Edel, K8LBZ, from Massillon, Ohio, was designated to fill the vacancy left by the resignation of Harry Gartsman, W6ATC. Another vacancy has now been created as a result of Director Jim Walsh, W7LVN, taking the position of QCWA General Manager. A replacement has not been selected at the time of this writing. There has been quite a turnover in the board in recent years due to all the promotions, etc., and we have been fortunate to have people who have been willing and able to step in. Our congratulations, and thanks, to all the new officers.

QSO parties

The QCWA CW QSO Party will begin Saturday, February 8 at 0001 UTC, and end at 2400 UTC Sunday, February 9. The Phone Party will follow on March 7 and 8. Don't miss these parties. You are sure to enjoy

them. (See last month's column or the *QCWA Journal* for more details.)

A little bit of history on the QSO parties: back in 1957 Stan Bellveau, W7AYO, in a moment of inspiration, started the first party. It was made into a real success by Dr. Spike, W7OS, and Charles Emigh, W7ER. (I believe all three are now Silent Keys.) There have been many changes over the years as technologies advanced and new modes of operation became available. Many logs are now generated by computer. But the parties have continued to follow the original concept of fun and good fellowship. Our thanks to Stan for his inspiration.

Honor awards

Two important honor awards were presented at the Canton Convention. The prestigious Distinguished Service Award was issued to Esther Given, W6BDE, in recognition of her eight years of dedicated effort as a member of the board and as editor of the *Worldradio* QCWA column during that time. We hope to have a picture of the presentation in the next issue. Roy Neal, K6DUE, was presented the Presidential Award in recognition of his outstanding and long time efforts in connection with promoting and publicizing Amateur Radio. Neal was the speaker at the convention banquet.

Take a little bit of your time to write a nomination for some of the available awards. There are many people deserving of special recognition. And don't forget the Anniversary Certificates which are issued in recognition of 50 or more years of amateur operation. These certificates are issued to eligible QCWA members upon request and proof of year of first license. (Headquarters has a good library of old *Callbooks* to confirm your eligibility.)

Chapter news

Northwest Chapter #4, reports presenting an impressive number of Anniversary Certificates at its fall meeting. A 65-year certificate went to Earl Thoms, W7DJ; 60-year certificates went to Roy Devish, W7AZI, and Bert Oscarson, W7ADT; 55-year certificates went to W7PV, W7FCK, W7MZQ, W7FNC, W7OOV, W7GPS, W7JWJ and W7GEY. The next meeting of Northwest Chapter will be

held in Centralia, Washington, on April 25. For more information contact Chapter Secretary Harold Johnson, W7PN.

Recruit a member

Let's make 1992 a year of recruitment. We know we have a wonderful organization and we are very proud of having over 11,000 active members, but there are so many more amateurs who have been licensed over 25 years and certainly should want to be members of QCWA. We think we have a lot to offer them and we know they have a lot they can offer us. Keep an ear and an eye out for potential members. Invite them to attend your chapter meetings, tell them about our activities, send them an application blank. Most people know about QCWA but it is surprising how many prospective members say they don't know how to go about joining! Let's do something about that. The place to write for application blanks is the new headquarters address mentioned above.

Organize new chapters

Fellowship is always one of the most important incentives for joining any organization. QCWA is no exception. There is fellowship in our on-the-air nets and other QCWA activities and especially in the personal contacts at conventions, area get-togethers, and chapter meetings. It is important to have a chapter within easy commuting distance so it is convenient to attend. If there isn't a chapter in your immediate area, consider starting a new one. This doesn't need to detract from any existing chapter, just supplement it to attract those people who aren't making it to more distant meetings. You can still have frequent joint meetings to bring the larger area together. It only takes 10 eligible people to petition for a charter for a new chapter. All must first be members of the national QCWA, but the signatures of new applicants can be counted on that petition. We now have 180 chapters throughout the world. Let's make it 200 before the end of the year.

New year's resolution

The first of each year is a good time to take a look at your amateur license and double-check the expiration date. We keep preaching about this and still keep hearing from people who suddenly discover their license expired a year or so ago! After two years there is no way you can get your call back again. After five years there is no choice but to go back and take the examinations again. So take that couple of minutes out right now and check your license expiration date. It can save you a lot of grief!



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Like other people born in the mid 50s I was glued to the television set until I heard about ham radio. There were some shows which were just okay, and others which were favorites. One particular favorite of our entire family was the Jetson's, a futuristic cartoon about a 21st century family. I especially remember this show because on its opening broadcast my father made a big point of gathering everyone around the black and white set to watch the first episode. I can still recall him thinking out loud and saying, "Just think kids, someday you'll be driving cars that fly and people will be going into space and no one will have to do any work except pushing buttons."

Perhaps six years after that, at a high school lyceum, a guest lecturer came in to talk about computers. "Imagine it!" he said excitedly, "Some day people will be able to own computers small enough to have in their homes." Sometimes my mind gets bogged thinking of how things have changed. And I haven't seen near half the changes that my 86-year-old grandfather has witnessed!

It seems that changes are happening at an ever-increasing rate. Let me just review for you some of the changes which have occurred in ham radio and Handi-Hams since I joined their staff in March of 1980.

- When I got my first license, Novice calls were good for only a year.
- The number in the call sign meant that if you were KF0I you were really in the 0 district.
- When you were not operating from your station location given on the license, the FCC had to be notified.
- Licenses were good for only five years when above the Novice level.
- When I got my first license in 1971 the Courage Handi-Ham System didn't exist. It was then a small volunteer organization called the Handi-Ham System of Minnesota which had perhaps 200 members. Now it numbers approximately 6,000 people.
- It took a good strong person with a bionic back to lift a receiver.
- Transceivers were the new thing; it used to be transmitter and receiver.
- Two meters didn't exist unless you were experimenting.
- In the 80s words like HT crept into the vocabulary.
- Call signs became stranger and stranger. When I received my Extra Class call in 1980 and switched from WB0EXQ to KF0I, people thought I was DX.
- Transistors were replacing vacuum tubes.
- It was rumored that computers would be used with radio.
- A group of folks in Tucson began referring to the word packet in terms of Amateur Radio, not the Post Office and courier business.
- Baude meant something other than teenage slang for the word "body."
- Rigs tuned themselves.
- The Handi-Ham System in 1983 could proudly boast of having students in every state.
- Blind hams could "listen" to their rigs saying frequencies.
- Rumors of a no-code license were quickly hushed in the mid 80s, only to appear again later in the decade.

And the list goes on innumerable. I would like to add one which will not (please turn to page 58)

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YL Roundup



Connie
Dunn
KB5LES

Women amateur operators are now gaining in numbers every day. And they have fewer barriers to hurdle than did YL of a few decades ago. Helen Douglas, W5LGY, of Commerce, Texas, first began operating after World War II and recalls, "Men wouldn't hesitate to tell me I didn't have any business on the air."

She says many of the men didn't think a woman was smart enough to be an Amateur Radio operator. They often threatened to report her to the FCC who, they said, would catch illegal

operators, seize their equipment and take a hatchet to it. The OMs would tell her she needed a license and wouldn't believe her when she said she had a "Class A" license, which was the equivalent to today's Advanced Class license.

But Helen got on the air anyway. Some people might say that she got on the air just to aggravate the OMs. But others would point out that Helen simply likes Amateur Radio. In fact, she likes it so much that she is making plans to take "Baby," her rig, with her to the nursing home. "I'm moving into a nursing home when I sell the house. If I can't get the rig to work there, I will be off the air," she explains.

Helen recently decided to sell her family home and relinquish some of her independence for safety, because of her 87 years, partial blindness and several falls. She believes, "If you're so decrepit you can't remember where you put your bonnet, you should tell your age." Whether or not she can keep up with her bonnet, she has recognized the need to hang it elsewhere. And she wants to hold onto what is dearest to her heart. "For me," Helen remarks, "ham radio is like old grandma talking about her grandkids."

Over the decades, W5LGY, who has never married and has no children, has seen the hobby grow. YLs have come of age since Helen got on the air in 1945. In her infant days of operating, there were fewer than 1,500 YLs on the air. Licensed women operators now number more than 40,000.

Helen has been—and still is—an avid operator. She holds numerous certificates, including: the Ragchewers Club; Certificate Hunters's Club; public service certificates for helping during the big freeze of 1949, the 1950 North Texas ice storm, the Waco tornado and the San Angelo tornado in 1953; ARRL Official Observer; ARRL Official Phone; ARRL Emergency Coordinator; YL Hunters Certificate for collecting calls of OMs hunting YLs; and a Russian SWL certificate from 1951.

She was the first YL to become a



Helen Douglas, W5LGY, was one of the first YLs on the air in 1950.

member of the Knights of the Kilocycle Net. This was an all-male net before she was granted membership. And she was instrumental in getting the Texas Young Ladies Round-Up Net (TYLRUN) going in 1952. "When TYLRUN first began, the OMs would get on (the frequency) and try to keep us off," she laughs. But keep them off, they did not. There were 14 original members. Helen is the only one of the founding members who still checks in to the 40-year-old net, which meets on Thursday mornings at 8 a.m. local time on 3.942.

Helen claims to have gotten interested in Amateur Radio because her family took train trips and she loved listening to the clicking sound of the Western Union telegraph. "That was my first fascination," she says. In high school, Helen had a teacher who owned a radio receiver. The kids would gather and listen to far-away places, such as Chicago and Pennsylvania. "My sister and I would stay until he ran us off," Helen adds.

In the old days, she says, most of the Amateur Radio equipment was homebrew. The circuitry has undergone the changes of technology. And amateurs no longer build most of their own equipment.

"A couple of guys on the air would help me," says Helen, explaining how she learned the technology of her time.

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"I would tell them what I had. They'd draw it out as I told them. They'd tell me what to do. Then I'd make a schedule with them."

Helen grimaces, "Today, no one knows how to fix things. No one wants to learn how to build." Most amateurs are "appliance operators," leaving the building part of Amateur Radio to fewer and fewer people. Because there aren't as many experienced amateur builders willing to help the newer ones, it is harder for newer hams to become interested. Encouraging newer hams to experiment is a good way for them to learn. "It improves your knowledge to experiment with things," she emphasizes.

Helen is still experimenting with different technologies. She explains, "I am just beginning to learn about the use of counterpoise ground, as I will not be able to have an outside ground connection when I move to the nursing home. Too bad that the jillions of ham articles I've read never mentioned it. I stumbled across it in a ham newspaper. They tell you how to make ground-plane antennas, but never call the ending radial or your actual ground connection 'counterpoise' by name."

Helen still recalls one of her first radio experiments. "I remember when the only thing I could get to work was a crystal set. I looked for a circuit. It



W5LGY is still happily operating today. (Photo by Judi Jaksa)

came out in a magazine. I built the crystal set using a cat's whisker and a nickel. I spent about a week winding a coil. Then I jiggled that cat's whisker all over that nickel. We heard a station out of San Francisco, it was about 1 a.m. We—my sister and I—let out a whoop! The secret of a crystal radio is that it needs miles of antenna. It's part of the circuitry. And it needs a good ground.

"We buried an old, leaky, Ford radiator in the flower bed. We left the spout up. Whenever we wanted to hear something special, we'd go out and fill

up the radiator with water. It'd wet the ground around it," she explains, "which would make a real good ground. Papa paid \$1.50 for that old, brass, leaky radiator."

Helen hasn't occupied her life solely with radio. She has spent years as an amateur meteorologist. She's kept daily records of the temperatures in Commerce since 1954, the year her mother turned the task over to her. She and her mother began keeping records in 1950.

Keeping Commerce's and Hunt County's historical records accurate is also of importance to Helen. She has written numerous historical manuscripts. She also makes ink-blot pictures, is involved with genealogy, and can reminisce about the days of being in the sheet metal, hardware and plumbing business with her father.

"During the war, we saved every piece of scrap metal. You couldn't have things that were new. Once a lady came in, and I made her a biscuit pan from scraps of metal. Two weeks later she came in and hugged my neck," she recalls.

One of Helen's handmade marionettes went to an international puppet convention. Miss Pill, a hand puppet that was designed from an egg carton during one of her hospital stays, has pills for eyes, wire glasses—and an uncanny resemblance to Helen. □

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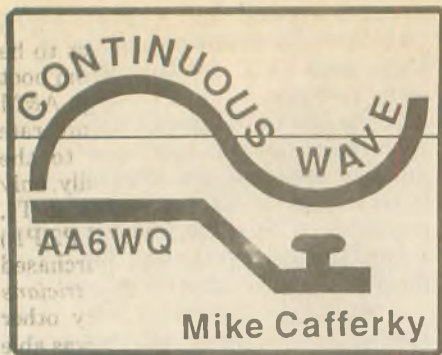
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Reaching your target weight

I don't want to say you have a weight control problem. That is not something I would discuss with you. However, maybe you do have a weight problem and don't know it. Actually being too heavy (or too light, for that matter) may be causing a problem, not for you, but for those who try to copy your CW on the air. What I am talking about is not visible fat, but the weight control on your keyer.

I have heard a wide variety of keyer weights being used on the air. If I hear a real heavily weighted key it really throws me off until I get used to it. I think that many operators set the weight once (or use the factory setting) and then forget about it. We are creatures of habit and routine.

Weight in CW is a measure of spacing and proportion. When you first learned Morse code, you were probably taught like I was that the building blocks of code are dits and dahs. Let me add a third and even more important element: *spaces*. Spaces, by interrupting the continuous wave, give code its pleasurable rhythm. Spaces are the building blocks of code which distinguish one character from another and one word from another. They are the silent partners of dits and dahs. They link everything you send in code and make your code either intelligible communication or simply garbage.

How much space you give between each dit and each dah is where weight comes in. Keyer weight can be defined

mathematically: Weight is the proportion of time your keyer allocates for the length of a dit compared to the total time of one dit and one space. This formula illustrates:

$$W = \frac{Td}{Td + Ts}$$

Where:

W = Weight expressed as a percent

Td = Time in the length of a dit

Ts = Time in the length of a space

What is the ideal weight for perfect code? In practice, "perfect" is defined by the one receiving your code. Perception of what is a perfect weight comes from habit, practice, and training. I believe that the perception of ideal weight is also influenced by the rise and delay time of the continuous wave as it is crunched on and off by the keyer. I have spoken with operators who believe that perfect weight should be related to the code speed. Some of these operators like to increase the weight slightly as they increase their code speed. Perhaps this helps the receiving operator copy the code better.

According to the *ARRL Radio Amateur's Handbook*, ideal code is when the length of one dit is equal to the length of one space between dits. Assuming this is correct, the ideal weight is 50 percent. By using different numbers in the formula, you will see that a dit half as long as a space makes the weight 33.33 percent, a dit twice as long as a space makes the weight 66.67 percent, and a dit three times as long as a space makes the weight 75 percent.

On at least one of the newer models of electronic keyers you can select a desired weight setting and the keyer does the rest. If you have an oscilloscope you can send a continuous string of dits and measure on the screen the length of time for each dit and for each space. But most operators don't have such equipment. For straight keys, mechanical bugs and older keyers there is no easy way to know what weight setting you have. You just have to play it by ear. As nice as the formula above appears, there is no foolproof "poor person's" way of calculating the actual percent a keyer has. The difficulty is in measuring the time (in tenths or

hundredths of a second) of each dit and of each space generated by your keyer.

I wanted to experiment with the formula so here's what I did. Realizing that it would be impossible to time dits and spaces at my usual operating speed, I set the electronic keyer at its lowest speed. Next, with the help of my son, I timed the length of ten dits alternatively clicking on a stop watch at the beginning of each dit and clicking it off at the end of each dit. My son's job was to count the number of dits so I would time exactly ten of them. I divided the total cumulative time for the dits by ten to get an average time for each dit (to adjust for human error in running the stop watch). This number (Td) I set aside to use later in the formula. I reset the watch and repeated the same procedure measuring the total time for the ten spaces between the dits and calculating the average time for each space (Ts). The next part was easy — plug into the formula the two numbers for Td and Ts. Last, I repeated the whole process after I changed the weight control.

You probably do not use your keyer at its lowest setting, but it is only on a slow speed that an accurate time measurement can be made manually. Using the procedure I described above assumes that your keyer has a relatively constant relationship between the lengths of dits and spaces as the speed increases. Only the manufacturer of your keyer knows for sure. If you are using a straight key or a bug, who knows what to assume!

In conclusion, several comments are in order. First, it would be helpful if weight controls on electronic keyers were easier to access. The same opinion holds true for electronic keyer units built in or added on to transceivers. Second, someone should develop computer software (maybe it exists and I haven't heard about it yet) which will analyze the weight of either an incoming signal or an outbound signal. Wouldn't it be nice to tell the other operator that his weight is 70 percent and really difficult to copy? Third, there may be an enterprising engineer who, after reading this, will build an after-market add-on product with a digital LED readout that will tell you your keying weight. That way when you key down it will be like stepping on the scales. Fourth, I have not tried to cover all the bases here. If you have ideas about keyer weighting or have an alternate method of calculating it, please send me a note. I may have a follow-up to this in a few months.

Many have written with questions and suggestions. Thank you. I enjoy reading them. In an upcoming issue I will open the mail bag and share some of your thoughts and my responses. □

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OLD-TIME RADIO



Fifty years ago—the USNR V6 Program

J.V. COLLETT, W6ERM

This is a story about an unheralded group of radio amateurs, both young and middle aged, who volunteered their services for the benefit of their country in need.

Shortly after the Japanese attacked Pearl Harbor, a large number of radio amateurs would be involved in a naval program which would influence the balance of their lives. This new program, called the USNR V6 Program, would provide the burgeoning fleet with a steady stream of well-trained radio and electronic technicians who would be capable of servicing or repairing any type of radio and electronic gear that the Navy possessed.

To initiate this V6 Program, the Navy went to the Bell Telephone Laboratories, selected three of the top engineers, commissioned them and gave them orders to take the necessary steps to get the program underway. These officers selected their staffs and then organized and supervised the construction of barracks and classrooms, and the procurement of millions of dollars in equipment, and then created a tentative curricula.

As construction of the barracks commenced, eyes were turned toward the large group of hams whose technical expertise was sorely tested by the FCC licensing requirements in those days before Pearl Harbor. Many of these men had gone on to professional positions related to electricity and radio. It was obvious that the military was long aware of this group. The Navy advertised in the February, 1942 issue of *QST*, to all amateurs actively licensed, a written contract which included at the time of enlistment the rank of second class petty officer with the accompanying paygrade, and nearly 1,000 hours of classroom and laboratory experience as well as hands-on experience with all naval radio and electronic gear. This ad specified only high frequency radar, but the offer was to cover the whole spectrum of radio and electronic gear used by the Navy.

Through ads like this, the FCC and word of mouth, the Navy was able to locate many amateurs for the job. On Treasure Island in the San Francisco Bay, where the V6 base was being

assembled, a group of several hundred amateurs arrived early. They were lined up on the parade grounds, where about 40 men were assigned their specific classroom subjects and were directed to draw up the curricula and text books. Some 60 men were then assigned as laboratory instructors who were to collaborate their material with the classroom instructors and then set up each lab and install the necessary equipment with the assistance of the base electricians.

The instructors were to remain until such time as the new graduates were of sufficient quality to replace them, and then continue through the school in order to comply with naval requirements to attain the rating of Chief Radio Technician. The remaining men were assigned to the first classes, which began early in the spring of '42. It is estimated that the system turned out at least 10,000 graduates.

Shortly after the ad appeared in *QST*, I enlisted in the V6 Program on March 9, 1942, but was held by naval delays. After nearly three months, I was finally sent to the Oklahoma College of Agriculture and Mechanics where I commenced a 12-week course in elements of electricity, applied mathematics, AC currents, machinery, and fundamentals of radio, as well as a comprehensive course in the use of an engineering slide rule.

I found many old-time amateurs there and they informed me that the Navy had contracted with several colleges to present this course and to prepare the men for the school at TI. Unfortunately for the men who preceded me at A&M, the Navy failed to advise the colleges to take it easy on the applied mathematics, which included algebra up through quadratic equations. For many it had been years since they had opened an algebra book; for my roommate, Henry Cain, it had been nearly 24 years.

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As it turned out, the delay I'd griped about at boot camp turned out to be very useful, as a fellow ham from boot camp had already gone through A&M and warned me that the failure rate was about 50 percent, due to the coursework in algebra. (Ironically, only two algebraic terms appeared at TI, namely $E=IR$ and $DB=*LOG P2/P1$.) I followed his advice and purchased *Cook's Mathematics for Electricians and Radiomen*, working every other problem in it. Consequently I was able to help old Henry make the grade.

In due time I graduated from TI, ninth in my class, and was selected to instruct classes in antennas, transmission lines and waveguides. Russ Bennet, W6DTJ (now a Silent Key), would be co-instructor with me after returning to school himself and graduating 11th in his class. After one year of this duty, I was commissioned and permanently assigned to the V6 Program for the duration of the war.

Three months later, after the Navy promoted 20 instructors to the rank of warrant and ensign, I joined 10 of them, together with a large contingent of trained instructors at Navy Pier, Chicago, to go through what was done at TI in 1942. Soon we had 1,600 students in training and would continue to well after VJ Day. In the years after VJ day, the men who participated in the V6 Program would find that the superb training that they received had greatly enhanced their technical knowledge and expertise, and that there would be a great demand for those men to fill the needs of a blossoming technical market after the war. I am personally aware of many who achieved great positions during the peace that followed.

When I applied for a job with Otis Elevator Co. and presented my naval training course certificate for the completion of the V6 Program, I was hired on the spot and in a period of four months was made a field engineer, and continued as such for the following 30 years.

Now, in retrospect, I wonder: Did the FCC do the Armed Forces any favor by greatly reducing the requirements for becoming an Amateur Radio operator? And what's more, did they really do justice to the modern hams? Thank goodness I was licensed in 1930, when the going was rough! □

In the 1930s people paid 10 cents to see a movie. Now they pay several hundred dollars for a TV set—and see the same movie.

—CHARRO, Brownsville, TX



Surely you've started a sentence or question with "What if...?" And what followed that introduction probably covered a wide range of topics or ideas. When you think about it, that may be the leading question that runs through the minds of science-fiction writers. And, interestingly enough, they have large, eager audiences.

So grant me the same license, only now about our earth and its ionosphere. But rest easy, I won't take you far away from our current reality, just consider what might have been if Fate rolled the Dice of Destiny a bit differently.

Having said all that, let me stake out the things I won't tamper with in my discussion: the mass of the earth, its distance from the sun, the basic chemical composition of its atmosphere. By that restraint, I will have the earth still orbiting the sun in 365 days and a friendly, life-supporting environment at the surface.

But there are some things that might have been different, starting back at Day One—for example, the tilt of the earth's axis relative to the plane of its orbit and the rate at which it rotates on its axis as well as the strength and orientation of the geomagnetic field. Each and every one of those factors would affect our ionosphere and, thus, how we'd pursue our hobby. So let's take a look at them, just for fun and edification.

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As you know, the earth's spin axis is tilted 23.5 degrees with respect to the plane of its orbit around the sun. This tilt is essentially constant in direction relative to the distant stars, due to the conservation of angular momentum, and mainly responsible for the changes of season, the axis tilted toward the sun during summer in the Northern Hemisphere and away from the sun during winter as the earth revolves around the sun.

There are parallels of latitude at 23.5 degrees away from the equator, the Tropics of Cancer and Capricorn, where some time of the year the sun may be seen directly overhead. And there are the Arctic and Antarctic Circles, 23.5 degrees away from the geographic poles, where some time of the year the sun may be seen right at the horizon.

For ionospheric purposes, the important item is the terminator, the line which divides regions which are illuminated by the sun and those in darkness. The regions illuminated by solar ultra-violet light and x-rays become ionized and then their properties depend on their height above ground level and the time in a day, say between consecutive sunrises. The lower D and E-regions come and go with sunrise and sunset; the F-region, however, gradually decays after sunset in the 300-400 km range and then develops again rapidly with the next sunrise.

Mars and Earth, both termed "terrestrial planets," have axes tilted at 23.5 degrees. The situation is different for the "Jovian planets," with Jupiter, Saturn, Uranus and Neptune having tilts of 3.1, 26.8, 82 and 35 degrees, respectively. Frankly, except for Uranus, I have to think that we could

adjust to those tilts when it comes to seasons and radio work. Uranus is so "far out" in that regard, however, that I really don't want to waste time and space on it. Besides, it makes me dizzy to think about that one.

More important, however, is that those Jovian planets all have shorter days, 10 to 16 hours in length. So what if our earth spun on its axis at about twice its present rate? There, we can think of some ionospheric consequences at once. Thus, the friction of the earth's surface, mountains and oceans, would stir up the lower atmosphere even more than now, making its atomic and molecular composition uniform up to higher altitudes than at present (around the D-region).

And the shorter intervals between sunsets and sunrises would give less cooling at night, serving to make the atmosphere warmer. As it is, above the well-mixed region, the constituents of the atmosphere separate according to weight, the heavier atoms and molecules (and pollutants) remaining close to the earth and the lighter ones rising in altitude.

With greater thermal agitation, essentially working against that sort of chemical sedimentation, the atmosphere would extend to higher altitudes. But the constituents in the upper reaches wouldn't change all that much, solar radiation still breaking up oxygen molecules, giving rise to oxygen atoms and ozone. And the solar radiation would still ionize those atoms, but now at higher altitudes.

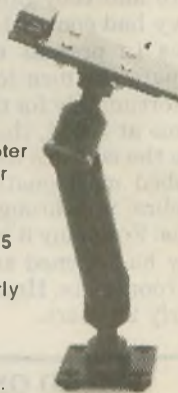
I haven't put any numbers to these ideas but it looks to me that if the speed of rotation about our axis were double what it is now, we'd have a higher ionosphere, translating into longer skip on the bands. So DX would be easier to come by. But then, maybe the quality of life might just be on the down-side—much warmer in the shack, shorter DX openings and more intense pileups, even requiring different work and commuting practices and, worse yet, biological clocks set to a shorter day or keeping our biology the same and working through two days. Why did I bring this up, you ask?

Well, there is one item in my original list that can change, indeed *has* changed significantly in the last century: the geomagnetic field. In point of fact, the geomagnetic dip pole was located near the Boothia Peninsula (70N, 264E) in Canada back in 1831. Since then, its position has been monitored and now is located at a position about seven degrees further north and five degrees to the west of its position in 1831.

Given what we know about geomagnetic control of the ionosphere, there's no escaping the fact that the iono-

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sphere has been "wandering around" at the same time, its orientation or axis moving closer to that of the earth's geographic axis. So things are moving but we're not there yet.

Beyond just locating the position of the geomagnetic dip pole and following its wandering, the geomagneticians have been measuring the strength of the earth's field on a continuing basis. And, curiously enough, they find that it's been decreasing at a rate of about four percent per century since the beginning of the 17th century. What does that mean to us, ionospherically speaking?

For that, let's go back just a few months, to late March of '91. We were all treated to some solar fireworks, several large, Class 3B solar flares, complete with intense fluxes of protons rushing out from the sun and heading in our direction. If you followed the WWV broadcasts, you heard about large errors on the Omega Navigation System and the fact that a Polar Cap Absorption (PCA) event was in progress. And if you're a DXer, you'd recall the polar paths were shut down for several days, even after the geomagnetic storm subsided. All those problems were due to the additional ionization in the polar D-region from those protons coming in at high latitudes.

Now in physical terms, the earth's magnetic field serves as a spectrometer, sorting out protons according to their momentum (mass times velocity). Thus, at a given latitude in the polar regions, protons must have a minimum momentum to get through the earth's magnetic field and into the ionosphere. If a proton fails the test, it is brushed aside (more precisely, deflected away) and is of no further concern.

In essence, at a given magnetic latitude, the strength of the earth's field limits the access of solar protons. But if the field were weaker, more protons would pass the test and get to the ionosphere at that latitude. Put another way, protons with a given momentum could reach lower latitudes if the earth's field became weaker. On that basis, for the same distribution of momentum in the solar proton beam, future PCA events will extend over a larger cap in the polar regions.

Now I'm not crying "Wolf" or anything like that, just saying that the orientation and strength of the geomagnetic field is important in ionospheric work, even Amateur Radio. With continental drift moving as it does, even slower than "full glacial speed," we don't have to worry about the ground moving underfoot, taking us to different magnetic latitudes. And we probably won't detect much shift in the ionosphere's position by our crude

methods. But things are a'movin', no doubt about it.

Being the worrier that I am, I keep wondering when the next comprehensive ionospheric survey will be made, correcting for the changes in a century's time. As I see it, NOAA will have to start preparing for that around the year 2040. Geomagnetically, worldwide surveys are made every decade, the last one being completed by the Defense Mapping Agency in 1985. So NOAA can keep track of how things are going and be ready to recruit when the time is ripe, right or whatever. But "What if...?" It's your turn now. □




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So much to do, so little time. Last summer I promised myself that by February I'd finish several home projects and get a huge pile of "ideas" sifted and worked on. A month into the new year and there's still this pile of stuff that beckons each time I come into the shack to relax.

One reader wrote from Colorado and thanked me for all the nifty ideas in *Worldradio* and said his group lacked information on getting involved and being prepared for emergencies.

Looking around

What I see often is an inability to observe. Some months ago a group gathered to kick around some radio ideas. One Amateur Radio operator caused me great grins as he tried to participate in three discussion groups (all at once), while what he was saying made little sense. He's a nice guy but hardly let anyone else get a word in edgewise. Had he paused to observe, process ideas being presented, and comment on specific issues, his input would have been welcome. As it was, most of what he said was ignored and he continues to shout down the crowd, saying nothing.

That happens too much and it isn't doing the people you serve any good. Too many good ideas just don't get off the ground or shaped into better ideas because someone's too busy talking and not observing and listening.

Reflect a little on the last discussion

meeting you participated in. Were you the main speaker or did you share the agenda with others? If you're unsure, take a stopwatch and when you speak, time how long you took. At the end of the meeting see how much time you talked and how much time you listened to others. You might be surprised!

Write it down

I'm partial to the written word. It gives me a chance to present some ideas and absorb some ideas without interruption. When you present it in writing you're focused and, in my opinion, more committed to your ideas.

It takes little to out-talk others at meetings, but sitting in front of your typewriter or computer and writing takes some effort. I presume that's why so much is promised vocally and so little is produced.

Checklists

Several months ago I wrote about the value of checklists and how beneficial they are to me. There are many types—equipment checklists, things-to-do checklists and behavior checklists.

The Alameda (California) ARES group put out a great manual, called the "Instant Trainer Emergency Manual." It's printed on heavy card stock and contains 40 pages of quick-reference material. Here they've gathered frequencies, maps, procedures, names, equipment lists, phone numbers and policies into an easily understood manual. To newly licensed Amateur Radio operators, manuals like these will be invaluable as the public service ranks swell.

One of my concerns is what people bring to an emergency response. For example, say you're called out for a forest fire. Several are assigned to "shadow" key fire officials and others to establish a communications base. If I'm one of the communications base responders, what should I bring? Maybe you've got a new person who has never participated, would he or she know what to bring? Does the operation require packet, UHF and VHF? Maybe I should throw in the HF rig and a dipole? What about several long runs of coax?

Put your thinking caps on and let's

get together some response equipment checklists. What do you need if you're a "shadow," or what should you bring if you're setting up a base station? We should have different pages for similar but different events, such as "Base Station—Urban" and "Base Station—Wilderness."

Group project

I need each of you to put in some effort and think of various scenarios and what would be needed. Are you walking, driving, riding with someone, flying or maybe bicycling? How much coax would you need for each response?

Many of you have called to offer thanks and support for what I write—now it's *your* turn to help me produce some future columns. Don't procrastinate! Stop at the end of this column and crank out a checklist. Put it in the mail. Better yet, create several checklists (from scratch!) and send them.

Here's the deal. I'll collect what you send, combine and typeset them, print them on some card stock, and send them back to you at my expense. Sure I'll put some of this into future columns, but I expect such a large input you'll feel real bad if you're not the first on your block to get the final product.

So what are you waiting for? Get writing. You've got the easy part. The guarantee is that you're not going to be out anything but a little time and a stamp. And I'll bet even the worst grouch among us will find something of value in the final series of checklists! Here's your chance to contribute to what could be the neatest thing since programmable radios.

But, hey gang, let's not drag this thing out. I've completed a couple of major products and I'll only have February and March to do this thing before I start into summer stuff. If you

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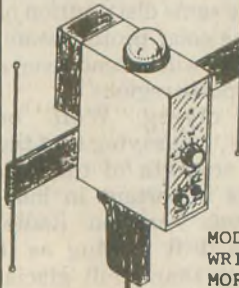
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wait, you lose. Your deadline is the end of March.

Response Briefings

I don't know about you, but I'm very curious. When the call goes out for a search mission I lust for information. Curses to the team leaders who spend hours on the radio with cryptic messages about "something about to happen."

Have you ever had that urge to key the microphone and shout: "What's going on!" When the call comes in and there's a possible emergency, it's better to share the information and let your team know what's pending. If you don't have much information, it's okay to say that. Share what you know. Giving your team members information allows them to prepare to respond. Keeping it to yourself usually means it's a one-person show which doesn't do the victim much good.

Day and night

What happens at 6 p.m.? Does your search team go home saying, "It's too dark to fly"? Can SAR happen in the dark? Usually. Night flights for flares and signals have saved lives. Night search for missing persons is also effective. (I was once puzzled why a cave search ended at dusk—think about it.)

An important part of SAR is what happens at the SAR base. A pause in the search or holding off overnight is a critical time to evaluate what has happened, plot probabilities and plan the

next day's search to improve your response. But wait, who does this overnight effort if you're tired from being on the search all day?

What an excellent time to use additional team members and let them contribute to the SAR effort. Not only will they learn as they calculate probabilities and form search recommendations, they'll be involved. Many cannot leave work to participate but would relish the opportunity to spend six hours at the EOC and contribute to the mission. Of course this means you've got an on-the-ball SAR coordinator and your SAR people know what needs to

happen on this night shift. But you've been holding regular training, right?

My continued thanks for your input, calls and letters. I appreciate knowing that a number of you have subscribed to *Worldradio* because of this column. I hope you enjoy the rest of the published feast each month as well. Over the past two years it has been a joy writing as well as reading *Worldradio*. See you next month!

Public service is more than talking or writing. It's training, preparing, thinking, supporting, responding, searching, rescuing, recovering and feeling good so you'll do it all again next time.

DX World

(continued from page 36)

UA3DJY, UA6HPR, UB5APW, V73CT, VE7KC, VK4CRR, K1MEM, KA3DBN, KB5KYO, K6OZV, W6TUR, AA7KG, NE8Z, Salt Lake City DX Association (KB2G), Northern Arizona DX Association (W7YS), Western Washington DX Club (K7WA), *The W6GO/K6HHD QSL Manager List*, *Long Skip* (VE3IPR), *The DX Magazine* (VP2ML), *DX News Sheet* (G4DYO), *The Long Island DX Bulletin* (W2IYX), *QRZ DX* (W5KNE), *Inside DX* (N2AU), and *The DX Bulletin* (VP2ML).

There are many different awards available out there ranging from the top of the heap with DXCC all the way down to obscure ones that most never heard about. And new ones keep showing. Mike Streeter, KB5KYO, suggests one such award—The WASP Award—for working all state parks. Perhaps some club would care to develop this one and contact Mike at 522 Prairie Dell, Lewisville, TX 75067.

Now is the time to begin your 1992 DXathon. Have a good year in 1992, de John N6JM. □



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10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

Dues increase

After over 10 years, yes 10 years, 10-10 has finally had to increase the dues. I have always said that 10-10 is the least expensive part of Amateur Radio that I have ever known. And now after over 10 years of \$4-a-year dues, the dues have been raised to a modest \$7 US and \$9 DX per year. This may still be the best buy in Amateur Radio! Along with the dues increase, the board of directors removed the requirement for new members to pay the \$1 initiation fee which was intended to cover the input of new member records in the computer data base.

Compare what you get for your \$7-a-year dues: the *10-10 International News*, a 32-page quarterly publication full of pictures and news about 10-10

members, 10-10 activities, DX, contests and awards; participation in four contests each year, two phone QSO parties and two CW parties; a host of awards with more new awards coming in 1992; and much more. Remember that no organization can function without active dues-paying members. 10-10 membership keeps growing each year and when the final tally is in for 1991, it appears that more new members joined 10-10 in 1991 than in 1990. So we keep growing, and to permit 10-10 to continue to expand the 10-10 awards and services to members, it is necessary to keep your dues current. If your dues are not current, you are an inactive member, and although you can still give your 10-10 number to other members, you cannot participate actively in contests, awards and chapter activities.

The new ARRL operating manual

I have just received a new issue of the *ARRL Operating Manual*, fourth edition. This great newly updated issue is edited by Steve Ford, WB8IMT. Steve has expanded the write-up on 10-10 which is located in the Operating Awards chapter.

I can highly recommend the *ARRL Operating Manual* for everyone, old or new to ham radio. It has a wealth of in-

formation about all aspects of Amateur Radio.

A note about QSL cards

Since the introduction of the 10-10 County Award, I have been sending out a number of QSL cards in order to confirm each new county. Although the 10-10 Worked all Counties Award does *not* require QSL confirmation of each county worked, the *CQ* magazine Worked all Counties Award *does* require QSL confirmation. As I am working for both awards, I decided to go for the confirmations for the 10-10 County Award as well as the *CQ* County Award. Sure it's a lot of work to fill out all those cards, and the cost of 19¢ each to mail, but I think it is worth it. Besides, I like to receive QSL cards. The various card designs are of interest and show something about each individual. For example, I live in Tarzana, the home of Edgar Rice Burroughs. Edgar lived in my area on his horse ranch, "Tarzana Ranch," in the early 1900s. In 1927 a contest was held to name the growing community, and Tarzana was chosen because the author of *The Tarzan Series* lived here. So what is a natural for my QSL cards? What else but a picture of Tarzan! Next time we work, how about sending me a QSL card and I will send you mine with a picture of Tarzan.

But there are a few things about QSL cards that should be brought to the attention of our newer members. First, please show your 10-10 number on the card. If you rushed out and had cards printed before joining 10-10, a simple solution is to get a rubber stamp made from your local stationery store and stamp each card before sending. Another good idea is to show your county. Most QSL printers will ask for your county on their application form. If you do not yet have QSL cards, it is a simple thing to send back a US post card with the necessary information hand-printed on the message side of

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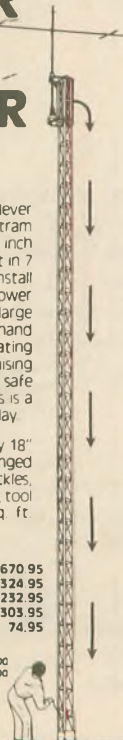
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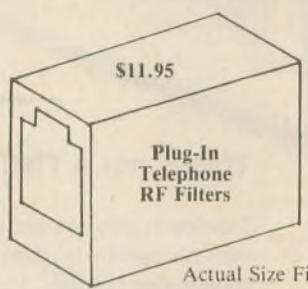
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the card. QSLing is fun. By all means give it a try, and please answer all cards received. The sender would like your card or he would not have taken the time to send a card to you.

1992 Winter Phone QSO Party

Soon after you receive this issue it will be time for the 1992 10-10 Winter QSO Party. The contest begins at 0000Z on February 1 and ends at 2400Z on February 2. Remember this year a lot of members will be asking for your county. It may be easier to throw your county in when you give your state and 10-10 number. Your response may be something like this: "State of California, County of Los Angeles, 10-10 number 19636." This way everything gets passed at one time.

This contest will be the first where 10-10 is asking members to observe a "quiet zone" between the frequencies of 28.490 and 28.510 MHz for non-contester use. Please let's all observe this quiet zone and leave some room for those who are not interested in the 10-10 contest. There is plenty of frequency space available and this voluntary restriction of this narrow band of frequencies will not hamper your ability to make contact with all of the stations you can hear. Remember, your log *must* be in UTC.

Contest Manager Harry Syring, WB1FTQ, usually picks just the right weekend for the contest so we have great propagation and overall good operating conditions. So mark your calendar for February 1 and 2 for the first 10-10 contest of 1992.

Finally

What interesting information do you have about yourself or some other 10-10 member? If you found my story about Tarzana noted above interesting, how about some trivia about you or your area? What activity is your chapter planning? What has 10-10 meant to you? Are you a 10-10 family? Contributions are welcome—help us gather interesting information for this column and the 10-10 International News. Photos are welcome. My address is listed below.

If you are interested in obtaining an Information Pack and application form to learn more about the 10-10 organization and how you can get your own 10-10 number, send me \$1, two first-class stamps and an address label. You will also receive a copy of the latest issue of the 10-10 International News along with your Information Pack. My address is 18130 Bromley Street, Tarzana, CA 91356-1701. 73, es cu next month. □



Hot tip in the cold

My antenna rotor manual says the lubrication will flow at 20 below zero. However, this last winter at 28 below, nothing moved.

I attached a magnet type electric car engine heater and warmed up the rotor.

—Richard Mollentine, WA0KKE, Overland Park, KS.

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CONSTRUCTION

Barebones crystal set

PHIL ANDERSON, W0XI

Can you imagine building a radio kit with just four parts and actually receiving any signals at all? While we know the ancients did it with a coil, headset, a hunk of galena and a cat whisker, it just doesn't seem natural today. After all, we live in the age of compact discs, complex integrated circuits and high definition television! But if you build the little radio featured in Figure 1, you'll be very surprised at the volume received and the quality of the audio, characteristic of crystal sets. This *barebones crystal set* consists of a coil assembly, a standard 365pF tuning capacitor, a germanium diode, and a high impedance headset. With the right tools on hand you can build it and be listening in one hour. To get good results you'll have to attach a 40 to 70 ft. single-wire antenna and ground the set.

Referring to Figure 2, the heart of the set is the coil assembly. It consists of two coils wound on a typical AM radio ferrit rod, often called a "loopstick." These loopsticks can be found in various electronics mail-order catalogs or, better yet, you can dig one out of an old AM pocket radio you're no longer using. Generally they're shaped like a piece of gum, thin with a rectangular flat surface.

The tuning coil consists of 80 turns of small wire, wound 10 turns at a time, having a total length of about an inch. Spacing is not critical and the windings don't have to be perfect but can be "scramble wound." When I wound mine, after each 10 turns, I'd make a little loop and twist the wire together into an eyelet (see the figure) and secure those turns with a piece of masking tape. Then I'd repeat the process until the tuning coil was complete.

Very fine wire is preferred for the tuning coil, like that wound on a loopstick inside an AM pocket radio. If you decide to scavenge the loopstick and wire from an old radio, unwind the wire first and then, rewind it using the coil instructions above. Using small wire keeps the coil from getting too bulky. If you use this fine wire, the eyelets for the tuning coil can be prepared for later connection by tinning them. Touch the eyelet simultaneously with resin solder and the tip of your soldering iron; the fine insulation

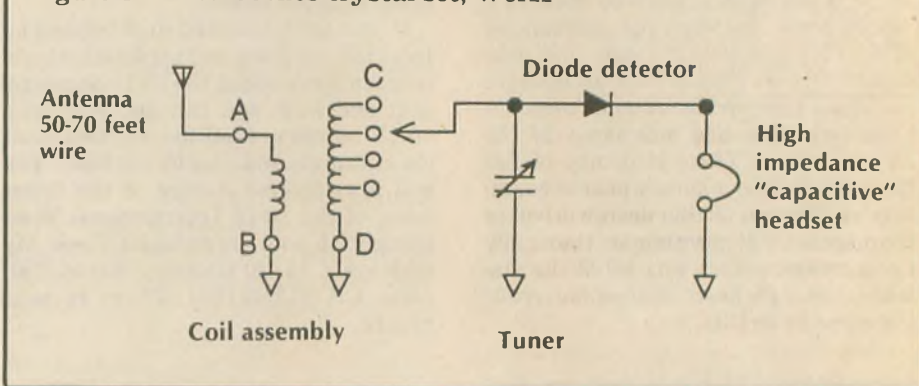
will melt away and the solder will tin the eyelets.

The antenna tap coil consists of four turns wound on top of the tuning coil in the middle of the stick. These windings are shown darker in the figure. For this winding you ought to use number 22 or

which is close to the design of the ancients, you'll have to locate a pair of high impedance headphones. You can find these via various specialty mail-order houses, or you could consider substituting a high impedance earplug which you can locate in most general electronics mail-order catalogs. The higher the earphone impedance the better. A third alternative is to utilize an audio transformer with a high primary impedance and an 8 ohm secondary resistance, and then use a standard 8 ohm speaker or headphones.

Since there are only four parts to this radio, I wired it on a small piece of Radio Shack perf-board instead of making a printed circuit board. Winding the coil is the only step that takes

Figure 1 A barebones crystal set, W0XI



24 insulated hookup wire and strip the ends for later connection. Wire size and alignment are not critical.

The tuning capacitor indicated in Figure 1 is the common garden variety 365pF air variable capacitor used in commercial AM sets for years. While you can find these in mail-order catalogs, it will probably be cheaper to locate an old AM tube set in your attic (or at a garage sale!) and reclaim the capacitor.

While the original crystal sets used various "minerals" such as galena to construct the detector diode, it's much easier to just use a modern day diode. Less hassle too! Use a 1N34 or a 1N6263 or any other germanium diode. Don't use a silicon diode such as the 1N914, as the higher forward-bias (turn on) voltage will require a stronger radio signal for detection.

Finally, to make this crystal set,

much time. I then taped all the parts down on a board and soldered the circuit together. You may want to consider using some "easy-hooks" or clips and solder them to the circuit for the antenna and ground connections. It's then easy to clip on a wire antenna and a ground wire when installing the radio.

Operation of the set

Once constructed, you'll be amazed by the performance of this set. Ground it, attach an antenna and start listening! I ran out about 70 feet of wire down the hall from my study, snaked around doors, etc., and then grounded the set at the wall outlet. My spouse is getting used to these weird experiments. *Be careful that you use a proper connection for grounding. Ask someone if you are not sure. Best and safest results come by grounding your set to a water pipe.*

Tune in stations simply by adjusting the air-variable capacitor. The stations nearest you will be the loudest. *Another caution: If you live near an AM station, leave the earphones off and just lying on the table until you've tuned in the station first.* Volume could be very high. In these cases, you'll have to tune above or below the station to get a comfortable listening level.

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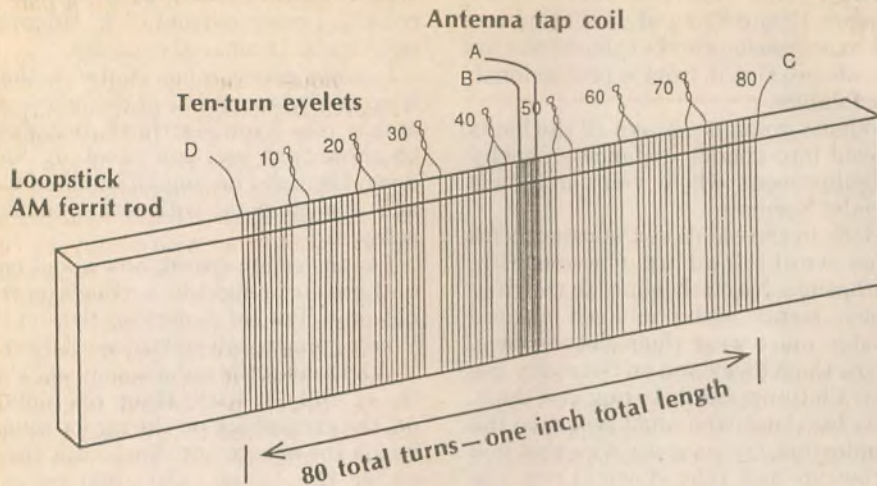
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Figure 2 The coil assembly

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Notes:

1. Coil D-C, 80 turns of Litz wire, taped every 10 turns.
2. Coil A-B, four turns of #22 insulated wire, wound on top of coil D-C.
3. Eyelets tinned by solder and soldering iron for later connection.

As with all crystal sets, if you live in an area where there are a number of strong stations, you may hear them all at once. This particular design is better than some at separating stations. For my location, I have one 500W station within seven miles and a stronger station about 30 miles away. I had no trouble separating these two, one at 560 kHz, the other at 1320 kHz.

Shortwave listening

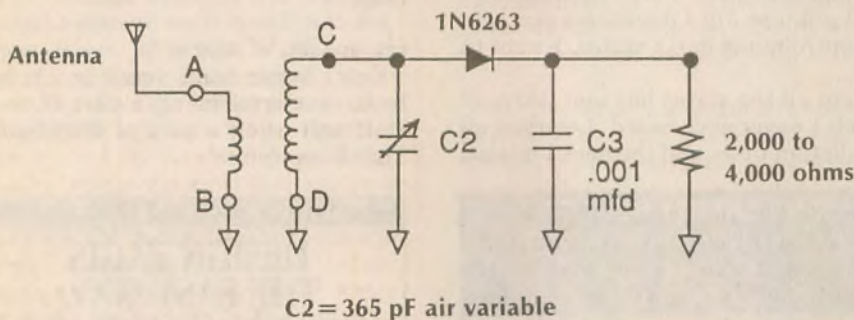
This same set is capable of receiving shortwave AM broadcasting if the tuning coil assembly is changed. The in-

amplifier chip or a few op-amps to get the necessary gain for this application.

Equivalent circuit

For those interested in more of the circuit aspects of this set, you'll note that there is no capacitor in parallel with the headphones after the detector diode. The capacitor is not necessary when the old style headphones are used, since they are inherently capacitive. In effect the headphones supply a capacitor and resistor in parallel, both of which are attached to the cathode of the diode, forming a traditional AM detector. It is convenient that these in-

Figure 3 Equivalent electronic circuit



ductance as it is too high; the coil has too many turns. A coil with about one microhenry of inductance will work nicely with the usual 365pF air variable capacitor for HF listening at around 9.5 MHz. Without audio amplification, however, one seldom can receive strong enough signals to generate volume at a good listening level. I've used an LM380 audio

herent circuit values are correct for proper AM detection. The equivalent circuit of our barebones crystal set is shown in Figure 3. With some older headsets, it may be necessary to add capacitor C3.

Second, with an oscilloscope attached at the cathode of the detector and using the 2,000 ohm old-style headphones, I was able to measure peak-to-peak audio voltages from the local 500W AM station at over 150 millivolts! Listening volume bordered on being a bit too strong. For the station broadcasting on 1320 kHz, the tuning coil was tapped at the maximum of 80 turns and the 365pF air variable was set to nearly full open.

I found that I could tune the entire AM broadcast band from 550 to 1600 kHz. Further, I could separate two distant stations easily and listen to either one with comfortable volume, one at 560 and the other at 610 "Country." Just imagine, listening to country on a four piece crystal set; does that beat all!

A PC board and plans for the crystal radio kit can be ordered from Phil Anderson, W0XI, RR 1 Box 129A, Lawrence, KS 66044. The cost is \$10. Try building a kit like this with your local club, as Phil did!

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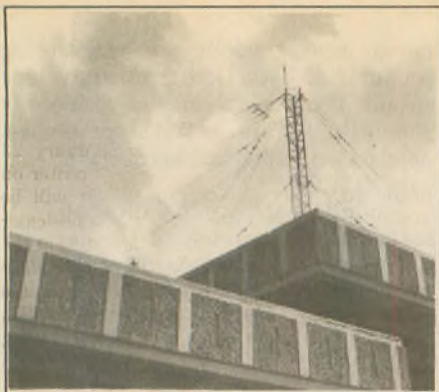
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AERIALS

KURT N. STERBA

Regarding antenna tuners . . . have you ever heard (or even said yourself) any or all of the following statements?
 1. Only feedline tuning is accomplished.

2. Antenna system performance is increased only when the transmatch is located at the feedpoint.

3. We are providing a proper load only for the transmitter, and not improving the antenna system efficiency.

Here now are the facts about those statements. 1. This is not true; the antenna is also tuned; 2. Not true. 3. Also not true.

The above is from *Reflections* by M. Walter Maxwell, W2DU, and published by the American Radio Relay League. Spend \$20 and you'll find out the exact reasons and explanations for the above. Get it from a professional, not folklore.

What's going on? Have all the hams moved into condos or fancy smanshy neighborhoods where you can't have aerials? Seems so.

Back in the old days the resourceful ones would load up the metallic clothesline. No clotheslines in the ritzy areas. Hams living in such exalted estates must wear their clothes once, throw them away and on Saturday use their Platinum Cards to buy new duds.

So for those who must resort to the clandestine, try a sneaky wire that you throw up and take down. From the shack a wire goes out, bends down (held by a little string) and comes back along the ground. A 70 ft. loop, vertically in a rectangle.

At about 3¢ a foot, you have an aerial for about \$2. Feed it with coax and you're ready for the big contest.

This can also be used on 10M just fine, and 15 too, but the tuning is so sharp that unless you go very slowly, you'll run right past it. It can also be tuned up on 40!

The return of the loop runs just above the ground. (Unless you are living in China or Cuba you should be able to get away with this over the weekend.) If your shack is on the second floor, the loop can be higher in the air and will work better.

How does this work in the Sweepstakes with 100W? Contacts at :17, :18, :19, :20. How 'bout a :56, :56, :57? Or, :57, :58, :59. I'm pleased with a :19, :20, :20.

Remember, this is 70 feet of wire in a rectangle. It's one wavelength on 20M. So, I put it on 75! I made nine contacts in nine minutes in six states. I went to bed.

I got all the states but four, three of which I never even heard. I worked all the distant ones, and the ones I missed

are the ones that nobody lives in.

In the middle of all this I heard a DX station on the other side of the world call CQ. I answered and POP! He came right back. It amazed even me.

I made many more contacts than were needed to get one of those Sweepstakes pins from Hartford. Just goes to show that you can scoot up and down the band having all kinds of fun and it's all done with some sneaky wires.

For the condo crowd, how about one of those six or eight ft. verticals on the balcony? Put an American flag on it. Who's going to tell you to take it down?

What about the radials, you say. Use the ol' Bill Orr trick. Hang the radials off the ground lug on the rig (or tuner) inside the apartment. Yes! Tuck them under the carpet. Cut quarterwave wires for each band. And, you can always run a temporary wire (alligator clip) to the cold water pipes for a ground.

I've made contacts loading up bed-springs. Honest! The window screens. I'll bet you could load up a lawnmower. (Lil suggests there's a better purpose for the lawnmower, but I'm not going to fall for that one!)

However, a lawnmower in your backyard in the winter might draw some suspicion.

(Kurt N. Sterba goes by his alias to avoid the poison-pen letters from those he pans, and also so the good guys can't send him any cigars.) □

HANDI-HAMS

(continued from page 45)

change ham radio or the services of the Courage Handi-Ham System: This column will have a new author, yet unknown. For effective January 1992, I left the Handi-Ham System to finish my master's degree in social work, which I began some years ago. It has been wonderful being a part of their staff and being a part of *Worldradio*. Thanks everyone! □

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HAMFESTS



Colorado

AURORA REPEATER ASSOCIATION will hold its 10th annual swapfest on February 16 from 8:30 a.m. to 2 p.m. at the Jefferson County Fairgrounds in Denver. Contact Judi, WD0HNP at 303/450-6910; or Jan, KA7TYU at 303/680-8857; or write to the Aurora Repeater Association, P.O. Box 39666, Denver, CO 80239. □

Florida

THE 13TH ANNUAL SARASOTA HAMFEST AND COMPUTER SHOW will take place on February 14 from 1 p.m. to 8 p.m. and February 15 from 9 a.m. to 3 p.m. at the Roberts Sports Arena. Door prizes and forums will be held both days and VE Exams will be given at 9:30 a.m. on Saturday. Lots of free parking is available. Admission is \$5 in advance, or \$7 at the door. Children 12 and under with an adult admitted free. Regular interior tables are \$15 each, end tables are \$20 each. Booths are \$20 per table. Vendor set-up will be from 8 a.m. to 1 p.m. on February 14 and 8 a.m. to 9 a.m. on February 15. There will be no tailgating during the hamfest. Contact Gene Marino, W1IDH, 4858 Tivoli Court, Sarasota, FL 34235; 813/355-0675. □

Georgia

DALTON ARC will be holding its annual hamfest on February 29 at the North Georgia Fairgrounds in Dalton. WCARS testing will be provided. Pre-registration is required. For testing information, contact Bert Coker, N4BZJ, at 404/673-2214. Talk-in on 145.230 MHz. Contact Harold Jones, N4OTC, P.O. Box 143, Dalton, GA 30722-0143; 404/673-2291. □

Illinois

DAVENPORT (IOWA) ARC will be holding its 21st annual hamfest on February 23 at the QCCA Expo Center in Rock Island, IL. Doors open at 8 a.m. A large indoor flea market, commercial exhibits, food, VE exams (photo ID required) and door prizes will be featured. For ARRL/VEC exam information, contact Al Broendel, N9OK, 2712 38th St., Rock Island, IL 61201. Tickets are \$3 in advance, \$4 at the door. Tables are \$8 each paid in advance by February 15, \$10 after the 15th. Commercial booths are \$5, AC hookups are \$3. Talk-in on the W0BXR 146.28/.88R. Contact Dave Johannsen, WB0FBP, 2131 Myrtle St., Davenport, IA 52804. □

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Michigan

CHERRYLAND ARC will be sponsoring a hamfest on February 15 from 8 a.m. to 1 p.m. at Immaculate Conception School in Traverse City. Dealer setups, food and refreshments will be featured. Admission is \$4. Tables are \$5. Vendor set-up will be at 7 a.m. Talk-in on 146.86R. Contact Ken Musson, W8QKP, 9680 Peninsula Dr., Traverse City, MI 49684; 616/947-1372. □

Minnesota

ROBBINSDALE ARC is sponsoring the 11th Annual Midwinter Madness Hobby Electronics Show on February 8 from 8 a.m. to 2:30 p.m. at the National Sports Center in Blaine (Minneapolis). Free parking will be available. VE Exams Friday night at 6 p.m. Admission is \$4 in advance, \$6 on the day of the show. 400 indoor flea market tables, 76 commercial booths. Talk-in on 147.66/.06. Contact Midwinter Madness Hobby Electronics Show, P.O. Box 22613, Robbinsdale, MN 55422; 612/537-1722. □

New York

WESTCHESTER EMERGENCY COMMUNICATIONS ASSOCIATION is sponsoring WECAFEST '92 the Association's eighth annual hamfest and electronics fair on March 1 from 9 a.m. to 2 p.m. at Yonkers Raceway. VE Exams, ham radio forums, huge secured tailgating area, free parking and handicap accessibility featured. Tailgating is available on a reserved-only basis. Admission is \$5. Children under 14 are admitted free with an adult. All vendor spaces must be reserved in advance. Indoor vendor spaces are available for \$15 (six ft. exhibit space). All vendors are advised that they should be registered with the New York Sales Tax Bureau. Talk-in on 147.06R. Contact Sarah Wilson, N2EYX, 3478 Russell Place, Yorktown, NY 10598; 914/962-9666. □

Ohio

1992 OHIO STATE CONVENTION will be held on February 22 and 23 from 8:30 a.m. to 5 p.m. at the Cincinnati Gardens Exhibition Center. Free parking for vendors and all attendees, ham forums, ladies' forums and major prizes are featured. Admission is \$6 in advance (by 2/16/92), or \$8 at the door. Large (8 x 9 ft.) tables are \$50; smaller (8 x 4½ ft.) tables are \$25; flea market space is \$15 (plus general admission). Set-up February 21. Contact Stan

Cohen, WD8QDQ, at 513/531-1011; or Joe Halpin, W8JDU, at 513/851-1056. □

CUYAHOGA FALLS ARC is sponsoring their 38th annual hamfest on February 23 from 7 a.m. to 3 p.m. at the ST.V. center on State Rd. Over 35,000 square feet will be available for buyers and sellers. Wheelchair accessible. Tickets are \$3 in advance, \$4 at the door. Tables are \$5 (sellers may bring their own tables). SASE for ticket orders and table reservations. Contact Bill Sovinsky, K8JSL, 2305 24th St., Cuyahoga Falls, OH 44223; 216/923-3830. □

MANSFIELD MIDWINTER HAMFEST/COMPUTER SHOW will be held on February 9 at the Richland County Fairgrounds. Doors open at 7 a.m. Plenty of prizes and a flea market with over 300 tables are featured. Tickets are \$4 in advance, \$5 at the door. Tables are \$9 in advance, \$12 at the door, if available. Talk-in: call W8WE on 146.34/94. Advanced ticket/table orders must be received and paid by February 1, 1992. For additional information or advanced tickets/tables send SASE to Dean Wrasse, KB8MG, 1094 Beal Road, Mansfield, OH 44905; or call 419/589-2415 after 4 p.m. EST. □

Texas

ORANGE ARC is sponsoring the seventh annual hamfest and flea market on February 29 from 8 a.m. to 4 p.m. at the VFW Hall on Highway 87. VE testing will start at 9 a.m. This location has plenty of paved parking and lots of tables. Soft drinks and food will be available. Admission is free. Tables may be reserved in advance by completing a form and returning it postmarked by February 9. Tables will be available for \$5 for individuals and \$15 for vendors. Unreserved tables will be sold on a first come/first served basis when the flea market is set up at 7 a.m. Talk-in on 147.180. Contact Sherwood Buckalew, KA5VOT, 409/883-6111 or Dan Killough, WB4GYS; 409/769-8436. □

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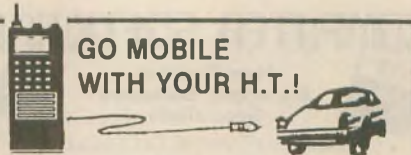
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New Hampshire QSO Party

The 1992 New Hampshire QSO Party, sponsored by the New Hampshire Amateur Radio Association (NHARA) will take place on February 8 from 1900 UTC to 0700 UTC February 9 and from 1400 UTC February 9 to 0200 UTC February 10.

Exchange: Signal report and QTH (county for NH stations; state/VE province/DXCC country for non-NH stations).

Scoring: All stations count one point per phone QSO (AM, SSB, FM); two points per digital QSO (RTTY, CW, packet). Contact with the following NHARA contest club stations will allow 20 points to be counted for each contact: NY1Z, W1OC, WB1FFZ, WW1G, WB1CAG, WK1P, K1MNS, N1LT, K1BKE, W1GUA, W1WQM, N0CUH, K1RD, and WB1ASL. Include the 20 points for club station contacts in the total QSO point score before the multiplier. All contacts

may be made on a once-per-band-per-mode basis. (This includes contacts with the 20-point NHARA club stations.) NHARA contest club stations are allowed to operate two transmitters on a single band, one for each mode of operation; the two modes are phone and digital, as defined above.

Multipliers: NH stations count number of NH counties, states, VE provinces, DXCC countries. Do not count the US, Canada, Alaska, or Hawaii as separate DXCC countries. Non-NH stations count number of NH counties worked only.

Suggested frequencies: CW—1810, 3535, 7035, 14035, 21035, 28035; SSB—1875, 3935, 7235, 14280, 21380, 28380, 50115, 144205.

Summary sheets and a complete set of contest rules are available by sending an SASE to Bud Valcourt, NY1Z, 19 Teague Dr., Salem, NH 03079. Logs must be postmarked by March 31, 1992. Send logs and comments to Mount Moriah Repeater Society, c/o Bud Valcourt, NY1Z, at the above address. □

YL-ISSB QSO Party

Dates and times: CW—1400Z Feb. 22 through 1359Z Feb. 23. Phone—1400Z Feb. 8 through 1359Z Feb. 9.

Scope: The party is open to all, though emphasis is on membership participation and member-to-member contacts.

Categories: Single operators, DX/US partners and YL/OM teams.

Exchange: Signal report; state, province or country; name; ISSB number (if member) and DX/US partner.

Scoring: Three points for two-way member contacts within the same continent; six points for two-way member contacts among different continents; one point for non-member contacts.

Multipliers: Only member stations count as multipliers—one for each of the following: working both DX/US partners; each YL/OM team; each US state; Canadian province; DX country; each VK and ZL Call district. Two multipliers counted for running lower power (250W PEP input) throughout the party.

Frequencies: The General portion of the Phone and CW bands. Avoid NET frequencies (14.300, 14.332, 14.336 etc). Check 40/80M on the hour; VHF/UHF simplex only.

Awards: Special certificates to top scorer in each US Call district, VE province and DX country.

Logs: Logs containing contact information plus ISSB numbers must be received by April 30, 1992. Address all questions, comments and entries to Fred Kujawa, K0ETA, RR4 Box 213-6, Stockton, MO 65785. □

Wisconsin QSO Party

The Wisconsin QSO Party, sponsored by the West Allis Radio Amateur Club, will take place from 1800Z March 1 to 0100Z March 2, 1992.

Modes: CW and Phone. All stations may be worked once per mode on each band. In addition, mobiles may be worked once per mode per county that they operate from (no repeater QSOs).

Entry classes: Single Operator Fixed, Multi Operator Fixed, Multi Xmtr/Multi Op Fixed; Single Operator Mobile, Multi Operator Mobile, Multi Xmtr/Multi Op Mobile; Single Operator Novice, Multi Operator Novice, Multi Xmtr/Multi Op Novice; Single Operator Tech, Multi Operator Tech, Multi Xmtr/Multi Op Tech.

Exchange: Wisconsin stations send county; non-Wisconsin stations send state/province.

Frequencies: CW—3550, 3705, 7050, 7125, 14050, 21150; Phone—3890, 7230, 14290, 28400.

Scoring: Phone contacts count one QSO point; CW contacts count two points.

Wisconsin stations: Multiply the sum of QSO points by the sum of Wisconsin counties (max 72), plus states (max 50) plus provinces (max 13). Note: DX countries count for QSO points but not as multipliers.

Non-Wisconsin stations: Multiply the sum of QSO points by the number of Wisconsin counties (maximum 72).

Wisconsin mobiles/portables: Add 500 bonus points for each county that you operate from, outside your home county, with a minimum of 15 QSOs per county to qualify.

Awards: Non-Wisconsin: Awards will be presented to the following: a.) highest single operator score in the QSO Party; b.) 10 highest single operator scores in each entry class; c.) highest multi-operator score in each entry class; and d.) highest aggregate club score (club member stations to be located within 50 miles of the club except for mobiles).

Logs: Entries must contain a log consisting of: Time (GMT), call, band, state/province, Wisconsin county, mode and a complete score summary including your name, address and call. Circle new multipliers as worked. Logs containing more than 200 QSOs must be accompanied by a dupe sheet (separate dupe sheet for each mode). Mobile entries must indicate county changes in log and submit a separate dupe sheet for each county. Entries must be postmarked by April 15, 1992 and sent to Wisconsin QSO Party, West Allis Radio Amateur Club, P.O. Box 1072, Milwaukee, WI 53201. □

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

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Correction ATV Secrets price

The December issue listed the price of *Amateur Television Quarterly's* new *ATV Secrets* incorrectly. The price is \$9.98 plus \$1.50 postage (Canada \$2.50 postage) Retail and bulk copies are now available only from the National Amateur Radio Association in Redmond, WA (1-800 GOT 2 HAM). □

Key collectors:

The New Products review of K4TWJ's new book on keys in the December issue strangely and incorrectly describes it as "the only book to ever have been written on ... the manual code key." In fact, Dave's book follows by a year or more my *Vibroplex Collector's Guide* and the *Introduction to Key Collecting* (Artifax Books) as well as K1BH's *The Vibroplex Co., Inc., 1890 to 1990* (Vibroplex Co.).

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FNB-14S	7.2v	1400mah	\$59.00
FNB-17	7.2v	600mah	\$35.00

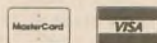
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More recently, my *Mac-Key Blue Book* has been published by Artifax Books (Box 88, Maynard MA 01754). Far from having only one book for their shelf, key collectors have a variety of books to read, study and enjoy. (Welcome to the club, Dave.)

For further information on the above listed books, contact Artifax Books at the address given or write to me, Tom French, W1IMQ, at 120 Great Road, Maynard, MA 01754. □

U.S. Repeater Mapbook

I have always been frustrated when using a repeater directory, especially when traveling in unfamiliar territory. Which county am I in? Which repeater gives a wide coverage from a high location? Which repeater is purely local in coverage? The usual format of repeater directories doesn't help you to answer these questions.

I have wondered why someone didn't produce a set of maps showing the repeaters which serve the various areas.

I am pleased to find that this has now been accomplished. Artsci Inc. has published the *U.S. Repeater MapBook*.

It shows maps for each state of the US, and each of the Canadian provinces as well (in spite of the book's name!). You can now locate yourself on any major highway or city in any state or province and immediately see the 2M, 1¼M or 70 cm. repeater that serves the area. With the advent of multiband radios, this last feature is especially helpful. The book also has a large scale map showing 10M repeaters. This new version has been updated and cross checked with the ARRL Repeater guide.

My hat is off to Bill Smith, the publisher who has accomplished all this. I plan to keep the MapBook with my VHF/UHF radios so it will be with me the next time I go on a trip, either by car, or by flying to a distant city. —Norm Brooks, K6FO

The *U.S. Repeater Mapbook* is available in amateur stores nationwide. For further information contact Karen or Bill at Artsci Publishing, P.O. Box 1848, Burbank, CA 91506; 818/843-4080; FAX 818/846-2298. □

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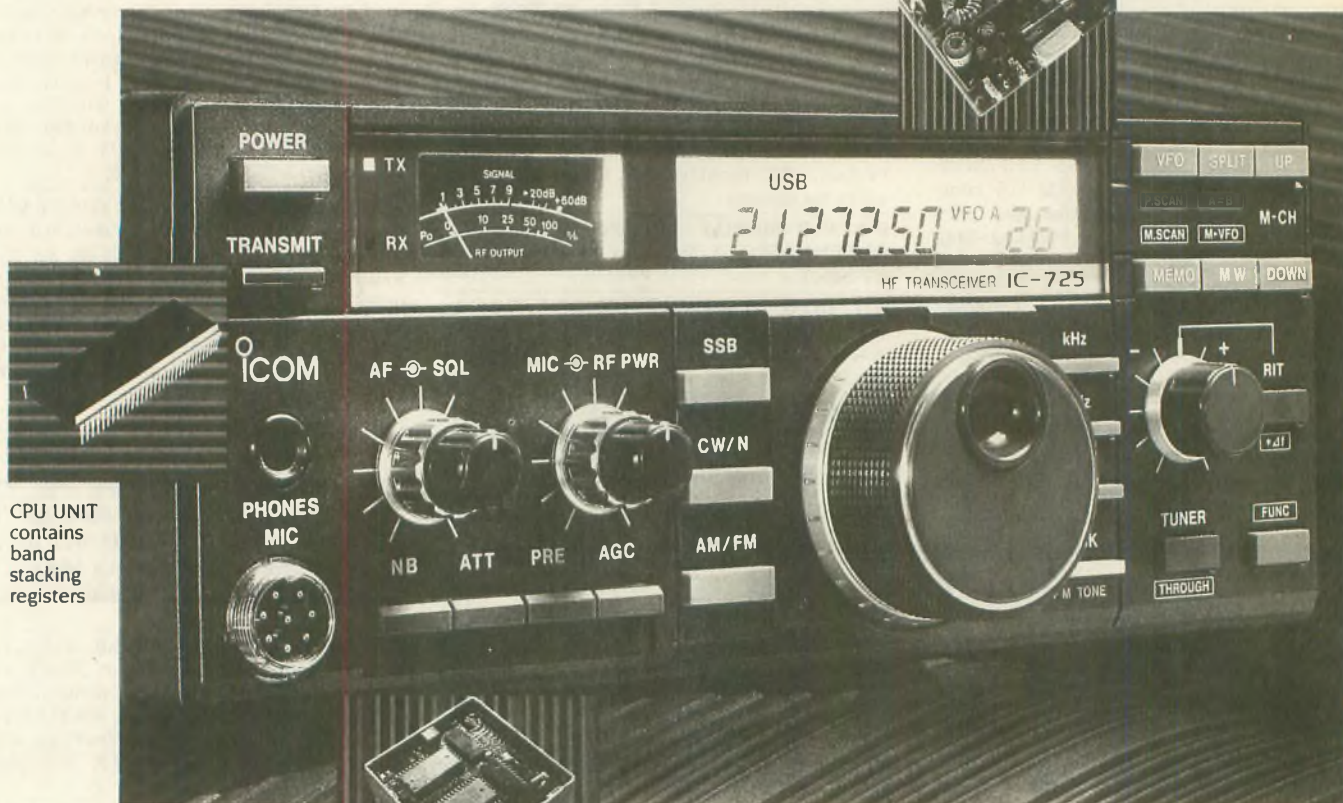
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Please mark the envelope "VE Exams."

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

p/r=pre-register

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Date	City	Contact	Notes	Date	City	Contact	Notes
Arizona				Kansas			
Mar. 7	Tucson	K7OPX 602/886-7217	w/i only	Mar. 31	Emporia	K0JDB 913/343-2158	w/i OK
Mar. 21	Tucson	Robert Olson 602/577-1050	w/i OK	Mar. 4	Great Bend	WA0PSF 316/792-5363	p/r pref; w/i limited w/i OK
California				Mar. 27	Kansas City	NC0M 913/262-0631	w/i OK
Mar. 7	Burbank	KE6AR 818/349-0927	w/i OK	Maryland			
Mar. 21	Cupertino	408/243-8349	w/i OK	Mar. 21	Laurel	WB3GXW 301/572-5124	p/r pref
Mar. 28	Fairfield	Jerry, 916/662-0801	w/i only	Michigan			
Mar. 3	Fremont	KJ6EP 510/791-6818	w/i only	Mar. 26	Hazel Park	John, WD8R 791-4289; Mike, WD8S 399-7970	w/i OK
Mar. 15	Hercules	415/467-2467		Missouri			
Mar. 7	Hesperia	NF6I 619/241-4732; K6BET 619/244-6080	w/i OK	Mar. 7	Independence	K0IXC 816/373-8976	w/i OK
		WZ6Y 209/295-7947	p/r pref; w/i OK	Nebraska			
Mar. 7	Jackson			Mar. 31	Omaha	KM0Y 402/553-2610	w/i only
				Nevada			
Mar. 7	Los Angeles	Ali Hassan, AA6WC 213/778-6226	w/i OK	Mar. 21	Minden	W7QO 702/265-3430	w/i
		W6XX 209/883-2968	w/i	New Jersey			
Mar. 14	Modesto	408/243-8349		Mar. 14	Cranford	24-hr. hotline: 201/377-4970	
Mar. 14	Monterey	209/683-8430	w/i OK	Mar. 11	Fort Monmouth	WB2GYS 908/532-5354	w/i
Mar. 14	Oakhurst	916/243-6339		Mar. 14	Pennington	AA2F 609/737-1723	p/r pref; w/i OK
Mar. 14	Redding	Dudley, WB6WAU 408/245-4801	w/i only	New York			
Mar. 21	Redwood City	N6DYZ 213/325-2965	w/i OK	Mar. 14	Greenvale	WA2BGE 516/921-0085	w/i OK
		N6XMA 209/952-5996	w/i only	Mar. 18	Lancaster	Stan, N2IAE 716/887-6608	
Mar. 29	Sunnyvale	AA6IY, KG6XF 408/255-9000	w/i only	Mar. 19	Lower Westchester County	WK6R 914/834-2322	w/i OK
Mar. 28	Vacaville	707/447-2680		Mar. 7	North Tonawanda	Vern, AA2AC 716/693-5977 days; 716/634-5276 nights	p/r only w/i OK
				Mar. 1	Yonkers	AC2V 914/237-5589	w/i OK
Colorado				North Carolina			
Mar. 14	Denver	Glenn Schultz, W0IJR 303/360-7293, 24-hr. voicemail 719/948-2291	w/i OK w/i OK	Mar. 8	Hendersonville	W2YTO 704/891-4359	p/r pref; w/i OK
Mar. 28	Pueblo	N0BLU 303/650-6826;		Mar. 8	Salisbury	Isabelle, AB4UX 704/284-2414	w/i OK
Mar. 21	Westminster	N0HNR 303/278-4280	p/r or w/i	Ohio			
Connecticut				Mar. 19	Youngstown	Lou 216/788-1618	w/i limited
Mar. 29	Milford	NB1M 203/933-5125; WA1YQE 203/874-1014	w/i	Oregon			
		WJ1T 203/736-0488	w/i pref	Mar. 5	Medford	503/488-2691	
Mar. 25	Shelton	Larry, K11ED 203/644-2356	p/r pref	Pennsylvania			
Mar. 15	West Hartford			Mar. 7	Erie	W3CG 814/665-9124	w/i
Florida				Rhode Island			
Mar. 21	Melbourne	WB9IVR 407/724-6183	w/i OK	Mar. 12	Providence	NN1U 401/231-9156; or 401/454-6848	w/i OK
Idaho				Mar. 28	Slatersville	W1YRC 401/333-2129; 401/333-2373	w/i OK
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Mar. 17	Aurora	N9AKE 708/892-1252	w/i pref	South Dakota			
Mar. 22	Bloomington	NX9M 309/662-3910	w/i OK	Mar. 13	Rapid City	KA0SEZ 605/394-1298; NU0F 605/348-6564	p/r 30 days prior; w/i OK
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Mar. 21	Chicago	312/929-8500, ext. 2221	w/i	Mar. 10	Houston	ND5F 713/464-9044	p/r pref; w/i OK
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Mar. 5	Mundelein	K9IW 708/367-6303	w/i				
Mar. 14	Oak Forest	KA9HDN 312/247-0650	w/i OK				
Mar. 28	Oak Forest	WG9R 708/687-0511	w/i				
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Mar. 7	Portage	KE9I 219/762-0580	w/i				
Mar. 7	South Bend	NI9Y 219/259-9445	w/i OK				
Iowa							
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