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WORLD RADIO



Year 28, Issue 2

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How to fix almost anything ... 11

BARRY GOLDWATER, K7UGA

Ham Radio's "Statesman", SK ... 6

NEWSFRONT

Some information has been supplied to *Worldradio Newsfront* courtesy of *Newsline* and the *ARRL Letter*.

FCC asks Germany to silence broadcaster on 3945 kHz

The FCC's HF/DF Group has asked German authorities for their help in eliminating a broadcast station in Germany operating on 3945 kHz.

The frequency is not allocated for broadcasting in Europe, which is in ITU Region 1. In Region 1, the 3900 to 3950 kHz band is authorized for aeronautical mobile operation.

"Since this station is a source of daily harmful interference to the Amateur Service, we would appreciate any assistance you could provide in eliminating the interference," said Chief Watch Officer/HFDF Group David Larrabee, K1BZ, in a fax 11 June to the Bundesamt fuer Post und Telekommunikation (BAPT), Germany's equivalent of our FCC.

The station on 3945 kHz, identified as The Overcomer Ministry, has been monitored at several East Coast locations as well as by the FCC in Columbia, Maryland. It broadcasts on AM from Juelich, Germany. — *ARRL Letter*

ARRL to FCC: deny LMCC 70cm grab

The ARRL has asked the FCC to immediately dismiss efforts by the Land Mobile Communications Council to gain primary access to 420-430 MHz and 440-450 MHz as well as other UHF allocations. Amateur Radio enjoys the use of 420-450 MHz on a secondary basis. In comments filed on RM-9267, the League said the LMCC proposed the switch "without establishing technical compatibility between PMRS operation and incumbent radio services in any of the bands sought."

The League said that existing federal government use of the spectrum precludes PMRS operation at 420-450 MHz. According to the ARRL, the petition fails to demonstrate any

basis to withdraw the two band segments from federal use, nor any compatibility between PMRS operation and either federal government or amateur use. In addition, the League said, the petition fails to justify displacing established amateur operations. The League pointed out that the amateur community uses the band for public service and public safety functions and that Hams have "substantial personal investment" in equipment in regular use there. The ARRL urged the Commission to throw out this portion of the LMCC petition "without further consideration."

The League backed up its arguments by citing documents from the National Telecommunications and Information Administration (NTIA), which manages federal spectrum. "NTIA has made it quite clear that there is no possibility of additional sharing of the 420-450 MHz band, and the unique relationship between Federal radiolocation uses and the Amateur Service cannot be duplicated by PMRS users," the ARRL said.

The ARRL said that the LMCC petition was premature because it did not take adequate account of the benefits of spectrum refarming already initiated. The League suggested that PMRS users adopt available spectrum-efficient technologies to maximize their use of existing allocations before seeking additional spectrum at the expense of other users. The League also said that PMRS users should look into using the Commercial Mobile Radio Service (CMRS). A copy of the League's comments is available at <http://www.arrl.org/news/bandthreat/RM-9267/arrl-cmt.html>. — *ARRL Letter*

RAC advises members to reject licensing changes

Radio Amateurs of Canada is advising its members to just say no to Industry Canada's plan to drop

Amateur Radio license fees and combine operator and station licenses. RAC says the plan lacks provisions to adequately track call signs, station locations, and operator qualification levels. RAC also says Industry Canada has been unable to answer specific questions about the plan.

"IC's proposal is viewed as another step by the Department to lessen its involvement in regulation of the Amateur Service," an RAC bulletin declared on 05 June. "In recent years, Industry Canada has reduced surveillance and enforcement activities to a virtually ineffective level."

Expressing fears of "chaos" ahead, RAC concludes that eliminating the license fee and merging the license documentation "would lead to a further decline in the status of the Amateur Radio Service."

Late last year, the IC scuttled negotiations to delegate partial authority over Amateur Radio licensing in Canada to an arm's length organization associated with RAC. There are approximately 45,000 hams in Canada. — *ARRL Letter*

Amateur Radio Spectrum Protection Bill has 39 cosponsors

HR 3572, the Amateur Radio Spectrum Protection Act, now has 39 cosponsors (including the original sponsor) and several more members of Congress have indicated their intention of signing on. The bill would protect existing Amateur Radio spectrum against reallocations to or sharing with other services unless the FCC provides "equivalent replacement spectrum" elsewhere.

Cosponsors also now include Peter DeFazio and Earl Blumenauer of Oregon; George Nethercutt of Washington; Frank Pallone of New Jersey; Tom Campbell and John Doolittle of California; Patsy Mink of Hawaii; David Hobson, Tony Hall, Steven LaTourette, Michael Oxley,

and Dennis Kucinich of Ohio; Bob Clement of Tennessee; Dave Weldon of Florida; David Price of North Carolina; Robert Wise of West Virginia; Michael Crapo of Idaho; and Jay Dickey of Arkansas. Dan Burton of Indiana; Louise Slaughter, Sue Kelly, Michael McNulty and Peter King of New York; Charlie Norwood, Nathan Deal, and John Lewis of Georgia; Bud Cramer of Alabama; Christopher Shays of Connecticut; Collin Peterson of Minnesota; James Talent, Jo Ann Emerson and Ike Skelton of Missouri; Dale Kildee and James Barcia of Michigan; J.C. Watts Jr of Oklahoma; Scott Klug of Wisconsin; and Jon Christensen of Nebraska.

The bill points out Amateur Radio's basic purpose as a "voluntary, noncommercial radio service" that has "consistently and reliably" provided emergency communication during and after disasters. The measure notes that the FCC has "taken actions which have resulted in the loss of at least 107 MHz of spectrum to radio amateurs."

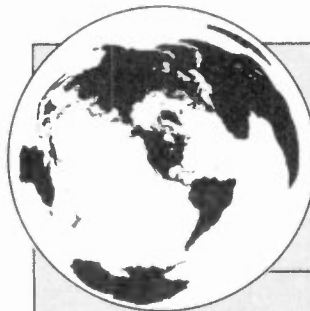
Amateurs are encouraged to contact their Representatives and urge them to support the bill or to sign on as cosponsors. The full text of the bill is available at <http://thomas.loc.gov/cgi-bin/query/z?c105:H.R.3572>: — *ARRL Letter*

Phase 3D won't fly on Ariane 503

The P3D Amateur Radio satellite will not be aboard when the Ariane 503 launch vehicle goes into space this October. Arianespace has decided to fly a dummy of a commercial satellite payload called Eutelsat in its place.

AMSAT-DL President Karl Meinzer, DJ4ZC, says it's clear that Arianespace wants to retain the option of swapping a real Eutelsat payload for the dummy right before launch. He says AMSAT simply could not compete with this by its offer of one million dollars and some moral justification of not flying ballast.

The Ariane 503 announcement is the latest setback for Phase 3D. AMSAT has been trying to find a ride into space for the satellite for the past couple of years. Until now it has pinned its hopes on the Ariane program but some say that this may have to change. — *AMSAT-NA, Newslines*



WORLD RADIO

August 1998 Year 28, Issue 2

News & Features

- The "Elder Statesman" of Amateur Radio, SK — 6
- Radio in Tibet — 7
- Tinkerer's Guide to the Galaxy — 11
- Coax — How it works and how to work with it — 12
- Dayton Contest Forum — 16
- Georgia students experience "live" emergency demo — 18
- Antenna raising in China — 19
- How Amateur Radio has enriched my life — 49

Departments

- | | |
|--------------------------|----------------------------|
| 50 — 10-10 International | 51 — Old-time Radio |
| 69 — Advertisers' Index | 54 — Propagation |
| 57 — Aerials | 4 — Publisher's Microphone |
| 25 — Amateur "Hi" | 44 — QCWA |
| 8 — Amateur Radio | 52 — QRP |
| Call Signs | 31 — QSL Managers |
| 24 — Awards | 56 — RFI & You |
| 42 — Computers & | 8 — Rules & Regs |
| Basic Stuff | 37 — SAR Communications |
| 59 — Contests | 24 — Silent Keys |
| 29 — DX Prediction | 23 — Special Events |
| 27 — DX World | 25 — Station Appearance |
| 34 — FM & Repeaters | 9 — Subscription, |
| 63 — Hamfests | Worldradio |
| 22 — HF Mobile | 67 — VE Exams |
| 47 — MARS | 45 — Visit Your Local |
| 68 — MART Classifieds | Radio Club |
| 66 — New Products | 48 — With the Handi-Hams |
| 2 — NEWSFRONT | 40 — YLs on the Air |
| 26 — Off the Air | |

Next month's columns will include Club Huddle and County Hunter

Congratulations to John E. Baker, WD8OSK, winner of a \$200 gift certificate (redeemable from MFJ). His name was selected at random by the computer from the **Worldradio** subscriber list. Check here next month to see if your name has been selected.



Worldradio

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TM

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Publisher's Microphone

A **Worldradio** Lifetime Sub-
scriber and his wife are on
vacation. Relaxing in their
suite which is an over-the-water bun-
galow in Samoa, he turns to Jeeves
and asks, "Do you have anything to
read?"

Jeeves replies, "For madam I
bring a copy of Ayn Rand's *Atlas
Shrugged*. And sir, I took the liberty
of ordering the crew of your
Gulfstream jet to make a round-trip
journey because I knew your copy of
Worldradio would be arriving at
home. "Good thinking, Jeeves. For
that, take the rest of the day off, en-
joy a swim."

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Sun City, CA

While listening to 20 Meters on 09
June at 0515Z I heard a station work-
ing LY2ZZ say, "My name is Aram."
That was also the title of a book by

author William Saroyan and my eth-
nic ears really perked up.

Aram said he had been a Ham for
78 years and that he was 95 years old.
He then went on to work a GM and
with a good clear voice. I looked up
W6JY in the Buckmaster HamCall
and it showed that he was born on 25
March 1903 and was licensed in 1920.

Aram Pashgian of Santa Barbara,
CA, said on the air, "I think Ham
Radio keeps me alive." I mentioned
this to my friend Peter Onnigian,
W6QEU. He said he met Aram at an
Amateur Radio VHF Conference
many years ago and that Aram said
he worked for Raytheon. Another
chapter in the saga of maybe, con-
trary to some beliefs, RF is good for
you.

CW operators who weren't on dur-
ing the CQ magazine WPX contest
Saturday night and Sunday morning
really missed spectacular conditions.
What I thought were local signals
turned out to be Europe!

One of the great things about Day-
ton is wandering through the Flea
Market and seeing the HRO series,
an SX-42, maybe a Harvey Wells
Bandmaster, the Johnson Vikings
and two favorites from my youth, the
SX-71 and the S40-B. If you are also
smitten by the old gear, a good invest-
ment is \$3 sent to *Electric Radio*,
14643 County Road G, Cortez, CO
81321. The articles will bring a swell
of nostalgia. Also there are many,
many pages of classifieds regarding
parts for restoration.

An editorial in one of the Ham

magazines seemed to be bemoaning
the fact that, regarding the ARRL,
only about 23% of us belong. That
statement needs some clarification.

If someone has given up the hobby
of flying there is really no longer any
reason for him to continue member-
ship in the AOPA. Likewise if photog-
raphy has lost its luster, a member-
ship in the PSA wouldn't make any
sense, and on.

The numbers of licensees, with the
introduction of the 10-year license, is
an illusion. Death, infirmity and
abandonment of Amateur Radio has
claimed more than half the licensees.

Then there are those who take deli-
ght in uttering the phrase, "I'm not
a joiner." They don't join their profes-
sional or trade groups, vets organi-
zations, or whatever. Practically ev-
ery organization offers its members
great savings (through group buying)
of insurance and other benefits. The
savings would pay many multiples of
the annual dues. However, the "I'm
not a joiner" crowd goes blissfully on
its way.

Then, as never before, we have lic-
ensees whose sole and entire purpose
in passing the test was to get a tele-
phone with no monthly charge and on
the way home, "Do we need any
bread, dear?" They will never go af-
ter DXCC, WAS, compete in a VHF
contest, moonbounce, go to a hamfest
or check into a net of any nature. Ten
years from now, without ever going
to a Ham club meeting, reading a
book or magazine about AR (if their
radio still works) they will renew
their license.

The fact that the ARRL has fought
innumerable battles so these bands
would be here to use is of no concern
to the casual licensees.

— Armond, N6WR



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shows 6-character alphanumeric capability; backlit keypad makes operation easy in dim light. And, although the

VX-1R is the world's smallest† dual-band HT, you get over 19 hours* of use with just a 1 hour recharge from its long-lasting lithium ion battery! Big features, small size--the most satisfying combination in the world! See it at your Yaesu dealer today!



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local Yaesu dealer for specific details.
†Smallest HT as of Jan. 1998

The "Elder Statesman" of Amateur Radio, SK

RICK M^cCUSKER, KO6DJ

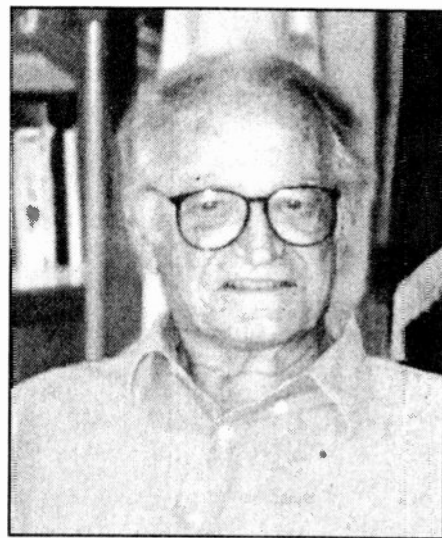
Barry Goldwater, K7UGA, is now a silent key. Former U.S. Senator Goldwater died in his Scottsdale, Arizona, home the morning of 29 May at 89.

First licensed as a Ham in 1921 Senator Goldwater's list of accomplishments is a distinguished one. He served many terms as a Senator from the State of Arizona, first being elected in 1953. In 1964, he was

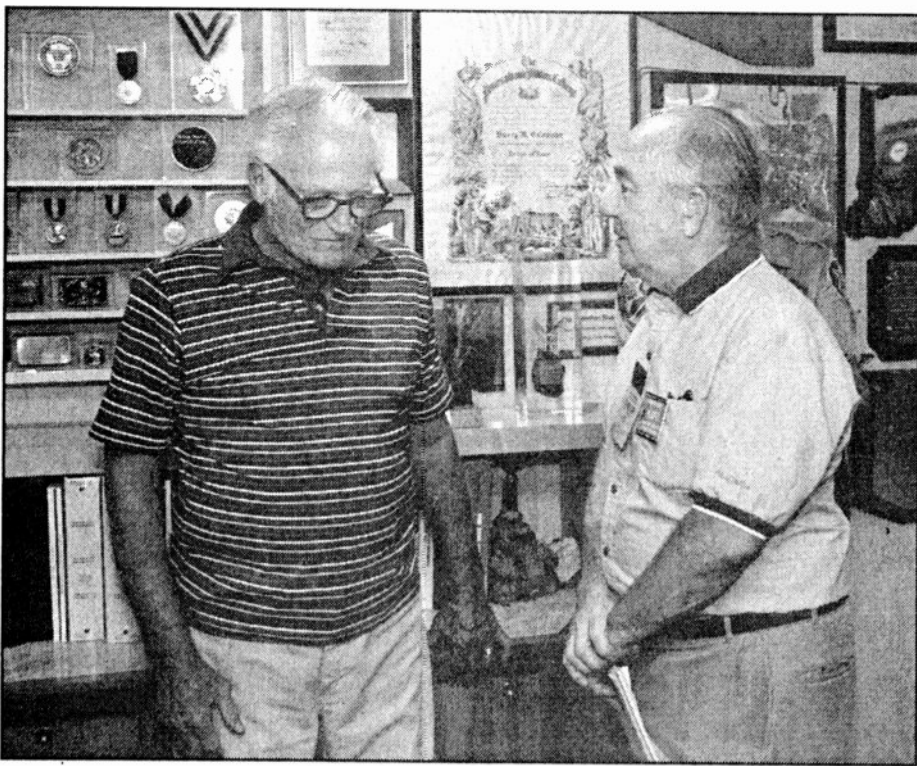
Amateur Radio as we know it today.

During the Viet-Nam War, his home QTH was manned by volunteers and served as a MARS station, running thousands of phone patches for military personnel stationed overseas. His efforts brought both news and comfort to the families of those serving in the armed forces.

In 1983, Amateur Radio paid homage to Goldwater as "its governmental protector and advocate" by establishing the \$5,000 ARRL Schol-



Sen. Barry Goldwater, K7UGA, at his home, — Photo by Bill Pasternak, WA6ITF 1993



Barry Goldwater, K7UGA and Norm Brooks, K6FO — N6WR

the Republican nominee for the office of President of the U.S. He was re-elected as Senator in 1969, and retired in 1987.

During his tenure in the Senate, he served as the chairman of the Senate Communications Subcommittee. In 1981, he introduced the piece of legislation that would forever change Amateur Radio in the U.S. Public law 97-259 established the Amateur Auxiliary and the volunteer examination programs, permitted 10-year license terms and exempted Amateur Radio from the secrecy provisions of the communications act. That one bill established

arship to Honor Barry Goldwater, K7UGA. In announcing the scholarship, then-ARRL Washington Area Coordinator Perry Williams, W1UED, said that Goldwater's

Amateur Radio involvement had "brought joy to thousands of members of the armed services stationed overseas, and through his professional career, he has exemplified the principles of commitment and service to one's country and fellow citizens." The Goldwater scholarship, administered by the ARRL Foundation, is awarded each year to a deserving radio amateur to encourage a spirit of achievement and dedication in the field of communication.

Barry's home station was one to envy. Located in the desert of Arizona, he had a custom-made rotating mast with 4 monoband beams located at 70 and 100 feet. He used the complete Collins S-line as his primary equipment.

His station and home had been "open" many times for Hams to come and visit, and get in a little "key" or "mike" time. He always welcomed visitors, especially during the ARRL Southwest Division conventions when they were held in the Phoenix area.

Barry was also involved in promoting Ham radio. Dave Bell, W6AQ, brought Barry to the eyes and ears of all Hams in his classic 1968 film, "The Ham's Wide World". He also appeared in a video to help raise funds for the Phase 3D satellite. His efforts have helped finance Amateur Radio's biggest adventure into space. Barry was also one of the biggest supporters of Amateur Radio space efforts, believing that the future of Amateur Radio depends on the satellite efforts from around the



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NORM JEWELER, W3NRS

world.

During World War II, Barry was a pilot, ferrying aircraft from the U.S. to overseas bases. After the war, he served in the U.S. Air Force Reserve, retiring as a Major General. During his flying days, he had the pleasure of flying some of the hottest aircraft in the inventory, including an experimental supersonic bomber.

Barry always went out of his way to say hello to a fellow Ham. During the 1964 Presidential campaign he was making stops at various cities around the country to give speeches. During his stop at London, Kentucky, Tony Deprato, WA4JQS, was there, but three rows back from

the front of the crowd. Tony wanted to shake his hand, but didn't think he was going to be noticed. Barry looked his way as he passed, adjusted his glasses and looked again. Tony was wearing his call sign badge, and Barry called out over the crowd, "Hi. Nice to meet you. My call is K7UGA."

Senator Goldwater was a life member of ARRL, and a longtime member of the Quarter Century Wireless Association. In 1991, a letter was sent to Barry, asking permission to rename the local chapter as the "Barry Goldwater" QCWA chapter. He replied, "Dear Gerry, You flatter the hell out of me, by suggesting you change the name of

Radio in Tibet

PETE PETERSEN, WY7Z

The movie *Seven Years In Tibet* was taken from a book by that name published in 1954.

The book relates the experiences of an Austrian mountain climber, interned in India by the British at the start of WWII, who escaped to and lived in Tibet until it was invaded by the Chinese Army in 1950. In addition to its main theme, the book provides a limited but interesting look at the meager use of radio, including Ham Radio, in Tibet at that time as summarized below.

For centuries Tibet had very little contact with the rest of the world and rarely admitted foreigners. Tibet did not belong to the ITU and its postal arrangements were complicated and seldom used. The British trade representative in the capital city of Lhasa had the only regular, direct communication between Tibet and the outside world in the 1940s. Their radio operator, Reginald Fox, maintained voice radio communication with British radio facilities in India. He moonlighted on the side, charging batteries for the few other owners of radio receivers in Lhasa.

In about 1948 Fox left the employ of the British legation and went to work for the government of Tibet. His primary duty was to listen to foreign news broadcasts and report the political news to the government. He was given a "small radio set" to use. He was able to hear foreign stations with some regularity

because Lhasa had no electrical machinery, high voltage transmission lines, or other sources to cause interference.

The Tibetan government anticipated an invasion by the Chinese Army, so in 1949 they instructed Fox to install two-way radio stations at strategic locations. He hired another Englishman, Robert Ford, to operate a station located at Chambo in Eastern Tibet.

Ford and Fox were Ham operators in addition to their professional radio work. The Fall 1949 issue of the *Radio Amateur Call Book Magazine* listed three Hams in Tibet: Bob W. Ford, AC4RF (exAC3SS), and Reg. N. Fox, M.B.E., AC4YN, both at a mail address in Lhasa; and N. Chakravarti, AC4NC at the Indian Mission in Lhasa.

The book states that Hams from all over the world competed for the privilege of talking with Ford at his remote location in Chambo and that Hams sent numerous letters and gifts to both Fox and Ford. The book makes no mention of Fox's Ham activity or of his life after the Chinese takeover.

In 1950 Ford was captured by the Chinese while trying to escape when they invaded Tibet. He was accused of espionage, based on what the book called his "notes" but which were probably his government radio or Ham Radio log books. He was also accused of a number of other crimes, including poisoning a Tibetan monk. He was imprisoned and as of the book's writing in 1954 was still held in spite of the efforts of the British Ambassador in Peking to obtain his freedom.

our chapter to the Barry Goldwater Chapter. Honors like that just don't come around that often, and it would make my life complete to know that I left my name on such a good cause. Sincerely, Barry"

The staff at *Worldradio* had the opportunity to meet with Senator Goldwater twice at his home. He was always a gracious host, and went out of his way to make the visitors feel right at home.

As one of Amateur Radio's strongest voices, his big signal will be missed by all.

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More special event call signs requested

The ARRL has petitioned the FCC for changes in the administration of the special event call sign program. The League wants the FCC to amend its rules to permit the use of additional special event call sign formats in addition to the current one-by-one (1x1) format now authorized.

The petition also asks the Commission to include call signs denoting U.S. territories and possessions having no mailing address within the special event program. Use of those call signs would be limited to locations corresponding to and denoted by the call sign.

Under current rules, 750 combinations of 1x1 format call signs are available for limited periods. Stations operating with special event call signs still must identify with the station's regularly assigned call sign at one-hour intervals.

The League says there has been significant demand for special event call signs outside of the 1x1 format and for DXpeditions to locations under U.S. jurisdiction which do not have U.S. Postal Service mailing addresses. The League also says there's "a great deal of interest" in

additional special event call sign formats that would let the call sign symbolize a particular event or type of event.

The petition requests that the FCC make available to the special event call sign program 1x1 callsigns with a letter X suffix as well as 1xx1, Nxx2, and 1xx3 formats, as part of the special event program. The use of the Nxx2 format avoids conflicts with TV translator call sign assignments, which start with K or W. The ARRL also asked that call signs appropriate to U.S. territories and possessions such as Desecheo Island near Puerto Rico or Kingman Reef in the Pacific be made available to DXpeditions for limited periods.

A comment period will be announced when the FCC assigns an RM number to the League's petition.

Declaratory ruling request mishandled and misunderstood

The ARRL says its request seeking an FCC declaratory ruling affirming the value of band plans was mishandled by the FCC and misunderstood by the amateur commu-

nity. In comments on RM-9259 filed with the FCC in May, the ARRL says it never intended to propose any changes to the amateur rules, and its request should not have been treated as a rulemaking petition.

The ARRL said it does not dictate how bandplans are developed and was not asking to make specific bandplans mandatory or to accommodate certain uses to the exclusion of others. "Exactly the opposite is intended," the League's comments declared. "Voluntary bandplans should be voluntary, and adherence to them should remain voluntary."

The League said its only goal was to have the FCC interpret and clarify the scope of "good amateur practice" as the term is used in Part 97 of the Commission's rules. It wants the commission to affirm, as the then-Chief of the Private Radio Bureau did in 1983, that, "given the widespread acceptance of band plans in the Amateur Service, operation not in harmony with those plans which results in interference to other amateur uses is not good amateur practice."

The ARRL reiterated that voluntary bandplans that enjoy general acceptance and adherence among

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 03 June 1998.

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	ABØHQ	KIØNH	++	KCØDQD
1	AA1TR	KE1JU	++	KB1CWV
2	AB2FJ	KG2OL	++	KC2DRC
3	AA3RD	KF3BR	++	KB3CRI
4	AF4KF	KU4SO	++	KF4YRX
5	AC5QG	KM5QS	++	KD5EJW
6	AD6FK	KQ6WK	++	KF6RFW
7	AB7YD	KK7NZ	++	KD7BZX
8	AB8CS	KI8FZ	++	KC8KHX
9	AA9WD	KG9NS	++	KB9SYK
N. Mariana Is.	NHØE	AHØAY	KHØGY	WHØABJ
Guam	++	AH2DH	KH2TK	WH2ANW
Hawaii	NH7H	AH6PK	KH7JZ	WH6DEO
Amer. Samoa	AH8R	AH8AH	KH8DM	WH8ABF
Alaska	ALØL	AL7RD	KLØOQ	WL7CUU
Virgin Is.	++	KP2CN	NP2KD	WP2AIJ
Puerto Rico	NP3W	KP3BG	NP3WP	WP4NNT

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

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Thank you!

Hams are "indispensable" and a keystone to self regulation. A copy of the League's comments to the FCC is on the ARRL Web page at www.arrl.org/announce/RM-9259-cmt.pdf.

(Ed: We believe there is an informal band plan in Canada which is not adequately observed in the U.S. An FCC Declaratory Ruling might help this situation).

Suggested ULS changes

In comments filed 21 May, the ARRL expressed overall support for the FCC's wide-ranging rulemaking proposal to implement the Universal Licensing System (WT Docket No. 98-20), but suggested several changes to the plan. The League:

Supported deleting the application process for non-U.S. Hams to operate in this country, but said that the FCC should impose a one-year time limit on such operation or at least be consistent with CEPT and CITELE requirements.

Urged the FCC to authorize visitors from certain European countries and the Americas to operate during short visits to the U.S. The League also said the new rules should require non-U.S. operators to have their license document in their possession while operating in the U.S. or its possessions.

Said it would "object strongly" if the FCC stopped issuing license documents to Hams. The League said it's often necessary to prove that one is a licensee. It cited amateur protections under state and local scanner and antenna laws, as well as requirements to produce a license for overseas operation. The FCC's ULS proposal did not suggest eliminating license documents, but the League said it has heard "repeated staff references" to the notion, and added that the proposed rules "contain nothing that would continue to obligate the Commission to issue license documents."

Discouraged the FCC from adopting a proposal to turn over issuance of club and military recreation licenses to private, third-party administrators.

Suggested changes for the new multiple-service FCC Form 605, saying that the new form makes it "inherently more cumbersome for the amateur licensee to determine which portions of the Form are to be used and which may be disre-

garded." Also, the League urged the FCC to retain a standard physician's certification for a medical exemption from the higher-speed Morse Code requirement.

Questioned from a privacy standpoint the requirement for applicants to supply a Taxpayer Identification Number (TIN), typically a Social Security Number, if they are not participating in the vanity call sign program, which is subject to a regulatory fee.

Said the FCC should not make electronic filing mandatory as of 01 January 1999, as the FCC's Notice proposes. The League said electronic filing is not yet available to all applicants and the requirement "would certainly disenfranchise some."

Germany authorizes AR "learner's permit"

A new program in Germany has established the equivalent of a learner's permit in an effort to make Ham radio more attractive to newcomers. Under the training program, amateurs in Germany may apply for a special instructional license that permits them to set up a station to be used by aspiring Hams.

The Deutscher Amateur Radio Club (DARC) proposed the plan — which is similar to one used for many years in the former East Germany — to the licensing authority, the Bundesamt fuer Post und Telekommunikation (BAPT). Those using the instructional station would have the operating privileges of the instructor holding the license.

During a visit to ARRL Headquarters in May, DARC International Liaison Officer Hans Berg, DJ6TJ, said the goal was to have a program to attract people into Ham radio and give them a chance to try it while preparing for the licensing examination. "This way, you have a chance to get people to your station to show them how Ham radio works," he said. The instructor would be responsible for making sure the station was operated according to the rules, but, Berg says, the rules do not specify that the operator has to actually be present when the station is being operated. There also are no age restrictions on those who operate an instructional station.

Instructional stations would have distinctive call signs, with DN prefixes. Wolfgang Manz, DJ3EO, who heads the DARC's Youth and Edu-

cation Committee, says a few DN call signs have been issued. "Unfortunately, some amateurs broke off contact because they regarded the instructional station to be illegal," he said.

Berg concedes that some might abuse the program, but he's optimistic that it will lead to Amateur Radio growth in Germany. "It worked pretty well for generations" in the former East Germany, where it was the only way for people to get into Ham radio, he said. Berg expects the program to be expanded to Austria and Switzerland within a year, and, eventually, it could be adopted throughout Europe.


Germany also has added what Manz calls "a sort of Novice license." It gives privileges on 2 Meters and 70 cm with power under 10 W EIRP. Call signs will begin with DO.

Local CB enforcement bill passes Senate

A bill giving state and local governments the power to enforce federal regulations covering illegal CB transmitters has passed the U.S. Senate. Senate Bill 608, introduced by Wisconsin Senator Russell Feingold, was incorporated as an amendment into S-1618, the Consumer Anti-Slamming Act, approved 12 May on a 99-to-1 vote (Sen Biden not voting). The measure, as redrafted from the original bill with assistance from the ARRL, totally exempts Amateur Radio from its provisions.

The measure requires the FCC to provide technical guidance and includes an appeals process. It's not yet known if or when the entire bill will come up for a vote in the House of Representatives.

In remarks read into the Congressional Record of 12 May, Feingold said in part: "First, the amendment makes clear that the limited enforcement authority provided to localities in no way diminishes or affects FCC's exclusive jurisdiction over the regulation of radio."

"Second, the amendment clarifies that the possession of an FCC license to operate a radio service for the operation at issue, such as an amateur station, is complete protection against any local law enforcement action authorized by this amendment." 

Send special event information three months prior to the date of its occurrence.

"The Tinkerer's Guide to the Galaxy" or "Daddy, can you fix this?"

GEORGE C. COOK, AA3JU

I am convinced that we are here because no other hobby could possibly stand having a huge group of fidgety tinkerers as its body of membership. Seems to me that any given Ham is always fixing or soldering something together. Let's face it; as an aggregate group we probably represent about 85% of the consumption of the world's annual production of both tin and lead. And if truth were to be told, most of us know more about the stock of the local hardware store than its owner.

When I got a panic call from the editor of our club bulletin reminding me that I had less than 24 hours to turn out some sort of literary gem for that magazine. I promptly went to work.... re-wiring the dashboard lights on my Oldsmobile Delta 88. This testament to American automotive engineering was produced well before Detroit learned any lessons from Japan about the proper building of a motorcar, hence there is very little that ACTUALLY works on it. That is why my Oldsmobile now has Kenwood pilot lights in place of actual dash lights. And I am sure that I could write an entire article on how I replaced the electric window switches with 30 amp breakers.

I don't personally own any piece of radio gear that I have not disassembled and modified in some way. That, I think, is true of most of us. Regardless of how much bellyaching about how over-sophisticated the "new" radios are, I figure the life of the factory torque on the cabinet screws on a new radio is about 15 minutes after unpacking. Modifying an HT for MARS/CAP even though you aren't a member of MARS is a popular tweak. I know that if I were of a mind to I could use my Kenwood 930S as the world's most expensive CB radio. Amazing what you can do with a pair of wiring dykes and a soldering iron. And my poor Midland 2-meter rig is about as far from stock as ever could be right now. I bought

this baby thinking "Great Packet radio." This baby now has switches and plugs where God had never intended them to be.

After re-wiring the Olds today, I took a stroll around the grounds. (I still had 19 hours to go for the article!) I could tell that I was getting N3SWA (my wife Bonnie) nervous. She was looking at me the way a condemned man looks at the phone outside the gas chamber. You see, I was looking up — to the trees. I am, to be sure, more prolific at spinning webs in branches than even the most dedicated of tentworms. Albeit that mine are woven from copper and aluminum rather than silk (do tentworms weave in silk?). At last count I have pieced together over 15 wire antennas strung through my trees in a most insane pattern. Antennas are a passion shared by all Hams. I took note today (with 15 hours to go) that I have seven antenna books around here. I was looking for that one last collection of wire that would put me into the "super station" class. Funny thing is that I have visited super stations and their

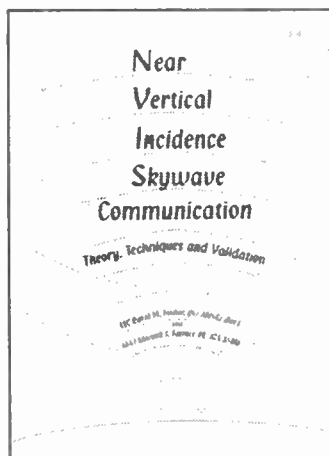
owners seem equally intent on producing antennas. I can only surmise that it is a genetic trait shared by us and one that eventually leads us to fill out a form 610. I have decided that a cage antenna for 160 Meters might just do the trick.

I don't think that antennas is where this all stops, though. I know each one of us has a big collection of desoldered odds and ends that we call a "junk box." I have read entire magazine articles dedicated to building projects just from a junk box. I made one of these once. N3SWA asked me, "What is that collection of junk?" Frankly, I had no answer. I know it was well constructed, I knew that it must be useful or it would never have been published in *QST*, and I knew that building it was a soul satisfying experience. (Bonnie knew that it was a collection of junk!)

Well, best I scoot whilst I have 20 minutes or so to get this out on the net. But before I do I think I want to reroute the cables to the TNC and perhaps check the SWR on the Ringo. I don't think it would take more than 15 minutes or so to tweak it up to snuff. And while I am doing that, take a look around you. I am sure you will see a few items that you have left unmodified or unbuilt.

So grab it down off the shelf and fix it, build it, tweak it. It'll be good for your soul and keep you from joining the Numistacist Society of America!

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Coax – How it works and how to work with it

RON NOTT, K5YNR

Coaxial cable has been in use for more than a half century, but many misconceptions still exist about how it works and what it does. Perhaps the best place to start is to review the history of this popular transmission line and why 50-ohm coax has become the most popular not only for amateurs, but for commercial, government, military and broadcast users.

According to information published by the Bird Wattmeter Co., the decision to standardize on 50 ohms (in some cases 51.5 or 52 ohms) was made by the U.S. Navy based on sizes and availability of copper pipe and tubing during WWII. They needed a quick source for manufacturing coax line and going with standard dimension materials was the fastest way.

Bear in mind that this early coaxial transmission line was rigid, rather than the flexible cable we now use. It was literally made of copper pipe and tubing. It was usually air dielectric with Steatite or ceramic disk spacers to keep the center conductor concentric within the outer conductor, and was often pressurized with dry air or nitrogen to keep moisture out and increase power handling capacity. Frequencies used by the Navy were from VLF through UHF and sometimes with very high transmitter power.

The Navy saw the advantages of coax over open wire line in their shipboard applications. Open wire transmission lines must be kept away from metal, and ships are massive hunks of metal. Severe weather and salt water are also hard on open wire lines. On the other hand, rigid coax can be attached directly to metal bulkheads and is self-shielding. Pressurization keeps the weather away from the conducting inner portions of the lines.

As time went on, flexible coax was developed with a copper wire center conductor, a braided copper outer conductor, polyethylene (P.E.) dielectric and a tough plastic outer jacket. The early stuff was not very good. It was lossy and the P.E. became

contaminated by copper oxide. This increased the loss. After a time, the P.E. would change from milky white to a greenish cast from the oxide.

During these pioneer days of coax, they realized it needed some kind of designation everybody would easily recognize. So they came up with RG as the prefix. What does RG signify? Why, RADIO GUIDE, of course. It could be compared to wave guide used for microwave frequencies as both of them guide RF energy from one place to another.

Coaxial cable became very popular and improvements were soon in coming. Non-contaminating dielectric material was developed and materials other than P.E. were used for dielectric. Foam dielectric is now available which reduces loss because of the entrained air or gas pockets in the foam.

Coax using dry air or nitrogen for the dielectric has the lowest loss. It is commonly used by high power TV and radio broadcast stations. An outgrowth of this is type 9913 cable. It has a partially air dielectric which lowers loss. However, don't allow water to get into it. Capillary action sucks water into it like crazy and when this happens, it is no longer low loss cable. Broadcasters pressurize their coax to keep moisture out. Maybe someone will invent a PL-259 connector which will allow pressurization of 9913 and similar cables.

A couple of coax details found in the handbooks are worth looking at. They are impedance and capacitance per unit length. The former is expressed in ohms and the latter is expressed in pF per foot (or meter). I used to wonder why they didn't also include the inductance per unit length if they're going to tell us the capacitance. It's because wire has a certain inductance per unit length and we can't do much about it. It

varies slightly with the wire diameter, but not much. On the other hand, capacitance can be varied by changing dimensions of the inner and outer conductors and spacing between them. As you know, the value of a capacitor is determined by the area of the plates, the distance between the plates and the relative permittivity (dielectric constant) of the material between them.

Characteristic impedance

— just what makes RG8 50 ohms?

You can see we're stuck with the inductance per unit length, but can vary the capacitance, so how can we use this knowledge to determine the impedance of a length of coax? There are many formulas for analyzing transmission lines, but from what are they derived? The most fundamental and simplest transmission line equation of all:

$$Z_0 = \sqrt{\frac{L}{C}}$$

Where:

Z_0 is the characteristic impedance of the cable

L is the inductance per unit length
 C is the capacitance per unit length

As an example, we can go to catalog 36 of the Andrew Corporation which gives both capacitance per unit length and inductance per unit length for all their cables. Their type LDF4-50 is 1/2" Helix cable with a foam dielectric and is very popular in amateur repeater systems. It is commonly called hard line. From the catalog, the capacitance is 23.1 pF per foot and the inductance is 0.058 uH per foot. Plugging these values into the equation and solving yields an impedance of 50.108108 ohms.

$$Z_0 = \sqrt{\frac{L}{C}}$$

$$Z_0 = \sqrt{\frac{.058 \times 10^{-6}}{23.1 \times 10^{-12}}}$$

$$Z_0 = 50.108108... \text{ ohms}$$

Wait a minute! You mean I buy this expensive cable, yet it is not precisely 50 ohms? Yes. In the catalog, impedance is stated as 50 ohms = + or -1. It is very good stuff, but manufacturing tolerances and variations must allow some tolerance in impedance value.

Bear in mind this may be the best

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there is in commonly used cable. In general, the cheaper the coax, the greater the impedance tolerance is likely to be. Just don't expect any coax to be precisely 50 ohms. This might help explain why regardless how carefully you build and prune an antenna, you sometimes cannot get a precisely 1:1 VSWR. The antenna may be 50 ohms, the radio may be 50 ohms and the VSWR meter may be 50 ohms, but the coax may be a little off. Just don't expect perfection and you won't be disappointed. This is yet another reason to have a good tuner.

Now that we understand impedance.....

This explains why the center conductor of RG59 is thinner than RG58 and the center conductor of RG11 is thinner than RG8. The thin center decreases the capacitance which increases the cable characteristic impedance.

The reason values of capacitance per foot for coax are found in some handbooks is that when applied properly, you can use a length of coax for a capacitor. However, you should be careful that the length is substantially less than a quarter wavelength at the frequency for which you're making the capacitor. As the coax gets near a quarter wavelength long, it will begin to act as a length of transmission line rather than as a simple capacitor.

Inside an operating length of coax cable

Now we are in a different world. Just how does the energy travel through a length of coax? It's not just electricity in two pieces of wire. The RF energy enters as electrical current and all of Ohm's laws for AC apply. But very quickly an electromagnetic wave is travelling through the space between inner and outer conductors. Its velocity is determined by the stuff in this space called the dielectric. Whatever this material is has a property called its relative permittivity (dielectric constant). This is expressed as a number referenced to a vacuum, the permittivity value for a vacuum being 1.0. If we take the square root of that number (the permittivity) and divide it into one, it will give us the velocity factor which is referenced to the velocity of light in a vacuum. Because the relative permittivity

will normally be greater than 1, the velocity of the energy with the coax is less than the velocity of light in a vacuum (space).

So what do the inner and outer conductors do? They function as guides for the EM energy, but the energy passing between them induces RF currents in the surfaces or skins of both. You can't get away from the fact that an RF current in a conductor causes an electromagnetic field around it and conversely, the moving wave induces an RF current in the surfaces of the inner and outer conductors.

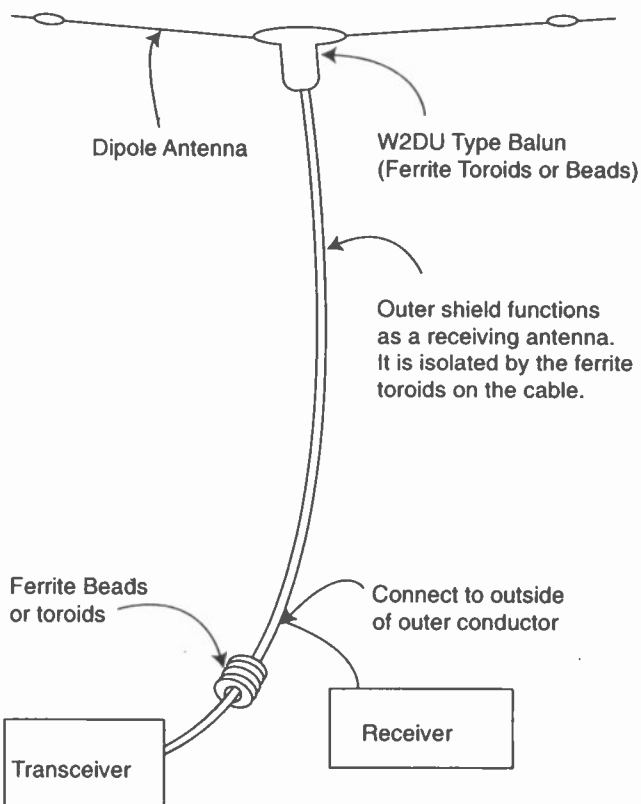


Figure 1. One of many possible applications of using the outer shield independently of the transceiver signal.

Taking advantage of skin effect

In a good conductor such as copper, RF currents do not penetrate deeply because of skin effect. The higher the frequency, the less the penetration depth. At extremely high frequencies, the depth may be less than .0001 inch. This means that most of the copper in your coax is just acting as a support for the skin. It also helps explain why the losses increase and power handling capacity decreases with increasing frequency. The higher the frequency, the thinner the skin with consequently higher losses and lower power handling capacity. There is just less copper to carry RF current. Bear in mind part of the losses are due to the dielectric material.

Use the outside of your coax as an antenna

Now let's look at the coax outer conductor only. Because of skin effect, all the RF energy should be inside the cable and there should be no RF current on the outside. Baluns have been developed which use ferrites to block RF currents on the outside of the cable. However, the outside of coax is exposed to space and all the radio signals out there. This means the outer skin of the outer conductor could be used as an antenna on a different frequency from that travelling inside it simultaneously.

For example, a part of the outer jacket could be isolated between ferrite toroids or beads and used as a random length receiving antenna while the inner skin is used in a QSO on a different frequency (fig. 1). This could be used on Field Day as well as at the home QTH. Assuming good quality coax with a high percentage of shielding, the signals on the inside and the outside should be well isolated from each other. Hardline would work best. Whatever you use, it's a way to get double duty from your coax cable.

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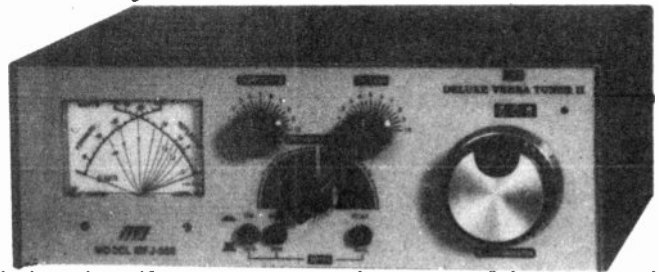


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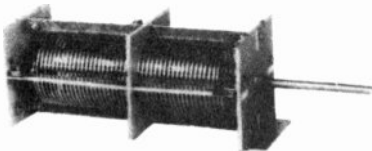
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Only MFJ reads SWR and true RF impedance from 1.8 to 170 MHz on dual Meters, digital readout and SWR Bargraph . . . built-in frequency counter . . . Ni-Cad battery charger . . . Battery Saver . . . easy access battery panel . . . smooth reduction drive tuning . . .

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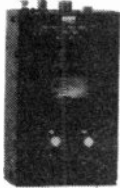
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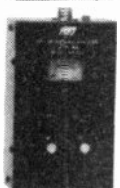
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Dayton Contest Forum

ACE JANSEN, N3AHA

CQ Test! The Contest forum kicked off from Meadowdale High School with seven topics and an audience of approximately 150 contesters. Renowned single-op, Doug Grant, K1DG, was the moderator and he introduced each of the speakers, including the first topic.

"To Win the World," a video made in the early 1980s, was the professionally produced story of K2GL's contest superstation in Tuxedo Park, New York. Harold Reeves, K2GL, had a beautiful house on top of rolling hills with many pieces of aluminum growing in his backyard. There were ten 195 foot towers with the prized possession being the 4-element 80-meter yagi, a 76-foot long, 90-foot wide monster costing \$12,000. The size of the antenna warranted the 700-pound rotator. Unfortunately, the antenna lasted only five weeks and came down in a windstorm.

The video described the preparations and operator techniques for winning the CQWW SSB contest. Unfortunately, with all their great equipment and great operators, 10.55 million points was not enough for N2AA, the contest call used at K2GL, to conquer champion W2PV's 10.67 Million points. Propagation favored stations further north. Yep, I've used that one before too.

VP5FXB

Geoff Howard, WØCG, gave a presentation describing a contest operation from VP5FXB. VP5FXB is a memorial contest station honoring DXer/Contester G3FXB. Geoff also described a new group calling themselves the Caribbean Contesting Consortium. The CCC is looking for operators of all skill levels to participate in low budget Caribbean contest operations. They claim there's an open invitation to come along for a contest. For more information, check out <http://asgard.kent.edu/ccc/vp5fxb/> on the internet. Operators for the VP5FXB operation included WØCG, W8KT, N8LGP, WA9S, K4LT and W9EFL.

The contesters operated from Jody's station, VP5JM. Geoff showed a video of station set-up and

installation of the 80 feet of Rohn 25 tower. It was very amusing watching everyone try to get bolts in the ground to hold the tower base. A 40-meter tower and delta loop rounded out the antenna installations. VP5FXB made 7992 QSOs for a total of 8.1 million points, but took second place to V26B with 9292 QSOs and 9.8 million points.

African Italy

Alberto Annesi, IV3TAN, and Fabio Schettino, I4UFH, gave a presentation on their contest operations from Lampedusa Island, an Italian Island so close to Africa that it's considered part of CQ Zone 33 (normally considered an African zone). Alberto, Fabio and other Italian contesters have set several single band world records from Lampedusa Island.

The island is only six miles long and involves a 22-hour boat ride from Italy. The team has set up many antennas on the island, including yagis, phased verticals, and beverages.

The records have piled up over the past few years;

CQWW SSB in 1995

IG9W (IV3SHF operator) 1st World 160 Meters
IG9T (IV3TAN operator) 1st World 80 Meters
IG9A (IT9GSF operator) 1st World 40 Meters
IG9R (I4UFH operator) 2nd World 20 Meters

CQWW CW in 1995

IG9A (UA3DPX operator) 3rd World 40 Meters
IG9R (I2VXJ operator) 3rd World 20 Meters

CQWW SSB in 1996

IG9/IV3TAN 1st World 160 Meters
IG9/I4UFH 1st World 80 Meters
IG9/IT9GSF 1st World 40 Meters
IG9/IK2QEI 5th World 20 Meters

CQWW CW in 1996

IG9/AC6WE 1st World 40 Meters
IG9/IT9GSF 1st World 20 Meters

The presentation was entitled, "A New Record-setting QTH — African Italy" and as you can see this African-Italian island has truly proved to be a new record-setting QTH.

6Y4A

During the bottom of the sunspot

cycle, 6Y4A accomplished 14,967 QSOs during the 1997 CQWW CW contest. It was the 4th highest QSO count in the history of CQWW CW with the record only 275 QSOs away — 15,242.

Through research, Tom Schiller, N6BT, and Ken Silverman, K2KW, determined that a 2-element vertical would perform better from the beach than a 2-element yagi antenna. They also determined through testing that the optimal location for a vertical antenna is 1/4 wavelength from the water. Consequently, all the antennas were optimized for a sea-front QTH including ease of installation, minimization of front-to-back ratio and fixed rather than rotatable antennas.

The 6Y4A operators included AG9A, K2KW, KE7X, JE3MAS, JI3ERV, N6BT, N6TV, W4SO, and W9QA. The team operated from Discovery Bay with 800 feet of shoreline available to them for their 29 antenna elements.

The antennas used were on 160, a 53-foot vertical with radials rising sharply then horizontally elevated at eight feet; on 80 Meters, a parasitic vertical array; on 40 Meters, a 2-element Force 12 ZR parasitic element for USA/JA and a 2 element ZR for Europe; on 20 Meters, a 2 by 2 driver reflector for Europe and a 2-element vertical array for USA/JA; on 15 Meters, a 2 element vertical array (1/4 wave parasitic elements) for USA/JA/EU and a monoband yagi; and on 10 Meters, a 2-element vertical array for USA/JA and a monoband yagi at 33 feet.

The equipment included six complete stations with amplifiers. They had two operating tables; table 1 included 40, 20 and 15 Meters, and table 2 included 80, 160, and 10 Meters. The team used DX Telnet to get to the OH2BUA webcluster for packet spots and beacon wizard to track propagation.

The 6Y4A team made 637 QSOs the first hour and 208 QSOs one hour on 40 Meters. Total QSO and country count for each band was:

Band	Q	DX
160	908	67
80	1943	95
40	7766	126
20	3754	149
15	3069	128
10	1527	90

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Look for 6Y2A in CQWW CW 1998.

NJ2L

Rus Healy, NJ2L, gave a talk on building a competitive 16-band contest station on a single tower. Rus first said he had to decide on his goals, basically to work 160 Meters through 10 GHz (excluding the WARC 79 bands), be competitive, fit in the family budget, capable of multi-single operation, two-radio operation, rotating antennas, stacked yagis, gain and directivity for low bands, two antennas per band, and reasonable tower loading.

His requirements led him to one rotating tower; a 100-foot Rohn 25 tower and the top 50 feet rotates using the K5IU RTS. He decided he wanted a single tribander and a 2-element 40-meter beam.

Rus discussed the benefits of rotating towers as the ability to stack tribanders, with the top two independently rotatable and the bottom one fixed, although that's not what he did. Rus has a TA34 at 103 feet and a 40-2CD at 96 feet. He also has a Hygain 155CA at 48 feet fixed toward Europe. He uses a wire array and ground plane for 80 Meters and an inverted L for 160 Meters. Rus also uses beverages for east and west low band reception.

Rus sized up the contesting audience and decided the majority of folks probably didn't care what he had up for 6 Meters and above, so he skipped over those charts. Rus counted 189 elements on the tower including a dish which Rus counted as a single element.

In the shack, Rus uses remote coax switches and routes alternating bands to each rig; 160/40/155CA with one amplifier and tribander/80 with the other amplifier. Beverages are connected to either radio. He also has it set up so either radio can use any amplifier or antenna...it must be a wiring nightmare!

Results are proof in the pudding, a 1997 CQWW CW finish of 3.58 million points, including 2282 QSOs and 406 multipliers. Rus has big plans for 1998 including the addition of a second tower. Guess next year's Dayton presentation will be "Building a competitive contest station using two towers."

Contest Log Checking

Bob Cox, K3EST and Dick Norton, N6AA, gave a presentation on some

CQWW log checking statistics. Dick estimates around 2000 manhours for checking logs. Logs are received via e-mail (59%), diskette via the post office (38%), and both methods (3%). CQ Magazine prefers electronic log submissions (e-mail) with the subject being call used, the text being a summary and category and attached a text log with the correct extension.

The last topic was entitled "Winning Single-op Strategies" and included a panel of distinguished single operators including John Dorr, K1AR; Randy Thompson, K5ZD; Rich Smith, N6KT; Mike Wetzell, W9RE; and Tom Georgens, W2SC. John also acted as moderator to keep the panel hopping.

The first question John posed to the panelists was how does the contest community encourage younger contesters. Responses included giving Novice and Technician class amateurs more frequencies and encouraging them to join in a contest.

Most of the contesters responded similarly to what was the most difficult thing about single op contesting. Items discussed included sleep deprivation, feelings of isolation, questioning why they're doing what they're doing, and basically 2nd day doldrums.

When asked how they prepare for lack of sleep, W9RE said he likes to stay up late the week before and sleeps later into the day. Most working blokes don't have that flexibility, so K5ZD recommended getting a lot of rest the week before the contest and taking a nap to wake up one hour before the start. Randy also recommended sleeping in 45-minute intervals.

When asked if the panel competed against themselves or against others, most replied they liked to set goals, but the real measure of success was how they did against their closest competitor. Randy said his goal is to beat K1AR once, whereas K1AR has to continue to beat Randy every contest. W9RE, being from the

Midwest, said getting in the top 10 is a personal win. W2SC said he likes to focus on making every minute effective.

What are other means of improving scores or learning more effective techniques? Most discussed use of a 2nd station for multipliers, operating from multioperator station to learn band openings, K3ZO postings on CQ Contest internet reflector, and searching and pouncing by queuing 4-6 in memory on 2nd station and knocking them out all at once. K5ZD also cautioned listeners that it takes a good six years to learn to single op from a new location.

All in all it was a very enjoyable forum for Contest enthusiasts. It definitely whetted the appetite for those without their own superstation and the panel encouraged everyone that there is always room to improve a contesters performance. Even the accomplished panel members continue to learn tricks and strategies to improve their scores and if they are constantly improving, the rest of us have a lot of catching up to do. End Test!

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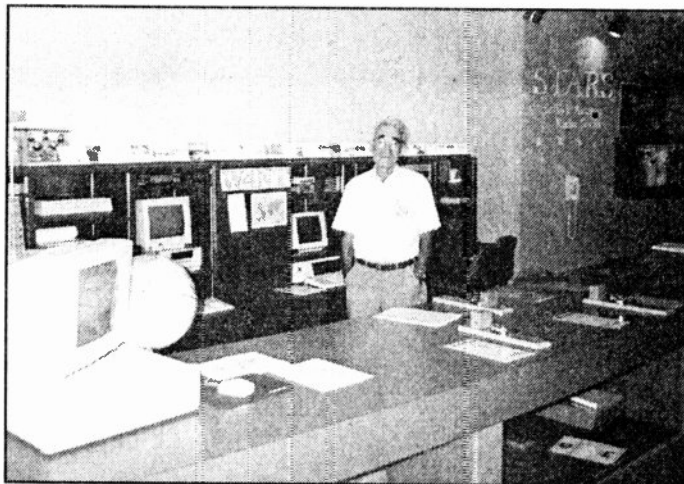
Georgia students experience "live" emergency demo

JUD WHATLEY, W4NZJ

Atlanta is fortunate to have the Atlanta Science Museum for young people and adults, too. It is called Atlanta Sci-Trek. Hundreds of students and adults visit the science museum each day to see real and live science demonstrations. Schools throughout Georgia regularly transport their students to Sci-Trek as part of their "hands-on learning days." Amateurs are fortunate in that there is a permanent Amateur Radio station exhibit. We refer to it as "STARS" (Sci-Trek Amateur Radio Station) and it has the call of W4WOW. Volunteer amateur operators regularly staff this exhibit to demonstrate live Ham radio, answer any questions visitors may have, and hand out Amateur Radio related information. It's a great Amateur Radio recruiting and public relations tool.

Several local radio clubs support this effort, including Chapter 49, Quarter Century Wireless Association (QCWA). The "Peach State Chapter" is a very pro-active chapter and participates in many public outreach efforts. In addition to the above, we have also set up radio exhibits at the annual Kidney Foun-

ation Camps here in Georgia to give live radio demonstrations to the kids and their parents. Our activities have always been fulfilling but not as challenging or possibly ful-



Bill Plage, W4DQT, at Sci-Trek Station W4WOW, Atlanta, GA.

filling as on Friday, 20 March 1998. It was on this day that Gainesville, GA, was struck by a deadly tornado.

Bill Plage, W4DQT, and I were scheduled to staff the STARS exhibit as part of our QCWA commitment. Having heard of the tragic tornado hitting Hall and White counties just hours earlier, we were unsure as to whether we should go to STARS or not. Then it occurred to us that we could use this actual event as a live demonstration of Amateur Radio in true emergency operation!

As soon as we opened the exhibit, we tuned to the Gainesville repeater on 146.07. As hundreds of young students, school officials, and adult visitors toured the exhibit, they actually had the opportunity to hear true

Amateur Radio in emergency operation! We explained how amateurs receive their emergency communication training through the Red Cross, ARES, and Sky Warn. We also carefully explained the ongoing communications procedures and techniques being used by the Gainesville amateurs and answered their many questions.

This terrible tragedy in life and suffering proved to be a real life example of how people pull together during emergencies, especially amateur operators. During our four-hour informal presentation, there were probably 300+ visitors who viewed this live demonstration of Amateur Radio in emergency operation. It is inaccurate just to say they were impressed. They were totally AMAZED...they were in AWE! It is one thing to hear about Ham radio in emergencies but much more impressive to actively observe it in operation! All were impressed with the organized and smooth communications flow taking place. We also heard many, many favorable comments

and expressions of gratitude to Amateur Radio and the amateurs directly and indirectly involved in this terrible tragedy.

Because of the extreme interest shown by the visitors, an unusually large number of Amateur Radio handouts were given to numerous students (ages 10 -17) and adults, too. Although Bill and I could not help the Gainesville Hams directly at that particular time, we sincerely hope that, by allowing the public this unique opportunity to actually hear Amateur Radio at its best, we have some way helped Ham radio and the people of Hall and White Counties indirectly. We hope that we have increased the public's awareness of the dire situation facing the brave people of Hall and White Counties and the public's awareness of Amateur Radio's commitment to public service, especially during such emergencies. While it was a sad day in Georgia for those who had perished and/or suffered otherwise, it proved to be a "shining moment" for Amateur Radio and the dedicated operators for unselfishly volunteering their time and energies to help others.

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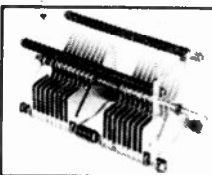
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Antenna raising in China

JERRY THYE, KF7MP

China and the company that I work for, Boeing, have a long history of technical exchange. It was the Boeing Radio Club (the BEARS) that became a big player when China decided to open up to the outside world about 20 years ago. Members of the Boeing Employees Amateur Radio Society were asked to come to China and give advice about the regulatory and technical aspects of bringing China back to Amateur Radio.

Ten years ago the members of the BEARS were again invited to return and check the radio progress. It was during this time that the first Amateur Radio contact was made from the Great Wall.

The 1989 Tiananmen Square incident shut down the radio hobby just as it was starting to blossom. In the ensuing years the hobby has been again gaining some status as an educational and recreational pursuit.

I arrived in Jinan, the capital city of Shandong province, in November of 1995. To find Shandong Province on the map look for the turtle head protruding from the east coast of China toward Korea. My purpose in Jinan was to be technical support for a new start-up airline. When the work load finally diminished, and allowed me time to locate the local Amateur Radio people, a year had passed.

In the early spring of 1997 a meeting was held at the Children's Palace, at the club station, BY4JQ. The radio shack is in one corner of the computer lab classroom. The club station equipment consisted of an Icom 710, speaker, power supply and a few test instruments for SWR, voltage and matching.

The only antenna was an inverted V tuned to 40 Meters on the top of the five story school building housing the radio club. I quickly realized that if the station is to help the students improve their language skills by communicating internationally, there would be improvements required to the antenna system.

It became evident that with a three-band beam the station could work beyond the 800 kilometers that they worked on 40 Meters. I sent an

e-mail to a member of the BEARS in Seattle requesting a rotator and controller from any member of the club who might have one hanging around collecting dust.

On my next trip to Seattle I talked with Marlo at Amateur Radio Supply (now out of business). I asked if he could help with a small discount on the antenna. Marlo not only helped with the price of the antenna, he also arranged to get the antenna to the airport for air shipment.

I approached United Airlines' Seattle air freight office about the idea of a free trip for the antenna to Beijing. They responded with a yes and the puzzle pieces started to fall into place.

After several weeks and with the help of the local airline I support, the antenna arrived in Jinan from Seattle and Beijing. Technical meetings were held with the club station manager, Mr. Chen. Several copies of the antenna assembly instructions were made and teams were formed to be responsible for the assembly of the three elements. Mr. Chen had directed the assembly of a five-meter high tower to support

the Cushcraft A3S.

I made a sketch of a tower that could be used to support the antenna. The tower that Mr. Chen and his staff put together far surpassed anything I had imagined. It was much better than I had suggested. Taller, stronger and with a broader base, which made it very secure on top of the school building.



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WORLD RADIO, August 1998 19



Children's Palace ARS members and a brand new beam!

As the weeks passed, all of the many small things that make a large project successful were completed one by one. The coax, rotator cable, building of the tower, and the window coax feed through were completed by the end of the summer.

After several reschedules of the antenna party, due to my conflicts as well as those of the team, we finally selected a Sunday morning to put it all together. I had suggested that the teams could build the antenna and be using it in about three hours if there were no complications.

Opening the antenna box on the top of the school building and making an inventory of the parts brought me a long face. The center driven element fiberglass insulator was missing. I asked through my interpreter, Linda, to have all of the tubes carefully inspected for the missing fiberglass insulator but to no avail. There was a small hole in

one end of the shipping carton that the antenna had made its 6,000-mile journey in. The hole was just large enough for the missing insulator to have slipped through. My heart was in my stomach. So much time and effort would go for naught if the antenna could not be erected that day. I asked if there might be a shop in the area that sold solid fiberglass rod or tubing material. The answer was yes and two people left to purchase what was missing.

As a last resort I thought another pair of eyes looking into the inside of the aluminum elements might turn up the missing part. The second tube I picked up had a funny feel to the balance. One end was much heavier than the other. As I turned the tube end toward my eyes I had the feeling that we would QSO that day after all. Success, the missing part was found!

The proof of the antenna is in the transmitting. In just over three hours we made the first QSO with a station in Hong Kong. As the Hong Kong station turned it back to me for the second go-around, I had moved the direction of the antenna about 10 degrees. His first signal report to BY4JQ was S-1. After moving the antenna those few degrees the signal had risen to S-5. There was the proof in the pudding.

A luncheon celebration was held with the radio club members and some government guests.

Here are several suggestions if you are going to help a radio club with an antenna project (or do it yourself).

Shipping the antenna requires that you securely ends of the antenna carton with aluminum duct tape. The ends of the carton take a beating in shipping. A couple of wraps around the middle of the carton with the duct tape will also help.

Make sure that the people receiving the antenna can pay for the customs duty when the antenna arrives. This will eliminate any storage charges at customs.

Purchase a copy of the antenna assembly instructions and have training meetings long before you obtain the antenna. This will help everyone better understand what is required when you open the box.

Make sure that you do an inventory when you open the box. Do not get in a hurry, especially with a team or crew doing the job. TAKE IT SLOW !!!



ELECTRIC RADIO

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In our 10th year, *ER* is a magazine for those who are interested in vintage ham/military/tube-type gear, AM operation and the history of Amateur Radio. Largest vintage-only classifieds anywhere! \$3 for a sample copy, refundable towards a subscription.

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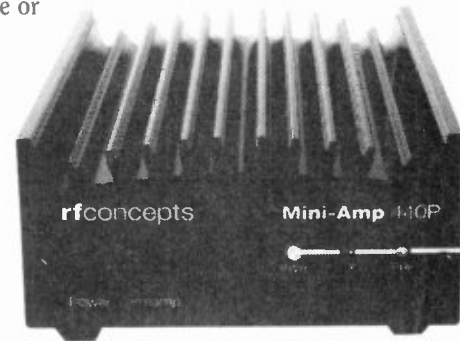
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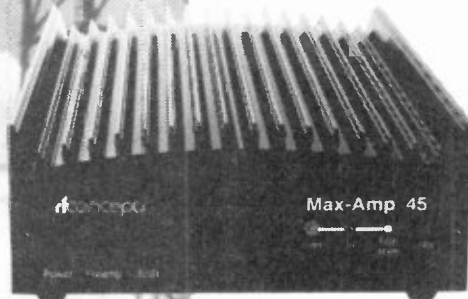
There are times your handheld radio needs a little "boost" to overcome distance or operating conditions. The rfconcepts Mini-Amp line is designed to help your HT get HEARD and using the preamp, receive more signals. Mini-Amps can add 10 ~ 15 dB gain to your signal, yet require just 5 amps @ 13.8 VDC to do the job. Perfect for mobile, base or field operations. With just 2 or 3 watts in, you can generate 20 to 30 watts out, giving your HT the "punch" of a mobile or base transceiver.

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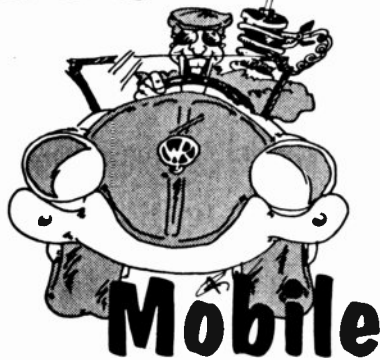


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HF



Les Cobb, W6TEE

• 4124 Pasadena Avenue, Sacramento, CA 95821 •
• E-mail: lcobb@compuserve •

In the July issue, Armond, N6WR, suggested he would like to have a column on HF Mobile, so here we are.

He is right in saying that the improving HF propagation is making mobile operation on these bands even more popular. I don't have the biggest or best mobile installation, nor am I the most active or accomplished mobile operator, but I have been on HF mobile for most of my 46 years as an Amateur Radio operator. I hope this gives me the perspective to share the mobile scene. So let's look at what's going on.

When I first met Armond (before *Worldradio*), we both belonged to a mobile club that encouraged local activity on 75 Meters. VHF repeaters have since eliminated most local HF mobile operation.

So what Amateur Radio activities use HF mobile now? In answering this question, we overlap almost ev-

ery other column in this magazine. *Worldradio* columns that cover possible HF mobile interests include: Contests, County Hunting, CW, DX, QRP, and Search and Rescue. Another really big area of HF mobile operating is in RVs and daily RV nets on the HF bands. How do you use your HF mobile? If you aren't on yet, how would you use your HF mobile? I would be pleased to hear from everyone out there.

I personally like to have skeds with friends while I am traveling. But people tend to forget and lose track of time. A more reliable contact for the traveler is a daily net. I found one on 20 Meter SSB that has people check in whom I know, and sufficient relay operators to get around skip areas. Now if I could just get them on the air on weekends, too.

So far I haven't said anything about the technical and equipment side. I assume the really interested reader is up to speed on the mobile literature, such as Don Johnson, W6AAQ's excellent book, *Everything You Forgot to Ask About HF Mobileering*. By some remarkable coincidence, this book is available from *Worldradio* Books. If some hints and kinks, or interesting products come to my attention, I will share them.

Here are some interesting quotes from my e-mailbag, in the order received:

"I really like the mountains around Chester up north of here. I usually spend most of August up there with the trailer parked under a pine tree. Our RV is a Collins 1993 26-foot fifth wheel. I work HF out of it and talk back home for the most part." *Herb Puckett, W6HBU* (old friend) (01 Feb 98)

"I don't have a favorite band, and

don't check into any nets but lately I've been running 20M SSB during the commute home and will be running 40M CW in the a.m. commute. It's been a blast really, worked five countries in the first week of operation." (*Yaesu FT757gxII, Bug-Catcher*) *Mark Schoonover, KA6WKE* (02 Feb 98)

"I hang out with a group on 3875 here in the eastern half of the U.S., and we get together twice a year for a mobile antenna shootout for 75M and 160M. We get people from all over the country to come by and compete in this fun event!" *Floyd Soo, W8RO* (10 Feb 98)

"I am renting a van conversion up in BC and will be roaming around for three weeks up there. Problem is that it's a rental, I won't actually see it til I get there and I want to be on HF during our travels there. I will be taking an ICOM 706MK2 and some Hamsticks." (with a 5" magmount) *Gary Belcher, KH6GMP* (13 Apr 98)

"I completed installing my HF rig in my van today, all seems to check out OK but haven't made any contacts yet. I have a Kenwood TS-130 and the Hustler antenna. Will try to check into the ... net Monday. This will be my first HF mobile operation in 33 years." *Vern McGlynn, W3DLY* (old friend) (25 Apr 98)

"I work mobile CW in my Chevy S-10, using a Kenwood TS-50S and a screwdriver antenna. Lots of fun and keeps the code proficiency up." *Ray Tyrrell, N6MY* (03 May 98)

"I am still running my Outbacker and am back on CW/M. I have the 706 out of the car for a quick check-out, and I will be improving my paddle setup. Worked Oman on 17M CW last week and am feeling the fever to enlarge my DX list." *Pete Brunelli, NIQDQ* (25 May 98)

I hope the fellows don't mind my sharing their messages, but this is a good reflection of what is going on.

If this leaves you interested, but still hungry, you are invited to visit the HF mobile web sites that I have linked from my web page at <http://home.pacbell.net/lcobb/>. Either scroll toward the bottom of my homepage, or click the HF MOBILE icon. There are some fine web pages listed there that show attention and devotion to HF mobile by the Amateur Radio operators that wrote them. There are some good photos, too.

73, Les

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SPECIAL EVENTS

Send your Special Event to **Worldradio** two months in advance and we'll put it on this page!

TEXAS RANGERS 175TH ANNIVERSARY

The Central Texas HF Society will be on the air as W5R from 8 August 1500Z-30 August 2400Z. Frequencies will be in the general class portion of Phone and CW in the 40-10 Meters band as well as 146.58 MHz FM.

The event will be transmitted from the Texas Ranger Hall of Fame & Museum as well as from the Fort Fisher campground located in Waco, TX.

To request a certificate send QSL and 9x12 SASE to: Larry Merritt, KC5BFM, P.O. Box 3501, Waco, TX 76707-0501.

60 YEARS OF ARRL AFFILIATION

The Ventura County Amateur Radio Club special event station K6MEP on 22 Aug. from 0000Z-2400Z, commemorating their 60th anniversary of ARRL affiliation on 28.340, 21.400, and 7.100. For certificate send QSL to K6MEP, P.O. Box 2103, Oxnard, CA 93034. For more information contact: John D. Gagliardo, AC6PX at 805/488-5758

VINTAGE TUBE BROADCAST

The Antique Radio Club of Illinois will have a vintage amateur station transmitting 05-08 August at Radiofest XVII from Elgin, Illinois. N9CQX will be our host and will be assisting individuals who bring a current copy of their license to broadcast over a variety of vintage equipment. The station will operate AM Phone and SSB on 80, 40, 20, 15 and 10 Meters. Contact station N9CQX on either day and send a reception report along with an SASE to ARCI for a QSL certificate. For more information email arci31280@aol.com or write to us at ARCI, P.O. Box 1139, LaGrange, IL 60526 or call Art Bilski at 630/739-1060.

NORTHERN ILLINOIS STEAM POWER SHOW

Kishwaukee ARC, WA9CJN of Sycamore, IL, will host station W9S

1300Z 13 Aug.-1900Z 16 Aug. in commemoration of the 42nd Anniversary of Northern Illinois Steam Power Show. Frequencies will be: 14.030 (CW), 14.250, 7.235, 28.350.

For certificate, send 9x12 SASE to Bob Yurs, W9ICU, P.O. Box 341, Sycamore, IL 60178. For more information contact: Bob Yurs, W9ICU at 815/895-3310

CAMP MARCELLA

The Piscataway Amateur Radio Club special event station on 08 Aug. from Camp Marcella, the New Jersey camp for blind and visually impaired children. The call K2VOA will be used.

Located in Rockaway Township, Camp Marcella is a private non-profit organization which provides the only summer camp for blind children in the State of New Jersey. This camp is a state-approved project of the NJ Lions Multiple District 16.

Look for K2VOA on the 40- and 20-meter General portion phone bands. QSL direct to PARC, P.O. Box 1233, Piscataway, NJ 08854.

NEW YORK STATE FAIR

The Liverpool Amateur Repeater Association W2CM 24 August-07 September 10 a.m.-9 p.m. each day. Frequencies are yet to be determined on 10-80 SSB/CW bands. Contact person is Dick Page, AC1M. For 5x7 QSL w/photos of NY State Fair and RR caboose send SASE and Large envelope to: AC1M, c/o Dick Page, 2939 Lafayette Rd., Lafayette, NY 13084

EDGAR F. JOHNSON

The Viking ARS/Waseca High School ARC will hold a Special Event Station honoring Edgar F. Johnson for his contributions to Amateur Radio on 15 August from 8 a.m.-2 p.m. in Minnesota We have permission from the FCC to use Edgar's call sign, as part of our station call WA0CJU/9ALD. A special certificate will be issued to all guest operators. A special QSL card will be issued to all Hams who work the station.

For information contact: Lloyd L. Schlaak, 507/465-8619; n0vfv@smig.net.

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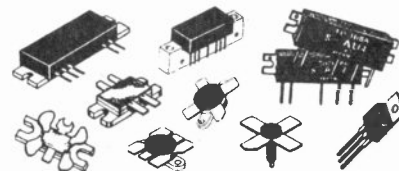
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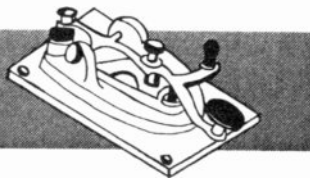
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MICHAEL KARP, N2FM

Michael J. Karp, N2FM (ex-AF2L), of Old Bridge, New Jersey, died 24 May. He was 59. Karp was a co-recipient of the 1995 Philip J. McGan Silver Antenna Award (with Joe Phillips, K8QOE). Karp, an ARRL Public Information Officer, was cited for his success in promoting coverage of nontraditional Amateur Radio stories, including young Hams, MARS, and digital and packet techniques. He also contributed to *QST* as well as to *The Hudson Loop*, the Hudson Division newsletter. Loop Publisher Richard Sandell, WK6R, said he was "deeply saddened" to learn of Karp's passing.

"Ham radio has lost a most valuable human being and today we are all a lot poorer for it. His wit, his sense of right and wrong, his dynamic personality were the hallmark of a giant," Sandell said. Karp was a member of the ARRL and a

member and major contributor to the Central Jersey Radio Association (formerly Old Bridge Radio Association) for almost 20 years. Services were 26 May. — *The Hudson Loop*, Art Chapman, KC2CA, ARRL Letter

FREDERICK "JERRY" HAGEN, W4IX

Jerry Hagen, W4IX, ex WA6GLD, N6AV, AD4MQ, passed away after a long battle with cancer on 18 May.

First licensed in 1959, Jerry's interest turned to DX and by the end of the next decade he was on the Honor Roll. DX became one of his passions, and he entered the ARRL CW DX contest each spring in the late 60's and 70's. His son was born about the time that 5BDXCC started and Jerry would tune up on

80M during the 2 a.m. feeding. By 1971 he earned award number 27.

Although he would make an occasional phone contact, Jerry was primarily a CW operator and could usually be found on the low end of 20 Meters.

Jerry once served as President of the Southern California DX Club and also edited the SCDXC "BULLetin". — SCDX "BULLetin"

ORVILLE STOCKTON, K6LEF

Orville Stockton, K6LEF, passed away 10 May in Corona, Ca. He was an electronics technician with Rockwell International for 35 years before retiring in 1988.

Orville served in the U.S. Army during WWII, and was an associate Section Manager for the ARRL. He belonged to the Corona-Norco Radio Club, Rockwell Radio Club, QCWA and the Riverside County Amateur Radio Association.

In his spare time, he was a reserve Police Officer for the Corona Police Department in the 1960s and 1970's.



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.

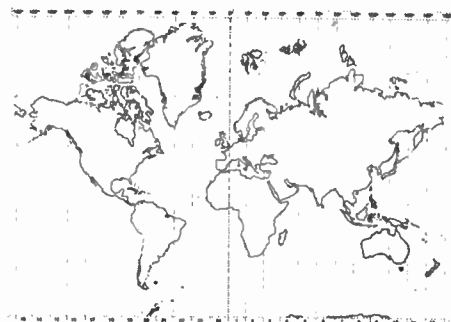
The world is divided into 24 time zones. Each time zone is 15 degrees wide. For the sake of this award, half-hourly zones and out-of-zone artificial time changes will be ignored.

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 8x10 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.

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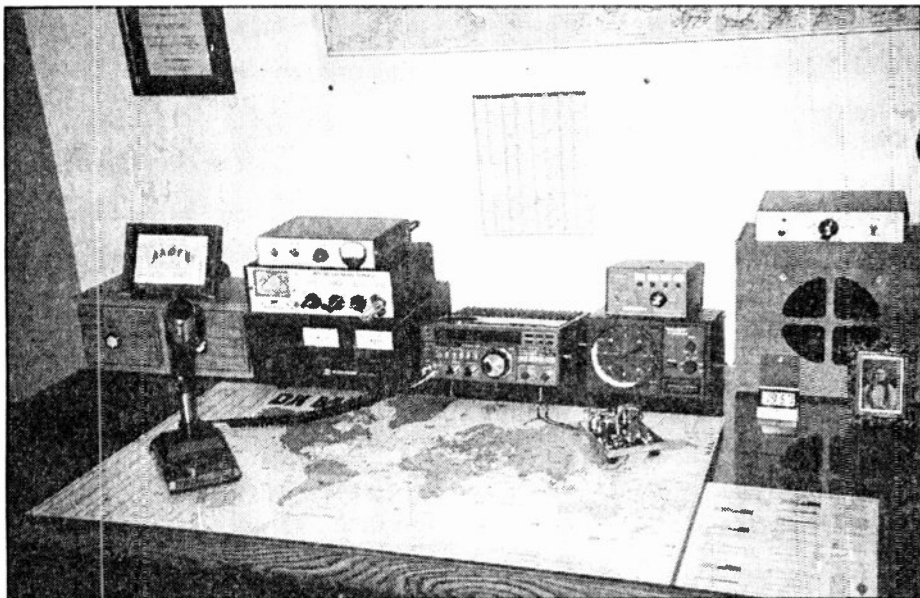
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David G. Yingling, AAØFN

I have been a Ham for about five years, and hold an extra class license. I have used a Yaesu FT-757GX II transceiver for almost that entire time, and it has performed flawlessly. The Yaesu is pictured here, in the center, with matching desk mike and a set of Vibroplex Iambic paddles. To the left

sits an Astron RS-35M power supply, atop which is an MFJ-948 Versa Tuner II. On top of the tuner is a home-brew resistance bridge/dummy load, which enables me to tune up while putting only a few milliwatts on the air. At the far left is a wooden file box, handcrafted by N2TLV, for storing QSL cards. On

the right side of the transceiver is my Yaesu G-800SDX Rotor Control, above which is an Ameritron RCS-4 remote coaxial switch control. At the extreme right of the desk is a home-brew speaker enclosure, with a home-brew active audio filter sitting on top. In front of this is an MFJ digital clock set for UTC, and the requisite XYL photo.

A United States map, DX prefix list, and my station license are on the wall above the desk, and under the desk-top glass is a DX map and ham-band frequency chart. The headphones hang under the desk, where they plug into a military surplus audio filter (I can use either or both audio filters).

Outside, the coax leads to a Cushcraft A4S beam for 10, 15, 20, and 40 Meters, and an Alpha-Delta sloper for 40, 80, and 160 Meters, which are mounted on a U.S. Tower TX-472 72-foot crank-up tower. Switching between the two antennas is accomplished through the coax with the RCS-4 remote switch. My mobile rig is an ICOM IC-706 feeding an Outbacker Perth antenna mounted on the rear of my Suburban. I use a Kitano key mounted to the wooden console for CW.

I enjoy working mostly CW, and have a regular schedule with my dad, W2UW, and his friends W2SMR and N2TLV. I'm working toward WAS on 160-meter CW, with about six states to go.



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*!

ROD FISCHER, KF6DRE

There is an unwritten rule in Prep Schools that you can't be punished for a stunt or trick as long as it's clever.

Like all kids in schools, the temptation to talk in class can be overwhelming, but how to do it and get away with it, that was the problem. The solution had to be different, clever and something that would never be detected. Something really "high tech."

Three of us into radio hit on it. CW to the rescue! We would converse in CW! They would never catch on! It

was simple, a tap with a pencil or a finger on the desk, even a wave of the hand, half for a dot, full for a dash.

This went on for about three weeks, when, right in the middle of a very interesting "classroom QSO",

we heard it. A breaking station, sending perfect CW coming from of all places, the front desk, letting us know that our teacher was on to us.

We stopped and I asked how long she had known, and how.

"I knew ever since the first dit," she replied. "During WWII, I was in the WACs, and was trained in the Signal Corps. There I learned the code and when they found that I had a knack for it, they assigned me to one of the schools. I was an instructor until the end of the war. I taught code before I taught high school.

Now the whole class was on to what we were doing, and all got a big chuckle out of it. And no, we didn't get in trouble for "talking" in class.

Who says CW doesn't get through? We made it for three weeks!



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WORLD RADIO, August 1998 25



Off the air

He tells it like it is

Kudos to Brian Hunsaker, W5CHH, for his excellent letter, "Reply to CW" in the June issue, in reply to John Frank, Jr., WB3ICL, static against CW. It is very well written and he tells it like it really is, covering all of the bases.

A.T. LENNY, W7IBC
Wenatchee, WA

Get with it, man!

Recently, I found in the mailbox a sample copy of *Worldradio*, and the best thing in it is a letter from Brian Hunsaker, W5CHH, in reply to one from John Frank, WB3ICL, a CW-hater.

These anti-CW technomaniacs have long puzzled me. It's not just that CW is no good.— it must be, like Carthage, destroyed and sown with salt! For some of the younger set, the existence of CW must be a constant reminder of their own inadequacy. For old-timers like

Frank, it seems more like scorn for those laggards who, unlike him, are mired in a past that started two hours ago. "What, you don't have a 999-trillion-byte hard drive? Get with it, man!"

Lately, I read in *National Geographic* about the Whitbread round-the-world saiboat race. "Sailboats? Columbus used sailboats, get with it, man!" In the high southern latitudes where westerly gales and mountainous seas are staples, they passed near Kerguelen and Heard Islands. I have worked on CW both Kerguelen and Heard where small groups of Hams, with a bit of the spirit of Columbus and the Whitbreas sailors, worked the world.

Mr. Frank and his like will never understand Hunsaker, myself and the Kerguelen Hams, but we will endure; today, tomorrow and the day after that.

FRED GRANT, AA4NG
Newport News, VA

(Ed. What? That was the best thing in the magazine?)

CW survey flawed?

While I don't want to perpetuate the CW debate, I was angered by the editorial comments made by Bill Mayers, KG2DI ("Where are all the CW ops?") in your July issue. Mr. Mayer's description of his amateurish efforts to conduct a survey lacks any pertinent fact and shows a basic misunderstanding of CW. I'm not an exclusive CW man; perhaps 60% of my contacts are made in that mode, but I rarely sit on a frequency and ragchew in Morse code. I chase DX, and most of those contacts are quick hitters. It's entirely possible that one or more of the "three QSOs" he heard on 80 Meters were DX stations, handing out contacts at a rate of 60-100 QSOs per hour. It's almost certain that most of the "25 QSOs" he heard on 75 Meters were extended ragchews by a few old timers who, in many cases, are fiercely possessive of "their" frequencies. He also fails to mention times, dates, flux levels, his antenna farm, or any one of numerous other factors which would influence his ability to hear, for instance, on 30 Meters.

DXers' love CW for its ability to snag countries in difficult conditions and large pileups. I worked the 3B6RF group ten times, eight of them on CW. I didn't pay any special attention to the mode, I worked 'em where I could. One night I tried calling for an hour on 40-meter sideband and just didn't have the brute force to get through. When they were spotted on 40 CW, I tuned down and worked them with my second call. I responded via the Internet to one amateur in Florida who hadn't been able to work them at all, even after they'd been on St. Brandon for two weeks. I'd already worked them eight times. Turns out he had never made a CW contact.

Examples of rude amateur practice should not be used as an example for shutting down a mode, or spectrum. The "angst-filled individuals" he describes as wanting "their own private preserve, with only a select few longtime on-air acquaintances" can be found on

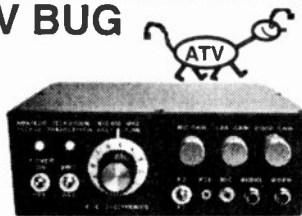
(continued on page 69)

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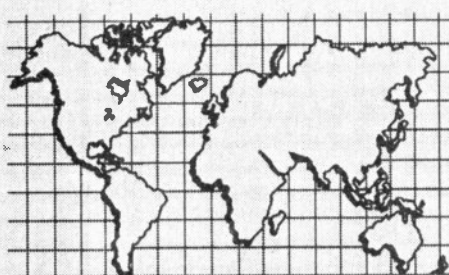


Tom (W6ORG) & Mary Ann (WB6YSS)

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W-100- N

There were four Worked 100 Nations Award applications this month. Congratulations go to the following deserving DXers: 531. Maurice I. Sasson W2JAJ 28 May 532. Ira L. Bray KA4JNB 28 May 533. Henry F. O'Meara WB2NRX 28 May 534. Corinne L. Keyser W7DIF 28 May

Henry's application had 103 contacts all on CW except for two on SSB. I took the liberty of deleting the two SSB contacts in order to endorse his application as "All CW." Normally, there are no endorsements to this award, but I will endorse such as above or all one band. I do not endorse "All SSB" unless it is all on a single band.

CATZ

Congratulations to the following for completing *Worldradio's* CATZ Award:

#3 Dick McKercher W0MLY 01 May
All of Dick's contacts were with IOTA islands and we have endorsed his certificate as such.

Amsterdam Is. (FT/X)

The *Daily DX* reports that the upcoming DXpedition to Amsterdam Island by members of the Lyon DX Gang is still in need of funding. Eric Blanchard, F5SIH, and Mehdi Escoffler, F5PFP, will leave from Reunion Island on 10 November 1998 aboard the *Marion Dufresne*, arriving on 15 November on Crozet Island. They will leave the next day and arrive on Kerguelen Island four days later. After a short stay they sail again for Amsterdam Island, arriving on 25 November.

FT5ZH Operation will start 23 December 1998. Plans are to be active with two complete stations on 10-160 Meters CW, SSB and RTTY. The priority of this DXpedition will be North America, Europe and Japan on the lower frequency bands.

Donations for this DXpedition may be sent to: Lyon DX Gang, Eric

Blanchard, F5PXT, 2 Rue Bichat Bat 32, 69002 Lyon, FRANCE. Gil Gautier, F5NOD, is the Official European Pilot and the coordinator for this DXpedition. They will be devoting full time to operating the radios as that was their sole purpose for visiting the island. They are still in need of some equipment. Gil's e-mail is: f5nod@easynet.fr.

Australia (VK)

The *Ohio/Penn DX Bulletin* notes that the call VM4AA is not that of Slim. This is a genuine call issued to Keith "Macka" McCarty, who is a retired Royal Australian Air Force Squadron Leader. Macka is 87 years old and was first licenced as VK3FX in 1932. He is the only amateur in Australia to have this unique prefix of VM. He was awarded the call VM4AAA in 1983 by the Minister of Communications in recognition of extended participation in amateur service. The call was modified to

VM4AA in 1997. Although not very active he can be found near 14.020 MHz. Yes, he operates CW only.

Austral Islands (FO/A)

With the possibility of the Austral Islands becoming a new DXCC entity, you might look for Albert Durou, FO5JR, who will leave Tahiti on 20 July to go over to Rimatara Island (OC-050). He plans to begin operation on or about 24 July and continue through 13 August. Albert works CW only and will be near 14.010 or 21.010 MHz. Be aware he does not care for those pileup type contacts.

Bhutan (A5)

If everything goes along without any problems there should be a DXpedition to the Kingdom of Bhutan sometime early next year. Zorro Miyazawa, JH1AJT, announced during the Sunday breakfast at the International DX Convention in Visalia that he has been invited back. Zorro operated from there in February 1995.

Chad (TT)

The *Ohio/Penn DX Bulletin* notes activity of Eric, TT8JE, on 20 Meters, both CW and SSB. His activity is often found on 14.025 or 14.195 MHz. Look for him between 2100 and 0100 UTC. Also, reported often during the month has been TT8ZB.

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M1850A	50 ft high M-18, 16 sq ft wind ld @ 87 MPH w/Hazer 6	\$2410.00
M1860A	60 ft high M-18, 15 sq ft wind ld @ 87 MPH w/Hazer 7	\$3355.00
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Mongolia (JT)

The Hungarian DXpedition to Mongolia in May ran into some serious problems that affected their operation, although they seemed to have corrected them. One of the problems was their close proximity to high voltage transmission lines which generated severe electrical noise (QRN). They also changed their call from JU1HA to JT1X. The operation continued through 02 June.

Nepal (9N)

Charlie Harpole, K4VUD, says he will be going to Nepal again in July and will be there through the middle of November, and will be signing with his 9N1UD call.

He plans to be on the air during his local sunrise and sunset with his main operating frequencies of 14.023 and 14.195 MHz. And, if conditions are good, he will try 21.023, 21.295, 7.023, 7.065 and 3.799 MHz. If there is a 10 Meter opening look for him near 28.490 MHz.

Charlie says that along with 9N1AA they hope to get an RTTY operation going. He also reminds those who wish to contribute to the 9N1MM Father Moran Memorial Station in Kathmandu should send a check or money order to: American Savings Bank, Kahului Branch, 73 Puuene Avenue, Kahului, HI 96732. Please mark donations: 9N1MM for deposit to account #21-471089, The Tsurphu Foundation.

Rotuma Island (3D2/R)

The Daily DX reports Roberto Diaz Gonzalez, EA4DX, plans to operate from Rotuma Island signing 3D2DX/P from 29 August through 19 September. He will be operating 10-160 Meters on SSB and RTTY.

St. Brandon Island (3B7)

The multi-national DXpedition to Raphael Island in the St. Brandon Archipelago (AF-015) came on the air on schedule with the first report of 3B7RF spotted about 1330 UTC on 06 May. The team members of this event included the calls: 3B8CF, HB9ABO, HB9ADP, HB9AFH, HB9AFI, HB9AHL, HB9AJW, HB9BQI, HB9BQW, HB9BXE, HB9JAI, JA3IC, K5KC and W7SE. The group was very active until about 0800 UTC on 17 May, with SP2HOU being the last station to be logged. They worked in excess of 53,000 contacts.

Their return trip to Mauritius took about 75 hours due to rough seas. They spent much time at anchor after traveling only two hours after the 0800 UTC departure on the 18th. When conditions permitted they continued on and arrived on the 20th about 1300 UTC.

This DXpedition was a long awaited one with many a DXer adding this one to their totals. Many had worked 3B7RF on several bands and modes. However, those on the West Coast unfortunately did not enjoy logging this one. Considering the location of the DXpedition and the location of the West Coast and the propagation it was very difficult. There were several that did make the log and they all should consider themselves deserving DXers. Maybe conditions will be better next time. Thanks should go to the DXpedition team for their fine job.

IOTA

The Daily DX notes that Eddie Battenberg, GMØKVI, had a serious heart attack on 03 May while operating GB5FI on Trennish Island (EU-108) and was air-lifted to a hospital at Oban, Scotland. Eddie has been quite active in the IOTA program.

Also reported in 425 DX News, Wolf Dattenburg, DL2SCQ, and his wife, Ann, DL1SCQ, will operate from Mamanuca Island (OC-121) near the end of this summer, 29 August through 1 September. Then

they will go to the Yasawa Islands (OC-156) between 04 and 07 September. They will be using the calls 3D2WD and 3D2DA, respectively. Earlier the couple will visit Mangaia Island (OC-159) in the South Cook Islands and operate as ZK1SCQ and ZK1SCR, respectively, between 24-26 August.

According to 425 DX News the recent IOTA DXpedition to Shijutuo Island (AS-134) by BI3H collected 2,698 contacts in 23 hours of operation. Of that amount, 922 were on CW, 1,776 on SSB. More than half were on 20 Meters. If you missed this one look for them in the IOTA contest.

Malcolm Johnson, VK6LC, has announced his intentions of activating a new one for IOTA, Rowley Shoals, sometime next year.

Here is another selection of IOTA activity, this one for the month of May. Note that I have been listing the island name with these listings, something most other publications don't do. If you would rather see other information such as frequencies instead let me know. Space limits won't allow me to list both.

AF-018 IH9/OK2DX	Pantelleria Island	31 May
AF-018 IH9/OK2GG	Pantelleria Island	29 May
AF-019 IG9/I2VXJ	Pantelleria Island	24 May
AF-019 IQ9L	Lamedusa Island	30 May
AF-045 6W1QV/P	Nfiqor Island	01-03 May
AF-045 6W1QV/P	Goree Island	30-31 May
AN-001 VP8ADE/B	Adelaide Island	02 May
AN-006 EM1LV	Galindez Island	06-21 May
AN-015 8J1RL	Ongul Island	29 May
AS-005 RZ9DX/Ø	Dickson Island	16-22 May
AS-015 9M2TO	Pinang Island	09-30 May
AS-017 JR6EA	Okinawa Island	26 May
AS-024 JS6LIH	Yayama Islands	08 May
AS-024 JJ1LIL/JR6	Yayama Islands	02 May
AS-028 UAØQMU	Kotelny Island	17-27 May
AS-039 UAØZBK/P	Komandorskiye Is.	19 May
AS-043 JR1EAX/1	Hacijiyu Island	24 May
AS-047 JM1PXG/6	Daito Islands	03-04 May
AS-047 JH1HUK/6	Kita Daito Island	02 May
AS-049 JH4FBV/6	Tokara Island	02-03 May
AS-053 HSØ/TK4MRH	Phuket Island	03-10 May
AS-053 E21AOY	Phuket Island	28 May
AS-072 9M2/GM4YXI	Pangkor Island	09 May
AS-075 XX9TSS	Taipa Island	28-30 May
AS-117 JRØBAQ/0	Sado Island	04 May
EU-008 GM3VLB/P	Isle of Pabay	25-27 May
EU-008 GM4CHX/P	Isle of Canna	08 May
EU-008 GB8FF	Staffa Island	01-02 May
EU-008 GMØPNS	Isle of Pabay	25-26 May
EU-009 GM4CHX/P	Orkney Islands	17-20 May
EU-010 GM3JIJ	Isle of Lewis	05 May
EU-011 GBØSM	St Marys Island	01 May
EU-016 9A2GF	Brac Island	03-23 May
EU-017 ID9/IT9NGN	Filicudi Island	28-31 May
EU-025 IJ9/IT9YRE	Scoglio Castelluccio Is.	23 May
EU-030 OZ1GBS	Bornholm Island	08 May
EU-031 IC8/DL9DYL	Ischia Island	05-08 May
EU-031 IC8/DL2DX	Ischia Island	05-13 May
EU-032 TMØAIX	Aix Island	21-24 May
EU-042 DK8ØL	Sylt Island	31 May
EU-046 LA1CI	Ringvassoe Island	21 May
EU-049 SV8CYV	Samos Island	26 May
EU-049 SV8DCY	Lesvos Island	05-26 May
EU-049 SV8/DJ2GM/P	Ikaria Island	30 May
EU-052 SV8JE	Kefalonia Island	04 May
EU-056 LA4GHA	Gossen Island	01 May
EU-057 DLØMVT	Reugen Island	25 May
EU-057 DL4PM	Ruegen Island	29 May

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EU-064 F6BUM/P	Yeu Island	03-08 May
EU-064 F6BFH/P	Noirmoutier Is.	07-09 May
EU-067 SV8/SM6CTQ	Santorin Island	05-07 May
EU-067 SV8/12YFO	Santorin Island	05-19 May
EU-072 SV8/DK1RP/P	Skiathos Island	06-11 May
EU-075 SV1TP/P	Peloponnisos East	21-24 May
EU-079 LA6LHA/P	Hareidlandet Is.	09-10 May
EU-079 LA4GHA/P	Hareidlandet Is.	09-10 May
EU-082 U1ZA/A	Kildin Island	26-28 May
EU-084 SMØIG/5	Roslagen Island	26-27 May
EU-091 LJ7/IK7ETE	San Andrea Island	23 May
EU-091 LJ7/IK7YZE	San Andrea Island	23 May
EU-092 GM4CHX/P	Summer Isles	04 May
EU-093 EA5/JI6KVR	Tabarca Island	04-05 May
EU-094 TM7M	Glenan Islands	08 May
EU-095 TM1IF	Chateau d'Iff	22-24 May
EU-098 DF4JGP/P	Poel Island	22 May
EU-098 DL2VFR/P	Poel Island	23-25 May
EU-104 TK/PA3GIO/P	Sanguinaires Island	24 May
EU-108 GB5TI	Trennish Island	02-03 May
EU-112 MM/K5MK/P	Shiant Island	22-25 May
EU-123 GM4CHX/P	Handa Island	14 May
EU-124 GW4WJO	Holy Island	28 May
EU-124 GWØSLM	Anglesey Island	27 May
EU-124 GCØSTH/P	Anglesey Island	13 May
EU-125 OZ/DLIAN	North Sea Coast	26-27 May
EU-125 OZIRDP	North Sea Coast	30-31 May
EU-128 DL9OBL/M	Fehmarn Island	06-08 May
EU-131 IL3/IK3PQH	Alga Island	23 May
EU-131 IL3/TV3WMI	Gorgo Island	24 May
EU-133 R1ASP	Kotliin Island	20-21 May
EU-136 9A4A	Pag Island	13-16 May
EU-159 F5KDC/P	Banc d'IArguin Is.	08-10 May
EU-164 TK/PA3GIO/P	Lavezzi Island	19-20 May
NA-051 VE7QCR	Queen Charlotte Is.	28 May
NA-056 CO4BM	Isle of Pines	04-28 May
NA-057 N7QXQ/HR6	Rotan Island	18-31 May
NA-067 K4EP/P	Hatteras Island	24-29 May
NA-069 AE4WK	Captiva Island	23 May
NA-072 3E1DX	Contadora Island	03 May
NA-072 HP1XVH	Contadora Island	18 May
NA-083 AA3DD	Chincoteague Island	25 May
NA-110 AA4V/P	Isle of Palms	17 May
NA-110 K9JVV/P	James Island	20-29 May
NA-136 W1DIG	Pot Island	15-17 May
NA-160 HR3/F2JD	Cayo Cochinos Is.	16-19 May
NA-181 XM7P	Trutch Island	22-25 May
NA-209 H75A	Isla de Venado	22-24 May
OC-027 FO5QG	Nuka Hiva Island	06-28 May
OC-059 V63AO	Kosrae Island	01-02 May
OC-067 FO5NL	Raia Tea Island	06-27 May
OC-070 YC8VIP	Ambon Island	05-29 May
OC-130 DU9HKD	Mindanao Island	18 May
OC-137 VK4LV	Bribie Island	12 May
OC-137 VK4GP	Bribie Island	15 May
OC-141 VK4KTC	Groote Eylandt	05 May
OC-151 YC9LQA	Flores Island	06-14 May
OC-152 FO5FD	Tubuai Island	14 May
OC-154 VK8AN/6	Troughton Island	20-28 May
OC-156 3D2MT/P	Yasawa Island	02 May
OC-156 3D2LJ/P	Yasawa Islands	02 May
OC-169 A35RK	Lifuka Island	06-19 May
OC-203 ZLA/K8VIR	Stewart Island	08 May
OC-210 YC8TXW	Sangihe Island	01-24 May
SA-008 CE8ABF	Tierra del Fuego	23 May
SA-008 LU1XSI	Tierra del Fuego	03 May
SA-027 PR5L	Sao Francisco Is.	01-03 May
SA-047 PR5L	Mel Island	30-31 May

DX Prediction — August 1998

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 = 79. 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	20	15	*24	14	*17
10	24	*13	*21	(14)	*20
12	31	*17	*19	20	22
14	*35	*21	17	*23	*28
16	*36	18	(16)	*24	*33
18	*36	(15)	(15)	*23	*36
20	*30	23	30	21	*37
22	25	26	*36	16	*38
24	*21	25	*38	14	*31
2	*19	23	*37	*20	*26
4	*19	*22	*35	*19	*22
6	23	18	*29	*16	*19

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	(16)	*20	*23	14	*20
12	(21)	*17	*20	(14)	(18)
14	26	*19	*18	20	26
16	29	*18	17	*23	*31
18	*31	(15)	(16)	22	*35
20	*30	22	23	20	*37
22	25	*27	33	17	*36
24	21	*30	*37	13	*34
2	19	*32	*38	16	*28
4	*19	*30	*37	*20	*23
6	21	*28	*35	*19	*20
8	18	*23	*28	16	*18

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	21	15	*24	*13	*18
9	22	*13	*21	17	*19
11	*30	*18	*19	*21	22
13	*34	18	(17)	*24	*28
15	*37	15	(16)	*25	*32
17	*36	(13)	(15)	*24	*35
19	*33	(17)	(24)	*22	*37
21	*27	21	33	*18	*37
23	*23	24	37	*15	*35
1	*20	23	37	*13	*28
3	*16	*21	*35	*15	*24
5	*23	17	29	*15	*21

Venado (NA-209) during May netted 6,914 contacts during 63 hours of operation. They would have stayed longer but heavy rains forced them to leave the island.

IOTA contest

Here is a sampling of what to expect during the annual IOTA contest, this 25 and 26 July:

AS-134 Shijituo Islands	BI3H
EU-008 Isle of Skye	GM/DL2QBD/P
EU-057 Ummanz Island	DJ3XG/P
EU-071 Vestmanneyjar Island	TF7/DL3KUD
EU-123 Great Cumbrae Island	GM3U5L/P
EU-123 Isle of Bute	MM8Y
EU-160 Koshiki Islands	RA1QQ/RW1ZZ
EU-167 Pessegueiro Island	CQ2P
NA-031 Aquidneck Island	AA1AC/P
NA-046 Martha's Vineyard	K1V5J
NA-079 Dry Tortugas Is. Florida W. Coast DX Ring	
NA-100 Antigua	V26VG

1998/99 IOTA Directory

The RSGB IOTA Directory and Yearbook for 1998/99 is hot off the press. For IOTA enthusiasts this is a must. It contains all the latest information necessary for participa-

tion in the IOTA programs.

The yearbook portion contains such items as "IOTA and the Environment" discussed by Marin Atherton, G3ZAY. With many of the islands today there are many that DXpeditioners should be concerned about. There is also a DXpedition roundup discussing 20 recent ones added to the list of activated island groups.

The Honor Roll and Annual Listing is also included, plus many other interesting subjects.

The second portion of the publication is the Directory. As in the past directories important matters are discussed regarding application for

F2JD signing with HR3/F2JD on Cayo Cochinos (NA-160) at times said he was on R Island (NA-057) which was an error.

Lew Jenkins, N6VV, reports that their V63VV DXpedition to Mokil Atoll had to be cancelled. The supply ship which was to deliver the generators and gasoline was unable to make its normal stop due to a water crisis on the other outer islands. The air charter also informed them that they could not carry gasoline aboard the aircraft. This would have been a new IOTA island.

The H75A DXpedition to Isla de

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SS-006	160M SINGLE-BAND W-SLOPER	60' or 65' LEING	\$57.00
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the awards. The latest list of islands with their respective reference numbers are also included.

To get your copy please send a check or money order for \$16 to Dewitt Jones, W4BAA, P.O. Box 8695, Lacey, WA 98509. The price includes postage. If you are becoming interested in this growing activity and do not yet have a directory now is your chance. A directory is mandatory to participate in the program. If you already have an older directory it is not necessary to get a new one. But it is nice to have the latest information and it is well worth the investment.

DX conventions

This year's annual W9DXCC will be held on Saturday, 12 September,

at the Holiday Inn in Rolling Meadows, IL, which is a northwest suburb of Chicago. The program will include the H40AA Temotu Island DXpedition by Tim Totten, N4GN, with Fred Laun, K3ZO, as the banquet speaker that evening. Early registration is \$44, which covers the program and banquet. For more details contact the chairman, Bill Smith, W9VA, at 1345 Linden Avenue, Deerfield, IL 60015.

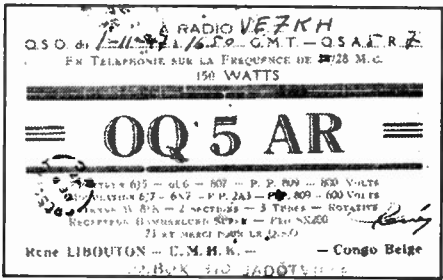
Bill says the convention rate for accommodations at the hotel is \$85 per night plus tax. Contact the hotel directly at 847/259-5000.

Also, there is the annual Northwest DX Convention in Seattle at the Double Tree Inn, 17 to 19 July. It is sponsored this year by the Western Washington DX Club.

The program for the New Orleans International DX Convention looks good. Details on this one are in last month's column. Again, this on Friday and Saturday, 14-15 August. If you intend to go to the Saturday evening banquet be sure to pack a jacket and tie.

Antique QSL Department

The Belgian Congo has been represented often in our selection of ancient QSL cards. This one for OQ5AR was submitted by longtime subscriber, Al Miller, VE7KC. The call on the card, VE7KH, was that of Milt Saunders, a friend of Al in Vancouver. Milt worked OQ5AR back in 1947 on 10 Meters.



The next two cards were submitted by Dick McKercher, W0MLY. Back in 1938 Dick, signing with W6MLY, worked XU9KT of Hankow, China, on 20 Meters CW. This is the second XU9 card that has been reproduced in the past, which we ran back in 1986. The card was printed in blue with red call letters.

A year later Dick worked CR7BC of Mozambique, also on 20 Meters CW. This card was printed in black with red call letters; the flag was red and green.

A check with the 1996 Callbook on



CD-ROM indicated that these operators apparently are no longer around.

QSL information

There was an error in one of the QSL routes in the June issue. The route for 9M6AAC should go via Bob Schenck, N2OO, and not to Pekka Ahtqvist, OH2YY. Sorry.

If you are still waiting for a QSL card for a contact with VK8AN or VK8AN/6 on Troughton Island (OC-154) you should reapply to Alan Roorcroft, VK4AAR. It is understood that the present QSL manager, Bill Horner, VK4FW, is unavailable to complete the QSL chores. Please provide an s.a.e. with sufficient funds for postage.

Thanks go to the following contributors for this month's column: AH0W, GM4FDM, HA0KHW, HB9NL, KE1L, AA1AC, K3ZO, W4BAA, K4VUD, W6TER, N6VV, W9VA, W0MLY, Western Washington DX Club (WA0RJY), Northern Arizona DX Association (W7YS), WebCluster (OH2AQ), 425 DX News (I1JQJ.), DX News Letter (DJ5AV), The OPDX Bulletin (KB8NW), Internet DX Mailing List (VE7TCP), The Low Band Monitor (K0CS), Island/DX News (N5VL), The Daily DX (W3UR), QRZ DX (N4AA), and DX News Sheet (G4BUE).

Many DXers fail to realize that there is still a wealth of DX on CW. Just tune by any CW contest weekend and see for yourself. And the competition for working DX is lower than that of SSB. Get out that old J-38 and take a look! 73 de John N6JM.

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QSL managers

The majority of the QSL routes this month were taken from 425 DX News. All corrections would be appreciated.

3A/IK1CJO	-IK1CJO	7Z500	-N2AU
3A/IK1QBT	-IK1QBT	8P91J	-VE3VET
3B8/DL1MHM	-DL1MHM	8P91R	-DJ1TO
3B8/DL6UAA	-DL6UAA	8P91U	-DJ1TO
3B8/K5KG	-K5KG	8P91G	-W2SC
3C1GS	-EA5BYP	8Q77J	-G0WBO
3D2DA	-DL6DK	8Q77Q	-HB9QQ
3D2DX/R	-EA4DX	8S3FRO	-SM3CVM
3D2HI	-JA1KJW	9A11ELS	-9A2AA
3D2KZ	-JA8VE	9A3NC/MM	-9A3NC
3D2LJ	-JM1LJS	9A7C	-KA9WON
3D2MT	-JJ1DWB	9A8000S	-9A5I
3D2QB	-SM3CER	9G1JX	-DK7HN
3D2SH	-JA1J3Y	9G1YR	-G4XTA
3D2TK	-JA3MCA	9H1EL	-LA2TO
3D2TS	-JE1OYE	9H3UT	-DL9GDB
3D2WD	-DL6DK	9J2A	-JA0JHA
3D2WP	-JA1WPX	9J2BO	-W6ORD
3DA0CA	-W4DR	9J2FR	-IK2RZQ
3V8BB	-DF7QK	9J2TF	-JA2BOV
(27-29 Apr 1998 only)		9K2/SQ5DAK	-SP5KQS
3W6E2D	-XU2C	9K2GS	-W6YJ
3W7TK	-OKLHWB	9L1ZW	-JA9IFF
3Z0AU	-SP6CB	9M2/GM4YXI	-GM4YXI
3Z0I	-SP62DA	9M2EU	-JA2EJI
4D7DA	-W3HNK	9M2IY	-JA1INP
4H8T1	-I2YJW	9M2PS	-HB9AAP
4K8ADR	-4J9RI	9M2TO	-JA0DMV
4K9W	-DL6KVA	9M6AAC	-N200
4L1UN	-IK7JTF	9M6AAT	-UA9CI
4L8A	-OZ1HPS	9M6QQ	-DF5UG
4L0CR	-IK7JTF	9M8CC	-PB0ALB
4N7ZZ	-YU7BW	9N1UZ	-UT4UZ
4N9BW	-YU7BW	9Q5/N3BNA	-N3BNA
4S7BRG	-HB9BRM	9U5DX	-F2VX
4S7DA	-W3HNK	9V1BG	-JL1MWI
4S7TWG	-N6TW	9V1XX	-7K3CKK
4X/K4YT	-W2TK	9V1YC	-AA5BT
4X50B0	-4X4B0	9V1ZB	-JL3WSL
4X50MO	-4Z5FG	9V1ZW	-JA9IFF
4X51FN	-AA2KD	9Y4SF	-WA4JTK
5A21FA	-ON4AFS	A35FT	-DL7FT
5B4/RA3CW	-YL2KL	A41KB	-ON7LX
5B4/RZ3BW	-RZ3BW	A43D1	-A47RS
5B4/T93Y	-W6MD	A61AD	-N1DG
5B4/T97M	-K2PF	A61AQ	-N1DG
5B4/UA9LAC	-UA9LAC	A61AS	-Y03FRI
5B4E4	-9A2AJ	A92GD	-K1SE
5B4EZ	-OE3FPW	AH0R	-JH6RTO
5H3PW	-N2CD	AH0T	-JA6BSM
5H3RB	-LA4DM	AH8LG	-KS6DV
5N1SYT	-IK0PHY	AX2ITU	-VK2PS
5N4B	-I2EOW	AZ1FAC	-LU4FSH
5N4BAV	-IK0SHF	BA1CO	-W3HC
5N9KWO	-N0UN	BA4TA	-9A7W
5R8FU	-SM0DJZ	B13H	-W3HC
5V7BM	-F5PCU	B17Y	-BD7JA
5X1LH	-GM4DMA	BN0A	-JH3DPB
5X1P	-G3MRC	BV5BG	-IK7JTF
5X1T	-ON5NT	BV98ARL	-BV4YB
5X4DEL	-WB3DNA	BX0YL	-BV4YB
5X4F	-K3SW	C31LJ	-VE3GEJ
5Z4FV	-N93Y	C4W	-5B4WN
6A1A	-IK3ZAW	C46A	-9A2AJ
6A1HM	-SU1HM	C6A/W0IY	-W0IY
6A1TA	-SU2TA	C6AKA	-DL7VOG
6K0T	-DS4CNB	CE3/F6EXV	-F2VX
6W1/N2CWQ	-UT4UZ	CK3MP	-VE3CPC
6W1QV/P	-6W1QV	CO4BM	-CT1ESO
6W1RE	-F8PX	CP4CR	-IK2UVU
6Y5/N2HNQ	-JH4IFF	CQ98BM	-CT3BM
6Y5/N8QBD	-JR4ISF	CT3/DL6NBR	-DL6NBR
6Y5DA	-VE4JK	CT70	-CT1ERK
6Y6A	-JE3MAS	CT98AAM	-CT1AAM
7J1AZL	-OK1FW	CT98ARL	-CT1EWA
7Q7EH	-AA9HD	CT98CJJ	-CT1CJJ
7X2ARA/P	-7X2ARA	CT98DSY	-CT1DSY
7X0AD	-EA4URE	CT98ETT	-CT1ETT
7Z1AB	-KN4F	CT98EXPO	-CT1REP

CT98GG	-CT1GG	GB6MD	-G0WMW
CT98REP	-CT1REP	GB8FF	-GM0KVI
CV1A	-F1NGP	GI6YM	-K1WV/K1TRS
CW8C	-CX8CP	GM3VLB/M	-GM3VLB
CX5X	-W3HNC	GM5VG	-GM3UTQ
CY9AA	-VE9AA	GM6F	-GM3ZRC
D2AI	-CT1ECH	GS2MP	-GM2MP (via Bu- reau)
D2EB	-I3LLH	GS3ZB/P	-G30CA
D68YN	-HB9CYN	GS5VG	-GM3UTQ
D68YV	-HB9CYV	H24LP	-5B4LP
DL4YT	-W2TK	H27X	-5B4XF
DS5SME	-HL5FBT	H40AA	-OH2BN
E21CJN	-K3WUW	H40AB	-VK9NS
E21EJC	-HS1GOS	H44XX	-JA5DQH
EA5/J16KVB	-EA5KB	H44YC	-AA5BT
EA5URX	-EA5AHC	H75A	-N5FTR
EA6/J16KVR	-EA5KB	HB0/HB9LEY	-JH1BSE
EA7FT/P	-EA7AJM	HB0/HB9NL	-HB9NL
EA8/G4DIY	-G4DIY	HB0/IN3IKF	-IN3IKF
EA8/IV3FSG	-IV3FSG	HB0/N7OV	-IK3VIA
EA9LJ	-EA7JB	HB0/P14TUE	-P14TUE
EC91A	-EA4URE	HB0/NL	-HB9NL
ED1HS	-EA1HS	H6CR	-NE8Z
ED11P	-EA1BLX	H8C/DL4VCG	-DL4VCG
ED2SPA	-EA2CBY	HG3CW	-HA3KNA
ED2TSS	-EA2ASF	HG41	-HA5LN
ED55JF	-EA5URL	HH2LD	-N3BNA
ED8CMT	-DL7VRO	HI8/DJ4LJ	-DK8ZD
EI1AT	-EC1BXI	HK0HEU	-HK0FBF
EF8RSM	-EA8URL	HK100GM	-HK3DDD
EG80TA	-EA8URL	HL5KY	-W3HNC
EJ7NET	-E12GX	HR3/F2JD	-F6AJA
EK1X	-RW6LH	HS0/JA6G1J	-JA6G1J
EKG6C	-W3HNC	HS0/JR3XMG	-JG3AVS
EK8WB	-IK2QPR	HS0ZAA	-KM1R
EL2DT	-IK0PHY	HS1RU	-JG3AVS
EL2VO	-EA5GIY	HS2CRU	-DL2FDK
EM1LV	-UR8LJ	HS8AS	-HS1CKC
EM4U	-UT4UZ	HV4NAC	-IK0FVC
EN5J	-LY1DS	IA1/IK2DUW	-IK8PGM
EN5U	-UR5UW	IA1/IK8PGM	-IK8PGM
EO5JM	-U02JQ	IA5/IK2SFZ	-IK2SFZ
EO5QB	-US4QWX	IC8/DL2DX	-DL2DX
EO5QZ	-U07ZQ	IC8/IZ8AMX	-IK8GYS
EO5W	-UT4UZ	IG9/12VXJ	-I2EOW
EO5WL	-UT1WA	I10C	-IK0ZME
EP2MKO	-UA6HCW	I130TA	-IK2PZG
EP3HR	-I2MQP	I19CAF	-IT9WPO
ER1LW	-SP7LZD	I19Z	-IT9PKO
ER9V	-ER1DA	IL3/K2PZG	-IK2PZG
ET31V	-IZ3AHY	IL7/1Z7ATN	-I27ATN
EX7MK	-IK2QPR	IM0A	-IS0LLJ
EY1ZA	-DJ1SKO	IQ2W	-IK2DUW
EY2Q	-DJ1SKO	IQ3AC	-IK3GES
EY8/K4YT	-W2TK	IQ9A	-IT9AJP
EY8CQ	-DJ1SKO	IR0N	-IK0SIR
EY8YV	-DJ1SKO	IR2P	-IK2DUW
EZ7T	-RW3QJ	IR4B	-IK4AUY
F5UJK/P	-F5UJK	IT9/T9GNG	-IT9FXV
FG/F2HE	-F2HE	IT9WKL	-IT9FXV
FG5EY	-F6EYB	IU6F	-IK6BOB
FG5FC	-F6DZU	IY0ORP	-IK0USA
FG5FR	-F6FNU	IY0TC	-IK0KHP
FK8HC	-VK4FW	IY4FGM	-IK4QJH
FM/F5SSM	-F5SSM	IY4IMD	-IK4BWC
FM5WD	-W3HNC	IY5PIS	-IK5QPZ
FO0F1	-K6SLO	J28BU	-F5OYM
FO0FR	-K6SLO	J28FA	-F5MXXF
FO0MIZ	-VE3HO	J38G	-W8KKH
FO5PV	-F6BCX	J49Z	-SV2CWY
FO5QG	-XE1L	J43PTR	-SV3AQN
FP5BZ	-F57JP	J45RDS	-SV5AZP
FR5ZQ/T	-FR5ZQ	J47LAF	-W57CO
FT5XN	-F6PEN	J52IM	-KB9XN
FT5ZH	-F5PXT	J69EB	-KB3AMD
FW2EH	-DJ2EH	J73CCM	-SM0CCM
FY5YE	-W55VZ	J13DST/0	-J13DST
GB0SM	-G3WNI	JL1KFR/JD1	-JL1KFR
GB4MD	-GW3VVC	JT1FCO	-VK4MZ
GB4MDI	-GW0ANA		
GB5TI	-GM0KVI		

JT1KAI	-JT1BV	JW0M	-SM0DJZ
JT1V	-JT1BV	JW5HE	-OZ8RO
JT1X	-HA0HW	JX7DFA	-LA7DFA
JU1DX	-JT1BV	JY8YB	-DL5MBY
JU1HA	-HA0HW	JY9QJ	-DL5MBY
JU1HC	-JT1BV	KG4AN	-WT4K
JU750BV	-JT1BV	KG40X	-W40X
JW/SM0DJZ	-SM0DJZ	KG4WD	-W4WX
JW0M	-SP2QOQ	KG4WW	-KX4WW
JW5HE	-OZ8RO	KH0/DU4CX	-DU4CX
JX7DFA	-LA7DFA	KH0AC	-K7ZA
JY8YB	-DL5MBY	KH0S	-JA10GX
JY9QJ	-DL5MBY	KH2/N2NL	-W2CY
KG4AN	-WT4K	KH4/N9KX	-DK9KX
KG40X	-W40X	KH6/K9PPY	-K9PPY
KG4WD	-W4WX	KH6X	-N2PU
KG4WW	-KX4WW	KH8/N5OLS	-N5JA
KH0/DU4CX	-DU4CX	KL7/N07F	-N07F
KH0AC	-K7ZA	KL7/W61XP	-W61XP
KH0S	-JA10GX	KP2AD	-OK1AJY
KH2/N2NL	-W2CY	KP4/N6TR	-N6TR
KH4/N9KX	-DK9KX	KS4Q/Y9S	-KS4Q
KH6/K9PPY	-K9PPY	L77E	-LU4DXU
KH6X	-N2PU	LG5LG	-SM0DJZ
KH8/N5OLS	-N5JA	LU/N3BNA	-N3BNA
KL7/N07F	-N07F	LW0D	-LU7DW
KL7/W61XP	-W61XP	LX2BN	-IK3OYS
KP2AD	-OK1AJY	LX4B	-LX1TI
KP4/N6TR	-N6TR	LX9LX	-IK3OYS
KS4Q/Y9S	-KS4Q	LZ/N3BNA	-N3BNA
L77E	-LU4DXU	LZ0B	-LZ1KCP
LG5LG	-SM0DJZ	M6T	-G3XTT
LU/N3BNA	-N3BNA	MM/K5MK/P	-K5MK
LW0D	-LU7DW	MS0AFP/P	-MM1AUF
LX2BN	-IK3OYS	OD5LX	-SM0DJZ
LX4B	-LX1TI	OD5PL	-HB9CRY
LX9LX	-IK3OYS	OD5VT	-Y03FRI
LZ/N3BNA	-N3BNA	OH0AE	-OH2KMG
LZ0B	-LZ1KCP	OH0CW	-OH2KMG
M6T	-G3XTT	OH0EA	-OH2KMG
MM/K5MK/P	-K5MK	OH0W	-OH2TW
MS0AFP/P	-MM1AUF	OK0W	-OK1AEZ
OD5LX	-SM0DJZ	OK5W	-OK1AEZ
OD5PL	-HB9CRY	OK6L	-OK1HRR
OD5VT	-Y03FRI	OLIC	-OK1AN
OH0AE	-OH2KMG	OL2A	-OK2RAB
OH0CW	-OH2KMG	ON50NMR	-ON4RU
OH0EA	-OH2KMG	ON50ODE	-ON4ACW
OH0W	-OH2TW	ON5PN	-LX1NO
OK0W	-OK1AEZ	OZ5HCA	-OZ3FYN
OK5W	-OK1AEZ	P29TL	-KF9TH
OK6L	-OK1HRR	P38M	-YL2KL
OLIC	-OK1AN	P40DS	-WB6SFA
OL2A	-OK2RAB	P40N	-KW8N
ON50NMR	-ON4RU	P43A	-P43ARC
ON50ODE	-ON4ACW	P43P	-P43ARC
ON5PN	-LX1NO	P49M	-VE3MR
OZ5HCA	-OZ3FYN	PJ2HB	-WA2NHA
P29TL	-KF9TH	PJ8W3EH	-W3EH
P38M	-YL2KL	PJ8DM	-KF4KRZ
P40DS	-WB6SFA	PR5L	-PP5LL
P40N	-KW8N	PS5S	-PP5LL
P43A	-P43ARC	R1FJV	-UA3AGS
P43P	-P43ARC	RA0FA	-WK6C
P49M	-VE3MR	RF2FWA	-DK4UW
PJ2HB	-WA2NHA	R18AA	-UK9AA
PJ8W3EH	-W3EH	RK3DZJ/3	-RK3DZJ
PJ8DM	-KF4KRZ	RP3QWK	-N2UCK
PR5L	-PP5LL	RX10X/FJL	-DL6YET
PS5S	-PP5LL	S21YR	-G3WZ
R1FJV	-UA3AGS	S92AT	-NJ2D
RA0FA	-WK6C	SJ9WL	-SM0DJZ
RF2FWA	-DK4UW	SM2/ON4BDS	-ON4BDS

SN0JG	-SP2BIK	TA1ZL	-RW9WA
SN7L	-SP7HB	TA2ZW	-OK1TN
SO3IF	-DJ0IF	TA3/N3BNA	-N3BNA
SP0DKI	-SP2DKI	TA3ZM	-DL5ABL
SP6NIC/1	-SP6ZDA	TA3ZN	-DL3FDU
SP6STB/1	-SP6ZDA	TF8GX	-K1WY/K1TRS
SQ6ELEB/1	-SP6ZDA	T12DX	-WA9BXB
ST0AP	-DJ6SI	T15NW	-W3CV
SU3AM	-DL1FCM	TJ1HP	-F6FNU
SV8/HB9EBC	-HB9EBC	TK0UFT	-F6AXX
SV8/12Y0	-IK2MYX	TK5UFT	-F6AXX
SV8CKM	-SV8JE	TL8CK	-F6EWM
SV9/LA4XFA	-LA4XFA	TM0AIX	-F5HA
T22JY	-JA1JQY	TM0E	-FF6KDC
T22KJ	-JA1KJW	TM0TWA	-F5UMP
T22KT	-JA3MCA	TM1IF	-F5RBB
T22VE	-JA8VE	TM5B	-F5XX
T30RW	-ZL1AMO	TM5CW	-F5SJB
T32B1	-KH6DFW	TM6ACO	-W6KFI
T32RT	-W6UC	TM8TWA	-F5UMP
TSAR	-SM0DJZ	TM0AIX	-F5HA
T88AN	-DF8AN	TO8T	-ON4TH (CW)
T88BE	-7N1RTO	TP4CE	-F6FQK
T88KH	-JM1LUS	TR8J	-W3HC
TA1ZL	-RW9WA	TR8SS	-DK8ZD
TA2ZW	-OK1TN	TT8FC	-EA4HNK
TA3/N3BNA	-N3BNA	TK6L	-F6AUF
TA3ZM	-DL5ABL	TL8CK	-F6EWM
TA3ZN	-DL3FDU	TM0AIX	-F5HA
TF8GX	-K1WY/K1TRS	TO8T	-ON4TH (CW)
T12DX	-WA9BXB	TP4CE	-F6FQK
T15NW	-W3CV	TR8J	-W3HC
TJ1HP	-F6FNU	TR8SS	-DK8ZD
TK0UFT	-F6AXX	TT8FC	-EA4HNK
TK5UFT	-F6AXX	TK6L	-F6AUF
TL8CK	-F6EWM	TL8CK	-F6EWM
TM0AIX	-F5HA	TM0AIX	-F5HA
TM0E	-FF6KDC	TO8T	-ON4TH (CW)
TM0TWA	-F5UMP	TP4CE	-F6FQK
TM1IF	-F5RBB	TR8J	-W3HC
TM5B	-F5XX	TR8SS	-DK8ZD
TM5CW	-F5SJB	TT8FC	-EA4HNK
TM6ACO	-W6KFI	TK6L	-F6AUF
TM8TWA	-F5UMP	TL8CK	-F6EWM
TM0AIX	-F5HA	TM0AIX	-F5HA
TO8T	-ON4TH (CW)	TO8T	-ON4TH (CW)
TP4CE	-F6FQK	TU2XZ	-W3HC
TR8J	-W3HC	TU4EI	-W3HC
TR8SS	-DK8ZD	TU5EV	-W3HC
TT8FC	-EA4HNK	TU0D	-TU2CI
TK6L	-F6AUF	TX8A	-FK8HC
TL8CK	-F6EWM	TX8K	-FK8VHN
TM0AIX	-F5HA	TX8JA	-JA3EMU
TO8T	-ON4TH (CW)	UA0AZ	-W3HNC
TP4CE	-F6FQK	UA0S/JT1BV	-JT1BV
TR8J	-W3HC	UA0ZBK	-K1WY/K1TRS
TR8SS	-DK8ZD	UAARZ	-K7ZR
TT8FC	-EA4HNK	UA9PAR	-W7YS
TK6L	-F6AUF	UE0AWZ	-RZ0AM
TL8CK	-F6EWM	UE56MM	-RW0MM
TM0AIX	-F5HA	UI8ADN	-UK9AA
TO8T	-ON4TH (CW)	UK0A	-UK9AA
TP4CE	-F6FQK	UK4YT	-W2TK
TR8J	-W3HC	UK8AXA	-UK9AA
TR8SS	-DK8ZD	UK8GBS	-RW6HS
TT8FC	-EA4HNK	UK8OM	-IK2QPR
TK6L	-F6AUF	UK9AA	-DL4YT
TL8CK	-F6EWM		

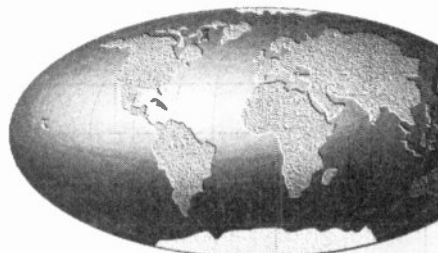
UX0ZZ —N3IRZ XV4SW —SM5MX
 V26A —WB3DNA XX9TSS —JK2PNY
 V26GG —W5AO YA1AR —SM0DJZ
 V26TT —K5TT YC4SJB —YB0DX
 V26VG —GM3UTQ YE0T —YB0PR
 V29TT —N2AU YE2B —YC0FTD
 V31HE —DL1DA Y11AK —AD5W
 V31SC —DJ4J Y11HK —KK3S
 V51CM —WA2JUN YJ0ADJ —DJ2EH
 V63DR —W7DR YJ0AWP —JA1WPX
 V63RL —NG7SZ YM2ZM —OK1DTP
 V16EWT —VK6ANC Z24S —W3HMK
 V175RAAF —VK4LV Z31GB —NN6C
 VK8AN/6 —VK4AAR Z31JA —NO6X
 VK9LZ —N0AH Z32XX —NN6C
 VP5/K6HNZ —K6HNZ Z37GC —NO6X
 VP8/G4VPU —G0HXL Z38/NO6X —NO6X
 VP9/K2VUI —K2VUI Z38C —NO6X
 VP9ANV —WB2YQH Z38X —NO6X
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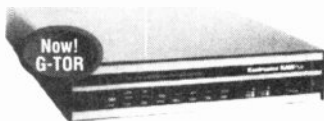
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'98 Dayton Hamvention

It started out hot and humid on opening day, Friday 15 May. By the time it ended on Sunday, 17 May, the temperature and humidity were at a very comfortable level for a spring day in Ohio. The "it" we are speaking of is the 1998 Dayton Hamvention, described by ARRL Letter editor Rick Lindquist, N1RL, as "Three days of fair weather and a largely enthusiastic crowd..."

If there was one product that stole the show, it had to be Yaesu's new FT-100 "Field Commander" all-band/all-mode mini-transceiver. Nobody doubts that the FT-100 was developed as a direct rival of Icom's very popular IC-706 Mk II. While not primarily designed for the "VHF/UHF-only" enthusiast, the FT-100 "Field Commander" transceiver is going to become a "standard" for any Ham who wants a single small radio to use mobile — or with an accessory power supply — as a base station.

The FT-100 covers all amateur bands and modes from 160 Meters through 70 cm, with the exception of 222-224 MHz in a case that is ac-

tually slightly smaller than the '706. In other words, it's about the same size as a 2 Meter FM-only mobile radio of a decade ago. Features include a black on blue lighted front panel display mounted on a detachable and remountable front panel. The FT-

100 also incorporates a fully adjustable CW keyer, easy to access menus, digital signal processing, open slots for optional filters and a lot more. About the only negative is the FT-100 will not operate full duplex for satellite work. Then again, neither will the IC-706 Mk II.

On the HT scene, Alinco introduced its DJ-C5T dual-band "credit card" radio at Dayton. Alinco's Doug Wynn, KD6NUH, told this reporter that the tiny radio was a big hit and that "...hundreds of them were sold" by Alinco dealers at Hamvention '98.

The DJ-C5T features a removable flexible rubber-coated antenna, a lithium-ion battery and a small speaker that generates surprising audio. The transceiver can also utilize a variety of speaker/mic combinations and its accessories are interchangeable with the DJ-C1 and DJ-C4 models.

Technically the radio is impressive, particularly when one considers the small size. Among the features to be found are CTCSS encode and decode, programmable European tone bursts, 50 memory channels plus a "call" channel, adjustable offset (to 15.995 MHz), AM Airband receive, extended VHF receive (118 ~ 173.995 MHz), full coverage of the UHF Amateur band (420 ~ 449.995 MHz) adjustable tuning steps, auto power off feature, battery save setting, MARS/CAP capability, packet radio capability and more. The radio comes with a clear plastic case and a "snap-in" charging unit.

Not to be upstaged, ICOM showed its new IC-Q7A mini HT. This radio is obviously designed to be a direct competitor to Yaesu VX-1R which made its debut at last year's Hamvention. The IC-Q7A offers wideband receive capability, from 30 to 1300 MHz in a very small package.

But my personal favorite was not a radio at all. Rather it was a radio accessory that I had the opportunity to play with — close up — at a private showing the evening before Hamvention '98 opened.

Thanks to Kenwood's Paul Middleton, KD6NUH, about 20 minutes after an aging TWA DC-9 groaned to a landing at Dayton's Cox International Airport, this reporter had his mitts on one of the greatest aids to Ham radio public service ever invented.

Kenwood calls it the VC-H1 Visual Communicator SSTV system. In reality it is a plug-in accessory (direct plug-in to Kenwood HTs) that permits an HT to transmit and receive SSTV pictures without losing voice transmit capability — except for the small amount of time it takes to transmit or receive an SSTV image. To accomplish this, the VC-H1 incorporates a high resolution CCD camera, a built-in LCD screen along with hardware and software to convert the image into almost any SSTV format ever developed. This means that the signal developed by the VC-H1 can be received by any Ham equipped with conventional (read that as larger sized) SSTV gear.

Imagine being part of a Ham radio team providing communications for a parade. Suddenly the line of march grinds to a halt and you are dispatched to find out why. You soon come across a float that has suffered some major damage. You could spend four or five minutes trying to explain the plight of the float — third party — to parade officials. Or, you plug your VC-H1 into your handheld, aim its camera lens toward the float and within seconds those miles away are seeing what you see. In situations where time is crucial, the VC-H1 is truly an accessory that makes one picture worth well in excess of the proverbial 'thousand words.'

Turning briefly to Ham radio politics at Hamvention '98, the FCC's Bill Cross noted as he was departing Washington for Dayton that the

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FCC has received many comments on RM-9259. That's the League's request for a declaratory ruling affirming that amateur operation that conflicts with established voluntary band plans and causes interference or adversely affects those operating in accordance with applicable band plans would be contrary to "good amateur practice."

Cross told those attending the FCC Forum that none of the comments received were in any way supportive of the ARRL position. Ironically, RM-9259 was the subject of a debate at a live to the Internet 'netcast' sponsored by Newsline and Tucson Amateur Packet Radio that was taking place in an adjacent forum room at the same hour Cross spoke.

The highest repeater in the world

Last winter, Bruce Paige, KK5DO, conducted a worldwide poll to try to find out where the world's highest repeater is. Bruce posted the question to the Repeater Owners Remailer and got far more responses than he was expecting. He received messages from as far away as Chile and Switzerland as well as many that are stateside including Hawaii.

Bruce learned there are lots of repeaters operating from some pretty tall spots. He compiled them into a list and here are some that you will probably find very interesting:

"There are several repeaters on Navajo Mountain in southern Utah. 10,400 feet overlooking Lake Powell." (W1ME)

"Haleakala, Hawaii, has a machine right around 10,000 feet. The highest in Hawaii. The Mauna Loa repeaters are running around 8,000-9,000 feet; I don't know the exact location, so I can't be more specific." (NH6YK)

"How about 9,350 feet in Pakistan?" (AP2AUM)

"The base elevation of the tower of KOLO-TV (for whom I work) is 9,720 feet, and there is one building slightly higher that has at least one 2-meter repeater inside, which puts it at 9,800-foot minimum." (W7PW)

"QTH = Mount Washington — 6,288', New Hampshire's highest peak in Northeastern U.S. Wind speeds of over 200mph have been recorded White Mountain National Forest= 753,359 acres." (W1ME)

"We had a digi above 10,000 feet

on Sierra Blanca in New Mexico when I was out there. More trivia. Highest state capital in the U.S. Santa Fe, 7,500 ft." (KAØYOS)

"A couple of years ago, I was talking to a guy who'd installed a repeater in Chile, to cover the road into Mendoza (Argentina). It was at 14,000 feet." (VK6KCH)

"There is a repeater on Mammoth Mountain in California, about 100 miles north of Mt. Whitney and it's over 11,000 feet. Also in the same area there is another repeater at 10,800 ft." (N6VFP)

"In New Mexico, the WB5EKP machine on mount Taylor tops out at 11,000; it's 34/94 and open." (K5EN) (*Ed note: I remember it in the early '70s as WA5JDZ and one of the first systems to use a voice ID.*)

"According to my info, the 2M and 70cm repeaters on the Schilthorn in Switzerland are at 2,970m, which is around 9,740ft; the 2M repeater on the Kitzsteinhorn in Austria is shown at 3,035m, which is around 9,957ft." (G4BLH)

"A UHF repeater listed at 10,500 feet in the Denver area. It was listed as 'super wide area' coverage." (NW7N)

"Just north of Tucson, AZ, we have many repeaters on Mt. Lemmon at a height of 9,157 feet." (NW7N)

"When visiting Denver, I heard a 2M repeater ID and say that it was located on either Storm or Fire Mountain, can't remember, at an altitude that was greater than 12,000 feet." (RFW no call given)

"Out here in Colorado we have several at 11,500 ft on Squaw Mt. However the repeater serving Colorado Springs is over 14,000 ft." (NØCKW)

"The repeater on Pikes Peak is at 14,110 ft. The call on it according to my friend KØDJ (he used to work on it) is WØVN on 146.37/97. The repeater on Cheyenne Mt. (NORAD) is at 10,000 ft and is 146.16/76." (N7ZEF)

"The local club here is putting up a repeater (not commercial) on Elk

Mountain 40 miles east of here at the 11,000 ft range." (N7ZEF)

"Bozeman Repeater sits atop Bridger Peak at about 11,000 feet, give or take a few." (K7YD)

Bruce says that the system on Pikes Peak is the highest in continental U.S. If you have more information on which is the highest repeater in the world, send it along to Bruce Paige at kk5do@amsat.org.

New North Carolina 6-meter repeater

Speaking about repeaters at high places, Bill Fisher, KE4GRW, reports on a new (now relatively new) 6-meter repeater on the highest peak on the eastern U.S. seaboard. The system is the KD4LBU repeater on Mount Mitchell, NC (Grid Square EM85). Elevation is 6,600 feet. The system operates on 53.630 receive and 52.630 transmit and requires a 100 Hz CTCSS tone to access. Bill's e-mail is billybobfisher@juno.com.

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See *Worldradio*, Oct. 1994 Issue.

The Four-meter band

Is there still a 70MHz band in Great Britain? "Yes indeed," says Alastair J.S. Beaton, GM4BAP. According to Al, the 4-meter band also exists in Ireland, Gibraltar, the ZC4-UK Base on Cyprus and more recently came to South Africa.

According to information posted by Al to the VHF REFlector, quite a number of other European amateurs in countries with North Sea coastlines have 4M receiving gear and operate cross-band 4M/28.885MHz (or at least they did the last time I listened on 4M!).

For more information check out the Four Metres Home Page: <http://wkweb1.cableinet.co.uk/gm4zuk/4m/>.

Alaska beacon needed

With the VHF DX season heating up faster than expected, a need has arisen for 6M and 2M propagation beacons to be installed in Alaska. To help facilitate this, Brandon Anderson, N8PUM, says over the VHF Reflector that he will donate a built and programmed keyer circuit to anyone in Alaska wishing to place a 6- or 2-meter beacon on the air.

Anderson says that his 50.0665 MHz beacon was heard from grid square EN65 to Alaska last January off the Aurora. He says that a beacon on the Alaska end would be nice for everyone. Any comments or suggestions go to n8pum@juno.com.

The Alinco listserver

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Comments on voice ID

About the same time that we discussed the use of voice identifiers for repeaters in this column, it also became a topic of discussion on the Repeater Owners Remailer. One of the concerns of using voice IDs is in multiple hop or multiple site linked systems. Also, there is the concern about the IDer interfering with user transmissions. Here are two views on the matter from a pair of well respected radio amateurs.

From: Bob Dengler NO6B (no6b@no6b.jpl.nasa.gov)

Voice ID is fine for initial IDs, but what happens when it's time to ID in the middle of a transmission? The nice thing about MCW is that it can be copied while the user is talking without interrupting his or her transmission (assuming the levels are set correctly).

I don't know if it's possible to achieve the same result with a voice ID. If extended to auxiliary operation as well, it would also eliminate the practice of using 1064 Hz MCW w/notch filters on link xmtrs to prevent link IDs from propagating throughout a large linked system. If all the Cactus RC link IDs passed through their system, it would sound like the bottom of 20 Meters.

From: Chris Boone, WB5ITT (cboone@earthlink.net)

I have run my RC850 and RLC3s

in voice only and voice interrupt mode. You can set the level for the Voice ID to be heard under a quiet signal, but when the noisy ones come in, you don't hear it at all or all you know is there IS an ID there. (Its not quite what Part 97 had in mind).

I changed all the IDs to CW Interrupt. I think my 850 and RLC3s only Voice now in the Initial and they too are capable of being interrupted to CW.

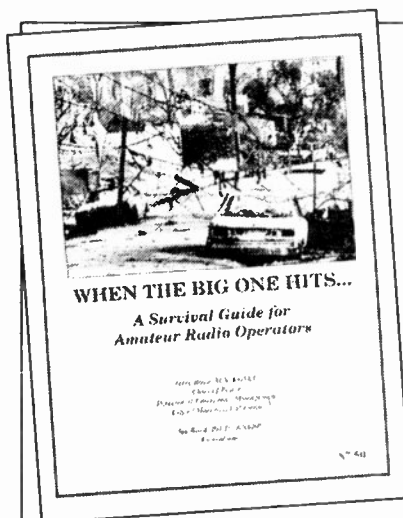
As for the large link systems, there are ways of getting around it. One way we have looked at is use Hypersonic keying (or Out Of Band as it is called in telephony and analog MW areas) and run the CW IDs on COS only with a user signal activating the OBS tone for the other end to unmute. If a user is keyed while an ID runs, the distant end will still hear it unless you notch.

One idea on a major link system is run one common ID on the link paths and let the local repeater channels ID with the local call. But that may prove to be a logistical/hardware nightmare, plus keeping the ID legal if a portion of the link is turned off before the 10 minute requirement.

Thought of the day

VE2BMQ's thought for the day.

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Several weeks ago you'll recall that a communications satellite, Galaxy 4, malfunctioned and ignored all Earth commands that attempted to get the errant bird re-aligned. This satellite was a primary relay for a number of television, radio, and media outlets as well as feed for a majority of U.S. paging systems. When the satellite quit relaying, the ground receivers went dark and sent technicians scrambling to re-establish these communications links.

Obviously one cannot just dispatch a repair party to fix the satellite's glitch so when it quit working, it was not simply a quick fix. Galaxy 4 was important because it occupies a great orbit position above Earth. Some satellites are low on the horizon which increases the possibility of interference and decreases the signal strength and quality.

Galaxy 4 was also packed with users. A large number of these users have receiver dishes that are locked into position. A home system has a positioning motor that lets you aim your dish at different satellites. In a windstorm, the dish might move a little and you just move it back remotely. A commercial system often uses a large, high-quality, dish that's aimed for optimum reception. They don't want the wind or elements moving the dish off target, especially for remote sites.

As some of the services moved to alternate satellites, many sites needed to realign their dishes. Where technicians were on site, it took from 30 minutes to several hours. Some remote sites required significant travel and technicians discovered that the structure supporting the dishes didn't allow enough movement which meant significant effort and engineering changes.

Some sites discovered the new alignment was blocked by buildings,

mountains, or other structures. In short, it was quite an undertaking to get communications flowing again.

Meanwhile ground controllers moved one of the lower position birds into the Galaxy 4 spot and they began getting it programmed to handle the heavy workload. As I write this, there are still services we use at the newspaper that are not back to normal or are of marginal quality. I was also surprised at the amount of data we use that came through this one satellite.

In the May/June 1998 issue of *911 Magazine*, an article details how the primary and secondary 911 network crashed in Alameda County (California). The outage only lasted for several hours, but it did cause an interruption in all 911 calls. While having a double failure of both primary and secondary systems was called "very, very rare," it was also called the "worst disaster" the systems had experienced.

These two events remind me of something I read (where, I cannot recall) that stated that in an emergency, "communications will fail."

In my real job, I've migrated from a newspaper writer and editor into technical support. When I first began my journalism career, newsroom technology was a typewriter. Today technology includes a half-dozen Novell servers, four Unix servers, an Enterprise server, a number of large database servers, fiber optics, network switches and routers, modem banks, high speed and high capacity Internet links, and rooms full of disks for electronic storage. And each reporter and editor has a computer as well.

If someone bumps a circuit breaker by mistake (which happens once in a while), it's not unusual to have half the newsroom's computers quit working. If a contractor clips a fiber cable, phones stop working and data stops flowing. It astounds

me how much we rely (as a business and as consumers) on state-of-the-art technology. In Salt Lake County, a major dispatch and 911 center relies on a microwave link to control transmitters for over a dozen agencies. A link failure would create untold problems in getting help sent where needed.

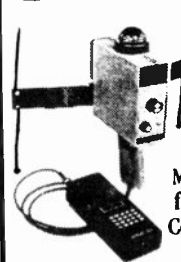
Here's my point. In an emergency or during a disaster, communications will fail. Plan on it. Use these recent events to point out to your public safety contacts that as technology becomes more and more complex, there are also more failure points. As we depend more and more on this technology, failures will create greater impact.

This is where Amateur Radio becomes critical. We have at our disposal many ways to create simple and reliable temporary communications links. And this is the important point — we can CREATE links where needed. We may not be able to duplicate the complete package, but we can create temporary links until normal operations are restored. Whether it is a construction company that digs through a cable or a power failure at a microwave site, Amateur Radio has resources to establish links.

Two things must happen in order to create emergency links. First you must have made contact in advance so the agency knows who to call. Second you must have created your own resources in advance so you can respond to create the needed links. Both must be done in advance.

Believe me, no public service agency wants to have a communications failure. It gets darn spooky

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in the field when the radios don't work (been there, done that). It's dark, it's quiet, and you know that help is NOT a call away. You're on your own and it's unsettling to say the least.

A good presentation to an agency would be to collect articles from trade publications (such as *911 Magazine*), magazines (such as *Worldradio* and *QST*), and newspapers showing what has happened in other parts of the country. It's not a bad thing to paint a worst-case scenario as this prevents big surprises. You must also realistically present what your Amateur Radio group can do when the normal links fail.

The idea is to create the opportunity for the public agency to look good when communications fail. You want to create a niche where you can keep them functional and make them look good that they had the "presence of mind" to call upon Amateur Radio. It's good public relations for the agency and for Amateur Radio — just lay the groundwork in advance.

ID cards

Ten years ago a good-looking ID card required a design team and a printer. You usually had to order several hundred at a time and then had to type each individual's name and information on each card. The downside was the cost and time needed to prepare and print the cards. The advantage was that the

cards were not easily duplicated and it's good for members to have ID cards visible during an event.

Our local ARES group had cards commercially printed, but we ran out a couple of years ago. Instead of going back to the commercial printer, I tried out a personal computer design program and a consumer grade color printer. The results were very good. I was able to use a lightly shaded ARES logo and put each person's name and call on the cards as they were printed.

With a little effort I was able to print on the back of the cards as well, leaving them looking very good. The basic design had been approved by several local agencies, so I didn't want to get too creative. Our ARES group has a small laminator so we're able to encase each card in plastic for about twenty cents each. The upside was once the design was in the computer, it was easy to print cards.

The disadvantage is that anyone can easily duplicate the card. It's recognized by several public service agencies so our concern remains that a non-ARES member might decide to "crash" the party and create a bad image for the group. It hasn't happened, but it's a concern.

What did happen is that another group discovered the ease of making ID cards as well. They also liked our basic design. Other than a different color, the cards look remarkably similar. This is also a concern.

In response to a reader inquiry about ID cards, I've given you the "how to." There's no guarantee your design will not be copied by others. It's easy to affix a photo and have your local copy center laminate the card. In fact, someone could create a pretty good-looking ID card in a couple of hours, have it laminated, and quickly be at the scene.

I would suggest that your group keep a current membership roster and share it with the agencies you serve. It would be a good thing for the agency dispatch center to have

your roster for two good reasons. First, it allows someone in the field to check a photo ID and verify membership. Second, it gives dispatch a number of people they could call to get your group responding if needed.

There's no guarantee that someone or some group will seize the opportunity to use your good efforts. In some ways it's a compliment but in some situations it might not be for the best. Working with your served agencies in advance is the best guarantee to prevent problems.

It's NOT a good idea to include birth dates and Social Security numbers on your ID cards. This information isn't needed in the field and is often on your driver's license if needed. With all the issues surrounding privacy, keep your cards simple. I would recommend simply the person's name, a photo, the call sign, the name of your group, and perhaps a unique (or sequential) number. (This number should also be listed on the roster for reference.) A nice, simple card is usually most effective.

Certification issues

There's been a discussion among various members of a search and rescue Internet discussion group concerning what you do when non-group members show up and want to get involved. If you turn these people away, you possibly create a media event when the person tells the media he or she could have saved the victim. If you use these people, you become liable for their safety. It's a thorny issue.

As a volunteer, I take the role that I work for some agency, and that agency has someone responsible for the event. It is my suggestion that these convergent volunteers are simply referred to the responsible agency representative. It gets you off the hook and lets you focus on what you're doing. The last thing you want as a volunteer is an article in the newspaper or a TV segment on how you're not acting in the public interest. Let the paid or elected people handle that.

As a Civil Air Patrol mission coordinator I would often decline non-CAP pilot volunteers primarily because of liability issues. I didn't know if they were qualified or competent and didn't want to send them into a hazardous search grid and then get sued by their family if they crashed. Some of these volunteers



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accepted my reasons. Others didn't. Several times I threatened to pull the CAP resources out of the air if these "unqualified" non-members took to the search area. I was impressed with myself and my perceived authority.

Looking back, these threats were childish and unprofessional. It would have been better to simply tell these non-CAP volunteers that this mission was under the direction of a particular county sheriff or under the supervision of the state Division of Aeronautics. If the sheriff or aeronautics director wanted to use these additional volunteers, it would become the agency's responsibility, not mine as a representative of CAP.

One of the thorny issues the Internet group brought up was that of training and certification and here we find a multitude of opinions. Some feel that having some certificate equates to quality and I strongly disagree. A certificate simply means you attended training and passed some kind of proficiency exam. Does this mean that only certified people are qualified? Certainly not.

There are a goodly number of former CAP members equally if not better qualified than current members with current certification. There are many good radio operators who are not current ARES members. There are many former sheriff SAR team members who retain excellent field skills and have experience above and beyond current members.

I maintain it's the experience AND the training that counts. Certification is a small part of qualification. What I find is that often classes are held simply to check off a requirement and not to impart any knowledge — it's a time wasting event simply to allow issuing of wallet "qualification" cards. Other groups implement serious training and weed out those who cannot pass the exam but rely on experience as the primary "certification."

Don't be fooled into thinking a wallet card means anything other than the person passed a set of criteria and was issued a card. It does NOT equate to expertise or quality. It may be a good starting point, but that's about all.

A technician I know has passed his computer "engineer" certificate exam. He cannot install a disk drive reliably nor can he handle basic

computer problems. What he can do is take tests well. In the field, he's the last person you want taking a screwdriver to your computer. In time he'll possibly gain enough experience to be of value. While he's learning, the person you want fixing your computer is someone with experience and often doesn't have the fancy framed certificate.

Remember that your responsibility is within your own group and to the agency you work for. The agency has asked you and your group to handle some segment of the event, but you work under the agency's authority. If the agency chooses to use anyone or any group, it's their call. Your call is to do the best you can with your members and with your group's resources. You should know the qualifications of your own group and refer non-member decisions to the controlling agency — after all, it's their jurisdiction and their mission. (Very seldom is a volunteer group given the overall command authority for a mission.)

An acquaintance of mine is a pilot and a search coordinator. Many times I've heard him belittle other groups and other pilots. His claim is they're not part of the "group" and should simply let the "trained group" handle the search. Imagine how his comments are taken by, for example, a sheriff designated (and well experienced) search pilot who is not a member of "the group." Imagine also the eating of the words when an "untrained" chopper pilot

from that "darned TV station" finds the crash before "the group."

It happens too often for me to believe the sheriff didn't know the TV station's pilot was experienced and qualified and the best resource for the mission at hand. A public service event is not a competition! I've never heard of a search victim asking to see a certification card before he or she agrees to be rescued!

Our primary focus as volunteers is to become as qualified and experienced as we can. Let the other folks worry about themselves. Your responsibility rests within your group and within the task assigned you by the agency you work for. Pounding the pulpit about how your certificates are better than some other group's certificates always makes me shake my head in wonder. Don't get caught up in the wallet card thing. Just work toward doing a good job. Work with and learn your own group's qualifications and let the responsible agency deal with all the other issues.

Have a great summer. Be productive and get involved. See you next month!

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YL Meetings

Iserved as moderator for the YLRL Forum held at the Dayton Hamvention in May. We had a good crowd of attendees, especially in view of the fact that the forum was scheduled 15 minutes before the general public was allowed full admittance into Hara Arena. Our speakers were Nancy Rabel Hall, KC4IYD, the President of YLRL, and Nobuko "Ton" Uchiyama, JR6XIX, the President of JLRS. Both YLs talked about their organizations, and YLRL's current scholarship drive, contests, and certificates were discussed. A drawing was held for YLRL members, and Cheryl Muhr, N0WBV, the 10th District Chairman for YLRL, won a packet of YLRL stationery and stickers. A drawing for non-YLRL members was held and Crystal Hart, KC0AJY, won a one-year membership.

On 16 and 17 May, 1998, the MINOW YL Net held its annual meeting and picnic at the home of Anna Skowronnek, KA7JYA, and her husband Werner, in Port Ludlow, Washington, on Puget Sound. There were 11 YLs and 7 OMs present. On Saturday night, Mary Lou Brown, NM7N, showed

slides of her DXpeditions to Anguilla, and on Sunday morning, the business meeting was held. An indoor picnic followed. The MINOW YL Net has members from the states of Montana, Idaho, Nevada, Oregon, and Washington.

Unni Gran, LA6RHA, is still working on some surprises for the Polar YL Meeting in Svalbard in August, as are the other two organizers, Ruth Tollefsen, LA6ZH, and Turid Bjerke, LA9THA. Remember to listen for JW0YL on 20-24 August. Unni is also editing a YL column now and would be pleased to receive your news. Her e-mail address is la6rha@online.no.

Jensen in Nicaragua

Jensen Reitz Montambault, KS4ZQ, joined the Peace Corps in 1996 and was sent to Nicaragua. Upon arrival, she tried to get a license and ended up with a year-long fight with the Peace Corps administration, who thought that operating a Ham radio station would make Nicaraguans think she was a CIA agent, and the Nicaraguan equivalent of the FCC, which requires you to know the coordinates of your station down to the second, even though all those records were destroyed in the civil war. She was finally given a license to operate for a year, and her call was YN9MJR, which Jensen liked to say stood for YN9 "mujer" or "woman" in Spanish. She thought they were trying to assign her initials, which are JRM, but couldn't figure out which was her first name.

Jensen's station in Nicaragua was in the "Casa Cural," where the Catholic church offices and priests' residences are located. Dating back

to pre-civil war days, the Drake TR4 she used was older than she was and still had most of its original tubes intact. (Legend has it that the Sandinistas confiscated the rig during the war but brought it back in disgust two weeks later.)

With the help of some young priests in training, Jensen strung up a 20-meter homebrew half-wave dipole. Unfortunately, the Casa Cural was surrounded by two-story concrete buildings and the dearth of tall trees effectively left her antenna in a cement well. The Amerique Mountains to the north also channeled her signal into uninhabited regions of the Costa Rican rain forest instead of toward her family in the eastern U.S. Jensen did manage a few shaky CW contacts with her dad, who is KS4ZR, before a small electrical fire caused her to give up the Ham radio ghost in Central America. She writes that, "Any and all Field Day experiences should seem luxurious after this!"

Jensen is now back from the Peace Corps and is hoping to find work with one of the non-governmental organizations involved with either the environment or Latin Americans in the U.S. In spite of the inherent trials of Amateur Radio, she has enjoyed the last 10 years that she has been licensed and feels that it has given her an opportunity to meet a wide variety of people of all ages and races.

YL Updates:

Blanche Randles, W4GXZ, has announced the appointment of Dot Young, W1YGY, as the new Certificate Custodian for QCWW, the Quarter Century Wireless Women. Dot's address is 47 Longwood Avenue, Augusta, ME 04330.

Blanche also announced that Bob Roske, WA0CLR, has designed a web page for QCWW, which can be accessed at www.geocities.com/Heartland/Pointe/8932. Please drop by the site and let Bob and Blanche know what you think of it. (I like it!)

Betsey Doane, K1EIC, and Barb Lombardi, K1EIR, recently were one of 50 pairs of identical twins who were selected as winners in an "Extraordinary Twin Search," conducted by Princess Cruises. Two thousand pairs of twins entered the contest and selection was based on outstanding community service, overcoming a handicap, or being

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exceptionally talented or successful in their chosen fields.

Betsey and Barb hold Extra class licenses and were licensed when they were 14 years old. Both are blind. Betsey is a professor of math and computer science at the Housatonic Community College in Bridgeport, Connecticut, and Barb is a counselor for the chemically dependent. They are active traffic handlers, and Betsey is especially active

Rosel Zenker, CT3/DL3KWR, operated CW on 20 Meters from Madeira during her holiday in May. QSLs go to her at Kotkaring 1, D-17493 Greifswald, Germany.

The YL-ISSB annual convention was scheduled in mid-June in Barbados, and several YLs planned an extended stay. Among those present were Phyllis Shanks, W2GLB; Darleen Magen, WD5FQX, and Nellie De Lazard, XE1CI, and you



1998 Dayton Hamvention: Front row: Nancy Rabel Hall, KC4IYD and Nobuko "Ton" Uchiyama, JR6XIX. Back row: Carol Scmitkons, KB8VYB, and Kay Eyman, WA0WOF.

in the ARRL. In addition to being the SCM for Connecticut, she coordinated the hundreds of volunteers needed for the 1995 Special Olympics, and both sisters have been honored for their community service.

The twins won a cruise and were joined on the 7-day Caribbean cruise by the Robideaux twins, Janet, KØJE, and Janice, KØJA. All four YLs are members of the HANDI-HAM System. Congratulations to Betsey and Barb, and thanks to Janet, KØJE, who furnished this information for *HANDI-HAM World*.

Marie Therese, 6W1RB, has been active on 15 Meters. You can find her around 21.300 MHz, between 1800-1900 UTC, and her callbook address is Box #3749, Dakar, Senegal.

Tanya, EY8YW, was active on SSB from Tadjikistan on 20 Meters in May. She was working the U.S. around 0230 UTC.

may have heard them or many of the other attendees on the air. I hope to have a write-up on the meeting for the next column.

You may remember that Nellie is the only person to have worked 5B WAS-YL. Now she is looking for YLs on the WARC bands to complete WAS-YL on 12 and 17 Meters. If you can operate on those bands, please contact Nellie to set up a sked as she would like to complete this goal in 1998. Her e-mail address is xelci@mail.internet.com.mx, and she would be very glad to hear from you. After Nellie has worked WAS-YL on the seven bands, she plans to start on 160 Meters.

Alice King, AI4K (ex-N4DDK), a veteran of several DXpeditions, was to be one of the operators with the Florida West Coast DX Ring when they activated Dry Tortugas Island (NA-079), during the RSGB IOTA Contest on 25-26 July. 📡

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More BASIC dipoles

One of the first articles I submitted to *Worldradio* appeared under Kurt's "Aerials" banner in April 1991. Its title was "Short Dipoles."

The article assumed that most of us, if we don't have the real estate to put up full-length dipoles for the top bands, seem resigned to limit our operations to the shorter wavelengths.

Of course, there are many ways around the dilemma, and the article gave several solutions. One of the ways included shortening the physical length of a dipole by placing loading coils in its two legs. The 10-line BASIC program in the article told you how long an "unmodified" dipole should be and asked how long (short?) you wanted the new antenna. It also asked how far from the

feedpoint the loading coils should be, and asked what size wire you intended to use.

What you got for all the decision-making was an inductance value for the coils, an estimated impedance for the antenna, and a ballpark standing wave ratio (SWR) for the short version antenna.

Of course, the program looped back to its first input line so you could change values until you found a design to your liking.

Center-loaded short dipoles

Another way to shorten a dipole is the subject of this month's column. Rather than use individual loading coils out in the legs, why not just put

reactance for physically short vertical and dipole antennas. His method was to determine the reactance at the center of the antenna, then cancel it with a coil of opposite reactance.

This month's BASIC program reduces Dome's tables and graphs to DATA statements (lines 30, 40, 50 and 60) to aid in selecting values for the formulas in lines 110 through 190. (I did modify Dome's data to reflect antenna performance over "real" ground rather than over a "perfectly-conducting" ground.)

What the program does is compute the length of a halfwave dipole the standard way, in line 120, then prompts the user for the short version's options.

```

10 CLS: PRINT "SHDIPOLE.BAS, BY KD5DL, 8/98"
20 REM: BASED ON W2WAM'S ARTICLE, QST, JAN 76
30 DATA 0,1.23,.05,.63,.1,.64,.15,.75,.2,.92,.25,1.2
40 DATA .3,1.31,.35,1.34,.4,1.23,.45,1.105,.5,.455
50 DATA .55,.86,.6,.82,.65,.83,.7,.91,.75,1.04,.8,1.12
60 DATA .85,1.16,.9,1.15,.95,1.09,1,1.04
70 INPUT "WHAT FREQUENCY (MHz) ";A: B=486/A: C=73.1
80 PRINT " THIS ANTENNA IS NORMALLY ";INT(B*10)/10;
   "FEET LONG.": PI=3.14159
90 PRINT " HOW LONG WILL YOURS BE ";D: F=984/A
100 INPUT " AT WHAT HEIGHT (FT) ABOVE GROUND ";E
110 INPUT " AND USING WHAT SIZE WIRE (AWG) ";WS
120 IF D=>B OR E=>F THEN PRINT "OUT OF RANGE: ": GOTO 90
130 G=1.05*D/F: H=E/F: J=4.3756*G^2.2073
140 RESTORE: READ K,L,M,N
150 IF H>K AND H<M THEN 170
160 K=M: L=N: READ M,N: GOTO 150
170 P=(H-K)*(N-L)/.05+L
180 R=C*J*P: S=12.6*D: T=E*12: U=.46/(1.1229^(WS+3))
190 V=U*SQR(1+(S/(4*T))^2): W=119.865*LOG(S/V)
200 X=-1/TAN(G*PI)*W: Y=ABS(X/(2*A*PI))
210 PRINT "RADIATION RESISTANCE =";INT(R*100)/100;"OHMS"
220 PRINT "REACTANCE =";INT(X*10)/10;"OHMS"
230 PRINT "CANCEL REACTANCE WITH";INT(Y*10)/10;"uH COIL AT
   FEEDPOINT."
240 PRINT "DO ANOTHER ";A$: IF A$="y" OR A$="Y" THEN 70

```

them in the antenna's feedpoint?

After all, loading coils dangling midway along the legs of a dipole puts an awful lot of strain on the wires, especially in icy or windy locations; and they can certainly draw attention to an antenna that might otherwise be "invisible" to neighbors, landlords and code-enforcement officials.

Robert Dome, W2WAM, approached the short dipole problem with an article in the January 1976 *QST*. In it he presented a few tables, a graph, and about ten math equations that would lead to the determination of radiation resistance and

Line 150 converts the antenna's height to wavelengths; line 160 directs the DATA search until it gets within a rough height range; and line 170 refines the value by interpolation.

Line 180 computes radiation resistance (R), then computes wire data and other factors that are needed to find the antenna's surge impedance in line 190.

Line 200 computes the imaginary part of the impedance vector (X) and finds an inductance (Y) to match its value. The rest of the program just provides the R, X and Y values to the screen, and gives the option to

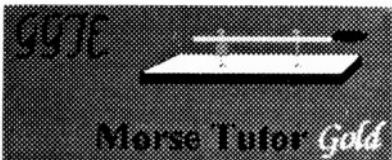


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"Do Another?"

To check things out, let's say we want to put up a 75-meter dipole, and we want to limit its length to 66 feet (the reason for which will be explained shortly). We expect to raise it 40 ft. above ground, and we intend to make it from AWG #14 wire.

Right away the program tells us the antenna would normally be 121.5 feet long. Since we want to make it 66 ft. long instead, we are told the shorter version has a radiation resistance of about 13.85 ohms and a reactance of -j984.6 ohms.

A 40.7 uH inductor, at this frequency, has a reactance of +j984.6 ohms, thus connecting it across the center feedpoint will cancel the antenna's capacitive reactance, effectively bringing the dipole to resonance. A 4:1 balun or an antenna tuner will match the system to 50-ohm coax with an SWR of about 1.11:1 or less.

There are several important things to consider that the program doesn't provide. First, a full-length dipole at a height of 40 feet over real earth exhibits a radiation resistance of about 53 ohms. Assuming the antenna is resonant at this frequency, the SWR, for a 50-ohm transmission line, would be 1.06:1.

For our short dipole, with its 13.85-ohm radiation resistance and 984.6-ohm capacitive reactance, SWR would be greater than 100:1! However, canceling the reactance with the 40.7uH coil drops the SWR to about 3.61:1. A 4:1 balun, as mentioned earlier, could bring it much closer to 1:1.

Actually an antenna tuner, or combination tuner and balun, would be better. Remember, our loading coil is designed for one frequency only, 3.850 MHz, and going to other frequencies, even in the same band, will change the antenna and coil reactances. Baluns are not meant to cancel reactances; only to match resistive impedances. Tuners, however, can usually do both.

As to antenna efficiency, if we assume wire (ohmic) and ground resistances totaling five ohms, which I think is somewhat high, then our normal dipole's efficiency is going to be $53/(53+5)*100$ percent, or nearly 90 percent.

Using the same losses, our short dipole's efficiency is going to be $13.85/(13.85+5)*100$ percent, or a little more than 73 percent. But we

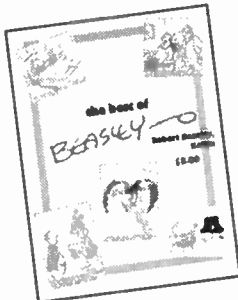
have to consider one additional loss — power dissipated in the loading coil. A high-Q coil may add three or four ohms to the total resistance in our short dipole, while a Q=50 coil can add nearly 20 (for an efficiency of only 36 percent!)

Assuming a coil with a Q of 300, our shortened antenna's efficiency is now $13.85/(13.85+5+3)*100$, or 63 percent. Performance-wise, the difference between 90 percent of your rig's output power and 73 percent of it is just slightly more than 0.9 dB. In other words, if you had both antennas on your lot, and switched power back and forth between them, most listeners on the receiving end would not be able to detect any difference in signal strength between the two!

Now, as to why I wanted the antenna to be 66 feet long, 66 feet happens to be the resonant length of a 40-meter dipole. By switching the loading coil into or out of the antenna's center feedpoint, I can have a three-band dipole good for 75, 40 and 15 Meters. (A 40-meter antenna loads well on 15 Meters).

I'll leave the switching method up to you, although I will suggest that it can be done with a simple d.c. relay and associated control line.

That's it for this month. Next time we'll explore a BASIC way to determine VHF/UHF antenna gain. So, until then, stay radio active. ☺



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John G. Troster, W6ISQ

A new beginning

HARRY W. LEWIS, W7JWJ

Shakespeare once said that mankind in his lifetime plays seven parts. As infants we emerged into a century that could be like none other. We would accomplish the impossible, to communicate via the magic of wireless, to discover the shortwaves. We can never forget the whine of the rotary gap, the mystique of propagation, the thrill of DX and the satisfaction of receiving that first QSL card. We were then but neophytes in the fascinating new world to follow, the world of telecommunications. But soon we would be schoolboys meandering our way to school, only to skip English class to work on the high school Ham station and to make friends across the nation. After graduation we would become the experts in the new world of radio communications. And we would keep in touch via radio with those who, like us, graduated to lend their talents in what one day would become an explosion of electronic technology. Many of us would provide communicative expertise to the military in time of need. We would explore the frontiers of the microwaves and attempt to pass on our findings to the next generation, our children.

One day, as we comfortably settle into the era of middle age, we realize that we are the leaders in our chosen field and are part of a fraternity that has many common ties. The desire and need to communicate will bind us together into a great organization called the Quarter Century Wireless Association. Its basic fraternal purpose became the promotion of friendship and cooperation among Amateur Radio (Wireless) operators licensed for a

quarter of a century or longer. Our mission and goal would be to operate exclusively for charitable, educational and scientific purposes.

As fraternal organizations do, we have grown old together, and our time on this earth may be short for we are now entering the final stage, as told by Shakespeare, moving slowly forward at a Chapter meeting to receive a certificate honoring our longevity. One out of five of our members has reached an age beyond ninety and three out of five are now past the age of eighty. Time is so short. Are we to fondly remember the organization called the Quarter Century Wireless? And thus it is so with most fraternal organizations. Their time has come and it has gone.

It needn't be so!

Gather any ten QCWA members under one roof and you have at least 250 years of collective electronic experience. Make it 10,000 QCWA members and you have at least 250,000 years of electronic experience and knowledge that should be shared. It must be shared! That is the way that our organization can survive, and it must survive! We must again operate exclusively for charitable, educational and scientific purposes. In so doing we can leave individual legacies that will perpetuate our organization via the newcomers who will anxiously anticipate the day when they can submit their name and call as candidates for one of the very best organizations in the world, The Quarter Century Wireless Association.

When I speak of we, that means you and me together, each and every member of every Chapter. We must ask: What has our Chapter done for Amateur Radio this past year? Has it Elmered an infant, a toddler just learning Ohm's Law? What has our Chapter done for fu-

ture technology? Has our Chapter sponsored a radio class? Why not? When was the last time you, yes you, deliberately opened a conversation with a teenager you did not know? Do it today, it's easier than you think! Let the new *QCWA Journal* show pictures of those who give of themselves to honor our service and our hobby. We can cherish the past, but we live for the future. QCWA will survive.

Yes it is easy to preach and idealize, but often difficult to reach a desired goal without each and every incremental step needed to reach that goal. Each QCWA member is just such a step. We are part of the whole. QCWA membership statistics enable us to make predictions based on past and present input. These statistics show that if the present status quo is maintained in our Chapter programming and membership drives that our membership will decrease in a negative acceleration.

What is necessary?

It is necessary for each of our approximately 140 active Chapters to recruit at least 12 new members each year. With an average in late 1997 of only 23 members present at Chapter functions, this is a formidable challenge. Is the QCWA membership up to it? I think so!

Recruiting new members from the eligible pool of nearby amateurs is the easy part. Date of birth, name, call and mailing address is available from many databases. From Internet, telephone numbers are available. Surely your Chapter members can handle such an assigned task. Slightly harder is reaching the next generation, our future. This can be done via contact with career center specialists at most high schools and community colleges. We have millions of teenagers looking for Elmers to guide them on the way. We of QCWA are the Elmers. What are we waiting for? QCWA survival is in our hands! Yours, and mine! We can once again experience the thrill of our very first contact as we look over the shoulder of the youngster we have guided into the magical world of Amateur Radio. We may not individually be around the day that youngster joins QCWA, but we will know that he or she will be there and we will hold his or her hand from just beyond the hill. 73

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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. K7RDR/R 146.76(-) rptr. PL 162.2. 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). 2/99

Tucson Repeater Assoc., P.O. Box 40371, Tucson, AZ 85717-0371. Meets 2nd Sat./monthly, 7:15 p.m., Dept. of Emergency Mgmt., 130 W. Congress. Net Thurs. 7:30 p.m. 146.82(-), 146.88(-), 147.08(+), 448.550(-) & 145.15 Packet. 3/99

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Amador County Amateur Radio Club. P.O. Box 1094, Pine Grove, CA 95665. Meets 1st Thurs./monthly, 7:30 p.m., Jackson Sr. Cntr., 229 New York Ranch Rd., Jackson, CA. Info: call 146.835(-). 3/99

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 Restaurant in Richmond, CA. Info: Ed Caine, KA6OFF, (707) 996-0962. 1/99

Downey Amateur Radio Club Inc., W6TOI. Meets 1st Thurs./monthly, 7:30 p.m., So. Middle Sch. 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. 11/98

Fresno Amateur Radio Club. Meets 2nd Fri./monthly, 7:30 p.m., Ernie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-). 11/98

Garlic Valley Amateur Radio Club (GVARC). Meets last Sat./monthly, 8:30 a.m., Gavilan Restaurant near Monterey exit, Hwy 101, Gilroy, CA. Info: Hal, AC6LK, (408) 779-7787. Net Tues., 7:30 p.m. Club rptr. K6THR, 147.825(-). 9/98

Golden Empire Amateur Radio Society, (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, rptr. 146.85(-). Meets 3rd Fri./monthly, 8 p.m. at 1528 Esplanade, Rm. 101, Chico. 10/98

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 Club, (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. (510) 846-6513. 1/99

Marin Amateur Radio Club (MARC). W6SG. Box 151231, San Rafael, CA 94915-1231. Meets 1st Fri./7:30 p.m., Kaiser Hosp., Bldg. 2, Terra Linda, CA. (except July & Dec.; contact Membership Chair., Pete Wolford, N6IYU, 924-1578). Sun. AM Club at Red Cross, San Rafael. 9/98

This month ... Fresno Amateur Radio Club, from Fresno, CA, has won 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.

Motorcycling Amateur Radio Club. Meets 2nd Sat./monthly, 8 a.m., Lake View Cafe, 2099 E. Orangethorpe, Placentia, CA, at 91 Fwy/Lakeview. Info: Ray Davis, KD6FHN, (714) 551-1036 or (714) 551-2010. 3/99

North Hills Radio Club. Meets 3rd Tue./monthly, 7:30 p.m., Carmichael Elks Lodge, 5631 Cypress, Carmichael, CA. Nets 8 p.m. Tue., Wed., Thur., 145.190(-) PL 162.2 and 224.400(-). Contact: Bob, AC6HF, (916) 966-3654. E-mail: ac6hf@juno.com or http://www.ns.net/~NHRC 3/99

Orange County Amateur Radio Club. Meets 3rd Fri./monthly, 7:30 p.m., Orange County Red Cross, 601 N. Golden Circle, Santa Ana, CA. 146.550. Contact Bob Buss, KD6BWH, (714) 534-2995. 2/99

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 contact Lyle, AA6DJ, (916) 483-3293. 9/98

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. W6AKR 146.91(-). Steve Kates, KC6TEV, (916) 391-7341 or Les Ballinger, WA6EQQ, (916) 393-4775. 2/99

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, 1000 Howe Ave. For info contact Paul Wolf, W6RLP (916) 331-1830. 12/98

Santa Clara County Amateur Radio Assoc., (SCCARA) W6UW & 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

Shasta Cascade Amateur Radio Society, (SCARS). 2124 Airstrip Rd., Redding, CA 96003. Meets 3rd Wed./monthly, 7 p.m. at the C.D.F. Conf. Rm. Grape St., near Parkway Ave., Redding, CA. Net 146.64, Wed., 8 p.m. 10/98

Sierra Foothills ARC. P.O. Box 1005, Newcastle, CA 95658. Meets 2nd Fri./monthly, 7:30 p.m., Auburn Library (Beecher Rm.), 350 Nevada St. Thurs. nets 7:30 p.m. 145.430(-) PL 94.8, Sun. net 7:30 p.m. 28.415. 3/99

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 Smpbx, 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. 1/99

Stanislaus Amateur Radio Assoc., Inc. (SARA). P.O. Box 4601, Modesto, CA 95352. Meets 3rd Tues./monthly, 7:30 p.m., Stanislaus Co. Admin Bldg. 145.39(-) PL 136.5, 224.14, 440.225 PL 136.5. 3/99

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. 1/99

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. 10/98

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(-). 2/99

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 10/98

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/warc Voice mail: (310) 917-1100. 7/99

Willits Amateur Radio Society, (WARS). 1712A South Main St., Ste. 73, Willits, CA 95490. Meets 4th Mon./monthly, 7 p.m., Brooktrails Fire Dept. (northwest of Willits). Talk-in: 145.13(-), PL 103.5. 9/98

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. 10/98

Yuba-Sutter Amateur Radio Club, (YSARC). P.O. Box 1169, Yuba City, CA 95992. Meets 2nd Wed./monthly, 7 p.m., The Mall at Yuba City, 1215 Colusa Ave., Yuba City. 2/99

COLORADO

Bicycle Mobile Hams of America. 46 states/6 nations membership. Annual Forum at Harvention. Net: 14.253, 1st & 3rd Sun., 2000 UTC. Info, sample newsletter: SASE to BMHA, Box 4009-W, Boulder, CO 80306. 2/99

CONNECTICUT

Tri-City Amateur Radio Club. P.O. Box 686, Groton, CT 06340-0686. Meets 2nd Tue./monthly, 7 p.m., St. Lukes Lutheran Church of Gales Ferry on Rt. 12. Info: Bob Dargel, KA1BB, (860) 739-8016. 11/98

FLORIDA

Gulf Coast ARC. P.O. Box 595, New Port Richey, FL 34656. Meets 4th Mon./monthly, 7:30 p.m., 3852 Prime Place, New Port Richey. WA4GDN rpters. 146.67(-) & 145.33(-), serving all of Pasco County. 10/98

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. 3/99

Port St. Lucie ARA. Meets 1st Fri./monthly, 7:30 p.m., St. Andrews Church, Prima Vista Blvd., Port St. Lucie, FL. Contact: Roy Cox, KT4PA, (561) 340-4319. Call in 146.955(-). 11/98

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. 2/99

GEORGIA

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 Wough St. & Thornton Ave., Dalton, GA. Info: Harold Jones, N4OTC, 706/673-2291. 4/99

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo, HI 96721-1938. Meets 2nd Sat./monthly, 2 p.m., Keaau Community Ctr., behind Fire Station on Old Volcano Rd., Keaau. Talk-in on 146.88(-). Lunch, 11 a.m. Fridays, Pizza Hut, Puainako Twn. Ctr. 7/99

Emergency Amateur Radio Club, (EARC). P.O. Box 30315, Honolulu, HI 96820-0315. Meets 4th Thurs./monthly, 7 p.m., Lincoln Elem. Sch., 615 Auwailimu, Honolulu. Nets: nightly 7:30 p.m., 146.88 & 146.80. Rptrs: 146.76(-), 146.80(-), 146.88, 146.98(-), 146.94(-). Info: (808) 833-6944, WH6CZB. 11/98

ILLINOIS

Dupage Amateur Radio Club. (DARC). P.O. Box 71, Clarendon Hills, IL 60514. Meets 4th Mon./monthly, 7:30 p.m., Holy Trinity Church, SE corner of Cass & Richmond, Westmont, IL. Net Sun., 9 p.m. on 145.25. W9DUP repeaters 145.25(-) 107.2PL, 442.55(+). PL 114.8, 244.68(-). Info: (630) 985-9256 6/99

Hamfesters Radio Club, W9AA. P.O. Box 42792, Evergreen Park, IL 60805. Meets 1st Fri./monthly, 8 p.m., Crestwood Civ. Ctr., 139th & Kostner, Crestwood, IL. Nets: Sun. (local) 0100 UTC, 28.410 MHz; Mon. 9 p.m. 146.43 S., Packet Mailbox 145.65 MHz. Info: (312) 974-3291. 1/99

Peoria Area Amateur Radio Club, (PAARC). P.O. Box 3508, Peoria, IL 61612-3508. Meets 2nd Fri./monthly, Red Cross Chapter House, 311 W. John Gwynn Jr. Ave., Peoria, IL. Voice mail: (309) 692-3378. Rptrs: 147.075(+)& 146.85(-). 6/99

Schaumburg ARC. P.O. Box 68251, Schaumburg, Illinois. Meets 3rd Thurs./monthly, 7 p.m., Rec. Center, Bode and Springguth Roads. (630) 612-9446. <http://members.aol.com/sarcradio> 10/98

The Starved Rock Radio Club, W9MKS. P.O. Box 198, Tabor St., Leonore, IL 61332. Meets 1st Mon./monthly, 7:30 p.m. Rptr. net 7 p.m. Wed./wky., 147.12(+). 1/99

INDIANA

Land of Lakes ARC. Meets 4th Tues./monthly, 7 p.m., Steuben Co. Annex Bldg., Angola, IN. For info: Theresa J. Limestahl, KB9NRR, (219) 495-5403. Call-in 147.180 PL 131.8. E-mail: llarc-k9hd@yahoo.com 7/99

LOUISIANA

Baton Rouge ARC. Meets last Tue./monthly, 7 p.m., Catholic HS cafeteria, 855 Hearstone Dr., Baton Rouge, LA. Info: Norma Ramey, WD5GFD, (504) 654-6087. Club rptr. 146.79(-). 10/98

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME. Info: (207) 782-8699. 11/98

MASSACHUSETTS

Quannapowitt Radio Assoc., Inc. 6 Savin St., Burlington, MA 01803. Meets 3rd Fri./monthly, 8:00 p.m., at Lynnfield-Wakefield-Lynnfield Methodist Church, Vernon St., Wakefield. Info: Jim Chamberlain, N1AKG, (781) 944-5098. 3/99

MICHIGAN

Adrian Amateur Radio Club, WB7QE. Box 26, Adrian, MI 49221. Meets 1st Fri./monthly, 7:30 p.m., Civil Air Patrol Bldg., Lenawee Co. Airport, Cadmus Rd., Adrian. ARES net Sun., 9 p.m. 145.37(-). Info: Mark Hinkleman, NU8Z, (517) 423-5906. 4/99

Genesee County Radio Club, Inc. Meets 3rd Tues./monthly, 7:30 p.m., Genesee Area Skill Center, Torrey Rd., Flint, MI. (810) 655-4360. 3/99

MINNESOTA

Viking Amateur Radio Society (VARS). Meets last Tues./monthly, 7:30 p.m., basement EOC, Waseca, MN. Call-in 146.94(-). 10/98

St. Cloud Amateur Radio Club. Meets 3rd Thurs./monthly, 7:30 p.m., Radio Club Bldg., 401 4th St. N., Waite Park, MN 56387. Info: (320) 255-1410, 146.94 or 147.015 or www.w0sv.org/ 2/99

MISSISSIPPI

Jackson Amateur Radio Club, Inc. Meets 3rd Thurs./monthly, 7 p.m., Am. Red Cross Bldg., Riverside Dr., Jackson, MS 39202. 11/98

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 2nd Sat./monthly, bkfst. mtg. 8 a.m., Country Inn, SE cor. W. Sunset, Valle Verde, Henderson NV. Club info: Jim Frye, NW7O, (702) 456-5396 or Bill Scarborough, WA6ASI, (702) 269-9551. 8/98

Wide Area Data Group, Inc. P.O. Box 3132, Sparks, NV 89432. Meets 1st Sat./monthly, 8:30 a.m., Bonanza Casino/Restaurant, 4720 N. Virginia, Reno. Info: (702) 356-8200. Call on 147.30(+)& MHz. 5/99

Sierra Intermountain Emergency Radio Assoc., (SIERA). Meets 2nd Tues./monthly, 7:30 p.m., Carson Valley United Methodist Church, 1375 Centerville Ln., Gardnerville, NV. Contact: George Uebel, WW7E, (702) 265-4278, 147.330 MHz. 11/98

NEW HAMPSHIRE

Great Bay Radio Association, WB1CAG. P.O. Box 911, Dover, NH 03820. (603) 749-2970/332-9107. Meets 2nd Mon./monthly, 7 p.m., Rochester Community Ctr. Talk-in: 147.57. 1/99

NEW JERSEY

Bergen Amateur Radio Association, (BARA). P.O. Box 304, Hackensack, NJ 07601. Meets 1st Sun./monthly, New Milford Elks Lodge, Patrolman Ray Woods Dr., New Milford, NJ 07646. Nets: 28.350 Mon. 9 p.m., 146.79(-) 9 p.m. Wed. 6/99

The Garden State Amateur Radio Assoc., (GSARA). P.O. Box 34, Fair Haven, NJ 07704. Meets twice monthly/1st & 3rd Wed., 8 p.m., Bicentennial Hall, Cedar Ave. (off River Rd.) Fair Haven, NJ. Contact: Bob Buus, W2OD, (732) 946-8615. 12/98

South Jersey Radio Assoc., (SJRA), K2AA. Meets Jan.-Oct., 4th Wed./monthly, 7:30 p.m. (Nov.-Dec. 3rd Wed), Bloomfield Fire Hall in Pennsauken, NJ. Talk-in: 145.29(-) rptr. 8/98

NEW YORK

Amateur Radio Association of the Tonawandas, (ARATS). P.O. Box 430, No. Tonawanda, NY 14120. Meets 3rd Tues./monthly (except July & Aug.), 7:30 p.m., Sweeney Hose Company, 499 Zimmerman St., No. Tonawanda, NY. Talk-in: 146.955(-) rptr. W2PVL. 11/98

Genesee Radio Amateurs, (GRAM). N.Y.S. Civil Defense Ctr., State St., Batavia, NY 14020. Meets 3rd Fri./monthly, 7:30 p.m. 147.285(+)& W2RCX. 1/99

Hall of Science Amateur Radio Club. P.O. Box 150131, Kew Gardens, NY 11415. Meets 2nd Tue./monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park, 7:30 p.m. Info: Voice mail (718) 760-2202. 2/99

PROS, Pioneer Radio Operators Society. Meets 1st Wed./monthly, 7 p.m., Sardinia Town Hall, Savage Rd., Sardinia, NY. Net 9:15 a.m. Thurs. 3853 MHz. 3/99

The Radio Club of J.H.S. 22, N.Y.C., Inc. WB2JKJ. P.O. Box 1052, New York, NY 10002. 24-hr. hotline: (516) 674-4072. Fax: (516) 674-9600. Non-profit org. using Ham Radio to enhance the education of youngsters, nationwide. Join us — "Class-room Net," 7.238 MHz, 7 a.m. E.S.T. PSE QSL! 10/98

Suffolk County Radio Club, (SCRC). Meets 3rd Tues./monthly, 8 p.m., Bohemia Rec. Ctr., Ruzicka Way, Bohemia, NY. Talk-in: 145.21(-) rpt. Info: W.S. Black, KB2YAP, (516) 289-5587. 4/99

Westchester Emergency Comm. Assoc., (WECA). Meets 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains, NY. Contact WECA INFO LINE (914) 741-6606 for details. Talk-in WB2ZII/R 147.06(+)& PL 114.8/2A. 11/98

Yonkers Amateur Radio Club, (YARC). Meets 2nd Sun./monthly, 10 a.m., 1st Pct., Yonkers Police Station, E. Grassy Sprain Rd., Yonkers, NY. Info: P.O. Box 378, Centuck Sla., Yonkers, NY 10710. (914) 963-1021. 146.865(-), 440.150(+). 10/98

NORTH CAROLINA

Cape Fear Amateur Radio Society. Meets 3rd Mon./monthly, 7:30 p.m., Methodist College, Fayetteville, NC. Talk-in 146.91/31. Info: Kelly Kanode, N4EWG, (910) 867-4300. 4/99

Stanly County Amateur Radio Club. Stanfield, NC. Meets 4th Thurs./monthly, 7 p.m. Talk-in 146.985(-) for location. Wed. net 9 p.m. 146.985(-). Fri. tech net 9 p.m. 147.390(+). Phone: (704) 888-4815. 5/99

SOUTH CAROLINA

Sumter Amateur Radio Assoc., Inc. (SARA) P.O. Box 193, Sumter, SC 29151-0193. Meets 3rd Mon./monthly, 7 p.m. Central Carolina Tech. College, Rm. 102, 506 N. Guignard Dr. Contact: Dee, NØZTV, (803) 499-6315. E-mail deebrown@sumter.net. Talk-in 147.015 9/98

OHIO

Ashtabula County ARC. Ken Stenback, WBKS (964-7316). County Justice Ctr., Jefferson, OH. Meets 3rd Tue./monthly, 7:30 p.m., County rptr., 146.715(-). 10/98

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly, 7:30 p.m., Municipal Bldg., Clyde, OH 43410. NFBE rptr. 145.35(-) and 442.625(+)& MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS 3/99

Greater Cincinnati Amateur Radio Assn., (GCARA), W8DZ. ARRL SCC, meets 4th Wed./monthly, 7:45 p.m., Brusman's Hall, 4813 Vine St., St. Bernard. Nets: Mon. 145.27-, Thurs. 1.936 MHz, 9 p.m. Info: <http://w3.one.net-rkns/gcara.html>, KB8JE (513) 825-2868, WBXS (513) 474-0287 12/98

Lake Erie Amateur Radio Assoc., (LEARA). Meets at Dimitri's Rest., (Mid-Town Shopping Ctr.), Snow & Broadview Rd., Solon, OH, last Tues./monthly. Dinner at 6:30, mtg. at 7:30 p.m. (R.S.V.P. to Marv Grossman 440/349-8398 for dinner by 11 a.m. day of mtg.) 4/99

Toledo Mobile Radio Association. P.O. Box 273, Toledo, OH 43697; (419) 243-3836. Meets 2nd Wed./monthly, 7:30 p.m., Luke's Barn, Lucas County Rec. Ctr., 2901 Key St., Maumee, OH. 147.270(+)& Net every Sun. 8:30 p.m. 2/99

Van Wert Amateur Radio Club, Inc. P.O. Box 602, 1220 Lincoln Hwy., Van Wert, OH 45891. Meets 1st & 3rd Sat./monthly, 8 p.m. Call-in: 146.85(-). 2/99

OREGON

Central Oregon Coast ARC. P.O. Box 254, Florence, OR 97439. Meets 2nd Sat./monthly, & every Wed./weekly, 9 a.m. for breakfast at Lovejoy's/Pier Point Inn. Net Wed. 7 p.m., 146.80(-). Info: 997-2323 or 997-4074. 1/99

Keno Amateur Radio Club. P.O. Box 653, Keno, OR 97627. Meets 3rd Thurs./monthly, 7 p.m., Keno Fire Stn. Rptr. 147.32(+)& K7ENO. For info: Tom Hamilton, WD6EAW, Tel./FAX: (541) 883-2736. wd6eaw@cdsnet.net 11/98

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Court House, Rm. 310, Roseburg, OR. Info: W6VDF/R 146.90(+)& or (541) 673-2747. 6/99

PENNSYLVANIA

Butler County Amateur Radio Assn. P.O. Box 1787, Butler, PA 16003-1787. Meets 1st Tues./monthly, 7:30 p.m., Boy Scout Cntr., 830 Morton Rd., Butler, PA. Call-in W4NDX/R 147.36(+). Net 10:10 p.m. nightly. 11/98

Mercer County Amateur Radio Club, W3LIF. P.O. Box 996, Sharon, PA 16146. Meets 4th Tue./monthly, 7:30 p.m., Shenango Valley Med. Ctr. Farrell, PA. Net, Thurs. 9 p.m. on 145.35(-) W3LIF, Digi. 145.01. 3/99

TEXAS

Brownsville ARC (CHARRO). Meets 2nd Tue./monthly, 7:00 p.m., Confederate Air Force Hangar, Brownsville Airport in TX. Coffee mtg Sat./weekly, 10 a.m., Days Inn, Hwy 83 & Price Rd. Talk-in on 147.040(+). 4/99

VIRGINIA

Southern Peninsula Amateur Radio Club, W4QR (SPARK). Meets 1st Tue./monthly Salvation Army Community Bldg., Hampton, VA. Repeaters 146.73(-), 449.55(-). VE Exam Info: (757) 898-8031, W4WRTZ 2/99

Virginia Beach ARC. Meets 1st Thurs./monthly, 7:30 p.m., St. Andrews United Methodist Church, Tuckson & Princess Anne Rds., Virginia Beach, VA 23462. 2/99

WASHINGTON

The Mike & Key Amateur Radio Club. Meets 3rd Sat./monthly, 10 a.m., Salvation Army Renton Hq., 720 Tobin St., Renton, WA. Talk-in on 146.82(-) (103.5 CTCSS) rptr. Doors open at 9:30 a.m. 5/99

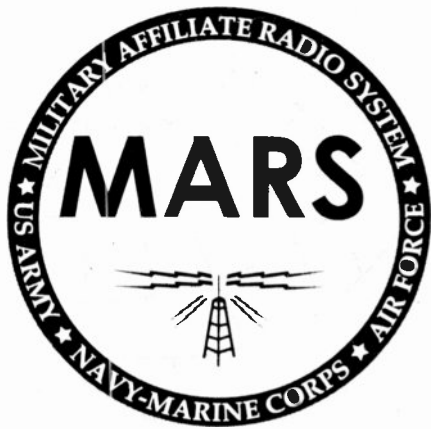
WEST VIRGINIA

Jackson County Amateur Radio Club. Meets 1st Thurs./monthly, 7:30 p.m., Saint John Episcopal Church of Ripley. Net Mon. 9 p.m. on 146.67(-) WDBJUN/R. For info: D Tennant, N8ZYB, Rt. 1, Box 188, Mt. Alto, WV 25264 7/99

Tri-State Amateur Radio Assn. Meets 3rd Tues./monthly, 7 p.m., The American Red Cross, 111 Veteran's Memorial Blvd., Huntington, WV. 5/99

WISCONSIN

Central Wisconsin Radio Amateurs Ltd. Meets 2nd Wed./monthly, 7:30 p.m., UWSP Science Bldg., A107. Info: Al Mallek, N9WBS, 246 Georgia St. North, Stevens Point, WI 54481 Call in on 146.985 or 146.670 5/99



Lorraine S. Matthew, N4ZCF
MARS Call AAA9PR
E-mail: Lorimatt@aol.com

On 29 May 1998, the Amateur Radio and MARS communities lost a staunch supporter in the death of Barry Goldwater, K7UGA.

Senator Goldwater was an Air Force MARS member whose MARS call signs became familiar to tens of thousands of service personnel serving their country in Viet-Nam. He set up a top-quality MARS station at his home for the express purpose of providing MARS services to these fine men and women and was instrumental in having radio equipment sent to Viet-Nam in order to have MARS stations available to troops all over the country. He staffed his home station at his own expense to keep it on the air continuously, and even assumed some of the toll charges needed to connect the military person with his or her family no matter where they were located. Thousands of MARS messages were also handled in addition to the phone patches provided by his station.

A very young Airman in Viet-Nam had become accustomed to making phone patches home to Minnesota without giving much thought to the gentleman often making the connection for him at the other end. One evening after the patch had been completed, the gentleman identified himself as the U.S. Senator from Arizona, startling the young Airman who was concerned about having the very friendly conversation — lowly Airman seldom talked to U.S. Senators. When the Airman mentioned this to his mother during the next phone patch home, she wasn't sure if her son was still OK. After the

patch, unbeknownst to the Airman, Mr. Goldwater had a fine conversation with the mother, assuring her that he was, indeed, the Senator from Arizona, and that he had had a pleasant conversation with her son. This was the very human side of a patriot known for his toughness and devotion to freedom. That young Airman still serves his country as Chief Army MARS, Robert L. Sutton.

In the spirit of unity between the Air Force MARS and Army MARS services, both Chiefs issued messages of remembrance to their respective organizations, recognizing the great achievements and the legacy left to the MARS programs by Mr. Goldwater. In his message to the Army MARS members; Chief Sutton made the following comments:

"1. It is with deep sadness that we acknowledge a great American who is now a silent key: The honorable Barry Goldwater, former United States Senator from Arizona, a retired USAF Major General, and Air Force MARS member AFA6BG. He was well known to MARS members of all services.

"2. Many great things have been said and will be written about Senator Goldwater. However, few, if any, will capture the undying gratitude of tens of thousands of military personnel serving their country during the Viet-Nam conflict. For many of us, we will forever remember his personal interest in Amateur Radio and MARS. This included the construction of a major MARS station in Arizona and the hours that he personally operated this station. Literally thousands of military personnel and their loved ones were well served by his station to include both MARS-grams and phone patches."

Mr. Goldwater, in his services during the Viet-Nam conflict, laid the groundwork for the most successful support of the troops in Desert Storm when military men and women were also far from home and in need of the bridge of communication that only MARS could provide. The legacy of Mr. Goldwater lived on in the successes of that period for all MARS members and those served by the MARS system.

It is fitting that this tribute from all MARS members to Mr. Goldwater close with the message from Chief Air Force MARS, Ray Collins, who said:

"1. It is with deep sorrow that we acknowledge that a great American, the Honorable Barry Goldwater,

former United States Senator from Arizona, retired USAF Major General, and Air Force MARS member became a silent key.

"2. In the next few days, many great things will be written and said about Senator Goldwater; however, few, if any, will relate the undying gratitude of tens of thousands of military personnel serving their country during the Viet-Nam conflict. To these men and women of the armed forces, Senator Goldwater was an undisputed hero. His legendary MARS station AFA7UGA (aka AFA6BG) literally was the bridge that spanned the distances for untold thousands of U. S. military personnel throughout Southeast Asia. Through this most famous of all MARS stations, the lonely GI found solace in a phone call or message connecting them with loved ones on the home front. This simple morale booster made the difference to those away from home fighting an unpopular war. Senator Goldwater never wavered in his support to the fighting men and women. His MARS station was a tribute and testament to that commitment. When he was away from his station performing his duties as a U.S. Senator, he ensured the MARS station was in capable hands, manned around the clock with volunteers. Throughout the entire Viet-Nam conflict, AFA7UGA literally handled hundreds of thousands of MARS messages and ran thousands upon thousands of phone patches from the troops, many paid for out of his personal funds.

"3. Senator Goldwater was a valued friend of both the Amateur and MARS worlds and his presence will be sorely missed. On behalf of Air Force MARS and the many thousands of military personnel who benefited from his generosity, we wish to proffer our most sincere and heartfelt condolence to the family of the late Senator Goldwater.

"4. To honor the memory of Senator Barry Goldwater and his historical MARS station, the Air Force MARS call signs AFA7UGA and AFA6BG are hereby retired permanently from Air Force MARS forevermore, never to be reissued.

"5. Signed, Ray Collins, Chief, USAF MARS/AGA3C"

In the spirit generated by Barry Goldwater and his services to our men and women in uniform, all MARS members follow his example and continue serving their country — Proud, Professional and Ready. 🇺🇸



PATRICK TICE, WAØTDA

On the resources trail

You know it, and I know it! Amateur Radio can be a really great activity! We instinctively want to share something that is so much fun with others, and we usually have no problem doing so. After all, the ARRL, Radio Shack, Gordon West, and others produce study guides, textbooks, and other learning tools that compliment radio club theory classes. Transceivers abound, and may be had for as little as \$100 on the used market.

The study materials are easily found, and you can start out with older, used gear. It really isn't that hard to get into Amateur Radio, then, right?

Well, that's mostly right. It is pretty easy to find a radio club class and to get study materials, and even to find good used gear. Consider, however, the problems a blind person might have in entering the hobby.

Study materials that are available in printed books are certainly difficult to read when you are unable to see the print in the usual way, and text reading computers are imperfect at best, and downright stubborn when asked to interpret technical prose for a blind user! Then there's the problem of getting to the club's classes for a person who does not drive. Test-taking is different for a blind person, too, because the tests are produced in print or on the screen of a computer that is not equipped with speech output.

Finally, the promise of an inexpensive entry-level rig is an empty one for a person who cannot see to tune the finals of these older transceiv-

ers! In short, a blind person must be prepared to seek alternatives in learning and in being a successful Ham, and radio clubs and club instructors should be aware of some of the ways this can be done. After all it is we, who are already licensed, who should know how to get started in the hobby!

Let's begin with study materials, because that's where we started our journey into Ham radio, too, isn't it? Where do we find books that can be read by a blind student? If your club is using *Now You're Talking* or the ARRL's *Tech Q&A With Explanations* as beginner books, you can point a blind student to the Courage HANDI-HAM System, which has both of these books on cassette tape, in a special four-track format for the Library of Congress tape players used by blind readers, or in standard cassettes for regular tape players. In fact, all of the ARRL License Manual series books are available in these formats. You must, however, have the student contact the HANDI-HAM System directly, as copyright restrictions only allow us to send these materials to members with disabilities.

With the study materials out of the way, the problem of attending classes comes up. While many people, blind or not, study successfully for a Ham ticket without ever attending a class, consideration should be given to locating the class sessions and testing in an accessible building, near public transportation. If this is impossible, car pooling to class may be an option. Remember that most blind people are as independent and self-sufficient as anyone else, and want to participate in every aspect of the class without a lot of hand-holding!

When test day arrives, it is already too late, in many cases, to provide a blind-adapted test for your student, so the time to plan for testing is several weeks (at least) before the test date. The VE team will

provide a test specially generated to exclude diagrams, making it much more accessible for a blind test taker. However, you are taking your chances if you do not notify the VE team early enough for them to produce the test. Some teams have computer testing, and this request can be fulfilled on a walk-in basis, but it's best to plan ahead and notify the team. Having the test available is one thing, and taking it is another.

Since the test will be in print, or on the screen of a non-speaking computer, a volunteer reader must be found to read the printed text to the student. Ordinarily, this is a member of the VE team, which is all the more reason to notify the team in advance, so that enough VEs can be present to administer and oversee the entire process.

At testing, the blind test taker may use a speaking calculator, and consideration may have to be given to the possibility of noise in the testing room.

When testing is only a memory and that new license has arrived, your student is now a fellow Ham! That's great, but where do you point a blind Ham for inexpensive beginner-level gear? How does he or she learn how to use it? The key here is to be creative; an older HF transceiver can be useful to a blind Ham, but only if it can be learned and made to be blind-friendly. This is another place that HANDI-HAM resources can help.

Volunteers in the HANDI-HAM shop produce an audio tuning aid, a device that produces a varying pitch according to RF output. This device allows the user to tune a rig or antenna tuner without ever seeing a meter, a good solution for older tube-type rigs, or even newer solid-state rigs without internal antenna tuners. Seeing what is displayed on the frequency readout is another matter, but a methodology does exist to locate frequencies. A blind HANDI-HAM has made a cassette tape explaining the process.

Another possibility is the addition of an external voice frequency speaking device to a rig with digital readout. Manuals for some rigs are available on cassette tape from HANDI-HAMS, and those that are not can be read by volunteer readers if a copy of the manual is sent to Educational Coordinator Jim Hammock, KIØDN, and HANDI-HAM

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headquarters. Magazines like *Worldradio*, *QST*, and *HANDI-HAM WORLD* are available in adapted formats, so that blind Hams can enjoy them. Frequency charts in Braille are an essential desktop aid, and are also available.

In the true spirit of Amateur Radio Elmering, we should be standing by to help our new Hams with study materials, classes, suggestions about equipment. Consider asking the Courage HANDI-HAM System about how to help a prospective Ham who is blind or who has a physical disability. We can be a resource guide for you and for your club, because we have information about everything from study tapes to adapted computing.

How Amateur Radio has enriched my life

This essay recieved Honorable Mention in our recent contest.

DAVE EVISON, W7DE

Amateur Radio has provided me: 1) Introduction to science. As a youngster, it was my Aladdin's Lamp. It not only opened my eyes and mind to the wonders of science, but it provided practical, empirical experiences. Hands-on experiences that later enhanced my college training, and made me a better engineer.

2) Gateway to an engineering career. I was hired for my first job in the electronics industry because I was ham. I was still a student and had no other credential. Forty years later, I'm still a ham first and engineer second.

3) Artistic expression. Designing and building my own equipment is the same creative process that is experienced by sculptors, fine artists, architects, etc. When I behold my handiwork, there is fully as much creative satisfaction (of course, I'm a product of the school of form follows function).

4) Community. Strong and lasting friendships are cultivated between radio amateurs, and in many cases between amateurs who have never even seen one another. This amazing process is largely a matter of two-way radio protocol — where only one person speaks at a time, and each person speaks in an established order. This promotes atten-

Check the HANDI-HAM world wide web page at <http://www.mtn.org/handiham> for an up-to-date guide to Amateur Radio resources for persons with disabilities. An excellent selection of news, links, and general information can be found on the page, as well as downloads of the current question pools. The HANDI-HAM page is one of the few Ham radio pages that is updated daily.

For more information about the non-profit Courage HANDI-HAM System, contact: Courage HANDI-HAM System, 3915 Golden Valley Road, Golden Valley, MN 55422; Tel. 612/520-0511; Fax 612/520-0577; handiham@mtn.org; www.mtn.org/handiham.

tive and organized listeners (who generally take notes) as well as speakers (who check their notes).

5) Source of adventure. The ability to communicate with other radio amateurs, perhaps thousands of miles away, without relying on a communications infrastructure costing billions of dollars is, to me at least, an adventure. And the experience is magnified even greater when it is accomplished using simple, inexpensive, homemade equipment.

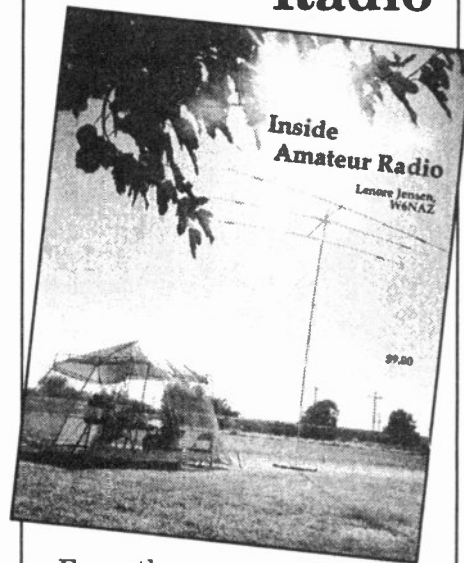
6) Gift to share. Introducing someone to Amateur Radio is a rewarding experience. As a father, two of my children have also become radio amateurs, and one son, like his father before him, became a Ham, then an engineer.

Dayton attendance up

Attendance at this year's Dayton Hamvention was up slightly over last year's attendance. Convention General Chairman Dick Miller, N8CBU, reports that 28,120 attended this year's Hamvention. That tops the 28,000 attendance figure from 1997 and reverses a trend of declining attendance. The ARRL National Convention in 2000 will be at the Dayton Hamvention. — *Dave Coons, WT8W, ARRL Letter*

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Inside Amateur Radio



From the knowledgeable and insightful pen of none other than Lenore Jensen, W6NAZ, comes this delightful collection of interviews with the people who make Amateur Radio the engaging hobby it is.

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WORLDRADIO, August 1998 49

10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

Hill Country 10-10 picnic

Ten years ago a small group of 10-10 members and friends gathered at the home of Jack Moore, K5CC, #50708, in the Hill Country just outside San Antonio, TX, for a BBQ picnic. A great time was had by all and again the next year they gathered with a few more attendees. This has been going on ever since, year after year, and this year, the last Sunday in May, was another such gathering of 10-10 members, XYLS, and friends. This was the tenth anniversary of the Hill Country 10-10 Picnic. This year was the largest attendance since the beginning, with 41 10-10 members and approximately 25 guests in attendance to enjoy the hospitality of Jack and XYL Barbara. There must have been enough BBQ beef, salads, deserts and goodies to feed at least twice the number of people in attendance. Second and third helpings were the order of the day.

That first little group of local 10-10 members and their guests has continuously grown until the picnic is no longer a "local" affair. This year's attendance included:

Janis, VE7AAP, #50407 and Garry Cameron, VE7ACM, #30939, from Port Alberni, B.C.; Linda Barnes, KJ4FM, #43299, from Kingsport, TN; Tom Henderson, K4CIH, #433233, from Tuscaloosa, AL; Jim, W6KVA, #23269 and XYL Carmon Jensen from San Carlos, CA; Dave Smith, K6RDK, #65812 from San Mateo, CA; Ed Gorman, III, N5PTR,

#57015 from Lumberton, MS; Don Weaver, KØJPW, #4541 from Osawatomie, KS; Roger Allen, KB7ARN, #44977 from Yakima, WA; Ed Bryant, KM5FF, #50356 from Los Lunas, NM; Chuck W6YLJ, #19636 and Esther Imsande, KB6HW, #23331 from Sun City West, AZ; And of course there were the "locals" from all around the state of Texas.

A net was conducted by Ray Dobson, N5DAS, #35877, with check-ins from mobiles or the fixed station of K5CC. There were mobile antennas of every kind on the more than 20 mobiles parked on Jack's 22-acre spread.

The Saturday night before the picnic, a group of local 10-10 members entertained the out-of-town visitors with a great Mexican dinner at one of the famous local restaurants.

Watch the *10-10 International News* or this column for updates on the 1999 Hill Country 10-10 Picnic.

10-10 QSO parties

Three 10-10 QSO Parties, or sometimes referred to as "contests," are scheduled for the near future. The first is the Summer Phone QSO Party, scheduled for 01-02 August. The second is the 10-10 Day Sprint on 10 October, and the third is the Fall CW QSO Party on the weekend of 31 October-01 November. Mark these dates on your calendar and join in the fun. Non 10-10 members are welcome to participate, and if you are considering becoming a 10-10 member, this is an excellent way to quickly obtain your 10 10-10 contacts required for membership. Members can obtain new 10-10 contacts for all of the 10-10 awards as well as a score in the party. Please remember that 10-10 promotes and

recommends that a "quiet zone" be observed between the frequencies of 28.490 and 28.510 for those who do not participate in this 10-10 activity. Please leave the above frequencies open for non 10-10 members to use.

Complete rules and scoring information can be obtained from the 10-10 Information Manager. Please send a #10 (business size) SASE with one unit of first class postage to the Information Manager listed at the end of the article. Request the 10-10 QSO Party Information Brochure.

Bar Manager change

We have a new 100-900 BAR Manager. Dan Morris, KZ3T, #41015, has taken over as the 100-900 BAR Award Manager. All BAR awards for 100 through 900 should be sent to Dan at: 112 Royal Oak Court, Lenoir, NC 28645.

New Info Manager

The new 10-10 Information Manager is Jeff Ritter, N5VAV, #59692. Jeff was formally the Assistant Information Manager under Mike Elliott, KF7ZQ, #54625. Mike has turned all of the Information Managers duties over to Jeff in order to spend more time on his duties as a Director. Jeff's address is listed below for those who would like to receive information about 10-10. His e-mail address is: n5vav@flash.net.

10-10 software update

Jim Hardy, K4HAV #17605, has recently moved all of his 10-10 software web sites to a new location at <http://hds.net>. Jim got this new domain name and a larger web site to host his new 10-10 Contest Program named Win1010, which is a 32-bit program designed to run under Windows 95/98. This new program is an updated version of his DOS-based 10-10 Contest Program and has many new features. The program as a Demo Version can be downloaded from the new Hardy Data Systems URL at <http://hds.net>. The demo version is the complete program with a 25 QSO limit. Upon receipt of the purchase price (or upgrade price for present 10-10 Contest users) the User ID file will be emailed which removes the 25 QSO limit. For those not on the Internet, distribution will be made by floppy or CD ROM disk. Jim's new e-mail address is k4hav@hds.net. Jim's con-


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test programs, both DOS and the new Windows 95/98 programs, are official 10-10 authorized products. Visit Jim's new web site for more details about this new 10-10 supported program.

New DX 10-10 Members — Our DX Manager, Carol Hugentober, K8DHK, #29588, advises that 10-10 continues to grow in the DX world. Here is a list of the 8 new DX members that came aboard in May 1998:
 ZS5BBO - #69603, DJ2DP - #69604, DF4WQ - #69605, DF7PM - #69606, VK6FDS - #69607, FM5DN - #69608, VK2XH - #69609, DF3TE/ZP2EHA - #69610

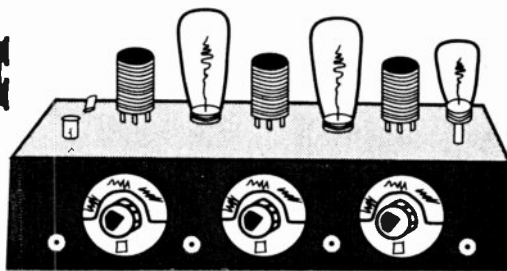
We want to welcome all of our new DX members into 10-10. If band conditions permit, look for these new DX members and welcome them into the net.

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 information 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 eight 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 Jeff 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, send your dues (\$10.00/year or \$25.00 for 3) to: 10-10 International Net, Inc., Attention: Dues Renewal, 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.

OLD-TIME RADIO



BILL ROSS, K6MGO

I became interested in QRP in high school, in the late 1940s. Only we didn't know or call it QRP then.

I had read an article in *Popular Mechanics* on how to build a "pocket portable" radio, and I was hooked. The "pocket portable" was a one tube affair, using a 1S4 peanut tube in a regenerative receiver circuit, with the feedback coil wrapped on the outside of the wooden box. The box was about 4x6x2, rather large for a pocket. It had a telescoping auto radio antenna connected to the loop and used headphones to hear it. Power was supplied by two batteries, a filament battery of 1.5V and a "B" Battery to supply plate voltage for the 1S4. I don't remember exactly what the "B" voltage was, but we didn't have 9V batteries then, and had to solder AA or AAA cells in series to get the high voltage for the "B" battery.

I took the article to "Electric Shop" and showed it to the instructor. He thought that it would be a good class project and so the entire class set about to build the "pocket portable." Most of us got them working and we must have really looked like a bunch of nerds walking around the school

yard with the box in our hands, the auto antenna extended and wearing headsets.

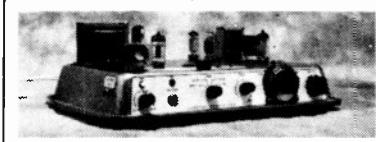
After getting out of the Air Force, I got my first Ham ticket, Technician Class, and so started building small six-meter converters to use with communication receiver and/or auto radios for mobile use. At first we used miniature tubes and then nuvistors came out and then finally transistors.

I always was fascinated by small rigs, to paraphrase a country western song, "I guess I was QRP before QRP was cool."

Now I am retired and living in a condo-type community and running an indoor antenna and low power. I don't get out too well, but do make a few contacts and have fun, which is the name of the game.

So, after forty years of hamming, believe it or not, I made my first cw contact on the air, last August. I always hated cw and only worked phone. Now, I love CW and am having a ball. What a hobby — always something new or different to keep our interest going. So if you hear a rather weak, nervous CW signal from an "old time call," give a newcomer (to CW) a break and answer me, I'd love to ragchew with you and improve my CW operating skills.

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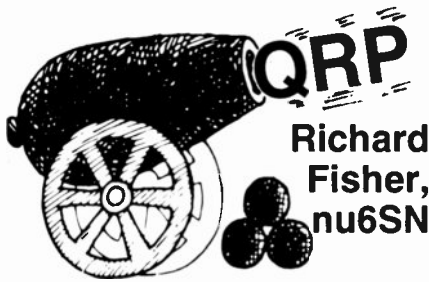
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QRP philanthropy, NorCal style

In a pioneering move unprecedented in organized QRP, the NorCal QRP Club is producing 1,000 20-meter QRP transceiver kits, 500 of which will be donated free to radio amateurs in Third World countries.

Dubbed the NorCal 20, the radio was designed by David Fifield, AD6AY, for use in some of the most demanding operating conditions around the world.

"For every kit sold," project team leader Doug Hendricks, KI6DS, said, "NorCal will produce a second kit and send it to the G-QRP Club (Great Britain), which will handle distribution at no charge to Hams in Third World countries."

Because of the kit's limited quantity, the gate opens 1 August for ordering from the 500 NC 20 kits being sold, Hendricks said. "There will be only one run, NorCal will no longer produce unlimited kits."

The Rev. George Dobbs, G3RJV, who heads the G-QRP Club, has been chosen to oversee dispersal of the other 500 radios.

"This is a huge project, and one that has never been done successfully before," Hendricks said. "The rig) has been designed to be easy to build with minimal test equipment, yet be a quality radio capable of worldwide contacts. (Designer Fifield) has many years of experience of operating in Europe and is very familiar with the requirements

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of radios in that environment. He has designed the (transceiver's) front end with that operating environment in mind."

The superhet radio has a TUF-1 mixer in its front end "designed for the harshest European conditions," deviating from the popular NE602 front end design that has enjoyed such popularity in the United States.

The NorCal 20 is \$95, plus \$5 shipping in the U.S.; \$10 to Canada and Europe; \$15 to Asia and Pacific Rim. Checks should be made out to Jim Cates, not to NorCal. Write: Jim Cates, WA6GER, 3241 Eastwood Rd., Sacramento, CA 95821.

European orders can be sent in British Pound Sterling to: Stephen Farthing, 38 Duxford Close, Melksham, Wiltshire, SN12 6XN, England.

In addition to the TUF-1 front end, the NorCal 20 will also feature VFO control, with a user-selectable tuning range from 10 kHz to 200 kHz of 20 Meters. So if you want your rig to cover, say, just 20 kHz of the band, such configuration is possible.

The VFO is varactor-tuned, and the kit will include a 10K tuning potentiometer. The board, however, is laid out to accommodate a 10-turn pot.

The NC 20 will also feature a specially-designed keyer by Gary Diana, N2JGU, and Brad Mitchell, WB8YGG, of Embedded Research; 2-watts of audio; and a PIC-chip audio frequency annunciator, designed by Mike Gipe, K1MG, for frequency readout.

A custom clam shell NC 20 case has been designed by Bill Jones, KD7S, and produced by Doug Hauff, KE6RIE.

The kit comes complete with all

parts, controls, knobs and connectors; a double-sided, plated through PC board; and comprehensive manual featuring a build-a-section/ test-a-section style of construction.

A 2N4427 drives an IRF510 in the final.

Other members of the NorCal 20 development team include Paul Harden, NA5N, and Jerry Parker, WA6OWR.

QRP power: introducing the EPS-1

The first sign of fowl play was a signal report from Roger Hightower, N7KT, operating April's QRP To The Field from the four corners junction of Colorado, Arizona, Utah and New Mexico.

The CW from nu6SN was chirpy, he said, like the Hartz Mountain Canary Chorus.

Now it's true this was at its heart a "field" event, but turning 40 Meters into an aviary certainly was not the intent of the contest's organizers. Any good CW operator knows chirp just isn't acceptable, even while portable. That's the time to QRT and see what's up — or down, as the case may be.

Experience teaches to first check the battery. Sure enough, the news wasn't good. A NorCal-40A transceiver outfitted with a KC-1 keyer/frequency counter and BuzzNot noise blanker doesn't take kindly to a battery pack delivering only 10.6 volts of direct current.

Mea culpa: I should have used a pack of fresh batteries or tested the aging eight-pack of AAs before leaving home base. But even at that, who's to know when a battery supply is getting ready to head south?

So when a few weeks later the EPS-1 Essential Power Supply kit arrived from Embedded Research, I was eager to get it built and running. It would have been just the thing to save the day during QRPTTF.

Embedded, based in Rochester, NY, is perhaps best known for its excellent line of TiCK keyer kits. Now owners Brad Mitchell, WB8YGG, and Gary Diana, N2JGU, have produced a surface mount DC converter kit that takes an input of anywhere from 2 to 16 volts DC and brings it to 12 volts at the output. In my QRPTTF saga, that would have meant 10.6 volts in; 12 volts out — the kind of voltage that keeps a NorCal-40A happy, and chirp free.

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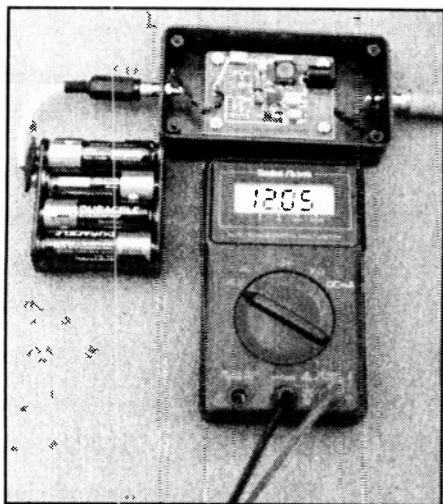
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The Embedded Research EPS-1 Essential Power Supply kit, converting 10.6 volts from a pack of lazy AA batteries to a fraction more than 12 volts at nu6SN.

The EPS-1 will handle up to 500 milliamperes of current at greater than 80 percent efficiency, the company reports.

A quick inventory of parts reveals just how small this kit is — both in the physical size of its PC board (2.5 X 1.75 inches) and SMD components, as well as in the number of parts: only 14, and that includes hardware. The quality, as with other Embedded kits, is superb.

The builder needs only to provide an enclosure, input jack and fused lines.

Diana and Mitchell advise EPS-1 builders to allow a half hour for construction. That was right on the money here at nu6SN. It could easily be finished on a lunch hour, or while the rest of the family is watching a "Seinfeld" rerun on TV.

If you've never worked with surface mount components, it may take a bit longer. But not much.

The heart of the EPS-1 is a tiny MAX1771CSA 8-pin DC converter chip. Like all the other components, it is soldered flat on the surface of the board. Embedded warns to be careful of static discharge when handling the converter chip, as well as the 55N035605 transistor.

Some of the components are most easily handled with a pair of tweezers. That's how tiny they are.

The EPS-1 comes with a five-page (8.5 X 11-inch) manual, including building instructions, surface mount construction hints, EPS-1 operation guidelines, a full schematic and component and board diagrams.

It's a great kit for the first time builder with good eyesight. The end product is a smart DC conversion unit that has lots of potential for application around the QRP shack or in the field.

For example, you'll need not pass by those inexpensive 6-volt gel cells at the swap meet anymore. Putting one on the input of the EPS-1 will now yield a solid 12 volts at the output. Cheap, reliable power is indeed a thing of beauty for the QRPer.

Embedded suggests fusing both the input and output lines to assure the current demand doesn't fry the EPS-1. Rated at 500 milliamperes, it's very good advice. As a tertiary precaution, there's also an on-board resettable fuse that comes with the kit.

As soon as the EPS-1 was completed at nu6SN, I dragged out that bedeviling eight-pack of tired AA batteries and patched them to the input. The kit nicely converted the 10.6 volt input to 12 volts out.

Next, it was time to pull out the NorCal-40A to avenge that chirpy showing during QRPTTF a few weeks earlier.

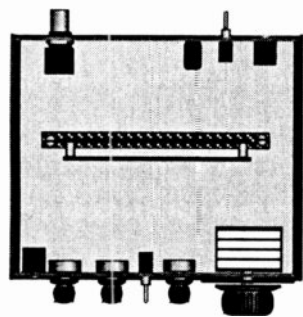
A CQ on 40 Meters brought a quick response from AD6EN in Northern California. He reported my signal was solid — clean, pure and chirp-free. I've used that battery pack and the EPS-1 for several other QSOs, all receiving similar reports. Who knows how long the pack will take to finally bite the dust?

The EPS-1 Essential Power Supply kit is \$35, plus \$2.50 shipping in the U.S.; \$5 DX. To order, or for more information, write: Embedded Research, P.O. Box 92492, Rochester, NY 14692. On the Internet, visit the company's web site: www.frontiernet.net/~embres. Via e-mail: embres@frontiernet.net.

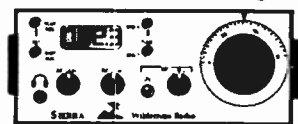
"Squeeze the last bit of energy from your batteries," Embedded's catalog says of the EPS-1. "Perfect for portable and emergency situations where 12 volts DC is required but not available."

I might add, it's also quite good at shooshing those canaries from your QRP transceiver — with no small credit to maestros Mitchell and Diana.

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The Sierra is the only compact, low-current, multiband QRP transceiver available. It uses plug-in modules to cover all HF bands. There's no chassis wiring—all components, controls and connectors are mounted on a single board. The superhet receiver has 5 poles of crystal filtering, RIT, and AGC, yet only draws 35mA! Power out is 2 to 3 watts, with fast QSK and no relays. The prototype Sierra is featured on the cover of the 1996 ARRL Handbook, and lab test results can be found in the June, 1996 issue of *QST*.

New KC2 LCD Counter/Keyer/S-Meter/Wattmeter \$75

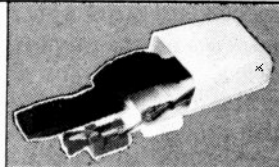
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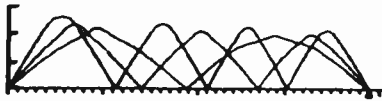


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propagation



Carl Luetzelschwab, K9LA
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In last December's ARRL 10M Contest, I set a goal to make 100 SSB QSOs and 100 CW QSOs. Things certainly were better this last December compared to December of 1996, so it wasn't too hard achieving those goals.

One event stood out, trying to work a W4 on CW. He had a pretty decent signal — the S-meter on my TS-180S hovered around S4. But I just couldn't raise him. He'd stand by after his CQ and I'd call, but he'd go right on CQing again. That was frustrating.

My first reaction was to make sure I had the amplifier on (yep, it was) and make sure I didn't have the VFO SPLIT on. (Been there, done that). In fact, once I had the SPLIT on while trying to work someone on SSB, and the other VFO was down in the CW band — that's a BIG oops. After all those checked out OK, I tried some more but finally gave up and went on my way looking for others to work. I figured the W4's receiver needed some help in the sensitivity department.

I didn't think too much about it after that. But then I received an e-mail from a contester in Florida on the Monday after the contest. He recently moved there, and was in the process of setting up his new station. All he could put up for the 10M contest was a TA-33 at low height fixed on a northerly heading. He said he heard me CQing on CW, and tried to call. But I'd just go on calling CQ. Hmm, the tables are turned.

Maybe the W4's problem wasn't his receiver — maybe other things were at work here. This episode also reminded me of one of W9EGQ's Amateur Radio columns in the old *Popular Electronics* in the early '60s. He discussed one-way skip on 15M, but I don't remember the specifics — anybody out there have any of these old issues of *Popular Electronics*?

Over the years I've seen several explanations of one-way skip, so this month's column is devoted to reviewing these explanations.

One possible explanation is what I alluded to earlier — receiver performance. Receiver sensitivity is measured in terms of a minimum discernible signal (MDS) — this tells where the noise floor of a receiver is, which defines how weak a signal can be heard. Some receivers are better than others in this aspect. For example, ON4UN's book *Low Band DXing* has a chapter devoted to receiver performance. The MDS of many receivers is tabulated. The best sensitivity is around -140 dBm , and the worst sensitivity is around -120 dBm . 20 dB is quite a difference. This might explain a one-way path.

Transmitter power is another factor. Even if comparable receivers are used at both ends, signals could be weak enough to be at the receiver's noise floor so that the 100W station hears the 1kW station, but the 1kW station can't hear the 100w station. A 10dB difference in power can also be significant. Maybe not by itself, but throw in antenna gain and the difference could be even more significant. I figure this was most of the problem with the contester in Florida who couldn't work me — he

was barefoot at 100W due to a broken amp, and I was at 1kW. Along these lines, think about the problems QRPer's may have working high power stations, especially under marginal conditions.

Another explanation, and the one that is most favored for one-way propagation, is QRN. The station who can't hear may have more atmospheric and/or man-made noise than the other station. A good example of different atmospheric noise levels being a problem is the northern hemisphere trying to work the southern hemisphere on the low

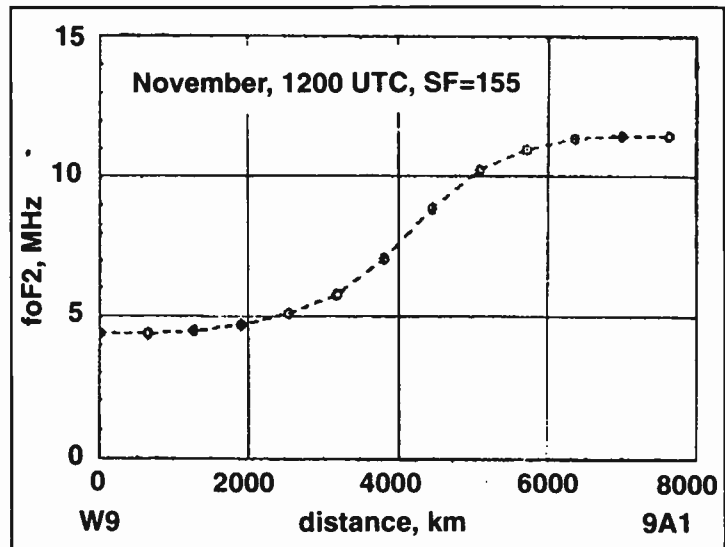


Figure 1 foF2 from W9 to 9A1

bands. When one hemisphere is in winter (atmospheric noise relatively low), the other is in summer (atmospheric noise relatively high).

A good example of man-made noise being a problem is a rural environment compared to a city environment. Being in a rural environment doesn't necessarily guarantee low noise, though — only one offending noise source can create havoc, like a security light (been there, done that, too).

Speaking of the low bands, a somewhat unique situation can occur due to the use of low noise receiving antennas (Beverages, EWEs, loops, etc). Many stations use verticals for the transmit antenna to get most of their energy concentrated at low elevation angles (there's another subtle reason why a vertical is the way to go on the low bands for those of us in North America — it's tied to magneto-ionic theory and coupling energy into the ionosphere — more

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on that next month). Using a single vertical for transmit means an omnidirectional pattern. Thus the transmitted signal goes in all directions.

But the receive antenna, being designed for low noise, usually has a null in some direction. A good example of this is an East Coast station transmitting on a vertical, but listening on a Beverage pointed to Europe. The West Coast may hear the East Coaster fine, but the East Coast can't hear the West Coast very well because of the front-to-back ratio of the Beverage. This specific topic has surfaced several times on the Internet reflector devoted to 160M (the topband reflector) in the form of West Coasters telling East Coasters to please listen to the west.

When a band is just opening is another explanation. The best example I can think of is the CQ World Wide DX Contest. When the higher bands are just opening up from the Midwest to Europe, we can hear them. But the bands are wide open in Europe. They are receiving much stronger signals from other Europeans, from Africa, from Asia, from the Mideast, etc. They just can't hear us yet among all the other stations due to QRM. We have to wait for the band to get better.

There's one other mechanism that I thought might produce one-way propagation, and it's tied to the ionosphere itself. Normally we tend to think of the ionosphere as somewhat constant between the transmitter and receiver. But this is the exception rather than the rule, especially for longer paths. Usually the E region critical frequency foE, the F2 region critical frequency foF2, and

the F2 region height of maximum ionization hmF2 vary along the path. This would be especially pronounced when one end of the path was near sunrise or sunset. Figure 1 shows the parameter foF2 (foE varies similarly and hmF2 is essentially constant) for an example I looked at — the path from Ft. Wayne to Croatia 9A for November at 1200Z (7 a.m. here in Ft. Wayne) at a smoothed solar flux of 155.

I figured that the my energy going to 9A would see a dramatically different ionosphere than the 9A energy going to W9, and that would show up as significant elevation angle differences for the incoming and outgoing energy at each end. Couple that with an antenna pattern with peaks and nulls, and one-way propagation could happen. The result of ray tracing at 14MHz with the above example requires the following elevation angles:

	W9 end	9A end
transmit	5 degrees	13 degrees
receive	2 degrees	15 degrees

Elevation Angles Required

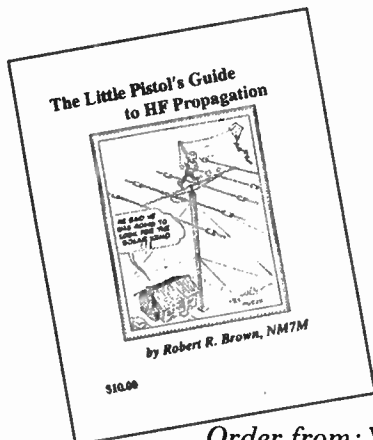
No significant difference exists at each end with respect to transmit and receive. If my antenna is good enough to receive the required low angle, then it would be good enough to transmit the required low angle. And likewise for 9A. This is only half the story, of course. I also looked at the signal strength in the off chance that it would be different going one way compared to the other. But that didn't give a hint of one-way propagation, either. This was interesting, so I tried another path, W9 to KH6, with the same result — no hint of

one-way propagation. Oh well, at least I had fun going through the calculations (yeah, right).

But remember the above analysis was done at 14MHz. On the lower frequencies (specifically 160M), non-reciprocal propagation is fairly well documented in the technical literature. This shows up as a stronger signal in one direction as opposed to the other direction — usually East-West. This is due to how propagation at frequencies near the gyro-frequency is affected by the earth's magnetic field. So those who work DX on 160M have this to contend with.

In summary, I hope I've shed some light on one-way propagation. Some explanations you can do something about. Buy an amplifier, make sure your receiver is sensitive enough (without compromising its ability to handle strong signals), and eliminate man-made noise sources. The others, atmospheric noise, the band just opening, and the ionosphere itself on the lower frequencies are things you don't have much control over. All I can say is keep trying, and good luck.

Don't let the bullies kick sand in your face!



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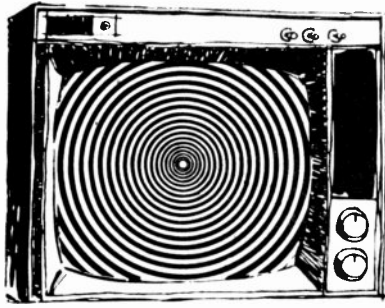
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RFI & you

JACK ALTHOUSE, K6NY

Most amateur stations these days are clean of incidental radiation causing RFI. The transmitters are well shielded and filtered. Their output goes through shielded cable to the antenna. The antenna radiates the power that causes RFI, just as it is supposed to. Long wires in the nearby house pick up the RF and guide it to the telephone, TV, and stereo. That's where we work to suppress the RFI.

But in some cases we need to look at the antenna. If it is a balanced horizontal radiator such as beam or dipole fed with coaxial cable and it does not have a balun there will likely be radiation from the feedline. The feedline extends from the antenna down to the building where it comes a lot closer to the susceptible equipment than the antenna itself.

The Amateur Radio newsgroups on the Internet carry on an unending debate about whether or not such antennas need baluns. The correct answer is: Yes, they do. If it is horizontal and center-fed like a dipole or beam it needs a balun. Even if the coax drops straight down from the feedpoint the antenna needs a balun.

Why is this? Because without a balun you can get RF on the outside of the coax. Here's how it happens: The RF comes up the coax to the antenna. There is RF current on the center conductor of the coax and an

equal current on the inside surface of the shield.

There is no current on the outside surface of the shield. Why? Because the shield acts like, well, like a shield. It prevents the RF from going through.

If you think about this a little you realize that all Hams know this. You know that you can pump 1500 watts through RG-8 cable and still touch the shield without getting a burn. The outside of the shield is not "hot." It's this feature that makes coaxial cable so popular.

But the outside of the shield is a conductor and, if given a chance, RF current can flow on it. This current flow, if it does take place, does not appear on the inside of the shield because of the shielding effect of the shield. But the outer surface of the shield will now be "hot".

How do we get current on the outside of the shield? One way is to bring the coax away from the antenna at an angle instead of straight down. Now the shield is a conductor in an RF field and a current will be induced into it. The cure? Bring the coax down at right angles to the antenna.

Another way to get current on the outside of the coax is to connect it directly to the antenna without a balun. Here's how that works: We have RF current flowing on the cable's center conductor and on the inside of the shield. The center conductor is connected to one side of the balanced antenna so the current flows from the center conductor into that side of the antenna.

The shield is connected to the other side of the antenna so current flows from the inside of the shield into this side of the antenna. But,

and here's the catch, the outside of the shield also is connected to this side of the antenna. Why can't the current flow down it also? It can and does flow onto the outside of the shield.

The big question is "How much flows down the outside of the coax?" The answer is found by using Ohm's Law. The RF current sees two impedances in parallel, the antenna and the shield. The lower impedance gets the most current.

You probably know the impedance of the antenna but what is the shield impedance? That depends on how long it is and where its true RF ground is located. So some cable lengths will give you a "hot" shield and other lengths will be without problems. You might be lucky but why take a chance? Use a balun.

It's easy to make a 1:1 balun using ferrite beads. Here's how: If you are using RG-8 or similar size cable (0.4" dia.) use Palomar FB-102-43 beads that have 1/2" hole. For RG-8X (0.24" dia.) or RG-58 (0.2" dia.) use Palomar FB-56-43 beads that have 1/4" hole.

Slip six beads over the cable right at the antenna connection. This will cover about 7" of the cable. Use cable ties or shrink tubing to keep the beads from sliding down the cable. That's it! Easy, wasn't it? Thank Walt Maxwell, W2DU, for coming up with this simple arrangement.

Any current trying to flow down the outside of the shield will now see a high RF impedance and will instead go into the antenna where you want it. Your beam will have deeper nulls, you'll have less noise when receiving, your microphone won't be "hot," and your RFI problems will be fewer. Try it, you'll like it! ☺

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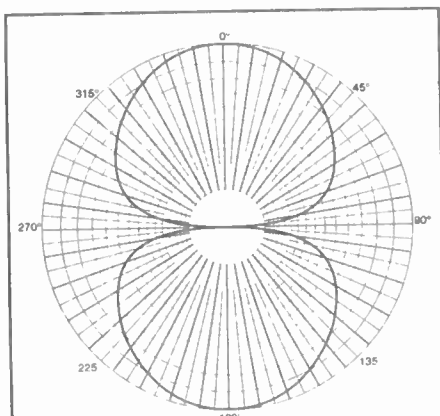
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AERIALS

Kurt N. Sterba

When he was managing the hapless New York Mets, Casey Stengel once said something like, "Can't nobody here play this game?"

That can also apply to antennas. Some material was sent to me that was originally put out as part of a prospectus for investors to fund a new antenna company.

In the explanation of the superiority of this new product was, in part, this explanation: "the monopole is typically 1/4 wavelength in length with a ground plane of 1/4 wavelength in diameter at its base."

Ah, not quite, the ground plane of a quarter wave vertical is actually 1/2 WL in diameter. The company also repeated that boo-boo in another piece of literature in the package. It was claimed that this new antenna "outperforms most antennas used today by 300%." Hmm, I supposed that 300% does seem to be more impressive than a mere 3 times.

However, I believe that sophisticated investors would quickly see through that ploy. An independent antenna facility was supposed to have verified the greatness of this antenna, but the date and the name of test facility were nowhere to be found. OH.

Let's turn to a proclaimed virtue of this antenna, which resembles wires wrapped around a tiny hula hoop: "all power pumped into the antenna is immediately transferred to transmission power, without the need to overcome parasitic noise first."

"Parasitic noise?" "Parasitic noise?" Are they saying this with a straight face? They expect the rubes to swallow it?

Then in a recent issue of *3 Skidoo*, in a description of a 20M antenna that consisted of wire wrapped on a 20-inch tube, the writer exuded, "and yet manages to cover the entire 20-meter band with an SWR no higher than 1.5:1. Amazing? Maybe. Interesting? Absolutely!"

Well, I have a cylindrical device that is only eight inches tall and 6-1/2 inches in diameter that also has an SWR of 1.5:1 across the entire 20M band. It is called a Heath Cantenna. On damp evenings it has an SWR of 1.5 to 1 across the entire HF spectrum. The magic is accomplished by a non-inductive resistor immersed in oil. MFJ manufactures the item today calling it a Dummy Load.

Many readers accuse me of repeating myself. I have never disputed that. It's because the same drivelly swill keeps rising up. So, again, when very small antennas display broad SWR curves, that is because the device is LOSSY!

Ruby Antennas put out a most interesting spec sheet. They have a vertical for 2M that is 13.8 inches long which has 2.15 dBd gain. Remarkable when you consider that a quarter wave on 2M is about 19 inches.

Another antenna is described as having 3 dBd gain. For newcomers we'll briefly explain that dBd is gain over a dipole. The antenna in question is 38.2 inches long, which is indeed a half-wave dipole on 2M. So here is a dipole that has 3 dB gain over itself.

But it doesn't stop there. Another vertical, which is identified as being a 1/2 wave long and is 36.6 inches long has 3.2 dBd "GAIN." As always, space will be given for rebuttal. Ha ha ha.

I've seen color photos of the "Ohming" that took place at Dayton in front of the Granite Antenna company booth. The wearers of the Kurt White Hats showed panache.

Information has been sent to me that a new owner of that company has changed the catalog claims. Before, while the commonplace 3L Yagis (both monobanders and trapped) all had 8 dBd gain, that has now been changed. The claim is now 8 dBi. So when you subtract the 2.14

dB difference, the claims are now right on—my congratulations.

However, there is now something in the catalog that has some of us holding our noses. And that is a particular gambit which was tried by some and later abandoned (I believe due to my constant harping about it).

And that is claiming a rather high gain figure and off to the side or below will read something like, at one wavelength. What they are doing is adding in the ground reflection!!! So, if you have a real 6 dB antenna and you add in 6 dB of ground reflection, voila—you now have a 12 dB antenna. There are only three things wrong with this. First, one wavelength over what? Is there a difference between one antenna being one wavelength high over the Great Salt Lake and the other over some dry as dust area in Oklahoma? There is no ground reflection there.

Number two is this—a dipole (unity gain) at one wavelength high (say over good ground) at the same spot as the Yagi would also benefit from the ground reflection. So is it a 6 dB gain dipole?

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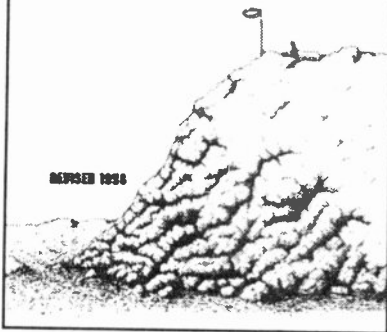

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of foolishness the real folks adopted the "free space" idea. That is, no "ground reflection" to add in willy nilly. Thus when one speaks of dBd gain, that means the gain of (whatever you are measuring) over a dipole. Either are both in free space or, more practically, occupying the same space (and being measured) in a consecutive manner.

Thus we'll be measuring apples against apples, etc. For those who need a little help we'll recapitulate. A (for example) 3L Yagi at one WL has but six dB gain when measured over a reference (which would be a dipole occupying the same spot). Any figures higher than that should be suspect.

However, this explanation will probably not prevent someone from advertising 18 dB gain and the fine print somewhere saying that the reference was a SOK, a sack of kumquats.

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 **WORLD RADIO BOOKS**, P.O. Box 189490, Sacramento, CA 95818. Price is \$9.00 plus \$2.00 shipping and handling. CA residents please add 7% sales tax.

Wilderness drama

LENORE JENSEN, W6NAZ

It would be difficult for Jeanette DeLang, KD6GA, to select just one of the dramatic experiences in her ham career. For many years, she operated from Hawaii, a rich source of Ham happenings.

"However," she says, "I'll never forget the suspenseful three hours when I helped rescuers find geologist Ira Bechtold. I was living in Auburn, California, and had just finished talking on the air to a Ham friend when I heard a man asking for help. He sounded as if he truly meant it.

"He explained he was in a four-wheel drive vehicle which had broken down in a ravine in the remote Mesquite Lake area of Nevada. No one was near.

"When I asked how I could help, he first asked me to alert his wife, who was waiting for him in a Las Vegas hotel. Then I was asked to phone a certain helicopter service as well as the tower at the Las Vegas airport. From then on I was extremely busy relaying information from Ira to the tower.

A bit of practicality now. Let's say in your particular circumstance you just can't squeeze in the length of a 20M dipole. You could let eight feet hang down vertically from each side.

Visualize the center-fed flat top being about 16.5 feet long and the two ends dropping down. The difference in signal strength at the other end would not be noticed. There would have to be some trimming of the antenna necessary. The same idea would apply for 40M. Normally a dipole would be in the region of 65 feet long. But if one is short of space, make the center-fed flattop 32.5 feet long and hang 16 feet down from each side. The same idea would work for 75M.

(The Masked Avenger will return next month with an announcement of a long-awaited great event for the benefit of Amateur Radio. Here's a hint: III)

"The first flight out couldn't find him at all, although he had his geology maps and was trying to be specific. It was becoming discouraging as time went by and late afternoon shadows warned him of his urgent situation.

"Again the helo flew in the area and again he reported seeing it but the pilot couldn't see Ira. Mrs. Bechtold called the tower herself, in the hope of helping. We all were getting desperate.

"Finally, Ira heard the whirring and did his best to attract attention. By then it was practically dark. Suddenly Ira told me he thought the pilot had seen him and was circling. At almost the same time, the tower told me by phone that he'd been located and the pilot could land nearby. I said, 'Good luck; now I will tell your wife.' Naturally, she was thrilled that he'd been found.

"As soon as Ira arrived at the airport, he telephoned me to say thanks. I was happy to have been involved. Any Ham would have been."



Contests

Dave Goodwin

VE2ZP/VE9CB

e-mail: ve2zp@bbs.ve3jf.ampr.org

packet: VE2ZP@VA3TCP.#EON.ON.CAN.NOAM

World Radiosport Team Championship

In July 2000, 106 of the world's most talented contesters will meet in Slovenia, a mountainous country in central Europe, to take part in the closest thing Amateur Radio has to an Olympic Games. Why?

For most people, contests are great opportunities to make a lot of contacts in a short period of time, pick up a few new countries, and have a bit of fun. For the especially keen few, however it's very serious competition. However, competitive some contesters may be, there is such a variety of contests, no one can say with any precision which contest is the most important, or which best rewards the greatest competitor with a win. There are many factors that can skew the results: the vagaries of propagation may favor certain parts of the world; the particular rules of a contest may unintentionally make it harder for people in one country to win; those in the most remote parts of the world may be too far away from large population centers to make great numbers of contacts.

In the former Soviet Union, the national organization of Radio Amateurs sponsored a series of local and national championships to determine the best operators. They did this by organizing competitions where all the operators met in one location (eliminating the geographic variables), using equipment running the same amount of power (eliminating the differences between stations running different power levels) using any kind of antenna they could raise in a small piece of open ground (eliminating the differ-

ences between antenna systems). They even limited the weight of all the equipment the competitors could use. Once set up and in place, the competitors would then take part in the former USSR's regular domestic contests as regular competitors. All this was done under the watchful eyes of on-site judges who would scrupulously ensure that all the rules were followed. The idea was that by equalizing all the other variables, the qualities of the best operators would shine through, and the country's best operators could be rewarded with the honors they were due.

Until the 1980s, this idea was pretty much exclusive to the former USSR and the then-communist countries of eastern Europe. Some prominent U.S. and European contesters hungered for an event that could be used to determine the best of the best. As an element of the diplomatic "détente" that was brewing between the U.S. and the USSR in the 1980s, a sort of miniature Olympic games called the "Goodwill Games" were set to take place in Seattle, Washington, in 1990. These games were to be a meeting of athletes from those two countries, some of their allies and a few other countries. A few enterprising contesters saw these games as an opportunity for some good publicity for Amateur Radio, and a chance to have a global on-site contest. They cribbed some elements of the format of the

USSR's national radio championships, and obtained the agreement of the games' organizers to have Amateur Radio contesting as a demonstration sport.

Dubbed the World Radiosport Team Championship (WRTC), the 1990 event was a major success, and it was followed by an even greater success in July 1996, when the second WRTC was held in San Francisco, California. While the 1990 event spun one off-purpose-designed contest, the 1996 event piggybacked on the International Amateur Radio Union's (IARU) HF Championship, and developed a more elaborate means of selecting competitors, employing major U.S. contest clubs to nominate captains for the ten U.S. teams, and the contest managers of many other countries to select the captains of their country's representatives.

The organizers of WRTC-96 not only arranged a fine event for the competitors, but they also did a great job of encouraging the folks at home to seek out and work the team members. All sorts of small prizes were available, and a lot of excitement was generated.

Shortly after the 1996 event, the Slovenian Contest Club (SCC) offered to host the next WRTC in July 2000. As with the earlier events, the competition will feature two-person teams participating as multi-operator single-transmitter entrants in the IARU HF Championship. The

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Contest	Date/Time	Bands	QSO points	Multipliers	Exchange	Entry Categories	Entries
NA QSO Party CW (NCJ)	1800z 1 Aug 0600z 2 Aug	160-10M CW	1pt/QSO	Canadian Call areas, US States, other NA countries	Name Prov	Single Op Multi-op, two tx All entrants must run 150W or less	1mo. K8CC
ARRL UHF	1800z 1 Aug 1800z 2 Aug	220MHz +	3pt/220, 432MHz 6pt/902, 1296MHz 12pt/2304MHz +	Grid squares worked on each band	Grid square	Single op	1mo. ARRL
YO DX (Romania)	2000z 1 Aug 1600z 2 Aug	80-10M CW & SSB	8pt/YO 4pt/DX 2pt/NA	YO Counties, ITU Zones on each band	RST ITU Zone	Single op: all bands, single band Multi-op, single tx	1mo. Box 05-50 R-76100 Bucharest
European DX CW (Germany)	0000z 8 Aug 2359z 9 Aug	80-10M CW	1pt/Eur 1pt/QTC QTC: reports of previous QSOs Time:Call:Ser#	WAE Countries worked on each band. x2 on 10/15/20 x3 on 40m x4 on 80m	RST Ser#	Single Op: All bands, Single band Multi-op: Single or multi-tx All entrants may use PacketCluster	15 Sep Box 1126 D-74370 Sersheim Germany
Maryland-DC QSO Party	1600z 8 Aug 2359z 9 Aug	80-2M CW, SSB and RTTY	10pt/Club stns 5pt/Mobiles 3pt/QRP 2pt/CW, RTTY 1pt/SSB, FM Work MD, DC only	Total of Maryland counties, city of Baltimore and DC regardless of band	Province or Territory	The rules are unclear. If you are the top-scoring entrant from outside MD-DC, you will win a watch (?!)	10 Sept Box 52 Hagerstown MD 21741 USA
SARTG RTTY (Sweden)	00-08z 8 Aug 16-24z 9 Aug 08-16z 9 Aug	80-10M RTTY	5pt/VE 10pt/NA 15pt/DX	DXCC Countries + Australia/ Canada/USA Call areas	RST Ser#	Single Op: All bands, Single band Multi-op, single tx	10 Oct SM4CMG
South-East Asia Net SSB	0000z 15 Aug 2359z 16 Aug	160-10M SSB	1pt/QSO	3 mult pts for SEANET countries: A4 A5 A6 A7 A9 AP BV BY DU EP HL HS JA JD1 JY KH2 P2 S7 VK VQ9 VS6 VU V8 XU XV XW XX9 YB ZK ZL ZM ZL6 ZL9 3B6/7 3B8 3B9 4S 4X 8Q7 9K 9M2 9M6/8 9N 9V		Single Op: All bands, Single band Multi-op, single tx	31 Oct 9M2FK Box 13 10700 Penang MALAYSIA
Keymen's Club of Japan Contest	1200z 15 Aug 1200z 16 Aug	160-10M CW	1pt/QSO	Japanese districts (62) on each band Japanese stns will send a two-letter district identifier in the exchange.	RST and 2-letter continent identifier (ie. NA)	Single Op all bands only	16 Sep JA1DD or e-mail to: VYL05350@ niftyserve.or.jp
Canadian and American Islands Contest	1700z 15 Aug 2300z 16 Aug	Rules Unclear, probably 80-10M CW & SSB	5pt/Island stn 1pt/mainland	Provinces, Territories and US States (unclear, but probably count once regardless of band)	RST Prov or CISA#	Island stations; Island "rovers"; non-Island stations: SWL (Note: Stations not on islands may only work island stns for credit. SWLs may only log island stations.)	15 Sep VE6VK
New Jersey QSO Party	2000z 15 Aug 0200z 17 Aug 0700-1300z off time for all	160-2M CW & SSB	3pt/QSO	NJ counties (21) count once, regardless of band	RST Ser# QTH	Single Operator Novice/Technician Mobile 07631-0528	18 Sep PO Box 528 Englewood NJ
NA QSO Party SSB (NCJ)	1800z 22 Aug 0600z 23 Aug	160-10M SSB	1pt/QSO	Canadian Call areas, US States, other NA countries	Name Prov	Single Op Multi-op, two tx All entrants must run 150W or less	1mo. K8CC
TOEC Field Contest CW (Sweden)	1200z 22 Aug 1200z 23 Aug	160-10M CW	1pt/NA 3pt/DX 3pt/any mobile	Total of Maidenhead "Field" locators. The first two letters of your grid square are your "Field".	RST + Grid square (ie. FN25)	Single Op: All band, Low power, Single band Multi-op: Single or multi-tx Single ops may not use PacketCluster	1mo. Box 2063, S-831 02 Ostersund Sweden
Hawaii QSO Party	1600z 29 Aug 2200z 30 Aug	160-Microwaves CW & SSB	1pt/SSB QSO 2pt/CW QSO	For stations outside Hawaii: HI counties (5) For HI stations: US states, Canadian provinces, DXCC countries Mults count once regardless of band.	RST QTH	Single Op: CW only, SSB only, mixed mode Single Op QRP: CW only, SSB only, mixed mode Multi-op Single Tx: CW only SSB only, mixed mode Multi-Multi: mixed mode only	30 Sep 1056 Kapau St Kailua HI 96734 or E-mail to starcommradio @juno.com

Addresses: CQ - 76 N Broadway, Hicksville, NY 11801 USA; ARRL - 225 Main St, Newington, CT 06111 USA; Call sign - Callbook Address; Bands: The 30, 17 and 12M bands are never used in any contest. Official forms and complete rules may be available from me. Please send SASE for details. For more listings check the contest page on the Worldradio web site: www.wr6wr.com

results of this contest will be used to determine part of each team's score. The balance will come from an off-air competition, where competitors will be tested in their ability to copy call signs in specially-prepared audio tapes simulating CW and SSB pile-ups.

Another little innovation of the organizers is that they have allocated teams by continent, in rough proportion to the level of contest activity from each continent. North America has been allocated 15 teams (12 of which are for U.S. contestants), Europe will have 25, Asia will have six, South America will

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have three, and Africa and Oceania will have one each. To qualify as a team captain, you will have to submit an application to the SCC. Captains will be selected on the basis of their scores in the CQ WW DX SSB, CQ WW DX CW, CQ WPX SSB, CQ WPX CW and IARU HF Championships from 1995 through 1999.

You can obtain more details of this event by reading the SCC's 'WRTC-2000 Comminque' on the Internet at www.contesting.com/_cq-contest/9805/0112.htm. You should also be able to obtain more information by e-mail at scc@hamradio.si or by mail at the call book address of Tine

Brajnik, S50A, in Slovenia.

The WRTC concept is not yet ten years old, but it looks like it has become a permanent feature of Amateur Radio contesting. It can never replace regular contesting, but it certainly is a nice addition to the sport, and it gives us a chance to reward and recognize our most accomplished friends.

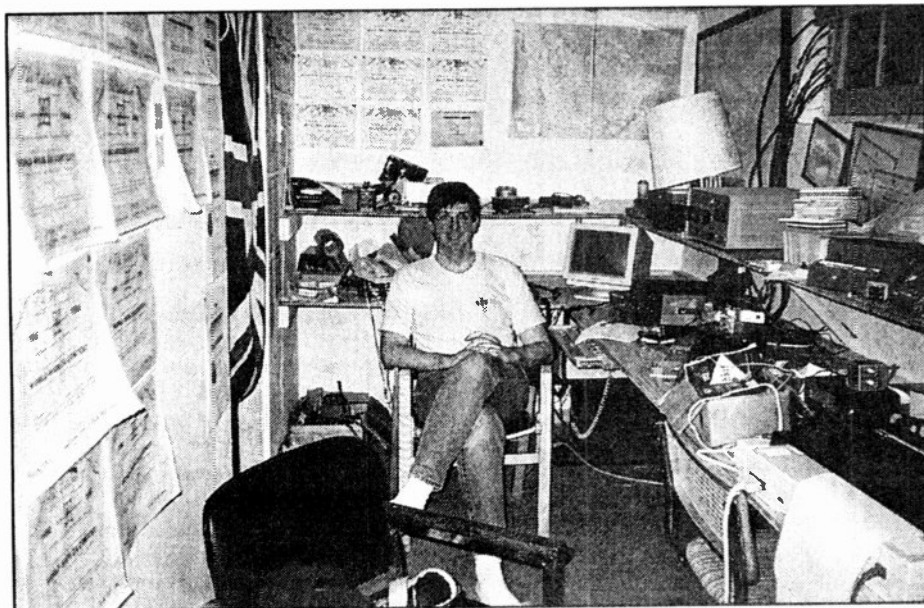
Contest of the month — Worked All Europe

CW:

0000Z 8 Aug.-2359Z 9 Aug. 1998.
(PDT: 5 p.m. Fri. 7 Aug.-5 p.m. Sun.)
(EDT: 8 p.m. Fri. 7 Aug.-8 p.m. Sun.)

SSB:

0000Z 12 Sept.-2359Z 13 Sept. 1998.
(PDT: 5 p.m. Fri. 11 Sept.-5 p.m. Sun.)
(EDT: 8 p.m. Fri. 11 Sept.-8 p.m. Sun.)



The Chaos of Contesting is accurately reflected in this shot of the station of your contest columnist. VE2ZP will never be a candidate for *Worldradio's* "Station Appearance" column. Dave normally works the *CQ Magazine's* Worldwide DX and WPX contests, the RSGB's Commonwealth contest and the contests sponsored by the Radio Amateurs of Canada from the impenetrable darkness of his basement in Aylmer, Quebec, Canada.

RTTY:

0000Z 14 Nov.-2359Z 15 Nov. 1998
(PST: 4 p.m. Fri. 13 Nov.-4 p.m. Sun.)
(EST: 7 p.m. Fri. 13 Nov.-7 p.m. Sun.)

Three times each year, the German Amateur Radio Club (DARC) sponsors one of the most interesting contests in Amateur Radio. The "Worked All Europe DX Contest" (popularly known as the "WAE") sounds like a regular contest, with the typical exchanges of signal reports and QSO serial numbers. In the CW and SSB sections of this contest, stations in Europe only work

stations on other continents for credit, and vice-versa. In the RTTY contest, you may work any station, anywhere.

A typical WAE Contest CW contact might sound like this:

Station 1: "CQ TEST W2EN
W2EN TEST"

Station 2: "GM3PPE"
(GM3PPE replies by sending his call sign once.)

Station 1: "GM3PPE 5NN 255"
(W2EN sends GM3PPE a signal report, the universal 599, and a serial number indicating this is his 255th contact in this contest. Doug then listens for GM3PPE's reply.)

Station 2: "R 5NN 314"
(GM3PPE replies with a signal report, and a serial number indicating that this is his 314th contact.)

Station 1: "TU W2EN"

(W2EN thanks GM3PPE for the contact, and is standing by for other stations to call him. If he gets no response, he'll call CQ again.)

To this standard formula, DARC has added an interesting twist: competitors from outside Europe can earn extra points by sending extracts of their logs to Europeans on the air during the contest, and Europeans can earn extra points for correctly copying this information. This is the famous "QTC" rule. "QTC?" is a Q-signal meaning "Do

you have any traffic?" Without the question mark, "QTC" means "I have traffic for you."

The QTC rule adds an extra dimension of skill to the WAE contest. Unfortunately, it is not well understood outside Europe, and casual participants from abroad often reply "no" when a European asks "QTC?" Take the time to learn the QTC rule. It will make even the most casual participation in the WAE more fun.

Stations outside Europe can "report" each QSO only once. You may send no more than ten such reports (called QTCs) to any one station, and you may not report a previous contact with the same station to which you are reporting. QTCs are organized in "books" with a number detailing what series of reports you are sending, and how many contacts you are reporting.

Let's return to the typical QSO described above. After W2EN sent his exchange, GM3PPE might well have replied as follows: "R 5NN 314 QTC?" This would have meant that GM3PPE acknowledged receiving W2EN's number, sends his own exchange, and asks if W2EN had any

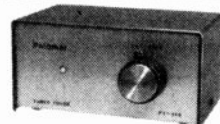
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previous QSOs to report. The exchange could have continued as follows:

Station 1: "R QTC 15/10"

(W2EN replies that he does have previous QSOs to report. 15/10 means that this will be the fifteenth series of reports and that he will report ten previous QSOs.)

Station 2: "R" or "QRV"

(GM3PPE replies that he is ready to copy W2EN's reports.)

Station 1: "2010 DL6RAI 627"

(W2EN reports that at 2010UTC he worked DL6RAI and that station gave him QSO number 627.)

Station 2: "R"

(GM3PPE acknowledges that first report, and stands by for the next.)

Station 1: "2011 I2MQP 705"

(W2EN reports that at 2011UTC he worked I2MQP and that station gave him QSO number 705.)

Station 2: "R"

...and the two stations merrily go back and forth, W2EN sending this data from his previous QSOs, and GM3PPE copying them until W2EN reaches the end of his allotted ten contacts. After the final "R" from GM3PPE, W2EN sends "AR", meaning "end of message." GM3PPE replies "QSL QTC 15/10 TU" to confirm that he has copied this "book" in full. W2EN then indicates he's ready for the next QSO by sending "TU W2EN" or calling CQ.

You don't have to send reports of a whole block of ten QSOs when you send QTCs. If you only have a few unreported QSOs when someone

asks "QTC?," send those few, and send the balance of the ten later, when you have a few more QSOs in the log.

Although it's a bit confusing at first, once you get into the rhythm of sending QTCs, you may well enjoy it. It certainly is a great way to pump up your score, especially when things are a little slow.

Now, with all these QSO numbers, QTC numbers, log data exchanges and so forth, this contest could be a nightmare to log on paper. DARC provides excellent official forms, which you can obtain for a self-addressed envelope and US\$2 from the organizers. See their address below. Better yet, K1EA's contest logging program, CT, handles the WAE and the sending of QTCs masterfully well.

Your Log

To calculate your score, count one point for each contact, and for each QTC you report. Each European country you work counts two multipliers on 10, 15 and 20M, three multipliers on 40M, and four multipliers on 80M. Use the European countries from the DXCC countries list, with the following additional "WAE" countries: GM (Shetland Islands), IT (Sicily), JW (Bear Island) and 4U1VIC (the UN center in Vienna).

The deadline for entries is 15 Sept. for the CW contest, 15 Oct. for the SSB contest and 15 Dec. for the RTTY contest. Send your logs to DARC WAE Contest, Box 1126, D-74370, Sersheim, Germany.

Other contests in August

This is a month chock-full of smaller contests, such as the National Contest Journal's North American QSO Parties, a pair of twelve-hour events of increasing popularity in the US. New Jersey, Maryland/DC and Hawaiian hams have their own state QSO Parties this month, and if you are an island-chaser, the Canadian and American Islands contest will see its fourth running. For those active on 222MHz and above, the ARRL UHF Contest is well-timed to take advantage of the frequent summertime tropospheric openings. There are other events focusing on Romania, Japan, southeast Asia, and a Swedish-sponsored event where grid squares are used for multipliers.

73, and good luck in the contests.

Dave, VE2ZP/VE9CB

WW2END reunion

The *USS Missouri* Project will be on the air once again 29-30 August for a special reunion of the 1995 special event that took place aboard the *Missouri*.

Many of the original 180 member operating team from the first event will be on hand. Look for this station 20-30 KHz up from the low end of the General SSB and CW bands, 10-80 Meters. No WARC bands.

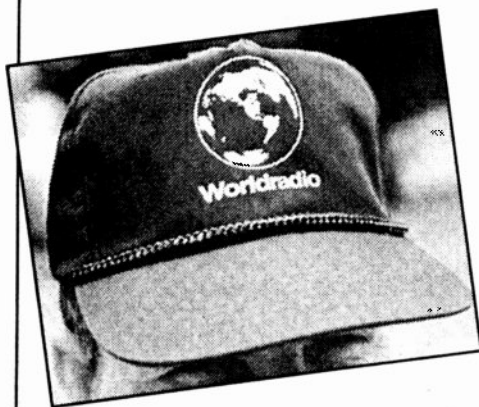
Gene McAvoy, KG7XD, will be handling the QSL requests. An SASE will get a beautiful QSL card from the original event, and \$3.00 and an SASE will bring you an original Project Participation certificate. For information: Matt Amis, K7OE, email: mvamis@oz.net, Gene McAvoy, KG7XD, email: gmcavoy@ox.net or Tom Sanders, W6QJ1, email: tsanders@linknet.kitsap.lib.wa.us.

New vanity fee set

The vanity call sign application fee will drop to \$13 effective 14 September. The new fee will be for the ten-year term, payable at the time of application for a new, renewed, or reinstated license.

The current vanity call sign application fee is \$50. The FCC says it has no plans to refund the difference between the current fee and the new fee for applicants who submit applications before the new fee schedule goes into effect in September. — Via FCC, ARRL, Newsline

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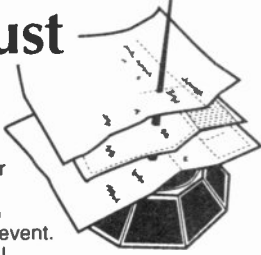
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Hamfests

August

Do you have a hamfest coming up? Send your information to our 28th St. office at least 2 months in advance of your event. We'll send prizes!



ALABAMA

The Huntsville Hamfest will be held 15-16 August at the Von Braun Center in Huntsville. Contact: Huntsville Hamfest, P.O. Box 12534, Huntsville, AL 35815.

CALIFORNIA

The San Diego County ARC 1998 ARRL Southwestern Division Convention, 14-16 August at Town & Country Convention Center in San Diego (500 Hotel Circle North, P.O. Box 80090, San Diego, CA 92128). Speakers, exhibitors, VE exams, and more. Admission \$12/advance, \$15/at door (16 & younger free with adult). For more information call Sybil Allbright, W6GIC, 619/278-4284.

COLORADO

The Denver Radio Club's Hamfest will be held on 16 August from 8:30 a.m.-2 p.m. at the Jefferson County Fairgrounds (15200 W. 6th Ave., Indiana exit, Golden CO). Admission \$4. Tables \$10. For information contact: Guy Read, W5GR, 303/674-5389.

FLORIDA

The Greater Jacksonville Amateur Radio & Computer Show will be held 01-02 August at Osborn Convention Center in Jacksonville, Florida (one mile north of the I-95/I-10 junction). Take the Forsyth St. exit off I-95).

Forums, indoor swap area and commercial booths. Testing at 9 a.m. Sunday in the lobby area. Walk-ins welcome. Open 9 a.m.-5 p.m., Saturday and 9 a.m.-3 p.m., Sunday. Setup is Friday 1-6 p.m. with drive-in access for easy unloading. Admission is \$8 at the door. Tables are \$25 and may be ordered from Karl Hassler, N4DHG, 2767 Scott Cir., Jacksonville, FL 32223; tel. 904/268-2302.

Commercial booths are available via Menard Norton, KE4IOR at 904/384-6750 or e-mail via ke4ior@juno.com

Talk-in: 146.76. For information write Greater Jacksonville Hamfest, P.O. Box 27033, Jacksonville, FL 32207; www.pobox.com/~w4ue/hamfest.html

ILLINOIS

The Vermilion County Amateur Radio Association Hamfest 30 August at U.A.W. 579 Civic Center in Tilton, Illinois. Doors open at 6 a.m. for vendors, 8 a.m. for the public. Tickets are \$3 or two for \$5. Free outdoor flea market area. Indoor tables are available for \$3 each.

Overnight camping is available. (NO hook-up.)

ARRL Information Booth, V.E. Testing from 10 a.m.-2 p.m., walk-ins are welcome, door prizes.

Don't miss the "Night Before the Hamfest Steak Cookout"!! Saturday, 29 August 6 p.m. at the Hamfest site. Cost is \$6 per person. Please RSVP by Wednesday, 26 August. Talk-in: W9MJL repeater. 146.820 (-).

For information, to RSVP for the steak dinner, advanced tickets or tables contact: Gary, KA9SKS, or Lyell, N9GGP, Denison, 14704 E. 2750 N. Rd., Danville, IL 61834-5610; Tel. 217/759-7389; e-mail: gdenison@danville.net

INDIANA

The Land of Lakes ARC Hamfest 02 August, 7 a.m.-2 p.m. at Steuben County 4H Fairgrounds, corner of 200 W. and 200 N., Exit 150 off I-69, Crooked Lk, IN. Indoor tables \$8, trunk sales \$2, VE testing, camping. Talk-in: 147.180 PI 131.8, 444.350.

Advance tickets \$3, Theresa Limestahl, KB9NNR, P.O. Box 346. Fremont, IN; tel 219/495-5403; Fax 219/495-1675; e-mail tjlimestahl@dmci.net

The Hoosier Lakes Radio Club Kosciusko County Hamfest & Computer Show 22 August 8 a.m.-2 p.m. at Kosciusko County Fairground (Bronson & Smith St., Warsaw, IN). Admission \$3. Table \$5. Free flea-market setup outside. VE testing at 2 p.m. Talk-in: 146.985 (-). For more information call Loren Melton, WB9OST, at 219/858-9374 after 6 p.m. or e-mail: wb9ost@waveone.net.

La Porte County Electronics Association Summer Hamfest will be 7 a.m.-2 p.m. 29 August at La Porte County Fairgrounds (50 miles East of Chicago). Paved area for selling, and an air-conditioned building with 8-ft tables for inside Vendors, open at 6 a.m. for vendor setup. Tickets are \$5, and tables are \$5 from Rich Dugger, WD9ARW, 4977 W. 150 N., La Porte, IN 46350. Telephone 219/326-6672. E-mail lpcea@hotmail.com.

IOWA

The Great River ARC, Iowa Antique RC and Historical Society, and the Tri-State Computer Users Group Hamfest/Radiofest/Computer expo 30 August from 8 a.m.-2 p.m. at Dubuque County Fairgrounds on Old Highway Road west of Dubuque. Free parking, camping, available refreshments, dealers, flea market, tailgating and VE exams at 10 a.m. Admis-

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sion is \$4 in advance and \$5 at the door; 12 and under are free. Tables (8 feet) are \$8, Talk-in on 147.84/24. Contact Jerry Ehlers, WØSAT 319/583-1016 or Loren Heber, NØYHZ, 319/556-5755 or Jerry Lange, KBØVIK, 319/556-3050. Write: GRARC, P.O. Box 546, Dubuque, IA 52004-0546. kb0lcj@mwci.net, http://grarc.mwci.net/.

KANSAS

The Chanute Kansas Hamfest 15 August 0900-1300 at Central Park Pavillion (21 S. Forrest St., Chanute, KS 66720). Talk in: 146.745(-). Admission is \$2 per person, under 10 years old free. Door prizes every half hour with an ICOM 2000H 2-meter Mobile being raffled off at 12 noon. Vendors' tables are free for the first three, then \$3 each. Contact Charlie Ward, WDØAKU, 316/431-6402 evenings to reserve.

MINNESOTA

The St. Cloud Radio Club hamfest on 09 August at Whitney Senior Center, St. Cloud, MN, 8 a.m. doors open. Testing begins at noon.

Talk-in on 146.94 and 147.015. For tickets and information contact WØSV, 401 N. 4th Street, Waite Park, MN 56387; jmaus@cloudnet.com; www.w0sv.org.

The Viking ARS/Waseca High School ARC Hamfest/Swapmeet and Craft Fair 15 August from 8 a.m.-2 p.m. Vendor spaces available for \$15 or \$10 if paid by 15 June. Tailgating \$5/advance, \$8/at door.

Admission \$1.00, \$3.00 for Hams (Hams are eligible for door prize). For information or to book space contact: Lloyd L. Schlaak, 507/465-8619; n0vfv@smig.net. Talk-in: 146.94, WAØCJU Repeater.

NEBRASKA

The AK-SAR-BENARC of Omaha Flea Market Sunday, 23 August at Millard Social Hall in Omaha. (Take I-80 to exit 440 and then South 1/2 mile on Hiway 50.) Setup at 7 a.m.

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and open to the public 8 a.m.-noon. Talk-in: 146.94 repeater (KØUSA). There will be sixty plus tables at \$5/advanced or \$7/at the door. Free admission, free coffee, free parking, ARRL book sales and door prizes. Dealer inquiries are welcome. www.qsl.net/k0usa/. Contact: Dave Kline, WJØZ, 5055 South 87th Street, Omaha, NE 402-592-4930.

NEVADA

The Sierra Nevada ARS/Wide Area Data Group Northern Nevada Hamfest 1 August, 7 a.m. at the The Alamo Travel Center, 1950 East Greg Street, Sparks, NV 89431. Special prize for the furthest distance travelled. (Be sure to Register at the speakers' tent.) Commercial vendors, swap meet sellers, guest speakers, demonstrations of Ham Radio, antique radios, ARRL testing, raffles for great prizes.

The cost for this extravaganza is \$10 for each swap meet seller (reservations in advance) and NO CHARGE for regular admission. Talk-in: 146.61(-) PL 123.0 or 147.30(+). For more information contact: John A. Peterson, KJ7EE, 702/853-8452; kj7ee@aol.com or Jim Myers, WA6ICB, 702/345-2482; wa6icb@reno.quik.com.

NEW YORK

The Auburn ARA Hamfest 01 August at 8 a.m. at Weedsport Speedway/Fairgrounds (Route 31 Weedsport, Just off the thruway). VE Testing at 10 a.m. Plenty of indoor vending area...tons of room to buy & sell in! Talk-in: 147.00, WA2QYT repeater. Call K2BFB for directions!

Admission \$5. Outdoor vending \$6, indoor vending \$10. For information contact: AARA, P.O. Box 427, Auburn, NY 13021; or David Kopp at K2RTG@juno.com or Joe, WA2NGX, 315/364-5135.

The Lancaster ARC's Greater Buffalo Hamfest & Computer Show on 23 August 8 a.m.-3 p.m. at Hearstone Manor, 333 Dick Rd., Depew, NY. For information contact Luke at 716/634-4666 or lcalinno@aol. Website http://hamgate1.sunyerie.edu/~larc/greaterbuffalohamfest.html.

The Westchester Emergency Communications Association (WECA) Hamfest 30 August open 8 a.m.-2 p.m. at the Yonkers Raceway. New and used Ham equipment, major dealers and outdoor selling spaces.

Free parking, handicap accessible. Admission \$6 (children under 14 free with adult). Talk-in: 147.060, PL 114.8. For information call the WECA info-line: 914/741-6606 or see the website: www.weca.org.

The Yonkers ARC Hamfest/Computerfest Sunday, 23 August 9 a.m.-3 p.m. at Yonkers Municipal Parking Garage. (Main Street, Yonkers, NY) Admission \$5 (XYL, YL, kids under 12 free). Spaces \$10 pre-registration, \$14 at the door. Contact YARC, P.O. Box 378, Centuck Sta., Yonkers, NY 10710-0378.

NEW JERSEY

The Somerset County ARS, Inc. Hamfest 22 August 8 a.m.-1 p.m. at Somerset County 4H Center in Bridgewater. Admission \$5 (XYL and children under 12 are free). Indoor tables are \$20 with power (reservations required) \$15 without power. Outdoor tailgating \$10 per tailgate space. Talk in: 448.175 (-) PL 141.3, 147.135 (+) PL 151.4. Contact: SCARS, P.O. Box 742, Manville, NJ 08835 or call: Pat, N2COM, at 908/873-3394; email: scars@qsl.net; www.qsl.net/scars.

OHIO

The Portage ARC Hamfair '98 Sunday, 2 August 8 a.m.-4 p.m. at the Portage County Fairgrounds, Randolph, OH (between Akron & Youngstown on St. Rt. 44, four miles south of I-76). Admission \$4 advanced, \$5 at the gate. Indoor tables with power \$10, Flea market spaces \$3. For reservations or information and tickets contact: Joanne Solak, KJ3O, at 330/274-8240. Talk in: 145.39(-) MHz. http://parc.portage.oh.us.

PENNSYLVANIA

The Juniata Valley ARC Hamfest 08 August 8 a.m.-1 p.m. at the Decatur Township Fire Company grounds (follow US Rt. 522 North to site, 8 miles East of Lewistown). Admission \$1. Tailgating \$5. Indoor tables \$10. Talk-in: 146.91. For information call Rich Yingling, WB3COB at 717/242-1882.

VIRGINIA

The Shenandoah Valley ARC Winchester Hamfest and Computer Show, Sunday, 02 August at the Clarke County Ruritan Fairgrounds (Berryville, VA). Gate opens at 6 a.m.

Admission \$5 (children under 16 free), tailgaters additional \$7/space, commercial & indoor tables by reservation. VE exams. Talk-in: 146.22-82, W4RKC. Hourly drawings. For information about VE exams contact: Leo Patterson, KQ8E, email: 6815484@mcimail.com; 304/289-3576 or Gay Rembold, W3DFW 301/724-0674.

For information, vendor registration and pre-reservations, contact Tom Martin, KF4TNX, 540/539-4301, hamfest@Vvalley.com, P.O. Box 139, Winchester, VA 22604. Download a flyer and vendor's table forms from www.Vvalley.com/svarc/hamfest.

WASHINGTON

The Amateur Radio Clubs of the Spokane Area are hosting the Spokane Hamfest 01-02 August at University High School (10212 E. 9th Avenue, Spokane, WA). Door prizes, raffles, food, dealers, seminars, demos, VE testing, fox hunts. Admission \$4 pre-registered, \$5 at the door. Tables \$5 (admission not included in price of table).

Doors open 6p.m.-9p.m. 31 July (commercial setup), 9a.m.-5p.m. Saturday, 01 August (breakfast 7 a.m., lunch & dinner), 8 a.m.-noon Sunday, 02 August (breakfast 7 a.m. & lunch).

The Lower Columbia ARA, W7DG, Ham Radio, Computer, and Electronic Equipment Swap Meet 15 August from 9 a.m.-3 p.m. at the Cowlitz County Fairgrounds in Longview (Take exit 36 or 39 off I-5 and follow the signs west for the county fairgrounds. Mt. St. Helens and the Oregon coast nearby). Admission is \$3. Swap tables are \$12 before 01 August, \$15 after. Commercial tables \$15. Food concessions, free parking, overnight RV parking on the fairgrounds for \$10, electrical hookup available. Setup on Fri. from 5-9 p.m., Sat. from 6-8:45 a.m. Talk-in on 147.26 (+), pl 114.8. For more information: LCARA Swap Meet, P.O. Box 906, Longview, WA 98632; or call Bob, KB7ADO, at 360/425-6076 in the evening. Email to KB7ADO@aol.com.

WISCONSIN

The Marshfield Area ARS Hamnic Sunday, 02 August 11 a.m. at Wildwood Park Shelter, Marshfield, WI. For information contact: Guy Boucher, KF9XX, 107 W. Third Street, Marshfield, WI 54449; 715/384-4323; guyboucher@tznet.com; packet: kf9xxx@w9ihw.e5.ai.wi.usa.na.

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Headquarters.

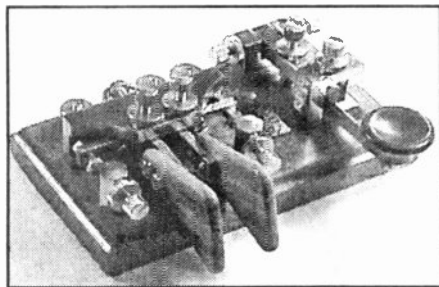


This is not it.

New Products



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



LTA Keys, Paddles & Bugs

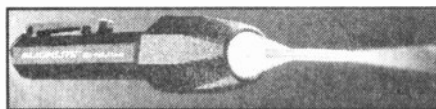
Morse Express has is now an authorized seller of keys, paddles and bugs from Llavas Telegraficas Artisanas ("Telegraph Key Craftsmen," or "LTA") in the Balearic Islands of Spain. The keys are hand assembled on polished wood bases with solid brass mechanical parts (optionally gold plated), teak knobs on the straight keys, and olive-wood finger pieces on the paddles.

The range of LTA instruments includes three straight keys, a dual paddle, a semi-automatic bug, a combination straight key and paddle, and even a "cootie key" or side-swiper.

The LTA line represents exceptional craftsmanship and value, the GMP miniature straight key in brass is priced at \$49.00, and only \$10.00 more for the gold plate version. The most expensive of the series, a combination dual paddle and straight key, is only \$119 in brass or \$139 in gold plate.

Credit card orders can be placed by calling Morse Express toll free on 800/238-8205. For further information about the LTA keys or Milestone's other products, contact Marshall on 303/752-3382 or write to him at Morse Express, 3140 S. Peoria St. Unit K-156, Aurora, CO 80014-3155.

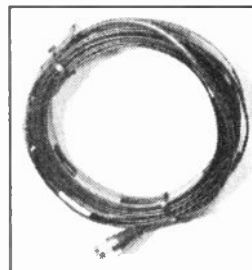
E-mail can be addressed to Marshall at N1fn@MorseX.com. Morse Express also has a website, which offers secure on-line ordering and images of the LTA products. The URL is www.MorseX.com or www.mtechnologies.com.



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The world's first alignment tool with a light. This handy tool makes it easy to see and access small electronic components in limited light. The 6000 candlepower xenon beam lights up the darkest areas of electronic equipment chassis. When the AlignLite tool is detached you can use the light as a pocket light. It's submersible to 500 feet and is made of chemically resistant Xenoy. Includes two different sized alignment tool screw tips, 2-AAA Energizer batteries and two vision aid lenses (red and blue/green).

For more information: Pelican Products, 23215 Early Avenue, Torrance, CA 90505; 310/326-4700; fax 310/326-3311; www.pelican.com.



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MFJ's 6 Meter J-pole is an omnidirectional full-size halfwave antenna with low angle radiation that consistently outperforms 1/4 wave antennas.

MFJ-1736 can hang just about anywhere. It's made of 156 inches of sturdy 450 Ohm ladder line and fitted with a short length of RG-58 coaxial line and a PL-259 connector.

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The price for the MFJ-1736 is \$24.95. To order or for your nearest dealer, call 800/647-1800, FAX 601/323-6551, e-mail: mfj@mfjenterprises.com; web site: www.mfjenterprises.com.

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(800) 854-6046

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Sacramento, CA 95824
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Ham Radio Outlet
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(800) 444-9476

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Atlanta, GA 30340
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(800) 444-7927

Ham Radio Outlet

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Sunnyvale, CA 94086
(408) 736-9496
(800) 854-6046

Ham Radio Outlet

2492 W. Victory Blvd.
Burbank, CA 91506
(818) 842-1786
(800) 854-6046

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1509 N. Dupont Hwy.
New Castle, DE 19720
(302) 322-7092
(800) 644-4476

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(800) 444-0047

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VE exam schedules

As a service to our readers, *Worldradio* presents a feature listing of those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is three months in advance. For example, if your VE group is scheduling an exam for December, please have the information to us by mid-September. *Worldradio*, 2120 28th St., Sacramento, CA 95818. Please mark the envelope "VE Exams." List the location (City), any information examinees should

have (advance registration, etc.) and the name and telephone number of a person to contact for further information. Examinees should bring their original license (along with a photo copy), two forms of identification (at least one should be a photo), and required fee.

p/r pref=pre-register preferred but w/i OK w/i=walk-in only
p/r=pre-register only—no w/i w/i pref.=w/i preferred to p/r

State	City	Contact	Notes	State	City	Contact	Notes
Arizona				Nevada			
9/12/98	Tucson	Joe, K7OPX 520/886-7217	w/i	9/19/98	Minden	George, WW7E 702/265-4278	w/i pref.
California				New Jersey			
9/08/98	Arcadia	Denny, W6VRK 818/358-1480	p/r pref.	9/17/98	Bellmawr	Diane, N2LCQ 609/227-6281	w/i
9/24/98	Colton	Harold, AB6RN 909/825-7136 days or 909/685-6073 eves	p/r pref.	9/12/98	Cranford	24-hour hotline 973/377-4790	w/i pref.
9/26/98	Culver City	Scott, K6PYP 310/459-0337	w/i	9/12/98	Pennington	Don, AA2F 609/737-1723	p/r pref.
9/05/98	Culver City	Clive, AA6TZ 310/827-2538	w/i pref.	New York			
9/12/98	Cypress	Harrison, AC6TI 714/952-6114	w/i	9/08/98	Bethpage	Bob, W2ILP 516/499-2214	w/i pref.
9/26/98	Escondido	Harry, WA6YOO 760/743-4212	p/r	9/12/98	Long Island	Al, W2QZ, 516/623-6449	w/i
9/01/98	Fremont	Dennis, K6DF 510/791-0914	w/i only	9/06/98	Yonkers	Emily, AC2V 914/237-5589	w/i ok
9/12/98	Harbor City	Elvin, N6DYZ 310/325-2965	p/r	North Carolina			
9/26/98	Lake Isabella	Ham HOTLINE 760/379-2947	p/r pref.	tba	Brevard	Harrison, KO4RV 704/877-4757 or 704/883-9096	
9/28/98	Montclair	Steve, 909/597-2249	w/i pref.	9/19/98	Concord	Bobby, AE4ZQ 704/932-9430	
9/06/98	Oakland	Vern, AA6YE 510/233-4504	p/r pref.	9/12/98	Leicester	Larry, WB4PLA 704/683-1400	w/i
9/19/98	Pablo Verdes	Paul KITKL 310/644-2271	w/i	9/5&6/98	Shelby	Norman, N4NH 828/253-1192	
9/19/98	Redwood City	Joe, KB6OWG 408/255-9000	w/i only	Ohio			
9/13/98	Sacramento	Dick, N6DK 916/383-2113	p/r	9/05/98	Cincinnati	Herb, WA8PBW 513/891-7556	w/i pref.
9/12/98	San Pedro	Elvin, N6DYZ 310/325-2965	p/r pref.	9/01/98	Clyde	John, N8RFK 419/684-7822	p/r pref.
9/12/98	San Rafael	Steve, AJ6Y 415/898-8123	p/r pref.	9/26/98	Van Wert	Robert, KA8IAF 419/795-5763	p/r pref.
9/12/98	Sta. Barbara	Nancy, WR6V 805/967-4473	p/r pref.	Oregon			
9/19/98	Santa Rosa	Recording, 707/579-9608		Tuesdays	Bend	Bill, K7ZM 541/389-6258	p/r only
9/19/98	Sebastopol	Recording, 707/579-9608		9/16/98	Florence	Hal, N7NNA 541/997-2323 or Bob, KH7VA 541/997-1222	p/r pref.
9/19/98	Stockton	Mark, W6DKI 209/465-7496	w/i	9/11/98	Grants Pass	Clyde, AA7WC 541/474-0205 or Gary, KB7CFI 541/474-7974	p/r pref.
9/12/98	Sunnyvale	John or Gordon 408/255-9000	w/i only	9/26/98	Klamath Falls	Brad, KG7OK 541/883-1737	p/r pref.
9/26/98	Upland	Warburg, WA6HNC 909/949-0059	p/r	Pennsylvania			
Colorado				9/05/98	Erie	Norma, W3CG 814/665-9124	w/i only
9/12/98	Denver	Glenn, WØIJR 303/366-0155	w/i pref.	9/03/98	Philadelphia	Dusty, ND3Q 215/879-0505, 215/482-0386, 215/448-1139(tape)	p/r pref.
Florida				9/21/98	Telford	Joe, W3PNL 215/723-6697	p/r pref.
9/19/98	Melbourne	Bill, WB9IVR 407/724-6183	p/r pref.	Puerto Rico			
9/15/98	Middletown	Paul Lux, K1PL 860/635-1742	p/r pref.	9/26/98	San Juan	Victor, KP4PQ 787/789-4998	w/i
Georgia				Rhode Island			
9/05/98	Ellijay	Hugh, 4D4E or Dorothy, N4DTC 706/276-6660	w/i	9/10/98	Providence	Judy, KC1RI 401/231-9156; Al, NN1U 401/454-6848	w/i pref.
9/19/98	Gainesville	Terry, K4FB 770/967-6364		South Carolina			
Idaho				9/12/98	Greenville	Sue, N4ENX 864/967-0001	w/i ok
9/12/98	Boise	Lem, W7JMH 208/343-9153	w/i pref.	9/19/98	Sumter	Dan, WB5SGH 803/775-9106	w/i ok
9/23/98	Grangeville	Larry AB7GY 208/983-2163	w/i pref.	Tennessee			
Illinois				9/26/98	Greeneville	Abner, KC4YVR 423/639-6495	
Anytime!	Burr Ridge	Arbonne RC Deni, W9DS 630/986-0061	p/r	9/12/98	Henry County	Mackie, W4MG 901/247-5489	
9/15/98	Dekalb	Lynn, AA9NA 815/824-2942		9/17/98	Jasper	Edgar, KF4CJ 205/597-3863	
9/12/98	Oak Forest	David, NF9N 708/448-0580	p/r pref.	9/19/98	Knoxville	Ray, W4CPA 423/687-5410	
Indiana				9/07/98	McMinn Cnty	Evan, WA4PNI 423/263-9300	
9/12/98	Indianapolis	Ray, K1HG 317/788-7448 or Mark, W9MAM 317/788-7448	p/r	9/19,26/98	Memphis	Stan, AC4CQ 901/758-0661	
Kentucky				9/19/98	Morristown	John, AD4JB 423/581-4227	
9/14/98	Hazard	John, K4AVX 606/436-5354	w/i	Texas			
9/12/98	Irvine	Dwaine, W4AIA 606/723-4500	w/i	9/26/98	Brownsville	Bob, K5VC 210/542-7449 (days) or 210/546-4779 (eves)	p/r pref.
9/12/98	Radcliff	Rick, AD4SM 502/352-2361 or Harold, AI4HB 502/352-0825		9/05/98	Harlingen	George, K5MRT 210/797-1762	w/i ok
Maryland				9/08/98	Houston	Harold, ND5F 713/464-9044	p/r pref.
9/19/98	Manchester	Ed, 410/239-8488	p/r pref.	Virginia			
Massachusetts				9/10/98	Chesapeake	Pat, KE4URC 421-9598	p/rf
9/19/98	Melrose	Scott, WB1F 617/665-7654	p/r pref.	9/26/98	Gloucester	Harry, N4THN 804/642-3517	p/r pref.
Minnesota				9/20/98	Virg. Bch	Ed, W4RTZ 804/898-8031	p/r pref.
9/05/98	St. Paul	Ed, WØVC 612/636-0108	p/r pref.	Wisconsin			
Michigan				9/19/98	Appleton	George, W9MDP 414/730-0967	
9/12/98	Marquette	Richard, N8GBA 906/249-3837	p/r pref.	9/12/98	Sheboygan	Pahr, K9XJ 920/876-2370	p/r pref.
Missouri							
9/19/98	St. Louis	Ron, KBØDIY 314/510-3223	p/r				

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(continued from page 26)

other modes, in spades. It doesn't appear that he's proposing to shut down 75 Meter sideband activity.

I didn't like CW so much while I was learning it, but in retrospect, it wasn't that hard to get to 20 wpm. With consistent effort, I managed to go from 5 wpm to 20 wpm in four (4) months. By the time I reached 20 wpm, I had developed more than a healthy respect for CW; it had become my favorite mode. Until you've "walked the walk," you have no right to criticize the path. I would respect Mr. Mayer's opinion on this subject much more if he had an Extra Class license. To me, he just sounds like another guy who wants all the spectrum without having to put forth any significant effort for it.

**STEVEN R. SCHMIDT, K4WA
Norcross, GA**

License class bigotry

The April 1998 "FM & VHF" column in *Worldradio* discusses what the author defines as "license class bigotry" and blames that for the rude, irresponsible talk and incursions into band segments that are recognized as non-FM segments by band plans, tradition, and just plain common sense regarding mode incompatibility.

Licensees in every license class except no-code Technician are blamed for a serious deterioration of courtesy, protocol, and compliance with FCC rules. Technician perpetrators are totally absolved of any culpability in these violations. It is vaguely implied that what the interlopers are doing is acceptable

and legal. Wrong! Willful and/or malicious interference is a direct violation of FCC Rules.

Later in the article, the real reason for the problem appears, although it apparently is not recognized. Quoting the article — "By now it has to be obvious to all that the majority of code-free Technicians have come to Amateur Radio as 'communicators'. A handful may be involved in public service work, but very few are experimenters. Most are people who just want to communicate — primarily with other members of their family unit, and by their own admission, have no real interest in becoming a part of the established Amateur Radio community."

Well, imagine that! I sure hope that did not come as a big surprise to anyone, because that result was cast in concrete in 1991. Greed and incompetent leadership usually paves the road to failure. Amateur Radio is not immune.

**FRANK PITMAN, K1FP
Rome, Georgia**

Updating Callbook listings via e-mail

The Radio Amateur Callbook now lets you update or correct your listing in the CD-ROM by e-mail. Station licensees may send changes to 103424.2142@compuserve.com or ral@injersey.com. The Callbook CD-ROM appears in May and November. The Callbook stopped publishing its hard-copy editions last year. — ARRL Letter

ADVERTISERS' INDEX

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Antique Radio Classified — 51	KO6YD Designs/Confluent	RF Parts — 23
Bilal Co. — 48	Designs — 34	Rotor Doctor — 17
Buckmaster Publishing — 28	Lakeview — 35, 63	Spectrum Electronics — 36
Caps Unlimited — 38	License Certification Service — 25	Stephen D. Carver, Ltd. — 31
Courage Center — 56	MFJ Enterprises, Inc. — 14, 15	SultanTronics — 40
Cubex Company, Inc. — 17	NiCd Lady, The — 19	T.J. Antenna Co./Nott LTD — 19
Davis RF Company — 18	Norm's Rotor Service — 6	Universal Radio, Inc. — 24
Electric Radio — 20	Omega Electronics — 12, 44	Van Gorden Engineering — 7
Embedded Research — 52	One of a Kind Custom Jewelers — 40	Vintage Radio Kit — 51
Emtech — 52	ONV Safety Belt Co. — 30	Visit Your Local Radio Store — 66
Engineering Systems, Inc — 54	Paddlette Company — 53	W9INN Antennas — 29, 50
EQF Software — 60	Palomar Engineers — 39, 55, 57, 61	Wheeler Applied Research Lab — 13, 16
GGTE — 42	PC Electronics — 26	Wilderness Radio — 53
Glen Martin Engineering — 27	Petersen Radio Co., Inc. — 34	Worldradio Books, Hats & Mugs — 11, 22, 36, 41, 43, 49, 55, 58, 59, 62, 70, 71
H. Stewart Designs — 35, 64	PROLOG/Datamatrix — 29	Yaesu — 5
Ham Radio Outlet — 33	QCWA — 50	
IMRA — 38	QSLs by W4MPY — 8	
Jade Products — 39		
Kantronics — 21		

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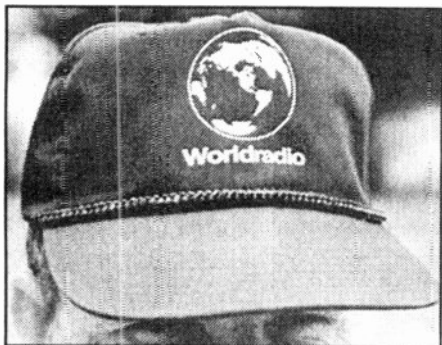
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WORLD RADIO, August 1998 71

Field Day '98!

RICK M^cCUSKER, KO6DJ

Once again, the biggest event in Amateur Radio has faded into the sunset. And with its passing, spouses, children and pets will now get the attention they deserve. We should all be thankful that they put up with our being away for this event.

The *Worldradio* staff club, WR6WR, was located 35 miles east

of Sacramento, in the area of Wilton, California. We were fortunate to get permission to use a 20-acre parcel, with a 75-foot hill located at the west end of the property.

The motorhome serving as the station was on top of the hill with the antenna supports. We had a 50-foot mast up, supporting the center feed-point on a V-beam antenna pointed east, with two 500-foot legs at 64° and 95°. The hill provided just enough slope to keep the V-beam off the ground. A Butternut vertical at ground level, and with several radials laying on the ground completed the antenna setup at WR6WR.

A Vectronics tuner was used on the V-beam, and an MFJ tuner handled

the vertical. A Yaesu FT-890 and FT-757 were used as the transceivers.

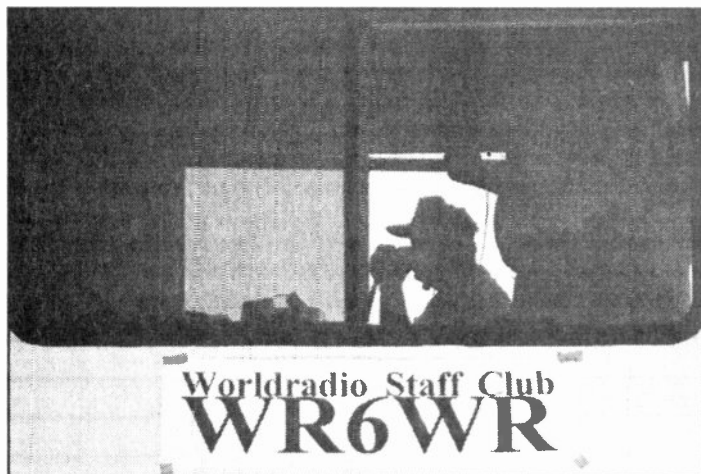
An amazing run on 40 Meters by Norm Brooks, K6FO helped our score tremendously. His run was almost matched by a run on 80 meters in the wee hours of Sunday morning by Rick M^cCusker, KO6DJ. And Armond Noble, N6WR, was impressive with his run of 37 stations in 35 minutes on 20 Meters!

As our effort came to a close, plans were already being formulated for next year. Thanks to all who recognized "WR6WR" as belonging to *Worldradio*. Among those stations to say hello were KH6RS with Randy at the controls, W9AA, AD6EN, W6VM, N7IHI and W4XI.

It was fun to hear someone say, "Hey, aren't you the *Worldradio* station?" Yes, we are, and wait until you hear our signal next year! ☺

How was your Field Day?

Send us your Field Day story. Why not share your experience with other clubs? There is always room for improvement in our efforts, so let's hear what worked and what didn't. And we'll even change the names to protect the innocent! So send in your story (and photos) now!



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