

DXER

N O R T H E R N
C A L I F O R N I A
D X C L U B



Spectrum Protection Act

If HR-73 and S-1372, the Amateur Radio Spectrum Protection Act, aren't passed before Congress adjourns in December, they will die and a great opportunity will be lost.

177 members of the House are now co-sponsors—the article on page 44 of the July QST shows who they are.

Please write your representatives and senators—now! Your letters should be short and to-the-point. An example:

August 5, 1992

The Honorable Norman Mineta
House of Representatives
Washington, D.C. 20510

Dear Representative Mineta:

Please become a co-sponsor of HR-73, the Amateur Radio Spectrum Protection Bill—if you haven't yet.

Radio spectrum space is a valuable natural resource and Amateur Radio operators must retain continued access to the small portion of it we now hold.

60,000 California Radio Amateurs have a vital interest in this legislation.

Amateur Radio's public service in disasters and crises goes back 80 years.

Amateur Radio continues to be an economical and practical "test bed" for new communications technologies.

No private sector commercial opposition to this bill has surfaced—only the FCC.

The bill requires no expenditures.

Sincerely,

(For Senators Alan Cranston and John Seymour, substitute U.S. Senate in the address and S-1372 for HR-73 in the text.)

"The Linker"

Members Help FCC Nab Culprit
by Chuck Vaughn, AA6G

This is the story of how Jack Mullen, K6CBL, and I cooperated in locating the person responsible for spuriously linking public service radio systems with Amateurs and with other agencies. We waited until now to go public with this story because we wanted to let the FCC take action first. Here is our story.

A group of South Bay Area Amateurs regularly use a 2 meter simplex frequency. In April 1991 we began to encounter intentional interference from someone retransmitting police frequencies, a taxi cab service, and other services. Not only did we receive interference from them, but they received interference from us. Jack quickly

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Ham Ranks Just Swell

by Charles McConnell, W6DPD

As of April 30, 1992 there were 563,000 hams, including 172,000 Technicians. The FCC issued more than 3,000 new Tech licenses in each of the last three months.

As the total number of hams grew to an all-time high, ARRL membership reached 158,000 and Pacific Division membership reached 10,500 by the end of May.

I'd like to thank Pacific Division clubs for enlisting so many new members. Their efforts to make ham radio, and particularly ARRL, grow will give us a stronger voice in

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Coming Up

- Livermore Swap Meet: 1st Sunday of each month, 7 A.M. to noon, at Las Positas College in Livermore. Contact N7TVE.
- Foothill Swap Meet: 2nd Saturday of each month through September, starts at 7 A.M. (get there early).
- ARRL National Convention: August 20-23 at LAX Marriot Hotel. Contact WA6WZN.
- California QSO Party: Oct. 3-4. Contact N6TV.
- Sierra Hamfest and Computer Faire: Oct. 10 at the Carson Valley Inn, Minden, Nevada. Contact W6FFT.
- Pacificon '92, the ARRL Pacific Division Convention: Oct. 16-18 at the Concord Hilton, Concord. Contact N6QGN.

General Meeting

N O R T H E R N
C A L I F O R N I A
D X C L U B

Club Officers:

President: Bob Artigo, KN6J
 Vice President: George Allan, WA6O
 Secretary: Garry Shapiro, NI6T
 Treasurer: Melissa Thomas, AA6TD
 Director: Dewey Churchill, KG6AM
 Director: Ralph Hunt, AG6Q
 Director: Bill Fontes, W6TEX

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 (or via DXPSN)

Membership Data: John Cronin Jr., K6LLK

Club Repeater, W6TI/R, (147.36+)

Trustee: Bob Vallio, W6RGG
 Comm. Chairman: Ralph Hunt, AG6Q
 Club simplex: 147.54 (suggested)
 Thurs. Net QTR: 8 p.m. local time.
 Net Manager: Ralph Hunt, AG6Q
 DX News: Dave Pugatch, KI6WF
 Propagation: Al Lotze, W6RQ
 Contest News: Rich Hudgins, WX6M
 Westlink: Craig Smith, N6ITW
 Swap Shop: Ben Deovlet, W6FDU
 933 Robin Lane
 Campbell, CA, 95008
 408-374-0372

QSL Information: Mac McHenry, W6BSY

W6TI DX Bulletins:

W6TI Station Trustee Bob Vallio, W6RGG, transmits DX information at 2:00 zulu every Monday (Sunday evening local time) on both 7.016 and 14.002 MHz.

Club address: Box 608
 Menlo Park, CA
 94026-0608

The DXer is published Monthly by the Northern California DX Club and sent to all club members.

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The general meeting was held July 10 at Harry's in Palo Alto. Bill, W6TEX opened the meeting at 7:33 PM.

- Bill commented on the ongoing work to update the procedure for choosing DXer of the Year. The special committee consists of W6FAH, N6AN and KG6GF.
- Bill commended outgoing directors and officers NG6X, W6DU, NQ6X and K6MA and handed the gavel to Bob, KN6J, our new President.
- Chuck, W6DPD, Pacific Division Director, presented the ARRL's new "25 Year Certificate of Affiliation" to NCDXC. He also reported that:
- There are now 560K hams in the US.
- A proposal is under study to change the name of ARRL to AARL (American Amateur Radio League); a show of hands indicated approval by a majority of those present.
- The controversy re automatic message forwarding on HF packet is ongoing
- HR73 (Amateur Radio Spectrum Protection Act) now has about 180 sponsors in the House; it may not pass before the end of this Congress
- SB28 (Inouye) threatens certain amateur spectral issues
- Jim, W6CF, handed out an annotated YU map, discussed the DXCC status of fragmented Yugoslavia, and summarized the DXCC country creation process. He advised all to work as many Croat, Slovenian, Macedonian, Bosnian and Serb stations as possible. "WFWL", he said.
- Knock, K6ITL reported key committee assignments to date for the 44th Visalia DX Convention, 16-18 April, 1993:

Pre-registration/Treasurer	KD6XY/KA6ING
On-site registration	W6VG
Prizes	W6RIM
Raffle	K6TS
Program	W8MEP
YL Program Activities	WA6IME
On-site facilities	W6MKM
Patches	W6MKM
"All-around Helper"	N6AN
Special Event Station (?)	W6REC
Cocktail & Hospitality Hours	K6TMB
Printing	WA6AHF
Local Assistance & PR	WB6QMD & K6OZL
DX Forum	W6CF
Contest Forum	W6ISQ
License Exams	W6NLG
Welcoming Committee	K6ITL
Official Photographer	(open, need a volunteer)

- Knock also discussed the patch design competition: max. dimension 3.5 in. and four or fewer colors

continued on next page

- Gordon, W6NLG commented on the VEC (Volunteer Examiner Conference) and current possible forfeitures (fines) levied by FCC resulting from promotion of commercial business on amateur bands.
- Bob, N6OXR, discussed the upcoming trip to T32 in late September by a group including several NCDXC members (KN6J, KE6FV, NI6T); the group will work 160-10m, all modes, then do a multi/multi effort in the CQ RTTY contest.
- A first reading was held for:
 - Lisa Smith, KD6BLK (105, all SSB)
Licensed since October, 1991, now with a new General Class license, Lisa is working to upgrade further, to compete with her OM—Terry, K7YNO.
- A second reading was held for:
 - Robert Sawyer, Sr., KM6ID (106, all SSB), Advanced class. Bob was voted into membership.
- Bob, KN6J, presented a plaque to outgoing president W6TEX.
- The meeting adjourned at 9:10 PM.

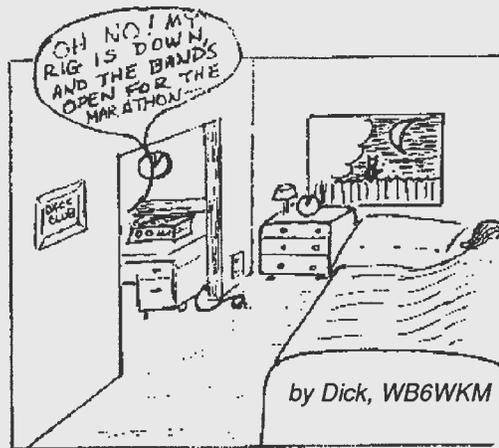
Roster Changes

New Member:

Robert L. (Bob) Sawyer Sr., KM6ID
5145 Willow Estates
San Jose, CA 95135
Home phone: (408) 238-2061
Work phone: (408) 285-8325

Change:

Garry Shapiro, NI6T
delete work phone number



Marathon Update

by Dick, WB6WKM

Despite the usual "summer doldrums," made worse by solar flares and low solar flux, Marathoners' country-counts keep rising. Reports show some members fast approaching the magic 100-country total as of the end of June.

Don't let that week or two of vacation deter you. After all, most people take a summer vacation, so things tend to even out. And the Marathon is fun, even if you start too late or have too little time to have a chance of taking the top honors.

If you've heard Dave, KI6WF, give his DX Report on the Thursday Night Net, you know there's some hot DX available. You don't need it for 5-Band DXCC or anything? Then work it for the Marathon and save the trouble and cost of QSLing (QSL non-DXpedition stations via the bureau).

So here's hoping to hear you in the pileups—after I work 'em, that is!



Treasurer's Report

by Bob, NQ6X

June 1, '92 to June 30, '92

Checking account activity:

May 31 EOM balance	4,745.20
Receipts	1,988.00
Sub total	6,733.20
Expenditures	2,023.48
Jun 30 EOM balance	4,709.72

Savings account activity:

Bank of America, as of 06/18	14,965.38
American Savings, as of 6/30	10,106.18
Total savings	25,071.56

Repeater fund:

Balance as of 6/30/92	1,270.36
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Please turn to page 11 for the '91-'92 annual treasurer's report.

Procrastinators Only:

Dues were Due July 1

for the year July 1, '92 thru June 30, '93

Club By-Laws require those whose dues are not received by September 1 to be put on inactive status. To reactivate membership, a person must submit a Reinstatement Application and subsequently be voted back in by the general membership.

Your club officers serve you voluntarily. Don't add to their work-load. Why not get that checkbook out right now?

Annual Dues schedule:

Regular Member	\$24
Family Member	Add \$15
Absentee Member	\$16
(Outside of NCDXC Area)	

Please send your check to:

NCDXC Treasurer
Box 608
Menlo Park, CA 94026-0608

Linker

from page 1

realized that someone was using a dual-band transceiver's cross-band repeat mode to link us with those UHF services.

From time to time, "the linker" would come on 2 meters and tell us, "If you don't stop transmitting, you'll lose your licenses for interfering with the police."

He didn't know we had used the same frequency for over 10 years and had encountered jammers before. He also didn't know that in the early 1980's I had DF'ed for the Northern California DX Club during a long stint of foul-mouth jammers on the W6TI repeater.

Jack assumed the task of dealing with the public service agencies and other non-hams that were being jammed. He explained what the jammer was doing and told them that if we went off the air, he would just select another frequency (which he did), so they would still have the problem.

Jack had various degrees of success. He developed a good relationship with a San Francisco taxicab company, helping them get their calls through, but some police departments were less friendly. Jack found the City of Newark police department in a real pinch because they had use of only one frequency.

After this had been going on for a couple of weeks, I decided it was DFing time. I had the NCDXC's doppler DF system from the NCDXC jamming days, so I installed its four antennas on my truck and asked Keith, KN6K, to come over and help me calibrate the system, using my mobile VHF rig as the receiver. With that done, we were ready—just waiting for an opportunity.

We had already narrowed the search area by DFing with our home-station 2-meter beams. These tests placed "the linker" in the Menlo Park-Redwood City area, due west across the bay from my Fremont QTH. Jack and I had planned our tactics; he would engage the linker, trying to keep him talking, when I DFed.

We didn't have to wait long for another linking session. Jack took up his post as I headed across the Dumbarton Bridge. Halfway across, the linker was already solid into the DFer. Taking Highway 101 north, I had barely gone a mile when the DFer's

direction indicator switched from northwest to southwest. I had passed him by already! I took the next exit and "followed the DF'er" through unfamiliar neighborhoods.

Meanwhile Jack was doing yeoman's duty keeping "the linker" talking. When I got within a few blocks, I carefully went up and down two streets that produced a rapid change in indicated direction and soon had a solid bearing on one particular house. It was dark, so I couldn't see any antennas. Worse, I couldn't see a house number!

I wrote down the numbers of the adjacent houses, noted the street name and how far the house was from the corner—and left.

When I reached home—just 45 minutes after I had left—Jack had already looked up hams in the area in a backwards callbook and found one on the same street with a house number between those I had recorded! Jack drove by the next day and found a dual-band omni antenna on a pole above the house. He

turned this information over to the FCC Hayward office. Later, the FCC Engineer in Charge and other FCC engineers visited my home. I showed them the DF equipment and explained how we found the culprit.

Using our information, FCC field engineers were able to catch "the linker" in the act, putting an end to his mischief.

Other San Francisco Bay Area hams have published claims that they helped with this case. But Jack and I were the only two who actively pursued the jammer. A copy of the letter I received from S. Marti-Volkoff, the Engineer in Charge at the San Francisco Office follows this article. It validates our story, as I have told it.

All jamming gives ham radio a bad name. But this guy's tactics were far more harmful than most, because they made hams appear to be interfering with essential public services—as well as commercial radio

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Father Moran's last Days

April 20, 1992

Dear Friends of Fr. Marshall Moran, S.J.:

Today we laid to rest the final remains of Fr. Marsh Moran. I thought you would want to know how he spent his last days on Earth.

After midnight mass on Christmas, Father experienced severe shortness of breath—after walking up a short incline. By the middle of March, this symptom became so acute he had to give up teaching.

A cat-scan revealed hot spots in his spleen and liver, which were both enlarged, and a bone marrow test suggested possible leukemia. But the primary site of infection was never determined.

Fr. Moran, 9N1MM, made his last radio contact April 1, and extreme weakness forced him to be hospitalized on April 4. By the tenth, the decision was made to fly him to New Delhi for further diagnosis and treatment, since we had done all we could in Katmandu.

Father weathered the flight well and was made comfortable in Holy Family Hospital in New Delhi on April 14. He never complained of pain but by late evening, he developed a cough and lung congestion. The

hospital staff worked on him for an hour, but he finally expired at 9:25 P.M.

Fifty years ago—as principal of St. Xavier's School, Patna—Marsh admitted a little boy from Burma, Alan D'Lastic. On April 14, Marsh received a blessing from Bishop Alan D'Lastic.

Forty years ago—when Marsh was principal of St. Xavier's School, Katmandu—teacher Thomas Joseph's wife had a premature child, Thomas Pradesh, and Marsh worked hard to save his life. In New Delhi, Dr. Thomas Pradesh attended to Marsh in his last hours of life here. How marvelous is the providence of God!

You may wish to contribute to the Fr. Marshall D. Moran, S.J. Educational Fund, which we are setting up to further education in Nepal. You may send any special contributions to:

Jesuit International Missions
2059 N. Sedgwick Street
Chicago, IL 60614

Sincerely yours, Fr. James J. Dressman, S.J.
Jesuit Community Superior
St. Xavier's Godavari School

this letter was forwarded by Mac, W6BSY

Worse Code

by Dick Petermann, NF2K

I recently tried to qualify for the ARRL's 30 WPM Code Proficiency Certificate, as a way to hone my CW skills for upcoming DXpeditions. Every evening I diligently copied WIAW code practice sessions and gradually built up my speed to the point that I thought I could pass the test.

Finally, last night, I sat down with paper and pencil, and this is what I copied:

OBAE NS M DTAW? NE ND M
 MTEOD WC PGORGMA EESNNR
 EB AE TTIDD EW NSWZAE
 IUATGOU DWNGEPGOSUFIBZT
 PRWRGMM HTHAXNWS. CIVIIG
 DANS MHN OGMMZIEIED ND
 SICFIFKLE HTC MKST EBTY WIZY
 MPPTMG OBTN EBT SEBKGGNIR
 DWCTOMRE IS IWE ZWADTS MID
 OHTI IWE ZWADTS MIS OHTI
 DTXEGML PWTEITIMZ HUYTGD MGT
 OAEFHNIR.

"What is this gibberish, anyway," I said to myself, "My code is rusty but this is ridiculous."

Next morning I called Newington and learned that RF had gotten into the keyer's logic, causing the first element of some characters to be inverted. So a leading dit sometimes became a dah and vice-versa—an 'A' could become an 'M' and a 'G' could become an 'R,' etc.

The good folks at ARRL headquarters said that if I could decipher what I sent in, they would award that Code Proficiency Certificate to me. Can you help me?

from the April '92 'NJDXA Newsletter'—Ron Levy, K2AIO Editor

Tombstone Plaques

An analysis of the DXCC-database (before the crash—see top-of-page story) found 27 percent of honor roll holders to be silent keys. An *ad hoc* committee, called to respond to the new findings, recommended the ARRL offer special Honor Roll Plaques designed for attachment to the tombstones of the deceased. A decision is promised "soon."

from the special Dayton Hamvention edition of "The Clod Harris DX Bulletin."

DXCC Database Lost

In a surprise announcement, the ARRL DXCC desk stated: "A clerical error resulted in the loss of the entire DXCC database. The timing of the loss is unfortunate, coming just two days after all paper DXCC records were incinerated."

An IBM representative, Cantwright D. Code, said in an exclusive interview with the DX Bulletin, "We have been so busy with OS/2 development that we can't do much to prevent tragedies like this."

As a result, DXCC must start anew and everyone must resubmit their cards.

On a brighter note, a special League task force, composed of K1KI, W7RM, and K1ZZ have managed to retrieve some data. DXers will be pleased to know that all CE, G, I, LU, VE, and 6Y5 records were saved and QSLs for these countries need not be included in the submissions.

from the special Dayton Hamvention edition of "The Clod Harris DX Bulletin."

(Before you believe everything you read in the DXer, you should consider the possibility that some editors might be far too impatient to hold everything of this genre for their April issues.)

44th International DX Convention

by "Knock," K6ITL (1993 Convention Chairman)

The granddaddy of 'em all will be held at the Holiday Inn Plaza Park, Visalia, on April 16-18, 1993. It promises to be the most exciting convention ever—despite the approaching solar minimum.

I have received many excellent suggestions, and all are being carefully considered for inclusion in the '93 event. And I'd like to thank the many people who have already offered to help in one capacity or another. Rest assured all such volunteers will be called upon when the time comes.

Please contact me by mail, packet, or telephone with your ideas for making the convention a resounding success. We still need assistance with the on-site management, pre-convention arrangements, and with myriad details. We intend to once again show that NCDXC knows how to sponsor the BDDXCW (Best Damned DX in the World).

With only 225 rooms available at the Holiday Inn, getting accommodations there is always difficult. But we expect many nearby motels and hotels to offer good rooms at comparable rates and shuttle services from the other major motels will again be provided. I'll have more specific information later on alternative accommodations.

It's still early, so we have plenty of time to work out the details of a superb program. We are already pursuing some of the excellent speakers members have suggested, but

please contact me if you have someone in mind whose subject would interest DXers.

What special activities do you want? Would you like more technical talks? How about a do-it-yourself-er on equipment, antennas, or ?? Would you like technical demonstrations outside the program area? If so, of what?

Would you like more time to socialize that doesn't conflict with program attendance? Did you attend the Friday night Barbecue-in-the-Park last year? Would you do it again?

Please keep in mind, as your volunteers do, that this will be *your* convention. We want you to enjoy it as much as possible, so let us know how you feel about any or all of the above questions.

Watch future DXers for news of further convention developments.

Convention Patch Contest

I'm proposing a competition for the design of the convention patch. It must be no greater than 3-1/2 inches in any dimension, have no more than four colors, and it must identify the year. Otherwise, the artist has free rein and can even enter more than one design.

All artwork will be judged by a panel selected from the Art Department of the College of San Mateo. The winner will receive either a set of Callbooks or registration for one at the convention.

Send your artwork to Steve, W6MKM, before October 31, 1992..



Pony Express

by Bryce Wilson, WB7UKH

SIERA's biggest annual event, supporting the Pony Express Rerun, takes place each June. This commemorative ride involves many horsemen carrying authentic mochilas (saddlebags) from Sacramento, California to St. Joseph, Missouri, faithfully following the old Pony Express Trail of 1860-61.

Nevada's part of the trail covers 431 miles of nearly trackless "outback." SIERA and other Nevada Amateur Radio clubs provide the tracking and emergency communications. We put about forty members in the field for the three days it takes to cross our state on horseback.

Our members treasure the chance to participate in this unique event, much of it in wilderness. We also do it to refine our emergency communications skills so we'll be ready should any kind of disaster strike.

This year the club's sector started about 45 miles north of Eureka, and included the Diamond Mountains, Huntington Valley, the Ruby Mountains, the Maverick Range, and Long Valley. It's spectacular Great Basin country, ranging in altitude from 5500 feet to mountain passes as high as 7500 feet.

You might enjoy some of the place-names: Hanging Spring (where our Ride Captain and his crew camped), Cracker Johnson Spring #2, Blue Jay Spring, Caboose Well, Maple Syrup Well, and Water Spout Spring. Colorful, huh?

As it turned out, my wife couldn't go—a last-minute problem came up—and neither could my team-mates. So I had to cover my forty-mile sector all alone. But that made it all the more fun! It meant I had to follow the rider the whole distance and report his progress using map coordinates over whatever distant, marginal repeaters I could reach. Despite the problems, all went smoothly in the sector.

Weather we had—all kinds. We had a 23-degree (F) morning, a day of fierce winds and blowing dust, and one of sunshine. Nevada's dust is like talcum powder; in some places, it was eighteen inches deep. At ten miles per hour, it sprays up like water;

you have to use the windshield wipers to see the road ahead.

Sunday morning I awoke to the sound of rain, a fearsome thing when you're parked on dust that will turn to slimy mud. The motor home was at least 100 feet from the hard-packed road when the rain started, and I leaped out of my pleasant dreams, pulled on a few clothes, and hit the ... yup, mud!

My ride captain had told me the night before they planned to start at 4 A.M. from their camp three miles away, so I knew I had to get on the road without delay. A roadside berm lay between me and mobility and, muddy now, it presented a formidable barrier.

Fear of going too fast and spinning out kept me from going fast enough. All hope sank as the motor home high-centered on the berm. Stuck, with help was 65 miles away, I thought things couldn't get any worse. Then the rain turned to sleet.

I did have one small hope. Just before I had left home, the Great Leader in the Sky had whispered, "You better take a shovel, just in case." I had heeded the advice, and thrown in an axe for good measure.

The shovel disclosed the mud to be only three inches deep. By digging down to dry ground in front of both the dual rear wheels and the front ones, the motor home just might get out. It did. I sighed with relief, then paused a moment to give grateful thanks.

Just ten minutes later Jim, one of the riders, came splashing down the road in his big truck and horse trailer. He had left later than planned, or he would have been long-gone. The Great Leader had even provided a back-up!

After that, the trip home was uneventful except for an encounter with some motorcyclists. Actually, it was a fellow ham and his buddy from Ontario, Canada. They were riding across the U.S. on their BMWs and had called in on the Eureka repeater. They joined us for a cuppa, to warm up after their ride in the rain and to exchange lies. Soon, having had a nice chat with their new-found friends, they sped off westward.

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WARC-92

by Stanley Leinwoll

Representatives of many countries met recently in Torremolinos, Spain to re-allocate parts of the radio spectrum for satellite and space communications services. But national delegations clashed over frequency redistribution.

The World Administrative Radio Council of 1992 (WARC-92), held from February 3 through March 3, allocated frequencies for a variety of satellite and spacecraft-to-Earth uses. Some of the proposed systems are just vague concepts that could nevertheless begin operating before the turn of the century. Consider:

- A cordless phone that can dial anywhere on earth. The proposed Iridium system, using a constellation of 77 low, polar-orbit satellites, would provide voice, fax, and paging services from airplanes, ships, and moving cars, as well as pedestrians.
- A satellite system that broadcasts signals to home receivers with compact disk-quality reception.
- A satellite television system that beams images directly to your home—images better than terrestrial broadcast signals provide.

WARC-92 allocated space exploration frequencies, including ones for a possible lunar colony and for a manned Mars expedition. In addition, an additional 790 KHz was allocated for high-frequency broadcasting.

Tough decisions

Although many WARC-92 accomplishments read like a script from Star Trek, they didn't come easily. Participants found the conference strenuous, some delegations were contentious, and some results were confusing.

Accomplishments

WARC-92 achieved:

1. High-frequency broadcasting additions: 5.90-5.95, 7.30-7.35, 9.40-9.50, 11.60-11.65, 12.05-12.10, 13.57-13.60, 13.80-13.87, 15.60-15.80, 17.48-17.55, and 18.90-19.02 MHz.

2. Satellite sound broadcasting (BSS): 1.452–1.492, 2.130–2.360, and 2.535–2.655 GHz.
3. High-Definition Television: 17.30–17.80, 18.10–18.40, 21.40–22.00, and 24.25–25.25 GHz.

WARC-92 imposed four conditions on the new HF broadcasting frequencies:

- They are limited to single-sideband (a broadcast industry first—ed.)
- Their use is subject to future WARC planning procedures.
- They were allocated to fixed and, where appropriate, mobile services.
- Existing fixed and mobile services can continue on a low-power and non-interfering basis until 2007, when the extension bands become available.

Preparing the way for a WARC planning meeting, probably in 1995 or 1996, the U.S. delegation proposed an additional 1125 KHz of HF broadcasting in Europe and an additional 1325 KHz in the Americas.

A large block of developing countries from Latin America, Asia, and Africa opposes such a change. They use HF for internal point-to-point communications and, particularly below 10 MHz, the bands are already extremely congested.

The United States delegation declared WARC-92 a failure because not enough spectrum was allocated to its broadcast services. The delegation announced it “reserves the right to ... meet its HF broadcasting needs.”

The satellite BSS issue produced a genuine “tug of WARC.” Europeans wanted the more economical and propagationally suitable L-Band (around 1.5 GHz), which the U.S. firmly opposed because of its military aeronautical uses of that band. Other countries—notably China, Russia, Japan, India, and Pakistan—wanted BSS in S-Band (around 2.3 GHz).

In the end, a compromise put BSS in several bands, on a regional basis. All agreed to limit the new BSS allocations to digital audio.

HDTV ran into similar problems. As a result, Europe, Africa, and Asia will use 21.4–22 GHz and the Americas will use 17.3–17.8 GHz. Feeder links will operate

It's Not—Dammit!— and it Never Was 'ES'

by Al Lotze, W6RQ

How many times have you received a QSL card inscribed “73 es CUL”? Do you think the sender knew why he put the ‘es’ there? I’ll bet he didn’t. Here’s the story.

It goes back to ol’ Samuel Finley Breese Morse (1791–1872), known to many in his own time only as a poor and rather untalented painter. Once, as old Sam returned from Europe by steamer, he mused about the piles of money he would soon amass by inventing the electric telegraph.

He’d already figured out how to make his sending device, receiving device, batteries, and all the other hardware jazz—and now he needed software! So he whipped a junk mail envelope out of his pocket and began writing out the Morse code¹.

Now, just so you aren’t confused, what Sam invented at that time was the Morse Telegraphic Alphabet. The International Morse Code, which you use on the radio—that is, I assume you do—came later. Sam’s original code used lots of dots and few dashes, and those dashes were doozies; they came in three different lengths!

He also used two different lengths of spacing within his characters^{2,3,4}. The C was ••• and the S was •••. After Morse finished his alphabet, with Y as •••• and Z as ••••, he came to the ampersand (&) and for it he wrote ••••.

And that’s it, folks; there you have it, ES. Today’s wimps, sending code on a

keyboard, could just as well type an ampersand (it’s shift-7), but their software wouldn’t know what to send and, even if it did, the machine on the other end would probably be confused.

Packeteers can do better, since their machines can send the ampersand. But the habit of sending es is so ingrained now that it’s probably with us forever. Anyway, hang onto your AT es T stock!

¹Writing on envelopes while riding public transportation has a history of stimulating creativity. You probably know all about that Lincoln fellow’s train ride to Gettysburg, but probably not about Harold Black’s invention of inverse feedback (U.S. Pat. 2102671) as he rode a New Jersey commute train to his workplace, the Bell Telephone Laboratories.

²The short space is one dot-width and the long space two dot-widths. The space between letters is two dot-widths, the same as our radio code.

³Modern communications theory tells us the maximum improvement we could get by improving Morse’s code is about 15 percent.

⁴When undersea cables were installed, letters with varying dot-spaces were found to experience too much *intersymbol interference*—the overlapping of dots and spaces. Our present ways of representing C, O, R, etc. are the results of correcting this problem.



24.25–25.25 elsewhere, and 18.1–18.4 GHz in the Americas.

Frequencies were allocated for Motorola’s proposed ‘Iridium’ satellite system in various bands between 300 and 3,000 MHz. But because agreed-upon allocations vary with region, inter-regional airplanes and ships will have to carry equipment that operates according to more than one standard.

Notable Statistics

More than 1400 delegates from 127 countries attended WARC-92, as did several hundred observers from 31 regional organizations. The conference produced six million pages of text weighing 28 tons.

The last two days featured two overnight sessions, and exhausted delegates left the conference unclear on what decisions had been made.

continued on next page

The Queen Mary

by Hy Schaffer, W6NAP

R.M.S. (Royal Mail Ship) Queen Mary, W6RO, is now anchored inside Long Beach Harbor. She arrived there under her own power in 1967 from her home port, Southampton, England.

She is too wide (beam: 118 feet) and too long (1009 feet) to pass through the Panama Canal, so her final voyage took her "around the horn"—the south tip of South America.

Designed to cruise the North Atlantic between Southampton and New York, her only way of cooling the lower decks is by forcing seawater through a system of huge heat exchangers.

In the tropics, off Rio de Janeiro, the temperature below decks became unbearable and many passengers who had paid \$5000 for the cruise left the ship and flew home.

The Queen Mary's four 40,000-horsepower steam turbine engines and four 35-ton screws propelled her at over 28 knots (33 MPH). At that speed, her "mileage" was 13 feet per gallon of fuel oil. But she carried 1,957 passengers and a crew of 1,175.

After her maiden voyage in 1936, she made 1,991 Atlantic crossings over a period of 31 years of service.

During WWII, the Queen Mary always sailed alone. She was so much faster than submarines (of that era) that none could maneuver into position to attack her, though Admiral Dönitz of the German Navy posted a 100,000 reichmark reward for the captain of any U-boat that could torpedo her.

She carried 16,000 troops on each crossing to England and 14,000 wounded and prisoners of war on return trips. And she

sank a warship! Unfortunately, it wasn't an enemy warship! The British escort vessel Curacao zigged when the QM zagged and she, under orders not to slow down for any reason, cut Curacao in half and then sailed on, leaving more than 300 British sailors to meet their fate in the cold North Atlantic.

The wireless room aboard the Queen Mary is usually open during daylight hours. The Associated ARC of Long Beach maintains it, and about 150 volunteers, not all of whom are members of AARC, man it.

Any tourist can view the wireless room through a large picture window or the Dutch door, but only hams are welcome to enter. Five operating positions are available and, upon presenting a valid license, a visiting ham may operate from the QM. The wireless room also features a display of some of the ship's original radio equipment.

The Disney Corporation has operated the Queen Mary as a tourist attraction for several years, but will not be renewing its lease when it expires this September. The City of Long Beach is negotiating for continued operation, but it might not happen.

So anyone who hasn't seen this beautiful ship, or would like to take what might turn out to be a last look, should not delay.

Disney's tours of the QM include a visit to Howard Hughes' "Spruce Goose." The Queen Mary's parking lot is right at the south end of the Long Beach Freeway. So when I say you can't miss it, I mean just that.

from the July '92 'Live Wire,' the bulletin of the Al Malaikah Amateur Radio Shrine Club of Los Angeles—WB6WAA Editor

WARC-92

81 countries appended declarations to the Final Acts of the Conference, calling attention to issues of concern. In one, the French delegation expressed its reservations about the number and complexity of the texts adopted, and of their possible misinterpretation of the final conference consensus.

from the July 92 'Radio Electronics/ Electronics' Now via the July Sierra Intermountain Emergency RA 'SIERA'—N7MXA Editor

(The May 92 issue of QST gives a good run-down on the effects of WARC-92 on Amateur Radio)

Dual-Banders

by George Hinds, N8CIX

Recently I decided to buy myself something nice—a new mobile transceiver, allowing my old Alinco DR-570 to go in the shack and a dual-band antenna to go on the tower.

All the available models seemed similar so I bought a 5200—my first Yaesu. It has all the bells and whistles, and the dial lighting provides excellent visibility. Cross-band repeat is easy to set up, too.

But on my first run downtown, it went crazy. Pagers, police radios, etc. came through—as beeps, burps, and squawks.

I was vaguely aware of rumors that some of the new dual-band rigs emit strange noises, but my old DR-570 never had the problem so I hadn't paid much attention.

Finally, after months of unhappiness, I took the new Yaesu out and reinstalled the old DR-570—solving the problem.

Then I read a respected West Coast ham's report on the newest Alinco, the DR-599T. He found it more sensitive than previous models, yet lacking the burps and squawks of other brands.

I called the dealer who had sold me the Yaesu and negotiated a fair trade-in on a DR-599T. I installed it and cruised the problem area so long, it's a wonder the gendarmes didn't pounce—but the Alinco stayed quiet.

Later, when business took me to Denver, I drove through a reknown problem area in which the Yaesu had proved useless. I heard just one brief burp on the Alinco.

Back home again, I sent in the warranty card and installed mods to expand receiver coverage to 108–174 MHz. In the process, I discovered an unexpected bonus: the Alinco covers 850–910 MHz FM (using a separate antenna).

So if you want a dual-bander without burps and squawks, consider the Alinco DR-599T. But to prevent future grief, do a trial run of any new rig before you buy.

from the Mountain Amateur Radio Club's (Teller County, Colorado) April '92 'MARC Communicator'—N8CIX Editor

Linker

from page 4

services. So we were particularly pleased to help rid Amateur ranks of this jammer.

August 28, 1991

Dear Chuck (AA6G)

We ... extend our sincere appreciation for your ... assistance in locating and identifying the source of harmful interference to various police agencies in the S.F. Bay Area. This was a difficult case because of the subject's sporadic ... pattern and ... numerous frequencies.

The Amateur Radio community has always demonstrated a willingness to assist the Commission ... Your actions are an excellent example of this ...

Because of the seriousness ... this office will be pursuing both criminal and administrative sanctions. ... we are recommending ... that his [ham] license be revoked and that his operator license be suspended for term.

Very truly yours,
S. Marti-Volkoff
Engineer in Charge (FCC SF Office)



Ranks Swell

from page 1

Washington. In these difficult times, we need all the strength we can get.

Please read about the Spectrum Protection Bill in July QST, page 44. And keep writing letters, sending copies to Perry Williams at ARRL headquarters. (Please read *Spectrum Protection Act*, page 1, for more detail—ed.)

Another problem in Congress is S-218, the Spectrum Auction Bill. It calls for the federal government to sell 200 MHz of spectrum to the highest bidder. The catch is that many frequencies between 420 MHz and 5 GHz are shared between the government and the Amateur Radio Service. Obviously, a different use of these frequencies could be detrimental to hams.

So keep your word processors ready. Please be prepared to write letters to your senators about S-218 if and when the league asks for your help.

from the July '92 'Pacific Division Update'

Lightning

by Earl Spencer, K4FQU

Each year, more than 300 Americans are struck down by lightning, and another 600 are injured by it. Lightning causes more deaths and injuries than any other weather phenomenon.

Florida, Louisiana, Mississippi, North Carolina, New York, Michigan and Pennsylvania all average more than ten lightning deaths and injuries per year.

Also, lightning starts about 7,500 forest fires annually in the U.S. It sometimes hits animals, too. In Elgin, Manitoba, a single lightning strike once knocked fifty-two Canadian geese out of the sky.

Cumulo-nimbus clouds produce lightning when they become electrically charged, but the mechanisms aren't entirely understood. The top of a thunderhead becomes electrically positive and the bottom negative.

Tall objects beneath a thundercloud become positive, too. A cloud's electrical potential grows until opposing charges create a high enough field for free electrons in the air to ionize air molecules by collision. Just before a strike, as much as 15 MegaVolts can develop. Peak current in a strike can exceed 100 K-Amps.

The hot, ionized air within a lightning bolt dissociates oxygen molecules (O₂) into separate atoms, and some of these attach themselves to other molecules to form ozone (O₃). Ozone also forms before a strike, in the high electric field, and the smell of ozone indicates danger of an immanent strike.

As air ionizes around any conductor—a rock, a metal tower, a person, or a ship's mast—it can create a bluish halo-like glow called St. Elmo's fire. If you're the conductor, your hair will stand on end and you'll hear a crackling sound. Roy Sullivan, a well-known national park ranger, has been struck several times—and lived to tell about it. He says, "When your hair stands on end and you smell sulphur, it's going to hit you and you don't have time to do anything ..."

A lightning bolt that reaches the earth is called a "ground strike" or "ground flash." High-speed photography shows lightning beginning with a "leader" that travels downward from the cloud—with much

forking. The leader moves by a series of 150-foot steps, at a rate of about 50 micro-seconds per step. It reaches the ground in a few milli-seconds.

When a leader fork gets within about 300 feet of the ground, a "streamer" rises to meet it. And when streamer meets leader, a conducting path from cloud to ground is established and the main discharge, the "return stroke," occurs. The return stroke instantly heats its air column to ten-thousand degrees Celsius or more, creating the bright flash of light. The air's sudden expansion, as it is heated, causes the loud "crack."

Because electric field strength is higher around a pointy object sticking up than over level ground, lightning usually strikes tall objects. Ham towers are good lightning attractors, as are trees and basketball players.

Let's look at some of the things you can do if caught out in the open in a storm. First, never seek shelter under trees and don't stay on top of a hill or ridge. Stay out of water if you can but, if you're in a boat, lay down in the lowest part of the boat—preferably below water level.

On land, hunker down but don't lay down. Keep your feet together and don't touch the ground with your hands. If you have any material that's an electrical insulator, put it between yourself and the ground. In a group, spread out, with 50 feet separating each person from another. Don't huddle in a mass; that just increases the size of the target.

Hams tempt fate with their antennas. The safest bet in a storm is to completely disconnect all feedlines and control lines that go up your tower—outside, not in your shack. Then pull the plugs from wall outlets and stay away from windows and still-connected appliances. If you must be on the air during a severe storm, use a handheld or mobile—staying inside a building or car.

—from the July 1970 Ft. Myers ARC 'Modulator'

Pony Express from page 6

Back home now, the clean up job on the motor-home awaits me. Ah, me; *siempre la mañana* for tasks like that! Even so, it was worth it for the adventure.

from the July 92 Sierra Intermountain Emergency RA 'SIERA'—N7MXA Editor

Letters



2 July 92

DXPSN-UG
Box 1077
Los Altos, CA 94023-1077

Dear Tom (NW6P):

Thanks for the information regarding the DXPSN and your nice note.

I must confess I was really very enthusiastic when it was proposed that the DX club integrate the DX network into the club repeater. However, as time goes on, I find it to be a real distracting repeater function. Perhaps mentioning this to you is directing my comments to the wrong party, but I feel that your proposal of blending the DX packet network with all of the others all over the place will even add more confusion to the repeater.

I know that Smitty does not agree, but the current direction of even announcing 2 meter satellite DX is the final straw! It's not bad enough that we have many putting out VEs, XEs, and other useless DX calls on the system. I know that as far as the DX club is concerned, one has to at least have 100

countries to even make application. What purpose is served with all of the common countries being called out or, for that matter, being put out on packet to begin with? The excuse is that "the new DXers are the ones that benefit from the callouts." Somehow I can't relate that to the true purpose of the DX club or packet. Those who suggest that it is can feel free to pay for it.

At this time, my only alternative to avoid all of this is to simply turn off the DX repeater. What a shame. It's a waste of a good repeater and also a waste of what could be worthwhile packet use.

Good luck in your quest to put packet DX announcements in a world-wide mode. Announcing DX that can't be heard in the San Francisco Bay area is a total waste of time for the majority of the NCDXC membership.

I'll be glad to discuss this further with you, Tom. In the meantime ...

73, Dick Letrich, WB6WKM

11 July '92

Dear Ralph (Hunt, AG6Q):

... numerous callouts [on W6TI via packet] don't come from the ... Bay Area. [DX reported] from southern California ... or ... Nevada cannot always be heard [here]. [So] why ... rebroadcast these reports? It's like getting a report of rare [DX] ... heard on the East Coast at 1100Z but not audible here. It doesn't make sense.

I have no objection to Charlie's reports of any DX ... There may be individuals who need that country ... [but] I don't believe it wise to "backbone" our spotting network to southern California or Nevada ...

I know Charlie makes mistakes at times reporting frequencies ... That's called "garbage in, garbage out."

I like the repeater the way it is. It isn't broken, so don't fix it. If others don't like the reporting of non-rare DX, let them turn off their radios.

Respectfully, Tom, K6TS

Pocket Mag-Mount for your Rubber Duckie

by Bill Pace, KB8ZM

This simple ultra-compact mag-mount will literally fit in your pocket. It offers a vast improvement over using a hand-held inside a vehicle, and its compactness makes it perfect for taking along when you travel by air.

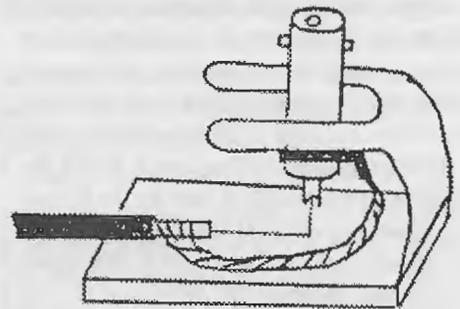
To make one, you need gather only the following parts:

- A Radio Shack magnetic mike holder, p/n 21-1130
- A chassis-mount BNC female connector with a ground-lug
- 6-8 feet of RG-174/U coaxial cable
- A BNC male connector with RG-174 adaptor.

Assembly:

Fasten the chassis-mount connector inside the cradle of the mike holder, using two nuts (see sketch). You may need to widen the gap between the cradle and the base of the mike holder, to accommodate the sub-chassis portion of the BNC connector.

Strip and dress one end of the coax and solder it to the connector—center conductor to pin, and braid to lug. Keep lead-lengths short—they are exaggerated in the sketch and the lug really points left.



Seal the solder connections and the exposed end of the coax, and provide strain relief for the cable. This can be done with a few drops of epoxy, or by filling the cavity between the cradle and base with GE RTV silicone rubber sealant. Actually, I filled the cavity with epoxy ("body plastic") because

continued on next page

Mobiley Duck

from previous page

of its greater density. Finally, install the male BNC on the free end of the coax.

To use your mag-mount, simply remove the duck antenna from the HT and put it on the mount. Then put the antenna on the roof of the vehicle, as you would any mag-mount, and route the cable inside to your HT.

RG-174/U is just 100 mils in diameter and is very flexible. You can close a door on it without harm. It is lossy at VHF, but with such a short length that isn't significant here. (10 feet has less than 1 dB loss at 144 MHz.)

I didn't invent this little gem; it was described in the literature several years ago. But the one I built has become one of my favorite ham accessories. Knowing you'll feel the same about yours, I encourage you to make yourself one.

from the Kanawha Amateur Radio Club (Charleston, WV) June '92 'Splatter'—Hal Turley, KC8FS Editor

Tailtwister Tip

by Bill Myers, K1GQ

Has your Tailtwister ever jammed? You're in good company. Sometimes the Tailtwister's solenoid is unable to retract the brake wedge. It usually breaks free if you flip the motor switch one way or the other.

The Hy-Gain factory confirms the problem. They say the brake wedge is shaped for added strength, making it susceptible to jamming when pre-loaded. Turning on the motor in one direction or the other relieves the preload force and allows it to release.

However, this won't work if the rotator jams at one of its rotation limits, because the limit switches inside the rotor assembly prevent further turning in the required direction. But don't climb the tower yet! You can bypass the limit switches by jumpering at the back of the control box. Touch a wire between terminals 5 and 8 for clockwise and between terminals 4 and 6 for counter-clockwise.

Originally printed in the Sept./Oct. 1981 National Contest Journal, this article was submitted to the DXer by Stan, K6MA.

Outgoing Prez Sez

by Bill, W6TEX

Many issues have arisen during my terms as Director, Vice President and President. The most sensitive concern ethics—as our Procedures Manual defines that term.

Of the five ethics cases I've been involved in, four were resolved with improvement of the offender's operating practices. One person chose to drop his club membership.

Our goal is for all members to understand and comply with our standards and the law.

Recently, both members and non-members have reported infractions by members. They did this in good faith; they care about the club and about ham radio.

But it's a long walk from caring to effective self-policing. Some have found fault with the Procedures Manual paragraph on ethical practices. Yet when given an opportunity to suggest improvements, all came up short. The paragraph already covers most cases, so we get back to: "How do we correct the situation without having a KGB agent standing behind every amplifier?"

Vital Element

Tuscaloosa (Alabama) Amateur Radio Club member Joe Stuckey, W4HCV, recently astounded fellow members when he described his discovery of what really makes electronic devices 'tick.'

"Once you see it, it's really simple," he said in his presentation at the June meeting. "Radios and all electronic devices operate on smoke; smoke is the mysterious substance that makes it all possible."

Although he has studied radio and electronics all his life, Joe said, the truth only struck him this year. "It just came to me out of the blue," he said. "Over the years, I've many times noticed that once the smoke gets out of something, it doesn't work any more. I just never put two and two together. Now it couldn't be more obvious. Since smoke is the vital ingredient of all electronic devices, when it leaks out, they quit working."

from the Tuscaloosa ARC's July '92 'Hamsay'—W4TXK Editor

Respected members could help just by talking to wayward peers. Approaching individuals directly—one-on-one, with a helpful attitude—is far more effective than lodging formal complaints—and far less destructive.

Human activities that are played by the rules are enriched, while any hobby or sport that tolerates breaking its rules loses self-respect and the respect of others. That's why we must strive for the highest standards.

That said, it's time to convey my best wishes to Bob, KN6J, for a great year as President.



Treasurer's Report, Annual July 1, '91 to June 30, '92

Receipts

Dues	9608.50
Badges	82.00
QSL Card Sales	505.00
Activities(Raffles,etc)	616.00
Advertising	450.00
Dinner Meetings	6161.50
DX Convention Return	7096.57
Other	327.00
Total Receipts	24846.57

Expenditures

DXer	6,624.23
Awards	587.22
Badges	196.56
QSL printing	248.22
Activities (raffle prizes, etc.) ...	1,423.14
Meetings & dinner costs	7,129.77
Supplies	250.48
Fees	402.52
Administration	776.23
"Charlie," P.A. system, etc.	3,022.98
Total Expenditures	20,661.35

Summary:

Checking acct. balance 7/1/91	524.50
Receipts	24,846.57
Sub Total	25,371.07
Expenditures	20,661.35
Checking acct. balance 6/30/92 ...	4,709.72
B of A Savings, as of 6/18/92 ...	14,965.38
American Savings, 6/30/92	10,106.18
Repeater Fund, as of 6/30/92	1,270.36



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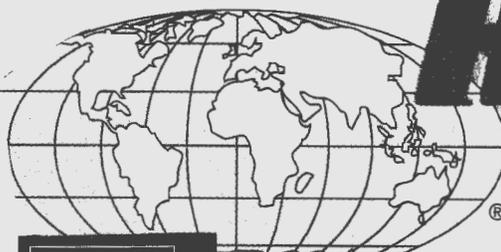
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