

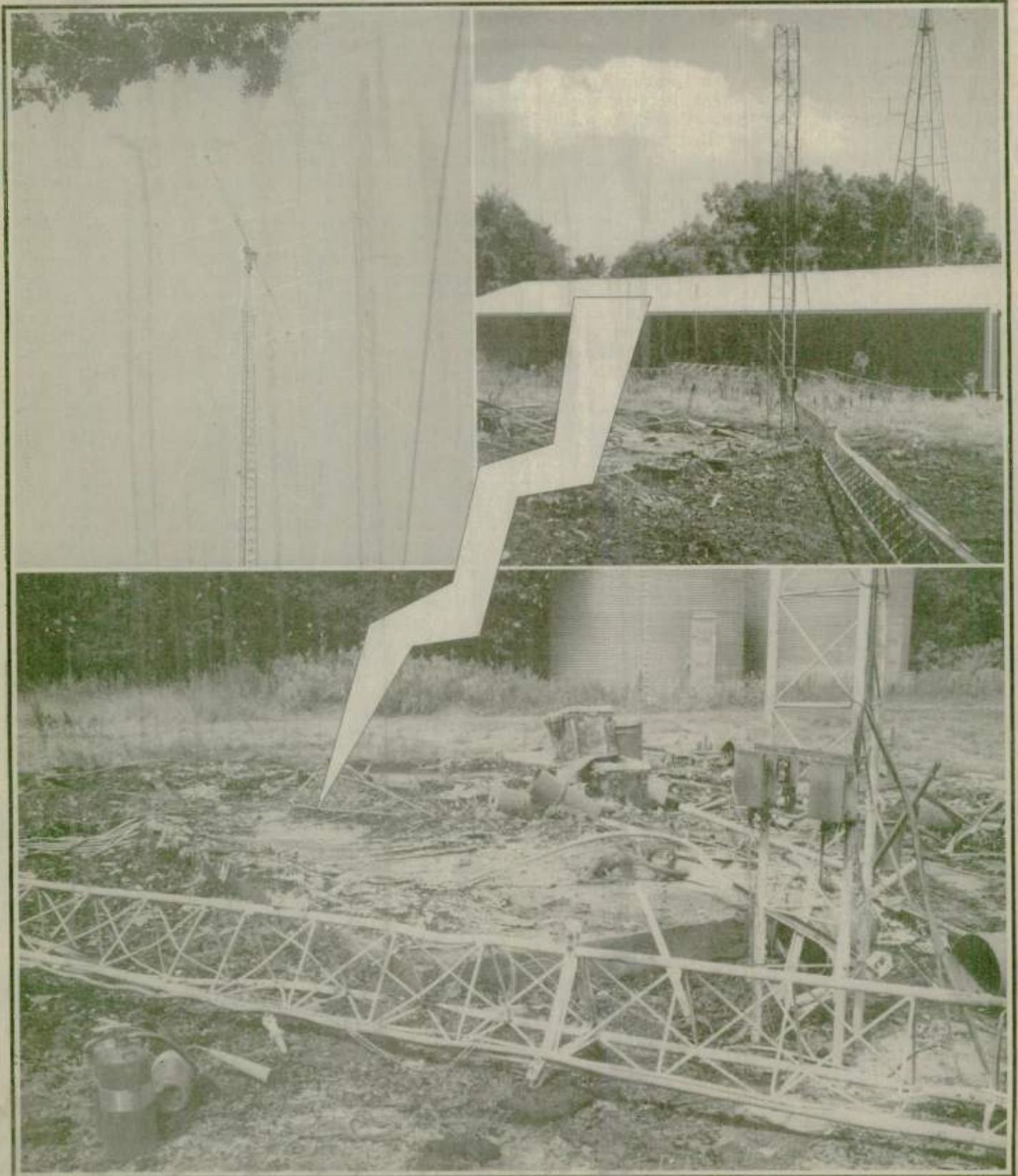
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WORLD RADIO

Year 28, Issue 10

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April 1999 • \$1.50



King Hussein, JY1, SK

Radio amateurs around the world joined in mourning the death of Jordan's King Hussein, JY1, 07 February. The Middle East's longest-reigning ruler, he'd been Jordan's king for 47 years, taking the throne when he was just a teenager. His son, Abdullah, succeeds him.

Hussein had been active in recent months from the U.S. while seeking cancer treatment at Minnesota's Mayo Clinic. A QSO with JY1 was considered by many amateurs to be both an honor and a privilege.

David Sumner, K1ZZ, called him "an enthusiastic radio amateur whose support was invaluable to us in obtaining new amateur bands at the 1979 World Administrative Radio Conference." Sumner recalled that in May

1979, IARU President Noel Eaton, VE3CJ, was invited to Amman to meet with King Hussein.

"Jordan's support of the Amateur Service was much in evidence at the conference that fall, and was a crucial element in our success," Sumner said. The WARC-79 resulted in gaining the 30, 17, and 12-meter bands. That same year, JY1 was featured in the film, "The World of Amateur Radio." Hussein regarded his 1983 contact with Owen Garriott, W5LFL, on board the Space Shuttle Columbia, as a high point in his Amateur Radio activity.

King Hussein also participated in the 1995 joint Israel-Jordan JY74X operation on Mt. Nebo, where amateurs from both countries participated in a Field Day-like operation. The King put in ap-

pearances on the air and in person, to the delight of the participants and those waiting to work him and JY74X.

Hussein's friend Bruce "Blackie" Blackburn, W4TA/JY9BB, of St. Petersburg, Florida, called him "one of the world's most respected amateurs" and recounted many stories about King Hussein as a person and an avid Amateur Radio operator. Blackburn said King Hussein "promoted Amateur Radio to the hilt in Jordan" and saw to it that Amateur Radio classes were instituted in elementary schools. King Hussein also dropped in on meetings of the Royal Jordanian Radio Amateur Society in Amman.

Former U.S. Ambassador to Lebanon and Iran Armin Meyer, W3ACE, recalled

Hussein 08 February in a letter to *The Washington Post*. Meyer said JY1 "has for decades been promoting peace and good will among quite ordinary people." As Meyer put it: "For the king, Amateur Radio was a different world, a community of diverse people."

All members of the Jordanian royal family automatically have Amateur Radio privileges in Jordan. Although the new king does not appear to have a call sign, King Hussein's widow, the American-born Queen Noor, is JY1NH. King Hussein's brother, the former Crown Prince Hassan, is JY2HT. Prince Raad, JY2RZ, is chairman of the Royal Jordanian Radio Amateur Society. — *NITDY, ARRL Letter*

PANSAT PO-34 satellite "operating well"

The PANSAT PO-34 satellite "appears to be operating well," according to PANSAT team member Dan Sakoda, KD6DRA, but he expressed some concern about battery life. "Basically, the temperatures are a bit lower than we expected, and some of our thinking as far as battery charging were less than optimistic," he explained. "The concern is that we really need to baby the batteries if we're going to have a long mission life."

The 150-pound Amateur Radio satellite carries a spread-spectrum communication package fabricated by student officers and faculty members at the Naval Postgraduate School here as an educational project and a means of demonstrating spread-spectrum communication. The spacecraft will provide store-and-forward digital packet communication using direct-sequence spread-spectrum modulation. Amateurs on the ground will be able to utilize PANSAT via a bulletin-board type user interface.

Sakoda said now that ground operations are somewhat under control, "the two main staff engineers here can focus on spread spectrum work and pushing for Amateur Radio user access." He said the project's Amateur Radio goal is to "first provide a spread spectrum beacon of sorts, to download at least PANSAT's call sign or some message" that would at least users to receive a signal, "without derailing the work toward a full spread spectrum BBS service."

Sakoda noted that he has added two-line element sets to the PANSAT home page <http://www.sp.nps.navy.mil/pansat>. Click on PANSAT TLE. The site also contains new photos showing the deployment of the satellite from the space shuttle. — *ARRL Letter*

MIR to stay in orbit — maybe

The Russian Mir space station may remain in orbit another three years. Prime Minister Primakov has ordered Mir to remain in space provided private investors pay its estimated \$250 million a year operating expense.

Mir, launched in February 1986, was expected to last just five years. It has hosted dozens of foreign astronauts, including seven Americans. Two Russian cosmonauts are currently aboard operating both the German built SAFEX and privately supplied slow scan amateur television stations. — *Newsline*

APRS and MIR

Bob Bruninga, WB4APR, says as part of the ongoing APRS School experiment using the MIR space station, the United States Naval Academy will be monitoring the Mir downlink on 145.985 using only a walkie-talkie and its standard rubber duck antenna.

This test will demonstrate the ability to deliver an emergency message to anyone anywhere in the world who only has an HT in their pocket. So far the test, which is underway, appears to be successful. — *WB4APR, Newsline*

SAREX delayed again

The only Space Amateur Radio EXperiment (SAREX) flight scheduled for 1999 has been delayed yet again. NASA sources say the STS-93 shuttle Discovery mission, originally set for January and subsequently delayed until March, then April, then May, now has been bumped until 09 July.

An official announcement was pending. Schools on the schedule to have their students talk to the astronauts via Amateur Radio will be contacted and possibly rescheduled for a future date. — *NASA, ARRL Letter*



On the cover

Isn't it amazing what one little bolt of lightning can do to a magnificent tower and antenna structure?

Dick McKercher, WØMLY, sent in the latest entries in our cover photo contest. Nice before and after pictures, Dick!

Dick wins a three-year subscription to **Worldradio!**

The King and I

Dave Bell, W6AQ, recounts his friendship with the late King Hussein of Jordan, JY1.

— page 6.



USS Hornet CVA/S-12

A brand new floating museum was the occasion for a unique special event station.

— page 21.



CQ WW CW from Paradise

Contesting from the South Pacific — the ultimate road trip.

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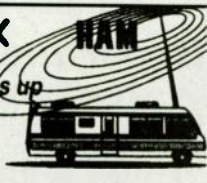
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Editor's Log

Using just a minute portion of their available intelligence, these fine amateurs realized the prestige and good fortune available to them by becoming lifetime subscribers to *Worldradio*. If only all amateurs could be as fortunate!

Our latest additions to the list:

- Robert Kenney, N1LC
Morris, CT
- Arthur Tan, AB4RL
Boca Raton, FL
- Parker Buckley, WD8JOL
Springfield, OH
- R. Dennis Black, WB9SYS
Eaton, IN
- Lon Martin, K0WJ
Shawnee, KS
- Christopher Thompson, N7ZWG
Sandy, UT
- David Benedict, W7DBH
Beaverton, OR

07 February 1999 will go down in Amateur Radio history as one of the darkest days since the inception of the hobby. Al Hussein ibn Talal, JY1, became a Silent Key that day. Known throughout the world as King Hussein of Jordan, he was very well known in the Amateur Radio world as an outstanding Ham. Whenever he was on the air, he insisted on being "just another Amateur Radio operator" instead of a head of state.

We, the staff at *Worldradio*, share in the feelings of Amateur Radio operators throughout the world and send the family and friends of King Hussein our condolences.

As the relatively new Editor of *Worldradio*, I thought I would take a little space and tell you about myself.

I grew up in the Los Angeles area, and moved at the age of 10 to Huntington Beach, CA. During my formative teenage years, my stepfather and a co-worker carpooled to work throughout various job sites in Southern California. The co-worker, "Breezy," had a Chevrolet pickup, and it was parked in front of our house every other day.

One day I noticed he had a very large antenna on the side of the bed. I wondered what this particular antenna was for, so I looked inside, and lo and behold, there was a mysterious box mounted under the dash. It looked like a radio, and must have been, because it had a microphone attached to it. As I was exceptionally curious, (as well as being very good with a coat hanger), I just had to see what this box had in it. So, every other day for several months, I would sit and listen to the voices com-

ing out of the speaker. Yes, it was a CB radio, but it started a lifelong love of radio.

In March of 1969, I received greetings and salutations from Uncle Sam, inviting me to "come on down" for my free physical examination! So I did what any intelligent young man from the surfing capitol of the world would do — I enlisted in the U.S. Coast Guard.

After a really rough assignment at Boot Camp in Alameda, CA (I was in the band), and a year as a deck ape on a Reserve Training Cutter, I was rewarded with the opportunity to go to Radioman School at Governor's Island, New York. And who should I get as a roommate? Dennis Brooks, N3BRY. Dennis had his General class license before enlisting, so he was sent straight to school from Boot Camp. We passed many, many hours on the third deck of RM school at the club station, W2AIR, working Europe until the wee hours of the morning.

After Radio School, I was sent to the Coast Guard Radio Station near Honolulu. Being young and single, I had other interests (ladies) and did not take the opportunity to upgrade from my Novice license, WN6VQW.

In 1973, I was transferred to Point Reyes, CA to the brand new Coast Guard Communications Station. While there, I met a young lady, and we were married in 1974. After my discharge in 1977, I concentrated on raising my family.

But the radio bug was still coursing through my veins, and one day, after moving to Sacramento, I noticed a small store with a huge tower and Yagi. I stopped in, and reacquainted myself with Amateur Radio. Shortly afterward, I was KC6AQC, and I purchased a Heathkit SB-102 from that little store.

In 1991, my wife graduated from nursing school and became an RN. The financial pressure was off, and I could now work just one job, and upgrade. I became N6UBJ, and then KO6DJ when I passed the Advanced class test. I became an Extra in 1995 and I just took advantage of the Vanity Callsign program and am now WF6O.

In December 1997, I saw a notice in the Publisher's Microphone saying that Armond was looking for a new Editor for *Worldradio*. I sent a resume to *Worldradio*, and two weeks later, I was selected as the new Editor.

I consider myself extremely fortunate to be your Editor.

Next month: *Amateur Radio as I see it.* — Rick McCusker, WF6O

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The King and I

Dave Bell, W6AQ

Al Hussein ibn Talal were the words under the royal crest on the face of the wristwatch given to me by His Majesty, King Hussein, JY1. It was one of many kind gestures shown me during my week in Jordan. I was treated as if I were the royalty. From what little I know of King Hussein, making people feel good was his specialty.

I was in Jordan the first time to film JY1 for inclusion in our film for the ARRL, "The World of Amateur Radio." It was the second film I'd made on the subject and by far the most difficult. The film was essentially done when word finally came from the King's communications advisor that HM (as many of his Ham friends in Jordan called His Majesty) had agreed to appear in the film. I was out of budget however, and couldn't afford to go. No problem. HM would pay for my trip (he owned the airline, after all). So my cameraman and I flew to Jordan for a week I will never forget.

The Israeli/Egyptian Peace Treaty had just been signed, much to the consternation of most of the Arab world. Zbigniew Bryzinski, Jimmy Carter's Foreign Affairs Advisor, had been to Amman just before I got there, trying to talk HM into endorsing the treaty. Walking his traditional tightwire, Hussein would neither endorse nor condemn the treaty, i.e., he didn't make anybody happy. But he didn't make anybody tremendously unhappy either, and that, I have decided, was his charm. And charming he was.

When he entered his shack for the filming, it was the first time I had met him. After introductions, he asked me what I wanted him to do, I told him, and he did it. He may have been the King, and I may have been his guest in his palace, but I was the expert of the moment and he did what needed to be done with a practiced savoir faire.



Dave Bell, W6AQ, presents a plaque to King Hussein of Jordan, JY1, naming him as a member of the ARRL.

Not that everything went exactly as one might have expected. When HM called CQ, nobody returned his call. He called a second time, and still no takers! HM heard a Russian calling CQ, and called him. Eureka! A QSO. But the Russian couldn't get Hussein's call right. He couldn't figure out JY1's suffix. Several times, many times, HM said, "My call sign is JY1. Japan Yankee number one. That's all there is. Just JY1." HM was very good humored about it. Even his famous call sign hadn't penetrated every amateur's consciousness. But throughout the bizarre QSO, HM never displayed the slightest impatience. I think he was even a bit amused. After that QSO of course, two hundred stations (at least) called, but Uli, DJ2OC, was the loudest, and I got my "classic" QSO — exactly the one I wanted for the film.

When Uli first called, he said, "How copy, Your Majesty?" Imagine the Rus-

sian listening to this exchange (because we all listen after our QSOs are over, don't we?) and hearing Uli say, "Your Majesty." The poor fellow was probably more confused than ever.

I'm sure Amateur Radio was a safety valve for HM. It's too bad that his role as hotspot mediator didn't leave him much time to relax in front of his rig. But there's no doubt that Amateur Radio was a big part of his life. He made sure that the Amateur Radio club at the Al Hussein School for Girls was on my itinerary. He wanted to be sure that Ham radio's role of "ambassador of good will" was going to be part of the film. People from all walks of life communicating with one another — that was important to him — one-to-one communications. That's undoubtedly why he picked JY4MB, Mohammed Balbisi, to be my guide for the week. Mohammed didn't even work directly for the King. He was a civil engineer, but he is a great guy and HM probably figured that we'd hit it off, and he was right. He was right about a lot of things. His life probably ended with more people considering him a friend than almost anyone else you can imagine, and he did it with tact and personality and will. He did it with what's called "leadership." It's a talent that's in short supply in the Middle East and for that matter, everywhere. The world has lost a great ambassador of good will, and Amateur Radio has lost one of its most fervent supporters and one of its friendliest voices. 73, your Majesty.

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Antenna confusion clarified

Walt Maxwell, W2DU

On several occasions, I have seen incorrect statements made about antenna measurements which are misleading. I'm sure the reader would appreciate having the correct information.

One of the confusing quotes is "Antenna VSWR does reduce antenna gain. No question. If you feed an antenna with a 20:1 VSWR you will give up 7.41 dB of radiated power. VSWR results in a mismatch loss regardless of cable attenuation."

I can't let this incorrect statement go unchallenged, because it shows a misunderstanding of transmission-line operation and technique. It is one of the misunderstandings that I addressed in the 1970s in my series of *QST* articles, "Another Look at Reflections," in which I explained the reason for the misconception. The same material appears in my book *Reflections — Transmission Lines and Antennas*.

So please allow me to explain why this particular statement is incorrect.

For starters, first assume a matched lossless transmission line, $SWR = 1:1$. We adjust a transmitter to deliver 100 Watts into the line, which will all be absorbed in the matched load. Second we replace the matched load with an antenna that produces a 20:1 mismatch, thus reflecting 81.9 Watts of the 100 Watts delivered by the transmitter. This leaves 18.1 Watts to be absorbed and radiated by the antenna. This is a reflection loss of 7.41 dB, just indicated. The reason that only 18.1 watts is delivered to the antenna is that, when the 81.9 Watts of reflected power reaches the transmitter, that reflected power tells the transmitter to reduce its output by 81.9 Watts. Unless something is done to change this situation the transmitter will continue delivering only 18.1 Watts, the power delivered to the antenna and radiated. And yes, this power is 7.41 dB lower than the original 100 watts delivered to the matched load.

HOWEVER, we do not operate in this manner — we either readjust the transmitter to again feed 100 Watts into the new line-input impedance resulting from the reflected power, or insert a matching network (antenna tuner) between the transmitter and line input. In this particular case a tube transmitter with a pi-network output will not be able to match into a complex input impedance resulting from a 20:1 SWR, so the correct choice is to use an antenna tuner. With open wire or ladder line a 20:1 SWR is in the normal work-

ing range when matched with a tuner.

So what exactly does the tuner do? The tuner re-reflects ALL of the 81.9 Watts back to the antenna, and since we're talking lossless line to appreciate the principles, all of the reflected power does reach the antenna. I will explain how this happens. You should also be aware that the real loss in a well designed tuner ranges from only 0.1 to 0.5 dB — insignificant.

So what does the tuner do? It totally compensates for the reflection LOSS by introducing an equal amount of reflection GAIN, which re-reflects the 81.9 Watts of reflected power back to the antenna, thus preventing it from reaching the transmitter, prohibiting it from reducing its delivery of power from the original 100 Watts.

The power reflection coefficient resulting from a 20:1 mismatch at the antenna is 0.819, which is why 81.9 watts are reflected. Because 81.9 percent of any amount of forward power will be reflected, no matter what we do at the line input, a much higher level of forward power than the 100 Watts delivered by the transmitter must reach the 20:1 mismatched antenna for the 100 Watts to be absorbed and radiated by the antenna. After several cycles of RF have traversed the line the steady-state condition is reached, in which the level of the total forward power has increased by a factor of 1/0.181 which equals 5.513. This means that the accumulated forward power in the mismatched lossless feedline has increased to 551.3 Watts in order for 89.1% (7.41 dB) to be reflected, and continuously re-reflected, because the 7.41 dB of REFLECTED POWER IS NOT LOST POWER, but circulates in the line.

The factor 0.181 above is the power

transmission coefficient, which is (1 - the power reflection coefficient). The derivation and verification of the 1/0.181 power-increase factor may be found on page 99 in *Transmission Lines and Networks*, by Walter Johnson, McGraw-Hill, 1950.

I hope this explanation clarifies the misunderstanding about what an antenna tuner can and can't do for your mismatched signal.

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FCC enforcement actions

First a little "column maintenance." Most of the reader feedback so far has been in the form of e-mail, but I did receive a snail mail from Charles Casebeer, K6CE, about my comment in the February issue that a large antenna was not required to work DX from a condo or apartment. I mentioned that I had worked and confirmed over 150 countries with a stealthy random wire. Charles wrote, "Your 17-foot antenna looped around branches in the trees working all that DX seems incredible!" If it were only so! The last "0" in the length was dropped, and it should have read "170 feet." I have loaded up step-ladders and gutters for fun, and worked DX on 40 Meters with 3 watts and 50 feet of super-stealthy magnet wire. I would dwell upon the DX possibilities using a 17-foot wire, but you can get all the antenna theory you need from Kurt and Lil Paddle. To stray into those topics where my expertise is marginal could be "curtains" for me.

A lot of e-mail concerned the use of PRB-1 to put the heat on local officials to ease off unreasonable restrictions on antennas and towers. Based on the comments and questions received, there seems to be some lingering belief (hope springing eternal?) that FCC Order PRB-1 can be used to overcome private contractual restrictions. PRB-1 can NOT be used to overcome antenna prohibitions in condos, neighborhoods with restrictive covenants, or apartments. I hope the February column provided some further clarity on this issue. The largest volume of e-mail concerned the FCC's announcement that it was going to increase enforcement against rule violators on the amateur bands, and that's the focus of this month's column.

In recent memory, FCC enforcement of the laws and regulations that govern the lawful use of radio transmitting

equipment on the amateur bands has been virtually non-existent. This "Paper Tiger" approach, along with the same kind of deterioration among hominids that has led to an exponential increase in incidents of "road rage," has resulted in near anarchy on some bands, especially the 75-meter phone band. This may be about to change.

The main reason for this is the radical change in the FCC's enforcement structure. Until last fall, the task of running down amateur scofflaws was under the jurisdiction of the Wireless (Toothless?) Telecommunications Bureau. To be fair, the Wireless Bureau was not really set up to address enforcement problems, and the complaints received from law-abiding amateurs usually found themselves at the bottom of the heap of higher priority tasks. The outlook for better enforcement seemed grim, but then someone at the FCC figured out a better way to do things.

In Report No. CI 98-17, the FCC officially announced a change in the handling of enforcement actions concerning the Amateur Radio service. Under

an arrangement between the FCC's Compliance and Information Bureau (CIB) and the Wireless Telecommunications Bureau (WTB), all investigation, evaluation, and processing of enforcement matters related to Amateur Radio were transferred to the CIB as of 01 September 1998. According to the FCC report, the main objective of this change is to facilitate the Commission's pursuit of compliance in the amateur services especially with regard to resolution of interference complaints.

The obvious advantage of this arrangement is that the CIB staff now handles Amateur Radio enforcement matters from start to finish, including complaints, amateur testing issues, warnings, monetary penalties, revocation hearings, equipment seizure, and criminal prosecution of the really hard core offenders through the Department of Justice. The WTB continues to handle processing and licensing matters including new applications and licensing renewals, as well as all policy and rule making issues related to Amateur Radio.

Amateur Radio Call Signs

The following shows the last call sign in each group to be assigned for each VEC Region under the sequential call system as of 01 February 1999. For more information about the sequential call sign system, see Fact Sheet PR5000 #206-S dated August 1996, or contact the Federal Communications Commission, Consumer Assistance Branch, 1270 Fairfield Road, Gettysburg, PA 17325-7245, toll-free 1-888/225-5322.

Radio District	Group A Am Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
Ø	ABØII	KIØPG	++	KCØEWV
1	AA1UI	KE1KX	++	KB1DQO
2	AB2FZ	KG2PP	++	KC2EPL
3	AA3SC	KF3CK	++	KB3DJF
4	AF4NH	KU4YC	++	KG4BTJ
5	AC5SF	KM5UD	++	KD5GEI
6	AD6HS	KQ6ZM	++	KF6USM
7	AC7AI	KK7RU	++	KC7DXO
8	AB8DQ	KI8HM	++	KC8LQE
9	AA9WV	KG9PD	++	KB9UBJ
N. Mariana Is.	NHØJ	AHØBC	KHØHS	WHØABJ
Guam	++	AH2DJ	KH2UC	WH2ANX
Hawaii	NH7T	AH6PS	KH7QR	WH6DFE
Amer. Samoa	AH8R	AH8AH	KH8DM	WH8ABG
Alaska	ALØN	AL7RI	KLØRY	WL7CVA
Virgin Is.	++	KP2CP	NP2KG	WP2AIJ
Puerto Rico	NP3Z	KP3BM	NP3ZZ	WP4NOL

++All call signs in this group have been issued in this district.

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Rules & Regs

A more subtle advantage of the restructuring is the fact that the Compliance Bureau is better equipped for tracking down offenders and, even more important, views enforcement of the rules as a major part of its mission. According to one e-mail from a Ham who had recently attended a briefing by local FCC officials, the CIB also has some well-equipped vehicles for use in tracking down the source of interference and other unlawful transmissions. The gear being used by the CIB would make any fox hunter drool.

Part of the paradigm shift (which is unrelated to doppler) is just based on the different attitude brought to the job by the CIB. The good folks in CIB like to put on their white hats, mount up the posse, and go after the bad guys. Although any good posse is a team effort, the "new sheriff in town" is a fellow amateur, Riley Hollingsworth, K4ZDH, a lawyer who works on amateur complaints in the Compliance and Information Bureau.

Hollingsworth and his CIB crew have already begun to step up the issuance of warning letters to miscreants, the last step before the FCC initiates formal enforcement proceedings. One of the tools used by the CIB is the Alert List, which is sent to all FCC field offices. According to Hollingsworth, the Alert List is like an "all-points bulletin" (or "APB" in sheriff lingo). He promised that Field Office monitors

would be making a special effort to listen for further violations by stations on the Alert List. The letters sent out by the CIB are not mild general warnings. They state the FCC's expectations in no uncertain terms. In the recent case of an HF operator who had allegedly been QRming a 75-meter net, the CIB letter stated that the Commission "has additional evidence that you have been deliberately and maliciously interfering with the operations of other licensed amateurs."

Of course there are two sides to some of the complaints received. In some instances, net control operators or regular net participants will try to start up a net on a frequency that is already occupied. It is important for nets (as well as individual amateurs, such as operators who have regular skeds on particular frequencies) that the amateur bands are not run like fancy restaurants. There are no reservations and no special tables set aside for regular patrons. If someone is using the frequency at the time the net or sked would normally begin, they have a right to continue to use it. In plain language, if they don't want to move, that's just too bad.

While common courtesy might suggest the amateurs using the frequency would voluntarily QSY (if asked politely) in order to make it easier for the net to operate, it is not required by law or FCC rules. Some net control stations I have heard on the air act like their net "owns" the frequency because (and I paraphrase several overheard net ops) "we have been running here every day at this time for the last 10 years." Be advised that the FCC will not go after an amateur who refuses to relinquish a frequency to a net or other Ham who wants to run a sked. In fact, net operators who attempt to drive an existing QSO off their net frequency are themselves inviting an enforcement "warn-

ing" for intentional interference.

Remember, you own your rig and your antenna, but you don't have a lien on any frequency at any time even if you have been a fixture there for two decades and "everybody knows that the Dirty Rag Chewers and Soap Opera Discussion Net meets here every night." Most amateurs will QSY (or finish up their QSO and QRT) if asked politely. Too often there is contention because the "regulars" act like the Hams already using the frequency are interlopers who "don't belong there." This attitude won't get much cooperation from the legitimate users, and certainly won't get any enforcement action from the CIB.

The targets of the CIB are amateurs (and unlicensed operators) who violate the provisions of the statute enacted by Congress to govern the use of radio communications in the United States. In next month's column, I'll take a closer look at the law and the substantial penalties that can be assessed against violators. As you will discover, the CIB has some real heavy-duty law backing them up and can do a lot more than send warning letters and slap the wrists of amateurs who abuse the privileges of their licenses. In the meantime, it would be interesting to hear from readers who have had personal experiences with jammers, foul-mouthed QRmers, net interference, and other types of rule violations.

For those of you who need assistance with curtailing violators, amateur enforcement questions and complaints should be sent to: Compliance and Information Bureau, Compliance Division, Attention: Amateur Complaints, 1919 M Street, Mail Stop 1500E1, Washington, D.C. 20554.

If you want to go right to the sheriff, call Riley Hollingsworth at 717/338-2502.

Manned Amateur Radio in space

The people planning the future of Amateur Radio on board the International Space Station have made some big news in Houston Texas.

Attending the 22-27 January sessions at the Johnson Space Center were representatives of several nations involved in the development of the ISS Amateur Radio station. Their primary objectives were to finalize the design development of the "Initial Station" Amateur Radio hardware for ISS and to develop a more effective understanding and advocacy of the ARISS program within NASA and Russia's Energia. — ARISS, *Newline*

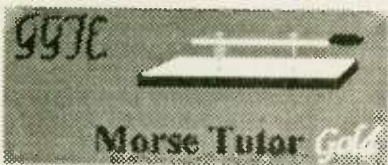


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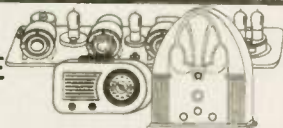
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V63X — CQ WW CW from Paradise

Charlotte Richardson, KQ1F, Paul Young, K1XM, and Ann Santos, WA1S

Soon after we got home from the second J39A CQ WW CW contest DXpedition in 1997, Paul and I started thinking about where to go in 1998. Paul enlisted Don Toman, K2KQ, to coordinate the 1998 J3 team (they operated as J3A), leaving us free to go further afield now that sunspots are back.

Where to go was a big question. Several intriguing possible locations were ruled out early on due to local politics or civil wars. We have a rule about not getting shot at while on vacation. Finally, Paul suggested a return trip to Micronesia. I was easy to convince. I love Micronesia, and it had been far too long since our last visit there in 1989 with Ed Kritsky, NT2X. Convincing fellow club members to come along was much more difficult than rounding up a team to go to J3. Grenada is easy and cheap to get to from the east coast of the U.S. V6 involves two days of travel in either direction, and there is no cheap route. Only avid CW operator Ann Santos, WA1S, signed on. So, we planned a multi-single effort.

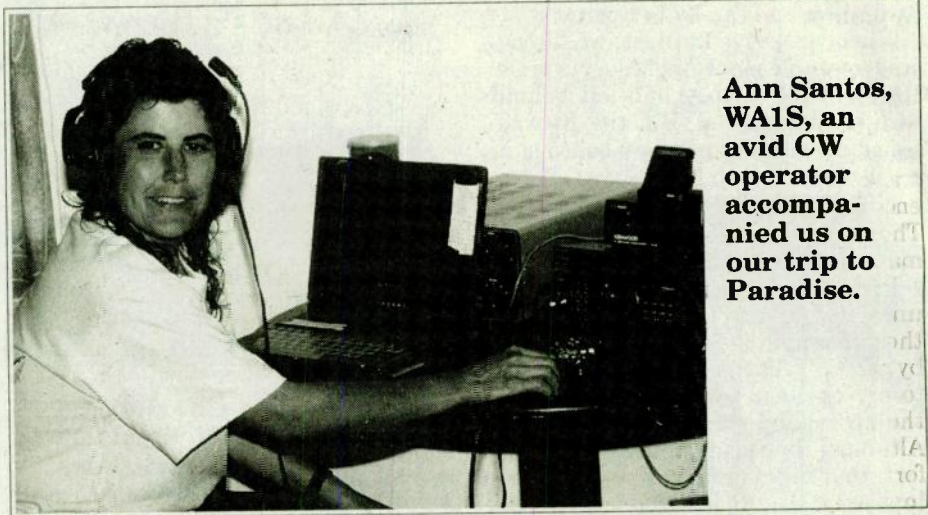
With two sets of dive gear and underwater cameras, equipment space would be tight. And it was likely that there would not be anything tall to use for supports. So Paul started working on a light set of antennas.

We had experience with verticals close to salt water, most recently on our 9M6 Spratlys trip. And the 6Y4A operation had shown how effective they could be in a contest. So at the Dayton Hamvention Paul discussed vertical antennas with various manufacturers. However, commercial verticals are heavy, 20 pounds or more each.

Paul spent some time during the summer designing a light 20/15/10-meter vertical. He came up with a simple design. The central full-length 20-meter element of each is 6061 T-6 aluminum tubing, and the wire ten and fifteen elements are spaced out from it by glass epoxy spacers. The base insulator is a glass epoxy rod. Each vertical weighs less than four pounds not counting radials, and they are strong.

John Kaufman, W1FV, modeled various configurations. The simplest arrangement was a pair spaced 11' with one driven and the other tuned as a parasitic reflector. Gain was best on 20 Meters, falling off on the higher bands, but that was considered acceptable.

We spent a Saturday morning with Gus Falgren, W1OG, in his machine



Ann Santos, WA1S, an avid CW operator accompanied us on our trip to Paradise.

shop, cutting up the aluminum and fitting all the parts for four verticals. We then cut up two minimal sets of radials and mounted one pair of the DXpedition antennas in my vegetable garden, where we tuned them and used them in the WAEDC CW contest, surrounded by zucchinis. They were not very loud there, but we knew they would perform better near salt water.

For 40 and 80 Meters we settled on a pair of Butternut HF2Vs, which weigh under 12 lbs each. 160 Meters was certain to be a problem since there were no supports more than thirty feet high or so. A trapped inverted L, which could also serve as a multiplier antenna on 40 and 80, would have to do. We did not know if we were going to be able to elevate the radials so, just in case, we made 20 radials for each antenna. We spent two weekends cutting up hundreds and hundreds of radials out of 24-gauge wire, soldering lugs on them, and coiling them up on cardboard forms. We also bought a multiband WARC dipole and several hundred feet of coax. Picking up on a neat trick we learned from the 6Y4A group, we bought a golf club bag carrying case for the aluminum, rather than packing it in a PVC tube with end caps, stuffed inside a ski bag, as we had done in the past. The golf

bag is four feet long, eight inches in diameter, and, best of all, it has wheels on one end and a handle on the other.

From Micronesia, the U.S. is north-east with Europe and Japan to the northwest. So all we needed was a hotel on the ocean on the north side of an island. After a bit of research, Paul found that the only hotel in all of Micronesia that is directly on a north-facing beach is the Sandy Beach Hotel on Kosrae, the easternmost state of the Federated States of Micronesia and a place I had wanted to visit for years. We knew that propagation into Europe would have been better from farther west in the country, but were willing to make that tradeoff.

We own several DXpedition amplifiers, and Paul wanted to bring two on this trip. But like most things that go on DXpeditions, they take a beating. He and Chuck O'Neal, K1KW, fixed the modified 30L-1, and Carl Huether, KM1H, fixed the Tokyo High Power HL1K/A. Chuck also supplied all the yellow radial wire. A series of phone calls and faxes renewed Paul's old V63YP call, and I got a new call, V63HC, since my old one had been reassigned. Ann was issued V63HO, and, eventually, even got us a special call sign to use during the contest, V63X.

We met Ann (and her husband Russ, KA1OTN) at Boston's Logan airport just before 4 a.m. on departure day, and with mountains of luggage, eight checked bags for the three of us plus several carryon items. We set off on the first leg of the outward trip, first to Newark, an extra three-hour equipment delay there, then the long flight to Honolulu, where we spent the night

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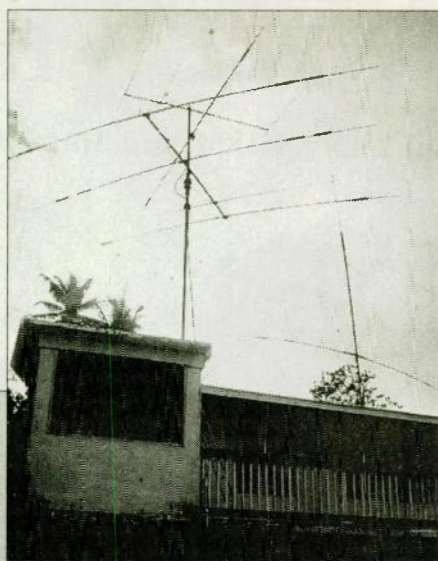
in the airport hotel. The following morning we boarded one of the most famous airline flights in the Pacific, Continental Air Micronesia's Island Hopper, the longest commercial route in the world. Westbound, this 727 flies from Honolulu to Johnston Atoll, Majuro, Kwajalein, and finally to Kosrae.

When we arrived at last, we discovered an unpleasant Air Mike surprise. To save weight, they had left behind ALL the luggage of ALL the Kosrae-bound passengers who had boarded in



Charlotte Richardson, KQ1F, takes her turn operating during the CQWW CW contest.

Above: Our luxury accommodations for the contest.



Honolulu, some twenty people, and would send it on the next flight — two days later. Arriving on Saturday, we had planned to spend Sunday, when very-religious Kosrae closes down, putting up antennas, and then scuba diving on Monday. Trying to roll with the punches, and very jetlagged, we instead rented a car and went hiking both days. In our wanderings on Sunday, we located Isao Nishimura, V63AO, the only active amateur on Kosrae. We also visited the local telecomm office and arranged for internet access.

Our luggage arrived on the Monday afternoon eastbound Island Hopper, having been sent on to Guam from Honolulu. Apparently it had also been run through the baggage masher, as one of the latches on Ann's amplifier bag was smashed. Everything inside was intact, and we were able to start assembling the antennas that afternoon. We set up the operating positions in Ann's room. Ann's radio worked fine, but the switching power supply for our DXpedition radio died, and Paul combed the island for a replacement, eventually borrowing one with V63AO's help the morning the contest started.

We settled into a routine for the days before the contest, doing antenna work in the morning and afternoon, and div-

ing during the middle of the day while Ann operated. We set up the driven elements of the triband vertical arrays at the high tide mark and put the reflectors behind them. One Butternut ended up in the sandy area behind the hotel, the wires went up in the coconut palms (none over thirty feet high though there are much larger coconut trees elsewhere on the island), and the beach and shallow offshore waters were soon full of yellow radial wire, weighted down with rocks. This being the off-season, there was one other person staying in the hotel, so all these wires were no problem to anyone but us. It paid to carry a flashlight if heading outside after dark since there were coaxes and radials everywhere.

The contest started at 11 a.m. Saturday morning local time. CW mavens Ann and Paul alternated on the run station, while I took shifts on the mul-

tiplier station. Conditions were very good, and other than problems with the radio interface on the run station everything went smoothly. Some stations were surprised when we called them. We ended the contest with just over 5,100 QSOs and about 8,200,000 points.

The contest ended at 11 a.m. Monday morning, so we were able to eat lunch together for a change. Monday morning's low tide was extremely low, exposing huge areas of the lagoon and reef flats. I walked out through the exposed sea grass beds to photograph the array of antennas on the beach with the mountainous interior of the island behind it. We decided, since everyone was too keyed up to sleep, to take a boat through the mangrove channels during the afternoon high tide. By the time we got there, the tide had already turned again, so we walked through part of remote Walung village, which is accessible only by boat.

When we returned to the hotel, we prepared to take down the antennas, starting with the various trapped wires. Paul was about to go return the rental car when the hotel owners appeared to tell us of a new Air Mike wrinkle. The Monday flight (the eastbound one) had never arrived at the landing strip on Kosrae. This was a very bad sign for us. Paul eventually got through to Air Mike and discovered that our Tuesday flight out was now scheduled for Wednesday. Making the best of this, we left the remaining antennas up. Paul ran 40-meter CW before dinner. Eventually we got our internet connection to work despite a flaky modem cable and sent out some e-mail.

Tuesday morning I ran 10M SSB while Paul and Ann went over to the Air Mike office. When they returned, Chuck, K1KW, wanted Paul to go to 12 Meters. Lunch time brought a very high tide, leaving the radials a tangled mess and even the upper reflector antennas awash in the surf, including the Butternut that was farthest from the water.

That night was the full moon, and the lunar high tide. We had hoped to go crabbing with Ronald, the hotel owner, but that never came about, so Ann ran on the WARC bands. The WARC trap dipole was still up in one of the coconut palms and so was not awash. We found the driven element of the northeast facing triband array had washed out, so we took down that set and one of the Butternuts as well as the reflector of the other triband array. Expecting another extremely high tide during the night, Ann took down the remaining triband vertical and laid it beyond the reach of the surf.

Wednesday morning Ann replaced the vertical and did some more operat-



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ing. Paul and I took down the remaining Butternut and wires and packed. Ann was on 10-meter SSB with a huge pileup as we watched the triband vertical slowly falling over into the sea. It obviously was still working fine, so we didn't shut down her fun to fix the antenna. After lunch, we finished packing. Most of the gear that had been in the amplifier bag with the smashed latch had to be crammed into the antenna bag, but we convinced Air Mike not to charge us overweight for that (which now weighed 90 pounds) since it was their fault we had to pack that way. Ann and Paul even sweet-talked them into upgrading us to business class for the short flight to Pohnpei, which got us free champagne.

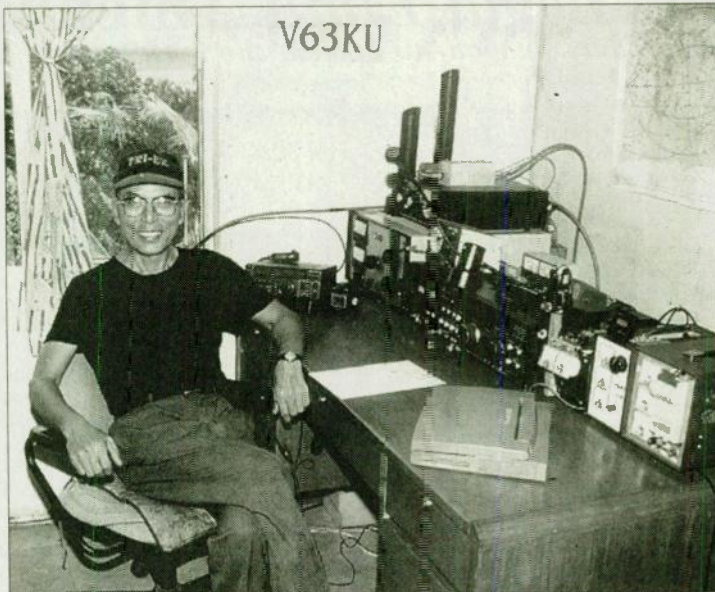
We had not planned much time on Pohnpei originally anyhow, and we arrived a day late due to the airplane troubles. With only Ann's power supply working, we were not expecting to do much operating from this island. After a half-hour bus ride we arrived at the Pohnpei Village Resort, a group of thatched bungalows on top of a high peninsula overlooking the lagoon with a beautiful sunset view of the basalt cliffs of Sokehs Rock. Paul and Ann quickly set up the WARC band dipole at Ann's bungalow while I prepared the underwater cameras and dive gear. The following morning, Ann got the hotel people to help get the dipoles up in the trees, and then went into town for some sightseeing. She was not very loud from this location.

That night it rained torrentially all night long, with several thunderstorms. Ann moved all the radio gear to the downwind side of her bungalow and covered it with towels. No one slept much. It was chilly, damp, and very, very noisy.

Saturday afternoon after some sightseeing, we had just enough time to shower and finish packing before heading to the landing strip for the flight to Chuuk (Truk Lagoon). We were met at the airport there by a van from the Truk Stop Hotel, a truck from Blue Lagoon Divers, and Sam Beppo, V63KU, the only active Ham on Chuuk, his landlord, and the landlord's family. The little daughter had even made us fragrant fresh leis.

Sam, a retired Japanese engineer, had looked all over Micronesia for an island on which to spend a few years operating Amateur Radio. He settled on

Chuuk when he found he was able to rent a suitable place there. He said he planned to return to Tokyo when his printed QSL cards ran out. He had about 30,000 cards remaining, enough to last him another couple of years.



Sam, V63KU, retired engineer and a favorite DX contact for thousands of Hams.

With Paul's radio out of commission and some of the best wreck diving in the world right off the hotel dock, Paul and I weren't too concerned about not fitting in much operating time during our stay on Chuuk. We set up one of the triband verticals on the hotel roof, strung the WARC band dipole across the back patio and ran the coax into Ann's balcony. Sam, though, was very eager to have a "famous YL operator" operate from his station, and offered to pick up Ann any time (day or night) she wanted to operate. Sam's QTH is on top of a hill next to the remains of the wartime Japanese radio communications center, now the Jesuit-run Xavier High School. It overlooks the lagoon to the north. He has a crank up tower with a 20M beam.

Sunday night, Ann got a phone call. Peter, V63PD, an American missionary and the only other Ham on the island, wanted to drop by to meet us. He came by the hotel and we all chatted for a while. Ann operated several days from Sam's QTH, while he supplied tea, soda, snacks, lunch, and an eager audience. Sam loves nothing better than to listen

to someone else run a pileup. One evening we all took Sam out for dinner at the Japanese restaurant near the Blue Lagoon Hotel.

We all took off on our last day on Chuuk, and hired a minibus and driver to see the above-water sights of Weno (formerly called Moen) Island. It turns out that there aren't many. Most of the Japanese gun emplacements and other war memorabilia are not accessible, and the island itself is dirty, has undrinkable tap water, is full of trash and wrecked cars and trucks, and has dreadful roads. Nothing like beautiful green and peaceful Kosrae. Definitely, the best sights on Weno are Sam's friendly smile beneath his Tri-Ex cap and the coral-covered shipwrecks in the lagoon. Ann went over to Sam's to operate for the rest of the day while Paul operated with Ann's radio from the hotel, giving the DXers two V6 stations to work at the same time.

The final morning on the island, we left our bags at the hotel and went over to Sam's QTH to operate until it was time to go to the airport. Sam set out an amazing spread for lunch, prepared in his tiny kitchen. Sam loves visitors. Too soon it was time to go to the airport, wearing more fragrant leis, for the flight to Guam. Guam looked like real civilization after more than three weeks in Micronesia. We spent the night in the airport hotel and then a very long, dull, uncomfortable day, flying from Guam to Honolulu, Honolulu to Houston, Houston to Boston, and then taking the airport shuttle bus home. Whew!

Trip totals: 15,000 QSOs, 92 rolls of exposed film, two airline-mangled suitcases, and three tired but happy DXpeditioners. Next year's CQ WW CW? Ann has already signed on for the club's return trip to J3 being organized by K2KQ. Paul and I are going to H44. Anyone want to join us?

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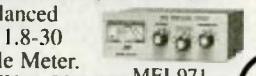
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More on the life and times of J. Harvey McCoy, W2IYX, SK

Articles about radio pioneers are among the most popular with our readers, and for good reason: they give us a good sense of the early days in wireless. J. Harvey McCoy was a pioneer, whose contributions to commercial two-way mobile communications, WWII VLF communications, and radioteletype were chronicled in the June 1998 issue of CQ. Shortly after the publication of that article, Ted Cohen, N4XX, received copies of two letters written in August 1986 by Harvey to his good friend, Jules L. Freundlich, W2JGR, of Minneapolis, MN. Although the QCWA Journal published these letters in 1996, we felt Worldradio's audience would appreciate seeing excerpts of the material as well. His story cannot be told too often. — WF60

Edited by Dr. Theodore J. (Ted) Cohen, N4XX

The early years, as a boy

My aunt (my father's sister) was married to Adolph F. Gall, who was Thomas A. Edison's Chief Engineer. I used to love to visit my relatives' home in West Orange, NJ, and to accompany my uncle to the Edison plant. I got to know Edison quite well, and although his prime interest was in the manufacture of his cylinder phonographs and recordings, he was also gung-ho on his invention of the vacuum tube. Unfortunately, he stopped his experiments after he had designed, produced, and patented a two-element tube (the diode). It, of course, filled the tremendous need at

the time for a rectifier for power supplies and for a replacement for the crystal detectors in receivers. (E. T.) Cunningham at RCA beat him to the punch by patenting the addition of a grid, thereby creating the triode.

I used to love to sit in the big Edison recording studio where the soloists would sing into big ornate wooden horns with large diaphragms driving the cutting stylus. I personally knew Enrico Caruso, Madam Schuman Heineck, Billy Jones and Ernie Hare (the Happiness Boys) and a host of the big names in that studio.

When my aunt died, I fell heir to my uncle's book of patents. As an employee of Edison, all of the patents for inventions developed by Harvey's uncle (N4XX) were in my uncle's name but were assigned to Edison. For years, it used to kill me to hear stories of how this or that had been invented by the wizard Edison — inventions such as the rotary shutter on movie projectors that ended the era of 'flickers' — and then to find out that the patent was in my uncle's name. I could write a book!

High school

It's amazing how Amateur Radio has played a role in our lives. About the time I entered high school, a friend told me that the owner of the Strand Danceland (a dime-a-dance place in Brooklyn) had obtained a broadcast station license and was looking for an electronics technician to help in its construction. Since the station was located within walking distance of my home, I went there to apply for the part-time job. (My electronics background up to

that time had been the construction of a spark transmitter, a crystal receiver, and a one-tube Reinartz receiver that could (and did) double as an oscillator. I vividly remember catching hell from my parents for burning a big hole in the parlor rug when the Leyden jars and lead-acid storage batteries I was using started to leak!) There, I met an old-time shipboard operator named Joe Burch. We hit it off from the beginning, and I was hired part-time at \$5 a week.

In six months we had built a 500-watt transmitter, a studio console to mix two turntables, three double-button carbon mikes, and a mixer-amplifier for remotes. We also designed and installed a big flattop antenna on the roof of the downtown Brooklyn building. The flattop comprised five parallel wires with 50" spreaders at each end of the 125" span, all mounted atop 75" steel pipes. Fed at the center, the downlead was part of the radiating system from the moment it left the transmitter. The entire station worked like a charm on 1400 kHz, and we used to run the station into the wee hours of the morning and revel in the telephone calls and letters that we received from distant states. I was the studio/transmitter operator after school hours, and I remember my elation when my pay was raised to \$15 per week!

In my senior year in high school, they gave me another \$5 per week raise, and I became an announcer. — that opened new doors! In the old days, many of the studio shows were vocalists and instrumentalists. When, on a couple of occasions, the piano accompanist failed to arrive on time, I was called upon to fill the gap. I had studied piano at the Brooklyn Conservatory of Music, and, I admit, was pretty good. As an aside, one of the vocalists was a cantor at a synagogue in Brooklyn. I was looking for a way to increase my income, so I asked him to introduce me to some of his friends at the 2nd Avenue Theater on Manhattan's East Side. He did, and with them, I put together several broadcasts in Yiddish. I had spoken to the owner of the station, and I told him that I could put together a series of Jewish Hours that would sell like hotcakes. He

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World Radio History

agreed, and gave me a contract that paid me 30% commission on both airtime and performer fees. In the 1980s, when Harvey called me every Friday night for the 27-day propagation forecasts he used to publish in *The Long Island DX Bulletin*, he still remembered the opening words for the Jewish Hour, and often voiced them for me in flawless Yiddish, much to our mutual enjoyment.

The college years

By the time I entered Brooklyn Polytech as a freshman, I had earned enough money to buy a new car, and while men were selling apples on street corners (1932), I was bringing home a husky paycheck. My first airtime sale was to Manishevitz, the wine producer, who signed up for one hour a week of Yiddish programming for 26 weeks at a time. From there on, it was "duck soup," and soon, we had one, then two hours of Yiddish programming every night. A couple of actors from the 2nd Avenue Theater put together a comedy show for me, which I sold to the Paragon Paint Company. It was called "Ike, the Paragon Painter." Unfortunately for me, I only signed them up for two years. At the end of the period, we could not match NBC's offer to them, and they became "The Goldbergs," which ran on NBC for more than 10 years. Remember "Molly Goldberg" of radio and TV fame?

The Brooklyn Edison Co.

During the years I worked full-time for the Edison company, I also worked part-time at the broadcasting station as an announcer. Every night, I was out doing remotes of the Big Bands at nightclubs and dance halls. Even Saturday mornings found me on the stage of the Brooklyn Strand Theater doing a Children's Hour. On Saturday afternoons, I did remote broadcasts from the Brooklyn Fox Theater, with Arthur Previn conducting the pit band that accompanied the stage show. I was the Guest Announcer on NBC for a Jessica Dragonette concert, and worked as an announcer on the 1 kW Public Address System aboard the Goodyear Blimp Columbia on her flights over New York City, making appeals for Unemployment Relief. I even found time to be one-half of the Guest Announcer team (with Norman Brokenshire) at the dedication of the million-dollar organ in New York's St. Patrick's Cathedral. And to top things off, I once did a network "straightman-fall guy" routine with Jimmy Durante at the old Village Grove Nut Club! Many of these events were covered in the local New York papers, and Harvey had scrapbooks full of his "clippings."

Forerunner to teletype

In the early days of WWII, I took a wartime leave of absence from the Brooklyn Edison Company and went to Washington, where I accepted a civilian appointment as the Deputy Chief Engineer, Office of the Chief Signal Officer, Plant Engineering Agency. The Chief Signal Officer was a civil servant by the name of Eldridge, who backed me on all of the initiatives I was to foster over the next few years. We became very close friends.

After I was in Washington for three days, I was called to the main office, where General Bagnall, who headed up all Army communications, explained one of his most pressing problems — a lack of telegraph operators to fill all of the combat-related fixed and field station positions. He asked if there were any way to automate our base stations so that he could assign more Stateside telegraphers to combat units. Some time previously, I had been introduced to a man I never will forget: Ralph Coxhead. He was president of the Varytper Corporation, which manufactured typewriters that used different numbers of space increments to represent letters. For example, an "I" was two increments in length, the same as for "f" and "t." The letters "c," "d," "g," "h," "o," and others used three increments. An "m" was five increments in length. Two and three space bars on the typewriter provided two and three increments of space, respectively.

The thought hit me that maybe Coxhead could design a typewriter that would produce a paper tape containing punched Morse characters from a standard typewriter keyboard. The punched characters would have to have constant-length dots, constant-length dashes, equal spacing between the component elements of a Morse character, and a longer, but constant-length space between each complete Morse character. To make the "cheese more binding," as we used to say, I drew up the entire Morse code, and then, added the equivalent letter character below it so any typist could prepare a tape in Morse code.

In the meantime, I had a photocell tape scanner/keyer constructed, so that when Coxhead delivered the first Morse code tape typewriter (which occurred

about ten weeks later), we could immediately set it up at the Washington Message Center. When we finally did hook up the first unit, it worked like a charm. Everybody, including the General, was elated, and the Army immediately placed an order for 100 units.

It wasn't long before another general, General Stoner, started pushing for an automatic tape Morse code reader to free up still more operators for combat assignment. I really didn't know how I was going to solve the tape reader problem. But then, the idea struck me that instead of using automated communication systems based on the Morse code, I could wire up a pair of teletypewriters on a radio circuit. I was sure that this would work because the Hearst Newspaper Corporation had been playing with a couple of trans-Atlantic radio circuits using radio-teletype (RTTY). I made an appointment with the manager of the Hearst office in New York City, and spent a week observing their RTTY operation.

The remainder of this story was covered in the June 1998 *CQ* article. Suffice it to say that as a result of Harvey's pioneering efforts in radioteletype, and especially in the development of frequency-shift keying, he was issued U.S. Patent #2,672,509, entitled "Teletypewriter Frequency Shift Transmission," filed 12 November 1943. The patent was assigned to the United States of America, but the original, framed patent certificate hung on the wall of his basement shack, over the operating desk, until the day he died. It's funny to note that over the years, Harvey was repeatedly praised for his having designed FSK RTTY with the 'ideal' shift of 850 Hz. Truth be told, this frequency separation for the "MARK" and "SPACE" frequencies was "forced" on him by the fact that thousands of 2125- and 2975-Hz filters were available from Bell Labs, which used them at that time in their J and K Carrier Telephone systems.



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Major Armstrong and VHF FM during WWII

In 1943, Major Edwin Howard Armstrong brought us together for a discussion on the use of FM. We had been having problems with enemy intercepts of our inter- and intra-island Pacific Ocean traffic. Though not stated in the letter, it appears that the purpose of the meeting with Armstrong was to discuss shifting communications on short-haul links from AM to FM, thereby providing a modicum of privacy until such time that the enemy could field large quantities of FM intercept receivers. Thus, long before anyone else was using VHF FM, we had FM circuits operating throughout the Pacific. It was a delight for me to get away from the frigid North (following his work on the new network of VLF stations that he helped to install in places such as Julienne, Greenland and Reykjavik, Iceland, that were used to handle emergency traffic for North Atlantic convoys.) and to bask in the pleasant weather of a dozen or more Pacific islands.

The post-war years

A friend who was president of a big fiberglass-reinforced plastics company called me for assistance in the production of navy SONAR structures and for some ideas on how to mass produce auto body parts for General Motors. The major problem with the SONAR structures turned out to be nothing more than the mechanical transmissibility of the dome structures, (which was being impaired by) a combination of hull vibration and induced vibrations from typical water flow. With a chemical engineer as a partner, I developed a sandwich structure having a somewhat viscous core that attenuated vibration by 1 dB. The Navy was ecstatic and my friend's company received nearly \$1 million in orders for replacement SONAR domes on surface ships and submarines. I have the patent on the process.

At about the same time, General Motors was dickering with the design (of the body) for what would be the Chevrolet Corvette. They had attempted to mold the body parts themselves, but they could not get the production rate up to their requirements. I visited their production line in Ohio

and immediately saw the root of their problem. They were electrically heating the molds, and it was taking a couple of hours to produce each part. I didn't tip my hand on the brainstorm that struck me, but instead, came back to our plant and rented a big diathermy machine. We made a similar pair of molds such as would produce a fender for a car. Each half of the mold contained a wire mesh that would simulate the typical diathermy applicator places. When we layered-up the first laminate, and using the diathermy machine, it cured sufficiently in 20 min-

utes (as compared to three or four hours for the GM molds). To make a long story short, my friend's company opened a plant in Ashtabula, Ohio, not far from the GM plant, and for the next several years, they made ALL of the body parts for the Chevrolet Corvette.

Acknowledgement

I gratefully acknowledge the generosity of Jules L. Freundlich, W2JGR, for sending me copies of Harvey's letters dated 6 and 7 August 1986.

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FCC announces new testing procedures

In an effort to bolster declining numbers in the Amateur Radio service, a new testing procedure will be implemented for prospective Amateur Radio operators, beginning 01 April 2000.

Due to the success of the Volunteer Examiner program, the FCC has decided to take the concept one step further. New testing facilities will be opened in shopping centers, most facilities of the U.S. Postal Service, and local 7-11 convenience stores. The centers will be manned by a certified examiner and a nurse. Anyone who correctly opens the door, and then rings the bell for service, will be checked for respiratory function and/or a pulse. If either of these two conditions are found to be satisfactory, the prospective licensee will be given a written test. The examinee will fill out his/her name at the top of the test form, and then proceed with a five question exam.

The FCC has released the question pool for the new test, and we present it below:

- What is your name? _____
(hint: see top of this form for help)
- What is the purpose of plugging a power cord into an outlet?
 - A. Stop air leaks from entering the room.
 - B. It's the only place on the wall where the plug will fit.
 - C. To obtain electricity for various battery-powered appliances and equipment.
 - D. None of the above.
- What is the purpose of the "On/Off switch" on a piece of equipment?
 - A. Turn it on.
 - B. Turn it off.
 - C. None of the above.
- What does the term "re-boot" mean?
 - A. Buy a new pair of boots.
 - B. Perform an accepted form of testing equipment by kicking it.
 - C. None of the above.
- What is the proper method of identification for an Amateur Radio Station using voice transmissions?
 - A. "My name's Bubba. What's yours?"
 - B. "This is W_ ABC for ID"
 - C. Not required. Let them guess who!
 - D. None of the above.
- What is the proper way to spell "Amateur Radio?"

To be fair, license classes will be awarded by test results, as listed below:

# of correct answers	License Class
none	Novice
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two	General
three	Advanced
four	Extra

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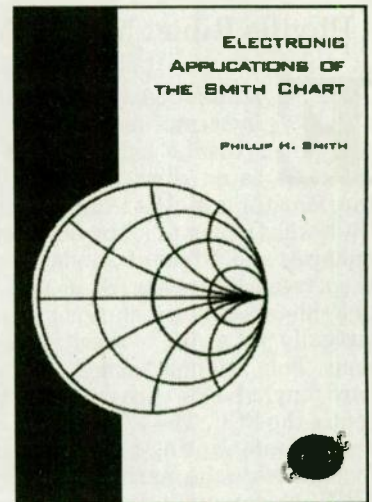
See *Worldradio*, Oct. 1994 issue.

The Smith Chart

Electronic Applications of the Smith Chart

by Phillip H. Smith

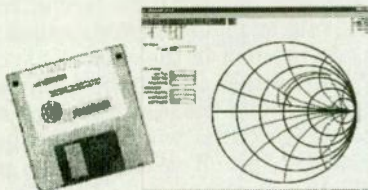
This is an updated edition of the original, classic reference book by the legendary Smith Chart inventor himself. This book describes how the Smith Chart is used for designing lumped element and transmission line circuits and includes tutorial material on transmission line theory and behavior, circuit representation on the chart, matching networks, network transformations and broadband matching. It also includes a new chapter with example designs and a description of *winSMITH* (see below).



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WORLD RADIO, April 1999 19

Maritime Mobile ARC ceases operation

Phyllis Riblet Myers, W5CXM

Established in the 1940s by maritime mobile operators, with the help of some dedicated shore side amateurs, the Maritime Mobile Amateur Radio Club was formed to lobby for more frequencies and different bands on which to operate while at sea. Being restricted to 10 Meters only, the sun spot cycle had virtually put a stop to maritime operations. This attempt turned out to be a hard fought battle with oral arguments before the FCC. The FCC had no objections about granting higher bands and frequencies to the maritime mobiles but ARRL was against expansion for the group. The FCC ruled in favor of the M/M operations and granted them operating privileges on 15, 20 and 40 Meters.

Early seagoing amateurs who took part in this petition to the FCC were Ady Tandler, W6YYT, and Arthur Hutchins, W5AXI. They had contacted Andy Anderson, W3NL, editor of "Mobile Corner" in *CQ* magazine for help in forming a club for the purpose of the petition. Bob Booth, W3PS, represented the group as their attorney and John McKinley, W3OB, prepared the petition to the FCC for the group.

Shortly after winning the new frequencies Andy Anderson found it necessary to end his duties with the club and John McKinley took over as the secretary of MMARC, a post he held for over 17 years. The club continued to grow by word of mouth and the members were informed of each others' happenings by a newsletter Mac send to each of them. After the death of his wife, Mac decided it was time to give up his work with the group and for a time the club was more or less in limbo.

In December of 1968, W5CXM, Phyllis Riblet of Houston, Texas, became the club secretary after the urging of members of the club who had come to know her through phone patch

work with the M/Ms. The club soon became active again and membership continued to grow. Before long there were over 300 members all around the world. A shore-side membership had been initiated in order that those shoreside stations who ran phone patches and were friends with many of the members could become a part of the club. A newsletter was printed four times a year and kept the membership abreast of events and travels of the other members.

In 1973, Max Grossman, then Vice Commodore of the club, drafted a petition to the FCC for operations on 80 Meters. The request was granted and maritime operations were permitted on all amateur frequencies. The club goal of some 20 years had become a reality.

This club, over 20 years old, had never had a meeting. Membership was now over 150. Many said it would be impossible to get that many men who went to sea together in one place at one time. The ambitious secretary, better known as "The Den Mother" of the club, decided it was time to try to arrange a convention for the group in Houston, Texas. In October, 1974, the first attempt was made and 43 members and their wives attended. One of the people attending was John McKinley, W3OB, who said it couldn't be done. Since that time the group has met every two years in various cities around the U.S. The numbers continued to grow at each reunion, as it became known after the first two conventions. The last reunion was held in San Diego in October, 1998.

In 1982, after 15 years of outstanding effort of building up the club and keeping everything together, Phyllis Riblet, W5CXM, decided she needed a rest and time to travel with her retired husband. Taking her place was Allan Moser, W7GYR. Al continues today as the secretary and has done an outstanding job, continuing to hold the membership together from his home in Samuels, Idaho. Al is also very active in running phone patches for the members and keeping up with what happens to those amateurs who still go to sea.

As with all things however, time changes everything. The club members reached the conclusion at the San Diego reunion in October to officially end the Maritime Mobile Club as it had been in the past. Many reasons entered into this decision but the biggest strike against the club and the reason for its closure was due to the changes in the Maritime Service as we know it today.

Radio operators aboard ships are no longer necessary. We have fewer ships sailing the U.S. flag. Satellite stations have taken the place that once were occupied by members of the club. It had gotten down to only three or four active members still seagoing. E-mail was easier than taking a rig aboard at sailing time. Time also has taken its toll on much of the membership. Many of the "old timers" are now Silent Keys. It is difficult to continue interest with so little activity. So with much sadness the Maritime Mobile Amateur Radio Club closed its books. The many friendships developed over the years will not go by the wayside however. Al has established a web page for the MMARC and participation has been very good. The club will hopefully continue its reunions every few years and anyone is welcome to exchange information on the web page at www.webpak.net/~aznosser. We would really like to hear from former members, retired members and anyone who has an interest in the club.

We know that around the world many amateurs hold the beautiful certificate from MMARC for working 30 ships at sea. We are proud we have had so much interest over the years and thank all of you for your participation with the club. The beautiful certificate picturing a sailing ship was designed by Don Riblet, W5HUX, now a Silent Key, and husband of Phyllis, W5CXM.

To the many members who helped make this club a success for so many years we say "thank you." The friendships established through the club will last a lifetime. 73s MMARC.

Inverse call server

Hams needing extra help in picking out an available vanity call sign should visit the Sunnyvale, California VEC website. Gordon Girton, W6NW, who runs both the VEC operation and the website reports that he now lists assigned calls. This works just the opposite of most call sign servers that have only available call signs. This way the Sunnyvale server gives an applicant the option of looking for call signs that are not on the list as potential choices. The page also lists all assigned club station call signs, has an FCC Amateur Radio database query screen, and other neat features. Its cyberspace address is www.amateur-radio.org/vanity.htm — Sunnyvale VEC ARC, Newline

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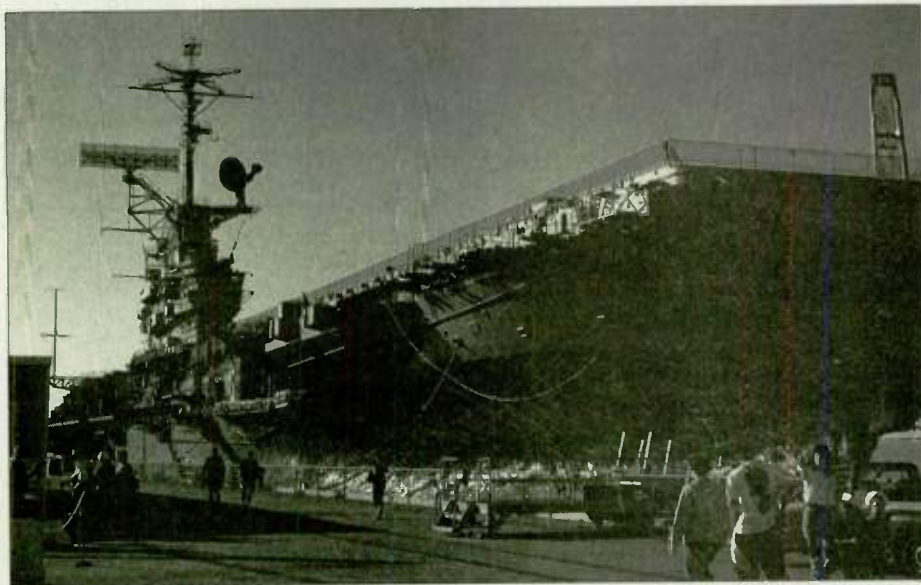
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SE station...USS *Hornet* CVA/S-12

Did you get a chance to contact special event station NB6GC on the weekend of 17-18 October? *Worldradio* stopped by to see what the excitement was about. NB6GC was aboard the USS *Hornet*, CVA/S-12, a historic aircraft carrier in Alameda, California. The special event station celebrated the opening of the *Hornet* to the public as a floating museum, and what a museum it is. The *Hornet* is 896 feet long, 224 feet wide at the widest part of the flight deck and tips the scales at 41,000 tons.



Hornet was built in 1943. She bears the name of the original *Hornet*, sunk during the Solomons campaign in 1942. The *Hornet* saw action in WWII, the Korean conflict and Viet-Nam. She originally was built with a straight flight deck and was converted to an angle deck in 1956. With the introduction of heavier jets in the late fifties, *Hornet's* flight deck could not handle the additional weight of landing aircraft. She was converted from the attack carrier role to a platform for anti-submarine warfare, carrying 24 S-2 "Tracker" aircraft, and 12 SH-3 Sea King helicopters. The *Hornet's* real claim to fame came in 1969 when she was used as the prime recovery ship for the Apollo 11 and 12 astronauts return to Earth.

Hornet was decommissioned in June 1970. She remained a part of the reserve fleet until 1995, when she was sold for scrap for \$188,000. Fortunately, the contractor did not realize the costs involved in removing the asbestos insulation used throughout the ship and filed bankruptcy before dismantling could begin. She was acquired by the *Hornet* Foundation in late 1995, to be turned into a floating museum. She was towed from Bremerton to Alameda, and was opened to the public on 17 October 1998.

The special event station was set up in the "island" in the space used by the navigators, just behind the pilot house.



Above: R7 vertical shining in the sun. Below: Dennis Franklin, K6DF, operating from the navigator's area behind the pilothouse in the island.

A Kenwood TS-430S sent 100 watts through an MFJ 949B antenna tuner to an R-7 vertical antenna mounted on top of the island. Operators during the 48-hour event were Dennis Franklin, K6DF, his father, Hal Franklin, WA6CCM, Wayne Springsteen, WU6A, Jerry Dell, WB6OMA, Kevin Gehrke, KG6D and Steve Bassett, KQ6VH. The call sign NB6GC comes from the original call sign of the *Hornet*, NBGC.

The special event station was manned and operated by the same Hams who operate another WWII veteran in the San Francisco Bay area, USS *Pampanito*, NJ6VT. — Rick McCusker, WF6O

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Surprise Russian Ham visit

Andy Romanisky, WA6WXD

Once in a while there are surprises in Amateur Radio. This happened to me recently. I enjoy Ham radio and DXing on the low bands. Back in January of 1998, I had a QSO with a Ham operator in Ufa, Russia. He was Ural Abdullin, RZ9WZ. The band conditions were great and we talked for a long time. During the course of the QSO he asked if I had a computer because he wanted to send me some e-mail, and asked for my computer e-mail address. We exchanged e-mail further explaining details about our interests and radio hobby.

In late June, 1998, I received some e-mail from Ural after not hearing from him for a while. He said he and his 16-year-old son, Danis, UA9WV, were coming to the U.S. for their very first time 11-19 July 1998, and would be visiting Terry Langdon, W6/G3MHV, of Santa Monica, CA, which was located near my home in Northridge. Ural stated he would really like to get a chance to visit with me while he and his son were in the Los Angeles area. I thought this would be a great opportunity to introduce him to the local Ham community and show them a good time. My wife Marilyn and I wanted to extend American hospitality to our Russian friends at our home, too.

Due to their limited time schedule, I was able to visit with them a couple of days while they were here. Their schedule was to visit a Ham convention in Scottsdale, Arizona, and then attempt to sightsee as much as they could through parts of Nevada, Utah and California. I wanted to introduce



Andy Romanisky, WA6WXD, center, with his two Russian visitors, Ural, RZ9WZ, and his son Dennis, UA9WV.

them to some local Hams in this area. I had them meet with Rich Bongiorno, WU6T, Gene Real, K6OJ, Scott Hanley, WA9STI, Stan Vogel, W6QFE, Joe Oliveira, WB6BJM and Cecil Casillas, WD6FZA. I was able to take them to local electronics stores, some nice homes in this area and to enjoy some great food with friends. One highlight was attending our local annual UHF Radio club, (P.A.P.A. group) picnic and

meeting dozens of local Hams.

Ural Abdullin, RZ9WZ and his son, Danis, UA9WV, really enjoyed their first visit to the U.S. and expressed their appreciation to all. Ural has a computer website in Russia for those interested. The website is at <http://radio.ufanet.ru>.

So remember, the next time you work some DX on the bands, that contact may end up with an eyeball QSO. 🌐

Royal QSO

Bob Shelby, W7FPY

It was early 1990, and I was logged into our usual morning net of retired folks checking on each other around the nation. Although our usual net control, Alvin Dykhuizen, N9FQW, (now SK) was in Illinois, propagation was deteriorating to where we were also using a West Coast NCS, Dick Allison, N7MOM, in Creswell, Oregon. The net had just been turned back to Dick for more western checkins when JY1 (now SK) checked in. He and Dick had a short QSO and then JY1 asked to chat with one of our Wichita, Kansas, participants. While this was in progress, our Illinois Net Control could be heard in a

stage whisper going, "Dick, Dick, do you know who that is?"

I knew of course, that it was King Hussein of Jordan, and I really wanted to have a contact with him, too, but I was in a quandary. How does one correctly address a monarch? Should I call him, "Your Majesty?" "Your Worship?" "Your Highness?"

The King solved that problem for us very nicely. He said, "It is true that I am the Chief Executive of my country, but today I am just another Amateur Radio operator." That struck me as being very representative of what the Amateur Radio service is all about, "the amateur's unique ability to enhance international goodwill." (FCC Part 97, Sec. 97.1, (e))

I did not get my royal QSO that day; JY1 had to move on. But from then on, I read of his actions in Middle East politics with renewed interest. I did not always agree with his political decisions, but I always remembered that he was willing to take time to visit with rank and file Amateur Radio operators elsewhere in the world. 🌐

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FIRST ANNUAL SETI LEAGUE QSO PARTY

The Search for Extraterrestrial Intelligence League is sponsoring its first QSO party. The event will take place from 0000-2400UTC 21 April 1999. The primary frequency will be 14204 kHz. Stations on this frequency may operate split, listening for calls at the low edge of the General class band. Otherwise, operate near the low end of the general class segment on all HF bands — no

WARC bands. Contact as many stations as possible, especially class M and N. Exchange: U.S. stations send RS plus class and state. DX stations send RS and DXCC country. Operator classes: N — non-SETI League member; M — SETI League member. M stations will exchange information about Project ARGUS and Amateur Radio participation. Colorful certificates will be awarded to anyone submitting a log claiming contact with 52 other stations, including at least two class M stations. (SASE would be appreciated). Send logs to: SETI League QSO Party, Burley ARC, P.O. Box 262, Burley, WA 98322 by 31 May 1999. For more info go to: www.setileague.org. — W6QJI

SPRING BUD BREAK

The Sonoma County Radio Amateurs, W6LFI, will be operating from 1700Z to 0100Z, 17-18 April from the Kendall Jackson Winery, Santa Rosa, CA. This "Spring Bud Break" event celebrates the commencement of the grape growing season. Frequencies will be: 14.275, 21.350 and 28.350. For QSL send #10 SASE to SCRA, P.O. Box 116, Santa Rosa, CA 95402.

300TH ANNIVERSARY D'IBERVILL'S LANDING IN OCEAN SPRINGS, MS

The West Jackson County ARC will operate N5D from 2200Z 23 April, to 2200Z 25 April. Frequencies are: 7.255, 14.255, 21.355, 28.455. To request a QSL card send a QSL card to: West Jackson County ARC, P.O. Box 1822, Ocean Springs, MS. 39564, and for more info contact: Ernest E. Orman Jr., W5OXA, 228/392-2816 or e-mail: w5oxa@datasync.com.

DISCOVERY OF FLORIDA

The Port St. Lucie ARA of Florida will operate K4PSL from 1-10 Apr. 1999 from 0000Z to 2400Z to commemorate the discovery of Florida by Juan Ponce de Leon on 02 April 1513. Suggested frequencies are 14.030, 13.250, 21.250 and 28.335. A 9x12 certificate will be sent to all Hams and SWLs who send an SASE to W2JAJ, 8598 Florence Drive, Port St. Lucie, FL 34952.

DOOLITTLE RAID REUNION

Amateur Radio operators from the Stu Rockafellow ARS of Plymouth, MI will be on the air from the U.S. Air Force Museum in Dayton, Ohio, starting at 1300UTC 16 April to 1600UTC on 18 April to help 31 original members of the Doolittle Raid commemorate the 57th Anniversary of the mission. In 1998, the group celebrated the anniversary from the Yankee Air Force Museum in Belleville, MI, while the raiders held their reunion in Sarasota, FL. They had over 600 contacts last year. This year the FCC has granted permission for the transmissions to include the word "Doolittle" as part of the identifier for the station. The call will be N8D and frequencies will be 7.240, 10.116, 14.270, 28.370 and 144.215 MHz. Certificates are available by sending an 8 1/2 X 11 SASE to: Dave Langston, KB8RAP, c/o Maritz, 1000 Town Center, Suite 1200, Southfield, MI 48075.

New use for old key

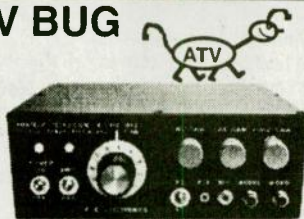
A friend recently gave me a keyboard she couldn't manage, but for two or three weeks she couldn't find the plug-in pedal which, for musicians, is all-important to play the keyboard well and smoothly. Being the genius that I am, I dug up an old telegraph key and used it as a pedal until the real thing was found. — John Wolozyn, W9ORS, McFarland, WI

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Tom (W6ORG) & Mary Ann (WB6YSS)

CLARENCE RASMUSSEN, W8LKR

Clarence Rasmussen, W8LKR, of Traverse City, MI, died 08 November 1998. He was first licensed in 1938 as W9NWX. After graduating from Waukegan High School in 1939 he was employed by the War Department. Shortly afterward, he applied to and was hired by the Civil Aeronautics Administration, now the Federal Aviation Administration. Since he was proficient in code and was licensed, he was assigned as a radio operator and weather observer at St. Ignace, Michigan. Throughout his career he was transferred many times, each time with a promotion and was eventually assigned as the Chief of Operations in Traverse City, Michigan. He retired in 1977 with 35 years of service.

In 1975, Clarence was awarded a Certificate for Meritorious Work in connection with the apprehension of fugitives in a robbery in Muskegon Heights. He was a valued member of ARES, and was presented with QCWA certificate #1134 for 50 years of service. During his Amateur Radio career he held the calls W9NWX, W2AQ, W9CGM and W8LKR.

JAMES E. JARVIS, W9KGM

James E. Jarvis of DeKalb, IL, died 22 January 1999. He was employed in the newspaper and printing business as a typesetter and printer. Jim started his career with the *Times-Echo* in Eureka Springs, Arkansas, before moving on to the *DeKalb Chronicle*, where he worked for 40 years. After leaving the *DeKalb Chronicle*, he went into partnership at Kingsbury Printing in Sycamore, Illinois. He was very active in Amateur Radio and scouting programs. — W9ICU

IRA O. MYERS, W2SVJ

Ira O. Myers, of Neptune NJ, died 03 February 1999. He retired in 1971 after 30 years as a physicist for the U.S. Army Signal Corps at Camp Evans, where he participated in the development of radar, electronic warfare and nuclear equipment. Ira received both his bachelor of science degree in electrical engineering and his master's degree in physics from West Virginia University, where he taught for six years. He did his doctoral studies at the University of Pennsylvania, where he was a research fellow at the Bartol Research Foundation of the Franklin Institute. Ira was a Mason; a charter member of Shark River Hills Community Chapel where he taught Sunday School for many years; a former member of Shark River Hills Fire Co.; was a license Amateur Radio operator for 70 years and a charter member of QCWA Chapter 138 and the Neptune Amateur Radio Club. — K1PZU

JOHN DEWITT JR., N4CBC

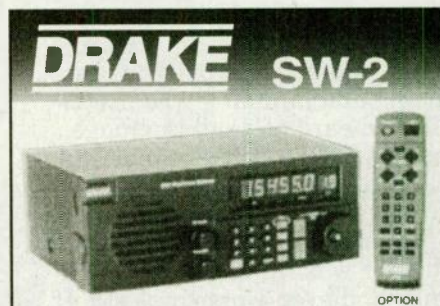
John DeWitt Jr., N4CBC, a pioneer in the broadcast industry, died recently in Nashville. DeWitt conceived the idea of bouncing radar waves off the moon in 1940 as an amateur astronomer. His first try at moonbounce using a 138-MHz transmitter and receiver that he had developed for WGN in Chicago was a failure. Success came while DeWitt was awaiting discharge following World War II. He received a directive from the Defense Department to pursue the possibility of bouncing radar off the moon. In 1946 DeWitt heard the first reflections of these signals back from the moon. This test, called Project Diana, showed the possibility that electromagnetic waves could penetrate the Earth's atmosphere.

After leaving the service DeWitt returned to Nashville, where he helped install transmitters for broadcast stations including WSM. That's the home of the Grand Ole Opry and where DeWitt remained for most of his broadcasting career. — *Newsline*

J. A. GMELIN, W6ZRJ

Former ARRL Pacific Division Director Jean A. "Doc" Gmelin, W6ZRJ, of Los Osos, California, died 11 February. He was 71. An ARRL Honorary Vice President, Gmelin, was Pacific Division Director from 1968 until 1978. He also had served as an assistant Pacific Division director, as Santa Clara Valley Section Communications Manager, and as an Assistant Section Manager for public service and external relations in Santa Barbara.

First licensed in 1947, Doc Gmelin was a Life Member of the ARRL and a member of QCWA. He also was a member and past officer of several California clubs. He was a member of the A1 Operators Club and had been active in RACES. He contributed feature articles to *QST* and was a *Worldradio* columnist. — *ARRL Letter*



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Letters to the Editor

The problem with Amateur Radio is...

Thank you very much for the sample issue (March 1999) of your magazine. While I enjoyed your magazine very much, I haven't yet decided whether to subscribe or not. That is no fault of your magazine, which I enjoyed more than any of the others I have read in the last year. Rather, the fault is with Amateur Radio itself. Let me explain.

Occasionally, I will pick up a magazine devoted to Amateur Radio and read it. After reading just about any Amateur Radio magazine, I am reminded of why I am no longer an active Ham. I currently possess an Advanced class Amateur ticket as well as a First Class Commercial ticket. I have a practically brand new Yaesu FT-757, Dentron 2Kw linear, Heathkit antenna tuner, Kenwood 2m mobile, Alinco portable, and much more. All of this equipment has been gathering dust for years. The reason? Years ago Amateur Radio was like a fraternity. The old-timers helped the newcomers with the code and theory. You listened before transmitting and jamming was practically unheard of. Foul language was taboo. To put it simply, AMATEUR RADIO WAS FUN.

The last year I was active was a nightmare. Jamming and foul behavior was rampant on the HF bands and even worse on VHF. If we want to attract the younger generation, we must go back to being gentlemen on the air and make the hobby fun for EVERYONE.

Deregulation along with making it easier to get a license has caused Amateur Radio to become nothing but a glorified citizen's band. The time has come to change or update the amateur regulations. But we need to look at more than just code speed. Although I am not nor do I care to operate CW, I have friends who consider this the best medium for DX. CW operation also should be considered for another reason that I feel is most important. For young people (or people with limited incomes), CW can provide an inexpensive method of getting

on the air. Both receivers and transmitters can be homebrewed (a forgotten art) easily. Add a simple long wire or dipole antenna and you are on the air at a very low cost. We might even get some of the new Hams to understand that P=IE isn't something you eat.

Yes, I feel that we should keep the code requirement. Perhaps going back to just three or four classes of license, with code speeds of 5, 10, and 15 wpm. Lets eliminate the no-code requirement for technicians. Doing so may prevent some people from becoming amateurs, but only those that are glorified CBers. At the same time, we should consider beefing up the written exam. Having spent 45 years in the commercial field, I saw an immense decrease in the quality of performance by commercial technicians after the FCC dropped its licensing requirements for commercial operators. I also see the same thing occurring in the amateur ranks as the licensing requirements become more and more simplified.

Yes, I know that I am stepping on a lot of toes, that technology has changed drastically, and that few amateurs build equipment any more due to its complexity. However, if Amateur Radio is to survive the computer age, we need quality as well as quantity. We need only look at the CB bands to see the effects of quantity over quality. Yes, CB is still popular, but the number of active participants appears to have decreased tremendously. (Or at least you don't hear them on the legal channels.)

The VEC program appears to be working fairly well. Now that the FCC no longer has the budget required to perform the strict monitoring they used to do, perhaps this function could also be turned over to volunteer groups. I am sure there are many groups that are capable of accurately monitoring frequencies, modulation, etc. These groups could in turn furnish the FCC with documented proof of violations (recordings etc), and the FCC would use this information

and documentation to enforce violations.

We also need a magazine that will provide a monthly construction article that will enable the average high school student to build a simple inexpensive CW station. Perhaps a company like Ramsey or MFJ will come out with a kit similar to the old Heathkit DX-20 or DX-100.

In your column "Publisher's Microphone," you asked the question "when was the last time a radio equipment store in your area ran a licensing course?" Years ago, almost every town of any size had an electronics store that sold everything from discrete components to OEM equipment. Today, only the very large towns have radio equipment stores, and few of them sell discrete components. Some of them (such as Radio Shack) sell amateur equipment, but don't even employ an amateur in the facility.

Are we a dying breed? Unless we do something to clean up our act and get back to be a friendly fraternal organization again, the answer is Yes.

Carl Desko, K8BNO
ROSSFORD, OH

Thank you

I've read *Worldradio* for years; from Microphone-to-caps of each issue. This note is to thank you for the "Best News Publication in Amateur Radio." This month, February 1999 was extra nice to this "old brass pounder," with 58 years on the air. So many good articles! My favorites were:

- Newsfront: "FCC official done taking names"
- Publisher's Microphone — Always very interesting
- "Saturn calms hurricane fury" by Major M^cPherson, WW9E
- "Son of the packrat" by Ken Neubeck, WB2AMU
- "CW Associations, is there one for you?" by Nancy Kott, WZ8C
- Aerials — "Roast him, not me!" by Kurt what's-his-name, The crown jewel of *Worldradio*
- And the advertising — MFJ is the high point of the ads!

Mr. Noble, thank you so much.
J.M. Huckabee, AA5BU
AUSTIN, TX

Station Appearance

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



Daniel DeFigio, K3AXB

My "shack" is a converted 3rd bedroom. The work station is my father's antique roll-top desk and chair. Left to right: Alpha 87A, IC-20 speaker, IC-775DSP, and an MFJ-989C antenna tuner. On top of the tuner is an IC-706 and power supply. The top of the filing cabinet holds a 200 watt 2-meter amplifier from the old RF Power

Labs, Inc. The CW key is an antique J-38 from my military days. The two microphones are the IC-SM20 and the SM6 respectively. On the desk leaf is a Compaq Presario 1232 laptop computer. Out of the picture, on the opposite side, is a Gateway 2000. The antennas are the G5RV dipole and the GAP Titan DX vertical.

Amateur "Hi"



Ever had a funny or strange experience with Amateur Radio, 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*!

Certificate for this?

Joseph Plesich, W8DYF

When the 30-meter band opened for amateur use several years ago, a "window" of a few kilohertz within the band was prohibited for amateur use. After a period of time, this band was lifted, and we were permitted to use the entire band.

One of our local amateurs, K8—, was an ardent CW operator, so when the band was opened, he immediately fired up his rig and proceeded to make contacts. However, he wasn't aware of the frequencies prohibited for use, and that's just where he was operating.

(Many Hams made this same error.)

That same evening my phone rang. It was K8—. He excitedly told me that he had just gotten off the new 3—meter band, and that he had also received phone calls from two FCC Monitoring Stations. He had been politely told that portion of the band was still closed for amateur use. Later, he even received an official note to that effect.

To this day, our club members still razz him about being the only member who has "worked" two FCC stations in one evening. His FCC "QSL" still decorated the wall of our club station.

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Awards



Contact All Time Zones

To help commemorate 25 years of *Worldradio*, we announced an award known as "Contact All Time Zones" (CATZ).

• Rules

The start date for valid contacts is 01 July 1996 at 0000Z.

The world is divided into 24 time zones. Each time zone is 15 degrees wide. For the sake of this award, half-hourly zones and out-of-zone artificial time changes will be ignored.

This award is based on the true 15 degrees each, world map 24 time zones.

The applying station must have one (two-way) contact on Amateur Radio allocated frequencies with a station in each of the world's 24 time zones. Contact with one's own nation does not count.

The operator applying for the award must have made all 24 contacts from a location within the same country.

The award may be endorsed as the applicant wishes in regard to band and/or modes.

• Application

The applying radio operator must be in possession of 24 QSL cards, one from each of the time zones.

A list shall be made showing each contact's call sign, date, band, mode and the time zone starting with the prime meridian (0°) and moving eastward.

There is a fee of \$5 to cover the cost and mailing of the 8 x 10 certificate (mailed unfolded).

It is not necessary to mail your QSL cards to *Worldradio*. Send a statement signed by two other licensed radio amateurs (General Class or above) that they have inspected and verified the required QSL cards.

Address applications to CATZ Award, *Worldradio*, 2120 28th St., Sacramento, CA 95818.

Recipients of the CATZ award will be announced in the *Worldradio* DX column.



Temple ARC Worked All Texas Award

The Temple ARC of Temple, TX is offering a new award to Amateur Radio operators with confirmed QSO's with counties in the State of Texas. The award is being offered in 5 different levels. Level I certificate is awarded for working 50 counties with Level V being all 254 counties. An endorsement sticker will be issued for 100, 150, 200 and 254 counties.

Holders of the *CQ Magazine* USA-CA award automatically qualify. All that is

needed is the USA-CA award number with the date the award was achieved. A certificate with all endorsements will be awarded for the price of the certificate alone.

Other amateurs interested in this award can submit their list of counties worked along with the call sign of the station worked and the \$5 fee for the Level I certificate. Each endorsement is \$2. QSL or Mobile reply cards are not required, just signatures of three amateurs (non-family members) verifying your cards. MRC cards are sent by mobile stations to stations they work when roaming through different counties.

A list of counties is available, or you send your list with your fee to: Worked All Texas Award, TARC, P.O. Box 616, Temple, TX 76503.

'99 AMSAT symposium

Amsat's 17th Space Symposium and AMSAT North America annual meeting will be held 08-11 October, at the Hanalei Hotel in San Diego, California. For more information go to: www.amsat.org. —*AMSAT T, Newslite*

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W-100-N

The following DXers were awarded certificates for *Worldradio's* Worked 100 Nations Award:

545. Bruce M. Small **KM2L**
All CW 06 Jan 1999
546. Marco Fabiani **IZ5BAM**
06 Jan 1999
547. Geert Heemstra **PAØGIN**
All CW 21 Jan 1999

CATZ

There still seems to be some misunderstanding on this award. One application was reviewed and rejected. All contacts listed were prior to 01 July 1996. In fact the applicant included one contact made back in 1967!

The zones do not follow the clock, such as the separation between Mountain and Pacific times, which is not a straight longitudinal line.

Aves Island (YVØ)

According to *The Daily DX* the Venezuela DX Club (YVDXC) and the Association de Radio Aficionados de Venezuela (ARV) are discussing the possibility of a joint DXpedition to Aves Island (NA-020) during the year 2000. Hopefully by the middle of this year they will have the proper paper work from the PTT and transportation issues worked out with the army.

Monaco (3A)

The *Ohio/Penn DX Bulletin* reports that YL operator Laura Martinez, 3A2MD, is active on SSB most days between 21.225 and 21.230 MHz at 1400 UTC. She also operates CW and can be found near 21.027 MHz at 1345 UTC.

Angola (D2)

425 *DX News* informs the deserving DXers that Gabriel, D3SAF, resides in northern Angola and is active on 10 and 20 Meters, and soon may be on 40 Meters.

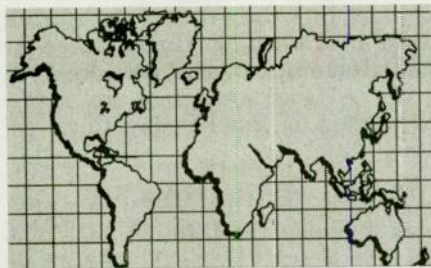
Liberia (EL)

Mark Demeuleneere, ON4WW, will be in Monrovia for several months signing with EL2WW. He is active on HF, both CW and SSB and has SSTV capabilities. Special attention is also given to 160 Meters.

Western Sahara (SØ)

There was a station signing with CN2UN from Western Sahara in January. As for being a valid call, Carl Smith,

N4AA, Editor of *QRZ DX*, checked with Bill Moore at the DXCC Desk. Bill quoted him the DXCC Rules, Section II, Rule 3(d), which specifically deals with Western Sahara. Unless the station has an SØ call sign, this CN2UN call will not count for Western Sahara.



New Caledonia (FK)

If you need this one look for Philippe, FK8VHU, who will be there through August. Philippe formerly signed with TU2FH.

Brazil (PY)

Look for ZX8DX on SSB and ZX8CW on CW the first few days in April if you are looking for something unusual. This will be a team of Brazilian DXers who will be operating from the Anavilhanas Archipelago, located in the Amazon Jungle. It is said to be the world's largest archipelago in a river.

St Peter & St Paul Rocks (PYØS)

The March 1999 DXpedition to St. Peter and St. Paul Rocks (SA-014) has been canceled. Karl Leite, PS7KM, a member of the team, says this was due to a low-budget. All donations received will be returned as soon as possible.

Falkland Islands (VP8)

Jan Heise, K4QD, had been quite active during his visit to the Falkland Islands in January. He even passed his goal of 10,000 contacts, with many of them on the WARC bands, signing with VP8CRB. He managed to make 140 of those contacts on the Top Band (160 Meters).

Chagos Island (VQ9)

The *Ohio/Penn DX Bulletin* reports Ron Marra, AA5DX, has returned to Diego Garcia and will be active with his former call of VQ9DX and should be there through May. He will handle his own QSL chores when he returns to the states in June.

Campbell Island (ZL9)

96,004 contacts! That's what the ZL9CI team did during their DXpedition to Campbell Island (OC-037). The DXpedition team to Campbell Island (OC-037) arrived on the island on 04 January after 90 hours of sailing in rough seas. The temperature on the island was around 6° Celsius with a steady wind around 20 knots. The team was soon at work installing the antennas for this operation, which was limited to daylight hours of operation. No operating was permitted between 1100 and 1630 UTC, unless weather conditions forced them to remain on the island.

They finally came on the air two days ahead of schedule at about 2300 UTC on 06 January and soon were operating with seven complete stations that included 6 Meters and RTTY. At the end of the first 23 hours they had collected 10,724 contacts. They had to remain on the island the first night, which helped the deserving DXer. The CW team members managed a contact rate of 200 per hour and at the end of over four days of operation they had over 30,000 in the log. After another two days the count was 40,750, and by early 18 January there were 65,501 contacts in the logs.

Even 30 Meters was a pipeline to Europe with many being worked. Considering this band has no band credit for DXCC the interest has been remarkable. Initially, due to the restricted hours of darkness, they held off operating SSB on 40 and 80 Meters until the activity had settled down on CW. This

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was done so more of the deserving DXers could make it into the log for those bands.

According to Lee Jennings, ZL2AL, Campbell Island is cold, wet, wind-swept, wild and strikingly beautiful. DXpeditioning from one of the best locations in the world is a tough job. They had operated from Perseverance Harbour on the eastern side of the island. James, 9Y1YC, has been preparing a video record of the operation and the video will be ready for sale at the Dayton Hamvention. Early in the operation the team was informed the ARRL had made them recipients of the Colvin Award grant for 1999. The 11 team members operating seven stations are to be commended in their fine effort to give a new one for many DXers. And from this side of the world much appreciation goes to Don Greenbaum, N1DG, the East Coast Pilot Station and Webmaster, for keeping the deserving informed during the entire DXpedition.

The other nine operators of this very fine operation included: Ken Holdum, ZL2HU; Declan Craig, EI6FR; Andrew Williamson, GIØNWG; Jason Christensen, ZL2URN, Brian Biggings, VE3XA; Jun Tanaka, JH4RHF; Wilbert Knol, ZL2BSJ; Trey Garlough, N5KO; and Murray Woodfield, ZL1CN.

They broke the record of 80,673 contacts that was held by the VKØIR DXpedition to Heard Island two years ago. Peter Casier, ON6TT, one of the operators of that DXpedition, remarked that totals like this did not come by accident. It was the result of extensive planning, professional execution, and good team work. Considering their operating was restricted this accomplishment is remarkable!

A typical day during their stay begins at 4:00 a.m. with a breakfast of corn flakes and coffee, then off to Campbell Island in the Zodiac. After landing, the team of about five operators trudge up the hill to the operating site. A big rock in the pathway suddenly comes alive and lets out a roar that sends the team scattering. Four-hundred-kilogram sea lions are very territorial and the ZL9CI site had been theirs for the past 30,000 years. The big generators are started

and the noise keeps the sea lions away.

By 5:00 a.m. they are on the air passing out contacts to the world. The sea lions have temporarily disappeared and the antennas are quickly turned to their desired direction during their absence. In another hour and a half the second shift arrives.

All day long they operate with shifts changing for meals. They continue to operate into the evening until about 11:00 p.m. when it's time to leave the island again for some well deserved sleep. At 4:00 a.m. they are rudely awakened for another day. Gotta get some sleep!

Palestine

In January, the International Telecommunications Union (ITU) assigned the telephone country code of 970 to the Palestine National Authority territory which is located on the West Bank and Gaza strip. On 01 February, the ITU assigned the call sign block E4 for use by Palestine. Palestine will be added to the DXCC list effective 01 October 1999. Contacts made with E4 stations after 01 February 1999 will count for this new entity. Under the DXCC rules, contacts with the deleted entity of Palestine made prior to 30 June 1968 do not count for this entity.

IOTA

Rick Kaplan, KL7AK, is planning to be on Nunivak Island (NA-074) from 04-07 June. In addition to SSB he expects to be on CW and RTTY. His main place of operating will be the normal IOTA frequency of 14.260 MHz.

Sam Pimenla, CT1EEN, reports he has been issued the call VK6EEN for his trip to Western Australia in September. Sam will be a member of the Rowley Shoals IOTA DXpedition, that was previously noted. There will be 12 to 16 operators on this one and will count as a brand new island for IOTA hunters.

According to the *Ohio/Penn DX Bulletin*, the Western Washington DX Club and the Island County Amateur Radio Club will operate from rare Tatoosh Island (NA-169) during the IOTA Contest in July. The island belongs to the Makah Indians and is located off the very tip of the state of Washington.

Mac McDaniel, W3HC, the QSL manager for several of the recent Chinese IOTA DXpeditions, has finally sent these long-awaited cards out, and it has been worth the wait. All cards are of the color photo type and include operations of BI3H (AS-134), BI4C (AS-136), BI5P (AS-138), and BI5Z (AS-137). The back of each card includes the contact

data and a description of the island.

The following IOTA operations have provided acceptable validation material:

EU-038 PA3BLS/P	Texel Island	Nov 1998
EU-095 F6OYU/P	Ile (Chateau) d'Iff	Oct 1998
EU-095 F6CIO/P	Ile (Chateau) d'Iff	Oct 1998
EU-160 RA1QQ/Q1	Korga Island	Jul 1998
EU-169 ZAØB	Sazan Island	Sep 1998
AS-018 RKØFWL/P	Moneron Island	Jul 1998
AS-139 BI7W	Weizhou Island	Aug 1998
OC-109 YC5XIP	Serasan Is.	Oct/Nov 1998

The IOTA committee is still waiting for validation material from the following operations: 9A1CZZ/P (EU-110), V5/DK6AO (AF-070), UAØIAS/Ø (AS-044, AS-059, AS-069), BI5X (AS-137), FO5QG (OC-051), V85QQ (OC-084), and FOØEEN (OC-152).

Here is our January selection of IOTA island activity:

AF-038 E3ØLA	Dahlak Archipelago	30-31 Jan
AF-038 E3ØMA	Dahlak Archipelago	30-31 Jan
AN-006 EM1LV	Galindez Island	01-21 Jan
AN-006 EM1LV/P	Peterman Island	29-31 Jan
AS-015 9M2TO	Pinang Island	05-24 Jan
AS-017 JS6PXB	Ishikawa	03-13 Jan
AS-017 JR6AH	Okinawa Island	11 Jan
AS-018 UAØFDX	Sakhalin Island	05-06 Jan
AS-024 JH3QFL/6	Hateruma Island	15-17 Jan
AS-026 HL4SF	Cheju Island	09 Jan
AS-028 UAØQMU	Kotelney Island	08-31 Jan
AS-045 HL5FUA	Ullang Island	03-06 Jan
AS-053 HSØ/IK4MRH	Phuket Island	02-21 Jan
AS-079 JA5CKD/6	Miyako Island	13-30 Jan
AS-083 RA9LI/9	Kara Sea Coast East	03-30 Jan
AS-117 JJ3GUW	Awaji Island	16 Jan
EU-009 GMØHTG	Orkney Islands	17 Jan
EU-009 GMØHTT	Orkney Islands	01-24 Jan
EU-009 GM3POI	Orkney Islands	03-30 Jan
EU-009 GM3IBU	Orkney Islands	17-25 Jan
EU-010 GMØHBF	North Uist Island	24 Jan
EU-011 G3RPC	Isles of Scilly	14 Jan
EU-012 GMØDJI	Yell Island (Shetlands)	27 Jan
EU-016 9A4RU	Brac Island	02-30 Jan
EU-016 9A1CPB	Brac Island	02 Jan
EU-016 9A4DUP	Mljet Island	17-20 Jan
EU-016 9A6DX/P	Mljet Island	16-17 Jan
EU-020 SM1BIQ	Gotland Island	06 Jan
EU-020 SM1TDE	Gotland Island	08 Jan
EU-027 JW4CJA	Bear Island	07-20 Jan
EU-029 OZ1CQX	Falster Island	19-26 Jan
EU-029 OZ/DL3ARM	Falster Island	01 Jan
EU-037 SM7DLZ	Oland Island	04-31 Jan
EU-037 SM7CBS	Oland Island	09 Jan
EU-037 SM7CRW	Oland Island	08 Jan
EU-038 PA7V3UHL/P	Texel Island	23-24 Jan
EU-047 DL15BCN	Borkum Island	23 Jan
EU-049 SV8CYV	Samos Island	18-19 Jan
EU-049 SV8DCY	Lesvos Island	27 Jan
EU-049 SV8FCA	Chios Island	06-17 Jan
EU-049 SV8CYR	Samos Island	12 Jan
EU-052 SV8CKM	Ionian Islands	05 Jan
EU-057 DL1AVD/P	Ruegen Island	04 Jan
EU-060 SV1CIV	Evvoia Island	27 Jan
EU-060 SV1CIV	Evvoia Island	12 Jan
EU-061 LA/DL4MNP/P	Tjome Island	28-31 Jan
EU-067 SV8EUA	Syros Island	01-07 Jan
EU-073 IJ7/KK6CAC	San Pietro Island	16-17 Jan
EU-073 IJ7/KK7VJX	San Pietro Island	16-17 Jan
EU-073 IJ7/KK7XIV	San Pietro Island	16-17 Jan
EU-076 LA1SV	Lofoten Islands	29 Jan
EU-076 LA7DHA	Lofoten Islands	07-08 Jan
EU-096 OH1LUP	Reposaaari Island	11 Jan
EU-096 OH1LEG	Kemio Island	06 Jan
EU-098 DL2BUE/P	Poel Island	24 Jan
EU-124 MWØAUX	Anglesey Island	23-25 Jan
EU-124 GWØGEI	Anglesey Island	01 Jan
EU-124 GWØMOI	Anglesey Island	28-31 Jan
EU-128 DL5HMB/P	Fehmarn Island	02 Jan
EU-131 IK3PQH	Lido Island	02-31 Jan
EU-131 IL3/KK3QAR	Lido Island	30 Jan

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DX Prediction — April 1999

EU-133 RIASP	Kotlin Island	19-26 Jan
EU-133 UA1AOP	Kotlin Island	19-28 Jan
EU-136 9A6DCR	Krk Island	15-29 Jan
EU-141 LA6SJA	Vardo Island	03 Jan
EU-152 FO5FD	Tubuai Island	14 Jan
NA-034 AH6JN/4	Anna Maria Island	01-21 Jan
NA-036 VE7DXQ	Vancouver Island	02 Jan
NA-036 VE7IM	Vancouver Island	19-30 Jan
NA-041 KL7IFP	Revillagegedo Island	04 Jan
NA-051 VE7QCR	Queen Charlotte Isls.	09 Jan
NA-055 AK1L	Vinylhaven Island	01-30 Jan
NA-057 AH6PN/HR6	Roatan Island	03-31 Jan
NA-065 K7MZV	Lopez Island	18 Jan
NA-072 3E1DX	Contadora Island	02-19 Jan
NA-076 KF9YLM	Cedar Key	20 Jan
NA-080 KN4UG/C6A	Great Abaco Island	11-27 Jan
NA-110 W4YOP	Harbor Island	02 Jan
NA-110 WB4WTY	Folly Island	01 Jan
NA-111 W2W	Long Beach Island	01 Jan
NA-140 W3YN	Kent Island	22-28 Jan
NA-142 KF9YLM	Dauphin Island	18 Jan
NA-151 OX3LG	East Coast group	16-17 Jan
OC-008 P29BW	New Britain	08-09 Jan
OC-011 V63KU	Moen Island	04-29 Jan
OC-027 FOØXUU	Nuku Hiva Island	17-30 Jan
OC-027 FOØAWI	Nuka Hiva Island	16-28 Jan
OC-027 FOØKOL	Marquesas Islands	08-12 Jan
OC-027 FO5QB	Marquesas Islands	21 Jan
OC-027 FOØSIL	Nuka Hiva Island	07-17 Jan
OC-027 FO5QG	Nuka Hiva Island	01-22 Jan
OC-046 FO5JV	Tahiti Island	02-31 Jan
OC-059 V63AO	Kosrae Island	04-29 Jan
OC-065 H4ØFN	Reef Islands	28-31 Jan
OC-065 H4ØMS	Reef Islands	29 Jan
OC-067 FO5NL	Raiatea Island	20 Jan
OC-070 YC8VIP	Ambon Island	03 Jan
OC-084 T32NCC	Fanning Island	04-23 Jan
OC-129 K9AW/DU6	Negros Island	05-28 Jan
OC-129 DU7MHA	Cebu Island	14-24 Jan
OC-137 VK4LV	Bribie Island	02 Jan
OC-137 VK4NM	Bribie Island	23 Jan
OC-143 YB5QZ	Sumatra Island	13-24 Jan
OC-146 YC8UFF	Sulawesi Island	26 Jan
OC-148 YC9MKF	Timor Island	09-24 Jan
OC-149 H44NC	New Georgia Isls	07-30 Jan
OC-152 FOØEEN	Tubuai Island	02 Jan
OC-169 A35VR	Ha'apai Island	03-08 Jan
OC-210 YC8TXW	Sangihe Island	25-27 Jan
OC-222 YC8TXW/P	Obi Islands	09-19 Jan
SA-008 LU1XQR	Terra del Fuego	25 Jan
SA-016 ZV8A	Sao Luis Island	16-17 Jan
SA-023 ZW7SC	Bahia State North	24 Jan
SA-026 PP5OW	Santa Catarina Is.	03-17 Jan
SA-026 PT5T	Maria Francisca Is.	28-31 Jan
SA-046 ZY7FO	Itamaraca Island	16-17 Jan
SA-046 PY7XC	Itamaraca Island	23-28 Jan
SA-064 CE7AOY	Isla Las Huichas	07 Jan

Maximum usable frequency from West Coast, Central U.S. and East Coast (courtesy of Engineering Systems Inc., Box 939, Vienna, VA 22183). The numbers listed in each section are the average maximum usable frequencies (MUF) in MHz for contacting five major areas of the world centered on Africa—Kenya/Nairobi, Asia—Japan/Tokyo, Oceania—Australia/Melbourne, Europe—Germany/Frankfurt, and South America—Brazil/Rio de Janeiro. Smoothed sunspot number = 139. 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.

CENTRAL U.S.A.

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	17	15	*30	14	*21
10	22	*14	*25	*21	*20
12	30	*20	*22	*26	*30
14	34	17	*21	*29	*36
16	*36	15	20	*28	*40
18	*37	(13)	18	*27	*43
20	*34	23	35	*24	*44
22	*28	*27	*42	19	*43
24	*24	*28	*45	*14	*41
2	*22	25	*44	*13	*33
4	*22	*21	*44	*17	*28
6	20	18	*36	*15	*24

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	16	*17	*27	13	*23
12	25	*15	*24	22	20
14	32	*18	*20	*26	*30
16	35	*18	20	*27	*37
18	*36	*22	19	25	*41
20	*34	*30	*34	23	*44
22	*28	*31	*42	19	*43
24	24	*31	*45	14	*41
2	*22	*29	*45	*18	*33
4	*22	*26	*43	*20	*28
6	21	*23	*39	17	*24
8	18	*19	*32	15	*21

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	*23	15	*27	*14	*21
9	25	*13	*23	*21	*20
11	*35	*21	*21	*26	*29
13	*41	18	22	*29	*35
15	*43	16	20	*29	*40
17	*42	14	(19)	*28	*43
19	*37	21	28	*26	*44
21	*31	26	39	*22	*43
23	*26	*28	*44	*16	*41
1	*23	25	*43	*15	*34
3	*19	*20	*39	*13	*28
5	*26	17	*32	*16	*24

COROZAL PANAMA CANAL ZONE

K 5 A C

"Dizz" Marconi, W7CKY
"Bow Wow" Hayes, W9CYU



GATUN

KZ5BC

CANAL ZONE

Antique QSL Department

It wasn't too long ago that the area around the Panama Canal was a separate DXCC entity, until one of our presidents gave it away. The "K" prefix was for U.S. territories, where a K5 was assigned to the Canal Zone. The Pacific islands used K6 and Alaska used K7.

Here we have from the Canal Zone an old 1935 card for K5AC. This particular card was submitted by George R. McKercher, WØMLY. Dick was in the Sixth call area at the time, signing with W6MLY, although it was addressed to him in Tampa, Florida. As for Dizz and Bow Wow it is not known where they went.


Eventually, all "K" calls were reassigned to the states, due to a large increase in interest in Amateur Radio due to the Novice class license. The K5 pre-

fix was changed to KZ5, such as for the KZ5BC card. This one was submitted by Bill Eckels, W8ZNH, for a 1956 contact he made on 20 Meters CW. The operator was Tracy White, who was running 500 watts with an 813 final tube. The card was mailed from Gatun, with a two-cent Canal Zone postage stamp.

Our next card is from F7ES in France. How many readers remember the F7 prefix? This prefix was used by American servicemen stationed in France during the occupied Europe. Leo Haijsman, W4KA, submitted this one and worked him on 10 Meters back in 1959. Fitz was using a Viking Valiant at the time. Leo was W8KA in Battle Creek at the time. This QSL card has a five-cent postage stamp.

Just six years ago we ran a card for VQ2W who was operating from North-

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VQ2W

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at 1922 GMT Your CW/EME/voice were 579
New 2E20/L10 XMT 50 Ant 2 of 6m
TKS for QSL/SL 20 73
Ex Q3EDW D2DW PETER R. GOLLEGE

ern Rhodesia. We thought we would repeat this one again. This one comes from Bob Truhlar, W9LNQ, and was from the collection of the late Roy Weisbach, W9UX. Date of this contact was at the end of 1959.

Don Miller

The following item was provided by Dick Solomon, W1KSZ, and should be interesting reading to deserving DXers from years past. Dick is not the author of this item and says the originator wishes to remain anonymous. You may agree or disagree with it.

"Has the world forgotten its idols — the people who provided a full scale of entertainment to radio rooms across the world? In spite of certain controversial issues involved, Don Miller, W9WNV, devoted more to the art of serious DXpeditioning than anyone else in those early years. DXers have always inspired controversy and so did Dr. Miller.

"Don is now in his fifties but, as a result of many unfortunate events following his DXpeditions, he has spent the last eight years in a California prison. Furthermore, he has been isolated from Amateur Radio for the past twenty years in the aftermath of his dispute with the ARRL, a dispute that was settled in a manner satisfactory to both parties. At the good age of 52, Don is

missing his freedom but maybe even more his 15-year-old son who was everything to him after he quit Amateur Radio. These twenty years have not wiped out Don's extraordinary code proficiency. He mastered code better than anyone else in the history of CW operating. "It's still banging in my mind — even better, purring like a cat, itching at night," he said.

"It took some effort and searching to find Don and to make the prison gates open for a first eyeball with him for the past twenty years. There he was standing — an idol of the entire DX community for almost a decade. Don was physically in great shape since he was exercising every day. He was mentally sharp, working on several specialized subjects related to his medical profession. He was involved in efforts to combat the drug problem — a problem in many prisons. Don Miller was found thirsting for new life and freedom.

"He was found searching for that Samoa girl whom he had once planned to marry. He was ready to re-establish his contest records and set up a contest site on Fiji, the island he had fallen in love with. But many years will still need to pass — and that massive 5-inch gate is very demanding until it finally opens up for him. God bless Don Miller.

"The visiting time ran out when two DX types got down to discussing their DXploits — past, present, and future. The California sun was shining brightly to set the scene for this historic meeting. Tears were running down the cheek when the session had to end. Don Miller was revisited and greeted by his fellow DXers. It had to happen. And it did.

"Don Miller sent his personal greetings to the many people whom he still remembered with fond memories. Two decades had not left out a single character of their call signs. According to Don's letter of thanks, 'A little of the faith I had lost has been restored now.' "So, the visit was definitely worth the effort. Don Miller is not forgotten.

"During the 1960s, Don Miller operated from many of the rarest DX locations around the world. While everyone in the DX community admired his enthusiasm and operating skills, some of his practices generated controversy. At times he seemed to hear the signals of those DXers making financial contributions to his DXpeditions over those of some Honor Roll DXers.

"He ran afoul of the ARRL Awards Committee following an unauthorized landing on Navassa Island. After a long disagreement with ARRL officials, including a lawsuit against the league,

Don admitted he had never landed on St. Peter and Paul Rocks, and DXCC credit for that and some other Miller operations was denied.

"In 1980 Don was convicted of conspiring to murder his estranged wife, and is currently serving a term of 25 years to life in a California prison. Free Willy! ...BRUCE G."

QSL Information

Chad Kurszewski, WE9V, informs us that he was erroneously listed as the QSL manager for KH7R in the January issue. All QSL requests should be sent to KH7R direct.

There have been reports on a couple of stations operating in January that include OY5NO and XQØY. These were possible pirate operations, a.k.a. Slim!

Greg Calkin, VE3ZZ, reports the Canadians have raised their postage rates, again! Postage rates to the U.S. are now 55 cents, up from 52 cents. So, those of you who make QSL requests through Canadian managers, please be aware of the postage increase. The rates are Canadian funds and Canadian stamps. If you don't have any Canadian stamps, you could get by with a green stamp and request change in the form of an extra 55-cent extra stamp.

When checking the QSL Routes those with an asterisk indicate the address is also included.

Thanks go to the following contributors for this month's column: CT1EEN, GU3MBS, ON5NT, ON6TT, PS7KM, ZL2AL, K1DG, W1KSZ, W3HC, WB4FNH, W4KA, K6JG, N7NZ, KL7AK, W8ZNH, W9UX, WE9V, WØMLY, Western Washington DX Club (WAØRJY), Northern Arizona DX Association (W7YS), American Radio Relay League (NC1L), WebCluster (OH2AQ), 425 DX News (I1JQJ), The OPDX Bulletin (KB8NW), DX-News (NJDXA), The Low Band Monitor (KØCS), Island/DX News (N5VL), The Daily DX (W3UR), QRZ DX (N4AA), and DX News Sheet (G4BUE). — 73 de John N6JM.

ARDF championship

The third IARU Region 3 Amateur Radio Direction Finding Championships will be in Nonsan, Korea from 21-26 June 1999. English will be the official language during the championships. For information, contact The Korean Amateur Radio League, Inc., C.P.O. BOX 162 Seoul, 100-601, Korea — KARL, Newsline

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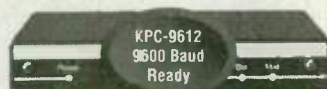


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4U1VIC	DL3NEO	CM6YI	CO6LG	HS1NIV	W1ZS	GR-111 45 Athens,		"Kshitija", opp.	
20-21 Nov 98		CN2UN	ZP6CU	HS1RU	JG3AVS	GREECE		Geetanjali Theatre, 5-	
5A1IC	IK3ZAW	CO0XE	XE1CI	HS98AG	HS1CKC	SV5CJN Drosos Skotis, 5,		Cross, Malleswaram,	
5B4AGC	N2WK	CO6XN	HK6DOS	HSØZCW	K4VUD	Kosma Etoulou str., GR-		851 00 Rhodos,	
5B4CW Michel E.		CO8LY	EA7ADH	HSØZCY	WB4FNH	GREECE		INDIA	
Kreitem, P. O. Box 1267,		CO8TW	W3HNC	HZ1AB	K8PYD	SV9/MUØBKA	K4ZLE	VU2NFS Nafisa Shikari,	
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5B4TI	KD9AY	CT3EE	DL3KUD	J28AG	ZL3CW	Konstantinos		Gangabaudi Road,	
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5W0GD	PA3AXU	P. O. Box 63, Inchon		KG4DZ	W4SD	T32KV	NØKV	VU3VLH	OK1MM
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7X2CR	ISOLYN	2010, PHILIPPINES		KHØA	JF1MIA	T33RU	DL2MDZ	XR3Z	Steve Sexton, Av
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World Radio History

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The title says it all! It's the time of the year when high school students are preparing to graduate and apply for college and prestigious Amateur Radio awards are ready to be claimed! If you are an older amateur reading this, please share this month's Youth Forum column with as many young amateurs as you possibly can, and encourage them to pursue what I am about to report on!

DARA scholarships

The Dayton Amateur Radio Association (DARA) is now accepting applications for its annual scholarship awards! DARA is planning to offer 66 scholarships to amateurs who are going to college and could use a little financial help! What does it take to be eligible? Not a whole lot, so read on! To be eligible, you must be a licensed Amateur Radio operator, and must either be enrolled at, or have been accepted to, an accredited university, college or technical school. That's it! There are no restrictions on course of study, nor does the student need to be pursuing a four-year baccalaureate degree.

According to Stan Kuck, NY8F, on behalf of DARA, awards are made on a nondiscriminatory basis. Selection criteria include financial need, scholastic achievement, contributions to Amateur Radio, and community involvement.

These scholarships range from \$500 to \$2,500. I mentioned above that 66 of these scholarships are waiting to be awarded, so don't hesitate or be intimidated to apply! This is free money, and many of you know that free money is always accepted in college as course books and tuition have no problems emptying one's wallet!

For an application and full details, please send a self-addressed, stamped envelope to:

DARA Scholarships, 45 Cinnamon Ct., Springboro, OH 45066. All applications must be received no later than 15 June 1999, so apply soon!

1999 Newsline Young Ham of the Year

The Newsline Young Ham of the Year Award is a prestigious honor awarded to one young Amateur Radio operator age 18 or younger in the Continental United States who has gone out of his or her way to make Amateur Radio a better hobby for everyone or by providing outstanding service to the nation,

or the community. This award is sponsored by Amateur Radio *Newsline*, and cosponsored by Yaesu, USA and *CQ* magazine.

Do you know an amateur 18 years old or younger who has put effort into improving Amateur Radio, whether it be by being active in ARES, clubs, running nets, committing time to public service or recruiting other people into Amateur Radio? If so, please consider nominat-

"These awards are up for grabs"

ing him or her for this award in appreciation of his or her efforts! All nominations must be received by 30 May 1999 on an official application. Application forms are available by sending an SASE to the 1999 Young Ham of the Year Award, c/o Newsline, 28197 Robin Ave., Santa Clarita, CA 91350. For those of you on the Internet, you may also find an official nomination form and rules at the Amateur Radio Newsline homepage, located at <http://www.arnewline.org>.

The recipient of the 1999 Newsline Young Ham of the Year Award will be formally presented at the Huntsville Alabama Hamfest the third weekend of August! The Huntsville Hamfest is one of the nation's largest and most popular Amateur Radio conventions with over 7,000 amateurs in attendance. Show your appreciation for the young amateur you know who has done a fabulous job making Amateur Radio such an awesome hobby! Obtain an application, and nominate him or her today!

1999 Hiram Percy Maxim Memorial Award

Yet another award is being offered by the American Radio Relay League to recognize young amateurs, except this one is available for those 21 years of age or younger. The Hiram Percy Maxim Memorial Award was first established in 1936, and is awarded to any young amateur who has proven to be a leading example to others by participating or holding a leadership role in a local or national organization, has an excellent operating record, has attained technical achievement, has recruited or trained a new amateur, or has participated in public relations activities.

Formal nominations are made by

ARRL Section Manager, and must be received by 31 March 1999 (I know this date is right around the corner, but I decided to mention it even though this is the April issue of *Worldradio* for those who might get it early!). There is no limit to the number of nominations one can make. The prize consists of \$1,000 cash, an engraved plaque and the winner will be presented formally at an upcoming ARRL Convention.

Wow! I told you this month's Youth Forum column was worth reading! These scholarships and awards are up for grabs and could be yours —

only if you apply as soon as possible! Don't pass these opportunities up as each of them is extremely rewarding and will open many doors in your life.

Field Day

Mark your calendars for the ARRL's annual Field Day, which takes place 26-27 June 1999. Ask your local club if they are participating in this great contest, and feel free to get on the air! This is the perfect opportunity for amateurs who hold a Tech No-Code ticket to actually get on HF and see what's waiting for you once you easily pass your code tests! And this is even a better opportunity to grab some friends who might be interested in getting their Amateur Radio licenses, and getting them on the air to work stations around the country and world! More details on Field Day can be obtained from the ARRL.

Enjoy the warm weather, and the great solar conditions that make working DX as easy as shouting across the street! Feel free to send e-mail or letters with topic suggestions or comments as they are appreciated. Until next time, I'd like to wish you the best of 73.

—Brian Mileschosky, N5ZGT, 1021 Dakota S.E., Albuquerque, NM 87108; e-mail: n5zgt@swap.co; web: <http://www.unm.edu/~brianm>

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HF mobile antennas

I thought I should get to know everyone better before I said anything to irritate the Antenna Police. There is nothing that can be said about HF mobile antennas that will not upset someone. As I write this, I'm about to leave for Quartzfest '99, where I know that any particular HF mobile antenna seen on my vehicle will affect my future credibility as a *Worldradio* writer! (Just kidding.)

Tom Barker, W7MTB, asked in my web page guestbook, "I install my Kenwood 450 in my RV sometimes but only to operate from State and National parks, fixed. I'm looking for ways to improve the output of the Hustler whips. Not much of a ground plane with all of the fiberglass of the 23' Tioga. The whip is mounted on the roof rack. Any ideas, guys? Tnx" Some of you mobileers with fiberglass vehicles may have specific answers for Tom. If so, send them to me, and I'll pass them on. Here are some of the general comments that I made, followed with more on HF mobile antennas. Tom didn't say up front what band he was on and that makes a difference. (It was 40 Meters.)

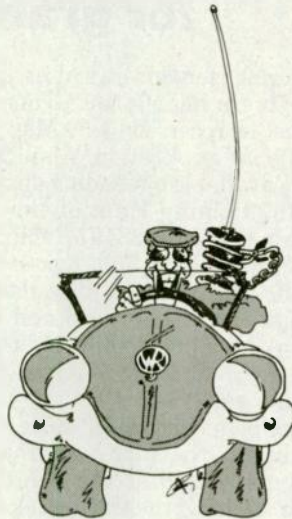
Before repeaters, our popular "local" frequency here was on 75 Meters. We had one poor soul who was trying to make a 75-meter loaded whip work on a fiberglass Corvette. It was driving him crazy.

On a lower band, like 75 or 40 Meters, a car body and frame are not a groundplane, but are one side of a capacitor-to-earth ground. The wavelength is so long compared with the car size that the car doesn't furnish much groundplane effect itself. But it is necessary to have the ground return for the antenna connection firmly connected to the major metal mass, such as the body and frame.

To take the other extreme, the wavelength at 10 Meters is so short that we have almost a VHF situation. There it's important to have a conducting surface, or equivalent, on or near a plane with the base of the antenna.

Remember the car as a capacitor to

ground? Another factor in mobile operation is the ground conductivity. This is going to be high (good) in rich delta land, and low (poor) in granite mountains. High ground conductivity is the same as low ground resistance. Did you ever wonder where all the 75 or 40-meter signals went when you drove into the mountains? The signals may still be there, but the low radiation resistance of your mobile antenna now has a high ground resistance in series. Radiation resistance is that portion of the antenna's impedance that transfers RF energy as radiation, rather than heat loss.



There are not as many bad HF mobile antennas as there are bad choices and wrong reasons. There have been other designs, still seen at swap meets, but today's choices usually boil down to: Stick wire-wound fiberglass antennas, Center-load interchangeable coil or resonator antennas, High Q bug-catchers, and the Screwdriver motor-tuned antenna. I'm only talking about

self-resonant antennas, rather than auto-tuners with a non-resonant whip.

The stick and center-load antennas in their simplest form are single-band devices. Band changing involves getting out and changing the stick or coil with the little crescent wrench that you keep in the door pocket for such events. There are two variations on the stick for easier multi-band operation. One stick antenna has taps used to change the resonant frequency. Another solution for both the stick and center-load is the "spider" where multiple antennas or resonators are fanned out with an adaptor. Various band changing schemes are used with big high Q antennas, usually involving taps. The QSY champ is the screwdriver antenna. A small electric motor inside the antenna allows the antenna to be tuned while the vehicle is in motion.

The reason that mobile die-hards select the largest coil that they can find is "Q." This is the figure of merit for the coil. Higher Q represents lower RF loss. Bugcatchers, and to some extent, screwdrivers, have higher Q than sticks and resonators with small coils. Should you abandon all thoughts of a little stick antenna on your sub-compact?

One parting shot about Q. A long distributed coil, such as on a stick, results in an antenna with a higher radiation resistance than one with a "lumped" coil. The result is that the loss due to low Q is partly offset by the higher radiation resistance. A plus is that the lower Q antenna has a greater bandwidth, ensuring that the antenna will be near resonance more often. A high Q antenna is still the most efficient, but recognize these other factors.

Most of the zeal for large mobile antennas comes from 75 Meters where an-

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See *Worldradio*, Oct. 1994 issue.

tenna efficiencies are at a minimum. If you operate on 20 through 10 Meters, select the antenna that you want without too much guilt. If you can't get on the air on any given band any way other than with an "incorrect" antenna, go for it.

I'm not putting down the high efficiency of a bugcatcher or the tuning ease and efficiency of a screwdriver. Those are both respected antenna designs, for good reason.

Thanks to Jim Ackerson, WØRFO, in Florida, who passed along the following: "Thought you might want to publish 'thanks' to SouthCars 7251 kHz, MidCars 7257.5 kHz and EastCars 7255 kHz for all contact they provided me while

I was traveling through the Northern part of the U.S. during the month of October in my Jeep Grand Cherokee with Icom 706MKII and tuner with full Hustler complement of antennas. Great bunch of guys and gals providing a much needed service to mobile and base stations."

Jim Hadder, KE4ZX, in Georgia, left me the following in my web page guestbook: "Enjoyed the web page, I'm planning my second mobile installation

of my FT-900 into a 1990 BMW. Look forward to your column in *Worldradio* and future articles on web page. Thanks for giving us newcomers to mobile Amateur Radio your many years of experience. 73s From GA."

I just got a nice letter from Everett Harrington, W1VMH, in Massachusetts. He is President of the WBCCI

Amateur Radio Club, which runs the many RV Service Nets mentioned in the February column. I knew that their nets were open to all Amateur Radio operators, but I didn't know that the Club and its many activities were, too. They are chartered by the organization for Airstream travel trailers etc., but now can accept other Ham RVers.

HF Mobile Web Pages

Brian Johnson, K2BJ
www.k2bj.com.

Mark Schoonover, KA6WKE
www.qsl.net/ka6wke

Mike Newell, WB4HUC
http://lonestar.texas.net/~wb4huc

Pete Brunelli, N1QDQ
www.connix.com/~pcb/rtcc.htm

Don Johnson, W6AAQ
www.w6aaq.com/
(may be off-line)

Just before deadline I received word on a new HF mobile web page by Brian Johnson, K2BJ, in New York. His very ambitious page is listed in the above box. Those visiting my web page will have seen links to other pages with HF mobile content. These are also included. — Les Cobb, W6TEE, can be reached at: 5000 North Ave., Carmichael, CA 95608; or via email: lcobb@compuserve.com; web: http://home.pacbell.net/lcobb.

1.8.0.0.3.6.6.9.1.9.2

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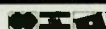
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It's not over 'til the paperwork's done

During a training seminar many years ago, the instructor put a slide on the projector that showed a picture of an old outhouse. There was a sign on the facility that said "search mission base." The caption under the photo read: "The search isn't over until the paperwork is done." Other than a thought that possibly a lot of strategy is planned in the privacy of an outhouse, the message is clear, we cannot escape the paperwork.

As communicators, we should be familiar with the radio log and the message form, but let's review. The radio log typically shows any action relevant to your station. You might not need to keep a log while operating mobile or portable on assignment, but you would always keep a log operating at a base of operations or in the field with a decision maker (such as the on scene commander).

What do you log?

What kind of entries might your log contain? You would note when you began operations. You would note any equipment problems. You might note any operating conditions (signal quality, temperature, weather, etc.). It would be good to record what stations are available and any status reports. Most important, however, are the transmissions you make or receive and a brief summary of what's said. I would also recommend you log attempts to contact field stations. If the policy is for field units to report in every 15 minutes, you want to know how long someone has been out of contact.

A message form could be something you've had custom printed for your group or it could be a yellow legal pad. Whatever its format, the idea is to be able to hand carry a message to someone else, and, preserve the data for future reference. You want to record who the message is from, the time received, who it is for, the message (formal being word-for-word, informal being a summary), and some note as to how a reply is to be sent.

The most frustrating thing for an incident commander is to be handed a message, and give the operator a reply to send, and have the operator not know a return path for the message. Rule number one — If you take a message, ask how a reply might be given. Don't assume there will be no reply or that the reply won't be immediate. If you're the late shift operator and need to send a reply from earlier in the day, it's embarrassing to not know how to get the reply sent.

Keep in mind that the radio logs and message forms serve to keep a written

record that might be included in the case file. It might also serve as evidence in court. You want to ensure your entries are readable, correct, and complete. If possible, your log and messages should allow you to re-create what happened if asked — and you might be asked months or even years later.

With the critical element that a radio link provides to any emergency operation, I would argue that what you record is one of the most important components of the overall mission file. But what might you find as other parts of the "written word" that makes up a mission file?

Initial data

An ongoing document is the initial alert and briefing. This is the information that the dispatcher, call taker, or on-call coordinator took from the reporting party. Here is recorded the type of incident, all information known at time of alert, the reporting party's name, and call-back information for the reporting party. As the incident develops, clues, leads, search results, weather, initial actions, and other information can be added to the initial alert form.

As each search team (or operational element) is assigned, a team information form is used. This form includes names of team members, resources, abilities, and assignment information. When the assignment is completed, the form is often also used to record debriefing (or search result) information.

Other forms will include detailed information on the missing person. As a search develops, the responsible agency should assign an interview specialist to discover as much as possible about the lost person. This data helps the search planner develop strategy. For example, you've been looking several days for a missing plane and discover the pilot was depressed, despondent, and a relative received a suicide note. That changes your search strategy big time.

A number of years ago, a search began for a missing plane from Utah to California. No flight plan had been filed and the pilot said he would be back in several days. The family needed to get some emergency information to him and discovered he had not arrived in California. As the event developed, the data team discovered a friend who said the missing pilot liked to stop in Nevada to see a girlfriend. The search turned out OK when he was found alive and safe. He didn't file a flight plan on purpose because he wanted a day or two with his Nevada friend. You can imagine how upset his wife was.

Calm during the storm

What I wanted to point out this month is how critical the systematic collection of data is to the search effort. We often (always) complain at how much paperwork is generated but it has a place and allows patterns to be discovered, clues to not be overlooked, and search assignments evaluated. This data also allows for a better mission critique and should legal action require court testimony. (While you may consider a public service event as doing something good for your community, it's a good idea to treat each event as a crime scene. Until the missing per-

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Search And Rescue

son is found and the situation known as to why they were missing, you cannot assume that foul play was not involved.)

Which brings me to a current problem — computer or paper? During a search New Year's Eve for a plane crash, the sheriff's office used a portable computer to record leads and radio traffic logs. And this worked well as calls were taken and crews dispatched. A discussion on a Civil Air Patrol forum debated whether or not

computerized electronic forms were better than the old paper ones. Good arguments were fielded and many operational considerations voiced. It was pointed out that there are many types of software available and that some incompatibilities exist. Others pointed out that operating conditions may prevent use of electronic means.

I hate to sound like a fence-sitter, but it boils down to what ever works best for the situation. I've got a couple of radio log programs that work super at a base station under controlled circumstances (no rain, adequate light and power, comfortable chair, and ability to type). Would I take the portable computer and operate from a mobile command post (vehicle) during a snow storm? No, as it's too difficult to balance the computer in the front seat and operate the radio at the same time. Yet I've operated from a tent where conditions were great for computer use.

"computer or paper?"

Can you plan on both options? You bet. Prices on a used pre-Pentium portable make it an inexpensive option. Technology brings its challenges such as finding programs that run under DOS and finding a power source for the duration, but it's doable. I prefer using a computer because my handwriting is

often difficult to read and it's easy to make multiple copies in case several agencies share jurisdiction. Again, it's what works best for you. If you don't type, it's difficult to

keep up with an active radio channel and you may like the written word. Keep in mind what the purpose is for keeping the documentation and to what use it might be put — perhaps even a year or more from when the mission closed.

One consideration is the use of packet radio and the ability to send your data from a remote site to a central operating location. I can think of many benefits to having this field capability especially if I were the incident commander or planner needing the information quickly. With the swift pace demanded of search and rescue response, packet is probably the most underused mode of Amateur Radio support, but I'll leave that topic for another month.

Until next time, best wishes from Salt Lake City. — *Jerry Wellman, W7SAR, can be reached at: P.O. Box 11445, Salt Lake City, UT 84147 or via e-mail: jw@desnews.com*



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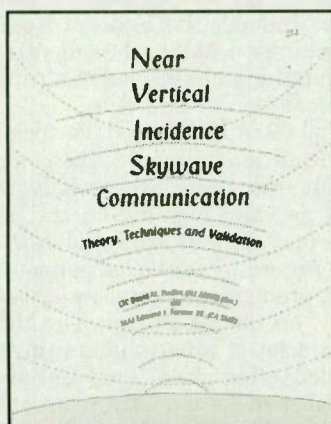
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A BASIC Y2K solution

Backtracking

I made a mistake in a listing in the February column. The problem is in line 40 of W2WW's HFYAGAIN.BAS listing. It should read: 40 PRINT "GAIN="; 10*LOG(E+E*(1+(A/(E-1)))/LOG(10)-2.148;" dBd"

Al also suggests another formula for calculating HF Yagi gain based on boom wavelength alone: GAIN (dBd)=10*LOG(5.4075*WL+4.25)/LOG(10)-0.98

I also got a note from Yardley Beers, WØJF, pointing out that he has already published a BASIC listing for a multiple-band loading coil arrangement in an issue of *Communications Quarterly* (summer 1993) and a performance follow-up in a subsequent issue of the magazine. While I haven't tried Dr. Beers' program yet, I do know he has been actively involved in building and writing about antennas since before I was born. If you'd like to know more about this interesting man check out the profile done on him in *Worldradio's* Nov. and Dec. 1997 QCWA columns.

Y2K Solution

Al La Placa, W2WW, passes along this story: God decides to end the world, and tells Boris Yeltsen, President Clinton and Bill Gates, the world's three most influential men, to get the word out to everyone else. Boris Yeltsen goes on TV to tell the Russian people. "I've got some bad news and some worse news. The bad news is that there is a God, and worse, he is going to end the world in two days."

President Clinton calls a press conference where he tells the reporters, "I've got some good news and some bad news. The good news is that there is a God, and the bad news is that he is going to end the world in two days."

Bill Gates, meanwhile, is on the Internet where he is telling the rest of the world, "I've got some good news and some great news. The good news is that there is a God, and the best news is that

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```
10 CLS: PRINT "JD.BAS, BY KD5DL, 4/99": PRINT
20 PRINT "JULIAN DATE AND DAY-OF-THE-WEEK FOR YEARS 1801 -
2099."
30 PRINT: INPUT "DATE (DD,MM,YYYY) ";F,G,H
40 A#=367*H-INT(7*(H+INT((G+9)/12))/4)
50 B#=A#+INT(275*G/9)+F+1721013.5#
60 C#=B#-.5*SGN(100*H+G-190002.5)+.5
70 PRINT "THE JULIAN DATE IS ";C#
80 D#=C#-2378861.5#: E=INT(D#/7)*7
90 A=D#-E: E$="DAY": RESTORE
100 DATA THURS,"FRI","SATUR","SUN","MON","TUE","WEDNES"
110 FOR E=0 TO A: READ D$: NEXT
120 PRINT " WHICH IS A ";D$+E$: PRINT: GOTO 30
```

he's got the solution to the Y2K problem."

It's really difficult for me to form an opinion about what will happen on the morning of 01 January 2000. Some people are predicting the end of the

world, or at least civilization as we know it, and just as many are saying that any Y2K problems will be fixed in plenty of time.

Actually, there's a lot more to the Y2K (year 2000) problem than having the digits roll over from 99 at the end of this year to 00 next 01 January. I think that problem has been pretty well addressed, and most (if not all) computer programs have been fixed by now, or will be soon.

Contrary to some so-called experts, I don't foresee a Wall Street crash caused by any kind of Y2K bug. But I do envision problems on The Street because people, not computers, are prone to panic. There have already been stories told in the media about people who plan to sell everything they own and keep the cold, hard cash until the "crisis" is over. Indeed, the Federal Reserve is planning on having lots of extra cash on hand in anticipation of a run on the banks at year's end.

The 00 roll-over problem seems to be the one most people are concerned about, but there are probably others just as valid looming on the horizon. One may actually arrive before 01 January. According to at least one source, the first problem may come as early as this year, on 09 September. The theory is that a lot of programmers (myself included) often use an easy-to-remember number to get a program out of a loop, or to signify that there will be no more input, or to simply quit.

Quite often that key number is "9999." Therefore, the theory goes, on the 9th day of the 9th month in the 99th

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year (09 September 1999) you can expect to see programs start to give erroneous data, or simply lock up or quit.

Another problem not often addressed is the Leap Year anomaly. The accepted way timekeepers measure the length of a year is to note the amount of time between the sun's apparent crossings of the equator to signify the start of a new cycle of seasons. Unfortunately, the time it takes to do this is not an even number. In fact, it's nearly six hours longer than 365 days. The way to make up for this quarter-day gain is to add a Leap Day every four years. Bingo, we're right back on track.

Well, almost. The tropical year has been measured relatively precisely to be 365.24219878 mean solar days. The extra time works out to be five hours, 48 minutes and 45.974592 seconds. There's still going to be a difference of nearly 45 minutes to take care of at the end of every four years.

Therefore, timekeepers came up with several other, although less familiar, Leap Year rules. Rule one was to add a Leap Year to every year evenly divisible by 4 (that's the one we all remember). Rule two is an exception; every year evenly divisible by 100 will NOT be a Leap Year. And rule three is an exception to the exception; every year evenly divisible by 400 WILL be a Leap Year.

That brings us to the Y2K problem: Even if the year digits roll around to mean 2000, will Leap Year be accounted for? In other words, if a program was written with 00 to mean 1900, which was not a Leap Year, will the "fix" to 2000 take into account the additional day in the coming year?

This month's BASIC program can help you discover if you have dating systems that are Y2K Leap Year compatible. It does it in two ways; it gives the Julian Date for any day between 1801 and 2099, and it gives the day of the week that date falls on.

The Julian Date, for those who may not be acquainted with it, is based on a system developed in the 16th century by French scholar Joseph Scaliger. Scaliger conceived of a consecutive numbering system based on three older calendar systems: the 19-year Metonic cycle, a 28-year solar cycle and a 15-year Indiction cycle. His calendar, therefore, would have a period of 7,980 years.

Tracing the cycles back in time, Scaliger found that all three systems coincided in the year 4713 BC. He therefore set the start date of his

7,980-year calendar to noon on 01 January 4713 BC, and named the system in honor of his father, Julius Caesar Scaliger.

So, with 01 January 4713 BC as "Day #1," every date since then has its own Julian date. Astronomers use Julian dates to track heavenly bodies and governments use a type of Julian date to keep track of elapsed time (as on contract obligations).

Lines 40-70 of this month's program use a formula that accounts for leap years in the relevant years evenly divisible by 4 or 400 and excludes leap year for 1900 (under the 100-year rule). With the program you can check Y2K Leap Year compatibility for any date between 1801 and 2099 AD.

When you run the program you will notice that Julian dates include the half day since the previous day's noon. (I left it this way as a courtesy to astronomers who still use the noon-to-noon way of reckoning Julian dates).

Lines 80-120 determine the day of the week for any valid date based on the length of a 7-day week and the fact that its reference date, 01 January 1801, fell on a Thursday.

As a test, try entering "1,4,1999" (as the 1st day of April, 1999). If you entered the listing correctly you will see "THE JULIAN DATE IS 2451269.5 WHICH IS A THURSDAY."

Now you have something to reference dates, especially the Leap Year next 29 February, when you check your own computer and software for Y2K compatibility.

Try this simple test: Reset your system's DOS date to April 1, 2000, and use BASIC's DATE\$ command to verify the change. If your computer is like mine, everything will continue working as it should.

No matter what we do to try to eliminate Y2K glitches, some will invariably fall through the cracks. But, as far as the Y22222222K bug affecting Waall Street or your baaank aaaccount, I certainly wouldn't worry. In faaact, I se lttl t jstfy wrryng vr th mtrr t ll. Trust meeee, nothin will go wrrng nxxt Jnry bcs chr\$ 01000001 01010000

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01001001
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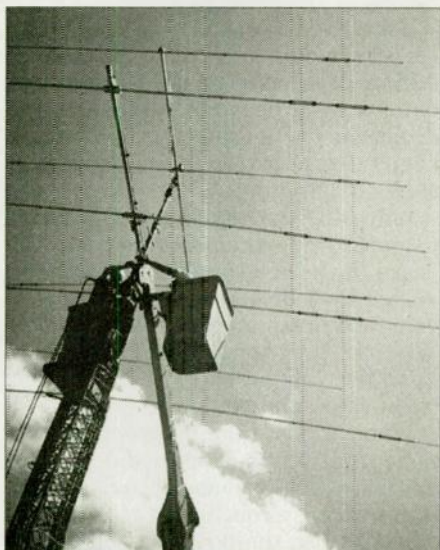
The 70-foot tower is actually a nesting crank-up style, made by Universal Tower, and it was raised using a crane onto the base, which had already been prepared by SARA club members. The crane operator, Dave Johnson, of Johnson & Son Crane Service, Chisago City, MN, donated the use of the equipment, which included a double bucket. This allowed SARA members Dave Glas, WØOXB, and Art Edlund, KAØZHZ, to place the Cushcraft tribander and WARC band beams in stacked position atop the tower without having to climb!

But I'm ahead of myself. I should have told you about SARA, the Stillwater Amateur Radio Association, a radio club affiliated with the Courage HANDI-HAM System. Stillwater is in Minnesota, right on the St. Croix River, the boundary between Minnesota and Wisconsin, but part of the rapidly-growing Twin Cities metropolitan area of Minneapolis and St. Paul. As radio clubs go, SARA is a youngster, only eight years old, but it serves the eastern Twin Cities metropolitan area, the St. Croix River Valley, and western Wisconsin.

The SARA shack at Courage St. Croix.

A club needs to define its purpose to be effective in providing service, and SARA members saw an opportunity in a liaison between their radio club and the Courage Center's HANDI-HAM System. Courage St. Croix, a rehabilitation facility in Stillwater, would provide both meeting space and a perfect antenna location at the top of Curve Crest hill. SARA would install an antenna and station, provided by HANDI-HAM donors, and support HANDI-HAM activities in the eastern Twin Cities.

Working together, club members made the station a reality; a Kenwood TS-440 equipped with voice readout for blind users is now on the air, feeding a set of beams on the Universal 70-foot tower. Wheelchair access is important,



Finishing up the tower installation.

so the station is not only designed to be easy to reach, it can move in its specially-designed cabinet, even out into the building's main foyer, for public demonstrations of Amateur Radio.

Because newcomers are the lifeblood of any activity, SARA sponsors Amateur Radio classes. Club members, lead by head instructor Tony Tretter, WØKVO, team-teach the popular classes as part of the local school district's Community Education program.

Realizing that communication is essential to maintaining activity, SARA supported and built a wide-area 2-meter repeater system that links club members to each other and promotes operation. The repeater is a platform for the club's weekly informal nets, allowing anyone with a Technician license or higher to participate in a fun social gathering, community service activities, emergency service, and more.

NØEDC starts the hole for the hard-line. Little did we know the wall would be poured solid concrete!

With so much available in my local club, why would I want to be "on my own" in Amateur Radio? Just a few short years ago, my club, SARA, didn't even exist, and now it's a full-service ARRL affiliated club with a mission to help the Courage HANDI-HAM System and the community, advance the radio art, and provide a fun and wholesome activity for its members! Being part of a radio club is an important part of Amateur Radio for me. So "club me." Please!

Up top: Dave Glas and Art Edlund. Others who worked on such things as wire-pulling, concrete drilling, go-ferring, finding stuff, putting parts together, and much more, were Stan Berkner, KAØJWH; Ed Distal, KØTTV; Orv Eriksen,

KØYEF; Ed Lawson, WØDIR; Mike Knox, WAØKKE; Dave Mangin, NØTXW; John Martin, KBØWRM; John McDonald, KBØSEF; Dave Schultz, KBØSED; Fred Schwartz, NØERF; Joe "The Big Cheese" Simonet, WØTBC; and Patrick Tice, WAØTDA.

This project provides a second major Amateur Radio station to the disabled community in the Twin Cities and Western Wisconsin. The station is accessible to persons using wheelchairs, and operators who are blind. This is a joint project of the Stillwater Amateur Radio Association, HANDI-HAMS, and generous donors who wish to share the hobby with others!

For more information about the Courage HANDI-HAM System or SARA, Contact Patrick Tice, WAØTDA, Courage HANDI-HAM System, 3915 Golden Valley Road, Golden Valley, MN 55422. E-mail: handiham@courage.org, or visit us on the WWW at: <http://www.mtn.org/handiham>.



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Cochise Amateur Radio Assn., (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. K7RDG/R 146.76(-) rptr. PL162.2. 5/99

Old Pueblo Radio Club, (OPRC). P.O. Box 42601, Tucson, AZ 85733. Meets 2nd Wed./monthly, 7:15 p.m., Tucson Med. Cntr., Grant & Beverly St. in the AZ Rm. of the Volunteer's Bldg. (1st bldg. on the left going north off Grant). 2/00

CALIFORNIA

Amateur Radio Club of Anderson, (ARCA). Meets 2nd Thurs./monthly, 7:30 p.m. Amer. Legion Post #746, 1709 Bruce Dr., Anderson, CA. Net every Tue., 7:30 p.m. on 146.64. http://www.snowcrest.net/bgorski/index.html 10/99

Beach Cities Wireless Society. P.O. Box 4016, San Clemente, CA 92674. Meets 2nd Thurs./monthly, 7:30 p.m., Ole Hansen Beach Club, 105 W. Avenida Pico, San Clemente. Rptr. 146.025(+). PL 110.9. 8/99

Coachella Valley ARC. Box 11092, Palm Desert, CA 92255-1092. Meets 2nd Wed./monthly, 6:30 p.m., Portola Com. Cntr., 45480 Portola, Palm Desert. Info: Bill Dews, (760) 346-8611. Net Thurs. 7 p.m. 146.025(+). PL 107.2. 5/99

Contra Costa Communications Club, Inc., WD6EZR/R. P.O. Box 20661, El Sobrante, CA 94820-0661. Meets 2nd Sun./monthly (except May & Dec.), 0630, Baker's Square Rest. in Richmond, CA. Info: E. Caine, KA6OFR, (707) 996-0962. 2/00

Downey Amateur Radio Club Inc., W6TOI. Meets 1st Thurs./monthly, 7:30 p.m., So. Middle School cafeteria, 12500 S. Birchdale, Downey, CA. VHF net W6GNS rptr. 146.175(+) Thurs., 7:30 p.m. 5/99

East Bay Amateur Radio Club, Inc. Meets 2nd Fri./monthly, 7:30 p.m., Albany Sr. Cntr., 846 Masonic Ave., Albany, CA. Info: S. Primbsch, (510) 741-8227. 145.11(-) MHz. 3/00

Fresno Amateur Radio Club. Meets 2nd Fri./monthly, 7:30 p.m., Emie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-). 11/99

Golden Triangle Amateur Radio Club. P.O. Box 1335, Wildomar, CA 92595. Meets 4th Mon./monthly, 7 p.m., Sharp Health Care, 25500 Med. Cntr. Dr., Murrieta, CA 92562. Rptr: KE6UES 146.805(-) PL 100. Info: Norb Dean, AD6F, (909) 767-0449. E-mail: norbjudy@pe.net 7/99

Livermore Amateur Radio Klub, (LARK). Meets 3rd Sat./monthly, 9:30 a.m., City Council Chamber, 3575 Pacific Ave., Livermore, CA. Net Mon. 1900 on 147.12(+). For info: LARK Secretary. P.O. Box 3190, Livermore, CA 94551-3190. (925) 373-1386. 2/00

Marin Amateur Radio Club (MARC). W6SG. Box 9456, San Rafael, CA 94912-9456. Meets 1st Fri./7:30 p.m., Kaiser Hosp., Bldg. 2, Terra Linda, CA. (except Dec.); Sun. a.m. Club at Alto Building, 27 Shell Road, Mill Valley. 9/99

Mount Diablo Amateur Radio Club. P.O. Box 23222, Pleasant Hill, CA 94523. Meets 3rd Fri./monthly, 8 p.m., Our Savior's Lutheran Church, 1035 Carol Lane, Lafayette, CA. Net Thurs. 7:30 p.m. on 147.06(+). PL 100Hz. Info: (510) 932-6125. 8/99

Nevada County ARC. Meets 2nd Mon./monthly, 7 p.m., Salvation Army Bldg., 10725 Alta St., Grass Valley, CA. Net Tues. 7 p.m. 147.015. Contact Linda Johnson, KE6HWE, lindausue@mail.telis.org (530)273-2008. 8/99

This month ... Western Reserve Radio Association, from Cleveland, OH, are winners of an MFJ Antenna Analyzer to share with its members. The club's name was selected at random from our "Visit Your Local Radio Club" listing.

Orange County Amateur Radio Club. Meets 3rd Fri./monthly, 7:30 p.m., Orange County Red Cross, 601 N. Golden Circle, Santa Ana, CA. Talk-in 146.550 (S). Contact Bud Barkhurst, WA6VPP, (714) 744-6361. WWW.W6ZE.ORG 2/00

Poinsettia ARC. Meets 1st Thurs./monthly, 7:30 p.m., First Christian Church, Telegraph Road. & Teloma Drive, Ventura, CA. For info: George Myers, KA6WZR, (805) 644-1131. 4/99

River City A.R.C.S. Meets 1st Tues./monthly, 7 p.m., SMUD Bldg., Don Julio at Elkhorn, Sacramento, CA. License classes offered. For info: (916) 483-3293. 9/99

Sacramento Amateur Radio Club. Meets 2nd Wed./monthly, 7 p.m. Sac. Blood Ctr., 32nd St. & Stockton Blvd., Sacramento, CA. Info net at noon on rptr. W6AK/R 146.91(-). Steve Cates, KC6TEV, (916) 391-7341 or Les Ballinger, WA6EQQ, (916) 393-4775. 2/00

Sacramento "Old Timers" Amateur Radio Society and Sacramento Valley Chapter #169 QCWA (Quarter Century Wireless Assn.). Meets 2nd Wed./monthly, 8 a.m., Lyon's Restaurant, El Camino Ave. & Watt Ave. For info contact Paul Wolf, W6RLP (916)489-8112. 12/99

Santa Clara County Amateur Radio Assoc., (SCCARA) W6UU & W6UU. P.O. Box 6, San Jose, CA 95103-0006. (408) 249-6909. Meets 2nd Mon./monthly, 7:30 p.m., Hewlett-Packard, Bldg., #48, 19483 Pruneridge Ave., Cupertino. Net all other Mon., 7:30 p.m. W6UU/R 146.385(+), 442.425(+). PL 107.2. 5/99

South Bay ARC. P.O. Box 536, Torrance, CA 90508. Meets 3rd Thurs./monthly, 7:30 p.m., Torrance Memorial Hosp., 3330 Lomita Blvd., Torrance, CA. Talk-in on WB6MYD rpt. 244.38(-). Info: (310) 328-0817. 8/99

Southern California Six Meter Club. P.O. Box 10441, Fullerton, CA 92635. USB Net Tue., 8:00p.m., 50.150. FM Rpt. Net Thurs., 7:30 p.m., 52.86/52.36 tx. FM Smpix, call freq. 50.300. Net Sun., 10 a.m. 50.40. 4/99

Southern Sierra ARS. Meets 2nd Thurs./monthly, 7 p.m., Veteran's Hall, 125 East F St., Tehachapi, CA. Contact: Caroline, KD6KMN, (805) 822-5995. 147.06(+), 224.42(-), 145.090(S) Packet. 1/00

Tri-County Amateur Radio Assoc. P.O. Box 75, Claremont, CA 91711-0075. Meets: 2nd Mon./monthly, 7:30 p.m., Covenant United Methodist Church, corner of Towne Ave. & San Bernardino Rd. in Pomona, CA. Info: Chuck, KQ6NX at kq6nx@juno.com or (909) 949-8145 3/00

Trinity Country ARC. P.O. Box 2283, Weaverville, CA 96093. Meets 2nd Wed./monthly, County School Adm. Bldg. in Weaverville, 7:30 p.m., Rptrs: WA6BXN 146.73(-) PL 85.4, W6HOR 146.925(-) PL 85.4. 11/99

United Radio Amateur Club, K6AA. L.A. Maritime Museum, Berth 84, Foot of 6th St. San Pedro, CA 90731. Meets 3rd Fri./monthly (except Dec.), 7:00 p.m. Monitors 145.52 Simplex 10 a.m.—5 p.m. 8/99

Vaca Valley Radio Club. Meets 2nd Wed./monthly, 7:30 p.m. (Board mtg., 7 p.m.) Vaca Fire Dist. Stn., Vine St. in Vacaville, CA. Rptr. WD6BUS 145.47(-) PL 127.3. Gerald Grossardt, (707) 447-0869. 5/99

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets 2nd Tues./monthly, 7:00 p.m., Presidio Recreation Cntr., 11100 Apple Valley Rd., Apple Valley, CA. Talk-in 146.94(-), PL 91.5. Net Sun. 7 p.m. 146.94(-). 2/00

West Coast Amateur Radio Club, (WCARC). P.O. Box 2617, Costa Mesa, CA 92628. Meets 3rd Thurs./monthly, 7 p.m., Fountain Valley Sch. Dist. office, 17210 Oak St., Fountain Valley, CA. 145.440(-) PL 136.5. For info: Jane, KD6ODV, (714) 531-6707 12/99

Westside Amateur Radio Club. P.O. Box 11092, Marina del Rey, CA 90295. Meets 4th Tues./monthly, 7:30 p.m., West Dist. Red Cross Bldg., 11355 Ohio Ave., W. Los Angeles, CA (VA Cntr. grounds). Net every Tues., 8 p.m. 146.67(-) except mtg. night. Website: http://www.qsl.net/wa6rc Voice mail: (310) 917-1100. 7/99

Willits Amateur Radio Society, (WARS). P.O. Box 73, Willits, CA 95490. Meets 4th Mon./monthly, 7 p.m., Brooktrails Fire Dept. 2 NW Willits http://www.zapcom.net/WARS Talk-in: 145.13(-), PL 103.5. 9/99

Yolo Amateur Radio Society. Meets 1st Tues./monthly, 7:30 p.m., Denny's Restaurant, 4120 Chiles Rd., Davis, CA. Contact Dave Nishikawa, KC6YFG, (916) 756-6375/Talk-in 144.430. 12/99

Yuba-Sutter Amateur Radio Club, (YSARC). P.O. Box 1169, Yuba City, CA 95992. Meets 2nd Thurs./monthly, 7 p.m. Location announced at Mon. net, 7 p.m. on 146.085. 3/00

COLORADO

Bolder Amateur Radio Club (BARC). Meets 3rd Tues./monthly, 7:30 p.m., NIST Bldg., 325 So. Broadway, Rm 1107, Boulder, CO. Talk-in: 146.70(-) & 100Hz CTCSS. Info: (303) 380-6540, e-mail: BARC@pobox.com or www.thisistrue.com/barc.html 8/99

CONNECTICUT

Western CT. DX Club. Meets 1st Tues./monthly, 8 p.m., Brookfield Com. Cntr. (on Pocono Rd. across from Brookfield P.O.) Info: contact Victor at: victoras@EROLS.com 8/99

FLORIDA

Gulf Coast ARC. P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., Marchman Tech. Ed. Cntr., 7825 Campus Dr., Bldg. C, Rm C122, New Port Richey, WA4GDN rpters. 146.67(-) & 145.33(-), serving all of Pasco County. 11/99

Indian River ARC, Inc., (IRARC). P.O. Box 579, Cocoa, FL 32926-0579. Meets 1st Thurs./monthly, 7:30 p.m., Community Church of the Nazarene, 400 Crockett Blvd., Merritt Island, FL. 4/99

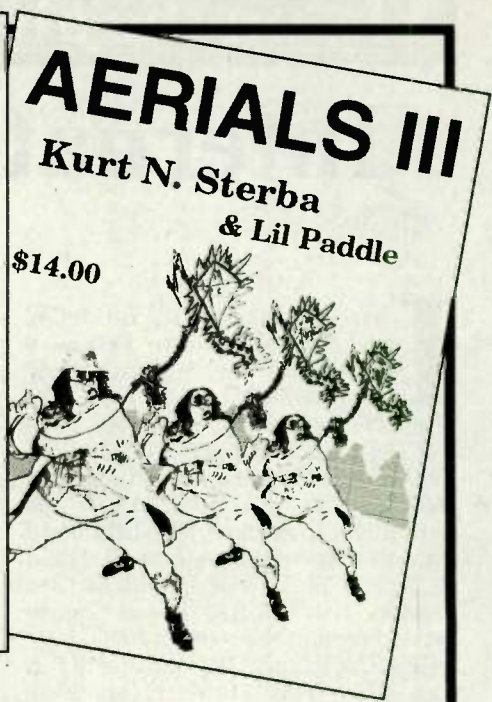
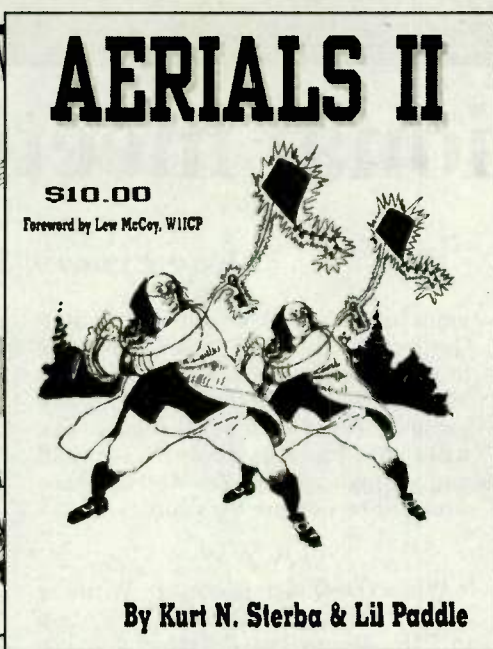
South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tue./monthly, 7 p.m., Public Library, 540 Fee Ave., Melbourne, FL. 12/99

Vero Beach ARC, W4OT. P.O. Box 2082, Vero Beach, FL 32961. Meets 2nd Thurs./monthly, 7:30 p.m., Emerg. Mgmt., Indian River County Adm. Bldg., 1840 25th St. Net Mon., 7:30 p.m. 146.64. 3/00

GEORGIA

Cherokee Capital ARS. Meets 2nd Tue./monthly, 7 p.m., Ashworth Middle School, Calhoun, GA. 146.805(+). Info: Felton Floyd, AF4DN, (706) 629-0369. 12/99

Dalton Amateur Radio Club, Inc., (DARC). P.O. Box 143, Dalton, GA 30722-0143. Meets 4th Mon./monthly, 7:30 p.m., Magistrate Court Bldg., corner of Waugh St. & Thornton Ave., Dalton, GA. Info: Harold Jones, N4OTC, 706/673-2291. 4/99



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International meeting



Kay Eyman, WAØWOF

Contests

I hope you enjoyed the YL-OM CW and SSB contests in February and that all YLs are getting ready for the DX-YL to NA-YL contest. The CW portion will run from 1400 UTC, 16 April, until 0200 UTC, 18 April 1999, and the SSB portion will run from 1400 UTC, 23 April, to 0200 UTC, 25 April 1999. Logs must be postmarked within 30 days of the contest and should be sent to YLRL Vice-President Cleo Bracket, KØJFO, 810 Towne Square Drive, Fremont, NE 68025-7000.

CLARA's Family HF Contest will run from 1700 UTC, 16 March, to 1700 UTC, 17 March. Both CW and phone contacts will count for points. Logs go to Contest Manager Audrey Hughes, VE1PK, 28 Carriageway Court, P. O. Box 134, Wolfville, N.S. Canada BØP 1XØ.

YL Meetings

A YLRL Forum will be held at the Dayton Hamvention on Friday, 14 May 1999, at 1:00 p.m. President Nancy Rabel Hall, KC4IYD, will be there to talk about current events in YLRL and to answer questions. All YLs are cordially invited to attend. The rooms have not yet been assigned but just check the program listings or stop by the joint Buckeye Belle/YLRL table and ask for directions.

Martha Barron, KA6TYO, is organizing the YLRL Convention that will be held 30 July-01 August on the Queen Mary, in Long Beach, California. It looks like there's going to be a very large crowd. Martha reports there are plans for a trip to Universal Studios and a water taxi ride to the new aquarium. A tour of the Russian submarine, which is next to the Queen Mary, will be an option. In addition, over 50 OMs are expected and they'll visit the TRW Swap Meet on Saturday morning. After the meeting, there are two cruises available, one for four nights and one for seven nights.

One of the attendees will be Biny Owen, ZL2AZY, who is one of the organizers for the International YL 2000 meeting, which will be held 29 September-01 October 2000, in New Zealand. The meeting will be held in Hamilton, about an hour's drive south from Auckland International Airport. The

main functions will be at the Hamilton Gardens Pavilion and there will be trips to scenic areas, including the famous Waitomo Caves. Accommodations are being reserved at several hotels. YLs will also be hosting visitors in Hamilton and throughout New Zealand for those who will be touring the country.

QCWW

When the Quarter Century Wireless Women met at the QCWA Convention in Palm Desert last fall, they voted to change the rules for their certificate. Now you only need to work five QCWW members instead of twenty. Paul Gerbracht, W3QPP, is the new NCS for the QCWW net, which meets at 1900 UTC, on 14.288 MHz, each Tuesday. 1999 will be the 20th anniversary of QCWW and President Blanche Randles, W4GXZ, would like to hear from you if you have any ideas on how to mark this special occasion.

Updates

YLRL is planning a memorial scholarship to honor Mary Lou Brown, NM7N, in 2000. This will be in addition to the Ethel Smith-K4LMB Memorial Scholarship so YLRL will now offer two scholarships each year. Marte Wessel, KØEPE, has been appointed Scholarship Treasurer and all donations for either scholarship fund will go to her. Marte is also working to build up the scholarship funds though a cash prize drawing at the YLRL Convention this summer. You can send donations or order tickets from her by writing to her at R. R. 1, Box 73, Liberal, KS 67901 or you can e-mail her at kØepe@rocketmail.com for further information.

Congratulations to Lia Zwack, WA2NFY! She has finally worked the last of the 26 Swiss cantons to earn the Helvetia-26 Award. She started in 1976

but couldn't contact Glarus, that last elusive canton, which is located in a little valley, surrounded by mountains. Finally on 30 November 1998, she had a sked with Hans Nef, HB9CEI, who got up at 4:00 a.m. local time to give her the contact. Lia was born in Switzerland and earning the award was a big thrill. Now she is turning her attention back to YL-DXCC.

Veronica Della Dora, IK3ZAW, and Martin Rizzi, IK3RIY, operated from Tripoli, as 5A1IC, from 29 December-02 January. About 3,000 contacts were made on CW and a few on SSB. QSLs go to Veronica at Piazza Fiume 14, I-30126 Lido di Venezia-VE, Italy.

BYLARA's new club call is MØBYL. The net controls for BYLARA nets use it to call the nets and it's also used for special events. BYLARA members will be celebrating their 21st anniversary next year and one of the special events marking the milestone is to activate Les Minquieres, south of Jersey in July 2000.

Congratulations to the new CLARA officers who have just begun their terms. Minnie Dawe, VE3DBQ, is President; Audrey Hughes, VE1PK, is Vice-President, Jeanne Gordon, VA3WX, is Secretary, and Kate Anderson, VE1VAO, is Treasurer and Database Manager. If you join in CLARA's Family HF Contest on 16-17 March you'll probably hear these YLs.

Congratulations also go to YLRL President Nancy Rabel Hall, KC4IYD, and her husband Steve, W8HF, who are the proud parents of a baby girl. Carol Stephanie Hall was born on 20 December 1998, and Nancy is being given a lot of credit for going far beyond the call of duty to recruit for YLRL. That's really getting new members the hard way!

Two YLs, Helen Archibald, VE2YAK, and Shelley MacDougall, VE1NOS, and six OMs from the West Island Amateur Radio Association in Montreal will activate St. Paul Island (IOTA NA-94 and Canadian Island NS-002), on 21-28 July 1999. Using CW9CWI, they will compete in the IOTA contest on 24-25 July and will also give DXCC contacts on as many bands as possible. QSLs go to VE2CWI, P. O. Box 884, Dorval, Quebec, Canada, H9R 4Z6. For YL confirmation, mark "YL" in large letters that

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YLs on the air



Dave Larsen, KK4WW, and his wife Gaynell, formerly KD4GMV and now KK4WW, at the DX dinner at Dayton. Dave is Executive Director and Gaynell is Vice-Director of the Foundation for Amateur International Radio Service (FAIRS), an organization dedicated to building global friendships between people and nations.

cannot be overlooked on the QSL card. Remember that U.S. postage is not valid in Canadian post offices.

I have been writing this column for seven years and while it's been a great pleasure to present the information and to hear from so many of you, I think it's probably time for a change and for someone with fresh ideas to take over. This will be my last column and I'd like to thank both the staff of *Worldradio* and all of you who have made the past seven years so enjoyable.

In closing, I ran across this poem in *sYLver sparks*, the QCWW newsletter, which was first published in the ALARA Newsletter, in October 1998, that I'd like to share with you.

MY GRANNY

I have a little granny, who's really very old,

But also unconventional in a most unusual mold.

She doesn't wear her spectacles perched on her nose.

She's into contact lenses and varnishes her toes.

Unlike some other grannies who are home before it's dark,

She's dressed up in a tracksuit and out jogging in the park.

And when I wish she'd sometimes stay and tuck me into bed,

She's off to yoga classes and standing on her head.

Some grannies sit in rocking chairs with a rug wrapped 'round their back.

Mine sits and calls "CQ DX" in her little radio shack.

She goes in radio contests, twiddling knobs until the dawn,

And gets so keen and interested she doesn't even yawn.

She goes on day trips with her gang — the over fifties club.

They rocket 'round the countryside and end up in the pub.

And on the homeward journey like a flock of singing birds,

They harmonize old favorites with very naughty words!

I love my little granny.

I think she's really great.

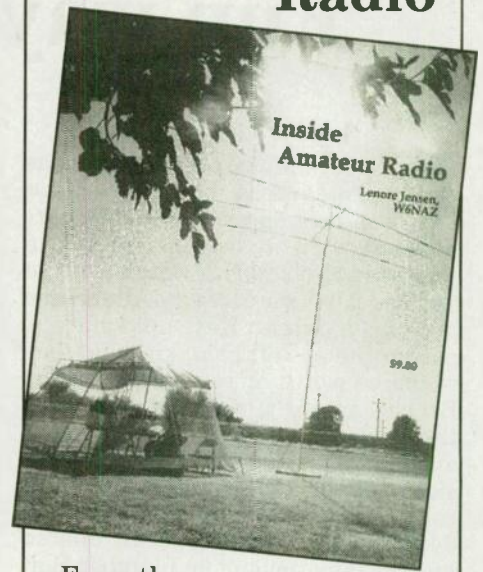
If that's what growing old is like...

I simply cannot wait!

33/73/88 to all and I hope to hear you on the air! — *Kay Eyman, WA0WOF, can be reached at: 29048 SE 1200 Road, Garnett, KS 66032 or via email at: wa0wof@paola-online.net.*

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Fun ways to learn CW

Nancy Kott, WZ8C



Every Morse code operator has a favorite key, but do you have one you wouldn't part with at any price? Steve Nurkiewicz, N2DAN, created a set of paddles called the Mercury. After Steve became a Silent Key, an amateur bought the two of them, knowing they would be worth more someday. When Bencher recently bought the rights to the Mercury, he decided to sell one at auction before Bencher made their version available to the public. A new key collector snapped it up for a top bid of \$4,999 and another collector offered him the same amount for his other Mercury!

That made me think about my own key collection, particularly my Mercury. Would I sell it for five thousand dollars? That's a lot of money. It would pay for a new tower, new rig, diamond bracelet ... I can just about hear Steve laughing and saying, "take the money and run, ya dummy." But I don't think I could sell it. Steve was a friend of mine and the sentimental value is something you can't put a price tag on.

Wondering if I was alone in this "sentimental value" opinion, I asked a few people the same question: Is there a key you wouldn't sell or wished you hadn't sold? Here are some of the answers I received.

Glen Reid, K5FX/MOBGF, writes: "Unfortunately, the key I would not part with today is the one I did part with many years ago. It was a beautiful, shiny, Vibroplex Presentation model. Gleaming gold plated top on the base with bright red handles, the wedge and the black wood storage box. All the bells and most of the whistles.

"I traded it away for something that youth made me think I needed more. Funny, I can't quite remember what that something was. I have been able to trace it through the second and third owners, but lost the trail there. After all these years, I am still attached to that bug and I don't even know who owns it. Whoever it is — I hope they are treating it well and appreciate what they have."

Your sentimental favorite need not be the most valuable key in your collection. Bill Norton, W8FYO, has an FYO key by Joe Hills. Bill is committed to the preservation of the heritage of the FYO,

which is the last major key design in history. But despite the historical interest value of his FYO, his sentimental favorite is a 1926 Vibroplex No. 4 (later known as the Blue Racer). This bug was owned by Don Ream, W8OG. Don used this bug in his job as Western Union telegraph operator in Springfield, Ohio, and later on amateur bands. He was licensed in 1924 and handled thousands of wartime welfare messages as a MARS operator and CW traffic handler. According to those who knew him, Don was a person who could make you laugh and appreciate life as he did.

Bill says, "The key is not a museum piece. Don had carefully painted his initials on one corner of the base. The gold leaf is worn where his fingers rubbed the base. The knobs so clearly show years of contact with his fingers that one can picture how he held his hand when he made the key sing. Don could make it really sing, just how fast no one seems to know, but he earned a 35 WPM code proficiency certificate in 1940. Oh, to know what stories of world events and personal emotion that passed through the contacts of that instrument.

"Although I've had the key for a few years and had it connected idle to the rig a couple of times, it seems that the best way I can honor it and its former owner is to fire it up on Field Day when it can again sing out 'de W8OG.'"

I asked my mother, Irene Kott W08E, what her favorite key was and whether she'd sell it. I knew she'd say it was my father's Junker. It's an interesting key, especially when you compare it to U.S. military keys of the same era. Irene says about the Junker, "I have a German Junker key which was made before WWII. It was 'liberated' when my husband's unit overran an enemy communication center.

"The key has 1/8" silver contacts whose spacing is adjusted by a 3/4" inch diameter, calibrated knob using a fine 'click' mechanism that requires no locking. Different operators may quickly set (or reset) it to their favorite spacing in seconds. Spring tension is easily adjusted by a 1/2" diameter knob that operates a lever mechanism to vary the spring tension. The operation is smooth and also requires no locking. The key is mounted on a light metal base which,

although readily movable, feels solid as a rock. The feel of the key is superior to any other key I have ever tried. I love it.

"I own a Bencher chrome-plated, iambic paddle which I would instantly sell if someone offered me twice the amount I paid for it. But, no matter what the price, I think if I ever sold my Junker I would regret it every time I sat down at my rig." She's right that she'd regret it, because I would never let her hear the end of it if she sold it!

Many of the amateurs voted for keys which have ties back to their Elmers. Chuck Carter, AAØRI, has a Les Logan 500 with a T-top frame that belonged to his Elmer, Cliff Simpson, WØYOQ, now a Silent Key. Cliff was licensed in the 1920s. Chuck used to tease him by introducing him as an amateur who predated Marconi. Chuck says he tried the key on the air for a while but the dit contact was too scratchy and it would only sound good for a few minutes after cleaning. It's in a cabinet with about 30 other old bugs and straight keys that he displays at home. The key is priceless to him because it stands as a trophy of respect to a Ham who had much to give to his country and fellow amateurs.

Scott Howell, N3BYY, started a very nice CW Elmering tradition with his first key. He gave it to an amateur who was having money troubles and could not afford a key. Scott told him that, once he got a better key, to pass it on to someone else who needed one. Who knows, because of his sharing, maybe Scott's key has turned out to be someone else's sentimental favorite!

A story from Steve Fried, K2PTS, illustrates that a paddle can be more than just a piece of machinery: "In 1962, I was sent to cover the Dayton Hamvention for my employer, Hammarlund Manufacturing. While at the convention, I met Mr. J.A. Hills, W8FYO, maker of the now famous FYO keyer paddle. I was so impressed with his new design that I bought the key on the spot. I still have that keyer paddle and would never part with it. It represents my youth, my Dayton Hamvention trip, and my employment with Hammarlund — all rolled up in one paddle! What memories it brings! I still collect bugs, keyers, paddles, and

Positively CW

things telegraphic but the FYO keyer paddle holds special memories for me."

Al Tanner, W8FAX, has a favorite key; a sideswiper. An old railroad telegrapher gave him when he was 16. Al says, "It is kind of rough, and I don't have the first idea who made it because it was well used when I got it. I don't use it because I have a problem switching back and forth between paddles and a sideswiper. It took me long enough to get over the sideswiper 'swing' when I started on paddles. I now use the straight key or Kent paddle depending on speed. However, the sideswiper still retains a nostalgic memory of a friend and of times long gone by. I sometimes wonder what some of the old hands would say if they could see all the fighting and craziness going on."

My favorite thing about my old keys is to think about the operators who used them before they came into my care. I particularly enjoy my military bug collection. Just thinking about the young

men who used them to serve their country, putting their lives on the line to send Morse messages, gives me goosebumps. My most treasured keys come from friends, some of whom are now Silent Keys. Knowing that they wanted me to have their key means more to me than any money I could get from selling the key. I hope that when it comes time to dismantle my shack and pass along my collection to the next generation, there will be someone who will cherish it as much as I do.

If you have a Morse related story you'd like to share, I'd love to hear it. My address is: Nancy Kott, P.O. Box 47, Hadley, MI 48440. If you're coming to Dayton, I hope to see you there! I'll be at the FISTS CW Club booth. Feel free to stop by the *Worldradio* booth and let them know you read Positively CW.

— Nancy Kott, WZ8C, can be reached at: P.O. Box 47, Hadley, MI 48440-0047 or via email at: nancy@tir.com.

Inside Amateur Radio

The following story has been excerpted from *Inside Amateur Radio*, by the late Lenore Jensen, W6NAZ. The book can be purchased from *Worldradio Books*, P.O. Box 189490, Sacramento, CA 95818. Price is \$9.00 plus \$2.00 shipping and handling. CA residents please add 70¢ sales tax.

Hello, friend

The sight of a ham-type antenna coming from a house used to be an invitation for another Ham to knock at the front door and be assured of an invitation to come in and see the radio shack. And many a curious youngster would receive the same friendly welcome to a new hobby.

In those carefree days, doors were rarely locked. And the presentation of a QSL card souvenir at the end of the visit was standard.

Mick McDaniel, W7FGE, had been reared in this tradition. He explains what happened in 1945.

"During the late winter months, I was a member of the U.S. Occupation Forces stationed in Japan. One day, while on liberty, I was sight-seeing in Kamakura, a type of resort town near Tokyo. Passing a photographer's shop, I noticed a QSL card in the window display. Old habits die hard.

"Although the shop was not open for business, persistent knocking on the shop door finally produced results. A middle-aged Japanese man opened the door and said something in Japanese, which I would like to believe was 'what

can I do for you?' At least, I hoped so — the big one had been over only a few months!

"I pointed to the QSL and then to myself saying, 'W7FGE!'

"Big silver smile! Instant international communication! He had a bit of English, enough to invite me to 'visit the shack.' Shoes off and inside to the second story of the shop where he proudly showed me the remains of his Ham station. It was a breadboard homemade rig with copper tubing coil. No receiver at all, however. He explained that during the war, the 'officials' had cut his transmitter coil in two and removed the wire out to the antenna.

"True to form, at the end of my visit, he presented me with his QSL card. Since then, I had often wondered if he were still around. After my story was printed in *Worldradio*, a Japanese Ham wrote that J1EE did return to the air, as JR1LDR, in 1970 but became a 'silent key' in 1983."

Mick treasures that QSL card as evidence that call letters can produce instant friendship.

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Super portable HF setup

Mike Greenfield, N9JIY

I really don't want this to sound like a commercial, but several off-the-shelf items came together in my shack to make a super portable HF setup. I run it on 40 Meters CW only, but it should work for other bands and modes.

The key to the setup is shown in photograph number one. It shows the antenna with supports and consists of an Isotron antenna for 40 Meters. I prepared it for bouncing around in the back of my truck by replacing all the nuts and bolts with self-locking stainless steel nuts, or by adding lock washers, where replacement of the original hardware couldn't be done.

The mast is 1 1/4-inch outside diameter TV antenna mast sections, 5 feet in

length and available from Radio Shack. I can raise the antenna with three sections with no additional help required. The bottom of the PVC pipe on the antenna has saw kerfs cut in it, and a screw-type hose clamp anchors it to the top mast sections. One word of caution. Where the sections join together, wire



Photo 2: Baseplate anchored in place by my truck.

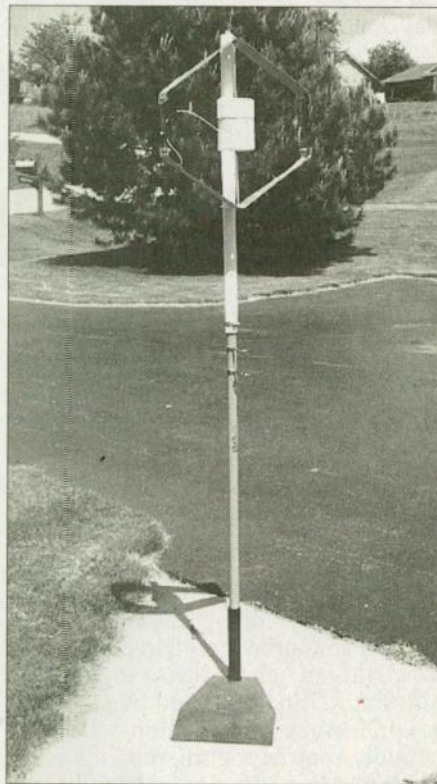


Photo 1: The antenna setup using one section of mast.

brush the paint off of the section that goes inside another section. If you don't, it will be very difficult to separate the mast sections.

The base plate was made at a local welding shop. I used 3/8-inch flat steel.



Photo 3: At 15 feet, ready to operate.

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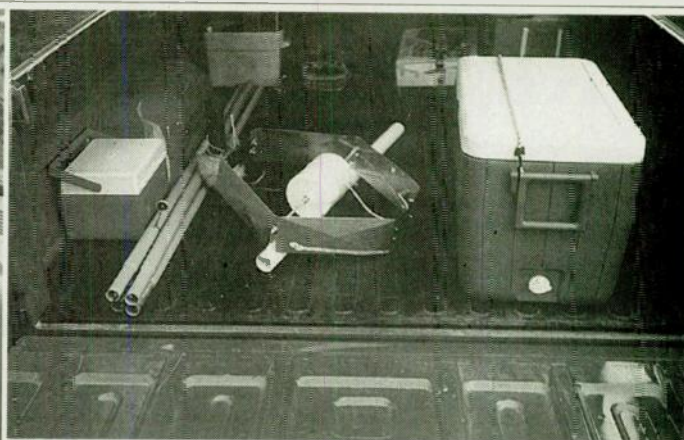
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Left: photo 4: Ten-Tec Scout on top of the dash. Above: Photo 5: All gear stowed for travel.

The tube is 10 inches of 1 1/4-inch schedule 80 heavy-wall steel pipe, high-strength welded to the plate. Photograph number two shows how this is

put together. When I park my truck on it, it's not going anywhere.

The whole assembly is shown in photograph number three. The coax from

the antenna is taped to a TV twin-lead bracket (also from Radio Shack) for strain relief, wrapped around the mast, and then run into the cab through a window. Guy lines would be a good idea, but so far I have never had to use any.

Inside the truck (photograph four), the coax runs directly to my Ten-Tec Scout. A tuner is not needed for the CW portion of 40 Meters. The cigarette lighter powers the Scout at 40 watts. Keying is done with a little Te-Ne-Key. Rather than use the leg strap, I hold the key in one hand and key with the other, and then put the key on top of the dash.

The last photograph shows all of the parts stowed for traveling. Loose items are packed in a plastic box. This box, the radio, and extra antenna (inverted V) and a tuner for the other bands are packed in plastic foam inside the big cooler. The small cooler contains lunch. From back-of-the-truck to on-the-air is under 15 minutes.

Product Review

The QRZ Amateur Directory

One of the modern conveniences available to Amateur Radio operators today is a callsign database on a CD-ROM. After all, one of the most desired pieces of equipment in most shacks today is a computer. But, all callsign database CD's are the same, right? WRONG!

QRZ now has the World Radio Amateur Radio Directory available. What sets this CD apart from the rest is the vast array of features available for the user. This CD has over 1 million callsigns from all over the world just like the others. It also has 2,500 personal biographies, 2,700 digital images and over 125,000 e-mail address.

What really makes this CD interesting is the ability to search for information in several different fields. It contains a search engine containing over 12 million keywords. You can search for an entry by name, town, street address, state, country, zip code and more. Want to find all the amateurs with the first name of Rick in California? Yes, it will give you a list.

So there you are, in a QSO, you have brought up my name in the database, but you didn't know I was the editor of your favorite magazine. You could fill out a slip of paper and make a note of it, or you could put one of those sticky notes on your monitor, but why do that?

With this CD, you can ADD any information you want to an entry! With the WRAD Notes function you can update any entry with information not included in the database.

The World Radio Amateur Radio Directory is brought to you by the fine folks at QRZ, and makes a valuable addition to any shack. It's available exclusively from Duane Heise, AA6EE, 16832 Whirlwind Lane, Ramona, CA 92065. Need more information? Duane can be reached at: 619/789-3674 or by e-mail at: DDHEISE@aol.com. — Rick McCusker, WF60

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QRP ramblings, in bits and pieces

Hard to believe this month begins the seventh year of our monthly visits in the *Worldradio* QRP column. It has been great fun and most gratifying. Thanks for the memories.

The August 1998 edition of the Northern California QRP Club's quarterly journal *QRP* is devoted entirely to the Internet Mail Group QRP-L's "Elmer 101" construction and teaching series. Participants in the web-based classroom purchased an SW-40+ transceiver kit from Dave Benson's Small Wonders Labs and then were treated to an explanation of the circuit's theory of operation and step-by-step construction hints courtesy of technical experts on QRP-L. It was truly a textbook experience, and NorCal's Doug Hendricks, KI6DS, by compiling all of the postings from "Elmer 101" in *QRP* has done a tremendous service to the QRP community in reprinting them in NorCal's journal.

Was there good QRP karma in January, or what? Two of the year's most eagerly awaited kits — the Elecraft K2 multi-band/dual mode transceiver kit and NorCal's groundbreaking 20-meter CW transceiver, the NC-20, were shipped to anxious purchasers within one day of each other late in the month.

I'll have a complete rundown on the NC-20 in an upcoming column. If you're one of the lucky bunch to build the first of the Elecraft K2s, I'd like to hear your assessments and comments about the rig: how it went together; your impressions of its operation; was it worth the wait and its price?

In the January *Worldradio* QRP column we offered an invitation to QRPers to send us their QSL cards proudly touting the virtues and joys of QRP. Many have arrived, and we'll be featuring them from time to time. This month's is from Gary Cochrell, K5ON/QRP from Tijeras, NM. The 'paper cup telephone' is Gary's idea, and he says the card was

designed on his computer. "I then print the QSLs as I need them," he writes. If you've got a QSL to submit, please do so at the U.S. Postal Service address accompanying this column. Some of the QSLs on deck for future columns include cards from: John Harper, K6KSR; Tom Palmer, N1TP; and John Mikuckis, K3CHP. Keep 'em coming. This is really good stuff.

The Rev. George Dobbs, G3RJV, editor of the QRP Club of Great Britain's quarterly journal *SPRAT*, will be on sabbatical from St. Aidan's Vicarage from 06 May to 08 July. "It will be most helpful if members refrain from writing me or sending e-mails over this period," he writes. The Rev. Dobbs will be on study leave to the U.S. Speaking of *SPRAT*, Chris Page, G4BUE, of West Sussex, England, has conducted the journal's "Members' News" for many years, and is to be congratulated for developing his column into a class without peer. If you'd like to read about QRPers' activities from around the world in a lively, interesting format, make a point to pick up *SPRAT* sometime soon. Nobody does it better.

The New Jersey QRP Club has the low power community buzzing with its 'Jersey Fireball 40' 40-milliwatt transmitter kit. It's just \$10, and the builder gets all the parts and printed circuit board for a CW transmitter that can be built for either 10, 20, 40 or 80 Meters. The board also has traces for adding an Embedded Research TiCK keyer and an RF power amplifier to boost output to about one watt. For complete information, visit the club's web site: www.njqrp.org/fireball40/.

The changes keep coming at QRP Amateur Radio Club International. Adding to the roller coaster ride on the board of directors and the staff of the club's journal *QRP Quarterly*, QRP ARCI treasurer Ken Evans, W4DU, has announced his resignation. Outside interests and a burgeoning treasury were cited as his reasons for leaving. Evans recommends that his successor be a certified public accountant or someone with a number-crunching background, as well as someone versed in the intricacies of filing necessary paperwork with the U.S. government.

NorCal QRP Club leader Doug Hendricks, KI6DS, was on the agenda at the Ft. Smith Hamfest in Arkansas, at the invitation of Jay Bromley, W5JAY, and the Arkansas QRP Club. Hendricks promised to carry along one of the new NC-20 transceiver kits to raffle.

The "Four Days in May" QRP symposium at the Dayton Hamvention will feature papers from several of QRP's luminaries: "Vertical Antenna Design," L.B. Cebik, W4RNL; "Constructing QRP Equipment," Dick Pascoe, G3BPS; "DSP-Based Coherent CW Transceiver," George Heron, N2APB; "QRP Construction Tools and Tricks," the Rev. George Dobbs, G3RJV; "Mixer Madness," Clark Fishman, WA2UNN; "PIC-based SWR Bridge/Tuner," Joe Everhart, N2CX; and "Distortion Demystified," Dave Benson, NN1G.

If you've found yourself on a feverish pace for QRP contacts in '99 you may want to go after the Arkansas QRP Club Millennium Challenge Award. Verify 2,000 QRP contacts between 01 Janu-

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ary 1999 and 05 January 2000 and you're a qualifier. Only the operator chasing the award needs to be QRP. All modes are acceptable. For a complete rundown on the challenge, visit: www.tir.com/~k8dd/.

The outdoor and QRP-oriented Adventure Radio Society's membership has eclipsed 500, with members in 44 states and many foreign countries. The organization's web site and monthly magazine, *The ARS Sojourner*, can be found at: www.natworld.com/ars. Long-time QRPer Jon Iza, EA2SN, of the University of Basque Country, is a frequent contributor to *Radioaficionados*, the Spanish equivalent of *QST* magazine. He also generously translates U.S. QRP kit construction manuals into Spanish — a selfless and thoughtful pursuit for a most dedicated low power enthusiast.

Don't miss this month's QRP ARCI Spring QSO Party, 10-11 April, sponsored by QRP Amateur Radio Club International. It's a great opportunity to make lots of QRP-to-QRP contacts across the HF spectrum, test new QRP gear and antennae, and renew old acquaintances. Visit the club's web site at: www.qrparci.org.

Avid QRP operator and builder Bill Jones, KD7S, of Sanger, CA, is heading a very interesting project on the Internet Mail Group QRP-L. Through his expertise and that of several other designers and QRPer on the web, Jones is developing the MINI-L, a minimalist QRP transceiver. "Initial

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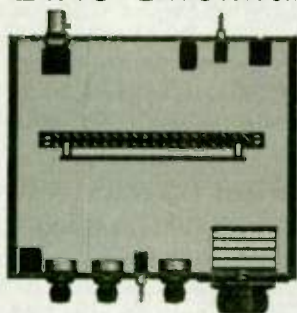
CALL ALL QRP QSLs: A paper cup-and-string telephone is an eye-catching image on the QSL card of avid QRPer Gary Cochrell, K5ON, who operates from Tijeras, NM. He's one of many low power operators who fly the QRP colors on their cards. If yours spreads the good word about QRP, please drop us a copy for display in an upcoming column.

performance is expected to be somewhat better than the Forty-9er and Pixie II (transceivers), but still no barn burner," he announced on QRP-L. "However, modules can be built to add features and flexibility." It will be VFO-controlled with the tuning range set by the builder. And, by the way, the finished design won't fit in an Altoids tin, Jones warns. When the design is re-

leased, we all happily begin to build.

Over the years has there been a more prolific QRP writer than C.F. "Rock" Rockey, W9SCH? In the September '98 edition of the Michigan QRP Club's quarterly journal *The 5-Watter*, Rockey has three articles: "Who Says That You Must Have High Power to Work DX?," "Where, Oh Where Has the Ether Gone," and "How About Some Loop Lore?" As a frequent contributor to many QRP journals, he has truly enriched our niche in the diverse field of Amateur Radio. — Richard Fisher, KI6SN, can be reached at: 1940 Wetherly Way, Riverside, CA 92506 or via e-mail: KI6SN@aol.com.

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10-10 Computer program update

Chuck Imsande, W6YLJ
10-10 19636



Jim Hardy, K4HAV, #17605, author of the official 10-10 Contest and County Hunter Program, has announced another program feature has been added. The addition of a Daily Log feature now provides a method of recording all of your 10-10 contacts. It is an optional feature that may not serve everyone's purpose, but is being included for those who have a need for a general-purpose 10-10 logging program. This new feature was added to Win1010 Version 1.3 in late January. The program, written for use with Windows 95 and 98 basically consists of two modules. WIN1010 is a complete 10-10 contest logging program, and the other module, WIN1010CH, is a complete logging program for tracking your 10-10 County Award information. The new Daily Logging feature can be used by either of the modules.

The logging program is designed to store 20,000 records (or contacts). All records are stored in memory while the program is in operation. Included is a feature that permits up to a 30 digit message in a Misc. Info field to add personal information about the contact or the 10-10 member. During the entry of the log record, the County Hunter data file is searched and a beep message is displayed if the station is a new 10-10 number, prefix, county or DX country. The respective index files are automatically updated if it is a new contact for any of the noted awards. A complete HELP file is also included. The program also provides for printouts of log data.

Jim says now that the Daily Log fea-

ture is complete, his next addition is the adding of a program to record and maintain Chapter information and records to be known as the Certificate Chasers module. If you would like to see more information about the above official programs, you can visit the following web site: <http://hds.net> or you can e-mail Jim at: jhardy@surfsouth.com

1999 10-10 Convention

Final arrangements for the 1999 10-10 Convention have been announced by Jim Whittlesey, KC4RHW #57051. This 7th Biennial Convention will be held 11-13 June 1999, at the Garden Plaza Hotel in Oak Ridge, TN. There will be Chapter tables, and a full day of Forums. The Forums include briefings by Ten-Tec, ARRL, 10-Meter mobile antennas, 10-Meter DX-ing, computer networking and servicing, and a session on How to Present 10-10.

The Board of Directors will hold their annual meeting during the convention, and a time has been scheduled for a question and answer session at the conclusion of the forums with the board. There are scheduled events for both Friday and Saturday for the ladies. Two full days of activities will provide the ladies with lots of activities. There will be a hospitality room open on Friday evening so all attendees can become better acquainted. A great banquet is scheduled for Saturday evening with prizes and the auction with the famous auctioneer Col. Ed Redwine, K5ERJ, #11843. Ed will perform his usual duties in auctioning off the many prizes

and keeping the gang in stitches with his auctioneer talents.

A Kenwood TS-50 will be the pre-registration prize for those registering prior to 24 May 1999. The grand prize at the banquet will be a Yaesu FT-840. Pre-registration may be made by contacting Tom Henderson, K4CIH, #33233, 4901 15th Place East, Tuscaloosa, AL 35404-4522. A pre-registration form is available for download at the 10-10 web site at: ten-ten.org. Hotel reservations may be made by contacting the Garden Plaza Hotel through their Memphis TN reservation center at 800/342-7336. Tell them your reservations are for the 10-10 Convention at the Garden Plaza Hotel in Oak Ridge.

We hope to see you all there as this is the last 10-10 Convention of this century!

New 10-10 NEWS Editor

We welcome our new 10-10 *International News* Editor, Steve Rasmussen, KBØWHY, #68684. Steve published his first News in January 1999 and has given the official 10-10 publication a "new look." Steve has a long background in computer graphics and works in the printing industry. He was trained in several areas of the graphic arts industry BC (before computers) and got interested in desktop publishing and put his C64 Commodore to good use designing church bulletins and Christmas cards. We welcome Steve to the group of volunteers that make 10-10 the great organization that it is, and look forward to Steve's continued effort to improve the *News*.

Silent Key

Hal Carter, KA1VFN, #56519, became a SK in late January. Hal was the CM of the Sam Clemens and King Arthur's Court Chapters. He was a longtime member and supporter of 10-10 and will be missed by his 10-10 friends.

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10-10 Chapters

Here are two 10-10 chapters that are very active and invite you to check into their weekly nets. The Air Capital Chapter holds their net meeting on Sundays at 2103Z on 28.775 MHz. The Lilac City Chapter calls their net to order at 1800Z every Saturday.

Listen for these chapters and if band conditions favor propagation to your area, check in and meet the members of these active 10-10 chapters.

The 10-10 Net also holds a net each day, except Sunday, at 1800Z on 28.380 MHz and 28.800 MHz. These nets have net control stations in various parts of the country, so listen on either 28.380 or 28.800 at 1800Z for the official 10-10 net.

Chesapeake Bay Chapter

The Chesapeake Bay Chapter has announced that Cindy Hamm, N3TF, has taken over the duties of Certificate Manager (CM) for the chapter. Cindy replaces Doris Slye, N3TGB, who served as the CM since the beginning of the CBC more than two years ago. All CBC Certificate information should

be sent to: Cindy Shamm, N3TF, 5829 Main Street, Rock Hall, MD 21661.

New DX 10-10 Members

Our DX Manager, Carol Huugentober, K8DHK, #29588, advises that 10-10 continues to grow in the DX world. Here is a list of the 13 new DX members who came aboard in January 1999: Heide Zitzen, DH3KAT, #70302; Arnold Thoennes, DL1KBO, #70304; Ferdinand Clemen, DH1JF, #70304; H. van der Berg, PA3DYJ, #70305; DF9LB, #70306; DJ3ADK, #70307; Gerhard Beise, DL3DXF, #70308; HJ3PXA #70309; J. van der Pavert, PB0AJR, #70310; SM7HZB #70311.

We want to welcome these ten new DX members into 10-10. If band conditions permit, look for these new DX members and welcome them into the net.

Information about 10-10?

If you would like information about 10-10, and how you can become a member and receive your very own unique 10-10 number, send \$2.00 and an address label for the return of your infor-

mation package to: Jeff Ritter, N5VAV, #59692, 10-10 Information Manager, 6959 Hovenkamp, Richland Hills, TX 76118. No SASE please as the information package requires a 9 x 12 envelope. You will receive a copy of the 14-page Prospective New Member Brochure which contains everything you want to know about the 10-10 organization, a listing of all 10-10 Chapters, their day, time, and frequency of net operation and an application form. Also enclosed will be a copy of the 8-page QSO Party Information Brochure and a copy of the latest issue of the *10-10 International News*, the 32-page 10-10 quarterly magazine.

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

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



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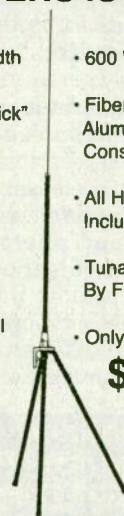
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New layer discovered

Did you happen to read the February 30th issue of *Ionospheric Weekly*? It told about a pretty significant discovery relating to the ionosphere, so I thought I'd reprint it (with permission) in its entirety.

Dateline: Arecibo, Puerto Rico

Ionospheric physicists at the Arecibo Ionospheric Research Station (AIRS) in Puerto Rico are reporting the discovery of a new ionospheric region. Up until now, the known regions have been the D region, the E region, and the F region. The D region is mostly responsible for absorption of radio waves, while the E and F regions are important for allowing long distance HF radio communications. The characteristics of these regions vary on an hourly, daily, and monthly basis, and are strongly tied to the solar sunspot cycle.

Scientists, probing the topside of the ionosphere with satellite-borne ionosondes, discovered an anomaly in their ionograms. At first this was thought to be contaminated data. But further study has given rise to the existence of a new ionospheric region above the F region.

Dr. R. J. Squirrel, head of the Physics Department at Wassamata University in Minnesota, is the leader of the project. Dr. Squirrel says, "The goal of this project was to verify the early topside ionospheric data from the 1970s that used rockets going up through the ionosphere. Discovering something new was certainly a pleasant surprise."

The bottom side electron density profile of the ionosphere is well documented. The profile shows a slight electron density peak in the neighborhood of 10 to the second power electrons/cubic centimeter at 70 km (the D region), a more pronounced electron density

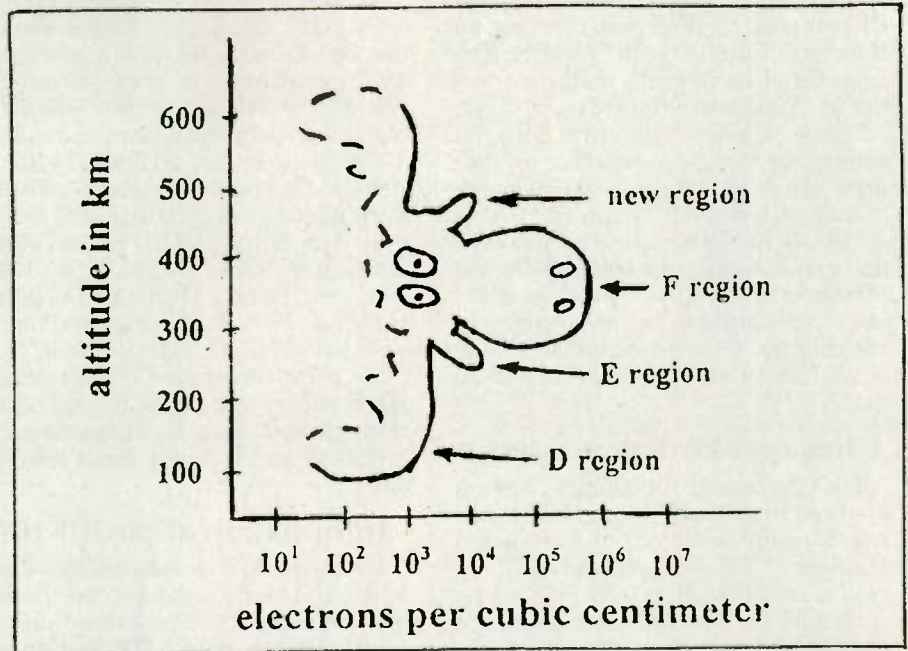


Figure 1. Electron density profile

peak in the neighborhood of 10 to the fourth power electrons/cubic centimeter at 110 km (the E region), and a very pronounced electron density peak in the neighborhood of 10 to the sixth power electrons/cubic centimeter at several hundred km (the F region). These values are typical of the daytime ionosphere near a sunspot cycle peak.

Up until now, it was thought that the electron density decreased exponentially above the F region peak. The new data shows a small electron density peak around 500 km. Figure 1 is a plot

of the electron density profile derived from one of the AIRS ionograms.

Note from Figure 1 that the new region has a peak similar to the E region. There are also some unusual circular patches of ionization in the profile that are still under investigation. Dr. Squirrel also advises that the dashed line in the profile is the result of a re-trace problem in the digital ionosonde equipment.

Scientists are unsure of the practical applications of this new region, but hope to report on this in a future issue of *Ionospheric Weekly*. Dr. Squirrel also says the Arecibo Ionospheric Research Station may sponsor a contest to name the new region in order to bring the importance of ionospheric research to the public's attention. Until it is officially designated, research scientists are calling it the M region.

Interesting, huh? Remember my wish about a higher region in my March 1997 column in order to have longer hops, which should result in less absorption and thus stronger signals? Looks like it came true. I expect these stronger signals to begin occurring very soon.

Oh, yeah. One more thing — April Fool — Carl Luetzelschwab, K9LA, can be reached at: 1227 Pion Rd., Ft. Wayne, IN 46845 or you can e-mail him at: k9la@gte.net.

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It doesn't take a Rocket Scientist...

My critics are an odd lot indeed. I do suspect that they have big pink plastic flamingos in their front yard. They listen to Kenny G records when not watching the Jerry Springer show.

They seem to be totally incapable of accepting that they have been bush-whacked by errant manufacturers and lost-in-space writers. I think this is called "denial." They can't handle the truth that they have been given Mickey Finns for so many years by so many.

One critic reacted to my oft-stated repugnance regarding the claims of 8dBd for a three-element trapped Yagi. He said he found an old book that stated a 3L Yagi had a gain of 7.5 dB and said I was jumping all over a 1/2dB difference. First, if we go back far enough we can even find a book that says the sun rotates around the earth.

Next, the gain of a TRAP Yagi suffers next to a monobander. Next, nobody that counts believes that a 3L beam has such gains. A good reference would be the book "Yagi Antenna Design" written by the late Dr. James. L. Lawson, W2PV, published by the ARRL.

Then we come to my disdain for a company that was claiming, for a 4L quad, 12dBd. One of my critics said that the company "really meant dBi."

Maybe Russian dictator Nikita Khrushchev was right when he said, "Americans, when you spit in their face they call it dew."

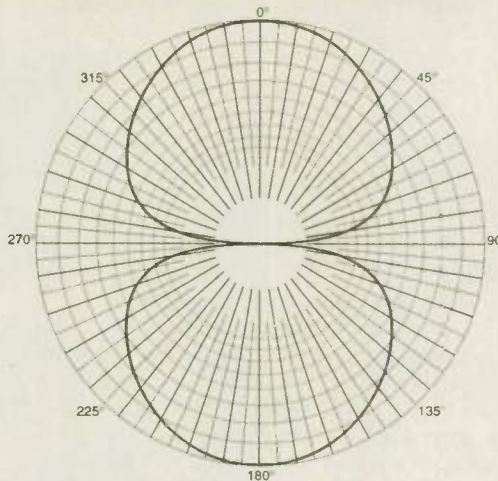
Logic would demand reasoning that if a company couldn't even get dBi and dBd straight that their antennas might be a bit bonkers also.

But I get the wrath instead of the company who is spitting in the face of the Ham, who then defends them.

I chastised a book that said, "A radiation resistance of 50 Ohms will make a perfect match to your coax feedline for maximum power transfer."

A critic said, "This is really a minor mistake." Oh? You could well have 50 Ohms radiation resistance and an SWR of, let's say, 30 to 1 if the reactance was high.

My critic said, "The author obviously meant..... A 'resonant' radiation resistance....." I guess my critics are now



mind readers and know what writers meant. What a stretch of powers extending thousands of miles. Considering the large number of people that blow resistance, reactance and impedance, I will guess that the author (who is a cornucopia of errors) wrote exactly what he thought, and was capable of.

Some of it is bogging. I wrote about the impedance of a particular antenna. Critic takes me to task telling me I'm wrong and relates what it is with the matching section in place. I wasn't talking about the matching section, I was talking about the antenna!

I have mentioned several times an antenna 12 feet long that is touted as a "5/8 wave" for 10, 12, and 15 meters.

It is impossible for this antenna to be 5/8 wavelength long for any of those bands.

Critic writes in, "It doesn't take a rocket scientist to figure out that if the physical length doesn't match the functional length, then they are obviously

NOT talking about physical length. They are obviously talking about electrical length." Then he rags me for using the term "wave" instead of wavelength. I'm sure that in his rush to rage he never noticed that I was actually quoting what was in the advertisement itself which was "wave." But that's about what I expect from my critics.

So let's go into that. There are times that one can refer to an electrical 1/4 wavelength antenna. That means that through some form of loading or matching, such an antenna would present to the feedline the same impedance as a physical length 1/4 WL antenna.

But what my critic does, as so many, if not all of them, is stop halfway through the exercise. So I query, of what practical purpose is there in creating an "electrical" 5/8 wave antenna which, when unaided by stub, would present a terrible mismatch to 50-ohm line?

It may have escaped the knowledge of manufacturer and critic alike but just loading a short stick with a lot of wire does NOT, NOT, NOT give it the radiation pattern of a real 5/8 wavelength antenna. The attribute of the 5/8 antenna (low take-off angle) is not realized by wrapping wire, or matching at the base, or whatever, with a physically too-short antenna.

And, as an aside, isn't it a bit much to say, for a 12-ft. antenna: "Covers all bands from 160 thru 10 meters, providing an exceptional level of performance." (First, for decent language purists, Lil says I should point out that the "thru" is a quote and not of our doing.) Exceptional? At \$400 the only thing exceptional about this 12-foot stick is the price.



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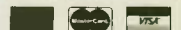
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AERIALS

When I presented an immensely practical short antenna that was functional on 20M and all HF bands higher, one of my critics responded rather hysterically (I was told) by screeching, "I can't get it to model."

That was the Off-Center-Fed, Double Reverse Dipole. Ha! He can't get it to model and I was working Bulgaria, Romania and a lot of other Europeans with a barefoot exciter. I just can't tell you how heartbroken I was that he couldn't get it to model. The LZ was unaware that it wouldn't model and I came into his receiver just fine.

Then there was the work I did on the loop that had the exact dimensions of 2 to 1 horizontal run to vertical sides. It was fed in the exact middle of one of the vertical sides. With a multiple of half-wave feedline (noise bridged to exactly 14.2 MHz), a variety of instruments all said the SWR was 1.0 to 1. A critic said he put my dimensions in his computer and said he determined that my formula was wrong.

I guess many just do antennas in the computer instead of going outside into the fresh air and building actual antennas.

For those that really work on antennas one method is to use two Bird Wattmeters. One, closest to the load (reading reverse power) has a slug rated at one-tenth the value of the other Wattmeter (reading forward power) which is closest to the source. The two Wattmeters are tied together with a double

plug coaxial adaptor. The benefit of this is one doesn't have to switch back and forth. With two meters both readings are always being shown. The slugs of different rating levels are used to resolve the reflected power at the greatest accuracy which is nearest full-scale.

There is a less expensive way of accomplishing essentially the same task and that is with the Palomar dual lightbar meter where forward and reflected are read simultaneously at maximum (switched) power levels of 2,000, 200 and 20W. And at just about the same accuracy as the Birds.

A critic even jumped on me once when I previously recommended this Palomar meter. Seems I poked fun at someone who had related that he was puzzled throughout an entire 48-hour contest. It seems he just couldn't get out well on two of the bands. After it was too late (after the contest was over) he discovered he had two of the antennas on the antenna switch reversed from what he thought they were. I said that if he had one of those Palomar meters the red lights on the SWR side would have alerted him to the problem. A critic said I was terrible for making fun of older Hams who forget things. First, I'm sure not going to make fun of my fellow older Hams and second, the contester spoken of was relatively young at least when compared to many of us.

This will be the last mention of my critics and their silly ways. I'll be moving on in the months to come to serious topics of assistance to you. But first here are the winners of our contest. The question was: What do these four antennas have in common?

Antenna 1
R 10.58
X 29.30
Z 31.15

Antenna 2
R 14.75
X 46.06
Z 48.36

Antenna 3
R 54.44
X 111.34
Z 123.93

Antenna 4
R 242.88
X 134.87
Z 277.81

Here is the answer. Each and all of them have an SWR of 6.4:1 when being fed with 50-Ohm line.

Yes, there are those who would say that Antenna 2 (50/48.36) would have an SWR of 1.03. After all, that is a close "impedance match" isn't it? Well, as you see, there is far more to it all than that "impedance match."

Winners, with the correct answer (and not a Kurt critic in the bunch!) receiving an \$8.00 (but really worth much more) Kurt White Hat are:

Peter Viezbicke, WØNXB, Boulder, CO; Willard Cox, N7FMT, Butte, MT; John Kirby, N3AAZ, Centerville, MD; Harry McGavran, Jr., W5PNY, Los Alamos, NM; Dusty Morris, W7ITM, Tempe, AZ; Jack Woods, N7LUO, Waldport, OR; Marc Tarplee, N4UFP, Rock Hill, SC; Carl Luetzelschwab, K9LA (ZF2LA), Fort Wayne, IN; Norman Stockwell, N6NS, Redondo Beach, CA; Glen Noble, WE7C, La Pine, OR; David Doan, KC6YSO, San Diego, CA; C. H. Stewart, KD5DL, Oklahoma City, OK; Steve Kubisch, WW7Y, Centerville, UT; Rich Shaver, WØFR, Sebring, FL; Ray Tyrell, N6MY, Carson, City, NV; Jack Pritchard, WR3R, Pasadena, MD; Gary Steinhour, N6DZA, Tracy, CA; Bob Eckweiler, AF6C, Orange, CA; John Gloria, W1CPW, W. Suffield, CT; Dan Rosenbaum, W2JCI, River Edge, NJ; Al La Placa, W2WW, Centereach, NY; Ray Beningo, AA4ZJ, Tampa, FL; Donald E. Novy, Jr., WB9NMN, Fort Collins, CO; Denny Bowman, W7SNH, Edmonds, WA.

(Your letters about antenna matters are most welcome. Write.)

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Station layout and accessories

While some of the best-equipped and best-designed Amateur stations in the world are owned and operated by contesters, anyone, with even the most basic gear, can participate in a contest. As you get more deeply involved in the sport, however, contesting may change the way you decide to organize and equip your station.

Layout

As a contester, you'll be spending many more consecutive hours seated in front of your rig. Although it may not seem like an activity that consumes much energy, fatigue can be a huge problem. Anything you can do to reduce fatigue will pay you a bonus in increasing your endurance. And one way to forestall fatigue is to limit the amount of physical energy you expend while operating.

One cannot overestimate the importance of a comfortable chair. I have been to several multi-ops where the hosts have gone out of their way to ensure creature comforts for guests, such as good food and places to sleep, but didn't get around to ensuring that the operators could operate in comfort. I've seen parlour chairs, hard-backed and hard-seated stacking chairs, kitchen chairs and even lawn chairs pressed into service in multi-op situations. If you are going to spend 48 hours sitting in one place, you want to be sure you can get up again when the contest is over. While some of these chairs are better than others, none of them really fit the bill. It may be well worth your while to find a good-quality office-chair. Softness is not that important, but good posture is, and the most recent generations of office chairs have been designed to minimize fatigue, and your employer's liability for your back problems.

The desk on which you set your equipment should allow for plenty of space to arrange your equipment. I suggest excess space to allow you the freedom to move things around, and most practically, to shift all the hamshack clutter before the contest begins. The desk should allow enough space in front of your equipment to allow you to rest your arms as you twiddle the knobs, and if you do all your logging on paper, you need enough space for your papers, pencil and erasers. The desktop should

clear your knees, but not be so high that you are reaching up to get at the knobs. Allowing two or three extra inches of height is a good idea if you use a computer. These few inches will allow you to install a sliding keyboard tray underneath the desk top. One option may be an office workstation. As with office chairs, workstations have been designed for an efficient arrangement of equipment. Be warned, however: many workstation desktops are insufficiently deep to support transceivers and allow a lot of space in front.

An efficient arrangement of your equipment is essential. You need to be able to reach all of the controls and accessories in your station from where you sit. Generally, the controls you use most often should be closest. Less-used equipment and accessories can be a little further away, but not out of reach. If at all possible, everything should be at table level, or perhaps elevated or tilted up no more than a few inches. You want to be able to read the front panel(s) of your transceiver(s), and reach all the controls with your hand resting on the desktop. If you have to reach up to adjust your transceiver, your arm will soon tire and become sore. If contesting results in real physical pain, you'll stop doing it.

Accessories

As with the rest of Amateur Radio, computers have become a very popular addition to contesters' shacks. First and foremost, computers are used for logging, and there is plenty of very powerful and feature-laden software out there that is an ideal companion to any contester's efforts. In my opinion, logging software has eliminated the single most fatiguing element of contesting: paper logging. While it takes some effort to learn to use any of the popular

logging programs, the payoffs are huge. Contrary to some cyberphobic opinions, you do not need good typing skills to use a computer in a contest. Hunt-and-peck is good enough. As even when rates are extremely high, you won't be entering data at much more than 50 characters per minute.

System requirements for computers are modest: IBM compatibles are de rigeur, and a 386 with a Meg or two of RAM is powerful enough for a single operator. These days, you may find contest-grade computers going for a song, or even sitting on the curb on garbage day. Some excellent software will even run on now-ancient XT's. There is software available that runs on the Mac, but I confess complete ignorance of the Mac world.

If you are going to use a computer to log, I strongly advise you to install a keyboard tray under your desktop. This keeps your desktop free of the keyboard, and you can slide the keyboard out of the way when you don't want it. Far too many people simply plunk down their keyboards right in front of your rigs. You don't want to reach over your keyboard to get at your rig, and when fiddling the knobs, you don't want your arm to hit the keyboard. Ten or fifteen dollars spent on a keyboard tray is well worthwhile.

If you going to participate in CW contests, a memory keyer is a tremendous asset. So much of contesting involves sending the same messages over and over. A memory keyer lets you send these stock phrases at the push of a button. Four short memories are probably all you need. Even though I use a computer to send CW in a contest, I always have my memory keyer programmed and connected with the following messages:

Message 1: CQ TEST VE2ZP VE2ZP TEST

Message 2: 5NN (followed by the exchange, whether it be a zone, province, or something else)

Message 3: TU VE2ZP

Message 4: VE2ZP

With my four memories programmed this way, I can call CQ and make contacts, or call others. The only information I need to send manually are the other stations' call signs.

One little advantage of having a keyer in tandem with the computer is that one can leave one's memory keyer set to speed slower than the "keyer" in

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Contest Calendar

Contest	Date/Time	Bands	QSO points	Multipliers	Exchange	Entry Categories	Logs
SP DX Contest (Poland)	1500Z 3 Apr 2359Z 4 Apr	160-10M	3pt/QSO Work SP only	Polish provinces (49) SPs will send 2-letter prov. abbr.	RST Ser#	Single Op: All bands, single band Multi-op SWL	1mo. Box 320 00-950 Warsaw
Spanish RTTY	1600Z 3 Apr 1600Z 4 Apr	80-10M RTTY	2pt/DX 1pt/NA x2 on 40, 80M	CQ Zones and Spanish Provs. (52) EA stations will send 1- or 2-letter province abbreviations	RST CQ Zone	Single Op: All bands, single band Multi-op SWL	Box 240 09400 Aranda de Duero (BU)
YLRL DX-YL to NA-YL CW	1400Z 8 Apr 0200Z 10 Apr	80-10M CW	1pt/QSO	YLs in North America work YLs on other continents. Alaska counts as outside NA; DXCC countries; ARRL/RAC sections	RST QTH	Single Operator only	30 days WO6X
Japan Int'l DX High-Band CW	2300Z 9 Apr 2300Z 10 Apr	20-10M CW only	2pt/JA Work JA only	JA Prefectures (50) JAs will send 2-digit prefecture no.	RST Ser#	Single Op: Both bands, single band Multi-op	30 Apr Box 59 Kamata Tokyo 144
QRP ARCI Spring QSO Party CW	1200Z 10 Apr 2400Z 11 Apr	160-6M CW	5pt/QSO w/QRP ARCI mbr. 4pt/DX non-mbr 2pt/North Am. w/non-mbr.	U.S. States, Canadian Provs & Terra, DXCC countries Multiply your score by 1 of you ran over 5W, by 7 if you ran under 5W, by 10 if you ran under 1w, or by 15 if you ran under 250mW.	RST QTH QRP ARCI mbr number; non-mbr send pwr	Single op: All bands, High bands (6-10M), Low bands (40-160M) Also *teams of two to five entrants -/ register your team with N6GA before the contest.	30 days N6GA
King of Spain	1800Z 10 Apr 1800Z 11 Apr	80-10M CW and SSB	1pt/QSO	Spanish Provinces (52) worked on each band. Spanish stations will send a one-or two-letter province identifier after the Ser#	RST Ser#	Single Op Multi-op SWL	16 May Box 220 Madrid Spain
Australian Postcode Contest	0000Z 17 Apr 2359Z 17 Apr	80-10M CW and SSB	10pt/QSO Work VK only	Australian postal codes. VKs will send a 4-digit number after RST.	RST Ser#	Single op: CW only, SSB only SWL	30 days Oceania DXG Box 929 Aympie QLD 4570 Australia or e-mail: odg@keylink.com.au
Holyland DX Contest (Israel)	1800Z 17 Apr 1800Z 18 Apr	160-10M CW & SSB	1pt/QSO x2 on 160-40M Work Israel only	4X,4Z stations will send a five-char. area identifier (ex: E14TA, H08HF). Each unique identifier is a mult on each band	RST Ser#	Single op all bands Multi-op, single tx SWL	31 May Box 17600 Tel Aviv 61176 Israel
Michigan QSO Party (USA)	1800Z 17 April 0200Z 19 April 0300-1100Z off time for all	160-2M CW, SSB, FM	1pt/SSB 2pt/CW +5pt bonus for QSOs.w/K8EPV, W8JXU	For stations outside Michigan: MI counties (83) For MI Stations: MI counties, US States, Canadian oprovinces and territories, DXCC countries	RST Ser# QTH	Single Op Multi-op Mobile	31 May EMARC Box 611230 Port Huron MI 48061-1230 e-mail: k8dd@contestin.com
European Spring Sprint CW	1500Z 17 April 1859Z 17 April	80-20M CW	1pt/QSO	None	your call, other stn's call Ser#, name	Single operator only	15 days G4BUO
YU DX Contest (Yugoslavia)	1200Z 17 Apr 1200Z 18 Apr	160-10M CW only	1pt/down ITU Zone 3pt/oth NA 5pt/DX	ITU Zones and Yugoslav prefixes on each band	RST ITU Zone	Single op: Mixed mode, CW only, SSB only Multi-op, single tx	30 days Box 48 11001 Beograd
YLRL DX-YL to NA-YL SSB	1400Z 22 Apr 0200Z 24 Apr	80-10M SSB	1pt/QSO	YLs in North America work YLs on other continents. Alaska counts as outside NA; DXCC countries; ARRL/RAC sections	RS QTH	Single Operator only	30 days WO6X
Helvetia 26 (Switzerland)	1300Z 25 Apr 1300Z 26 Apr	160-10M CW & SSB	3pt/QSO Work HB9 only	Swiss Cantons (26) on each band HB9s will send 2-letter Canton abbreviation	RST Ser#	Single op all bands Multi-op single tx SWL	14 Jun HB9DDZ
Nebraska QSO Party (USA)	1700Z 24 Apr 1659Z 25 Apr	All Amateur bands (exc. 10, 18, 24) all modes	1pt/Fone QSO 2pt/all other modes	For stations outside Nebraska: NE counties (93) For NE stations: NE counties, US States, Canadian oprovinces and territories, DXCC countries	RST QTH	Single Op Multi-op, single transmitter Mobile Novice/Technician-class licensee Club (minimum 3 logs)	31 May Box 375 Elkhorn NE 68022
Ontario QSO Party (Canada)	1800Z 25 Apr 1800Z 26 Apr	160m to microwaves CW, SSB & FM (No FM on 146.52)	1pt/Phone QSO 2pt/CW QSO 5pt/QSO above 50MHz 10pt/VE3ODX, VA3RAC	Stations outside Ontario work only Ontario stations Rovers earn 300 QSO points for each multiplier activated For Ontario stations: Ontario counties, districts, regional municipalities(49), Canadian Provs, Territories, US States, DXCC Others: Ontario counties, districts, regional municipalities (49) only.	RST QTH Ont. Stations send 3-letter county abbrev.	Single Op: mixed mode: High pwr, low pwr, QRP CW only: High pwr, low pwr, QRP SSB only: High pwr, low pwr, QRP Single op VHF-UHF FM QRP Multi-operator Mobile (may be more than one operator) SWL	31 May Box 161 Stn A Willowdale ON M2N 5S8 or e-mail to: ve3are@ compuserve.com
Florida QSO Party (USA)	1600Z 24 Apr 2200Z 25 April 0200-1200 off time	80-10M CW and SSB	1pt/SSB QSO 2pt/CW QSO	Florida stations: US States, Canadian RAC Sections, DXCC on each mode For others: Florida counties (67) on each mode Multiply your score by lover 150W by 2 if under 150W by 5 if under 5W.	RST QTH	Single Op Multi-op Single tx Multi-op multi-tx Mobile (may be more than one operator) Novice/Technician class licensees each of these categories are further divided into high power, low power and QRP categories.	30 days K4OJ or e-mail to: FLQSOParty @aol.com

Addresses: CQ - 25 Newbridge Rd., Hicksville NY, 11801 USA. ARRL - 225 Main St, Newington CT, 06111 USA. Callsign - Callbook Address
Bands: The 30, 17 and 12m bands are never used in any contest.

Contests

Contest	Date/Time	Bands	QSO points	Multipliers	Exchange	Entry Categories	Logs
Massachusetts QSO Party (USA)	1800Z 1 May 2100Z 2 May 0400-1100Z off	All bands	1pt/Phone QSO 2pt/CW, digital, sstv QSO	Stns outside MA Wrk MA stns only MA stations work everyone. Stns outside MA: MA counties (14) on each band MA stns: MA counties, US States, Canadian Provinces and territories DXCC on each band.	RST QTH	Outside MA MA Single op MA Multi-op MA Portable MA team (5 MA single ops)	6 Jun FARA POBox 3005 Framingham MA 01701 USA or e-mail to: n1tyh@aol.com
ARI DX (Italy)	2000Z 2 May 2000Z 3 May	160-10M CW, SSB & RTTY	0pt/VE 1pt/NA 3pt/DX 10pt/Italy	Italian Provinces (103) + DXCC on each band Is will send a 2-letter province abbreviation.	RST Ser#	Single op All modes, single mode Multi-op, single tx SWL	1mo. Box 14 27043 Brioni (FV) Italy
A. Volta RTTY (Italy)	1200Z 8 May 1200Z 9 May	80-10M RTTY		DXCC + Call areas in Canada, Australia and USA	RST Ser# CQ Zone	Single Op: All bands, single band Multi-op single tx SWL	31 Jul Box 55 22063 Cantu
Oregon QSO Party (USA)	1400Z 8 May 0400Z 9 May	160-2M CW, SSB and FM	1pt/SSB or FM 2pt/CW QSO 50pt/QSO w/K7O 100pt/QSO w/K7ZZZ	Oregon counties Oregon stations count Oregon counties. US states, Canadian provs and terrs & DXCC countries Multipliers count once regardless of band.	RST QTH	unknown	CODXC 19821 Ponderosa St Bend, OR 97702
CQ-M Int'l DX Contest (Russia)	2100Z 8 May 2100Z 9 May	160-10M + satellites CW, SSB & SSTV	1pt/own country 2pt/other NA 3pt/DX	DXCC countries + Russian autonomous oblasts, Arctic islands, Crimea (UU), 4U1VIC (see rules)	RST Ser#	Single Op Single band: Mixed mode, CW only, SSB only, Satellites Single Op All Bands: Mixed mode, CW only, SSB only, QRP Multi-op single tx SWL World War II veterans SSTV only	1 July CQ-M Ctte Box 88 Moscow Russia or e-mail to: cqmq98@mai.ru

Addresses: CQ - 25 Newbridge Rd., Hicksville NY, 11801 USA. ARRL - 225 Main St, Newington CT, 06111 USA. Callsign - Callbook Address
Bands: The 30, 17 and 12m bands are never used in any contest.

the logging program, and send at a slower speed when required. Of course, when you ask another station to repeat information, or say "hi" to a buddy, you will want to use the keyer manually anyway.

Some memory keyers will provide an incrementing serial number, and this is a very useful feature in contests like the CQ WPX.

If you work SSB contests, a headset is a very good idea. Headsets combine earphones with a small boom microphone. Using a headset allows you to completely eliminate your desk or hand microphone, reducing the clutter on your desk. Some operators prefer to use a foot switch during SSB contests, others prefer to use voice-operated transmit (VOX). Headsets make it easier to use VOX, and allow you the freedom to stand up and move around somewhat.

Just as there are memory keyers for CW operators, there are a number of voice keyers now available. Some are separate boxes with pushbuttons that sit on your desk, just like a CW memory keyer, others are cards that fit in your PC, and still others are options that fit in competition-grade HF transceivers of the last eight years. In whatever format, voice keyers allow you to store and recall stock messages, such as CQs, thus saving wear and tear on your voice. These also reduce fatigue, and save you from sounding like Frankenstein's monster when you finally ascend the basement stairs after a contest.

There are now a whole range of impressive little devices designed to make your station more efficient. Many of

these are designed by and for contesters. There are now several antenna switches which will look for "band data" from your contest logging computer or transceiver, and automatically select the correct antenna for the band on which you are operating. Others will allow you to direct any antenna to either of two transceivers, but prevent you from connecting any one antenna to both transceivers. These are very useful for those single operators who use two transceivers, or multi-op stations.

Bandpass filters are almost essential equipment in many multi-op stations. These are filters that install between the transceiver and amplifier. They will usually pass energy on one ham band, and attenuate signals outside that band. Many multi-op stations now keep a stock of these filters, at least one for each band. They will attenuate any spurious emissions from one transceiver, and protect your receiver from overloading by nearby transmitters.

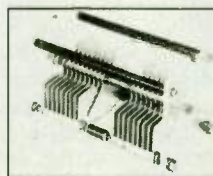
The common element with all these devices is that they make operating simpler and less fiddly. They save you

energy and allow you to do more than one thing at a time. You don't have to have any or all of these devices to enjoy a contest, but they may all help making the experience easier and more pleasant.

April Contests

There are no truly major contests in April, and hence, no "Contest of the Month" featured in this issue. Nonetheless, there are several smaller events that may be well worth a try. I know of three U.S. states with QSO parties this month: Michigan Nebraska and Florida. The Canadian province of Ontario (VE3) also has a QSO party in April. There are also national contests featuring Poland, Japan, Spain, Australia, Israel, Yugoslavia and Switzerland. For women only, the Young Ladies' Radio League have their DX-YL to NA-YL contests. Give them a try — the stations you work will all be grateful for the contacts, and you will probably find them a nice diversion.

73 and good luck in the contests! —
Dave Goodwin, VE2ZP/VE9CB can be reached via e-mail: ve2zp@rac.ca; packet: VE2ZP@VE3XRV.#EON.ON.CAN.NOAM.



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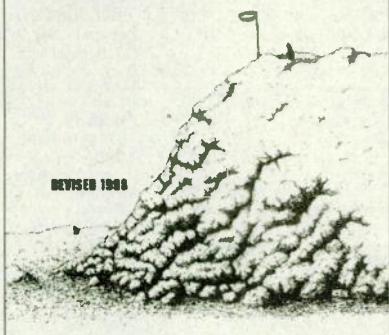
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SOS for Morse code

— A venerable signaling system is overtaken by high tech

Morse code apparently died out before the International Maritime Organization announced its passing recently. The six dots interrupted midway by three dashes that spelled out the Titanic's SOS signals, and recorded the end of two World Wars, have been replaced by satellite technology.

But if the new electronic Mayday system to replace it is as reliable as the computers in most business offices, or the satellite whose malfunction cut off most of the pagers in North America, we'd best keep teaching and testing Morse code as a backup. The code was invented by Massachusetts portrait painter Samuel Morse as he made a trans-Atlantic crossing. It substituted sets of dots and dashes that could be more readily transmitted by radio or wire signal for letters of the alphabet.

During both wars spies sent coded messages home with an added layer of Morse, and so did journalists. And learning the dots and dashes or combinations thereof was expected of every Boy and Girl Scout for many years. People hailed the code as "the instantaneous highway of thought." Wireless communications invented by Marconi

brought Morse code a fresh lease on life, and in 1899 the first shipwreck was reported by Morse code in the English Channel.

From the Titanic in 1912 came the fateful three dots, three dashes and three dots. "SOS," it began. "Come at once. We have struck berg." Because the radio operator aboard the nearby liner California wasn't on duty, the message never reached the one potential source of quick and meaningful help. And from that fateful night came the decree for 24-hour radio watches.

The code's time seems to have passed. Still, it is not clear that smaller vessels will have or will be required to have the tony electronics that are now standard on large vessels. And it is not clear that satellite systems are immune from injury, sabotage or wear and tear.

For these reasons, while Morse may fall into disuse, we forget it at our peril. (Ed. This editorial appeared in the Pittsburgh, PA Post-Gazette, 12 February 1999. It was written by Richard Paton of the Toledo Blade, and was sent to Worldradio by our alert reader Gerald Wetzel, W3DMB. Reprinted with permission from the Pittsburgh Post-Gazette)

Colombian earthquake

Amateur Radio has become a communications lifeline after a killer earthquake struck western Colombia on Monday 25 January. Normal lines of communications were lost and Amateur Radio operators in the devastated area began coordination of search, rescue and relief efforts.

The quake hit Columbia at about 1:30 p.m., registering 5.9 on the Richter scale with the epicenter in western Valle del Cauca state, about 140 miles from the capital city of Bogota, with several hundred known dead and thousands injured.

With most normal lines of communications temporarily cut, Amateur Radio brought first reports of the scope of the quake's devastation. In Calarca, about 90 miles west of Bogota, amateurs reported 20 dead and another 200 injured. Other hams passed word that at least five people were killed in Pereira with at least 70 hurt.

Amateur Radio nets were activated on 14.347 MHz for international communications and on 7.085 and 7.090

MHz for local coordination. Dallas Carter, W3PP, in Laurel, Delaware, coordinated the English-speaking 20M earthquake relief network with HK3SA Bogata. He said Amateur Radio is vital to relief efforts because phone service is minimal. Carter reported that most of the Amateur Radio relief effort was centered in Bogata, but there were also amateurs on the air in the areas hardest hit. One of the stations that has been providing support here in the United States is W1AW at ARRL Headquarters in Connecticut. Two websites mentioned by Carter are run by local media outlets in Bogata. They can be found on the Internet at the following URLs www.rcntv.com.co and www.eltiempo.com.co.

The Colombian Red Cross dispatched a team of eighty relief workers but doctors were in short supply. News reports say residents have been seen frantically trying to dig out victims trapped below the debris of a fallen building in Armenia, the capital of Quindio state. — KC9RP, RAIN, Newsline

Hamfests – April

CALIFORNIA

Valley of the Moon ARC Hamfest on 24 April, from 8 a.m.-noon at the Sonoma Valley Veteran's Memorial Building (126 First Street West Sonoma). Free admission. Tables: \$10. Set-up 7 a.m. VE testing. Talk-in: 145.35 (-). For info: Darrel, WD6BOR 707/996-4494; for directions send SASE to VOMARC, 358 Patten St. Sonoma, CA 95476.

DELAWARE

Penn-Del ARC Hamfest and '99 ARRL Delaware State Convention on 25 April 9 a.m.-2 p.m. at the Nur Temple (rte. 13 N. in New Castle, De. 1/4 mile north of the intersection of rte. 13 & 40). Admission \$5 (under 12 free). Tables: \$15 w/electric, \$12 w/o. Tailgating \$10. Set-up: 6:30 a.m. Tables by reservation only. VE testing, indoor vendors and tailgating, seminars and food. Talk-in 147.225 (+) or 224.220/R. For info: Hal Frantz, KA3TWG 302/793-1080; Email: hfrantz@snip.net; Web: www.magpage.com/pennidel.

FLORIDA

Kings ARC Hams & Hackers Swap Meet on 24 April at 9 a.m., at Hanford Fraternal Hall (10th Ave.) Tables: \$5. Door prizes, computers and Ham gear, refreshments. Talk-in: 145.11 - 147.33 - 224.44 or 441.900. For info: Rick, WB6VFZ 209/945-2266 or Doug, KC6BGQ 209/582-0949 or 209/584-5414.

Flamingo Net and the University of Miami ARC Hamfest on 17 April, 8 a.m.- noon, in the Physics Parking Lot, in the northwest corner of the University of Miami Coral Gables Campus. Talk-in: U. of M. repeater, 146.865 (-). For more info contact: Walt, W4DWN 305/895-0398, or Bill Moore, 73 Palm Ave. Miami Beach, FL 33139.

GEORGIA

Southeastern VHF Society Conference 9-10 April, at the Atlanta Marriot Northwest (Marietta, GA). The hotel and conference center is located northwest of Atlanta, GA at exit 110 of I-75, Windy Hill Rd. The hotel rate will be \$69 a room. Reserve a room 18 by calling Marriot at 1-800/228-9290. Features: preamp noise figure testing, antenna gain measurements, flea market, vendors, banquet and door prizes. For info: SVHFS, P.O. Box 1255, Cornelia, GA 30531; Email at k4sz@stc.net; www.svhfs.org/svhfs/.

Cherokee Capital ARS Hamfest 24 April at the National Guard Armory (Calhoun, GA). Admission: \$4. Tables: \$5. Vendors, dealers, tailgating, VE testing and food. Talk-in: 145.230 (-). For info call Felton Floyd at 706/629-0369; Email: ffloyd@wavegate.com.

IOWA

Denison Repeater Association Deloit Amateur Radio Swap Meet 11 April at 7 a.m. at the Deloit Community Building (320 Maple St. Deloit IA) Admission \$2. Tables \$2. Talk-in: 147.090 repeater (+). For info: John Amdor, KD6MXL, 712/388-8042; Email: johnmxl@radiks.net; Web: www.radiks.net/~johnmxl/deloit.html.

MINNESOTA

Rochester ARC Hamfest on 10 April at the Olmsted County Fairgrounds Graham Area. Admission \$6. Vendors and flea market. For info: John Scott, NØHZN, 4552 5th ST NW, Rochester, MN 55901 or http://members.aol.com/rarchams.

Midwinter Madness Hobby Electronics Show on 17 April from 7:30 a.m.-3 p.m. at the National Sports Center (Blaine MN, north of Minneapolis/St. Paul on 35W, exit #32). Admission: \$7. For info: RARC, 4737 S. Hwy 101 #276, Minnetonka, MN 55345; Tel.: 612/537-1722

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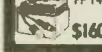


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Hamfests — April

Southwestern Metro Amateur Radio Transmitting Society Hamfest on 18 April from 12 p.m.-5 p.m. at Canterbury Park (Shakopee MN). VE testing, vendors, and flea market. Talk-in: 147.165(+). For info: SMARTS, P.O. Box 144, Chaska, MN 55318.

NEW MEXICO

Albuquerque ARC & Caravan Club Central New Mexico Swapfest/Flea Market on 24 April from 7 a.m.-noon at the United Methodist Church (9500 Constitution NE). Free Admission and tailgating. Talk-In: 147.06(+). 100 hz tone. For info: Chuck, KC5GA, 505/858-0306; Email: Art, N5ART, n5art@att.net.

NEW YORK

Mt. Beacon ARC Hamfest and Eastern NY Section Convention on 25 April, at the John Jay High School (Fishkill, NY). Admission \$5 a family. Tables \$10. Large Indoor/Outdoor

Flea-Market Space, Free parking, FCC license exams (w/i), and hot food and beverages. Talk-in: 146.97(-). For info: Ken Akasofu, KL7JQC, 8C Hudson Harbor Dr., Poughkeepsie, NY 12601-5367; Tel.: 914/485-9617; Fax: 914/485-2402; Email: kl7jqc@iname.com; Web: www.mhv.net/~friting.ork.

Orange County ARC Hamfest 11 April, from 8 a.m.-2 p.m. at the Valley Central High School (1175 State Route 17K, I-84 to exit 6 (Rt. 17K & Montgomery) take Rt. 17K west to High School) Admission \$5. Tables \$10-we supply, \$8-you supply, \$7 tailgate. VE testing. For info: Edward, N2XJI, 123 Harold Ave., Cornwall, NY 12518-1701; Tel.: 914/534-3492; Email: n2xji@danet.net; Web: www.lds.net/~Mshovani.

OHIO

Twenty over Nine Radio Club Inc. Hamfest on 25 April from 8 a.m.-3 p.m., at the Canfield Fairgrounds (State Rt. 46). Admission \$5. (under 12 free w/Adult). Table \$10. Flea market space \$2 per 10-ft. section. Set-up: 6:30 a.m. Computers, electronics, fleamarket, food and refreshments, hourly prizes. Talk-in: 147.315(+), 443.225(+), and 145.275(-). For info: Dave Mellott, KE8KT, 2895 Penny Lane, Youngstown, OH 44512; Tel.: 330/793-0816; or Call Don Stoddard, N8LNE at 330/793-7072.

TENNESSEE

The Rhea County ARS will be sponsoring the Dayton Hamfest on 17 April, in Dayton TN. Admission: \$5. Tables: FREE. Door Prizes. For more info contact: Tom Mize 423/570-0840, Website: www.volstate.net/~ko4sy

TEXAS

Temple ARC Ham Expo '99 Springfest on 17 April at Bell County Expo Center (Belton, TX). Admission \$1. Tables \$10. Vendors, tons of tailgates, food and prizes. For info: Mike LeFan, WA5EQQ, P.O. Box 4511, Temple, TX 76505; Tel.: 254/773-3590; Email: hamexpo@tarc.org; Web: www.tarc.org.

Brenham ARC Hamfest on 10 April, 7-10:30 a.m. at the Washington County Fairgrounds. Free Admission. Tables: \$5. Talk-in: 147.260. For more info contact: Dan Lakenmach, N5UNU 409/836-8739.

WASHINGTON

Eastern Washington Hamfest on 10 April, 9 a.m.-5 p.m. at Spokane Community College (1810 N. Greene St., Spokane, WA). Admission \$5 (under 12 free). 8ft-table \$12 and 10x10 ft booth \$60. Set-up 5-8 p.m. Fri. and 6-9 a.m. Sat. VE testing. RV parking. Talk-in: 146.52 S and 147.32 R. For info: Warren, 1405 Crestline, Spokane, WA 99203; Tel.: 509/534-8443. Checks payable to Lilac City ARC.

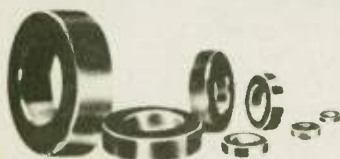
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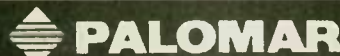


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You'll never have to take the MFJ-418 out of this special case (except to change the battery).



All buttons and controls are operational while the MFJ-418 is in its case.

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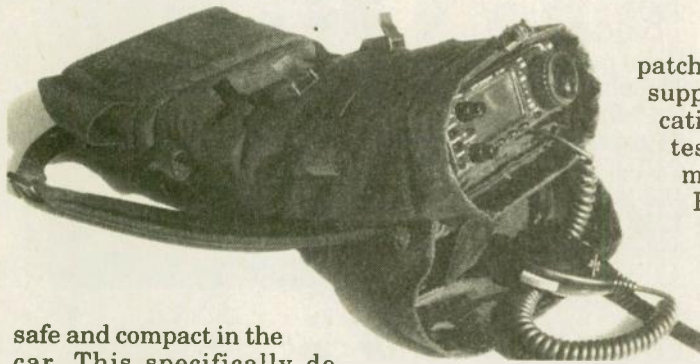
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AMERITRON's illuminated Cross-Needle true Peak-Reading SWR/Wattmeter measures peak or average forward and reflected power plus SWR and has an electronic circuit that allows accurate peak power to be measured. An optional external 12 VDC or an internal 9-volt battery is required. Has 3000/300-watt ranges. The ATR-30 is loaded with features like a 3-core choke balun, 6-position antenna switch, 6:1 vernier reduction drives and much more! Only \$599 suggested retail.

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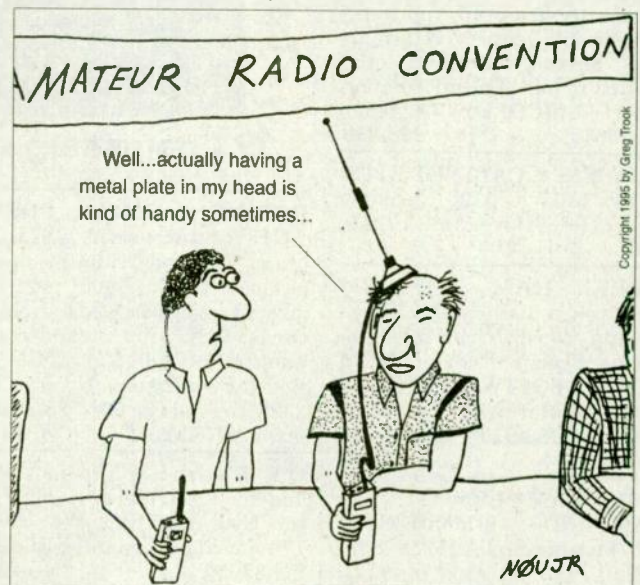
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Motorcycle Hams assist police

De Witt Morgan, KM6UK

Imagine running a 120-mile relay race across the California and Nevada deserts. Start in Las Vegas and head toward Baker, California. When you have traveled 120 miles, draw a line across the road. Now add a 20-person relay team of sworn law enforcement officers, a ton of support personnel, and tell them to run in relays, with legs of 5-7 miles, back to Las Vegas. Oh yeah, add 202 more teams, that's 4,060 runners, a whole bunch of alternates, and another 6-10,000 support personnel, on a narrow two lane highway, and do it all in less than 24 hours.

Ham radio plays a huge part in this law enforcement only event. Many of the teams keep in contact with their team members by Ham radio. They track the teams with Ham radio and GPS/APRS. There is a even committee who do nothing but coordinate the Ham radio frequencies for the event.

To help maintain control of this huge mass of humanity surging across the desert, there is need of "cops" for the cops. Because of the narrow roads, the race, and local traffic, the obvious choice is motorcycles. For many years the race was patrolled by CB-equipped motorcycles, with the obvious limitations. Four years ago the Motorcycling Ama-

teur Radio Club, MARC, lent its considerable expertise to the event.

MARC, the Motorcycling Amateur Radio Club was formed six years ago, and its founding Board Members, President, Ray Davis, KD6FHN, Billy Hall, N6EDY, and De Witt Morgan, KM6UK, decided that its motorcycle radio work would be done for charity. In that six years, MARC has helped earn over \$7,000,000 for charities. That is an enviable record in any organization.

MARC has members worldwide. There is even a chapter in the U.K. MARC members have equipped their motorcycles with Ham radio, using all types of radios, with the Kenwood 741/742 being most used. Lately the Kenwood Blue Face V7A has been gaining favor. After extensive testing and many broken antennas, the Comet HP-32, and the Z-780 seem to be favorites. Club President Ray Davis is the recognized expert in motorcycle Ham radio antenna applications.

MARC riders patrol the race legs, helping to keep the race moving safely, maintain support traffic, and race control. The race is a 24-hour event. It starts at 10:00 a.m. sharp! The last teams leave the start line at 5:00 p.m. There are runners and support vehicles strung out the entire 120-mile course. Motorcyclists ride shifts of approximately 10-12 hours. It is a grueling

event for the motorcyclist, too. Daytime temperatures can be very hot, and the midnight crossing of Mountain Springs Pass can bring temps in the 20s.

MARC Motor Officers look out for violations of race rules, and 'cite' the violators via Ham radio, calling in 'violations' from the race course via Ham radio to Net Control in Las Vegas. MARC uses the BARN system, (Bikini Amateur Radio Network) 440 repeater system to communicate direct from the course to Las Vegas, beginning to end.

The 'violation' is actually written in Las Vegas, thus freeing the motorcyclist from trying to find a safe place to stop to write the violation. With the dark, cold, and traffic, the motorcyclist must be extremely alert.

The penalty for 'violations' is time, the least penalty is 5 minutes. For 20 members who have trained for months, a penalty can be devastating. But with 203 teams on the race course, penalties do occur. Any alcohol on the course is cause for immediate disqualification, and lifetime disbarment for that offending team. But boy, do they party HARD in Las Vegas.

We also use a lot of non-motorcycle Ham radio operators as relays for simplex operations and Las Vegas Net Control. We have a great time and we do a lot for the officers of the Los Angeles Police Department.



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