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Worldradio

Year 26, Issue 5

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NEWSFRONT

Worldradio

Some information has been supplied to *Worldradio* Newsfront courtesy of *Newsline*.

Hurricane Fran

Packing winds in excess of 105 miles per hour, Hurricane Fran hit the United States along the Carolina shoreline near Cape Fear at about 10 p.m. Eastern time on Thursday, 5 September. According to the Reuters news agency, ham radio operators in Myrtle Beach, South Carolina, clocked winds in excess of 120 miles per hour in their reports to the National Weather Service. The storm submerged beach towns, ripped steeples off churches and snapped trees into sticks as it roared through the Carolinas. At least a dozen people were left dead in its wake.

According to news reports, ham radio was a vital link in coordinating all aspects of this emergency. When the Shenandoah National Park closed Skyline Drive in Virginia and evacuated visitors, ham radio carried a part of the message. Hams also assisted in the pullout of over a half-million tourists and residents ordered to evacuate the coast in North and South Carolina. More than 19,000 people packed shelters overnight, shelters manned by volunteer workers, side by side with ham radio communicators.

Earlier in the day, hams were put on alert as Hurricane Fran approached the southeastern coast. Much of the activity was on 75-meter SSB with South Carolina ARRL section manager Mike Epstein, KD1DS, activating an ARES and RACES net with the state SSB net serving as backup. The Georgia state emergency SSB net was on 3.975 kHz while the Virginia state emergency nets held forth on 3.910 kHz and 3.947 kHz, respectively.

Jerry Herman, N3BDW, reports that the Hurricane Watch Net was activated on 14.325 MHz in coordination with the National Hurricane Center station W4EHW, in Miami as the storm approached.

One of the big casualties of Fran has been cellular telephones. In reality, cellular phones are nothing more than a radio link to the wired telephone network. When the wires come tumbling down everyone tries to use their cellular phones. The remaining lines get overloaded and service goes away. That's where Amateur Radio takes over.

Regarding the National Weather Service, many hams put themselves at risk to keep their communities and the NWS informed of Fran's devastation on a local level.

On the cover. . .

Here are some QSLs from our Lifetime subscribers who live in various DX countries. We hope you enjoy them.

ARRL seeks changes in RF safety rules

The ARRL will seek reconsideration of certain aspects of new RF exposure safety rules as they apply to the Amateur Radio service. The League's executive committee has authorized the filing of a petition for partial reconsideration of the Report and Order in the FCC's RF safety Docket 93.62. The League will claim that the data used in formulating the new rules was flawed and therefore the action taken to create them is arbitrary and shortsighted.

K7UGA suffers minor stroke

Amateur Radio's elder statesman has been hospitalized in Phoenix, Arizona. Retired Senator Barry M. Goldwater, K7UGA, was admitted to Saint Joseph's Hospital 9 September, after suffering what family members call a minor stroke.

According to his daughter Joanne Goldwater, her father had gone to the hospital for some tests. During the evaluation it was found that he had suffered the stroke. A hospital spokesman confirmed that the stroke was very minor and that Barry had not suffered any paralysis. The spokesman says that K7UGA's release from the hospital will depend on the results of further tests.

President Clinton visited Senator Goldwater in his hospital room on the 11th. He later told reporters that Barry spoke very clearly and that the well-known Goldwater smile was the same.

Get well wishes can be sent to Barry Goldwater, K7UGA, at his *Callbook*™ address.

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Our goal is to be a valuable resource of ideas and experiences beneficial to the Amateur Radio community. We publicize and support the efforts of those who bring the flame of vitality to this avocation. You readers are participants — an alliance of active radio amateurs concerned with reality, using radio as a communications tool to develop the skill, quality and full potential of Amateur Radio.

We emphasize the positive aspects of this great activity, and desire your contributions dealing with dramatic, personal and humanitarian uses of Amateur Radio. Articles for consideration may be submitted through the U.S. Postal Service or e-mail to kb6hp@ns.net

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Publisher's Microphone

Here are the latest to hear the resounding cheer of the crowd. The most recent ***Worldradio*** Super-Boosters (Lifetime Subscribers) are:

- **Ernesto Cardona, KP4AWI, San Juan, PR**
- **J. P. Pilus, N2JGS, Cornwall, NY**
- **Steve Kralick, K3DEM, Dozier, AL**
- **Daniel Weinberger, AAØOL, Goodland, MN**
- **R. M. Murray, NV3L, Omaha, NE**
- **Keith Mack, AC5IA, Denham Springs, LA**
- **Milton O'Hara, Jr., AA6ON, Santa Clara, CA** (KN2OUO in 1959, K2OUO in 1966)

*

Regarding the ***Worldradio*** QSO Party (1st weekend in June, 1997) Frank Fabozzi, WB2BTJ, Bronx, NY, suggests: Subscribers and non should enter and have two winners, one in each category or have subscriber-to-subscriber two points and non-sub-to-sub at one point. And Life Subscribers should count more points. He also felt that the contest should run 36 hours but only work 18 of it as many hams have to work on the weekends.

We also expect to have software developed in time so the contest can be computer logged.

To the right is a promotion piece worked up by the Santa Barbara (CA) ARC. It's the best worded advertisement for Amateur Radio that I have ever seen. I'm sure they wouldn't mind (and in fact would encourage) your use for your club.

—Armond, N6WR

NEW

Compact Dual Band Mobile FT-8000R

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  TX: 144~148 MHz
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- Crossband Repeat (bidirectional or one-way)
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What time is it?

Dave Casler, KEØOG

When you tell your daughter to be home at 6 p.m. for dinner, everyone involved knows exactly what you mean. There's no ambiguity. Just look at any clock or watch and it tells you the time, right?

And it works the same way on the radio. When someone on the repeater says the club meeting is at 7 p.m. we all gather at the same time. Simple, yes? No. It's not simple. When communicating on our local BARC (Boulder, Colorado Amateur Radio Club) repeater, everyone within range has their clocks set to Mountain Standard Time. But when you get on HF, you could be talking to someone in Zanzibar. If you give them a hearty "good morning" as they look out the window at the setting sun, it would come across as rather odd.

When we send the ham in Zanzibar a QSL card, wouldn't it be nice if the time we put on the card corresponds to the time the Zanzibar operator has in his log? Or if we set up a schedule to meet on the air at a certain time, we need a common way to establish just when that time is.

Radio operators are not the only folks with this problem. In fact, up until U.S. railroads had to set up schedules for their trains, each locality had its own time reckoning, based on local noon (defined as the sun being at its highest point). The railroads solved this problem by dividing the U.S. into four standard time zones — within each time zone, people would use a "standard" time. That usage has stuck — Mountain Standard Time, for example. Local noon is slightly different in each locality as you go from east to west, but with "Standard Time," everyone uses the same time reference.

As undersea telegraph cables spanned the globe, followed by international radio links, the need to do this on a global basis became apparent. It was adopted dividing the world into 24 basic time zones, roughly 15 degrees apart (totaling 360 degrees — all the way around the world). I say "basic," because there are still several areas of the world that fit themselves in between these time zones — they are not an integer number of hours different from us.

But where was the "zero hour" or baseline to be set? By convention, the whole system would be synchronized to local noon at the Greenwich Observatory, just outside London. Why Greenwich? When navigation issues were being grappled with in a major way, Britannia ruled the waves. That's why.

We call a "day" the period from local noon to local noon. We divide this into hours and minutes and seconds. The problem is that the earth (yes, our dear, stable mother earth) wobbles. Therefore a "second" (the basic unit of time) varies a twitch from day to day. So, people figured out a way to average this over a period of time. Another term for an average is a mean. So the world's standard time became Greenwich Mean Time, meaning an astronomically correct time that was smoothed out according to a certain algorithm.

As the need for time synchronization became more pressing (some systems have to be coordinated down to a few nanoseconds), GMT just wasn't good enough. For one thing, a "mean," or average, varies with time. People looked for better time references. A variety of time signal sources have been explored, and the atomic clock was invented and is now in wide use. It turned out the cesium atom has some state transitions that are extremely repeatable and are measurable without too much trouble. The cesium atomic clock is "primary" standard, in that it can be made repeatable without having to be calibrated to some other source.

Let's dig into NIST Special Publication 559, Time and Frequency Users Manual:

"The international standards community defines a second as 9,192,631,770 of these oscillations of a cesium atom, rather than 1/86,400th of an astronomical day."

This is far more repeatable. It ignores the wobbling (dear me!) of our planet earth. Two people, widely separated, can use a cesium standard to measure time intervals independently of each other and come up with the same (or very nearly the same) answer and can synchronize events, without the ambiguity introduced by the earth's non-uniform rotation.

What does all this have to do with the radio ham? Here's what: Since scientists can't leave well enough alone, they decided that the method of determining GMT wasn't good enough. They developed a new algorithm, somewhat similar to GMT, to determine time.

Actually, several different kinds of time. The first few are based on astronomical time (meaning the earth's rotation). But UTC is not!

UT0 is the mean solar time of the prime meridian obtained from direct astronomical observation.

UT1 is UT0 corrected for the effects of small movements of the earth relative to the axis of rotation (polar variation). This is the time used by navigators who reference the stars and whatnot, as it tells you where the earth is in its rotation at any given time.

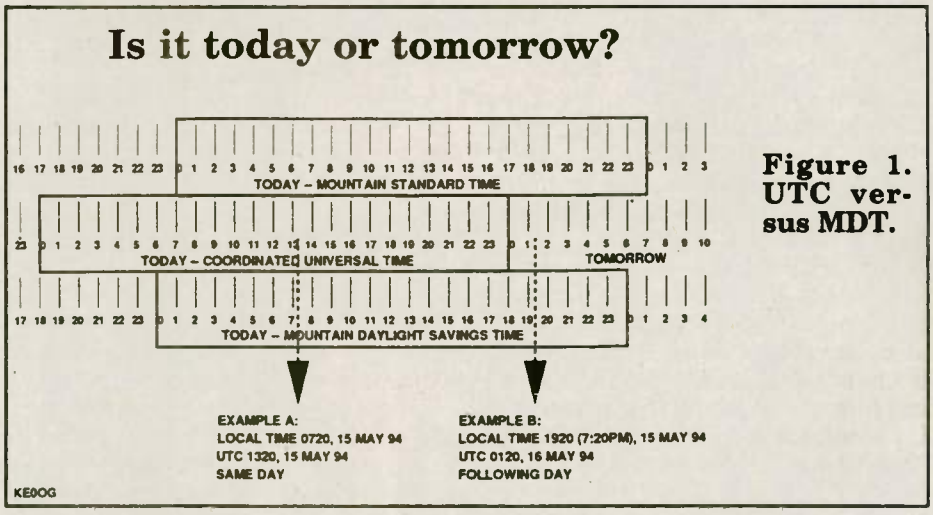

Figure 1. UTC versus MDT.

UT2 is UT1 corrected for the effects of a small seasonal fluctuation in the rate of rotation of the earth. This time is not used by navigators because it is too smooth!

And, finally, UTC. The C stands for Coordinated. Here's how it works. UTC uses atomic seconds, not astronomical seconds. Each second in UTC is an atomic second. It corresponds to TAI (international atomic time — the initials are from the French words) exactly except it differs by an integral (whole) number of seconds. That's because UTC is adjusted so that it is within nine tenths of a second of UT1. If the earth slows down, UT1 slows down with it, but UTC keeps right on trucking — to the point where there's a time difference of greater than 0.9 seconds. When it gets to this point, a leap second is added (usually) or subtracted to coordinate UTC with UT1.

The addition or subtraction of a leap second is very widely publicized in advance — it's usually done at midnight on 31 December when it's needed. (Yes, the earth is slowing down with time. That means a UT1 second gets longer — so you have to add a second here and there to UTC to make it catch up — the last minute of the year may have 61 seconds!).

Gee, that's nice, you say (personally, I find this whole subject fascinating!). Our legal time is tied to UTC. We are a whole number of hours apart from UTC — to be exact, while on Mountain Standard Time here in Colorado, we are seven hours behind UTC (leap seconds included).

UTC provides a universally understood way of telling time that is the same around the world. It doesn't matter where you are, UTC is the same. You can be in Afghanistan, Zanzibar, New Zealand, Rwanda, Switzerland, or even Texas and UTC means the same to everyone. UTC does not change when we go to daylight savings time.

And this is why hams universally use UTC when using HF radio. Hams may call it GMT, Zulu, or whatever, but they really mean UTC. (Remember that GMT is an astronomical time — it differs every so slightly from UTC). So when you talk to a DX station, he's logging the time in UTC. You should too.

Note also the tall HF shortwave broadcast stations keep their schedules in UTC.

Many hams operating HF keep a 24 hour clock in their station (readily available from suppliers such as MFJ) set to UTC. That way they can jot the UTC time in their logs without having to make the mental calculation every time. Note, however, that there is one little catch to all this.

Figure 1 shows the relationship between UTC and MDT. Look at Example A. In the example, it's 7:20 am (or 0720 military style) on 15 May. That's 1320 or 1:20 p.m. (the rest of the world uses military style, so you'll always see it as 1320 on QSL cards from DX stations) on 16 May. But look at example B. It's 1920 local time (okay, okay, 7:20 p.m.) on 15 May. But the 15 May UTC day has already ended. 16 May has begun. So, 1920 local 15 May, is 0120 UTC 16 May — the next day! This is a very important point! The new UTC day starts here at 6 p.m. in my time zone (during Daylight Savings Time). I've seen this mistake over and over — another ham sends me a card with the right time and the wrong day.

Imagine if you're sending a card to a DXpedition and they have several hundred contacts a day. If you put the wrong day down, your listing could be many pages away in the log from where they look, and you won't get a QSL in reply.

Since accurate radio time (and day) is so important for logging and reporting (and for finding programs if you are listening to the shortwave broadcasts), what are the sources of UTC so you can set your clock to the second? The most commonly used by hams is WWV. WWV is a radio station operated by the National Institute of Standards and Technology (NIST). It is located in Ft. Collins, Colorado, and broadcasts the time 24 hours a day.

There is a sister station, WWVH, in Hawaii. These stations broadcast on 2.5, 5, 10,15 and 20 MHz. Your HF receiver may tune to one of these stations (all the newer ones do). They broadcast in AM. They announce the time every minute, in UTC. Around here, the 5 or 10 MHz broadcasts seem to come in most clearly. Sometimes the Hawaii station is as loud as the Ft. Collins station (Hawaii announces in a woman's voice before Ft. Collins announces in a male voice).

You can also call a local number, and hear what WWV is broadcasting. (The NIST atomic clock is here in Boulder — yes, we really do keep the nation's time.) —*Barc's Bark* WR

Every once in a while we include something which is not an FCC Highlight, but because we think it is pertinent to Amateur Radio allocations and usage. This month we are including two such articles.

One is on objections of the General Mobile Radio Service organization to sharing their bands with the new Family Radio Service.

Another item concerns a bill introduced by Wisconsin Senator Russ Feingold which would give state, county and local governments the ability to regulate interference from CB radios. Before you say "it's about time," consider the possibilities if such action was extended to other services.

Biohazards of non-ionizing EM radiation

At the FCC Open Meeting on Thursday, 1 August, the Commission adopted a Report and Order in ET Docket No. 93-62 concerning Guidelines for Evaluating the Environmental Effects of Radio frequency Radiation. The text of the Report and Order is already posted at the Commission's web site (http://@.fcc.gov) and may be downloaded in either WordPerfect or Acrobat format by going to the page.

The Telecommunications Act of 1996 required a timely resolution of this proceeding. The Commission had proposed to update its guidelines by using the 1992 ANSI/IEEE standards instead of the 1982 ANSI standards that had formed the basis for the existing rules under which Amateur Radio stations were categorically exempted.

Under the rules just adopted, and following a transition period that will end on 1 January 1997, only amateur stations with transmitter powers of 50 W PEP output or less will be categorically exempted. Operators of other amateur stations will have to abide by the following new rules:

Section 97.13 is amended by adding paragraph (c) to read as follows: 97.13 Restrictions on station location.

(c) Before causing or allowing an amateur station to transmit from any place where the operation of the station could cause human exposure to levels of radiofrequency (RE) radiation in excess of that allowed under 1.1310 of this chapter, the licensee is required to take certain actions. A routine RF radiation evaluation, as discussed in 1.1307(b) of this chapter, is required if the transmitter power exceeds 50 watts peak envelope power; otherwise the operation is categorically excluded from routine RF radiation evaluation except as specified in 1.1307(c) and 1.1307(d) of this chapter. Where the routine evaluation indicates that the RF radiation could be in excess of the limits contained in 1.1310 of this chapter, the licensee must take action to prevent such an occurrence.

Further information on evaluating compliance with these limits can be found in the FCC's OST/OET Bulletin Number 65, "Evaluation Compliance with FCC-Specified Guidelines for Human Exposure to Radio frequency Radiation."

Amateur examinations for Novice, Technician, and General licenses will be expanded to include 5 additional questions each on RF environmental safety practices.

Note 1: We understand that the ARRL has asked for a postponement on the matter of new examination questions on RAD HAZ.

Note 2: This debate on thresholds of injurious radiation goes on and on. The aforementioned 1992 IEEE Standard includes a brief historical

Amateur Radio Call Signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of the first of September 1996.
For more information about the call assignment in the Amateur Radio Service, see Section 97.17(f) of the FCC Rules, or write to the FCC, Consumer Assistance Branch, Gettysburg, PA 17325-7245. *2x1 call signs are available for these groups.

Radio District	Group A Am Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
Ø	ABØCR	KIØEG		KBØYJM
1	AA1QM	KE1FY	N1XUO	KB1BZG
2	AB2BZ	KG2IE		KB2ZTL
3	AA3OV	KE3XL	N3YAE	KB3BPY
4	AE4XV	KT4VI		KF4LTZ
5	AC5JP	KM5CV		KC5VZK
6	AC6XH	KQ6IX		KF6GBD
7	AB7SJ	KK7AN		KC7SNL
8	AA8XU	KG8YK		KC8ETM
9	AA9TF	KG9HW		KB9OJR
N. Mariana Is.	NHØA	AHØAW	KHØFJ	WHØABF
Guam	WH2X	AH2DB	KH2QT	WH2ANR
Hawaii	*	AH6ØT	KH7BF	WH6DCN
Amer. Samoa	AH8O	AH8AH	KH8DA	WH8ABF
Alaska	*	AL7QR	ALØAQ	WL7CTX
Virgin Is.	WP2X	KP2CJ	NP2JL	WP2AIE
Puerto Rico	KP3L	KP3AI	NP3FG	WP4NMI

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Thank you!

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

Subscriptions received by the 20th of the month will begin with the issue dated two months from the month of receipt, i.e., if we receive the subscription by April 20, your first issue will be June, which will be mailed to you in early May.

summary, as follows:

"In 1960, the American Standards Association approved the initiation of the Radiation Hazards Standards project under the cosponsorship of the Department of the Navy and the Institute of Electrical and Electronics Engineers.

"Prior to 1988, C95 standards were developed by an accredited standards committee C95, and submitted to ANSI (The American National Standards Institute) for approval and issuance as ANSI C95 standards. Between 1988 and 1990, the committee was converted to Standards Coordinating Committee 28 under the sponsorship of the IEEE Standards Board. In accordance with policies of the IEEE, C95 standards will be issued and developed as IEEE standards, as well as being submitted to ANSI for recognition.

"The present scope of IEEE SCC28 is development of standards for the safe use of electromagnetic energy in the range of 0 Hz to 300 GHz relative to the potential hazards of exposure of man, volatile materials, and explosive devices to such energy. It is not intended to include infrared, visible, ultraviolet or ionizing radiation. The committee will coordinate with other committees whose scopes are contiguous with SCC28."

GMRS versus the Family Radio Service

General Mobile Radio Service users do not want to share spectrum with a newly created Family Radio Service that could be a nightmare to control and their lobby group is taking a point position in asking the FCC to enact some major rules changes. The Michigan-based Personal Radio Steering Group filed a Petition for Reconsideration that contends that current FRS rules do not preclude repeaters, nor do they bar the transmission of music and other sound effects. Also not covered is the transmission of obscene or indecent language or issuing phony distress calls.

The Personal Radio Steering Group believes that all of these prohibitions must be put in place and that the FCC must also place a strictly enforced time limit on all Family Radio Service transmissions. It also is asking that FRS users be required to monitor activity on a channel before transmitting.

Wind profilers are back

A new version of an old adversary to Amateur Radio 70 centimeter operation is reappearing, and this time with full government support.

The newest threat to the amateur 440 MHz band has been announced by NOAA, the National Oceanic and Atmospheric Administration. WPRs or Wind Profiler Radar units operating in the 449 MHz segment of the amateur UHF band are scheduled for deployment in the near future to a number of sites throughout the continental U.S..

WPRs will be used to monitor wind velocity and direction. Frequency coordination, spectrum allocations, as well as possible in-band interference are being monitored by the Federal Communications Commission and the International Telecommunication Union.

FCC honors McNamara

Robert H. McNamara, chief of the FCC's Private Radio Division in the Wireless Telecommunications Bureau was among several FCC employees recently honored for advancing the mission and objectives of the FCC, through their sustained extraordinary or exceptional accomplishments.

Bob McNamara received a Distinguished Service Award gold medal. His Private Radio Division regulates the Amateur Radio Service.

Wisconsin Senator seeks local control over RFI

Acting in response to what he says are nearly 45,000 complaints to the FCC every year, first-term Sen. Russ Feingold (D-Wisconsin) has introduced SB-2025, which would give state, county and local governments the ability to regulate interference from CB radios "when that interference results from a violation of FCC rules." Saying his bill "simply allows common sense to prevail," Feingold reasons his measure would give states and localities the ability to investigate and enforce Federal law, "thereby protecting the rights of their residents." The bill would only affect unauthorized CB transmitters or amplifiers. Municipalities could prohibit use of the equipment and levy fines or other monetary sanctions.

Recently, the City Council of Beloit, Wisconsin — reacting to complaints from local residents of interference to home electronic equipment — passed an ordinance that would give that city the power to enforce FCC regulations on CB interference. While the bill is an explicit reversal of the total Federal preemption over telecommunications matters granted by the Communications Act of 1934, it contains a provision reaffirming the continued Federal preemption in handling other types of RFI.

Feingold said he's tried to enlist FCC help in investigating constituents' RFI complaints without success. He said he was told the FCC no longer investigates RFI complaints and offers "only a packet of self-help information for the consumer to limit the interference on their own."

It's all a question of fairness, Feingold says: "It is not fair that municipalities and their residents should be hamstrung by an outdated Federal preemption of laws the Federal government no longer has the resources to enforce." The bill has been referred to the Senate Commerce, Science and Transportation Committee. WR

Oklahoma DX Assoc. 1996 DX banquet

The Oklahoma DX Association says its 1996 DX Banquet will feature presentations by globe-trotting DXpeditioner Vince Thompson, K5VT, and Bill Kennamer, K5FUV, who is the manager of the ARRL's DXCC Program. This year's event will take place on Saturday, 9 November, at the River Oaks Golf Club, located just east of Edmond, Oklahoma. The registration deadline is 31 October, so if you hurry, you might make the deadline. For more information, look on the club's web site at www.pcok.com/~5ogp/okdxa.

News for your repeater

Second part of a two-part series

Bill Pasternak, WA6ITF

New technology

Along with the new voices has come new technology. Remember last month when we told you about the truly ancient Collins broadcast cartridge recorders and players, the machines that let us automate and do away with those tape mail-outs? By 1982 they had been replaced by more modern, all solid-state Spotmaster 3000 broadcaster cart machines from 1982 to 1991, when you called our Hollywood telephone number, you were accessing this type of machine. But the endless-loop tapes and the machines that use them have some major drawbacks. They are expensive, they break easily, and if you got disconnected in the middle of taking a feed, you had to wait until the tape was finished. Only then could you call back to try again.

There had to be a better way, and believe it or not, I found it at Kmart! While browsing through the electronics department, I came across a unique Panasonic answering machine that uses standard audio cassettes. It also seeks silence to reset and rewind, so it is not necessary to record any special control tones onto the outgoing news tape. This meant that the length of the outgoing message and hence the length of the newscast is only limited by the size of the cassette we use. The only question was — could these machines withstand the type of abuse they would face?

Some experimentation showed that the transport was well designed, but the audio quality left something to be desired. Since these were home answering machines, they had remote control capability. This meant that we would be at the mercy of anyone who might want to "play." The first step was to disconnect and disable remote control capability. It just took cutting a few traces on the printed circuit board to accomplish this. Next, the original drive system was replaced with heavy components originally used in Sony broadcast videocassette recorders. Finally, a few more traces were cut, and shielded cables for the audio signals were routed out of the telephone answering machine for audio processing. While a $60 answering machine connected to a $3,000 audio processor may seem strange, it works well and gives the listener the best quality audio that a low bandwidth telephone line can deliver; and if the line drops, the tape immediately rewinds and is ready to try again in a very short time.

The newsroom

There have also been many changes in the news-gathering process. We started with just a telephone and a typewriter. When computers first became affordable, we bought a Commodore 64 and accessories. As it became apparent that IBM compatibles were taking over the wordprocessing market, a Zenith XT took the Commodore's place. That was succeeded by a 386SX16, and more recently a 486DX33.

Computers are only a part of the story, though e-mail, the Internet and the World Wide Web have become an integral part of the news-gathering process. Messaging goes back and forth between many hams who make the news and those who report it. Computers, modems and the Internet have revolutionized the news business. Today, the only paper we use is in printing scripts and paying our bills.

They are legal, too

Newsline bulletins conform to all sections and codes as outlined under the Part 97.113(c) of the Amateur Radio Service rules regarding the legal means by which Amateur Radio operators may issue "QSTs" or "Bulletins of Interest to All Amateurs." It differs only in format and is more like the traditional radio "spot news" show.

Whenever it is possible, *Newsline* stories include the voices of the newsmakers themselves so that you can more easily understand the effect that the story will have on all radio amateurs. If you have ever heard "CBS Network Radio News" or NBC's "News on the Hour," then you will be familiar with the format utilized by *Newsline*, with the exception that the information we provide is strictly directed to radio amateurs.

A quick word for the techies

On a technical level, *Newsline* bulletins are formatted and engineered primarily for distribution on VHF/UHF amateur repeaters and by FM simplex bulletin stations. Audio processing is specifically contoured following the Fletcher-Munson pre-emphasis/de-emphasis curve for these delivery media, however audio quality is more than acceptable for SSB.

There is a text version too

For those who wish a written version of *Newsline*, the text of each script is posted to the Internet and several commercial service providers including the General Electric Consumer Information Service (GEnie) and America Online. The script material is formatted for direct printout or electronic download, though *Newsline* has no business affiliation with GEnie, America Online or any other Internet Provider. Please see Internet Information attached.

The data version of *Newsline* is available for download from the "ham radio" areas on several other services, including America Online, Compuserve and Delphi/MCI. Automatic download is also available over the Internet by subscribing to the Boston Amateur Radio Club information server. This is accomplished by sending a request from your data service to:

listserv~netcom.com.

The text of your message should read:

subscribe Newsline-list

It's all free—kind of

Exclusive of any of your own toll charges, electronic messaging fees, etc. *Newsline* is a free service to the ham radio community. While it provides news and other information to many, *Newsline* is not directly associated with, or in any way funded by, the American Radio Relay League or any other organization, ham radio support business or Amateur Radio lobby group. It is a completely autonomous organization made up of hams who are broadcast professionals who donate their time and talent freely to making the service possible.

But who pays for it?

All participants in the *Newsline* operation are volunteers. There is no paid staff and all funds go directly to defraying operating costs. Since recording facilities are largely donated, the majority of expenses relate to telephone charges, e-mail charges, postal and express shipments, tape stock procurement, transportation and equipment maintenance.

For the first two years, Jim Hendershot footed all the bills. Later, when I took over it was funded by Bill Orenstein and yours truly. When expenses got to a point where the two of us could no longer deal with them, we looked for outside support.

Wanting to avoid any conflict of interest, Bill Orenstein and I decided back in the '70s that we, as the "staff," would not get involved in developing the funding to keep the service in operation. That was handed off to yet another volunteer, Dr. Norman L. Chalfin, K6PGX, who created the *Newsline* Support Fund. For over a decade "Dr. Norm" accepted donations and paid the bills.

At age 79, Norm retired from his job at the Jet Propulsion Laboratory and also turned the reins of the *Newsline* Support Fund over to Andy Jarema, N6TCQ.

Funds donated to *Newsline* go toward paying operating expenses only. *Newsline* speakers you may see and hear at various hamfests have either paid their own way, or have had their expenses underwritten by the convention sponsor. No *Newsline* funds go to paying anyone to attend these events. In fact, we are so tight with our limited resources, that the only way anyone is ever reimbursed—for anything—is if they have a bona fide invoice or receipt. Some hams who know the way *Newsline* operates say that we have learned to ". . . pinch a penny until President Lincoln hollers in pain!" Should there not be enough in the way of donated "pennies," then I get the opportunity to write yet another check.

The address of for contributions is the *Newsline* Support Fund, P.O. Box 660937, Arcadia, CA, 91066.

Looking toward newscast 2000

Will there be a *Newsline* newscast #2000? That I cannot say. What I can promise is that as long as I have my health, the support of those who are a part of the volunteer news team, and the continued financial support of the ham radio community, *Newsline* will be there.

Simply said, after nearly twenty years, not one of us is tired of doing the job. We are people who have spent the better part of our professional careers in and around a newsroom, and "doing" news is a way of life. Bringing you the news and information you need to be a well informed radio amateur is all in a day's work for us. We hope that you will continue to enjoy it for years to come.

Frequently asked questions

Q) I have a story that I think is newsworthy. How can I get it to you?

A) There are numerous ways, but here are the top four. If your news item is for something taking place 2 or 3 months from now—like a DXpedition, contest or hamfest, simply mail it to the same P.O. box listed above. If your story contains late-breaking news, you can call or fax us 24 hours a day at 805/296-7180. This line is automated with voice mail and a fax machine, so even if we are not in the office, the message will reach us. We also maintain several e-mail addresses, with the easiest to remember being: billwa6itf@aol.com. E-mail is checked twice to three times each day.

Newsline on the Internet and www

Q) Didn't you say in the article that you are also sending out *Newsline* audio on the Internet?

A) Recently, several amateurs involved in transmitting audio over the Internet have established audio websites that feature *Newsline*. The first was Bill Levey, WA4FAT, at ACC Bandmaster in Birmingham, Alabama, and it has grown from there. Since there is no standard for Internet audio transmission, each of these websites uses a different and incompatible audio data transfer system. That's the bad news. The good news is that each site has the needed audio drivers available for download. The sites currently available are:

Sponsor: ACCS Labs
Contact: Hank Armstrong KI6JL
E-mail: hank@hank.com
FTP Site: 204.118.4.135
System: Internet Wave
URL: http://www. smartlink.net/~hca3

Sponsor: Bandmaster
Contact: Bill Levey WA4FAT
E-mail: WA4FAT@scott.net
System: True Speech
URL:http://www.scott.net/~wa4fat

Sponsor: TAPR
Contact: Greg Jones WD5IVD
E-mail: wd5ivd@tapr.org
System: Real Audio
URL:http://www.tapr.org/Newsline/index,html

Q) What about a text version. Do you publish one?

A) *Newsline* scripts are posted to

various data distribution sites including our own "home page" on the World Wide Web. The URL is: http://www.rrnet.com/~wd0ako/newsline/index.html

The transcribed version is produced by Dale Cary, WDØAKO, from materials provided by *Newsline* and is jointly distributed to online services and bulletin board networks by Steve Coletti and Dale Cary. You can find it at the following locations:

Internet Newsgroups:

rec.radio.infoor rec.radio. amateur. mis

Contact: David Dodell, moderator of "info" at david@stat.com

E-mail: Send mail to: listserv @netcom.com with the following commands in the body of the message

(the subject is ignored)

To subscribe: subscribe *Newsline* - list

To unsubscribe: unsubscribe *Newsline* - list

For more information: help

For list problems or information on other ham radio related lists from Netcom, e-mail listservowner @netcom.com and be sure to request the attention of Michael Ardai in your note.

The mailing list maintained by bigsteve@dorsai.org for individual subscribers is now closed. No new subscribers will be accepted. All those wanting to receive *Newsline* by e-mail should now use the listserver at Netcom, as described above. Current subscribers are not effected at this time.

The list maintained by wd0ako4 @rrnet.com for BBSs and radio clubs that redistribute *Newsline* remains active and is still open.

World Wide Web: http://www.rrnet.com/~wd0ako/newsline/index.html

or

http://www.accessone.com/~vbook/hronline.html

or

http://www.alinco.com/Hotlinks/Index.html

FTP: oak.oakland.edu pub/ ham radio/docs/Newsline/

Contact: Scott Ehrlich, Boston ARC file librarian at wylz@ ehrlichtronics.com

Direct dial BBSs

Dallas Remote Imaging BBS (DRIG), 214/492-7573, in bulletin number 36. The Midwest Connection BBS, 701/239-2440. In bulletin number 6 of the ham radio conference.

Online services

America Online

Contact: Terry Stader, Sysop at tstader@aol.com

Compuserv - HamNet Library 0 Contact: wd0ako@rrnet.com

Delphi — In the ham radio conference Contact: wd0ako@rrnet.com Genie - RTC Bulletin Board (m345;1) or File Library (m345;3) Contact: Glen Johnson at RADIO. RT@ genie.geis.com

MicroSoft Network — Amateur Radio Files Library, (No contact)

BBS Networks

FidoNet: Echoes; HAMRADIO and AMATEURRADIO, (names will vary per individual BBS)

Contact: Steve Coletti@1:278/230

FREQ; NEWSLINE @ 1:2625/111

Contact; Joe Brown, B2NBN@ 1:2625/111

RIME/RelayNet: Ham Radio Conference Contact: Send RO mail to: Steve Coletti, ->35

Others: In the Ham Radio related conferences on Intellec, I- Link,

AR-Net and Fringenet. Contact: Send private reply to Steve Coletti within the conference. WR

What if . . . made toasters?

If IBM made a toaster, it would be big and blue and they would make just one toaster to which people would submit bread for overnight toasting. IBM would project an eventual worldwide market of, oh, maybe five or six of these big blue toasters.

If MICROSOFT made toasters, you would have to buy a toaster every time you bought a loaf of bread. The new TOASTER '95 would be overpriced, would take up 95% of your kitchen space, would secretly interrogate your other appliances to find out who made them and if you are the rightful owner, and would then falsely claim to be the very first toaster that lets you control the darkness of your toast. Everyone would hate MICROSOFT toasters, but would buy them anyway because most of the good bread will work only with their TOASTER '95. Additionally, once you have a TOASTER '95, it's nearly impossible to get rid of it.

If RADIO SHACK made toasters, their sales associates would try to sell you the entire store-full, but would be able to tell you nothing about any of them . . . and would get angry if you asked. You could also buy the toaster in individually plastic bagged pieces for assembly yourself . . . but you would have to go to at least six stores for all of the essential pieces.

If the ARRL made toasters, they would be highlighted as a continuing feature article in *QST* for several months running and be so complicated and impractical that only the author would ever think about making one. The Government would be petitioned to create an Incentive Toasting scheme . . . the details of which are rather complicated . . . but you would have to be further tested or lose the toaster privileges you already had.

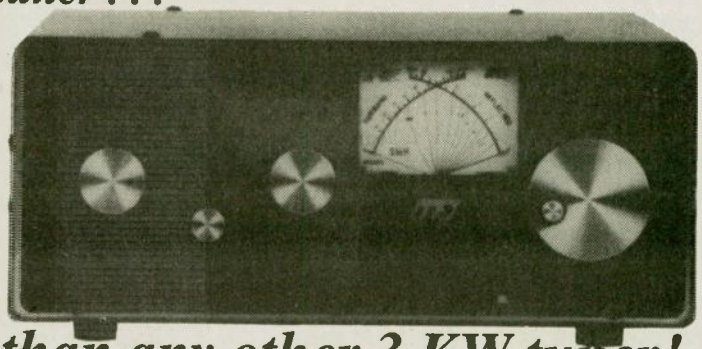
If THE FRANKLIN MINT made toasters, you would receive — each month — a lovely hand-crafted pewter, pre-Civil War, miniature, limited-edition reproduction piece of toast. —*The Newsette,* Nittany ARC, State College, PA

MFJ-989C 3 KW Antenna Tuner

More hams use MFJ-989s than any other 3KW tuner in the world! Why? . . . Because MFJ uses super heavy duty components to make the world's finest 3 KW antenna tuner . . .

In Stock at ham dealers everywhere!
Call your dealer for your best price

$349.95 MFJ-989C



- *New for 1996 -- MFJ AirCore™ Roller Inductor*
- *Super Heavy Duty Components • Made in U.S.A.*
- *Handles 3000W PEP SSB*
- *peak/average Cross-Needle SWR/Wattmeter*
- *Antenna Selector • Balun • Built-in Dummy Load*

More hams use MFJ-989s than any other 3 KW tuner!

MFJ uses super heavy duty roller inductor, variable capacitors, antenna switch and balun to build the world's most popular 3 KW antenna tuner.

The rugged MFJ-989C handles 3 KW PEP SSB and covers 1.8 to 30 MHz, including all MARS and WARC bands.

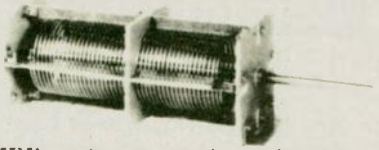
MFJ's new 1996 AirCore™ Roller Inductor, three-digit turns counter and spinner knob gives you exact inductance control for absolute minimum SWR.

You can match dipoles, verticals, inverted vees, random wires, beams, mobile whips, shortwave -- nearly any antenna. Use coax or balanced lines.

You get everything you've ever wanted in a high power, full featured, antenna tuner -- widest matching range, lighted Cross-Needle SWR/Wattmeter, antenna switch, built-in dummy load, balun, convenient flip-stand -- all in a sleek, compact cabinet.

MFJ builds the world's most popular 3 KW antenna tuner using these **super heavy duty** *components . . .*

MFJ *AirCore*™ Roller Inductor



MFJ's exclusive *super heavy duty AirCore*™ Roller Inductor has an air core that can't burn up! You get ultra high-Q, the lowest loss, highest efficiency and highest power handling of any roller inductor in ham radio.

MFJ's exclusive *Self-Resonance Killer*™ keeps potentially damaging self-resonances away from your operating frequency.

Large, self-cleaning wiping contact gives excellent low-resistance connection without arcing or contact burning.

A *solid* ¼ inch brass shaft with self-align bearings gives smooth non-binding rotation.

Some competing "legal limit" tuners use a lossy, low Q, solid core with erratic electrical contacts and have potentially damaging self-resonant frequencies. This can cause excessive heating and can destroy the core.

Massive Transmitting Capacitors

Look inside . . . you'll see two *super heavy duty* transmitting variable capacitors that can handle 6000 volts. Extra wide (0.27 inch) stator plate spacing gives you arc-free operation.

Specially shaped plates give low minimum capacitance when unmeshed. This and a hefty 250 pf maximum give you an extremely wide matching range -- even on 160 and 10 Meters.

The nearest competing "legal limit" tuner has variable capacitors physically *much smaller* than the MFJ-989C's. Theirs is rated at 4500 volts -- a full *25% less* than the MFJ-989C. Theirs is more likely to arc -- *not what you want in a "legal limit" tuner!*

Super Antenna Switch

The MFJ-989C *super heavy duty* antenna switch is made of *two* individual *ceramic* wafers wired in parallel. Extra wide spaced, heavy duty contacts handle extreme voltages and currents. *We've never burned one up!*

You can select two coax antennas (directly or through tuner), balanced line/random wire, or built-in dummy load.

3 KW *Current* Balun

MFJ's *super heavy duty* 3 KW *current* balun for balanced lines uses *two* giant 2½ inch toroid cores. It's wound with *Teflon®* wire connected to high voltage *glazed ceramic* feedthrough insulators.

The MFJ-989C lets you safely operate high power into balanced feedlines without core saturation or voltage breakdown.

Some "legal limit" tuners have inferior *voltage* baluns with smaller diameter toroid cores and use soft plastic feedthrough insulators that can arc and melt.

More reasons why the MFJ-989C is the world's finest 3 KW tuner . . .

Built-in Dummy Load

A full-size 300 watt non-inductive 50 ohm dummy load is built into the MFJ-989C.

You'll find it handy for transmitter tuning, testing and repairing your rig, setting power level, adjusting your mic gain and more.

Some "legal limit" tuners *don't* have a built-in dummy load. They want *you* to pay for an external dummy load that just gets in your way.

Lighted *Cross-Needle* Meter

MFJ's lighted *Cross-Needle* SWR/Wattmeter lets you monitor SWR forward and reflected power *simultaneously*. Read both peak and average power in two power ranges.

Sleek and Compact

The compact MFJ-989C slides right into your operating position -- you'll hardly know it's there. It's just 10¾x4½x15 inches. *Do you really want a bulky "legal limit" tuner that's bigger than your amplifier?*

Superior Cabinet

The MFJ-989C's *premium*, low-profile all-aluminum cabinet has a sub-chassis that adds strength and RFI protection.

Every cabinet is chemically treated and has a tough, scratch-proof vinyl cladding -- not paint that can scratch or chip off. You won't find a tougher, longer-lasting finish anywhere.

Detailed logging scales and legends are *permanently* silk screened on *real* aluminum front and back panels -- they aren't decals or glued-on paper strips that can peel off.

Superior Construction

Every MFJ-989C uses PEM nuts (*not* self-tapping screws), wing-nut for ground post (*not* a cheap nut), fire-retardant epoxy glass PC board (*not* canvas based), heavy guage wire throughout (*not* small guage), locking compound on nuts/bolts (*not* loose hardware).

No Matter What™ Warranty

Every MFJ-989C is protected by MFJ's famous one year *No Matter What*™ unconditional warranty. We will repair or replace your MFJ-989C (at our option) *no matter what* for a full year.

Others may give you a *limited* warranty on defects in material and workmanship.

But what do you do if your "legal limit" tuner burns up and they say, "Sorry, your *limited* warranty does *not* cover that?"

Outstanding Customer Service

We're here to help keep your MFJ-989C performing flawlessly -- *no matter how long you own it* -- just call 800-647-TECH(8324).

Call your dealer for your *best* price

In stock at ham dealers everywhere!

Order today or pick one up at your favorite dealer or hamfest -- no shipping, no waiting.

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MFJ . . . the world's most trusted name in antenna tuners!

600 WATTS . . . $649

More hams use Ameritron AL-811 amplifiers than any other amplifier in the world . . . The AL-811 has earned a worldwide reputation for legendary quality, flawless performance, proven reliability and superb customer service . . .

Ameritron AL-811 linear amplifier gives you plenty of power to bust thru QRM.

You get a quiet desktop linear that's so compact it'll slide right into your operating position -- you'll hardly know it's there . . . until QRM sets in. And you can conveniently plug it into your nearest 120 VAC outlet -- no special wiring needed.

You get three tough 811A transmitting tubes, extra heavy duty power supply, all HF band coverage, pressurized ventilation, tuned input, dual illuminated meters, adjustable ALC and much more . . . for an incredible $649 . . .

In Stock at ham dealers everywhere!

The first 600 watts makes the difference

The AL-811 gives you 600 watts PEP output -- that's nearly 2 full S-units over your barefoot rig.

That could mean the difference between hearing, "You're Q-5 armchair copy" and, "Sorry can't copy you, too much QRM."

Now you won't have to stand aside while the "big guns" steal your DX. You'll be able to log some of those stations first.

Going from 600 watts to the full legal limit gives you less than one S-unit increase. But is that fraction of an S-unit worth the 3 to 4 times more money it'll cost you?

The AL-811 gives you a powerful punch at a price that's easy on your wallet.

All band, All mode coverage

The AL-811 covers all HF bands. There's no compromise on WARC and most MARS bands -- you get a 100% rated output.

You can operate the AL-811 on all modes. Get 600 watts output PEP SSB and 500 watts output CW. You even get 400 watts on demanding continuous carrier modes like RTTY, SSTV, FM and AM.

How the low cost 811A tube resists premature failure - - even when your amplifier is mistuned

First, they're constructed with widely spaced elements that minimize the chance of elements touching and causing a short -- even if the plate gets hot enough to melt.

Second, they use a directly heated thoriated tungsten filament cathode that prevents the electron emitting layer from instantly stripping off -- even if mistuning causes a sudden, severe current overload.

The Ameritron AL-811 is excellent for the newcomer because it's tough enough to withstand momentary mistuning. And the tubes are so inexpensive that you can replace one for mere pocket change.

The Ameritron advantage: Extra heavy duty power supply gives you peak performance year after year

The heart of the AL-811 power supply is its heavy duty power transformer with a *high silicon steel* core weighing a hefty 17 pounds.

A full wave bridge using 52.5 ufd of total capacitance (four 210 ufd, 470 volt capacitors) produces 1500 volts under full load and 1700 volts no load. That's excellent high voltage regulation!

Full height computer grade filter capacitors with screw terminals are used -- *not* short stubby, light duty soldered-in "high technology" capacitors that can't dissipate the heat generated by high current.

The rectifier diodes are rated for a massive surge current of 200 amps. They won't blow even if you accidentally short the high voltage supply.

Wire wound, 7 watt, 50 K ohm equalizing resistors safely protect each filter capacitor -- *not* 2 watt, 100 K ohm carbon composition resistors that can open and cause your filter capacitors to explode or fail.

The Ameritron AL-811 power supply is built tough so you get peak performance year after year.

Tuned input provides excellent load for any rig

A Pi-Network tuned input provides a 50 ohm load for your rig. Even fussy solid state rigs can deliver their full drive to AL-811.

Low loss slug tuned coils -- tunable from the rear panel -- let you optimize performance. High quality low drift silver mica capacitors maintain proper tuning.

Output tank: optimum Q on each band

The low loss pi-network output tank of the AL-811 has been carefully designed for optimum Q on each band and built with quality RF components.

The result is peak performance over each band, wide impedance matching range and exceptionally smooth tuning with efficiencies close to 70%. Even a 3:1 SWR load won't damage the tubes or tank components.

A ball bearing vernier reduction drive makes plate tuning precise and easy.

Quiet pressurized ventilation keeps your tubes safely cooled

A *quiet* blower pressurizes the cabinet with a large volume of air flow. It keeps the 811A tube temperature *well below* the tube manufacturer's rating -- even with a key down carrier at 400 watts output -- without the *overwhelming* noise of oversized fans.

Two illuminated meters

Two illuminated meters give you a clear picture of your AL-811 operating conditions so you can tell right away if something is wrong.

The Grid Current meter *continuously* checks for improper loading. The other meter switches between high voltage and plate current to warn of abnormal conditions.

Ameritron exclusive Adapt-A-Volt™ power transformer

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

Ameritron's exclusive *Adapt-A-Volt™* power transformer has a special buck-boost winding that lets you compensate for stressful high line voltage and performance robbing low line voltage.

This makes your components last longer and gives you peak performance -- regardless of your line voltage.

Plus more . . .

An Operate/Standby switch lets you run barefoot, but you can instantly switch to full power if needed.

A transmit LED tells you when your rig is keying your AL-811.

A 12 VDC keying relay makes it compatible with all solid state and tube rigs. A built-in back-pulse cancelling diode protects your rig's keying circuit.

Shielded RF compartment. One year limited warranty. Compact 16" D x 13¾" W X 8" H. 30 pounds. UPS shippable. Shipped with transformer installed and wired for 120 VAC. Draws 8 amps at 120 VAC. Export model AL-811X wired for 240 VAC and includes 10 and 12 meters.

Made in USA

Made in USA. At Ameritron, we don't just ship amplifiers we build them to last.

800 WATTS . . . $795

Ameritron gives you *four* 811A tubes, 800 watts for the *same* price as the competitor's *3* tube 600 watt unit . . . Why settle for *less* power and pay *more* money?

Only the Ameritron AL-811H gives you *four fully neutralized* 811A transmitting tubes. You get absolute stability and superb performance on higher bands that can't be matched by un-neutralized tubes.

Ameritron mounts the 811A tubes *vertically* -- not horizontally -- to prevent hot tube elements from sagging and shorting out. Others, using *potentially damaging horizontal mounting*, require special 811A tubes to retard sagging and shorting.

A *quiet*, powerful computer grade blower draws in plenty of cool air. It pressurizes the cabinet and efficiently cools your 811A tubes. Our air flow is so quiet, you'll hardly know it's there-- unlike noisy, oversized blowers. **You** also get efficient full size heavy duty tank coils, full height computer grade capacitors, heavy duty high silicon core power transformer, slug tuned input coils, operate/standby switch, transmit LED, ALC, dual meters, QSK compatibility with QSK-5 plus much more.

Call your dealer for your best price!

Call your dealer for your best price

Get 600 watts of real power and the *best value* for your money. Call your favorite dealer for your *best price* and order your AL-811 today.

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http://www.ameritron.com

The Tunisian Club's booth had information about operating from their club station, 3V8BB.

Amateur Radio in Friedrichshafen, Germany

Kay Eyman, WAØWOF

"Ham Radio" is the huge three-day international meeting for Amateur Radio enthusiasts held in Friedrichshafen, Germany, on the last weekend of June. This year marked the 21st year for Ham Radio and the 46th Lake Constance Meeting of the Deutscher Amateur Radio Club (DARC), which are held jointly.

Thirty thousand amateurs from over 40 countries were expected at this year's meeting, and 280 exhibitors from 30 countries were on hand to demonstrate the latest equipment and computer software. In addition, there was a large indoor flea market, and one large hall was devoted to national clubs. Many countries were represented, and the booths had information about the clubs and items for sale, as well as hand-outs.

An example was the Israeli booth, which had information on their beautiful Holyland Award and small chocolate bars, labeled "4X4." The Tunisian club had a booth, with information about operating from their club station, 3V8BB. ARRL was there and had a long line of DXers waiting patiently to have QSLs field-checked for DXCC. The largest space had a white picket fence around it, with tables and chairs inside and YLs serving tea and coffee. This was the YL central meeting point, and a big message board on the wall was in constant use.

Another unexpected feature that I especially liked was a long wall near the escalators that had been designated "The QSL Meeting Point." Double-sided masking tape had been put up in very long rows and as people went by they added their QSLs and looked to see who else was there. The whole wall was almost filled by late Saturday afternoon.

There were 43 forums scheduled during the three days, with 24 of them on Saturday. I attended two, the YL meeting and the DX forum. The first was the YL meeting, and the room was set up with four long rows of tables, seating almost 300. Coffee and tea were served and a variety of cakes and pastries could be purchased. Every attendee was given a small Swiss Army-type pocket knife, inscribed with the meeting name and date, and a glass imprinted with "Ham Radio 1996."

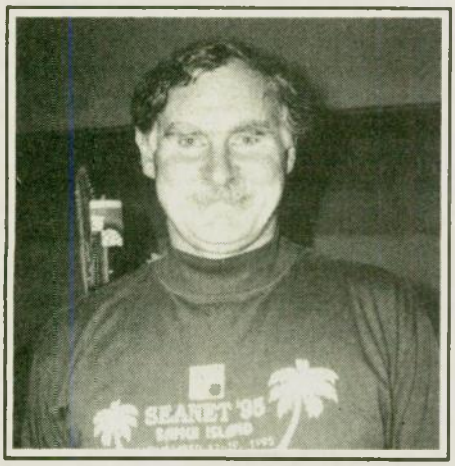
Pictured left to right: Bergitta Astrom, SMØFIB; Peggy Rieger, OH6YRG and Flo Reitzel, KU7F

The main speaker was DARC President Dr. Horst Ellgering, DL9MH, who spoke about the importance of protecting the amateur bands from commercial interests. He reminded everyone that the two most important things they can do are to increase on-the-air activity and to contact their respective officials in government. Greta Hubacher, HB9ARC, who had just made the DXCC Honor Roll, was recognized and congratulated, and then each YL visiting Germany was introduced and said a few words.

The DX forum followed in the same room and, as at Dayton, the room was filled, with people standing in the back. Prominent DXers and DXpeditioners were recognized, and then Bill Kennamer, K5FW, ARRL DXCC Manager, gave a slide presentation of the recent XZ1A DXpedition. The second featured speaker was Hans-Heinrich Ehlers, DF5UG, who talked about how

SEANET started and reported on the 1995 SEANET Convention, which was held in Thailand last November. The 1996 convention will be in Madras, India, on 22-24 November.

At about 6:30 p.m. on Saturday, Hall 3 was opened for dinner, or Ham-Fest '96, as it was described in the official booklet. Small groups drifted in and sat on benches at long tables. Instead of a traditional banquet, people ordered from the



Hans-Heinrich Ehlers, DF5UG, spoke about SEANET at the DX meeting. ***—photos by WAØWOF***

menu and excellent food arrived very quickly. Very early in the evening, musicians arrived and from that point on, if not before, it was just a large party.

Even with the large crowd in attendance, there were never long lines and it was easy to talk to exhibitors, who were very friendly. The flea market seemed unique in one respect. My OM, Mike, WØXM, was in the flea market area and heard someone shouting. He saw a very angry man go up to a table, sweep some of the radios off onto the floor, and then smack the proprietor on the back of the head. The man then picked up a computer and raised it over his head, threatening to throw it on the floor. Bystanders intervened and it appeared that he was assured his problem would be dealt with. Flea market purchases apparently have some kind of unwritten guarantee!

Ham Radio 1997 will be held 27-29 June 1997. For further information, write Messe Friedrichshafen, Messegelande, 88045 Friedrichshafen, Germany, or telephone 07541/708-0 or fax 07541/708-110. WR

On being a QSL manager

Michael Pilotti, N3IRZ

Fellow amateurs often ask me "How did you become a QSL manager?" or, "How can I become a QSL manager?" It's easy! Simply volunteer your services to a DX station. You would be surprised by how many DX stations would love to have a North American QSL manager. The work is minimal and although the pay is low (that is, *nothing* — and may actually cost you a few bucks a year!) the need and the rewards are great.

Remember the joy of working and/or confirming a new state or country? I experience the same joy every time I receive a card for UXØZZ and there is a note on the card that says "Tnx for the new one!" or "Pse QSL fer DXCC, WPX," etc. Although Ukraine is hardly considered "rare" DX, I know that this person would have had little chance of ever receiving this QSL card anytime soon, if at all, even via the bureau. Normal postage rates from most of the former Soviet Union makes direct QSLing anywhere between difficult, to downright impossible.

The QSL bureau there is slow and very inefficient and the basic cost of using the bureau makes it prohibitive for some amateurs. In fact, according to Nick, UXØZZ, many amateurs in the former Soviet Union do not have QSL cards because they cannot afford to have them printed, much less send them. Nick also reports that although he often receives cards direct that sometimes might have contained U.S. dollars or International Reply Coupons (IRCs) the mail is often pilfered for the currency, and his local post office does not exchange IRCs for postage.

Most U.S. amateurs cannot imagine the obstacles that many DX stations, especially those in the ex-Soviet Union, must overcome to simply stay on the air with equipment that we would probably toss in the trash! Almost all of these amateurs homebrew their own equipment and enjoy ham radio as much as you or I do. By having a North American QSL manager, especially someone who is willing to design and print their QSL cards, cards are sent as soon as the confirmations arrive from the DX station. I regularly "donate" my lunch hour once a week to keep up on outgoing cards.

While UXØZZ is a fairly active DXer and I receive cards almost daily, many QSL managers (who must have a whole lot more spare time than I do!) chose to manage several stations. In the past several years of managing for this station, I can count on one hand the number of times I did not receive an SASE enclosed with the QSL. Many generous folks regularly enclose a dollar or two to help defray the minor expenses.

If you've ever thought of what you could do to improve our great hobby or help another less fortunate amateur, consider offering your services as a QSL manager. Who knows, you just might make a new best friend, as I have with Nick, UXØZZ!

P.S. The Mid-Atlantic Amateur Radio Club has established a fund to help pay for anti-seizure medication for Nick, UXØZZ, the Ukrainian amateur who came to the U.S. for successful medical treatment in July (see cover story, ***Worldradio***, September, 1996). Donations can be sent to: Nick Fund c/o MARC, P.O. Box 352, Villanova, PA 19085. WR

Jammer harasses hams—and pays!

The Arizona Repeater Association, the ARRL's Amateur Auxiliary and the First Lady have teamed up to bring the wrath of the FCC down on an illegal operator, a CBer who the FCC says spent the last four years harassing legitimate ham radio operators in Phoenix, Arizona.

Timothy H. Hoffman has been issued the Notice of Apparent Liability to Monetary Forfeiture in the amount of $6,000, after being charged with transmitting on the amateur bands without a valid license, willfully and maliciously interfering with the radio communications of licensed radio amateurs and failure to allow a station inspection by FCC personnel.

The action against Hoffman comes after members of the Arizona Repeater Association working hand in hand with the ARRL's Amateur Auxiliary went the political route. According to Lance Halle, KC7FVX, of the Arizona Repeater Association, for about four years Phoenix repeaters have been plagued with what he termed as vile, malicious interference.

Halle says that the man had several followers and that they would selectively wage war on one ham after another. This included death threats and phone harassment.

Almost two years ago the Arizona Repeater Association's Local Interference Committee located the individual, and turned him in to the FCC. At that time there was still a manned monitoring facility nearby in Douglas, Arizona. The agents running the facility had been following this interference and were delighted with the information supplied by the ham radio group They were quick to pay him a visit one evening while he was singing vulgar lyrics over a Swap Net and issued a Notice of Violation.

That stopped him for a couple of months, but soon he was back on the air. He taunted local hams telling everyone that even the FCC couldn't stop him. KC7FVX says that the Interference Committee and its staff of Official Observers continued to DF, record, and document his activities. Since he was unlicensed they forwarded this info to both ARRL and FCC. After about a year of no action, with the approval of the ARRL they began a letter writing campaign to Congress and the President of the United States.

Enter the White House and the first lady. A few weeks ago Halle says that he received a letter from the Chief of the FCC's Compliance and Information Bureau. It stated "First lady Hillary Clinton requested I answer your inquiry." The FCC official went on to indicate she was aware of the case, but since it was under investigation, she could not divulge any information. Shortly thereafter, Halle received responses from three Congressmen who had also heard from the FCC. The big surprise came when the $6,000 Notice of Apparent Liability was issued to Hoffman.

Halle says that it seems the system does work, but needs a little help now and again from Congress. He says that a lot has been learned from this experience, both locally and by ARRL. And that the ARRL's volunteer Official Observer program and Local Interference Committees are effective in combating this type of problem, although sometimes you do have to go the political route. Halle adds that none of this would have been possible without the hard work of the ARRL's Amateur Auxiliary to the FCC.

Hoffman was given the usual thirty days to respond to the Notice of Apparent Liability. It is unknown if he planned to file an appeal.

Amateur Radio comes through

Amateur Radio was there to jump in and fill the breach when cellular telephones failed to provide the promised communications for a major public event. It happened over the July 4th weekend of the Twin Cities to Chicago Bike Ride to fight AIDS.

According to Dave Deiler, KB9JKV, the event was running well using cellular telephones for all communications, until the entourage reached central Wisconsin. Suddenly the cell phones would no longer work, cutting the group off from one another as well as the outside world. Enter ham radio.

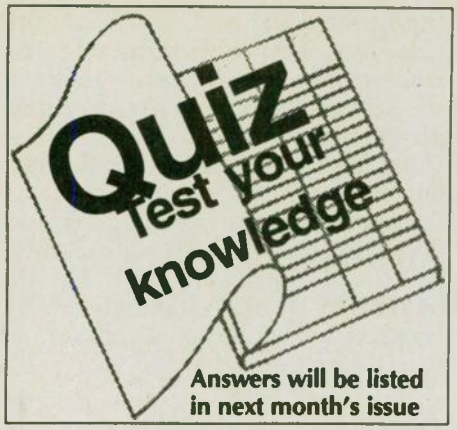
Late in the evening on 1 July, a plea was heard on the Madison, Wisconsin, 147.150 MHz repeater for hams to bring their gear and take over where the cellular telephones had left off. Although it was a holiday weekend, enough radio amateurs were found that normal communications for the ride could be resumed.

Dave says that when the riders reached the Janesville area of southern Wisconsin that they were back in cellular telephone range, but that the communications loss was one that the group did not want to experience again. Rather than rely on the nation's cellular system, ride organizers opted to recruit ham radio communicators along the route all the way into Chicago.

Cause of the cell phone failure? Not enough cell sites covering the central Wisconsin terrain.

Indiana beacon

Brian Bell, N9XDW, reports that a new six-meter beacon is on the air from Mooresville, Indiana. KG9AE can be found on 50.065 MHz transmitting in CW. The purpose of the beacon is to draw attention to the 53.450 MHz and 444.575 MHz linked repeaters that serve central Indiana. Reports go to KB9DJA at his *Callbook*™ address.



The answers to last month's quiz questions 35-53 are as follows:

35. C; 36. C; 37. D; 38. A; 39. B; 40. C; 41. B; 42. A; 43. B; 44. C; 45. D; 46. D; 47. B; 48. C; 49. D; 50. A; 51. B; 52. A; 53. C

54. What must the Element 1(A) telegraphy examination prove?

A. The applicant's ability to send and receive text in international Morse code at a rate of not less than 13 words per minute

B. The applicant's ability to send and receive text in international Morse code at a rate of not less than 5 words per minute

C. The applicant's ability to send and receive text in international Morse code at a rate of not less than 20 words per minute

D. The applicant's ability to send text in international Morse code at a rate of not less than 13 words per minute

55. Which telegraphy characters are used in an Element 1(A) telegraphy examination?

A. The letters A through Z, 0/ through 9, the period, the comma, the question mark, AR, SK, BT and DN

B. The letters A through Z, 0/ through 9, the period, the comma, the open and closed parenthesis, the question mark, AR, SK, BT and DN

C. The letters A through Z, 0/ through 9, the period, the comma, the dollar sign, the question mark, AR, SK, BT and DN

D. A through Z, 0/ through 9, the period, the comma, and the question mark

56. Who is responsible for preparing an Element 2 written examination?

A. The FCC

B. Any Novice licensee

C. The volunteer examiners or a qualified supplier

D. The VEC

57. Where do volunteer examiners obtain the questions for preparing an Element 2 written examination?

A. They must prepare the examination from material contained in the ARRL Handbook or obtain a question set from the FCC

B. They must prepare the examination from material contained in a question pool maintained by the FCC in Washington

C. They must prepare the examination from material contained in a question pool maintained by the local FCC field office

D. They must prepare the examination from a common question pool maintained by the VECs or obtain a question set from a supplier

58. Who is eligible for administering an examination for the Novice operator license?

A. An Amateur Radio operator holding a General, Advanced or Extra class license and at least 18 years old

B. An Amateur Radio operator holding a Technician, General, Advanced or Extra class license and at least 18 years old

C. An Amateur Radio operator holding a General, Advanced or Extra class license and at least 16 years old

D. An Amateur Radio operator holding a Technician, General, Advanced or Extra class license and at least 16 years old

59. Within how many days after the administration of a successful Novice examination must the examiners submit the application to the FCC?

A. Within one week of the administration date

B. Within 10 days of the administration date

C. Within 5 days of the administration date

D. Within 30 days of the administration date

60. Where must the completed Form 610 be submitted after the administration of a successful Novice examination?

A. To the nearest FCC Field Office

B. To the FCC in Washington, DC

C. To the FCC in Gettysburg, PA

D. To any VEC

61. What is the minimum passing score on a written examination element for the Novice operator license?

A. A minimum of 19 correct answers

B. A minimum of 22 correct answers

C. A minimum of 21 correct answers

D. A minimum of 24 correct answers

62. How many questions must an Element 2 written examination contain?

A. 25 C. 40

B. 50 D. 30

63. In a telegraphy examination, how many characters are counted as one word?

A. 2 C. 8

B. 5 D. 10

64. What is the minimum age to be a volunteer examiner?

A. 16 years old C. 18 years old

B. 21 years old D. 13 years old

65. Under what circumstances, if any, may volunteer examiners be compensated for their services?

A. Under no circumstances

B. When out-of-pocket expenses exceed 25

C. The volunteer examiner may be compensated when traveling over 25 miles to the test site

D. Only when there are more than 20 applicants attending the examination session

66. Under what circumstances, if any, may a person whose amateur station license or amateur operator license has ever been revoked or suspended be a volunteer examiner?

A. Under no circumstances

B. Only if five or more years have elapsed since the revocation or suspension

C. Only if 3 or more years have elapsed since the revocation or suspension

D. Only after review and subsequent approval by the VEC

67. What are the penalties for fraudulently administering examinations?

A. The VE's amateur station license may be suspended for a period not to exceed 3 months

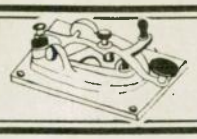
B. The VE is subject to a monetary fine not to exceed 500 for each day the offense was committed

C. The VE's amateur station license may be revoked and the operator's license suspended

D. The VE may be restricted to administering only Novice class license examinations

Stay tuned for more next month!

Silent Keys



Bill Stevens, W6ZM

Bill Stevens, W6ZM, died of a heart attack 17 August 1996, while attending a game played by his much-loved Oakland As baseball team. At age 84, the baseball team was only one of his avid interests

Bill Stevens, W6ZM, was probably my closest friend in Amateur Radio over the last 30 years. He was one of my closest advisors and colleagues in Amateur Radio. He was a top- notch DXer, and was on the top of the Honor Roll for many years.

Bill was the Pacific Division Director from 1978-1985, then was elected a Vice President in 1986. He convinced me to follow in his footsteps. Bill was my QSL manager from 1974 to 1977 when I lived in Europe and faithfully prepared cards confirming my contacts from The Netherlands, Belgium and other places from which I operated in Europe.

Bill and his wife Delphie also served as business manager and hostess for the East football team in the annual Shrine team. Bill was a long-time Master Mason and Shriner, and was also an active member of the West San Jose Kiwanis Club. As Delphie Stevens said of Bill, "Everything he did, he did 110 percent."

73, Bill. Thanks for the opportunity of knowing you and for having you as my friend! *—contributed by Brad Wyatt, K6WR*

Vern "Rip" Riportella, WA2LQQ

Vern Riportella, WA2LQQ, the third president of AMSAT-NA, died suddenly but peacefully on Friday, September 13, at his home in Warwick, New York. "Rip" was 53 years of age; the cause of death was a heart attack.

A former officer in the U.S. Air Force, "Rip" became active in AMSAT affairs in the late 1970s, rising to the position of executive vice president. He was elected president in 1984, serving until 1987. "Rip" tirelessly worked to create our present high-altitude transponder satellites. Without his unceasing devotion to fund-raising, organizing, recruiting and the general encouragement of all concerned, AMSAT-OSCAR 10 (launched in 1983) and AMSAT-OSCAR 13 (launched in 1988) might never have become realities. He also revitalized *The AMSAT Journal* and created a new publication, *AMSAT Satellite Report* (now *OSCAR Satellite Report).*

Ron Broadbent, G3AAJ, Secretary of AMSAT-UK, said that he can think of no more fitting memorial for Rip than to have his name and callsign fly on Phase 3-D. Accordingly, he is sponsoring Rip as one of those listed on the AMSAT-UK "Names in Space" plaque which will be affixed to the satellite.

Ray Soifer, W2RS, AMSAT-NA's International Vice President said: "AMSAT-NA and the entire international Amateur Radio satellite community mourn Vern Riportella's loss. His enthusiastic spirit, needed now more than ever, will be sorely missed. I, myself, have lost a good friend."

Expressions of sympathy may be sent to his wife, Ellen Riportella, P.O. Box 177, Warwick, NY 10990, USA. *—contributed by AMSAT-NA*

John P. Alexander, K6SVL

John Alexander, K6SVL, of Rancho Palos Verdes, California, died of cancer on 30 August at age 73. John was the Southwestern Division representative to the ARRL DX Advisory Committee. In addition to serving on the DXAC, John was active in local DX organizations and was a past president of the Southern California DX Club.

He was the founding President of the Rancho Palos Verdes ARC, and remained active in it, serving as Elmer to many now-senior hams in the area. W6SVL was also an active participant in Field Day and the Disaster Communications Service for many years.

John Alexander, W6SVL, is survived by his beloved wife Stella, children and grandchildren. He will be missed by all. *—contributed by* Newsline, *and* QRO, *newsletter of the RPVARC.*

Alan McCarthy, AA6GM

"Alpha alpha six Germany Mexico, AA6 Golf Mike." That was the call as Alan gave it on the air. Alan McCarthy loved Amateur Radio, and everything and everyone associated with it. President of the Vaca Valley Radio Club many times, fixer of radios and a general all-round good guy, he was one of those people who had an almost contagious laugh that would start from his toes and resulted in everyone else being in stitches, too.

From the time he was a very young man he had been fascinated by radio. Not just operating them, but why and how they worked. He delighted in both phone and CW, and always jumped at the chance to visit the station of a "big gun" for a contest, or go out with the radio club and do a full-tilt Field day operation. High-speed CW was a special delight of his, and he served as Elmer to many newcomers to Amateur Radio.

Ham radio led to a career in broadcasting, and Alan served as a broadcast engineer at KUIC-FM, KXBT-AM, in Vacaville, California, and at the time of his death, KHYL-FM, and KFBK-AM in the state capital.

On a hot summer day many years ago, Alan was helping out with the raising of an antenna system. The late WB6ETN watched as this big, tall, strong boy pushed and pulled, and ultimately got everything just right. He said "Alan, I know just what your phonetics for that new 2x2 call sign of yours should be — as Able As Six Good Men."

On 26 August 1996, Alan McCarthy died of a sudden heart attack. He was 45.

Alan is survived by his beloved fiancée, Shauna Manina, mother, and sisters. Contributions may be

made to the Alan McCarthy Memorial Fund, Continental Pacific Bank, 141 Parker Street, Vacaville, CA 95688. *—contributed by Lou Ann Keogh, KB6HP*

William A. Bleher, W9GQL

William A. Bleher, W9GQL, aged 69, passed away 28 July 1996, at his home after a long struggle with cancer. He was surrounded by his immediate family.

He was born in Ferndale, Michigan in 1927. He enlisted in the Armed Forces after high school and served during World War II. After the war, he pursued his interest in electronics and received his electronic engineering degree from Lawrence Technological University.

His avid interest in electronics led to an Amateur Radio license in 1950. He was a lifetime member of the ARRL, the Clarkston Repeater Association, and the Thunder Bay Repeater Club It was with these clubs that he dedicated many hours of his technical skill to training and troubleshooting electronic problems. He won numerous awards for his electronic designs and publications in automotive and Amateur Radio-related activities.

Since his retirement as a Chrysler engineer in 1989, he relocated from Redford Township, Michigan, to Barton City and was active in the Eagles No. 4141. Spending his summers in northern Michigan, he enjoyed his winters in Arizona and the Florida Keys where he enjoyed fishing.

He is survived by his wife, Shirley; a son, Joel of Los Angeles; a daughter, Cheryl Farbod of Arizona; and four stepsons, Larry of San Pedro, David of Washington, daughters Marilyn (Gary) Zasuwa, Kathleen (Michael) Robinson, and Constance Bleher; one sister, Betty Sturman; four grandchildren, Andrew Zasuwa, Kelly, Brian and Laura Robinson. *—submitted by Gerard Zasuwa, KB8WJJ* WR

Off the air

RF radiation hazards?

What's all the fuss about RF radiation hazards? Many of us oldtimers in this game have spent a good part of our lives working in strong RF fields. I speak of transmitter engineers at powerful broadcast or TV transmitter locations or those of us who spent eight hours per day riding herd on a dozen or more multi-kilowatt shortwave transmitters at such facilities as Press Wireless, RCA Communications or the like.

I recall the theory bouncing around in the thirties and forties that exposure to HF RF would make one sterile. I have worked in RF fields most of my life and have six children to disprove that theory. These desk-chair scientists and engineers would do well to conduct some meaningful research before engaging in meaningless scare tactics.

John McKinney, W0AP
Dannebrog, NE

As I approach 85....

In the October, 1991 issue of **Worldradio,** *we published an "Off the air" letter from Merle Parten, K6DC, whose 80th birthday was approaching. In it, he decried the claims and tactics of those who were warning that RF fields would injure us all.*

Recently ***Worldradio*** *contacted K6DC to see how he was faring as his 86th birthday nears. Here is his response.*

There is not much of interest to add to the never-ending disagreement between the [fearful types] and us perfectly normal, healthy, sane people.

When Dave Atkins, W6VX, was alive (he died in his nineties from grief over the death of his ever-loving wife, also in her nineties) he sent me a clip from a power company enclosure-with-bill in Los Angeles, describing the woe-to-you that the power lines "might" cause. No proof, just a warning!! As I recall, I sent them a scorching note about scaring their customers with this rubbish. I received back a nice soapy letter of explanation of why they had to do this. . . Anyway, water (or kilowatts) over the bridge.

As my 85th birthday approaches and I recap the hazards of a lifetime of exposure to the deadly fields of radio, all I can do is look at the size of my belly, and wonder how the hazard of being a bit too fat compares to electronic exposure. When I was age 73, I wondered if I would reach the love-and-kisses age of 88. Who knows better than the dear Lord? My wife for the last 60 years is still raring to go, so I depend on her to keep me healthy.... Thanks for your interest.

Merle Parten, K6DC
Santa Barbara, CA

Want to get something off your chest? Drop a letter to "Off the air" and let your voice be heard.

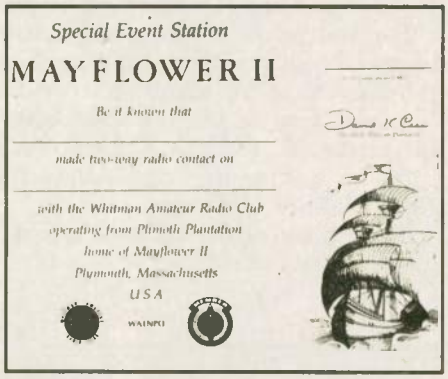
Special Events

Return of the Snowbirds

The Brownsville CHARRO ARC will operate KC5PCN from the Coast Guard Station on South Padre Island on 9 November to commemorate the return of the Snowbirds to South Texas. Operation will be in the General phone subbands on 20 and 15 Meters, and the Novice phone subband on 10 Meters, propagation permitting. QSL with SASE to CHARRO ARC, 3554 Boca Chica, Brownsville, TX 78521.

New World

The Whitman ARC will operate WA1NPO 30 November and 1 December from 1400-2100 UTC each day at historic Plimoth Plantation in Plymouth, MA to commemorate our forefather's first successful settlement in the New World. Suggested frequencies are: 3.970, 7.270, 14.270, 18.140, 21.370, 24.970 and 28.370. A special QSL card will be sent to those hams and SWLs sending an SASE. Also, a 7½ x 10" special certificate with the Mayflower II (see below) in the background is available for the event. All replies must be sent to: Whitman ARC, P.O. Box 48, Whitman, MA 02382.



Canadian Liberation March

The Belgian Airforce Amateur Radio Assoc. (BAFARA), Royal Naval Amateur Society (RNARS), Belgian YL Club (BYLC), International Police Assoc. (IPA) and hams from the Canadian Liberation March, will operate OS4CLM from Friday, 25 October until 3 November. A multi-colored OS4CLM Award will be available to all licensed amateurs and SWL's for any contact with this special event station. A QSL card is also available. Cost of the OS4CLM Award is $5US (no checks) or 10 IRCs.

The following frequencies will be in operation: SSB — 80M (3.685; 40M (7.045); 20M (14.145); 15M (21.245); 10M (28.545); 2M (144.25); CW — 80M (3.515); 40M (7.012); 20M (14.020; 15M (21.020); 10M (28.020); 2M (144.020); FM — 145.475; Packet — OS4CLM@ ON4KTK. For more information about the special event, please contact ONL453 (N1TBH), Bob Dyserinck, Vuurtorenstraat 12, B-8301 HEIST aan Zee, BELGIUM.

Honoring Veterans

The Albuquerque ARC will operate WB5MII from the VA Medical Center on 11 November, from 1500 UTC to 0400 UTC to honor the Veterans of our country for their service. Operation will be on the lower General phone and up on 20, 15, 17, 20, 40 and 80 Meters, depending on propagation and band conditions. For a certificate, send a QSL card to AARC, P.O. Box 11853, Albuquerque, NM 87192.

General Omar Bradley

The Tri-County ARC will operate NØAUY on 11 November from 1600-2200 UTC to commemorate the dedication of a bronze statue in honor of General Omar Bradley. Operation will be on the General portion of 40, 20, 15 Meters SSB and the Novice portion of 10 Meters SSB. For certificate, send QSL and 9 x 12 SASE to: TCARC, P.O. Box 341, Moberly, MO 65270.

U.S.S. *Ling*

The Piscataway ARC will operate KB2UGB on 2 November, 1400-2200 UTC aboard the U.S.S. *Ling* 297, docked at the New Jersey Naval Museum in Hackensack, as a tribute to this WWII submarine. Operation will be on the lower 25 kHz of the General phone from 10-40 Meters. Stations contacted may request a certificate. Please QSL to Richard Alderiso, 438 E. Bay Ave., Unit 13, Barnegat, NJ 08005. WR

Station Appearance

Charles R. Jones, K9TZJ

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

This is the story of my ham shack. Miriam, WA9JCF, my wife is licensed but does not operate the station very much so on with the story.

I have been a ham for over 35 years, so when we built our house 29 years ago, I made provisions for Amateur Radio. The house is a tri-level and the shack is in the lower level. So, before the floor was poured, I drove two ½" copper water pipes 10' down into the gravel and then laid a network of copper wire under the floor tied to the copper pipes that then stuck up above the floor for the ground connection.

I needed to get to the roof, so I had the electrician run a 2" conduit in the wall to the attic and then a weatherhead through the roof for control and coax cables. This was for the VHF/UHF antennas. The Hy-Gain Hi-tower is at the back corner of the house so when we poured the garage floor, I laid 1" plastic pipe to the far corner for coax and a hole through the brick wall to feed the antenna.

The electrician installed a small electrical distribution panel in the wall behind the desk so I would have enough power, including 240 volts.

Let's look at the station now. From left to right:

A Johnson kW amplifier is the foundation for the station. Above the desk, the meters measure voltages and currents. To the right of the meters are a clock, VHF SWR bridge, NC-303 speaker, frequency counter and AC voltage meter.

Above the meters is a Drake SWR bridge between the B&W 6100 and the amplifier. Next, the Tempo VHF-1 and power supply. Next, is a Geneave 1212 VHF transceiver, then a Heath Ham-scan oscilloscope tied to the National NC-303. Next, is the PK-232 TNC and KDK FM-2030 and power supply and last is the digital voltmeter.

The dumb terminal and keyboard are on a small table behind the chair.

Second row: A B&W 6100 transmitter; a TMC GPR-90 general coverage receiver; National NC-303. On the wall is a public service scanner, telephone, and VFO for the Johnson six by two VHF transmitter.

Third row: a Johnson Ranger II; Johnson kW Matchbox; GPR-90 "sideband slicer" and a Johnson six- and two-meter transceiver.

On the top are the GPR speakers, then the Six and Two converters that tie in with National NC303. How do I lash all of the equipment together? I get down on my back, slide under the desk and then I can stand up and work on the equipment. But, of course, I have to slide the tool caddy out first. WR

Amateur "Hi"

*Ever had a funny or strange experience with Amateur Radio, either on or off the air? If so, type it up (or print neatly) and send it to us for consideration in our monthly AMATEUR "HI" contest. You could win a free year's subscription to **Worldradio**!*

Which way did he go?

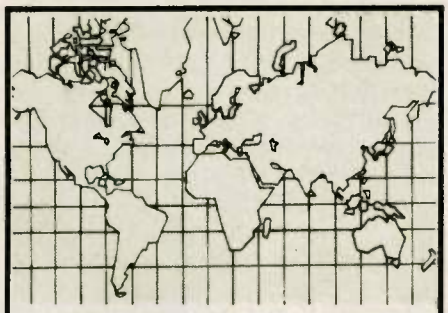
Harryette Barker, W6QGX

I don't think anything is more fun than actually meeting in person the good friends you make on the air. It was like that with Betty, W6OQY, from California and me.

We talked several times a week on 75 Meters. We decided to meet in Los Angeles during one of Betty's bus trips to Santa Maria.

As I waited patiently at the bus depot, a man came through the gate and walked over to me. He said "Betty is on this bus. She will be here shortly."

I thanked him, and when Betty came through the gate I asked her who her friend was. She replied that she knew no one on the bus. We searched the bus station but did not find the man. The mystery was never solved. WR



DX WORLD

John F.W. Minke III, N6JM
P.O. Box 310, Carmichael, CA 95609-0310

W-100-N

Congratulations to the following DXers for completing the necessary requirements for ***Worldradio***'s Worked 100 Nations Award:

509. David J. Allard, KD1PW 22 Aug 96

510. Chandler W. Jones, WB1Q (All 20M SSB) 22 Aug 96

511. Jerry Breazeale, K4FDP (All 17M SSB) 22 Aug 96

Notice that the certificate to Jerry Breazeale, K4FDP, is endorsed "All 17M SSB." Jerry is the first applicant to submit all contacts for the 17 Meter band.

Every now and then I'm asked if you can use a contact with a station in your own country for this award. The answer is yes.

Don't forget ***Worldradio***'s newest creation, our CATZ, the Contact All Time Zones Award. Keep in mind that all contacts must be made 01 July 1996 or later.

Eritrea (E3)

As reported in *Ohio/Penn DX Bulletin* Carl Henson, WB4ZNH, who had the first valid license to operate from Eritrea, informs the DX community by saying, "I traveled to Eritrea last October assuming I would have no trouble operating there. Bad move. Even though Martha and I were the first to operate from Eritrea after the revolution, we were denied permission. The official reason was that Eritrea is in the process of creating new Amateur Radio Rules. At that time, the head of the Department was in Norway, studying Norway's Amateur Radio Rules. I phoned Asmara and received the same answer as nearly a year ago."

North Korea (P5)

According to *425 DX News* Sanyi, HA7VK, currently with the Hungarian Embassy in Pyongyang, has been informed by the North Korean authorities, that at the present time there is absolutely no chance to get an Amateur Raio license in North Korea. Others have received the same reply.

Tokelau Islands (ZK3)

Yvette, F3YA, will be signing with ZK3YA for the next three years. Operation is limited to six hours per day due to a.c. power restrictions. Check 40 Meters around 7.003 MHz between 1000 and 1100 UTC.

IOTA

PY2EPA will be visiting at least three Brazilian islands this fall operating as ZV2EPA. From 24 to 28 October he plans to visit Comprida Island (SA-024); 16 to 21 November from Santo Amaro Island (SA-071); and 22 to 25 November from São Sebastião Island (SA-028). These islands also count as credit for the Brazilian Islands Award, DIB 21, DIB 10 and DIB 16, respectively.

Here are just a few of the many IOTA islands that were reported during the month of August:

AF-018	Pantelleria Island	IH9/IK8BIZ
AF-019	Lampedusa Island	IG9/IK2ZPC
AS-024	Yaeyama Archipelago	JS6LIH
AS-090	Tok Chok Island	HL0T/2
EU-106	St. Tudwal's Island	GB2STW
EU-122	Rathlin Island	GB2MRI
NA-042	Middleton Island	KDØWZ/KL7
NA-207	Akimiski Island	VE8A
NA-208	Avataqpivik Island	NU2L/VE8
OC-216	Ashmore Reef	VK4ALF/9

425 DX News reports that after two years of planning and replanning, Ushagat Island, located in the Barren Islands (NA-206), finally became a reality on July 4th thanks to John, NL7TB, and Rick, N6IV. Landing on Ushagat was extremely easy on a beautiful day, but then the weather got worse, with rain and strong winds (55 mph and up!) blowing from all directions. Often times John and Rick could not hear 5 by 9 signals with headphones on, due to the roar of the wind slamming against their tent. Vlad, UR5WCW, at club station UT7WZA, assisted them with taking lists for Europe several times and other operators also helped with lists for North America. NL7TB/KL7 worked 1,432 stations

in 59 countries in 50 hours of actual operating time.

Another island news publication to appear is *Island Hopper* edited by Art, N2AU, (of *Inside DX*), and Terry, W9JOO. Contact either party for a free sample copy.

Most Wanted Islands

Figure 1 is the list of IOTA island groups in order of most wanted. The first column is the number of IOTA members who have received credit for the island; the second column is the percentage who have worked the island (out of about 1000 active IOTA members worldwide). This information taken from a list provided by Martin Atherton, G3ZAY, dated 13 April 1996.

Only the U.S. and Canadian island groups are shown, in order of ranking position. Possessions are also included, but not those in the Antarctic. In case you are interested in activating such a group, this should be of use in deciding upon an island. (See Figure 1 on page 26.)

Also, be aware that there are several island groups that still need to be activated for the first time. Those are the ones in your IOTA Directory that have no reference numbers. There are several in Alaska. You would be very popular if you activated such a group.

Oceania DX Group

The Oceania DX Group was organized by a group of Australian DXers on 29 April 1996 for the purposes of promoting good Amateur Radio procedures; assisting with training of local operators in countries with limited activity; providing QSL cards and managers as needed; and to make available more DX by offsetting the costs.

Membership in the Oceania DX Group after two months had grown to 50 members in over 15 countries. The present officers of ODXG include: Jon, VK9CY, President; Vickie, VK2IVK, Senior Vice President; Elvira, IV3FSG, Junior Vice President; Bill Horner, VK4FW, Secretary Manager; and Carl Smith, N4AA, Director.

Membership in ODXG is $20 (U.S. funds) or 30 IRC per year. Mail to Oceania DX Group, P.O. Box 929, Gympie, Queensland 4570, AUSTRALIA. Telephone/FAX: 61-74-827497. Application forms are available from N6JM in limited quantity. Please provide an SASE.

JARL Awards

The JARL (Japan Amateur Radio League) is presently celebrating the 70th Anniversary with a series of five awards for contacts made during the period of 1 June 1996 through 31 May 1997. These awards are as follows:

- J Award: Requires contacts with at least seven different Japanese prefixes.
- A Award: Requires contacts with a least seven different DXCC countries, Japan and poccessions excluded.
- R Award: Requires contacts with at least seven different JARL Commemorative stations, such as JA3RL, JR6RL, or those with the 8J prefix.
- L Award: Requires contacts with at least seven different Japanese stations having different grid squares.
- 70 Award: Requires contacts with at least 70 different Japanese stations on a single band or single mode.

To apply for this award send your log extract and a fee of 6 IRC to JARL Award Desk, P.O. Box 377, Tokyo Central, JAPAN. No requests after 31 December 1997 will be accepted.

It is assumed that the QSL cards are not required for confirmation. As for the fee, it is not known if the 6 IRC fee applies to each award or for all awards you are applying for.

Portuguese Islands Award

There is an award for working Portuguese Islands, known as D.I.P., Diploma das Ilhas. With the increase in island activity many countries are getting into the act.

The rules for this one are fairly simple and requires confirmation of at least 10 Portuguese islands. The award is available for HF only and is awarded in SSB, CW or Mixed modes. All contacts made since 1 January 1985, will count for this award. Endorsements are also available in groups of 5 additional islands for an SASE only.

To apply for this award prepare a list of contacts showing all the necessary log data and have it certified by two licensed Radio Amateurs. QSL cards need not be sent. A fee of US$5 U.S. (7 IRCs) is required. Send your application to: Jose Alexandre Carloto Barbosa, CT1DIZ, Rua Serra de Baixo, 66,

2726 Algueirao, PORTUGAL. A list of islands can be found on the internet, or send an SASE to N6JM. The list is too long to include here.

DXCC Applications

The DXCC Desk reports that the number of unprocessed applications at the end of January was 111 (11,934 QSL cards). During the month 227 applications (22,976 QSL cards) were received for endorsements and new awards.

Applications being sent out at the end of the month were received only a couple of days earlier. A few received prior to that time were waiting for paper records to be converted, or were being audited, and so had not yet been completed.

DXCC 2000

The ARRL DXCC 2000 Committee held its first meeting in Rocky Hill, Connecticut on 21 July. The items on the agenda were:

- History and cost of DXCC
- International aspects
- Discussion of the basis and purpose
- Discussion on how to seek membership input
- Overall aspects of the current program

The committee plans to meet again in the fall to continue their work.

The DX Bulletin

After more than eleven years of editing *The DX Bulletin* Chod Harris, VP2ML, has retired. Editing of this famous DX newsletter will be assumed by Paul (AE4AP) and Nancy (KB4RGW) Smith of Paducah, Kentucky. Chod will continue with his DX column in *CQ*.

From what I can recall the Paul and Nancy will be the third set of owners of this publication. The original editor was Jim Cain, K1TN, in Connecticut. Best wishes and success to Paul and Nancy.

Antique QSL Department

Dale Meyers, W4BIM, responds to the XU8NR QSL card printed in the August issue. Dale reports that the operator Gene Goss retired from the Marine Corps and is now a Silent Key. He met Gene in Tsigtao, China, in June 1946 then attached to the 4th Marine Regiment. Dale is also retired from the Marines and operated as XU1YC in Tientsin.

This month we will really step back in time. These cards are from

15.	NA-150	KL7	Little Diomede Island	7	0.7%
25.	OC-055	KH6	French Frigat Shoals	17	1.7%
30.	NA-157	KL7	Gulf of Alaska East	26	2.6%
35.	NA-178	W6	Farallon Islands	46	4.7%
39.	OC-190	KH8	Rose Atoll	53	5.4%
50.	NA-186	VE8	NWT (Hudson Bay/Manitoba)	67	6.8%
72.	NA-040	KL7	St Lawrence Island	84	8.5%
88.	NA-042	KL7	Gulf of Alaska Centre	95	9.6%
90.	NA-053	KL7	Trinity Islands	96	9.7%
95.	NA-074	KL7	Nunivak Island	98	9.9%
115.	NA-064	KL7	Near Islands	105	10.7%
115.	NA-070	KL7	Rat Islands	105	10.7%
135.	NA-121	KL7	Bristol Bay	114	11.6%
150.	NA-184	W6	California State North	121	12.3%
156.	NA-004	KL7	2nd Jud Dist - Beaufort Sea Coast	123	12.5%
156.	NA-193	VY1	Yukon Territory	123	12.5%
173.	NA-182	VE8	NWT (Inuvik) East	127	12.9%
182.	NA-043	VE8	Sverdrup Islands	132	13.4%
184.	NA-087	KL7	Shumagin Islands	133	13.5%
184.	NA-158	KL7	Cook Inlet	133	13.5%
184.	OC-200	KH8	Swains Island	133	13.5%
189.	NA-159	VE8	King George Islands	135	13.7%
189.	NA-169	W7	Washington State West	135	13.7%
197.	NA-118	VE7	Dundas Islands	140	14.2%
197.	NA-187	W6	California State Centre	140	14.2%
209.	NA-050	KL7	4th Jud Dist - Beaufort Sea Cst	145	14.7%
215.	NA-197	KL7	Gulf of Alaska West	147	14.9%
222.	NA-156	VE8	NWT (Hudson Strait) West	148	15.0%
232.	NA-205	VO2	Labrador Centre	152	15.4%
243.	NA-037	KL7	Semichi Islands	157	15.9%
245.	NA-181	VE7	Estevan group	158	16.0%
249.	NA-144	W6	Channel Islands North	159	16.1%
262.	NA-044	W6	Channel Islands South	164	16.6%
262.	NA-195	VE8	NWT (Hudson Bay/Quebec) North	164	16.6%
274.	NA-129	VE8	Banks Island	169	17.2%
279.	OC-077	KH8	Manua Islands	171	17.4%
288.	NA-028	KL7	Pribilof Islands	176	17.9%
315.	NA-192	VE8	NWT (Inuvik) West	184	18.7%
318.	NA-091	VE7	British Columbia South	185	18.8%
318.	NA-175	VE8	NWT (Kitikmeot) Centre	185	18.8%
330.	NA-172	KL7	Arctic Ocean Coast	190	19.3%
333.	NA-059	KL7	Fox Islands	192	19.5%
340.	NA-051	VE7	Queen Charlotte Islands	195	19.8%
358.	NA-196	VE8	Belcher Islands	205	20.8%
366.	NA-173	VE8	NWT (Hudson Bay/Quebec) So	209	21.2%
366.	NA-185	VE8	NWT (Keewatin)	209	21.2%
383.	NA-125	VE2	Quebec (St Lawrence Gulf) W	214	21.7%
393.	NA-082	W5	Mississippi State	220	22.3%
393.	NA-119	W5	Louisiana State Centre	220	22.3%
393.	NA-130	VE8	NWT (Hudson Strait) East	220	22.3%
393.	NA-154	VE1	Nova Scotia North	220	22.3%
402.	NA-176	VE2	Quebec (St Lawrence Gulf) Cntr	223	22.6%
402.	NA-177	VE2	Quebec (Gaspé Peninsula)	223	22.6%
404.	NA-194	VO2	Labrador	224	22.7%
422.	NA-007	VE8	Southampton	234	23.8%
430.	NA-126	VE1	Nova Scotia South	239	24.3%
432.	NA-152	KL7	Chukchi Sea Coast South	240	24.4%
437.	NA-161	KL7	Gulf of Alaska	245	24.9%
444.	NA-120	W5	Louisiana State West	248	25.2%
444.	NA-198	VO1	Newfoundland's Coastal Islands	248	25.2%
460.	NA-136	W1	Connecticut State	257	26.1%
468.	NA-084	VE2	Quebec (St. Lawrence Gulf) East	263	26.7%
483.	NA-137	W1	Maine State West	272	27.6%
497.	NA-131	VE8	NWT (Kitikmeot) East	283	28.7%
500.	NA-168	W5	Louisiana State East	284	28.8%
505.	NA-111	W2	New Jersey State	287	29.1%
507.	OC-085	KH5	Palmyra Atoll	289	29.3%
510.	NA-089	W5	Chandeleur Islands	291	29.6%
510.	NA-143	W5	Texas State East	292	29.6%
510.	NA-174	VE8	NWT (Foxe Basin)	292	29.6%
513.	NA-081	VE1	Nova Scotia East	293	29.7%

Figure 1. Most Wanted Islands

the collection of Jerry Faas, W6KMI, who picked up these cards at a coin and stamp store in Fresno a few years back.

The first card is that of 9AEC, operated by a John A. Murphy of Lincoln, Nebraska, who worked 9AEF, operated by Phillip E. Lohr, of Churdan, Iowa. Notice that both states were in the 9th call area.

Harry, VK4DHM (left) and Len, VK4BQL (right) on the 1996 VK9CT DXpedition to Cocos (Keeling) Island. The DXpedition also included YL operator Vickie, VK2IVK, George, VK6NKG, and Bill, VK4FW. Despite poor propagation the group managed to collect 11,107 contacts, with 5,825 on SSB, 5,256 on CW and 26 on FM.
—Photo by VK2IVK

There was no 10th call area. The card indicated that a Hartley circuit was used at 5 watts. The design of the receiver was by 1BGF (or 1BCF) and the detector by 1AF. 9AEF claimed to have had his signals reported in 48 states, Puerto Rico, Hawaii, Mexico, and another point. Confirmed contacts included 45 states, plus two Canadian. The operator was listed as HW. The date of this long ago QSO was 26 March 1924! I cannot figure what the band was and assume that it was CW. Old-timers can fill us in as to when spark was outlawed.

The second card is not quite as old. This one dates from 12 April

1925. The band for this one too was not indicated. The call 9KV was operated by Reed R. Brunner, of Duluth, Minnesota, who worked 9DEX, operated by Donald M. Wherry, also of Churdan, Iowa. Don, 9DEX, eventually became WØDEX and in 1947 was residing in Minneapolis.

None of the four mentioned amateurs are listed in the present *Callbook™*. They are either no longer in Amateur Radio or are Silent Keys. Most likely, they are the latter. Amateur Radio is a lifetime hobby.

The postage in those days was a mere penny, truly the source of what used to be known as penny postcards. However, the 9KV card had two penny stamps on the back, which makes no sense. Minnesota required more postage?? Both of the cards indicated that the operators were members of the ARRL. Are you a member?

QSL Information

John Munroe, W7KCN, reports that he has QSL cards and the beat-up log from VS9AJM (Aden) for anyone who needs a souvenir. He only has the logs for 1967.

The QSL route for BV3BW via AA7AN as shown in our September QSL routes is incorrect. In addition, he no longer handles cards for VQ9KC, 4F3AAL and UA8TAA.

John Parkinson, W6KBC, is looking for suggestions in obtaining a QSL from LU6Z, whom he worked in December 1995. Two requests to Raul, LU6EF, with sufficient funds, have been unsuccessful. However, cards should be in the mail soon or via the bureau. The QSL manager reported that he has sent more than 500 direct cards. *QRZ DX* suggests another route shown in the QSL Routes

Rolf Rahne, DL6ZFG, can no longer handle QSL requests for calls such as 4K2BY, 4K4BEU, RA9LI, and others, as they are not members of DARC, and the DARC bureau will not deliver the cards to Rolf, even though he is a member.

DX Prediction — November 1996

Maximum usable frequency from West Coast, Central US and East Coast *(courtesy of Engineering Systems Incorporated, 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. 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 USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	*(11)*	8	12	*(8)*	*12
10	*(11)*	8	11	*(7)*	*(11)*
12	*(20)*	7	11	*(13)*	22
14	24	10	*19	*(15)*	*24
16	26	*(10)*	*(16)*	*(13)*	*26
18	26	*(9)*	*(14)*	*(9)*	*27
20	21	*(11)*	*(20)*	*(9)*	*27
22	*18	*(16)*	23	8	23
24	*15	*(13)*	23	8	*16
2	13	*(10)*	*(15)*	7	*14
4	*12	*(9)*	*(14)*	7	*13
6	*(12)*	*(8)*	*(13)*	7	*12

WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	*(9)*	10	12	*(8)*	*(13)*
12	*(9)*	9	12	*(7)*	*(11)*
14	*(16)*	9	11	*(13)*	22
16	*(19)*	10	*16	*(12)*	26
18	20	*(9)*	*(14)*	*(8)*	27
20	20	*(12)*	*(19)*	*(8)*	28
22	*(18)*	19	23	*(8)*	27
24	15	21	25	8	23
2	11	17	23	7	*16
4	10	12	16	7	*14
6	*(10)*	*(11)*	*(14)*	7	*13
8	*(9)*	*10	*13	*(8)*	*12

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	*(11)*	8	*(12)*	*8	12
9	*(11)*	8	11	*(7)*	*11
11	21	7	11	13	20
13	25	8	*21	15	*23
15	27	*(8)*	*(17)*	15	*26
17	*27	*(8)*	*(14)*	12	*27
19	24	*(7)*	*(18)*	*(9)*	*27
21	*20	*(13)*	*(22)*	8	*24
23	*15	*(13)*	*(22)*	8	*18
1	*13	*(9)*	*(15)*	8	*15
3	*12	*(9)*	*(14)*	7	*14
5	12	*(8)*	*(13)*	7	*13

The thinking of the bureau is that those stations should join DARC and Rolf doesn't have the funds to pay for the membership fees in addition to printing costs of the cards. Rolf says to use their QSL bureaus instead.

This also applies for direct QSL cards to Rolf as the return airmail rate in Germany is high. This will take effect after January. Therefore, if you need a card through Rolf, send your request now and include enough to cover the cost of return mail, such as two green stamps (U.S. dollar bills) or two IRC (International Reply Coupons). Thanks, Rolf, for the service that you have performed.

QSL Routes

These QSL routes come from several sources and cannot be guaranteed. Please report any errors.

3A/IK2GZU	—IK2SAU	9M6NA	—JE1JKL
3C1DX	—EA6BH	9M8HN	—JH4NPP
3D2AM	—W6BSY	9N1HP	—JA1OEM
3D2PN	—OH5UQ	9N1WU	—JA8MWU
3D2RW	—ZL1AMO	9Q2L	—PA3DMH
3DAØ/H5ANX	—ZS6EW	9Q5HX	—IK2MRZ
3DAØCA	—W4DR	9U5CW	—EA1FFC
3V8BB	—'	9V1ZW	—JA9IFF
3W6JP	—JA2TG	A35IG	—JA3IG
3ZØPAE	—SP1NQF	A35RK	—W7TSQ
3ZØWAW	—SP5PBE	A92GD	—K1SE
4M5LR	—WS4E	AM1ILO	—EA1EPB
4S7BRG	—HB9BRG	AP2MY	—OM2SA
5R8EN	—F6AJA	BT4SZ	—JA9YHY
5R8EY	—DJ1RL	C6AFP	—N4JQQ
5R8EZ	—DK8FB	C6AIE	—WZ8D
5WØAN	—DF8AN	CH3Y	—VE3MKX
7O1JAF	—IK8JAF	CI3O	—VE3TIG
8P9HR	—K4BAI	CQ2U	—CT4UW
8P9HT	—K4BAI	CU4N	—CU4AH
8P9Z	—K4BAI	D2FIB	—SMØFIB
8Q7AS	—G4VPM	D2JA	—JA3IG
9HØDX	—DK9IP*	DX1HB	—JA1KJK
9H3SS	—DL6MDG	DX1RVN	—JA1HGY
9H3UD	—DL8OBC	EA4ENK/P	—EA5OL
9H3UF	—DL4OCL	ED1IDT	—EA1EZQ
9H3WK	—DK9IP*	ED1RAV	—EA1JJ
9K2HA	—ON6BY	EI96I	—EI4AN
9M2JJ	—SMØOEK	EM1KA	—9H3UP
9M2KQ	—JA1XOC	EM1U	—9H3UP

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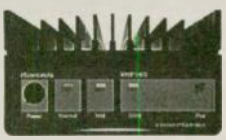

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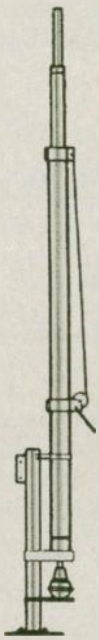

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JG8NQJ/JD1	—JA8CJY	V63MC	—JH8BKL
JY5DK	—ON6BY	V63NN	—JA7FWR
K9VV/C6A	—K9VV	V63VF	—AA8HZ
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KG4ML	—WB6VGI	VK9XM	—JA1BK
KH2/JF6PMO	—JF6PMO	W4D	—KD4FQT
KH2GR/KHØ	—JF6BCC	XU1CJF	—JRØCGJ
KH8/K8AQM	—AA8HZ	XX9KC	—JH2MRA
KH8/KB8ECG	—AA8HZ	XX9TRJ	—JH2MRA
KH8/KG6CO	—AA8HZ	YB28AR	—YC2BK
KH8/KG8DS	—AA8HZ	YM21HCS	—TA2BK
KP2/KD4D	—KD4D	YM22HCS	—TA2BK
N6JM/VE2	—N6JM	YO3AC	—W3HNK
N6JM/VE3	—N6JM	Z32XX	—KM6ON
NH8/N8CC	—AA8HZ	ZC4KS	—GØOWR
NL7TB/KL7	—NL7TB	ZK1AAU	—AA8U
NU2L/VE8	—G3ZAY	ZK1MJZ	—AA8U
OHØKMG	—OH2KMG	ZK2YY	—JA3IG
PR5L	—PP5LL	ZK3YA	—F3YA
S79SF	—JH6RTO	ZV2EPA	—PY2EPA
TA2ZP	—JA2BDR	ZV5AVM	—PP5LL
TE9RLI	—JH1NBN	ZV5VB	—PP5VB
TI9X	—JH1NBN	ZW9L	—PY1LVF

Notes:

a. When sending QSL requests to German QSL managers please include two green stamps or two IRC. German airmail stamps cost 3 DM.

b. This applies for the October 1995 operation only. For the March 1993 operation use FM5CD.

c. The route for this one depends on the operator, normally YT2AB. For the period of October 9 through 13, 1996, QSL via Eddie Schneider, GØAZT, P.O. Box 5194, Richmond, CA 94805; direct only.

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5Z4RL —P.O. Box 76315, Nairobi. KENYA

7P8/G4FUI —M.J. Rigby, c/o British High Commision, P.O. Box 521, Maseru 100, LESOTHO

7Q7SB —3311 Thomas Avenue, Midland, TX 79703

DU2/
N3GKY —J.Goshert, SIL/3711, Bagagag, NuevaVizcaya, PHILIPPINES

HLØT —Ham Korea University 1, 5-Ka, Anam-Dong, Sungbuk-Ku, Seoul, 136-701, SOUTH KOREA .

L8DX (1982)—Argentine CW Group, P.O. Box 9, 1875 Wilde, BA, ARGENTINA

LU6Z —Argentine CW Group, P.O. Box 9, 1875 Wilde, BA, ARGENTINA

LU6X (1979)—Argentine CW Group, P.O. Box 9, 1875 Wilde, BA, ARGENTINA

OEM1XBC —ADXB-OE, P.O. Box 1000, A-1081 Vienna, AUSTRIA

V44NEF —P.O. Box 565, Charlestown, ST. KITTS

V73CO —Arthur M. Hale, W4TVQ, 3133 SW 42nd Pl, Gainesville, FL 32608-2624

VP8CWI —P.O. Box 559, Stanley, FALKLAND ISLANDS

YB5NOF/8 —P.O. Box 1205, Palau 94001, INDONESIA

Many thanks to the following contributors: G3ZAY, VK2IVK, VK4FW, W4BIM, W4TVQ, W6EL, W6KBC, KC7DA, K7IFG, W7KCN, AA8HV, Western Washington DX Club (WAØRJY), Northern Arizonia DX Association (W7YS), International DX Association (W4WMQ), American Radio Relay League (K5FUV), *425 DX News* (I1JQJ), *The Ohio/Penn DX Bulletin* (KB8NW), *The Low Band Monitor* (KØCS), *DX News Sheet* (G4BUE), *QRZ DX* (N4AA), *Inside DX* (N2AU), and *The DX Bulletin* (AE4AP).

I'm back! My extended trip to the east amounted to over 13,000 miles of driving. My activation of islands didn't turn out as planned, mostly due to the weather. We managed to activate an island in Lake Superior for the Canadian Islands Award, which was a new one. We arrived on Anticosti Island (IOTA NA-077) 1 July and set up our station. Unfortunately, the band conditions were poor, resulting in only ten contacts during our stay of three nights. They were all CW, mostly 40 Meters.

If it wasn't the rain or time element to mess things up for our visit to a Newfoundland offshore island, it was the ferry. There were about four trucks ahead of us plus three cars and this took up all the space, requiring us to cancel out our trip to Ramea Island.

We also visited St Pierre during the IARU Contest, but didn't bring the radio. However, we met Jean-Pierre, FP5CJ, during our stay.

Although we were on the Magdaline Islands (IOTA NA-034) the weather didn't allow us to set up, adding to more disappointments. The same applied to activating our U.S. islands. However, we did get on the air from Madeline Island, one of the Appostle Islands in Lake Superior.

The lesson learned here is that activating islands should be the only objective, not the trip. But, that is unrealistic with your wife and mother-in-law along with you. Anyway, thanks to Lou Ann for helping with my column while I was away. Good DX to you! 73 de John N6JM. WR

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Call	Mgr	Call	Mgr
3D2VJ	G4ZVJ	EA1/G3PMR	G3PMR
3DAOAY	GOEOV	EA2CMW/P	EA2CMW
3V8BB	DF2 UU	ED2LFC	EA2MQ
3ZOZIM	SP5ZIM	ED2VCC	EA2BUF
4F3CV	HB9CXZ	ED3DGN	EA3DGN
4K8F	UA9AB	ED3RGC	EA3ACA
4L1BR	SP7MTL	ED3SCR	EA3EVR
4L55K	NIØB	ED5FSJ	EA5URA
4L8A	OZ1HPS	ED7RGC	EA7GYD
4L1DX	OZ1HPS	ED9IA	EA7ESH
4N14OT	YU1SB	ED1PDC	EA1AAA
4X/UX5PS	UX5PS	ED1SDC	EA1DPC
5B4/G3VMW	G3VMW	ED1WPX	EA1DAX
5B4/G4ZVJ	G4ZVJ	EK4JJ	GW3CDR
5H3BB	HB9DHB	EK8WB	N7RO
5N4ALE	DJ2VZ	EL2/K2YT	W2TK
5N6/KE6GEM	K4ZLE	EL2JZ	EL2FM
5N6RDH	KF9TH	EL2RR	KFØUI
5NØMVE	ON7LX	EM1KA	9H3UP
5R8EE	FR5EL	ER27A	ER1DA
5R8EN/P	F6AJA	ES96I	ES4RM
5R8FI	F6AJA	ES96L	ES6PZ
5V7BC	F5KPG	ES96M	ES1QD
5V7MD	AB7BB	ES1OX/1	ES1OX
5W1VJ	G4ZVJ	ES1RA/1	ES1RA
5X1D	SMØBFJ	EX8F	DL8FCU
7J1ATX	OH1TX	EZ8AI	RW6HS
7Q7EH	AA9HD	F/DJ8SE/P	DJ8SE
7Q7JL	GØIAS	F/EA3NY/P	EA3NY
7X4AN	DJ2BW	F/ON4CDC/P	ON4CDC
8Q7VJ	G4ZVJ	F5GVH/P	F5GVH
8R1K	OH6DO	F5PVT/P	F5PVT
8R1ZG	W4FRU	F5SHQ/P	F5SHQ
9A2IK	9A1CBM	FG/FS5PL	KFØUI
9A8ØØOS	9A1BOP	FG5HR	F6BUM
9A9A	9A1A	FK8GJ	F6CXJ
9G1BJ	G4XTA	FM5BH	F6HEQ
9G5CA	ZL2IW	FM5GU	WA4JTK
9H3MV	G3NYY	FS5PL	KFØUI
9H3PB	DF4EK	FS5PL/P	KFØUI
9H3RJ	HB9TU	FT5WE	F5GTW
9H3VZ	DK7IH	G6W	G4JVG
9HØA	LA2TO	GB5ØSWL	G4EHU
9J2SZ	SP8DIP	GB5FI	GWØANA
9K2/SQ5DK	SQ5DAK	GB5VJ	G4ZVJ
9K2IC	DG2SBW	GB8ØØSA	GØREP
9K2ZM	9K2RA	GM5VG	GM3UTQ
9M2/JA8EC	JA8ELC	GM6MD .	GM4FDM
9M2JJ	SMØOEK	GM6X	GM4FDM
9M2KQ	JA1XQC	GU/PA3EXX/P	PA3EXX
9M2TO	JAØDMV	GU4DXX	GØDXX
9N1ARB	KV5V	GU4UJS/P	G4UJS
9U5DX	F2VX	GW6A	GØDBE
A35VJ	G4ZVJ	H25Z	5B4ES
A41JR	YO3DAD	HA/WØYR	AA9DX
A925GF	EA7FR	HAM4FB	HA4FB
AH4/AHØW	KE7LZ	HBØ/DL4AMK	DL4AMK
AH8F	G4ZVJ	HBØ/DL1AZZ	DL1AZZ
AP2MY	OM2SA	HG8SDS	HA8PH
BD4TB	9A2AJ	HGM8KVK	HA8KVK
BV/NØIAT	NØIAT	HGMØTYP	HAØIR
BV5CN	AA6BB	HH2/N3SIY	KFØUI
BV5DR	W3HCW	HH2PK	9A2AJ
BV5GQ	BV5AO	HI3/DH2JD	DH2JD
BY1PK	PAØLOU	HI3/KG8JK	KG8JK
BZ4DHI	I1YRL	HKØHEU	HKØFBF
CT3/DJØMW	DJØMW	HP1XVH	KFØUI
CU2DX	KB5RA	HS7CDI	7L1MFS
D2/UR5TY	UR5TY	HSØ/G4ZVJ	G4ZVJ
D2FIB	SMØFIB	HZ1AB	K8PYD
D68DV/ET/XS	DL4XS	I06ARI	I6JSH
DL2YY/P	DL2YY	IA5/DK5RK	DK5RK
DU3/AH8F	G4ZVJ	IA5/IK4RR	IK4RSR
DX3H	DU3BAA	IA5/IK4RX	IK4RUX
IA1/IK1JJB	IK1JJB	KC6JF	KD6BTP
IBØ/IK6JOT	IK6MWK	KH2/WH6ASW	VK4FW
IBØJN	I8JN	KH2D	K8NA
IC8/IK2PZG	IK2PZG	KH6/G4ZVJ	G4ZVJ
IC8/IZ8AMZ	IK8NBE	KH8/G4ZVJ	G4ZVJ
ID9/I2IAU	I2IAU	KHØES	VK4FW
IG9/IK1AOD	IK1AOD	KP4IX	WP4MIM
IH9/IK8BIZ	IK8BIZ	LA/DK4UN/P	DK4UN
II1VE	I1BWI	LA/DL1SAX/M	DL1SAX
II9CM	IT9PKO	LX1RQ	KFØUI
IIOS	IK2IWU	LZ3XT	LZ1KPE
IJ7/IK7DXP	IK7DXP	NH2G	WF5T
IJ7/IK7IMO	IK7IMO	OD5MM	HB9CYH
IJ7/IK7JWX	IK7JWX	OHØ/DL6LAU	DL6LAU
IJ7/IK7XIV	IK7XIV	OHØ/OH3GZ	OH3GZ
IJ7/IK8TWP	IK8VRH	OHØKMF	OH2KMF
IL3/IK2PZG	IK2PZG	OIØRJ	OHØRJ
IL3/IV3DXW	IV3DXW	OY/DL8HAG	DL8HAG
IL3/IV3EXW	IV3EXW	OY4TN	OY6FRA
IL3/IV3VER	IV3VER	OZ/DL8AAM/P	DL8AAM
IMØ/IK2OFT	IK2OFT	OZ/DL1BWU/P	DL1BWU
IMØ/IK1TKS	IK1TKS	OZ1DYI/P	OZ1DYI
IMØ/ISOBDF	ISØBDF	P29TL	KF9TH
IQ1TSM	IK1TSM	PA/DL6MZ/P	DL6MBZ
IU3VMD	IK3AWP	PA6NL	PA3BPC
J28JA	F5PWH	PA/ON4BDS/P	ON4BDS
J28JY	F6BFH	PJ2MI	K2PEQ
J28MD	DL2RDP	PJ9G	K2NG
J28TC	F6FNU	PR5L	PP5LL
J3/KBOQNS	KFØUI	PY5ZHP	DL4DBR
J3/N3SIY	KFØUI	R1OO	EU1FC
J59ON	DJ9ON	RAØFAD	KM6ØN
JX7DFA	LA7DFA	RAØFF	KL7H
JY8CR	DL4VCR	RFØZ	RA3DEJ
K4ØØPI	K4PI	R1ASP	RA1AD
K96EWG	K4EWG	R1FJZ/FJL	DF7RX
RUØLAX	W3HCW	VP2MR	N5DXD
SO8SM	DF3SM	VP9/W3WKP	W3WKP
S5ØO	S59VM	VQ9VK	AA1OJ
SP6CZ/1	SP6CZ	VQ9WM	K7IOO
SU/DL5XAS	DL5XAS	VS6WO	K9EC
SU1JR	9K2RA	VS96BG	VS96BG
SU3AM	DL5ZBV	VU2TS	I1YRL
SV8/EA3CB	EA3CB	WH2U	KG6JHC
SV9/IK1GPG	IK1GPG	WH8ABB	G4ZVJ
SV9/KN8M	K8CW	WP4Q	KP4CKY
SV9/WØCG	KQ8M	WX3I/P	WX3I
T2ØAA	N4FJL	XE1/W6EFR	KFØUI
T2ØVJ	G4ZVJ	XJ1TX	VO1TX
T5/N9OQS	WN2R	XT2DP	WB2YQH
TA1FA	TA1AL	XV7SW	SM3CXS
TA2II	TA2DV	YB7/GØSMC	GØSMC
TA2IJ	DJ9ZB	YE5ØRI	N6QLQ
TK1A	TK5FP	YE8P	YB8NG
TK2YT	F2YT	YI1HK	SM3DBU
TT8SP	F5OIJ	YWØRCV	YV5AMH
TT8WD	F5UPY	Z31VP	DJØLZ
TU2VQ	KE6YUW	Z32KZ	I1YRL
UAØAZ	W3HNK	ZA1TAG	IK2HTW
UAØLS	AIØY	ZB2FX	G3RFX
UEØFDX	HH2HM	ZC4KS	GØOWR
UI8ØBL	UR4BYU	ZD7VJ	G4ZVJ
UK8OO	W3HNK	ZD8Ø/88V	G4ZVJ
UNØG	N8LYM	ZD8DEZ	GØDEZ
US8ØBL	UR4BYU	ZD8VJ	G4ZVJ
V63OM	DJ9HX	ZG2FX	G3RFX
V63CO/YL	SM6FJY	ZK2/3VJ	G4ZVJ
VE8/NU2L	SM6FJY	ZP9DM	ZP5AA
VI75RAAF	VK4LV	ZS8IR	ZS6EZ
VK6BCP	HB9CAI	ZW2EPA	PY2YW
VK7DI	VK3UX	ZX7AG	PR7AA

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3W5RS —P.O.Box 303, Vung Tau, Vietnam

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5A27 —P.O.Box 6318, Tripoli, Libya

5N4KST —P.O.Box 1035, Enugu, Nigeria

5T5SN —P.O.Box 1583, Nouakchott, Mauritania

5Z4BJ —P.O.Box 21171, Nairobi, Kenya

5Z4BZ —P.O.Box 41784, Nairobi, Kenya

7K3EOP —Noriko Tokura, 2-5 Yotsuya Shinjuku-ku, Tokyo 160, Japan

8P6EH —Venice Richards, Hope Field, Christ Church, Barbados

8P6ER —Gary Field, Prior Park Hause, St.James, Barbados

8R1AK —P.O.Box 10868, Desmond Jones, Georgetown, Guyana

9G1BL —Liliane, P.O.Box 13291, Accra, Ghana

9H1CD —Henry G. Souchet, 29 Gladioli Str., San Gwann SGN 05, Malta

A71CQ —P.O.Box 11862, Doha, Qatar

AA6BB —Jerry Branson, 93787 Dorsey Lane, Junction City, OR 97448, U.S.A.

AK1L —R.Tabloski, P.O.Box 802, Vinalhaven Island, ME-04863, U.S.A.

BD1KA/BD1NH —P.O.Box 6111, Beijing, China

BD4IE —P.O.Box 89, Harbin, China

BZ4RA —P.O.Box 542, Nanjing, China

C21DJ —P.O.BOx 217, Nauru

CO3ZD —P.O.Box 7, Artemisa, La Habana, 33800, Cuba

CT9F —A.R.R.M., P.O.Box 4694, 9058 Funchal Codex, Madeira Island, Portugal

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DK9IP —Win Kriegl, Martin-Luther-Str. 11, D-76327 Pfinztal, Germany

DJ1RL —Theo See, Breulgasse 13, D-63477 Maintal, Germany

DJ2VZ —Herbert Koehna, Ungelsheimer Str.4 A, D-47259 Duisburg, Germany

DL5ZBV —Ahmed El-Sagir, Hauptstr 18, D-63220 Kirtof/Lehrback, Germany

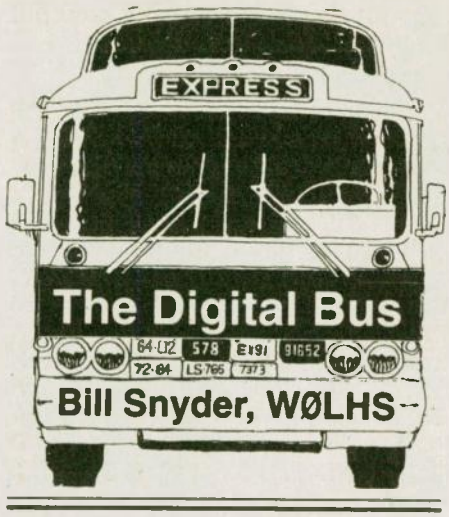
DL7CM —Hans-Rainer Uebel, Am Goldmannpark 47, D-12587 Berlin, Germany

DL7DF —Siegfried Presch, Wilhelmsmuehlenweg 123, D-12621 Berlin, Germany

DL8HCZ —Joachim Kraft, Gruetzmuehlenweg 23, D-22339 Hamburg, Germany

F1PSR —Cedric Faure, Montadour P-40, F-40500 Saint Sever, France

The above information was provided by *425 DX News*. WR



The other day I joined a group of old-time hams while they were having coffee in a local cafe. The conversation wound up with World War II stories. After I listened to a couple U.S. Navy sea-going tales, I tossed in one U.S. Army radio operator yarn. Here is the story (with embellishments, of course).

During World War II, I was assigned to the 58th Signal Battalion operating in the Southwest Pacific Theater of War. Our job was to support the United States Army I Corps Headquarters with all methods of communication. We were a well-trained outfit whose members had been recruited from the Bell Telephone system, and we were equipped with about everything in the communications business known to mankind. I had been with the 58th for about a year when this story happened in 1945.

Our task force had just recaptured the Philippine island of Luzon and we were in the process of driving the Japanese Army northwards to the end of island.

In doing our job, we operated a very busy message and cryptographic center; we wired and serviced enough telephone gear to equip a small city, we had operators sending radio messages on 16 radio networks, and we even had a flock of carrier pigeons being trained for message hauling.

After we moved to the Philippines from Dutch New Guinea, we also inherited a small air force (no, not the pigeons), too. They came from the Corps Artillery which boasted a Headquarters staff, an air officer and a fleet of small planes for reconnaissance and target spotting purposes. The Corps Artillery HQ had all that, but they did not have any cannons or firing-battery personnel.

So in the Luzon operation, which was spread over the whole island, the Corps Artillery flight group was assigned to our 58th to give us airborne messenger delivery capability. The island of Luzon was a big piece of real estate, and as we had a number of army divisions under our tactical command, we needed planes for hauling messages to the outlying division commanders.

Shortly after we made the initial combat landing on Luzon, General Swift, the Corps commanding general, established his headquarters on the banks of the Agno River close to the Pangasinan village of Rosales. Our signal battalion camp site was located on a former Japanese military airport complete with one grass runway about a half-mile long. There were numerous revetments for parking planes along the side of the runway, so we used them to put our tent camp in.

For aircraft, we had an L-5 and a number of L-4 observation planes, so we used them for daily messenger runs all over the island.

To drop back in time for a moment, when I was radio officer for the battalion on the Good Enough Island and Dutch New Guinea, I had a platoon of 66 high speed radio operators assigned to me. All of them were trained for copying Morse code at high speeds while typing the messages directly on paper. They were a very good bunch of lads and they did yeoman service by handling thousands of code groups a day while we were in New Guinea. We staffed 16 radio circuits that embraced army and navy units in Australia, the Admiralty Islands, and all of New Guinea. All operations were by manual Morse code, no radio teletype circuits for our group.

Our radio group worked 24 hours a day, but during the night time hours the frequencies assigned to us usually went dead for a few hours on some of the long-haul circuits, so there was little the ops could do but wait until the Heaviside Layer let the distant signals come back in.

The mental strain on the operators was something that builds up when forced to concentrate long hours at punching out strings of long code groups messages at a fast pace. One wrong letter in certain places in a message can keep the cryptographic people from decoding it, so accuracy is very important. That fact puts pressure on the receiving operator.

Back in those Dutch New Guinea days, one of our best ops suffered from a mental problem, he blew his top and had to be sent back to the

states. After nearly three years overseas, the life of a radio operator in a heavy traffic situation can be like living in a pressure cooker. The fact that he was the first op to get a "home run," as the soldiers called a trip back to a hospital in the United States, caused a few other homesick soldiers to try and duplicate the feat. "Gotta get a home run," became the battle cry for some war-weary soldiers.

So in Luzon we suddenly had a tiny wave of home run hitters trying their best to convince the medics they were a little bit nutty from copying the code every day, Sundays included. The most dramatic show was put on while we were in the Rosales area. It happened in the middle of the night.

The artillery spotter L-4 airplanes, a military version of the famous Piper Cub, came overseas in a giant wooden box designed for ocean shipping. The wings and propeller were removed from the fuselage and everything neatly packed in the crate. Because we had to keep the crate for possible shipping by sea again, the crew chief usually used it as his temporary bunkhouse near the airfield. It made a dandy cabin for sleeping purposes.

One crew chief of ours was awakened one bright moonlight night by strange noises. The sound seemed to be coming from inside the L-4 plane which was tied down right in front of his cabin/crate. When the sergeant got his eyes adjusted to the darkness and the moonlight, he could see someone in the cockpit of the plane. The person was occupying the pilot's seat. The flight control stick was being violently shaken in time with guttural noise that sounded much like a plane being flown doing aerobatics.

Although the whole area was surrounded by a defense perimeter, the sergeant grabbed his flashlight along with his carbine and quietly slipped out of the packing crate and approached the L-4 cabin as stealthily as he could. The strange noises were coming from the man in the pilot's seat.

The window on the plane had been opened up, so the sergeant poked the carbine barrel in on the man in the pilot's seat and snapped on the flashlight. "Hold it," the sergeant called out as loud as he could. The noise stopped and the pretending pilot froze in place.

In the beam of the flashlight the sergeant saw it was a radio operator he had seen around the message center tent. "What the @#!!! are you doing in my plane?" the crew chief demanded.

"I'm flying it to the Port of Embarkation in San Francisco. I'm gonna get me a home run," the radio man said resolutely.

Well, you can imagine what happened after that. The crew chief brought the radio op in, and he was sent to the medics for help. When I asked the crew chief what he had said to him after 'the pilot' said he was going to get himself a 'home run,' the sergeant answered, "I can't remember exactly; I was a bit excited, but I think it was something like, 'You ain't gonna get yourself a home run, soldier, you're gonna get yourself a base on balls — and that'll give you a walk to the booby hatch!' "

That is exactly what happened. The radio operator was shipped somewhere for medical help. I never did find out what happened after the poor man left the 58th. I've always wondered if he was actually off his rocker, or whether he was practicing to become an actor in the movies. According to the crew chief, the operator was doing a heck of a good job imitating a crazy person, but he didn't look like he could fly the plane.

EAVESDROPPINGS

VOTING IS GOING TO BE A LOT OF FUN THIS YEAR — I'M USING A WEEGEE BOARD TO DO THE SELECTING BUT NOT THE SPELLING . . . . WHY WOULD ANYBODY WANT TO PUT MONEY IN A SLOT MACHINE THAT IS DESIGNED TO TAKE IT AWAY FROM THEM . . . I NOW HAVE 70 CHANNELS ON MY TV, BUT I HAVE A HARD TIME WATCHING MORE THAN ONE AT A TIME . . . MY DOCTOR LIVES HIGH ON THE MEDICARE JACKPOT. . . MY WIFE TAKES PILLS AND PILLS AND PILLS SO SHE RATTLES WHEN SHE WALKS.

Write me: Bill Snyder, WØLHS, 1514 12th St., S., Fargo, ND 58103-4134. My packet address is WØLHS @WØLHS.#SEND.ND.USA.NOAM. 73 and DIT DIT. **WR**

New Section Manager

Coy C. Day, N5OK, has been elected Oklahoma ARRL Section Manager. Day received 475 votes, to 149 for Richard E. Russell, KJ5VV. Day takes office 1 October. He replaces *CQ magazine* writer Joe Lynch, N6CL, who is studying for the ministry and did not seek reelection.

FM & REPEATERS REPEATERS REPEATERS REPEATERS

BILL PASTERNAK
WA6ITF
28197 Robin Ave. • Saugus, CA • 91350

(Internet)billwa6itf@aol.com
(AOL)BILLWA6ITF
(Netcom) newsline@ix.netcom.com
(24-hr voice/fax) 805/296-7180

Tall antenna structures must be registered

If you operate a repeater from a commercial radio site or on a private tower that exceeds 200 feet in height, this concerns you. The FCC streamlined its antenna structure clearance process last July first by implementing new antenna and tower registration procedures. As a result, the owners (this is the key word *owners*) of antenna structures that are higher than 60.96 meters (200 feet) above ground level, or that may interfere with the flight path of a nearby airport must be cleared by the Federal Aviation Administration (FAA) and registered with the FCC. After registration is complete the FCC will issue the owner a registration (FCC Form 854R) containing a unique seven-digit registration number that identifies the structure.

Now, here is what will affect most hams who "rent" (another key word) space on commercial towers for their Amateur Radio repeater systems. The owner of the structure must provide each tenant, licensee, and permittee — including ham radio operators — with a copy of the registration. Licensees and permittees — again including ham radio operators — must reference the registration number on all subsequent filings with the Commission. For more information, call the Wireless Telecommunications Bureau's Consumer Assistance Branch in Gettysburg, Pennsylvania, at 800/322-1117 or 717/338-2500.

The WTB has also released a "Fact Sheet" to explain the registration program. The publication contains guidelines on applicability, registration requirements, electronic filing, and painting and lighting specifications. It's available on the World Wide Web at:http://www.fcc.gov/wtb/antstruc.html where the information for this story was obtained.

The "Chronicles of '76"

In the past three years I have often made reference to a work called the "Chronicles of '76." It's the story of what happens when you let a hobby take over your life. In this case it is a combination of a mode as well as a hobby. The hobby is Amateur Radio and the mode was FM.

For those of you who do not know, organized FM really got its start in the 1960s in Southern California. Similar to other modes, it too gathered a kind of "cult following" among its proponents. In Southern California, the FMers may have gone a bit overboard in that the 'cult' developed into a lifestyle that some hams hold dear to this day. That lifestyle centered around the then-simplex channel of 146.76 MHz.

In the '60s most FMers were running old, wideband FM commercial rigs garnered from police, fire and taxi services which were replacing them with the newer narrowband units. The majority were single channel, crystal controlled sets using vibrator and dynamotor power supplies and weighing in at close to 100 pounds or more. Since these radios were not frequency-agile like modern FM transceivers, the ham community had to choose a common meeting spot. The frequency chosen by Southern California hams was 146 .760 MHz.

Late in the decade, Kendall Webster Sessions, then K6MVH — himself an ardent '76er, took pen in hand to write the story of the rather colorful version of ham radio to be found on 146.76 MHz FM in the metropolitan Los Angeles area. I had the opportunity to read this manuscript in the early '70s. It would have been unbelievable — except that I got to know some of those mentioned in Sessions' text, and learned — to my utter amazement — that most of it was indeed based on fact.

Unfortunately, I managed to lose my copy of the 'Chronicles' during several moves. When I began writing this column I searched all over trying to get a copy — and also tried to locate the author to get his permission to reprint the work here in ***Worldradio***. I have yet to locate Ken Sessions. My last contact with him was in 1979 when he called to ask that I take over writing a book about repeaters that he could not undertake. I have not heard from him since, and the latest search of the web call directories indicates that Ken is no longer a licensed ham.

I thought that all was lost until the other day, when I received some e-mail from Neil McKie, WA6KLA. Neil was one of the original "76 Control Stations" before moving to Oregon almost twenty years ago. He has been assisting me in trying to locate one of the remaining copies of the 'Chronicles' but until now, without success.

This note held out a glimmer of hope and read in part: ". . .Out of my file cabinet is the top half of the first page. . . There is some manuscript involved too but [from] later in the book." Attached was the following opening paragraph:

The Chronicles of Seven Six
by Ken W. Sessions, Jr., K6MVH

Genesis

"From nothingness an FM empire evolved on 146.76 Mc in California. As operators settled on the channel,

the frequency became an untamed world — not too unlike the San Francisco of the early nineteenth century. And, as in the early west, posses and vigilante committees were hurriedly formed to keep maverick stations in line. Special licensing procedures were initiated by self-appointed guardians of the frequency. And the Organization grew and grew, held together by special "governors," secret "police," and a jointly operated evening news broadcast on 146.76 Mc. Then the Organization died, with the help of the FCC. The story is fascinating! Here in twelve monthly installments are the 'Chronicles.'"

As I recall, Sessions planned to publish the entire 'Chronicles of '76' in *73 Magazine* when he moved to New Hampshire to take on the job of Editor under Publisher Wayne Green, W2NSD. That was during the time I was getting a new business underway and had let all my subscriptions to the various ham magazines lapse. If the entire series was published in *73* I missed it and nobody at the magazine can remember or find back copies to check. Maybe someone with a private collection of *73* dating back to the late '60s can take a look-see. If someone sends me copies, I'll do what I can to get the "Chronicles of '76" into print to be enjoyed by the next generation of FMers. Meanwhile, the foregoing is all that's known to be left of that epic ham radio literary work. Well — maybe "epic" is overstating things a bit.

More on calling frequencies

Bob Homuth, KB7AQD, writes via packet radio regarding the "146.52 MHz Wilderness Monitoring Protocol" written up in the FM and Repeater column in the July issue of *QST* magazine (Traveling on Highway .52 by August C. Hoecker, N6LKQ). Bob says that some hams have sent him notes that the 2M calling channel in their area is used for chatting — not as a calling frequency.

Bob lives in Phoenix, Arizona, and says that most of the simplex 2M communication is found on 144.980, 145.510, 145.530, and especially 146.54 MHz. He asks how heavily used is 146.52 MHz in your region, and would a distress call be heard? If you want to exchange ideas on this issue with KB7AQD, his address is: Bob Homuth, 5656 North 17th Avenue #E43, Phoenix, AZ 85015. You can contact him via packet to KB7AQD @ WD6ETH.az.usa.na

Need an amp?

One fact about operating FM is that if you operate mainly through repeaters, only a few watts of power — sometimes even milliwatts — is needed to maintain most communications. But FM simplex and modes like SSB and CW are another story. In these cases, going QRO is sometimes not only an advantage. It can be the difference between making contact, or simply being in the noise. These are instances where having a switchable power amplifier can be a definite advantage.

Tucker Electronics — a company best known for great bargains in test equipment, has entered the ham radio market with products of their own. Of interest to readers of this column are two new 2-meter amplifiers designed specifically for use with handheld radios and/or low-power, 2-meter desktop transceivers.

The Tucker V-35W operates both FM and SSB/CW with drive levels of between .5-8 watts. It also has a 15 dB gain receive preamplifier, and a unique DC monitoring meter that provides a constant reading of DC input voltage to the amplifier, as well as a traditional RF output meter.

Tucker's other 2-meter amplifier, the model V-100W, also accepts between .5-8 watts in, also handles SSB/CW as well as FM, but with higher output power. In fact, 3 to 8 watts is enough to drive the V-100W to a full 100 watts out. It too includes a 15 dB receiver preamp and RF output metering.

Both amplifiers are covered by Tucker's one year warranty and 30 day "satisfaction plus" no-questions-asked return privilege. For more information on these products contact Tucker Electronics, 1717 Reserve Street, Garland TX 75042 or call toll free to 800/527-4642.

The best repeaters in town

Continuing our series naming which repeaters hams consider the best in their area for travelers and tourists, Ghery, N6TPT/7 writes via America Online that when in the Portland, Oregon area, try the 147.32 (+) machine. It is located on South Saddle Mountain (about 25-30 miles west of town). Ghery says that this repeater offers tremendous coverage of the greater Portland area and lots of friendly folks to talk to.

Closing thoughts

This column was written a little early to permit my wife Sharon, KD6EPW, and me to take off to celebrate our 25th wedding anniversary. The trip we have planned will take us through parts of Alaska, hopefully before the winter snows set in. I'll be carrying a dual-band HT with me and will let you know a bit about FM and repeater operation in America's last frontier in an upcoming issue.

Meanwhile, from our house to yours, best wishes for an enjoyable Thanksgiving and a great holiday season. de WA6ITF WR

Late flash!

Contrary to what you may have read on page 23 of the October, 1996 *CQ*, radiation resistance and impedance ARE NOT the same thing. Kurt N. Sterba will explain the difference in his next month's column.

The Youth Forum

Brian Mileshosky, N5ZGT

1021 Dakota S.E., Albuquerque, NM 87108

E-mail: n5zgt@wpc.com

Hello! My name is Brian Mileshosky, N5ZGT, and I am the new author for ***Worldradio's*** Youth Forum. I am 16 years old and live in Albuquerque, New Mexico. I have been a ham since I was 12, hold a General ticket and will be upgrading soon. I am a senior in high school and am the Junior Assistant Scoutmaster for Boy Scout Troop 41 and hold the rank of Eagle Scout. I am also the Post President for Explorer Post 296, which is sponsored by the Albuquerque Amateur Radio Club.

As the new author for this column, I plan to address Amateur Radio issues that will interest primarily youth who are hams, or who are interested in getting their Amateur Radio license. Feel free to send me your comments, suggestions, and ideas. If you have a particular subject in mind that you would like me to write about, please let me know. I hope to hear from many of you soon.

In this first column, I would like to bring up a subject that could seriously affect Amateur Radio. I'm sure everybody has heard about the 2 Meter and 70 centimeter band threats of forfeiture. There is a mobile satellite service that operates the "little LEO" satellites, which are low earth orbiting satellites that use frequencies below 1 GHz. This satellite service already has frequencies allocated to them by the FCC but they want more. The needs of little LEOs are being addressed in IWG-2A, chaired by Warren Richards of the Department of State. The ARRL technical relations staff participates in IWG-2A to represent Amateur Radio interests. At the 7 May IWG-2A meeting, an industry representative proposed a list of "candidate bands" for little LEOs. The list includes a number of bands that would negatively impact existing services, and does not include bands that would be more practical. Among the bands on this list of "candidate bands" are our 2 Meter and 70 centimeter bands! The decision of which band(s) will be allocated to the little LEOs will be made in 1997, when the World Radio Conference (WRC-97) takes place.

This threat to our 2 Meter and 70 centimeter bands affects *every* Amateur Radio operator. These two bands provide the backbone of our local public service communications effort and are used every day for search and rescue communications as well as emergency, and health and welfare traffic.

A few examples of where Amateur Radio has been used during emergencies are earthquakes in California, hurricanes on the east coast, floods in the mid-west, numerous search and rescue missions, and many, many other instances. The 2 Meter and 70 centimeter bands are the most popular, widely used and most crowded bands in use today. These are the most popular bands in which No-Code Tech licensees have privileges as well. Uses of the 2 Meter and 70 centimeter bands include FM phone, packet, repeater operations, simplex communications, amateur television, amateur satellite operation, moonbounce, sideband phone, and CW.

These bands have been used by the Amateur Radio service for a very long time, and we must defend them. Act now! Write, call, visit and e-mail your senators and representatives. Tell them what is happening to our bands and politely ask for their support so that these bands will no longer be threatened. Don't hesitate to contact them more than once.

Let your fellow Amateur Radio operators know about these threats. Address it on nets. Announce it at Amateur Radio club meetings. Include the news in Amateur Radio club mailings. Start petitions and pass them around at meetings or other ham radio events (hamfests and meetings are great for obtain-

ing those signatures).

Next, start writing and e-mailing the FCC. The FCC has set up a special address you can use to send these letters and e-mail. Don't hesitate to follow up. It is important to show that you are concerned with these threats and ask that our 2 Meter and 70 centimeter bands not be considered.

Keep up the heat. These issues will be decided in 1997 at WRC-97, and it is important that we keep showing our concerns and defending our bands. Amateur Radio operators cannot be concerned with these threats for a few weeks and then forget about them. We must keep emphasizing that our 2 Meter and 70 centimeter bands must not be taken away. Be sure to note that these bands are meant for service. However, I cannot stress enough how important it is to be courteous, and civil toward the FCC, our senators and representatives when we write, call and e-mail them. If we are impolite or hostile, it will only do us more harm.

So get your pens and paper out! Start today because time is running out! Please don't be lazy, and don't get the attitude that "I'll write later," or "Oh, there are enough hams writing now, so I don't need to." These are our bands and they are too precious to lose! If everybody acts now and keeps doing it, we will make a great impression, and will succeed! But remember, be courteous. As the ARRL said in their bulletin regarding this threat, "The object is to educate and persuade. The facts are on our side."

Here are the addresses to the FCC:

Office of the Secretary
Federal Communications Commission
Washington, DC 20554
or, via e-mail: wrc97@fcc.gov

Each letter or e-mail must have "Reference No. ISP-96-005" and "Advisory Committee Informal Working Group 2A" at the top. If you mail a letter, you must send the original, plus one copy!

The FCC staff states, "any comments sent to WRC-97 will be given prompt consideration. All written and electronic comments from Amateur Radio operators received at the Commission have, and will be included as part of the public record on WRC-97."

We, as youth, are the future of Amateur Radio. Let's work together to keep our precious bands! 73, Brian, N5ZGT WR

Some ham web sites

Sarex
http://www.nasa.gov/sarex/sarex_mainpage

FCC
http://www.fcc.gov

ITU info
http://www.itu.ch

Search And Rescue Communications

Jerry Wellman, WB7ULH
P.O. Box 11445
Salt Lake City, UT 84147

Audio

When we boil it down, one of our primary functions is delivery of audio from one point to another (or to many other points). I hope the audio would contain mission support information, but content aside, quality is something we communicators should constantly evaluate.

Amateur Radio is seeing large numbers of new operators and some seem to think it's fun to attach clever devices to microphones and create beeps, chirps, echoes, and various other effects. Let me say up front, that these have no place in public service communication efforts. You might have someone who believes an echo device is cute, but it simply isn't and you should make every effort to discourage such devices.

Before you give me both barrels, I do make exception for courtesy beeps, especially for HF contacts. I believe this function is useful when used correctly — which is during poor conditions and if the beep indicates you have finished sending and are ready for a reply. Many repeaters have courtesy beeps and there is no need to add your own or use one when it is clearly obvious you have ended your transmission. Some repeaters use a double beep to indicate that a formal or emergency net is in progress so you wouldn't want to "simulate" these inadvertently by adding your own beep.

A second possible exception might be an alert tone. Many police and fire agencies use one tone (medium pitch for about a second) to alert their people to a message they need to copy (such as a "be on the lookout" transmission). A two beep prelude indicates a more serious event and a three beep prelude is used for working fires, injury accidents, shootings, etc. Some years ago I put a tone generator (built with a 555 chip) into a microphone base. The small board was powered with a nine volt battery and a momentary push button switch which piped the tone into the microphone line.

When I used the tones during a search mission almost everyone commented they liked the tones. However the next shift operator didn't understand the tone concept and its erratic and untrained use created about as many complaints as beeps. I believe an argument could be made for the proper use of an alert tone (one, two, or three short bursts) within a controlled event by a net control station. With some planning and training, an emergency net control station could make good use of this function and mobile operators could key into message importance depending on the number of tones.

One advantage might be seen in high activity assignments such as a fire scene, emergency coordination center, or staging area. In these areas the repeater (or simplex) signal may be excellent but ambient noise will affect the ability to listen to each message. A series of preamble beeps would alert stations in these areas to pay closer attention to the message that follows. You might kick it around at your next meeting and see if this has application to your operations.

The primary topic this month is audio quality. Listen to your local aircraft frequencies and notice that many, if not all, pilots sound pretty good on the air. You don't hear much background noise, and the pilot's voice sounds clear. Very seldom do you have someone yelling into a microphone. If you've ever been in an aircraft cockpit and used a headset on the aviation radios, you know that the transmitted audio can be heard in the headset - this is called "side tone" audio.

In essence, the pilot (or radio operator) hears his or her voice as it is transmitted. The aviation headset often covers both ears and provides a noise shield from the engine noise which can be pretty loud in some planes. It is common for Amateur Radio operators (and even public safety officers) to increase their voice level to match ambient noise levels. If they are in a noisy crowd, the tendency is to speak or yell into the walkie-talkie or vehicle microphone. I'll hear a fire captain try to out-shout a pumper truck at a fire scene or a police officer attempt to compensate for a siren.

What we fail to realize, in the excitement and noise, is that the radio microphone is now getting an overload from our voice at close distance. The microphone "hears" only the close noise which is now very loud. This causes the radio to send a distorted audio signal which requires requests for repeated messages and wasted time trying to copy garbled messages. One of our regular local ARES training topics covers the need to speak in a normal voice despite the surrounding noise conditions. Many forget and it's common to hear distorted audio.

I believe the aviation headset, with it's noise-blocking earphones and the monitor (side tone, to the aviation types) goes a long way to create excellent audio quality from aircraft. When I nosed around the fire station, I noticed that many of the newer fire rigs also have headsets for the firefighters who operate the apparatus. If you've been around an active fire, you may notice how much noise a ladder truck or pumper produces and it only makes sense to have a long cord and a headset for this critical operation.

Before you rush out and find a headset, consider that they're only functional in some situations. You don't want a headset when you're on a trail searching for a missing person — you need to hear surrounding noise. If you're a shadow at the scene of an event, you need to hear not only the person you are shadowing, but perhaps warnings (or approaching vehicles) for your own safety. A headset would be recommended for an operations center, a net control station, and those locations where the operator does not need to hear ambient audio.

Another consideration point is the deviation level and quality of your microphone. During a recent exer-

cise, one agency had an amplified microphone at their station and it picked up background noise to the point of rendering the transmission unusable. We could hear laughter and other radios in the background which were, in most cases, louder than the operator voice. It was very poor audio. I've also heard operators who, having been told their audio is weak, have cranked up the deviation to where it became marginal copy.

Let's explore a little theory for a minute. In an FM radio, the signal is modulated by changes in frequency. If you have a 3 kHz modulated signal, it means that the voice peaks cause the transmitted frequency to deviate plus and minus 3,000 Hertz. A good FM rule of thumb is to set your deviation at about 4 kHz and that 5 kHz is too much. The reason for the upper limit is that too much deviation will put your signal outside a receiver's reception ability (the pass band) and the audio will sound choppy or intermittent. If your audio is set properly and the receiving station claims your voice is soft, the answer is for the receiving station to turn up the volume.

It is possible to set the deviation on your radio by guess and by golly, but it's not a recommended method. The correct way is to use something called a service monitor which usually costs a lot of money! Most radio groups have someone in their midst with access to a service monitor and during one meeting (which I recommend as a yearly event) everyone's radios can be checked. The service monitor can also tell you if your radio is on frequency as well.

Modern radios seldom need an amplified microphone! Using that old battery powered microphone might just toast the transmit audio section of your transmitter, and that gets expensive. Some radios (Motorola comes to mind) use a high-quality microphone with a level adjustment. These microphones can be connected to other radios, but BE CAREFUL! You can easily overdrive and cause problems to your radio. If in doubt, don't do it!

We often ask others "how we sound" after we've made a few adjustments. This works well if the other station has a good idea of what "good audio" sounds like. I like to suggest that you connect a tape recorder to a receiver and check your own audio quality. What sounds "good" to one operator may be "poor" to another. Most professional broadcasters run an on-the-air tape regularly and listen to how they sound. It's the best way I know to evaluate both audio quality and audio content and it's easy to do.

Here are some audio suggestions:

1. If the microphone is very inexpensive, don't expect robust, full-quality audio.

2. If you fiddle with the deviation adjustment enough, you'll render your radio unreadable.

3. Don't rush out and buy an expensive headset unless you will be using it. Consider also a noise-cancelling microphone and a small earphone for portable operations.

4. Good microphones cost money and take time to properly connect to your radio. Spending the time on audio quality is time well spent. When you sound good, others enjoy listening.

Some of my favorite microphones include: Shure's magnetic cartridge desk microphone, Kenwood's MC-85 desk set, General Electric's electret slim desk microphone, and a Motorola slimline amplified console microphone (recent vintage).

For mobile use, the Kenwood MC-55, a Shure noise cancelling, and the Kenwood standard issue (for the TS-50S or the TM-733) have all given good results. In the headset category you cannot beat the David Clark aviation headset or a Telex communications headset.

Heil headsets and Plantronics Starsets also rate high in my experience. Each microphone has unique qualities and applications — as you test various types (during test exercises) discover which works best for your assignment. One microphone may not meet all your needs if you respond to a variety of scenarios.

Civil Air Patrol

It is nice to note the CAP has just issued a new communications regulation. It comes in four volumes and replaces their old comm manual. The first volume is currently available via the CAP's World Wide Web page (www.cap.af.mil). It's good reading for both member and non-member and is very readable with a lot of the old bureaucratic writing style abandoned in favor of imparting information clearly. There is a good section for any communications group concerning planning and another section on training.

I was disappointed the CAP did away with the Radio Operator Certificate of Proficiency. Members who completed a challenging exam and earned the COP were recognized as those who were most experienced and knowledgeable in CAP communications. According to CAP, very few members in recent years earned the award and keeping the exam current was more effort than it was worth.

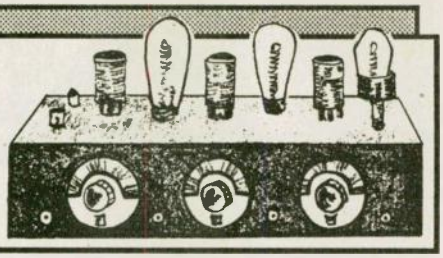
Reading this new CAP regulation by Amateur Radio operators, however, is mostly for your own use and interest as the CAP now strictly prohibits use of Amateur Radio frequencies to conduct CAP business including SAR and emergency operations. Where many agencies (federal, state, and local) are seeking ways to augment communications systems and involve Amateur Radio, CAP simply says no. This seems odd for a volunteer organization whose comm program has many roots within Amateur Radio circles. I wonder how many Amateur Radio operators and technicians will continue to offer their volunteer assistance where there is no need of the Amateur Radio Service. The regulation states: "[CAP] Members with Amateur Radio licenses may only use CAP frequencies for CAP operations." I guess you can talk about the weather or report a traffic accident, but telling the sheriff where the plane crash is (if you're a CAP member on a search sortie) won't happen via Amateur Radio.

Until next month, enjoy public service. There are still many agencies who welcome volunteer communication professionals. Your input is welcome via e-mail (jw@desnews.com) or U.S. Mail. WR

Techsat on the WWW

The Techsat project, Israel's first amateur satellite, now has a site on the world wide web. Its Universal Resource Locator is: www.technion.ac.il/~astronen/techsat

Old-time Radio



People Calling People

Buddy Robins, W2KN

Buddy Robins, W2KN has generously allowed **Worldradio's** *readers the opportunity to see some excerpts from his unpublished manuscript, "People Calling People." Here is the first part of his recollections.*

While this story is about ham radio, more accurately it is about one particular ham, or radio amateur, whose life and that of his family were changed because of his devotion to the hobby. It is my wish that those of the readers who are already involved with this wonderful pastime will enjoy hearing of the adventures of a brother radio amateur. Others who have only heard of this seemingly mysterious activity which is shared by hundreds of thousands of otherwise normal individuals, will to tempted to find out more about it; and maybe, yes maybe even be tempted to experience its fascinating nuances for themselves.

Hams have a world of activities in which to indulge themselves. They can handle "radio traffic" by relaying messages across the country or around the world and form friendships by chatting with other hams in far away places. In fact, we can have friendships with hams for years, in which we are only voices, and then in our travels, when we finally meet we can get the shock of our lives when we meet the person that goes with the voice.

Amateur Radio operators can take their portable equipment on vacations to other countries where what is termed reciprocal operating is permitted and have the fun of talking to friends back home. They can also make many new friends with the hams in the countries they visit. In the almost 60 years that I have been licensed, I have been fortunate to enough to have traveled extensively through my business activities. In the process I have made friends in the United Kingdom, France, Spain, Italy, Israel, Hong Kong, Taiwan, the People's Republic of China, many countries in South America, islands in the Caribbean and the Canaries, all begun with radio contacts made from the United States.

Radio amateurs come in to their own when normal channels of communications break down due to hurricanes, floods, earthquakes or other disasters. In addition they have helped design and build equipment which is carried aloft by rockets, and which provides satellite communications both for commercial services and for the increasing number of amateurs who are communicating with their own satellites. They may also get involved with amateur television, world-wide contests, and expeditions to remote places in the world called DXpeditions.

What sort of person becomes a "ham?" Just about any type you can imagine. Your local postal carrier may be one . . . mine is. So is the king of Jordan, and former senator Barry Goldwater. Also represented are many in the music and entertainment fields, lots of engineers and occasionally someone in the apparel business, like me.

In many ways we are all different, but deep down we are all alike. As the saying goes, you don't have to be crazy to be a ham, but it helps.

Room 520

Most Amateur Radio operators are a bit obsessive, particularly about operating from the unlikeliest of locations. Seldom will they miss an opportunity to take their radio gear with them when they clearly shouldn't, when successful reception and transmission are inappropriate or hopeless.

One morning a few years ago I woke up feeling that all was not as it should be in my lower abdomen. A visit to the doctor confirmed my suspicions and before I could say "ouch" I was scheduled for a hernia operation at the University Hospital in New York.

I was briefed by many well-meaning friends that this particular bit of surgery was a piece of cake, and that I would be out dancing with my wife, Cherry, a few hours after the operation. Hearing that, I decided (unbeknownst to her) to take with me to the hospital an extremely compact, lightweight two-meter amateur handheld radio, easily smuggled into the hospital packed in my personal effects. What ham with any self respect would have done otherwise?

My loving wife escorted me to the hospital, bade me a fond farewell,

and left me lying in the solitary splendor of my private room.

Immediately I hopped out of bed, dug into my overnight bag, took out my neat little miniature radio station, got back into bed, set the transceiver up on my dinner tray, and extended the whip antenna. Smiling proudly, I readied myself for communication with the outside world from what was for me a new and rare and uniquely exotic location.

"This is W2KN," I announced, choosing a repeater frequency that I knew could relay weak signals all over Manhattan. "Anybody around?"

"I sure am" responded a friendly voice, giving his call sign. "Where are you?"

"University Hospital," I replied.

"Patient or staff?," came the query.

"Patient," I said, and was immediately deluged with calls and sympathetic comments from hams all over the city lurking on the repeater.

I spent the next half hour reassuring my new-found friends that my operation-to-be was relatively minor, and thanked them for their warm concern. But what really gave me a charge was their enthusiastic congratulations for my foresight and daring and expertise in secreting the hand held from both my wife and the hospital authorities, and winding up with it in my bed, no less!

Eventually things quieted down and there was silence — until I heard a very weak signal, down in the noise, repeating my call sign.

"Who is calling W2KN?" I asked eagerly. "Go ahead."

A feeble signal, and an even more feeble voice replied: "This is WA2TIA. What room are you in in University Hospital?"

"Thirteen nineteen" I replied, "Where are you?"

"I'm down on the fifth floor, in 520," came the weak response.

I was stunned for a moment, not just with surprise, but with hurt pride. Someone had matched me. Then I said magnanimously, "Well, I'm still ambulatory. Would you like some company?"

"I'd love some," he sighed, "but I'm afraid there's no way. You see, I'm in intensive care."

Next time, W2KN relates the story of getting life-saving medicine to a friend in South America. WR

Lorraine S. Matthew, N4ZCF
MARS call AAA9PR

Army MARS goes to sea

The United States Army ship, *General Brehon Sommerville*, was recently tasked to sail to a destination above the Arctic Circle and Army MARS communications went along.

Communications support was requested by Chief Stubbs of the 805th Transportation Group to Mr. Chuck Verdon, station chief at Army MARS Western Area gateway station/AAAØUSA located at Fort Lewis, Washington.

The 805th Transportation Group is a logistical support group providing water transportation in support of combat operations or such operations that lend support to potential combat operations. The Army has a navy of its own for this kind of work. The *General Brehon Sommerville* is an Army LSV3 and has the capacity to haul the equivalent of M1A1 Abrams tanks and drop them on a beach with no port or dock facilities. This time the ship's mission was to sail north through the Aleutian Islands and the Bering Strait to Noorvik, Alaska, above the Arctic Circle to provide support for the construction of an airstrip. Cargo and personnel for this support were carried by this Army ship with true interservice cooperation.

Chief Stubbs was looking for HF radio support for the mission. His goal was an economical way for the ship and its personnel to communicate back to the Fort Lewis area. He felt that an alternative to the $10-per-minute INMARSAT communication was needed. He was looking for HF voice traffic and phone patching.

Chuck Verdon showed Chief Stubbs that there was much more that HF communications could accomplish. Automated text message forwarding 24 hours per day with no operator present and Internet e-mail forwarding to and from homes and offices were two of the services cited in addition to the tried and true voice communications. With all of the potential support offered via HF communications, the project was declared to be "on." Coordination included Chuck, Al Zuck/AARØMZ, Larry Smith/AAAØWA (Washington State Army MARS Director), and Al "Smitty" Smith, the technical expert at the AAAØUSA station. Each man dedicated his skills to getting the ship's equipment and software capabilities matched to the tasks at hand. Even manuals and documentation had to be developed and written for the project. All of this was accomplished in a few days' time.

Al Zuck gathered the ship's radio room crew together on a Saturday morning for briefing and training. The crew had a lot to learn and Al had to teach them in just an hour and a half. As he said, "The crew did the best they could with the time they had available."

He received a call on Sunday night about 9 p.m. from the ship. A member of the crew had turned the computer off and no one could get it to boot up again. A step by step instruction session by phone did not solve the problem.

"Smitty" was called because the problem was within the computer rather on the techniques being used. He agreed to go to the ship. The ship's crew, however, had called on a cell phone since they were at sea going to another port (Tacoma) to take on cargo. "Smitty" finally found and boarded the ship at Tacoma at about 2 a.m., solved the problem, and re-briefed the operators. That computer was probably never turned off again.

The ship fueled for the voyage at the Naval Fuel Dock at Bremerton,

WA before heading north. On Monday evening, at 9 p.m. they checked into the MARS/A net. Al Zuck, project coordinator, spoke to them at length as they were heading out through the Strait of Juan De Fuca and into the open sea. Their operators still had many questions which he answered. As the days went on, they became more familiar with the equipment and the operations protocols and began to rely on HF more and more. The traffic flow increased to the point where not only health and welfare traffic was handled but a vast amount of administrative and logistical traffic was included as well.

Traffic such as weather data, coordination of crew replacement and their itineraries, and parts orders were effectively and efficiently handled.

The combination of HF Radio between the ship and the gateway station and forwarding to and from the Internet meant that the staff back home could send and receive e-mail information 24 hours per day.

Phone patches from crew members to their loved ones were run every night and the personnel at AAAØUSA kept the traffic flowing to and from the ship. The array of antennas at the Fort Lewis station/AAAØUSA included a huge rhombic which they use to pass traffic to and from Korea every day. This antenna became the workhorse of this project since its fixed bearing crossed the Aleutians and the Bering Sea and was wide enough in its scope to be able to work the ship all the way north.

On one occasion, the ship's antenna coupler broke and the ship was able to work only one frequency. AAAØUSA patched the ship's radio operator through to the supplier of the part located in Missouri who advised the operator how to fix it. The ship had encountered rough weather and water had rendered the part useless except for the one frequency. Continued rough weather made it impossible to fix despite heroic efforts made to climb the mast holding it.

The part was ordered via radio link and it was air expressed to the Kotzuebue Army National Guard Station where it was picked up by the ship and installed. The ship continued north to its final destination.

The return trip was supported equally and was highlighted by the transmission of the ship's anticipated arrival time back in Tacoma.

Mr. Zuck, project coordinator, wrote, "The project has been very enjoyable for me from the coordination stage to seeing our efforts rewarded as traffic was passed. As the reliance the crew put on the system grew and the amount and type of traffic changed from health and welfare to operational data, this only made me feel better. Chief Stubbs should be commended for utilizing the Military Affiliate Radio System (MARS) as an economical and effective asset for his ship and crew. The staff of AAAØUSA, the Western Area Gateway Station, and MARS members can feel good in supporting our service personnel and a job well done."

(My deep appreciation goes to Mr. Zuck who sent me a very complete description of the entire project from which this column was adapted. Thank you, Al.) WR

Visit Your Local RADIO CLUB

ALASKA

South Central Radio Club. 8023 E. 11th Ct., Anchorage, AK. Meets 2nd Fri./monthly, 7 p.m., UAA Business Ed. Bldg., Rm. 220. KL7CC, (907) 338-0662 for info. Club rptr: KL7CC/R 146.97(-) PL 103.5 Hz. 2/97

ARIZONA

Arizona Repeater Association. P.O. Box 35758, Phoenix, AZ 85069-5758. Operates 20 VHF & UHF rptrs. In AZ. Meets 4th Thurs./monthly, 7:30 p.m., 1515 E. Osborne, Phoenix. Info: (602) 631-4879. 9/97

Cochise Amateur Radio Assn., (CARA). Meets 1st Mon./monthly, 7:30 p.m. at club facility on Moson Rd., Sierra Vista, AZ. WA7KYT/R 146.76(-) rptr. 5/97

Old Pueblo Radio Club, (OPRC). P.O. Box 42601, Tucson, AZ 85733. Meets 2nd Wed./monthly, 7:15 p.m., Northwest Neighborhood Center, 2160 N. 6th Ave. (South of Grant). 2/97

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. 3/97

CALIFORNIA

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(-). 5/97

Amateur Radio Club of Anderson, (ARCA). Meets 2nd Thurs./monthly, 7:30 p.m. Amer. Legion Post #746, 1709 Bruce Dr., Anderson, CA. Net every Tue., 7:30 p.m. on 146.64. 4/97

Clovis Amateur Radio Pioneers, (CARP). P.O. Box 514, Clovis, CA 93613. Meets 1st Fri./monthly, 7:30 p.m., Clovis Sr. Cntr., 840 4th St. Info: (209) 298-7707, KE6TCY 147.675(-) PL 141.3 net Thur. 7 p.m. ARRL SSC 3/97

Contra Costa Communications Club, Inc., WD6EZC/R. P.O. Box 20661, El Sobrante, CA 94803-0661. Meets 2nd Sun./monthly (except May & Dec.), 7 a.m., Baker's Square Restaurant in Richmond, CA. Info: Ed Caine, KA6OFR, (707) 996-0962. 1/97

Downey Amateur Radio Club Inc., W6TOI. Meets 1st Thurs./monthly, 7:30 p.m., So. Middle Sch. cafetorium, 12500 S. Birchdale, Downey, CA. (Summer exception: contact Doug, N6WZI, (310) 929-1441). VHF net W6GNS rptr. 146.175(+) Thurs., 7:30 p.m. 5/97

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. 145.110 MHz. 6/97

Fresno Amateur Radio Club. Meets 2nd Fri./monthly, 7:30 p.m., Ernie Pyle School, 4140 N. Augusta, Fresno, CA. 146.94(-) 223.94(-). 11/96

Fullerton Radio Club, Inc., W6ULI. P.O. Box 545, Fullerton, CA 92632. Meets: 3rd Wed./monthly, 7:30 p.m., Sr. Citizens Ctr., 340 W. Commonwealth, Fullerton. Net ea. Tue., 8 p.m. 147.975(-). Info: Bob Hastings, K6PHE (714) 990-9203. 6/97

Garlic Valley Amateur Radio Club (GVARC). Meets last Sat./monthly, 8:30 a.m., Dimitri's Gilroy Inn, 1st and Wayland St., Gilroy, CA. Info: Hal, AC6LK, (408) 779-7787. Net Tues., 7:30 p.m. Club rptr. K6THR, 147.825(-). 6/97

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. 9/97

Golden Triangle ARC, (GTARC). Meets 4th Mon./monthly, 7:30 p.m., Sharp Health Care Activities Rm., 25500 Med. Ctr. Dr., Murrieta, CA 92562. 6/97

Livermore Amateur Radio Klub, (LARK). Meets 3rd Sat./monthly, 9:30 a.m., City Council Chamber, 3575 Pacific Ave., Livermore, CA. Net Mon. 1900 on 147.12(+). For info: LARK Secretary, P.O. Box 3190, Livermore, CA 94551-3190. (510) 846-6513. 12/96

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. (Summer exceptions; contact Pete N6IYU, 924-1578). Sun. AM Club at Red Cross, San Rafael. 9/97

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) 551-2010 or (714) 551-1036. 2/97

Mount Diablo Amateur Radio Club. P.O. Box 23222, Pleasant Hill, CA 94523. Meets 3rd Fri./monthly, 8 p.m., Our Savior's Lutheran Church, 1035 Carol Ln., Lafayette, CA. Net Thurs. 7:30 p.m. on 147.06(+) 100Hz PL. Info: (510) 932-6125. 7/97

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(-)(162.2) and 224.400(-). Contact: Bob, WA6ULL (916) 983-2776. http://www.ns.net/~NHRC 3/97

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. 1/97

Palos Verdes ARC. Meets 3rd Wed./monthly, 7:30 p.m., Community Rm., "Shops at Palos Verdes," 550 Deep Valley Dr., Rolling Hills Estates, CA. Info. Herb Clarkson, KM6DD, (310) 377-6342. Rptr. 145.38(-) PL 100. 11/96

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. 9/97

San Gabriel Valley Radio Club, Inc. P.O. Box 88, Monrovia, CA 91017-0088. Meets 1st Tue./monthly, 7:00 p.m., Arcadia County Park, 405 So. Santa Anita Ave., Arcadia, CA. 147.765(-) PL 131.8. Info: (818) 857-0249. 12/96

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., United Way, 1922 The Alameda, San Jose. Net all other Mon., 7:30 p.m. W6UU/R 146.385(+), 442.425(+) PL 107.2. 5/97

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 Parkview Ave., Redding, CA. Net 146.64, Wed., 8 p.m. 9/97

Sierra Foothills ARC. P.O. 3262, Auburn, CA 95604. Meets 2nd Fri./monthly, 7:30 p.m., Firehouse, 226 Sacramento St. Auburn. 28.415, 2/220m, Thurs. 7:30 p.m., 145.430(-) (PL 94.8) & 223.86(-). 3/97

Simi Settlers Amateur Radio Club (SSARC). P.O. Box 3035, Simi Valley, CA 93093. Meets 2nd Thurs./monthly (except Dec.), 7:30 p.m., Seventh Day Adventist Church Hospitality Rm., 1636 Sinaloa St., Simi Valley. Contact Ron, KD6VLM, (805)584-6737, 147.930(-) (PL 127.3). 11/96

So. Sierra ARS. Meets 2nd Thurs./monthly, 7:30 p.m., Veteran's Hall, 125 East F St., Tehachapi, CA. Contact: Caroline, KD6KMN, (805) 822-5995. 147.06/224.42. 12/96

South Bay ARC. P.O. Box 536, Torrance, CA 90508. Meets 3rd Thurs./monthly, 7:30 p.m., Torrance Memorial Hosp., 3330 Lomita Blvd., Torrance, CA. Talk-in on WB6MYD rpt. 244.38(-). Info: (310) 328-0817. 7/97

Southern California Six Meter Club. P.O. Box 10441, Fullerton, CA 92635. USB Net Tue., 8 p.m., 50.150. FM Rpt. Net Thurs., 8 p.m., 52.86/52.36 tx. FM Smplx, call freq. 50.300. Net Sun., 10 a.m. 50.40. 4/97

Southern Humbolt ARC, (SHARC). Meets 4th Tues./monthly, 7 p.m., Best Western Humboldt House Inn, Garberville, CA. Talk-in on 146.79(-). 4/97

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). 3/97

Tri-County Amateur Radio Assoc. P.O. Box 142, Pomona, CA 91769. Meets: 2nd Mon./monthly, 7:30 p.m., Covenant United Methodist Church, corner of Towne Ave. & San Bernardino Rd. in Pomona, CA. 11/96

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. 10/97

United Radio Amateur Club, K6AA. L.A. Maritime Museum, Berth 84, Foot of 6th St. San Pedro, CA 90731. Meets 3rd Fri./monthly (except Dec.), 7:00 p.m. Monitors 145.52 Simplex 10 a.m.—5 p.m. 7/97

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. Mary Turner, (707) 451-2134. 5/97

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(-). 12/96

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: Joe, KA6LPZ, (714) 963-4426. 10/97

Westside Amateur Radio Club. P.O. Box 11092, Marina del Rey, CA 90295. Meets 3rd Thurs./monthly, 7:30 p.m., Red Cross Bldg., 1450 11th St., Santa Monica, CA. Net every Tues., 8 p.m., 146.67(-). Voice mail: (310) 917-1100. 5/97

Willits Amateur Radio Society, (WARS). P.O. Box 73, Willits, CA 95490. Meets 4th Mon./monthly, 7 p.m., Brooktrails Fire Dept. (northwest of Willits). Talk-in: 145.13(-), PL 103.5. 9/97

Yolo Amateur Radio Society. Meets 1st Tues./monthly, 7:30 p.m., Training Rm. of the Davis PD, 226 F St., Davis, CA. Contact Dave Nishikawa, KC6YFG, (916) 756-6375/Talk-in 144.430. 10/97

Yuba-Sutter Amateur Radio Club, (YSARC). P.O. Box 1169, Yuba City, CA 95991. Meets 2nd Tue./monthly, 7:30 p.m., Yuba City Police Bldg., 1545 Poole Blvd., Yuba City. 12/96

CONNECTICUT

Middlesex A.R.S., (W1EDH). Meets Tuesdays, 7 p.m., Adult Day Care Cntr., 32 Miner St., Middletown, CT. VE classes/exams; ARRL Service Club. Ctc: M. Harper, W1FYM (860) 633-6295, P.O. Box 5, S. Glastonbury, CT 06073. 3/97

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. 10/97

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 rptrs. 146.67(-) & 145.33(-), serving all of Pasco County. 9/97

Indian River ARC, Inc., (IRARC). 597 Capri Rd., Cocoa Beach, FL 32931-3011. Meets 1st Thurs./monthly, 7:30 p.m., Community Church of the Nazarene, 400 Crockett Blvd., Merritt Island, FL. 3/97

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(-). 9/97

Saint Petersburg Amateur Radio Club. Meets 1st Fri./monthly, 7:30 p.m., Red Cross Bldg., 818 Fourth St. North, St. Petersburg, FL. Nightly net 6:30 p.m., 147.06(+). Rptrs. 147.06(+), 224.66(-), 444.475(+). Info: C. Wagner, KE4EYI, (813) 894-6710. 1/97

South Brevard Amateur Radio Club. P.O. Box 2205, Melbourne, FL 32902. Meets 1st Tue./monthly, 7 p.m., Public Library, 540 Fee Ave., Melbourne, FL. 6/98

Vero Beach ARC, W4OT. P.O. Box 2082, Vero Beach, FL 32961. Meets 2nd Thurs./monthly, 8 p.m., Emerg. Mgmt., Indian River County Adm. Bldg., 1840 25th St. Net Mon., 7:30 p.m. 146.64. 12/96

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 Waugh St. & Thornton Ave., Dalton, GA. Info: Harold Jones, N4OTC, 706/673-2291. 3/97

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo, HI 96721-1938. Meets 2nd Tue./monthly, 7 p.m., Army Reserve Center, 470 W. Lanikaula St., Hilo. Talk-in on 146.88(-). 6/97

Emergency Amateur Radio Club, (EARC). P.O. Box 30315, Honolulu, HI 96820-0315. Meets 4th Thurs./monthly, 7 p.m., Lincoln Elem. Sch., 615 Auwaiolimu, 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. 10/97

Koolau Amateur Radio Club, (KARC). 45-145 Mikihilina St., Kaneohe, HI 96744. Meets 2nd Sat./monthly, 9:30 a.m., Hoomaluhia Pk., Kaneohe, HI. 4/97

ILLINOIS

Chicago FM Club Inc., (CFMC). P.O. Box 1532, Evanston, IL 60204. 146.76(-)(PL 107.2)/224.10/224.18/443.75 (PL 114.8). Ham help line: (312) 262-6773. Info net Tues., 9 p.m. on 146.76(-). Meets 3rd Wed./monthly, 8 p.m. 7/97

CHI-NET Amateur Radio Club. North & Northwest Chicagoland & Suburbs. Specializing in PACKET Radio and 220 Phone to further the fulfillment of Amateur Radio. Meets last Thurs./even mos. Info: (708) 307-8198 or Packet on 144.99 MHz or Voice on 224.24 MHz. 11/96

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(+) (114.8PL), 224.68(-). 11/96

Fox River Radio League. P.O. Box 673, Batavia, IL 60510-0673. Meets 2nd Tue./monthly, 7:30 p.m., Old Bank Bldg., 900 No. Lake St., lower level, Northgate Shopping Ctr. & Rt. 31, Aurora, IL. 7/97

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. 1/97

Peoria Area Amateur Radio Club, (PAARC). Meets 2nd Fri./monthly, 7 p.m., 1401 N. Knoxville Ave. Info: (309) 685-6698. Rptrs: 146.85(-) & 147.075(+). 5/97

Schaumburg ARC. Meets 3rd Thurs./every other month, 7 p.m., Rec. Center, corner of Bode and Springinsguth Roads. Nets all other Thurs., 9 p.m., 145.23(-). Info: (708) 612-9446. 8/97

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./wkly., 147.12(+). 11/97

IOWA

Sooland Amateur Radio Assoc., (SARA). Meets 3rd Tues./monthly, 7:30 p.m., American Red Cross Bldg., 1512 Pierce St., Sioux City, IA. Contact: Glenn Holder, KØTFT. (712) 239-1749. Call-in 146.97(-). 11/96

LOUISIANA

Baton Rouge ARC. Meets last Tue./monthly, 7 p.m., Catholic HS cafeteria, 855 Hearthstone Dr., Baton Rougne, LA. Info: Norma Ramey, WD5GFD, (504) 654-6087. Club rptr. 146.19/79. 9/97

MAINE

Androscoggin Amateur Radio Club. Meets 1st Wed./monthly, 7:00 p.m., Auburn Police Station, 1 Minot Ave., Auburn, ME. 11/96

MASSACHUSETTS

Quannapowitt Radio Assoc., Inc. 6 Savin St., Burlington, MA 01803. Meets 4th Fr./monthly, 8:00 p.m., (May & Nov. meets 3rd Fri.), at Lynnfield-Wakefield Methodist Church, Wakefield. Info: Jim Chamberlain, N1AKG, (617) 944-5098. 1/97

Wellesley Amateur Radio Soc., & Babson Wireless Club. Meets 1st & 3rd Thurs./monthly, 7:30 p.m., Tomasso Hall, Babson College Forest St., Wellesley, MA (Sept.- June) Talk-in 147.03(+). Info: J. Driscoll, NV1T, (617)444-2686. 12/96

MICHIGAN

Adrian Amateur Radio Club, W8TQE. Box 26, Adrian, MI 49221. Meets 1st Fri./monthly, 8 p.m., Civil Air Patrol Bldg., Lenawee Co. Airport, Cadmus Rd., Adrian. ARES net Sun., 9 p.m. 145.37(-). Info: Tom Parsons, N8QEW, (517) 263-5568. 3/97

Chelsea Amateur Radio Club, Inc. Meets 4th Tue./monthly, 7 p.m., Society Bank, 1478 Chelsea-Manchester Rd., Chelsea, MI 48118. 12/96

Eastern Michigan Amateur Radio Club, (EMARC). Meets 1st Tue./monthly, 8:30 p.m., Woodland Developmental Cntr., Kimball Township (Range @ Smiths Creek Rd.). Contact Frank Forsyth, N8XTO, (810) 987-3540. Talk-in: 147.30(+). 9/97

Edison Radio Amateurs Assoc. Meets 2nd Fri./monthly (Sept.-June), 7 p.m., Edison Western Wayne Div. HQ, 8001 Haggerty, Belleville, MI (So. of Ecorse Rd.). Net each Thurs., 8 p.m. on 145.33(-) and 442.80(+) rptrs. 3/97

Genesee County Radio Club, Inc. Meets 3rd Tues./monthly, 7:30 p.m., Genesee Area Skill Center, Torrey Rd., Flint, MI. (810) 634-6077. 2/97

MINNESOTA

Viking Amateur Radio Society (VARS). Meets last Tues./monthly, 7:30 p.m., basement EOC, Waseca, MN. Call-in 146.94(-). 7/97

MISSISSIPPI

Jackson Amateur Radio Club, Inc. Meets 3rd Thurs./monthly, 7 p.m., Am. Red Cross Bldg., Riverside Dr., Jackson, MS 39202. 10/97

MISSOURI

PHD Amateur Radio Assn., Inc. P.O. Box 11, Liberty, MO 64068. Meets last Tue./monthly, 7 p.m., Gladstone Comm. Bldg. (816) 781-7313, Volunteer Examiner Coordinator. 2/97

NEVADA

Frontier Amateur Radio Society, (FARS). Meets: 2nd Sat./monthly, bkfst. 8 a.m. & mtg. 8:30 a.m., Country Inn, SE cor. W. Sunset, Valley Verde. Club info: Jim Frye, NW7O, (702) 456-5396 or Leona Wallace, WA6OHB, (702) 247-6450. 7/97

Wide Area Data Group, Inc. P.O. Box 3132, Sparks, NV 89432. Meets 1st Sat./monthly, 9 a.m., Jack's of Reno, 5485 Equity Ave., Reno. Info: (702) 356-8200. Call in on 147.30(+) MHz. 5/97

Sierra Intermountain Emergency Radio Assoc., (SIERA). Meets 2nd Tues./monthly, 7:30 p.m., Carson Valley Museum & Cultural Cntr., 1477 Hwy 395 North, Gardnerville, NV. Contact: George Uebele, WW7E, (702) 265-4278, 147.330 MHz. 11/97

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover, NH 03820. (603) 755-2600/335-6643. Meets 2nd Sun./monthly, 7 p.m., Rochester Fire Dept. Training Rm. Talk-in: 147.57. 11/96

NEW JERSEY

10-70 Repeater Assn., Inc. 235 Van Emburgh Ave., Ridgewood, NJ 07450. Meets 1st Wed./monthly (except July & Aug.), 8 p.m., VFW, Valley Rd., Clifton, NJ. Rptrs.: 146.70(-), 224.84(-), 444.15(+). 10/97

Bergen Amateur Radio Assoc., (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., 144.40 9 p.m. Wed. 5/97

South Jersey Radio Assoc., (SJRA). Pennsauken Sr. Hi Sch. at Hylton Rd. & Remmington Ave., Pennsauken, NJ 08109. Meets Jan.-Oct., 4th Wed./monthly, 7:30 p.m. (Nov.-Dec. 3rd Wed.). Talk-in: 145.29(-) rptr. Club call K2AA. 8/97

NEW YORK

Amateur Radio Assoc. 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 Co., 499 Zimmerman St., No. Tonawanda, NY. Talk-in: 146.955(-) rptr. W2PVL. 10/97

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. 12/96

Hall of Science Amateur Radio Club. P.O. Box 131, Jamaica, NY 11415. HOSARC, 2nd Tue./monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park, 7:30 p.m. Info: Arnie, WB2YXB, (718) 343-0172. 2/97

Orleans County Amateur Radio Club, (WA2DQL). Meets at Emergency Management Office, West County House Rd., Albion, NY 14411, 2nd Mon./monthly, 7:30 p.m. 145.27(-) — WA2DQL. 12/96

PROS, Pioneer Radio Operators Society. Meets 1st Wed./monthly (except July/Aug.), 7 p.m., Sardinia Town Hall, Savage Rd., Sardinia, NY. Net 9 a.m. Thurs. 3853 kHz. 3/97

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 — "Classroom Net", 7.238 MHz, 7 a.m. E.S.T. PSE QSL! 9/97

Suffolk County Radio Club, (SCRC). Meets 3rd Tues./monthly, 8 p.m., Bohemia Rec. Ctr., Ruzicka Way, Bohemia, NY. Talk-in: 145.21(-) rpt. Morten Eriksen, KA2UIU, (516) 929-6911. 4/97

Westchester Amateur Radio Assoc., (WARA). Meets 1st Wed./monthly, 7:30 p.m., Am. Red Cross Bldg., 106 N. Bway, White Plains, NY. Club net: 145.495(-) rpt. Tues., 7:30 p.m. Info: Dan Grabel, N2FLR, (914) 723-8625. 2/97

Westchester Emergency Comm. Assoc., (WECA). Meets 2nd Mon./monthly, 7:30 p.m., Westchester County Ctr., White Plains, NY. Contact WB2VUK (914) 631-7424 or WECA INFO LINE (914) 741-6606 for details. Talk-in WB2ZII/R 147.06(+) PL 114.8/2A. 10/97

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 Sta., Yonkers, NY 10710. (914) 963-1021. 146.865(-), 440.150(+). 10/97

NORTH CAROLINA

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. 5/97

OHIO

Ashtabula County ARC. Ken Stenback, AI8S (964-7316). County Justice Ctr., Jefferson, OH. Meets 3rd Tue./monthly, 7:30 p.m., County rptr., 146.715(-) 10/97

Clyde Amateur Radio Society (CARS). Meets 2nd Tue./monthly, 7 p.m., Municipal Bldg., Clyde, OH 43410. NF8E rptr. 145.35(-) and 442.625(+) MHz. Net Sun. 9 p.m. Info: E. Remaley, KA8CAS. 3/97

Firelands Area Rptr. Assn., (FARA). Meets 4th Tue./monthly, 7 p.m., Erie County Admin. Bldg., Sandusky, OH. WB8LLY rptr. 146.805(-). Net Sundays, 8 p.m. Info: FARA, P.O. Box 442, Huron, OH 44839. 11/96

Greater Cincinnati Amateur Radio Assn., (GCARA). Meets 4th Wed./monthly, 7:45 p.m., Brusman's Hall, 4813 Vine St., St. Bernard. ARRL SCC, Net Thur. 9 p.m. EST. 1.936 MHz. TI 147.15(+). Info: WA8STX or (513) 772-7378. 11/96

Toledo Mobile Radio Association. P.O. Box 273, Toledo, OH 43697. Meets 2nd Wed./monthly, 7:30 p.m., Luke's Barn, Lucas County Rec. Ctr., 2901 Key St., Maumee, OH. Contact: Brenda, KB8IUP, 866-5928. 11/96

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(-). 2/97

Western Reserve Radio Assoc. P.O. Box 81252, Cleveland, OH 44181-0252. Meets 2nd Wed./monthly, 7:30 p.m., Jenkins Community Cntr., Main St., Olmsted Falls, OH. Info: B. Beckman, N8LXY, Pres., 146.73, 444.900 MHz. 6/97

OREGON

Central Oregon Radio Amateurs, (CORA). P.O. Box 723, Bend, OR 97709. Meets last Thurs./monthly, 7 p.m., Bend Sr. Ctr., 1036 NE 5th, Bend, OR. 147.06(+) MHz. Info: (541) 385-9497. 6/97

Keno Amateur Radio Club. P.O. Box 653, Keno, OR 97627. Meets 3rd Thurs./monthly, 7 p.m., Keno Fire Stn. Rptr. 147.32(+) W7UFM. Info: Tom Hamilton, WD6EAW, (503) 883-2736. 11/96

Central Oregon Coast ARC. P.O. Box 254, Florence, OR 97439. Meets 3rd Sat./monthly, 9 a.m. for brkfst. Net, Wed. 7 p.m., 146.80(-). Info: 997-2323 or 997-4074. 1/97

Umpqua Valley Amateur Radio Club, Inc. P.O. Box 925, Roseburg, OR 97470. Meets 3rd Thurs./monthly, 7:30 p.m., Douglas County Courthouse, Rm. 310, Roseburg, OR. Info: W5PII/R 146.90(-) or (503) 673-1310. 6/97

Valley Radio Club of Oregon. Meets 1st Fri./monthly, 7:00 p.m., Lane County Red Cross chapter house in Eugene. Info: (541) 683-0987 or write: VRC, c/o 159 E. 16th Ave., Eugene, OR 97401. 12/96

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 W3UDX/R 147.36(+). Net 10:10 p.m. nightly. 10/97

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. 3/97

Mid-Atlantic ARC. Box 352, Villanova, PA 19085. Meets 3rd Thurs./monthly, 8:00 p.m., Radnor Mem. Libraray, Wayne, PA. Call Bob Haase, W3SA, (610) 293-1919. 147.06(+) WB3JOE PBBS 145.09. 1/97

Warminster Amateur Radio Club, WA3DFU. P.O. Box 113, Warminster, PA 18974. (215) 672-9985. Meets 1st Thurs./monthly, 7:30 p.m., Benjamin Wilson Sr. Cntr., Warminster, PA. Net on 147.69(-), 147.09(+), Wed. 8:30 p.m. and 28.450 Sun. 9 p.m. 5/97

RHODE ISLAND

South Coast Wireless Society. P.O. Box 1516, Westerly, RI 02891. Meets 4th Tue./monthly, 7:00 p.m., Pawcatuck Neighborhood Center. Info: Bill, KA1ZZR, (401) 596-5849. 6/97

TEXAS

Brazos Valley Amateur Radio Club, (B-VARC). P.O. Box 1630, Missouri City, TX 77459. Meets 2nd Thurs./monthly, 7:30 p.m., Sugar Land Community Ctr., 226 Matlage Way., 3 blks SW of Imperial Sugar Co. at HWY US-90A & Brooks St. (HWY 58) in Sugar Land, TX. Talk-in: 145.47(-), 442.5(+) rptrs. http://www.hal-pc.org/~bvarc 7/97

Brownsville ARC (CHARRO). Meets 2nd Tue./monthly, 7:00 p.m., Confederate Air Force Hangar, Brownsville Airport in TX. Talk-in on 147.040(+). 12/96

VIRGINIA

Southern Peninsula Amateur Radio Klub, (SPARK). Meets 1st Tue./monthly Salvation Army Community Bldg., Hampton, VA. Repeaters 146.73(-), 449.55(-). VE Exam Info: (804) 898-8031, W4RTZ. 2/97

Virginia Beach ARC. Meets 1st Thurs./monthly (except July), 7:30 p.m., St. Andrews United Methodist Church, Tucson & Princess Anne Rds., Virginia Beach, VA 23462. 2/97

WASHINGTON

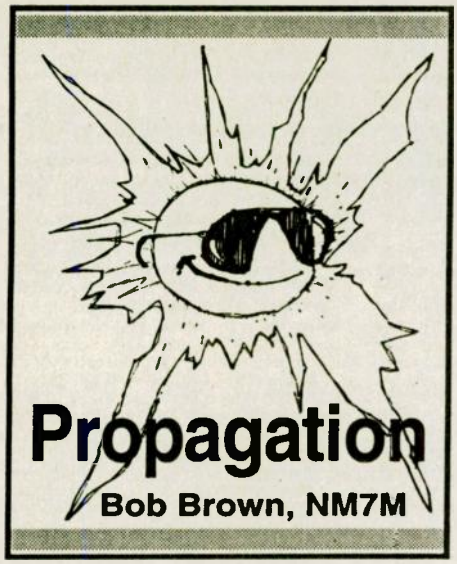
The Mike & Key Amateur Radio Club. Meets 3rd Sat./monthly, 10 a.m., Salvation Army Renton HQ., 720 Tobin St., Renton, WA. Talk-in on 146.82(-) rptr. Doors open at 9:30 a.m. 5/97

Skyvalley Amateur Radio Club, KC7LOC. Meets 3rd Sat./monthly, 8 a.m., Dutch Cup restaurant off Rt. 2 in Sultan, WA. Info: (360) 793-3433. 4/97

WEST VIRGINIA

Jackson County Amateur Radio Club. Meets 1st Thurs./monthly, 7:30 p.m., United Nat'l Bank of Ripley. Net Mon. 9 p.m. on 146.67(-) WD8JNU/R. For info: D. Tenant, N8ZYB, Rt. 1, Box 188, Mt. Alto, WV 25264. 6/97

Tri-State Amateur Radio Assn. Meets 3rd Tues./monthly, 7 p.m., The American Red Cross, 111 Veteran's Memorial Blvd., Huntington, WV. 5/97



"The Devil's in the details!" I'm sure you've heard that one some time or other. It seems to apply to legislation, contracts, even the ionosphere, for that matter. But how does one distinguish between "The Details" and "The Big Picture?" Good question. For my part, I have to think that it's often a personal matter. For example, in my time at the Big U in California, I went out into the field on research trips, sort of "DXpeditions in Physics." And I found a thing or two, even an ionospheric effect that had never been seen before in the recorded history of mankind. To me, that was a Big Deal and part of "The Big Picture" but in time, its importance shriveled to the point where it is only mentioned in passing now and I suffer being ignored as the one who first found it. In short, my "Big Picture" has now become only a minor "Detail" to the rest of the world. Pity!

But when it comes to the ionosphere and HF propagation, what would be the "Big Picture" and what a "Detail" from a personal standpoint? A good example would be DXing, day or night. So for the 10-meter DXer, the daytime ionosphere is the "Big Picture" and "detail" would be the nighttime ionosphere. But the latter is the "Big Picture" for the low-band DXer. Of course, right now at solar minimum, you don't find many 10-meter DXers strutting around town and all the low-band DXers are getting caught up on their sleep. In both cases, those were personal choices, not exactly physical differences.

When it comes to physical differences, one good example to my way of thinking is what happens to all the waves or rays going out from an antenna. There, the Big Picture is they go off on earth-ionosphere hops, up to one region or another and then back to ground. And the Big Picture would say all you need to know are the critical frequencies of the regions, say foE or foF2, and their height above ground. But while such a simple view has the weight of statistics on its side, it does not distinguish between the fraction of rays or the radiation angles which go off on an E- or a F-hop. That's in the details.

Actually, as radio amateurs, we were all brought up on "The Big Picture," our literature talking about the ionosphere like it was made up of discrete layers, just like a cake. Some of that still persists today, much to my chagrin. Like Don Quixote, I attack those ideas whenever they are shoved in my face but the trouble with that is once you catch people's eye by making a fuss, their attention span is not long enough for them to listen to the arguments, "the details."

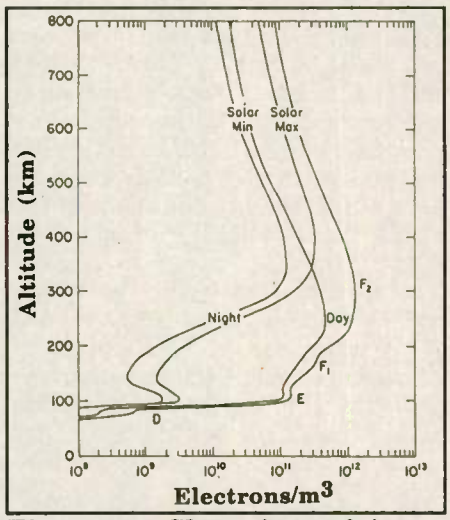


Figure 1. Changing of ionospheric profiles from solar maximum to minimum.

Take propagation programs as an example. In real life, they have a long history but in Amateur Radio circles, the story is much shorter, simpler and only now beginning to include "the details." Thus, we got our start in predicting propagation by working out the great-circle distances and headings for paths, then by bouncing kinky lines or rays off of mirror-like surfaces characterized by critical frequencies. With that, a new phrase entered Amateur Radio — the maximum useable frequency, MUF for short.

As I pointed out recently, we suffered from the lack of an information transfer from the professionals to our group. Thus, there were details missing in our picture, the daily variation of critical frequencies being one example. So amateurs thought MUFs were "carved in stone," not subject to fluctuation or variation from the predicted values. So that's a case where "the details" happen to be pretty important!

Other examples of "detail" that we missed had to do with signal strength and noise. I'm not sure about the former, whether it was just too hard for amateurs to understand or whether our history was such that we could afford to ignore it. In saying that, I am thinking of times around the peaks of solar cycles; then, MUFs were important and at the frequencies used, say 28 MHz, signal strength was not a problem, as demonstrated by the profusion of "quarter-watt and wet noodle" stories.

As for noise, that began to be studied around the time of WWII and after finishing with noise of atmospheric origin, the study went on to include man-made noise. And that's an example of "detail" that we're finally getting into, modern propagation programs now including signal/noise ratios for different

settings, from industrial to rural. But the "Big Picture," atmospheric noise on a global scale, is still out there in professional circles. I would guess that it is only a matter of time for that to show up in Amateur Radio circles, given how computers have grown in memory and speed.

Now in talking about "details," it should be noted that they can be present in both space and time. Again, the ionosphere is a classic example where there are changes which take place slowly with the solar cycle, almost putting them in the category of "details." But like the infinitesimal in calculus, those changes or increments can amount to something finite, even big and important. To see what I mean, look at Figure 1 which summarizes how ionosphere profiles change from solar maximum to minimum and day to night. Each of the curves have their share of detail but when you get right down to it, slow changes in detail add up to the large changes in the "Big Picture."

Radio waves going through such ionospheres are refracted, of course, and I've shown some ray-traces from time to time to remind you about the difference between the reality and the simple picture of reflection off of ionospheric mirrors. An interesting point to that discussion is that it proves possible to bring the two approaches together in a rough way. Here, I am thinking of propagation programs by Raymond Fricker, who was a propagation engineer at the BBC and is one of my heros. He put together some interesting programs like IONPRED which made both MUF and signal strength calculations, a major step at the time.

While his calculations used the simple ray/mirror technique, he adjusted the height of the F-region to account for the sunspot count and the local time of the F-region reflection. So some details of the ionosphere were included in his program, beside the gross features of how critical frequencies of the ionosphere changed with SSN and time. But the neatest trick of them all was how he dealt with what happened to signals in approaching the transition regions, say the E-region or the top of the F-region. He had a simple way of dealing with something that I've mentioned before - exotic modes of propagation, like ducting or chordal hops, which replace earth-ionosphere hops when rays pass through those transition regions.

Now he was interested in the "Big Picture," reliable forms of HF communication, so he found a way of excluding the exotic modes. In essence, he declared them "unstable," which they really are in their brief existence. So he got rid of them by rejecting any situation or mode where the effective critical frequency of a wave (remember that one?) differed by less than 5% from the ionospheric critical frequency at the transition region. If the difference was 5% or more, all well and good; the ray would go across the transition region, say the E-layer, and go on its merry way. But if the difference was less than 5% then the mode failed his stability test and the program stopped the calculation, went back to the very beginning and looked for the next radiation angle for the path from point A to point B so it could start the whole calculation all over again. So it went, try after try.

In modern terms, that was hop-testing or mode-checking, a means of giving a better "Big Picture" by excluding some of the more unreliable details of the situation. So his method could show that long haul paths might start with a short E-hop or two in the morning and go over to longer F-hops when the path got into darkness. Of course all that depended on the frequency, high frequencies like 28 MHz being pretty immune to the E-region and paths for lower frequencies like 3.5 MHz controlled by that region.

Before that approach, the usual system was to work the propagation calculation using only F-layer hops and adding, rather parenthetically, that there might be E-region problems or E-cutoffs along the way. But Fricker's method changed all that and came up with the simplest mode of propagation. Of course, other higher modes would be possible, more hops, different radiation angles and such; nowadays, MINIPROP PLUS goes through those calculations and comes up with the mode that gives the greatest signal strength, doing Fricker's method one better.

Now I've gone through some ideas, talking about how details can be of importance, say how rays from an antenna pattern divide up for short E-hops and longer F-hops. But those details depend on other details. Remember the rhyme about "fleas with little fleas upon THEM?" Well, the division of rays is one thing but the unstable modes that Fricker singled out to omit depend on how the ionosphere varies with distance. For example, chordal hops and ducting on the higher frequencies of the HF band, discussed in the January '96 column, depend on the electron density declining along a path, i.e., the critical frequencies falling.

Now you were probably raised thinking that signals could go out to 4,000 km on a single F-hop, but nobody told you that foF2 was the same along that path. At best, you might have been told that the value of foF2 at the middle of the hop was used in calculations. Okay, those calculations are "zero-order" and the first-order corrections bring forth the interesting differences, you guessed it, from the details of how foF2 varies *along* the path. Okay?

Another place where details are important, taken right from a glimpse of the "Big Picture," is the skewing of signals away from their original direction. I'm not saying that skewing is always large and important but it happens and it depends on a detail, the variation of the electron density or foF2 values with distance *perpendicular* to a path direction. A case in point is the dawn terminator, so important in long-path contacts along the terminator in the winter. From the dark across to the sunlit side of the terminator, the critical frequency foF2 can increase by 50%, say from 8 MHz to 12 MHz. So a signal sent along the terminator would be deviated to the west or skewed away from the greater ionization.

I think I've spoken about that be-

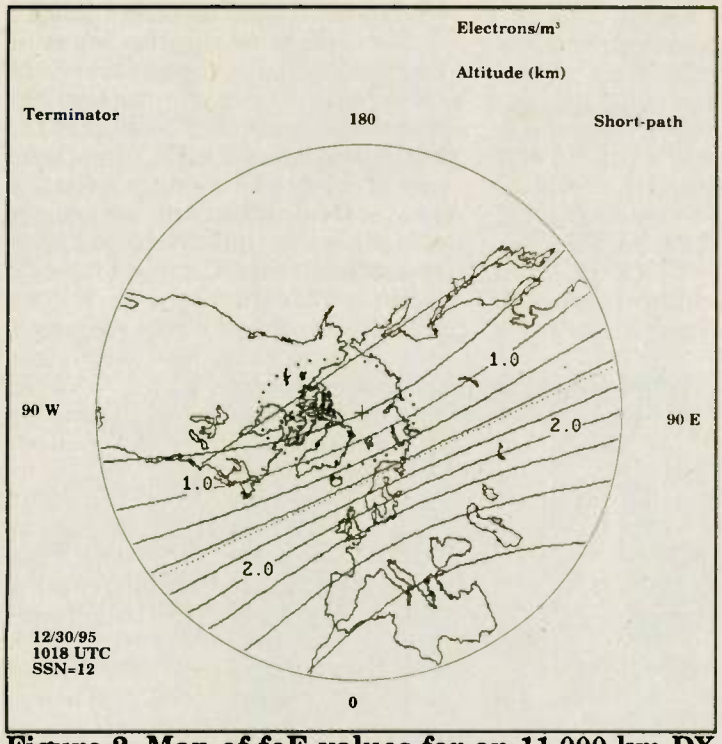


Figure 2. Map of foE values for an 11,000 km DX contact on 1.8 MHz between K1ZM on the East Coast and JA7NI.

from the greater ionization.

I think I've spoken about that before, using the F-region and 14 MHz signals as an example. But the ideas work at lower altitudes and lower frequencies, say the E-region and the 3.5 or 1.8 MHz bands. For discussion of the F-region, I cited how those two values of foF2 are for a separation of only 1,500 km across the terminator. Now let me show you a map of foE values for an 11,000 km DX contact on 1.8 MHz between K1ZM on the East Coast and JA7NI; the date was 30 December 1995, the time was 1018 UTC and the sunspot number was a paltry 12.

On the foE map in Figure 2, the iso-frequency contours are spaced by 0.25 MHz and major contours at 1 and 2 MHz are labeled. The sunlit part of the map is on the lower right, below the dotted line showing the position of the terminator, and the region of darkness is above that dotted line. At that date, close to the winter solstice, the solar declination is 23.1 degrees. That tells you the terminator goes across the northern tip of Norway at a distance of about 2,566 km from the North Pole.

Over that distance, the critical frequency foE drops from about 1.5 MHz to 0.75 MHz. That would seem like "peanuts" compared to the decrease from 12 to 8 MHz across 1,500 km in the case of the dawn terminator cited above. But deviation or skewing goes as the inverse-square of the frequency so 1.8 MHz waves are "soft and flexible" and undergo about the same skewing in that sort of situation as "hard and stiff" 14 MHz waves would across the dawn terminator. So there are details to the details; but you knew that.

Having said all of that, let me help you organize your thoughts about the ionosphere, putting them in an order that you could use if you were stuck on a desert island with nobody to turn to for advice or explanation. First, the BIG PICTURE for long-distance communication on high frequencies is in the form of global foF2 maps; details are how it shrinks in size in going from solar maximum to minimum. Next, the BIG PICTURE for short-haul communication on lower frequencies is a global foE map; the solar cycle changes are minor as foE values vary by no more than 20% is going from solar maximum to solar minimum.

Those maps are at different heights in the ionosphere, as given in Figure 1. In a crude way, they would indicate directions where paths would have better chances of good propagation (toward regions with high foF2 values) and more likely to show bad ionospheric absorption (in regions with high foE values).

That's enough to get you going, working out from that desert island; all the rest is in the details. WR

Quarter Century Wireless Association, Inc.

John G. Troster, W6ISQ

In general

Thanks to Robert Hamilton, KF4DYU, who writes he had two "pangs" of remorse when he received a second complimentary copy of ***Worldradio.*** First, that he had not yet subscribed; and, second, that he had not yet joined QCWA.

Robert was licensed as W6BSF in 1946 but doesn't have documentation. So, Robert, here's the answer for you and the many others who are asking the same thing. If you were licensed 25 years ago, and are licensed now, you are eligible to join QCWA. You may even have let the ticket slide in between. If you've lost all your old licenses and other documentary material, just ask the alert General Manager at QCWA HQ in Eugene, OR, BJ Walsh. He has call books from forever and will check you out. HQ's address is in the QCWA ad in this issue of WR.

Robert also mentions the night when he and his buddy Roy McCarthy, W6GEJ, were operating 40-meters while stationed at Travis AFB in 1947. Roy built a tiny crystal controlled cigar box rig running wee power. He would call CQ and Robert would tune around with his BC-348 for answers. Their most spectacular contact was with Pennsylvania with a ham running 0.7 watts to a 117LGT. Robert wonders if the late '40s were not the beginning of what is now the QRP mode we know today.

Thanks to Lorraine Witkowski, WA1EDR, for sending the announcement of new chapter #195. Lorraine, is your OM still recording "D" layer reflections? Or non-reflections? Also thanks to Jay Ingram, W5QVS, for the announcement for Chapter #63. Jay also admonishes his chapter to send their views on NO-CODE HF licensing to QCWA HQ now. I hope that will inspire the entire QCWA membership to do the same. Thanks, Jay.

Dr. John A. Attaway, K4IIF

This fella, John Attaway, K4IIF, is an old friend of mine, and, if you have read ***Worldradio*** in the last several years, you will recognize him as the former author of the ***WR*** column, "Worldwide DX Contesting." Before that he wrote the DX Column for *CQ* magazine for more than 20 years. The ***WR*** column, and the *CQ* DX column, came to him naturally because of his travels all over the world. Why all the traveling? To extol the glories of Florida Orange Juice. Yes, orange juice. John was Director of Research for the Florida Citrus Commission for 27 years!

John's a native of Atlanta, Georgia, and attended schools there. During high school John didn't think about oranges and didn't know much about radio either. But he did become an avid SWL, mostly AM BC DX listening on the family Atwater Kent. He was a writer even then, and served as editor of the High School paper and year book. He also received the school science award for chemistry and physics upon graduation in 1947.

After high school, he went to Florida Southern College where he received a BS in chemistry and then to University of Florida for an MS in the same. During the latter period, he began writing technical papers for publication particularly about his speciality, organic fluorine compounds. He went next to Duke for his Ph.D. in chemistry. His dissertation, to my interpretation, was a theoretical study of the fluorine synthesis of organic compounds (is that close enough, John?). During his stay there, he was captivated by two influences: He found out about Heathkits, and remembering his high school days of BC and SWL listening, began building receivers, amplifiers, etc.; and at the same time, over the Bunsen burners most likely, he met a rather special grad student, Olga, who was also a chemist. When John graduated and took a job with Monsanto in West Virginia, he took along his Heathkits and also Olga, by then Mrs. Attaway.

At Monsanto he worked to synthesize agricultural chemicals. He also became acquainted with several amateurs at Monsanto who patched John and Olga through to her parents in her native Puerto Rico. That was it for John, he became interested in Amateur Radio.

After a year with Monsanto, both he and Olga decided they were better acclimated to Florida weather. Thus in '59, he went to work in Winter Haven for the Florida Citrus Commission and stayed 36 years until 1995, when he retired. John's work as a research chemist was that of analyzing flavors to find what components made a good or

About 20 years ago: **The late Bob Thompson, K6SSJ; John Attaway, K4IIF; Iris Colvin, W6YL; and another DXer.** ***—photo by W6ISQ***

bad flavor and what should be done to avoid the bad components. It was a detailed study of organic chemistry. John explains you must first pick good fruit, well ripened. The bad flavors generally form by oxidation after the fruit is picked. John also worked on the recovery of the orange essences in recovery units, and then figured out how to re-add them for enhanced flavor. After nine years in the lab, John became Director of Research of the Commission, responsible for about 50 scientists working on a large budget to bring you better orange juice. His travels also began.

In '59 John got into Amateur Radio, learning his basics and code at local radio clubs around Winter Haven. He got a Novice license, KN4IIF, and the next year upgraded to become K4IIF. He went on the air first with a Globe Scout (Hello Leo!) a National NC-188 and a folded dipole. He worked 15 and 40 trying to make as many QSOs as possible to improve his code speed. Then, with his upgrade, he went to a Viking Valiant and HQ-170 and tribander. He became a DXer and began meeting fellows who had been on DXpeditions. For a while, he also became editor of the Florida DX Club newsletter. He went Big Time in '67 and became DX Editor of *CQ magazine* where he wrote for 20 years.

His first DXpedition was to the British Virgin Islands, using the call VP2VD for the CQWW phone contest in 1965. The next year he operated the same contest from KV4AA, then to United Nations, Geneva, Iceland, Finland, Bahamas, and a few others. Each year between 1986 to 1994 he operated ZF2JI. He invited this writer to go a couple of times and I never could make it. Wish I could have!

At *CQ*, John became highly involved in creating new DX awards. He appointed a CQ DX Awards Advisory Committee, which preceded the ARRL version about two years. Building on the basic WAZ program which had existed since pre-WWII time, they broadened the program by adding single band WAZ Awards for both SSB and CW as well as mixed, plus a 5-band WAZ Award—which is a real challenge. (Scribe note: Really! I still need three Zones on 80!). To the WPX program they added a WPX Honor Roll for CW, SSB and Mixed, plus the WPX Award of Excellence. They also started a CQ CW DX Award to go with the existing SSB DX Award with an Honor Roll for both modes. Later they introduced the prestigious DX Hall of Fame, followed by the Contest Hall of Fame. In short, John helped to create some of the best known and most prestigious awards in HF Amateur Radio.

To digress just a bit in connection with the above, I want to mention current recipients of these awards who've made major contributions to the world of Amateur Radio DXing. Last year the DX Hall of Fame was awarded to Rusty Epps, W6OAT, who not so incidentally, was organizer and Chief Honcho of the recent World Radiosport Team Championship games. The Contest Hall of Fame was awarded this year to Lew Gordon, W4VX, who is also the ARRL Board Liaison member to the ARRL DX Advisory Committee. During his time with *CQ*, John traveled the world for the Florida Citrus Commission. That's how I first met him about 25 years ago. He came through San Francisco enroute Japan and our meetings became a regular thing as he went through SFO. Also, beginning in 1958, he used P.O.Box 205 in Winter Haven, and for many years it was one of the best known box numbers in the world among DXers. Right up there with Box 88, Moscow. After retiring from *CQ*, John came up with the idea of writing about places amateurs could go on vacations to operate or to go contesting. He researched and published the right people to contact for a license, where to stay, costs, etc., for any number of places. Really a great boost for traveling DXers but an awful lot of work for John trying to keep current and ferret out new information.

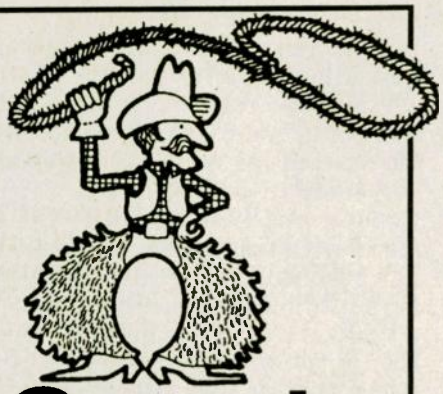
When he retired he also shut down much of his amateur activity. He started his own citrus consulting company, the Florida Citrus Consultants International, and as usual with things after retirement, has been working harder than ever. He's also concentrating on writing a book on the "Impact of Freezes on the Citrus Industry." It's almost finished and will be followed by the "Impact of Hurricanes on the Citrus Industry," a good title for Florida growers. He's also on the boards of a few companies and the President of the Florida Citrus Research Foundation. John is not one of these all theory and research fellows. He own 150 acres of citrus, mostly tangerines with some grapefruit and oranges.

John and Olga have four grown children, all Duke graduates: They are, in order, John Junior, an attorney in Lakeland, Florida; Joe, WA4RDC, an optometrist; Marie, an attorney in Tampa: and Susie now working on a Ph.D. at the University of South Florida.

John still has his tribander at home which he feeds with an FT-1000. But it is his mobile 2-meter rig that gets most of his attention now. When he finishes the books and gets the research all lined up, he says he'll be back with the big rig, and back onto the DX and contest trail, maybe even qualify for some of those awards he established 25 years ago!

So with your morning orange juice, you can now think happy thanks to John that he figured out all those little compounds and flavors and essences to make your orange juice taste so sweet and is still be good for you. We're mighty pleased to count Mr. Orange Juice, John Attaway, K4IIF, as One of Us, the Proud, the Many, the Elite, the QCWA.

Until the next one, 73+25. Jack, W6ISQ **WR**



County Hunter

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10 Years? 20 Years?

How long does it take to contact all 3,076 U.S. counties? Well, if you were lucky enough to contact one new county every day, it would take 3,076 days or 8½ years. Would you start county hunting if you knew it would take 8½ years? How many of you would start county hunting if I told you it takes 20+ years? Fortunately, it only took me 10 years, but it takes others 20 years, and some have been at it 20+ years and still aren't finished. Have I got a deal for you! Could I sell you on starting to hunt counties if you finished in less than one year? Read on!

The Dranchak way!

Ed, NT9V, and Katie, N9HRX Dranchak can say they did it their way. They hit the 'on' switch on their rig at 1200 UTC and keep it on all day until they lose propagation or active mobile operators on the CH net. They even use a baby monitor to listen to the net throughout the house. Ed also spends part of the day acting as net control or assistant net control and has racked up 2300 hours over the years. Labeling Ed and Katie as county hunter-holics would be an understatement.

No, it didn't take Ed and Katie 10 years as it took me. In fact Ed has only hunted counties for seven years and Katie only six years, but look what they've accomplished in that amount of time. In less than seven years, Ed contacted all counties eight times and in about five years, Katie contacted all counties five times. You see, not only can you contact all counties in less than one year, it can be achieved consistently. Okay, being retired helps a little! Ed is retired from U.S. Steel where he was a supervisor in the research and development and quality control departments.

Ed started county hunting 21 November 1989, and received his 8th time around award on 10 August 1996. The most amazing thing is it only took Ed 5½ months between the 3rd and 4th times. Ed got a little lazy between the 6th and 7th times — it took a whopping 11 months. He must be spending more time with his other interests; woodworking and fishing. Ed's other amateur interest is DXing. With 311 countries under his belt, countries are coming much slower than his seemingly endless supply of county contacts. MARAC has been watching Ed go (more like he keeps going, and going, ...). He was voted as the 1992 Net Control station of the year and the 1995 county hunter of the year. He also received the excellent operator award and several merit awards.

Katie, on the other hand, really takes her time; however, the longest amount of time it took her was 16 months. She started county hunting immediately after passing her General license 15 August, 1990 and finished her 5th time award 7 September, 1995. Often times, she's the support team behind Ed, fixing him meals while he hunts counties or organizes the net.

Whether they're at home or in the car, they have their equipment tuned to the CH net. At home, they use a Kenwood 940SAT with a KLM-KT34XA tribander and homebrew double bazooka for 40 and 75 Meters. While mobile, they use a Kenwood 430 with trunk lid mounts holding a 20-meter antenna on one side and a 40-meter antenna on the other side. They use TenTec stick antennas with an impedance matcher in the trunk.

Speaking of their mobile set-up, they started running counties in 1990 and have transmitted from 1035 (34%) counties in 25 (50%) states. They really enjoy giving out counties and travel the backroads as much as possible. About 50% of the county hunters they contact on the net want to work Katie for the YL county or want to work them both as a team contact. Ed has given out 218 last counties and Kate has given 32.

Although they have 177,000 miles on their 1983 Olds 98 Regency, they are looking forward to putting out more counties in the future. One thing they plan to do is visit more conventions. They've already attended national conventions in MN, MO, NY, and VA, and attended mini-conventions in MI, OK, TN, and WI. They consider the conventions as an added bonus to county hunting; an opportunity to meet with fellow county hunter friends, which they consider their extended family. Ed and Katie feel very fortunate that they enjoy the same hobby.

Without a doubt, Ed and Katie did it the Dranchak way. In the process, they set the precedent for the shortest amount of time to contact all counties so many times so quickly. The county hunters have always referred to their hobby as addictive, now maybe they'll say they've been Dranchaked! Thanks Ed and Katie for your story.

CHing on the web

In September, I mentioned that County Hunting is on the World Wide Web and that you surfers should check it out. The URL address is: http://www.delve.com/ch/ Here's a review of the current information on the web page.

The title of the page is The County Hunter Web, and it says it's "a resource serving the needs of U.S. county hunting around the world." The web page was developed by Don Flynn, K3IMC, with assistance from Mark Behrens, WB9OOG. And yes, although it's in constant development (like most web pages), it is very good resource for county hunters as-is.

The web page has all of *CQ Mag-azine*'s USA-CA rules, including award classes, conditions, county identity, administration, record keeping and the applica-

tion. I learned in this section that cities, parks, or reservations not within counties are not allowed for USA-CA. This was a rule change beginning 30 June, '95 that I never knew about. There is also a link to Hardy Data Systems (http://www.surfsout.com/~jhardy/zip.htm) to learn more about the ZIP Code conversion software.

There are ten other sections on the web page; news, events, forum, awards, net frequencies, e-mail directory, services and products, planned trips, special needs, and interesting links. The first section had the latest news; a September mini MARAC convention, latest USA-CA holders and Florida Millionaire Award holders, and a note about W6CCM becoming the editor of MARAC's *Roadrunner* newsletter.

The events area listed the county hunting events, only conventions at the time, but I assume contests are also listed here when appropriate. Most of the county hunting contests are in the spring.

The forum area was a place for county hunters to share notes on various items. I found discussion on the latest USA-CA holders, a note about the Down Under County Hunter Net on 14.255 MHz (0330Z), debate on the most difficult county to run (responses ranged from 2nd district AK to Lake county, OR, to Jackson, KY, etc), likes/dislikes about the new mobile radios (Yaesu 900 and Icom 706), debate on electronic confirmation (WA3RTY from *CQ Magazine* says "not at this time!"), and a sad note about a county hunting friend (KB6ZX) becoming a silent key. Although there was some interesting dialogue here, I found getting to and from the index to the actual comments very slow. Maybe this is not the best way to establish this type of forum. The DXers and Contesters have a reflector, a broadcast of information to everyone's e-mail address. This is better as far as beating the internet slowness, but then everyone might get deluged with mail, some of which they wouldn't care to read.

The awards section is an honors section with lists of holders of the USA-CA, 2nd time, Bingo, 3rd time, Masters Gold, 4th time, FL Millionaire, and 5th time awards. For beginning county hunters, the USA-CA is THE county award for contacting all counties. The other awards are for dedicated county hunters (the Dranchaked!). I didn't know what the FL Millionaire award was until I checked out the rules section link from the FL Millionaire holder's list. It's a contest between 7/8/95 and 7/1/97 with the highest scorers receiving a trophy and a Florida lottery ticket at the 1997 MARAC convention in Orlando, FL.

The net frequencies provided the net locations for 20/40/75/15/10 Meters for SSB, and 20/40-meter frequencies for CW. Although I was unable to connect to the e-mail directory, I'm guessing it's a list of known county hunter e-mail addresses.

The services and products area had some links and e-mail addresses for six county hunter services and products. There are other county hunter services and products available that aren't on the web page. ACES (QSL exchange service) had a web link and e-mail address, the B&B Print Shop had an e-mail address, CHUBS (software) had an e-mail address, KWIKLOG Plus (software) had an e-mail address, the Mobile QSL Service had a snail mail address, and the ZIP Code conversion software (HDS mentioned above) had a www link and an e-mail address. Once all county hunter supply companies get on the web, it will be very easy to gather information on products and services available.

The next section was planned trips. Eight operators had planned trips (with dates and counties listed). Some were only one day trips, others longer. One trip was planned for February 97. The special needs section is an opportunity to list the counties needed to finish off a particular state. There were 34 county hunters who listed the counties they needed and the user can sort by call or state. Since I live in VA, I sorted the list by VA and found nine of the 34 needed some counties in VA. Unfortunately, none were my home county so it won't be so easy to help them.

The last section (interesting links) was an area to link the county hunter to other Amateur Radio web sites including the FCC, ARRL, Newsline Amateur Radio News, Buckmaster Callbook, QRZ CD-ROM call book on-line, and the Amateur Radio WWW Bookmark file [WARNING: transfer of 89937 bytes . . . it may take awhile (took me 20 minutes)]. If you can stand the download time, this bookmark file was unbelievable . . . there are an incredible number of ham radio related web sites.

All-in-all my opinion is positive about the county hunter web site and my hat is off to Don and Mark for their efforts and continual work to upgrade the web spot. I am still limping along with a '89 vintage 386SX, 16 MHz computer with a 14.4 bps modem and AOL connection. If you have a faster computer and modem and a direct connect to the Internet, the experience will be less frustrating to you. It took me 2½ hours of America Online time to research the web site for this review. OUCH!

Latest USA-CA holders

A big YIPPEE to the following new holders of the USA-CA.

900. VE1BES, 5/12/96
901. KØTVY, 7/6/96
902. KC1NA, 8/2/96
903. WB9OOG, 8/2/96
904. W1NHJ, 8/27/96
905. K6YK, 8/27/96
906. KEØVB, 8/30/ 1996
907. KA7AKJ, 8/30/1996
908. WA3RTY, 8/30/1996

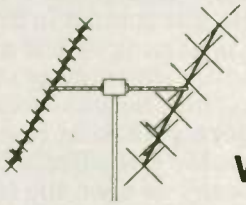
Drawing

The drawing to win an MFJ ALS-500M (500 watt mobile amplifier) is 30 October. If you haven't sent me your QSL card or postcard for the drawing, do so NOW! Please put your county on the card as I'm keeping track of how many counties respond to the drawing. The winner will be announced in the January issue.

Until January, Happy Hunting. 73, Ace, N3 aha! WR

We welcome any comments or suggestions you might have to improve ***Worldradio.***

Amateur Satellites



Terry Douds, WB8CKI

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Hello once again! There's a lot of news this month, so much that it may not completely fit in this column! Let's get started.

First, a correction to July's column. I was discussing Mean Anomaly, and I mentioned that you could think of it as breaking a day into 256 parts — let's agree to restate this as breaking an *orbit* into 256 parts! It may seem that orbits are a day each on the DX birds, but it's not always the case! My thanks to Jim Henderson, KF7E, for the catch on this one.

Phase 3D News: The bird WILL go up on Ariane 502! It was announced by the AMSAT News Service that it would go up in the first quarter of 1997, probably in February. Assembly and testing of modules continues, and all is on schedule.

An exciting development in August was the launch of the first new amateur satellite this year. JARL/JAMSAT was successful in putting JAS-2 into orbit. The bird began working about 40 minutes after deployment, and systems were checked out immediately. As of the writing of this column, the bird is almost ready for full operation, but the analog transponder has been in use a great deal and was performing very well. The bird was assigned the name Fuji-Oscar 29, or FO-29. It has a Mode J transponder aboard with the same up and downlink frequencies as FO-20, 145.9 to 146 MHz up and 435.9 to 435.8 MHz down. This transponder is for CW and SSB signals ONLY — no FM. It also has digital transponders for both 1200 bps and 9600 bps FM Packet! The packet downlink frequency for both speeds is 435.91 MHz. 9600 bps uplink is at 145.87 MHz, and 1200 bps uplinks are at 145.85/87/89/91 MHz. The packet call sign of the satellite is 8J1JCS. Another special function of FO-29 is a Digitalker, similar to the one on Dove. It will emit various voice messages on 145.91 MHz FM. There are some great pictures of the bird and a QuickTime movie (http://yyy.tksc.nasda.go.jp/Home/Press/Press-e/saishin_e.cgi) of the launch available on the World Wide Web. Set your browsers for http://www.jarl.or.jp/jarl/jas-2/ejasmenu. htm.

The Southeast Michigan Area AMSAT Net has a web site with a new page dedicated to the bandplans and modes of FO-29. It also has a wealth of other info on other satellites, links, and some special audio files that utilize EchoSpeech, a form of audio transmission over the Internet. The URL (Universal Resource Locator, or "address" of the web page) is http://www. wwnet. com/~jsmyth/index. html.

At press time, word had been received of the successful launch and subsequent reception of signals from UNAMSAT-B, the microsat recently completed at the Autonomous University of Mexico under the tutelage of David Liberman, XE1TU.

According to reports on AMSAT-BB, the AMSAT Internet Bulletin Board, the UNAMSAT launch took place along with Cosmos-2334 from Plesetsk in Russia on 5 September at 1347 UTC. (This information was obtained from Phil Chien, KC4YER who quoted Russian newsman Vladimir Agapov on AMSAT-BB).

One of those providing reception reports of the new satellite is Jeff Garrett, ZL1BIV. He says that he checked the UNAMSAT downlink on 437.206 +/- at 12:45 UTC on 7 September, and observed a good signal.

As I had promised, here is the list of frequencies at which UNAMSAT-B will operate as a store and forward bbs (for 1200 bps PACSAT operation; i.e., Manchester-encoded FM up, and BPSK [SSB] down):

Downlinks:
UHF TX1 437.206 MHz
UHF TX2 437.138 MHz (secondary)

Uplinks:
VHF CHA 145.815 MHz
VHF CHB 145.835 MHz
VHF CHC 145.855 MHz
VHF CHD 145.875 MHz

Also on board is a 40.997 MHz pulse transmitter and a wide band receiver centered on the same frequency that will be looking for ech-

oes produced by the ionized trails of meteors as they enter the atmosphere. You could use this signal to get echoes from meteors in your area when UNAMSAT-B is passing below your horizon. I hope that you will have some luck operating with the new bird!

For those who might be interested, the annual meeting of AMSAT will be held in Tucson, Arizona, from 8-14 November 1996. The great folks at TAPR (Tucson Area Packet Radio) are helping out with details. It will be held at the Holiday Inn City Center. The first block of rooms has been sold out, but the hotel has opened up additional rooms for the conference. There is a wealth of information that one can pick up at these events. Included in the agenda are forums for beginners, Phase 3D, and New Developments, among others.

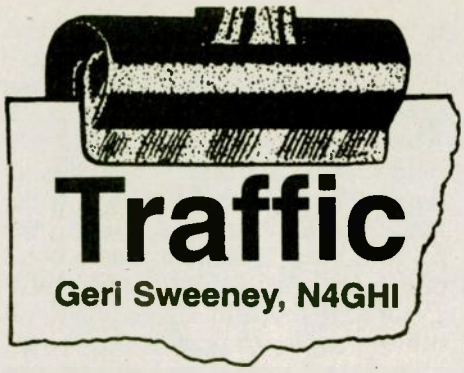
In addition to the usual Saturday evening awards banquet, there are also plans for a tour of the Kitt Peak National Observatory, including the radio telescope and some of the optical ones as well. There will be a breakfast meeting on Sunday for AMSAT Area Coordinators who are able to attend. For more information, contact Martha at AMSAT headquarters, or point your web browser to http://www.amsat.org/amsat/sympos 96.html.

A place that you might look to for information on all points of satellite operation is the Houston AMSAT Net, which is currently on the air on Tuesday evenings at 8 p.m. Central Time. The people in Houston have worked very hard to make their net available to many of us around the country. The net is a local one, operating on 2-meter FM, along with both A5 and F5 TV in the Houston Area. The net is uplinked (audio only) onto a Ku-Band satellite, SBS 6 (T13B, 6.2 Audio, 74 degrees, next to Galaxy 6) for distribution nationally. Additionally, it is simulcast on 1860 MHz Full Carrier AM by WAØRCR in Missouri, who has a wonderful signal into my QTH in Ohio. It is also available beginning about 30 minutes following the net by Real Audio via the facilities of North American Internet - set your browsers to http://www.phoenix.net/~paigecom/. I have been listening to it this way lately, as my work schedule has not permitted me to listen "live." The net is co-hosted by Andy McAllister, WA5ZIB, and Bruce Paige, KK5DO. It is carried on many repeaters nationally, and they invite both checkins and questions via a wide variety of means — via e-mail to KK5DO@amsat.org; via Internet IRC at usnet.undernet.org — look for channel #amsat; or via landline at 713/467-9870. It's worth the effort if you have the ability to check out this source.

While on the topic of finding pertinent information on the satellites, you might want to check out another series of nets that are also aired on Tuesday evenings. The AMSAT 80-meter Nets happen in 3 parts — East Coast, Midwest, and West Coast. They are all found at 3.840 MHz +/- (depending on QRM). The East Coast net is run by Ron Long, W8GUS (one of the editors of *The AMSAT Journal*). It begins at 9 p.m. in the East, and then at 10 p.m. Eastern, the net is handed off to the Midwest net. The western movement continues in a similar fashion. Tune in and become informed!

I would like to formally say "goodbye" to Oscar 13 in this month's column. We have been very fortunate that the bird has not demonstrated some of the anticipated problems as it begins to reenter the atmosphere. Consequently, beginning September 1, the satellite was repositioned into its last "favorable" ALON/ALAT of 170/0. Hopefully it will hold at this attitude until it shuts down sometime in November. If I'm lucky, you'll get this column in time to do a bit of operating at the end of Oscar 13's life. Re-entry is still predicted for mid-December, and many people are gathering telemetry data to study the effects the atmospheric drag has upon the bird until it burns up. Hopefully all will go well with Phase 3D, and we'll have a reliable DX satellite available for us all again. However, for the interim, we will still have our old venerable Oscar 10 to get us through!

It's time to wrap it up for this month. I hope these tidbits of news have been informative, and that you as readers find it useful to have all of this information somewhere where it is easy to find. In the next column we'll talk a bit about FO-29's digital operations, and hopefully have lots of good news about UNAMSAT-B. Good Luck and have a great Thanksgiving! WR



Traffic

Geri Sweeney, N4GHI

Upcoming traffic:

October

- SET exercises everywhere
- Foliage tours (Skowhegan ME)
- Georgia National Fair (Perry)

November

- Heavy Thanksgiving traffic

December

- Enormous traffic load (everyone needed)

Health/Welfare/Emergency traffic

As I write this, hurricane Bertha just hit the East Coast. A check-in to our Virginia Side Band Net mentioned that an announcement was made on the Eastern Area Net indicating that no traffic was to be sent to North Carolina for 48 hours.

Over the years, this position of refusing incoming traffic, has been gaining strength in the NTS. It poses a dilemma. If traffic handlers must wait two days after an emergency before they can begin a message's journey toward a disaster area, it's probably not worth while in many cases. Consider the timing: 1) Some time from origination to area. 2) 48 hours (2 days) before the message can even try to get into the emergency area. 3) Sometime in the area hopefully getting delivered. 4) Another day or two in return. Electric and phone crews are pretty fast in getting service restored after an emergency, in the U.S. If one has to wait so long for news of a loved one, I wonder how credible the National Traffic System can be regarded. While you may have experienced NTS traffic handlers in the area saying, "don't send us any traffic for 48 hours" very often you have many other Amateur Radio operators just popping up, establishing frequencies, and helping.

Yes, of course, there are numerous problems (reasons) during an emergency as to why traffic handlers might not want to sit at their radio and copy traffic. Like everyone else, they are trying to service and reorder their environment. As I said, a dilemma.

Still, I don't think we should ban folks, who may be ready, from trying to receive traffic. Even if nets are only partially staffed (perhaps no one shows up who can take a Health and Welfare message), it just don't make sense for the National Traffic System to ban incoming traffic. Sure, everyone wants to take important 'tactical' traffic and not get bogged down with Health and Welfare messages. But, when a disaster strikes, traffic should approach its destination and await a net, PBBS, or whatever mode is ready to collect it. It may take 6 hours. It may take 60 hours. Every event is different. Often, an announcement is made to send traffic for the area to a particular PBBS. This is a time when packet can be of enormous value. It enables traffic to flow into the area where it can be collected for delivery as soon as someone in the area is ready.

In preparation for Bertha, I spoke to a major HF PBBS in the Virginia Beach area. He reported that he didn't anticipate any problems in maintaining his station through the hurricane. His situation is unique. He works for Virginia Power and could restore his power, if needed. Many folks have generators and/or batteries to maintain readiness. It doesn't take much for a few folks to get back up and running.

As a rationale for banning incoming Health and Welfare traffic, it's often mentioned that it would be far better for those in the emergency area to send traffic out. It would be a lot more efficient, effective, etc. But, that isn't happening. It's never happened, and I see no groundwork for making it happen in the future. Perhaps, we need more PR about Amateur Radio traffic handling to enlighten the public on how to find an Amateur Radio operator during a crisis. Perhaps that's a goal for ARES to consider. How many Emergency Coordinators have ever handled a formal message.

SET

I hope all ARES folks utilize a Section level net and send a test message during the October SET. Any EC (Emergency Coordinator) who has never sent a message, isn't prepared. Perhaps a requirement to become an appointee should be having sent several messages. SET (Simulated Emergency Test) messages have the word test just after the precedence (Routine, Priority, Health and Welfare, and Emergency). Some are very clever. Since the emergency is simulated, the message is, of course, a fabrication. It's only purpose is to train operators in how to handle traffic in an emergency.

Tip

From the Hit and Bounce's fine newsletter *Traffic Call*, comes a common sense tip.

•Remain on frequency after sending or receiving a message. Another station may be waiting to communicate with you.

•Listen before you speak and/or send when returning to net.

X-Country

John and I left in early August, for a cross country trip in our little RV. This trip will take about 2 months, and essentially encompass coast to coast travel. We have long wished to see the Canadian Rockies (Banff and Jasper), and thus, that is the purpose of this trip. Since we are recently retired, we now have the time. From our home in Mt. Vernon, VA, we headed Northwest and traveled along just under the Great Lakes and Canadian border. (We did the East Coast last year.)

We visited friends in North Dakota and spent time in Glacier National Park, MT, before heading North. The scenery is magnificent, and the Canadians are wonderful — helpful and friendly. After checking out the Olympic National Park in Washington, we are now in Oregon and heading slowly South along the Coast to Southern California to visit our families. Thus, I regret the delay in answering your letters and packet messages.

Part of the enjoyment of this trip, is checking into all the Section Level CW nets. We have an Icom 735 and Hustler antenna. As this goes to press, I've been part of MI, WI, SD, ID/MT, Alberta, WA and OR Section nets. While each of the formats of these nets was a bit different, they were all good, friendly nets. Some had long preambles (QND, QNZ, name of net spelled out, etc). Some had no preamble, but just called for traffic. Check-in procedure has run the gauntlet from checking everyone in with one QNI, to checking each station in individually. One net even took a roll call. It was disappointing to find ND had no CW nets. Thus, I had to check in to a SD net to send my friends in ND a message. Not only did BC not have a CW net listed in the ARRL Net Directory, but, it didn't list any traffic nets. Each net I visited, took my traffic, understood procedures, and seems a nice place to be. VE7DWG (ATN), even invited us to visit Vancouver, see his shack, spend the night, and see Vancouver with him. It doesn't get any better. Checking into the WA net, I recognized several stations with whom I have worked TCC skeds in the past. This is the kind of friendship traffic handlers establish. So far, we have only originated one message for a fellow camper. Hopefully, we will get a chance to send more messages for folks, other than ourselves.

Tennessee

It's wonderful to keep getting information on slow speed CW training/traffic nets. It demonstrates that people are reading this column; and, even better, that there are slow speed (under 10 wpm) nets available throughout the USA. These nets are marvelous for training to join faster CW nets. They are also great to just practice your CW. It gives you regular, real time, practice in not only receiving but in sending. WB4DYJ, Milo, writes to say the Tennessee slow CW training net meets on 3682 at 8:30 p.m., Monday through Friday. Their goal is to "offer assistance to Novice and Tech Plus license holders to improve their code practice. The net runs at approximately five words per minute." If you can hear them — join in the fun.

CW Slow speed traffic nets:

FSN	(FL)	8 p.m.	3715	D
ITN	(IL)	7 p.m.	3680	D
MSN	(MD)	7:30 p.m.	3717	D
MSSN	(ME)	6/10 p.m.	3685	D
CSN	(NC/SC)	6 p.m.	3715	D
ES	(NY)	6 p.m.	3590	D
OSN	(OH)	6:10 p.m.	3708	D
PITN	(PA)	6:30 p.m.	3610	D
TSN	(TN)	8:30 p.m.	3682	M-F
WNN	(WI)	6 p.m.	3723	D
WSSN	(WI)	6:30 p.m.	3645	D
FISTS(MI)		9 p.m.	3682	T/TH

Local times. Let me know of any *slow* speed traffic nets in your area. It will be great when there are so many listings, we can only list one area per column.

Stats: Eastern Area 7 nets
Central Area 5 nets
Pacific Area 0 nets WR

I SHOULD REACH THE REPEATER OK FROM HERE, BUT THERE MUST BE A LOT OF RE-INFORCING IRON IN THIS ELEVATOR.

Richard Fisher, KI6SN
1940 Wetherly St., Riverside, CA 92506
e-mail: KI6SN@aol.com

An 'Atomic' keyer in QRP-land

The keyer's name and circuitry seem to disagree with one other.

It's called "Atomic." However, the electronic design is anything but.

No plutonium. No lead-lined enclosure. Just 15 components on a small PC board (2 x 2.5 inches) to form a very simple, inexpensive, easy-to-build and great sounding station accessory with many features found in much higher-priced models. Chernobyl it's definitely not.

Here's what Embedded Research's AK-1 Atomic Keyer delivers:

- Mode B Iambic keying with 3:1 weighting
- Speed adjustment (from QRS to QRQ) by paddle
- User-selected message memory
- Key-down tune function
- Off-air CW practice mode
- Keyer monitor function during speed and memory adjustments
- Extremely low current requirement
- Extended operation using AA or AAA batteries

The AK-1 is a great, high-quality project for beginners. And CW operators — both newcomers and seasoned brass pounders — won't be disappointed with the Atomic Keyer's performance or capability. For something so simple and low cost, the AK -1 does a lot.

Given its low current and voltage requirements and small physical size, it's an excellent QRP station accessory — whether as a separate unit or built into any of today's popular QRP transceivers.

Five momentary push buttons direct the keyer through its functions.

Button 1 sends a polished "CQ CQ CQ DE," and then automatically inserts your call sign — one of three dynamic messages (DM) the AK-1 can provide. The message ends with "K."

Button 2 combines messages DM1 and DM2 and sends them together — forming DM3.

Button 3 sends DM1 (your call sign).

Button 4 sends DM2, an additional message of your choice, such as "/QRP."

Button 5 places the AK-1 into speed adjustment mode. Touch your paddle and the keyer — in off-air monitoring mode — progressively increases speed, topping out at 50+ wpm, then cycles back to just a few words per minute. Just let go when the keying speed you desire is reached. Simple.

Buttons 1 and 3 (pressed simultaneously) toggle the AK-1 to accept the first dynamic message, DM1: your call sign — which you input using your CW paddle.

Buttons 3 and 5 ready the AK-1 to receive DM2, again input via paddle.

Buttons 1 and 4 place the keyer in TUNE mode, shifting the AK-1 into keydown, until the paddle is tapped to break the command.

Buttons 2 and 4 toggle the AK-1 between on-air and practice (off air/monitor) modes.

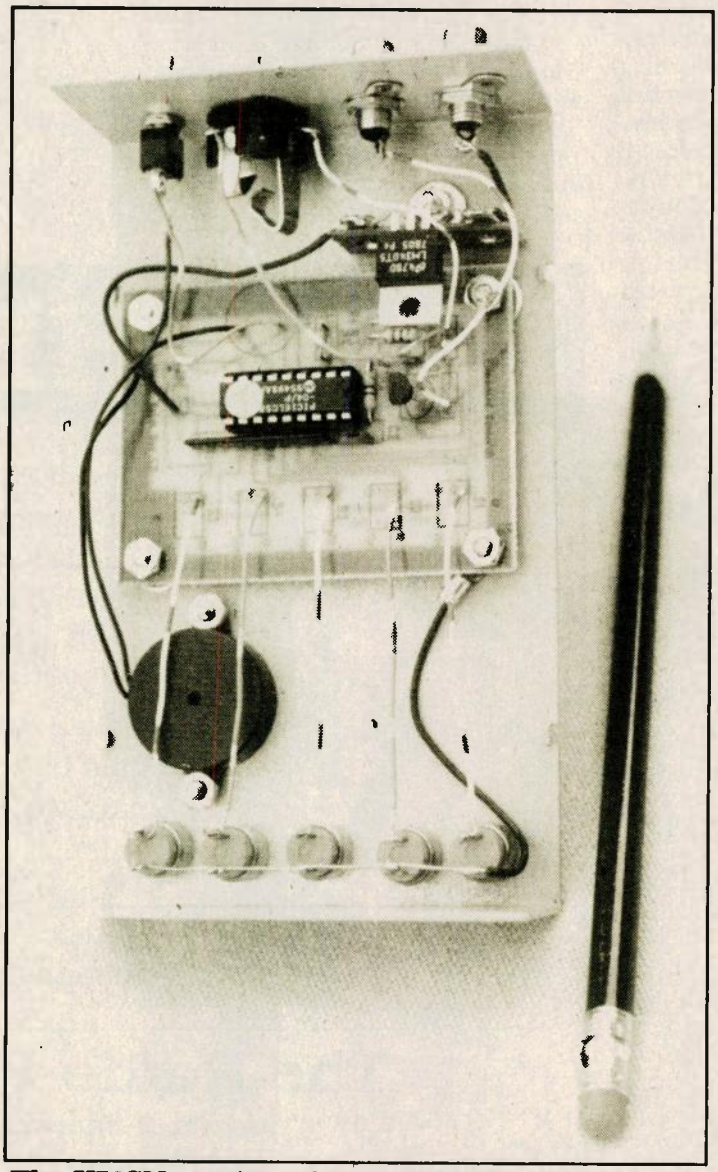
The Atomic Keyer runs nicely from 3 to 5 volts of battery power, drawing only about 300 microamperes of current. The AK-1 can be used for months, even years, using a couple of AAA batteries.

A board-mounted piezo audio transducer provides the AK-1 monitor's sound. It's only in line when the keyer is accepting commands, or you're in CW practice mode. The rest of the time, output is directed to the keyline and the buzzer is silent.

At KI6SN, the AK-1 was built into its own box. Heftier pushbuttons than those provided with the kit were used. A larger transducer (Radio Shack part RS 273-059) was substituted so it could be bolt-mounted to the chassis, although the small board-mounted transducer provided in the AK-1 kit is plenty loud.

Voltage to the AK-1 in the KI6SN version is derived from the station's 12V DC line. A 5-volt regulator (RS 276-1770) was used to drop the voltage to meet the Atomic Keyer's needs.

Embedded Research's



The KI6SN version of Embedded Research's AK-1 Atomic Keyer.

building instructions are easy to understand. Following the "manual" almost guarantees a functional finished product of which you'll be proud. The unit was easily built in a couple of hours. That includes drilling holes in the chassis and mounting other hardware for the modifications.

The brain of the AK-1, a PIC16LC58A microcontroller, has volatile memory. So every time power is removed from the circuit, the information stored disappears. Embedded Research designers have made message inputting so simple, however, reprogramming takes less than a minute. And kits built with batteries permanently installed will have the messages saved as long as there are good batteries on the system.

Veteran QRPers Gary Diana, N2JGU, of Henrietta, New York, and Brad S. Mitchell, WA8YGG, of Brockport, New York, co-founded Embedded Research in the fall of 1995. They're the brains behind the AK-1 brain.

"We had ordered two PIC development systems, and decided it was time to form a partnership," Diana said. "Brad's background includes a BSEE (Michigan State) and MSEE (from Rochester Institute of Technology). He's a design-for-test engineer at Eastman Kodak here in Rochester. I have a BSCS and MSCS (Rochester Institute of Technology) and work as a senior software engineer at Eastman Kodak as well. Between the two of us we have about 30 years of hardware/software experience."

Mitchell came up with the idea of building an affordable iambic keyer, which had to include message memory. "He thought what already existed on the market was too expensive," Diana said. "So with that, Brad selected a low-end PIC processor and the programming started. We worked on the project in phases, getting a basic iambic keyer function to work at first, followed by speed control, audio feedback, tune function, and finally adding message memories."

The AK-1 was named, it turns out, more in a moment of serendipity than fissile fusion. Veteran QRPer Bob Gobrick, VO1DRB, in Newfoundland, had heard that a project was in the works and sent an e-mail query to Diana: Were they developing "an atomic keyer or something" The handle stuck, and so the AK-1 was named.

"We froze the source code just a few weeks before Dayton '96," Diana said. "Brad was at Dayton representing Embedded Research, and was selling the AK-1s in the flea market and in the QRP Hospitality Suite in the evenings.

"Since the hamfest, we've attended a few local hamfests, and have been selling the unit using our web page for advertising (http://www.vivanet.com/~gmdsr)."

Are there improvements on the horizon for the AK-1 Atomic Keyer? "Microchip has recently introduced some new PICs which feature more RAM and other features, which would lend themselves nicely to an enhanced AK-1" Diana said. And with the future of the Curtis Keyer chip's manufacture in question, "there is a new niche in the market for a low-buck, fully featured memory message keyer, maybe the little brother of the AK-1."

The AK-1 Atomic Keyer is $29.95 plus shipping and handling ($4 for U.S. orders; $5, Canada and Western Europe; $6, Pacific Rim). New York residents add 8-percent sales tax.

If you're interested in learning more about Embedded Research's AK-1 Atomic Keyer, visit the company's Internet web page or send e-mail to: gmdsr@vivanet.com. Via U.S. Postal Service, write: Embedded Research, Box 92492, Rochester, NY 14692.

New QRP book

The American Radio Relay League has published a new book covering QRP projects, construction practices and components.

QRP Power was compiled by Joel Kleinman, N1BKE, and Zack Lau, KH6CP/1, featuring QRP articles originally appearing in *QST*, *QEX* and *The ARRL Radio Amateur's Handbook*. It also includes a new article on the "40-40" transceiver by Dave Benson, NN1G.

QRP Power includes contributions by Rich Arland, K7YHA; Bruce Hale, KB1MW/7; Rob Capon, WA3ULH; Rick Campbell, KK7B; Dave Newkirk, W9VES; Roger Hayward, KA7EXM; Bill Jones, KD7S; and Wes Hayward, W7ZOI.

The book is available directly from the ARRL for $12 (plus $4 shipping and handling) from ARRL Publication Sales, 225 Main St, Newington, CT 06111-1494, Phone: 860/594-0255; FAX 860/594-0303.

QRP ARCI address change

Mike Bryce, WB8VGE, longtime membership chairman of QRP Amateur Radio Club International, has a new mailing address for club matters. Write: QRP ARCI Membership, P.O. Box 508, Massillon, OH 44648-00508. WR

AERIALS
Lil Paddle

We have a new book recently written by, let's call him, Mr. Famous. Yes, this is the same Mr. Famous who in an earlier book advocated stuffing the end of a half-wave wire into the coax plug of your transceiver (page 113). That would result in a solid state transceiver shutting down and a tube transmitter going snap, crackle and pop.

Kurt has often stated he would look over any antenna-related book (prior to publication) or sales literature, brochures, etc., for $100. He could have said $10. Or $1. Or even free. There were no takers. The book publishers, with their feet up on the desk, probably said, "Oh, what does that old coot in Texas know?"

So, I shall now demonstrate what we had to offer. The adverts for this book state, "Rather than filling nearly 200 pages with theory and complicated diagrams. . . ." What that really says (loosely translated) is, "Let's not let any real knowledge get in our way."

This book said, regarding a 10M antenna, "The major lobe is 8 degrees above the horizon when the beam is 10 feet high." (OUCH!) This would be equivalent to saying the same thing about a 20M antenna 20 feet high. Eight degrees? HA HA HA HA!!! Hey, would it have been worth $100 to them not to look incredibly stupid?

Now what's so bad about that? Well, I can just picture at some radio club meeting some wet-behind-the-ears (radiowise), two-day crash course newcomer saying to some old geezer, "My 10-Meter antenna is ten feet off the ground and its angle of radiation is eight degrees." The gray-haired old man tries to gently tell him differently and the beginner then tells someone who may have had eagles on his shoulders, MD or CEO after his name that he is wrong.

Do we really blame the kid (of whatever age)? No, not at all, He read it in that book by "Mr. Famous" and believed it.

Try this one, "The very high off-resonance SWR exhibited by the antenna can be reduced to an acceptable value by the tuner." OK, big publishing company, do you now wish you could pull that one back, too? $50 for the 10M beam, $50 for this one.

That tuner statement is so excruciatingly painfully wrong! Again, the tuner does NOT change the SWR on the line one iota. All the losses remain. (This book went into great detail about how to check the accuracy of SWR bridges. Nowhere did it ever advocate putting one right at the load [antenna] to see the true conditions.)

Again, for what seems like the thousandth time, I have to say the conditions at the feedpoint are not affected by the tuner at the other end of the line.

The formula for the Windom antenna and the diagram explaining it are off by quite a bit. We are now down to $33.333 per goof.

Then, at the end of a chapter telling us we should build the Off-Center-Fed single wire antennas for 160, 80, 40, 20, 15, 10, the author concludes this way: "The OCF antenna? Well, as for me, I'll take a 6-element Yagi on an 80-foot boom at 125 feet for 20 Meters any day."

Isn't that just too cute for words? Well, when will he be putting up that monster? We'll all find that interesting since we have all spent our adulthood hearing him whine about because in his neighborhood he could never put up anything really big.

Since we charge for exorcising cutesy statements we're now at $25 per chop.

Then Mr. Famous, in talking to his imagined friend, Harvey, brought up the Smith Chart. Harvey, the foil, asks about it and is told to look up articles in the Nov. 1970 of the now defunct *Ham Radio*, in Jan. and Feb. 1966 *QST* and Nov. and Dec. 1963 *CQ*. Great! They are telling people who have already spent 20 bucks on this book to go find articles printed (for most of the newcomers) before they were even born. OUCH!

I have no idea what was meant by this: "It's difficult to put out a loud signal from a city lot. It's equally difficult to work more than one band from a city lot." It sounds like absolute horsefeathers. There were some GREAT contesters of yesteryear and those of today who (did) do magnificently from city lots and on many bands. I only charge $10 for knocking out silly, baseless statements.

There is some meandering about a matching system for a 10M Yagi antenna in which the driven element (in the diagram) ends up to be eight-feet, two- inches long instead of the double that it should be. (Ten dollars please.)

In the section on antenna analyzers the MFJ and the AEA are mentioned. Not mentioned is that the AEA's accuracy, I've been told, leaves something to be desired. Oddly missing is the Auteck analyzer which is truly a marvel.

And please, spare us from such as these (while discussing wattmeters), "While I don't believe in 'plugging' name brands, be assured this high-flying instrument is really a Bird!" Isn't that just too cute for words?

Why not mention it by name? If something is believed to be the best in its price class there is nothing wrong in saying so straight out.

This puzzled me: "A minimum of one center and two end insulators (or baluns) are required for a wire

antenna." Are end insulators baluns? Is there a way to have more than one center insulator? What are the maximums?

This book is promised to be a "thoroughly practical text." However in the write-up (page 5-12) on the 0.2WL groundplane loop, capacitance values are given for the three different C1s (for different bands) but no values given anywhere for C2 nor are the voltage ratings given for any of the capacitors (which can be quite high) for the shortened antennas. We're told that this little antenna is down only 2dB from a full-size vertical. Is that a full-size vertical with 120 radials each 0.4 WL long or a full-size vertical grounded to a water faucet in the garden??? The size of the necessary groundplane or mat needed for the proper operation is given as "size not specified."

There's more but I figure that at my normal hourly rate that I've already given them much more than $100 worth of changes for their second edition.

Besides, I need the time to work on my book. The one problem with my book is, who can I get to look it over (before publication) for $100?

Based upon having previously read a great many ARRL books, I fully believed that, upon starting to read "Your Ham Antenna Companion" that I would issue a glowing report and recommend its purchase.

I can not. This book is an abomination. It should be titled "Antennas for those 9 through 13" because any bright 14 year old would be offended.

I have heard through the grapevine that the ARRL is now aiming their literature at "the MTV generation" to use their exact words. They have certainly succeeded at that dubious endeavor.

What I truly do dread is that any doctor, lawyer, architect, schoolteacher, pilot, policeman, etc., pick up this book. They will think that hams are a real gang of idiots. Heaven help us if a recent EE grad (thinking about joining the ham ranks) picks this up. He will set the new world record for the 440-yard dash in his run away from us.

For example: "There are (approximately—very approximately) 3 feet to a meter." Just what does "approximately—very approximately" mean? About almost? Nearly roughly?

Does the ARRL believe that it is beyond the ken of those who have had a few semesters of high school algebra to grasp and retain that a meter is 39.37 inches? We've mentioned it quite a few times here, obviously we think more highly of the amateur that Newington does.

The back of the book proclaims, "You don't need an advanced degree in mathematics or a touch of magic to have a good antenna installation." Does that strike you as rather condescending?

It is said that this book is for "a new ham or an old timer trying a new mode or band for the first time." Old timer? I hope most old timers can figure out how to get on a new band without this "Antennas for Dummies." There IS a difference between simplified and simplistic. Such has escaped the attention of the author. This book serves only in assisting the downward spiral of what was once a learning path.

Just how did generations of hams learn what they needed to know without such a "book" as this?

A photograph shows a 3-element Yagi, the caption below the photo calls it a 4-element. The neophyte may come to believe that the boom is an element.

We put up antennas (we are told here) within the limits of our "piggy banks." Maybe it's not the "MTV generation" being aimed at but instead are writing the books.

This book uses the terms radials and groundplane interchangeably and tells the novice that the groundplane is "ideally several wavelengths in each direction." Well, that will send him back to model airplanes. If one follows the diagram on how to feed a vertical (Fig. 3-9) one will see some strange impedance indeed. Fig. 3-11 shows a photo of a 3L, 80M Yagi at 490 feet. Just what Ned Novice is concerned about. He will probably order two of them, putting them on his Visa card.

To confuse the confused even more, they are told, "You can think of a Yagi as a set of dipoles stacked on a boom." Should anyone pick up a decent dictionary they will see: Stacked: "A radio antenna consisting of a number of components connected in a substantially vertical series." Looking in the dictionary and proper word usage does seem

to be a lost art these days.

In Fig. 3-31 (3L, 20M wire Yagi) the wire lengths are shown on two of the elements extending to the ends of the end insulators. NO! The dimensions are supposed to be up to where the element wire goes into the insulator. Some sort of strange-looking feedline is used with not a clue about what its impedance is, how is it matched or whatever. And, we don't care for the wire support between the elements, use some non-conductive cord.

A full-wave loop is shown and how to feed it. Not mentioned (with their choice of feed location) is that the angle of radiation is straight up. Nice for local contacts but not too spectacular for DX. The option should be explained, it is not.

But then, what can really be expected from a book, when writing about the rhombic shows it as an exact 90 degree corner SQUARE?

It tells to make it "6 Wavelengths" on a side but nothing about the necessary angles. A big "R" is at the end but nothing about values, etc. The writings on the V-beam leave out all information about apex angles. The "balcony railing" antenna of Fig. 4-4 has neither directions nor dimensions.

Here's what I really object to: "Keep in mind that you have to lose a great deal of power to reduce your signal on the far end by only 1 S Unit." Hey, just how much is "a great deal?" Tell the folks! These are people who balance their checkbook, pay their credit cards, go to gainful employment every day providing a nation's goods and services. They can handle "75%." Have a little more faith in them, Newington!

In the section on antenna analyzers we're told that the noise bridge "will tell you the impedance of your antenna as seen in the shack end of the transmission line." I wish. First, the unit will indicate resistance and reactance. You will still have to work the formula to find impedance. And, the noise bridge will only perform its function properly when the feedline to the antenna is a multiple of half-wavelengths (with velocity factor cranked in).

Oddly, (truly oddly) a picture is shown of an (usually overpriced-[my opinion]) AEA unit but no mention of the pioneer in the analyzer field, MFJ. His unit probably saved many lives of hams as they no longer had to run up and down stairs, trimming, checking SWR bridge, etc., back and forth. I nominated MFJ for the Dayton Technical Achievement award one year but nothing came of it. A brilliant breakthrough certainly deserves mention in each and every antenna book written. The Autek unit is also a true gem. Sadly, it also is not mentioned in this mindless moron book and the two omissions are one of the reasons for its earned (and rightly so) utter disdain.

Then we read this: "There is at least one national electronics distributor who sells a 'lightweight' mast section that has all the strength of the walls of an aluminum soda can. Select this material and you can have problems." Since no one reading this book is a structural engineer, it would have been nice if it had been spelled out the distributor and parts number of the object to be avoided.

I just don't understand the mindset behind this book, for example, in talking about why campers and hikers don't use verticals we are told it's because they don't "want to carry ground rods and large rolls of wire for radials." Even four radials for 80M, 67 ft. each, does not require "large rolls of wire." (And for a ground-mounted vertical those four wires will suffice for all the other bands higher in frequency.)

It is shown that the tire of a car driven over a flat plate attached to mast will provide a steady support, then the reader is told, "Just don't change your mind and drive out for a sandwich during the operation!" *Yup, yup, good thing that there book told me not to do that. Yup, Yup, might have just driven away and seen the antennas all fall down. Thanks, bub, for the warning.* Others, however may ask, "Just how dumb do you think I am?"

The dimensions given for radials, when using only four, contradict the lengths given in *The ARRL Antenna Book*. Oh, what is one to believe?

I could write more about that book but that's all the space we have.

(Lil, a former schoolteacher, is writing an antenna book. It is titled: "See Toby the electron. See Toby go down the wire. Chug, chug, chug." Kurt returns next month.) WR

VE exam schedules

As a service to our readers, ***Worldradio*** presents a feature listing 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 October, please have the information to us by mid-July.

p/r pref. = pre-register preferred but w/i OK
p/r = pre-register only — no w/i

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.

w/i pref. = w/i preferred to p/r
w/i = walk-in only

State	City	Contact	Notes
Alabama			
12/02/96	Mobile	David, WA4VAC 205/649-5229	
Arizona			
12/14/96	Tucson	Joe, K7OPX 520/886-7217	
Arkansas			
12/14/96	Siloam Sprgs	Mike, KJ5OP 501/524-8090	p/r pref.
California			
12/01/96	Chico	Jackie, W6YKU 916/342-1180	p/r pref.
12/12/96	Colton	Harold, AB6RN 909/825-7136 days or 909/685-6073 eves	
12/01/96	Concord	Gene, WW6H 510/254-5090	w/i only
12/28/96	Culver City	Scott, K6PYP 310/459-0337 or Dave N3BKV 818/559-2572	p/r pref.
12/14/96	Culver City	Clive, AA6TZ 310/827-2538	p/r pref.
12/21/96	Cupertino	Emmett, AE6Z 408/243-8349	p/r
12/28/96	Escondido	Harry, WA6YOO 619/743-4212	p/r
12/28/96	Fairfield	Dick, AB6EY 916/791-0268	w/i pref.
12/03/96	Fremont (TP)	Greg, KJ6EP 510/791-6818	w/i only
12/07/96	Lancaster	Adrienne, WA6YEO 805/948-1865	p/r
12/04/96	Lake Isabella	Tom, KN6TS 619/379-2947 or KD6YNX 619/379-5236	p/r pref.
12/21/96	Oakhurst	Ken, K6LFR 209/683-8245	
12/14/96	Petaluma	Dale, 707/762-9414	p/r pref.
12/21/96	Porterville	Phil, WA6WRS 209/535-4288	w/i only
12/21/96	Redwood City	Joe, KB6OWG 408/255-9000	w/i only
12/21/96	Sacramento	Lyle, AA6DJ 916/483-3293 or Phil, N6ZVA 916/338-3223	w/i
12/04/96	Sacramento	Larry, KD6OLN 916/361-2476	p/r pref.
12/08/96	Sacramento	Dick, AC6RJ 916/383-2113	p/r pref.
12/07/96	San Rafael	Recording 707/996-6461	p/r pref.
12/11/96	Santa Ana	Red Cross, 714/835-5381 x140	w/i
12/21/96	Stockton	Mark, W6DKI 209/465-7496	w/i
12/14/96	Sunnyvale	John, KG6XF 408/255-9000	w/i only
12/14/96	Torrance	Joe, WB6MYD 310/328-0817	p/r pref.
Colorado			
12/14/96	Denver	Glenn, WØIJR 303/366-9689	p/r pref.
12/96	All Colorado	Exams recording 303/360-7293	
12/07/96	Sterling	Blaine, WAØJTB 970/522-5787	p/r pref.
Florida			
12/21/96	Melbourne	Bill, WB9IVR 407/724-6183	p/r pref.
Georgia			
12/21/96	Marietta	Joanne, AC4JQ 770/955-3171	w/i
12/02/96	Marietta	Delaine, KM4FV 770/993-9758	w/i
Idaho			
12/04/96	Athol	Bob, N7GHV 208/683-2094	p/r
12/14/96	Boise	Lem, W7JMH 208/343-9153	p/r pref.
12/14/96	Sandpoint	Russ, AA7XM or Chris, AA7XN 208/264-4534	p/r
Illinois			
12/17/96	Aurora	James, N9UZC 708/879-3042	w/i
12/21/96	Loves Park	Dennis, W9SS 815/877-6768	p/r pref.
12/21/96	Morton	James, NT9C 309/266-6756	p/r pref.
12/14/96	Oak Forest	David, NF9N 708/448-0580	p/r pref.
Indiana			
12/14/96	Chesterton	Bill, N9SLQ 219/762-2887	w/i pref.
12/01/96	Terre Haute	Fred, K9EBK 812/466-2122	p/r pref.
Iowa			
12/14/96	Council Bluffs	Lorraine, AAØBS 712/322-1454	p/r pref.
Massachusetts			
12/27/96	Holyoke	Dave, N1MHP 413/592-4978	w/i
12/21/96	Melrose	Scott, WB1F 617/665-7654	p/r pref.
Minnesota			
12/07/96	St. Paul	Jay, KØQBE 612/222-7253	p/r pref.
Missouri			
12/07/96	Kimberling	Jim, NQØG 417/739-2888	p/r pref.
Nebraska			
12/13/96	Sioux City	Glen, KØTFT 712/239-1749	p/r pref,
New Jersey			
12/14/96	Cranford	24 hour hot-line 201/377-4790	w/i pref.
12/19/96	Bellmawr	Bill, NT2N 609/933-1500	w/i pref.
12/11/96	Ft. Monmouth	Gerry, WB2GYS 908/532-5354	p/r pref.
New York			
12/21/96	Long Island	Les, AA2FJ 516/364-0030 or 516/922-0947	p/r pref.
12/10/96	Long Island	Bob, W2ILP 516/499-2214	w/i pref.
12/01/96	Yonkers	Emily, AC2V 914/237-5589	p/r pref.
12/22/96	N.Lindenhurst	Walter, KA2RGI 516/957-0218	p/r pref.
Ohio			
12/07/96	Cincinnati	Herb, WA8PBW 513/891-7556	p/r pref.
12/14/96	Van Wert	Robert, KA8IAF 419/795-5763	p/r pref.
Oregon			
12/13/96	Grants Pass	Clyde, AA7WC 541/474-0205 or Gary, KB7CFI 541/474-7974	p/r pref.
12/09/96	Medford	Dale, N7IXS 541/772-6865 or Rick, KG7PX 541/779-3404	p/r pref.
12/11/96	Roseburg	Dick, AA7GC 541/672-7564	p/r pref.
Pennsylvania			
12/07/96	Erie	Norma, W3CG 814/665-9124	p/r pref.
12/21/96	Mercer	Dennis, WM3H 412/347-5960	w/i
Rhode Island			
12/12/96	Providence	Judy, KC1RI 401/231-9156 Al, NN1U 401/454-6848	w/i pref.
Texas			
12/21/96	Austin	Jim, AB5EK 512/327-6184	w/i pref.
12/10/96	Houston	Harold, ND5F 713/464-9044	p/r pref.
Virginia			
12/07/96	Virg. Bch	Judy, KD4JMA 804/468-9166	p/r pref.
Wisconsin			
12/07/96	Racine	Bob, WØWLN 414/886-8551	p/r pref.

Contest Corner

Don Durk, KA1DWX
76226.1414@compuserve.com

If you know of upcoming contests, or you've a topic to discuss drop me an e-mail or snail mail. What are you interested in seeing discussed?

One of my all-time favorite CW tests — the WAE Worked All Europe CW test has just finished. It's a shame that you folk in the west and midwest don't have good propagation for this, as it is a CW lover's dream! You get to exchange traffic — in this case a list of the time, call, RST and serial number of ten previous QSOs, with the station you're contacting. It's a great test of your sending ability and the other stations copying ability. What brought this to mind was a review of some of the BIG WAE results from the really BIG stations. I am often humbled when I hear some of the guys and gals working stations I don't hear and often wonder why. Well, eat your hearts out. An Internet posting of the reported WAE contest score of N3RD included the antennas in use: for 80, a 4-Vee phased array; for 40, 4 elements at 145'; for 20, 5 over 5 over 5 @120'/80'/40'; for 15, 4 over 4 over 4 @ 130'/90'/50' and for 10, 4 over 4! Not too shabby, eh?

Meanwhile for we mortals, November is Sweepstakes month! You may want to consider putting up a high angle radiator (a modest height dipole) favoring local contacts, or perhaps a low angle radiator to help get that VE1 or KL7.

The Internet address for the *CQ* page mentioned in our 9/96 column has been changed to http://www.affcom.com/contest/(tnx KN6VF).

Most contests require separate logs per band, check sheets for over 200 Qs, a summary sheet and a signed and dated affidavit attesting to observance of the rules of both the contest and your local regulating authority. A statement wherein you agree to be bound by the decisions of the contest committee is also needed. All times are in UTC.

Late October 'tests

(see October ***Worldradio*** for details)

*** CQ WW SSB**

26 October 00:00-27 October 24:00

(RS +CQ zone)

Q 1x/ band. 1.8-28 MHz. (NOT WARC BANDS). You must sign portable if your call sign indicates a different zone or country than actual. Single ops need 12 hrs or more for awards; multis need 24. 10 minute rule and antenna details-CK RULES! Score-pts (diff continent 3 pts; own country 0 pts, but ok for mult; NA other NA countries 2 pts; non NA stns — same continent but different country 1 pt) x mults (ea *CQ* zone+ea DXCC country/WAE country per band)/mm =zone mult only. Single op all band or single band. A1-single op high power — no DX alerting assistance. A2-single op low power — not> 100W out. A3-single op QRP-not> 5W out. A4 — single op assisted. Multi op — all band only. B1-multi op 1 tx — 1 tx on 1 band during any 10 minute period, except that during this 10 minute period 1 and only 1 other band may be used if the station worked is a new mult. B2- multi xmtr-1 signal and running station per band. Team — any 5 ops in the single op category. You may be on only 1 team per mode. You may be on entirely different SSB/CW teams. Competing on a team does not prevent you from submitting your score for a club. A list of the team's members must be received by *CQ* prior to the contests start. Fax to CQ, Att: Team Contest, 516/681-2926. Club — at least 3 logs, and club officer must report list of participants and scores. For awards single op must have minimum of 12 hours on; multi must have minimum of 24. Trophies, plaques and certs. Ck sheet for each band w/ 200+ Qs. Penalty for dupes or broken calls- up to 3%, 3 Qs removed for each error; for > 3% possible disqualification. Disks-IBM, MS-DOS compatible. Format CT. Bin for example-HS0AC.BIN or N6TR.DAT or your .DBF files. *CQ*.

November 'tests

*** ARRL SS(CW)**

2 November 21:00-4 November 03:00

(599+A/B/Q+yr)

Q U.S. + Canada 1 time only, not 1 time per band. 1.8 - 28 MHz NO WARC BANDS. Exchange format example: W1AW NR 001 A KA1DWX 56 EMA. Give stations call; consecutive serial #; A if <150 watts , B if > 150 watts or Q if < 5 watts; ur call; last two digits of year first licensed e.g. 1956 and ARRL section. Score — 2 pts per Q x mults per band (ARRL + Canada sections+ VE8/VY1, max 77). KP4 = Puerto Rico section, KV4/KP2/KG4 = Virgin Island section, KH6/ U.S. Pacific possessions = Pacific section.

Single op, non packet/ multi op 1 transmitter/ QRP single op/ club competition. ARRL

Check this out!!!

*** JA INT'L DX TEST SSB**

8 November 23:00-10 November 23:00

(59+*CQ* zone or prefecture 01-50 for JA stns)

Q 1x/band. Q JA only. JA Q only non JA. Q w/mm ok for pts and zone but not for country mult. 3.5 - 28.9 MHz NO WARC BANDS. Look for JA stns 3525-3575;3747-3754,3791-3805. Single ops 30 hr. max., multis 48. Rest period of at least 60 mins. Score - pts (1 for 40-15; 2 for 80 and 10) x mults (prefectures per band). 100W or > single op/single band// single op multi band. 100W or < single op/ single band// single op multi band. Multi op/ multi band(ck 10 min rules!). Packet or other assistance not allowed for single op. Ck sheet for 500 or more Qs or for band w/> 200 Qs. Results on:jidx-info@dumpty.nal.go.jp. ARRL format log to: jidx@dumpty.nal.go.jp w/printed summary sheet or *59 Magazine*, PO Box 59, Kamata,Tokyo 144, Japan. *Winner of U.S. phone will be granted a free round trip ticket to JA to get plaque (courtesy of Bear, JA7RHJ/AA6PU).*

***ALARA (Australian Ladies ARA) SSB/CW 'test**

9 November 0001-2359

(For YL non-ALARA, OM or club RS(T)+nr+ name+club, if club;

RS(T)+name for ALARA member) Q 1x per mode per band.3.5 - 28 MHz. Score-pts — 5 for ALARA Q, 4 for YL non-member Q, 3 for OM or club Q. Note: contacts where 1 op is Novice count for double points. There are no multipliers in this contest. Certs and trophies. Logs to VK3DMS.

***WAE RTTY 'test**

9 November 00:00-10 November 24:00

(599+NR)

Q 1x/band. 3.5 - 28 MHz NO WARC BANDS. 36 Hour max for single ops. For WAE RTTY work all stations including your continent, BUT no QTCs within your own continent. EU and non-EU may both receive QTCs. QTC is a list of prior exchanges. Send and receive no more than ten to or from each station outside your continent. The format is grp 1/10, 2/10, 3/5, 4/5 etc. this means your first group having ten exchanges, your fourth group having 5 exchanges, etc. You then send time/stn/nr for example 0001/DJ6QT/020 0002/DL1IAO/034 0004/DJ6RB/023 etc.

Score - # of QSOs + QTCs x multipliers (non EU = # of EU countries per band [WAE country list] x2 for 14/21/28; x3 for 7 MHz; x4 for 3.5 MHz). EU = 1 mult per band for each non EU country per DXCC list.) Single op all bands, multi op single transmitter, SWL. WAEDC, PO Box 1126, D- 74370 Sersheim, Germany.

***OK/OM SSB/CW DX 'test**

9 November 12:00- 10 November 12:00

(RS(T)+ number for non OK/OM; RS(T)+number+ 3 letter county code) OK/OM Q only outside OK/OM others Q only OK/OL/OM. Q 1x per mode per band 1.8 -28 MHz. Score : pts(EU w/OK/OL/OM-1; others w/ OK/OL/OM-3; OK/OL/ OM w/ EU-1; OK/OL/OM w/other continent-3) x mults(for OK/OL/ OM-WPX prefixes-once per whole contest; for others-counties on each band and each mode).

Classes are: Single op CW; single op SSB; single op mixed; multi op mixed; QRP; SWL. Special QSL for each participant, Trophies, awards, 4 color certificates. OK2FD

***ARRL SS(SSB)**

16 November 21:00 - 18 November 03:00

See rules for ARRL SS(CW) 11/2 - 11/4 in this column.

***RSGB 1.8 MHz CW 'test**

16 November 21:00-17 November 01:00

(RST +number; UK stns RST+ number+county) UK stns work all others.

G3UFY.

***ARRL INT'L EME 'test**

23 November 0000 - 24 November 2400

This is the second weekend of a two weekend 'test. The first weekend was in October (Both calls + report + acknowledgment of calls and reports).

Q 1x/band SSB/CW. 50 MHz and up. Score-pts (100/Q) x mults per band. Mults = U.S.+VE call areas +DXCC countries (not U.S./Canada). Single op multi band/single band// multi op-special rule-2 or more amateurs including neighboring amateurs within one call area but not greater than 50 km apart provided EME facilities for different bands on the different premises are present. Certs for even 1 Q via moonbounce. ARRL

***CQ WW CW**

23 November 00:00 - 25 November 24:00

(RST +CQ zone)

Q 1x/ band. 1.8- 28 MHz. (NOT WARC BANDS).You must sign portable if your call sign indicates a different zone or country than actual. Single ops need 12 hrs or more for awards; multis need 24. 10 minute rule and antenna details-CK RULES! Score-pts(diff continent 3 pts; own country 0 pts but ok for mult; NA other NA countries 2 pts; non NA stns — same continent but different country 1 pt) x mults (ea CQ zone+ea DXCC country/WAE country per band)/mm = zone mult only. Single op all band or single band.

A1-single op high power-no DX alerting assistance. A2-single op low power-not> 100W out. A3-single op QRP-not> 5W out. A4-single op assisted. Multi op — all band only. B1-multi op 1 tx — 1 tx on 1 band during any 10 minute period, except 1 and only 1 other band may be used during any 10 minute rule if and only if the station worked is a new mult. B2- multi xmtr-1 signal and running station per band.

Team — any 5 ops in the single op category. You may be on only 1 team per mode. You may be on entirely different SSB/CW teams. Competing on a team does not prevent you from submitting your score for a club. A list of the team's members must be received by *CQ* prior to the contest's start. Fax to *CQ*, Att: team contest, 516 681 2926. Club — at least 3 logs, and club officer must report list of participants and scores.

For awards single op must have minimum of 12 hours on; multi must have minimum of 24. Trophies, plaques and certs. Ck sheet for each band w/ 200+ Qs. Penalty for dupes or broken calls- up to 3%, 3 Qs removed for each error; for > 3% possible disqualification. Disks-IBM, MS-DOS compatible. Format CT.Bin for example-HS0AC.BIN or N6TR.DAT or your. DBF files. *CQ*.

December 'tests

12/1 weekend

QRP ARCI Holiday Spirits Homebrew Sprint

12/7

*ARRL 160 'test

*TOPS CW Activity 'test

*Telephone Pioneer QSO Party

12/14 weekend

*ARRL 10 Meter 'test

*TARA RTTY Sprint

12/28 weekend

*Straight Key Night

*RAC Canada Winter 'test

January 'tests

1/1/97

*SARTG RTTY 'test

1/4 weekend

*AGCW DL QRP 'test

*MI QRP 'test

1/11 weekend

*JA INT'L LFCW DX 'test

*Midwinter Contest CW 'test

*ARRL RTTY 'test

1/18 weekend

*NAQP SSB 'test

*ARRL VHF 'test

*YL INTL 'test

*HADX 'test

*Hunting Lions

1/25 weekend

*CQ 160 CW 'test

*REF CW 'test

*SSB 'test

*QRP ARCI Novice/Tech Roundup

WR

Hamfests November

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 **Montgomery ARC** will host the 19th annual Montgomery Hamfest and Computer Show on 9 November from 8 a.m. to 3 p.m. (setup 3-8 p.m. Friday and 6-7:30 a.m. Saturday) at the South Alabama Fairgrounds, located on Federal Drive in Montgomery. Admission $4, free parking, all indoors including the flea market. Flea market reservations are encouraged. VE exams on site at 8 a.m. For more information or table reservations, write to: Hamfest Committee, 2141 Edinburgh Dr., Montgomery, AL 36116-1313 or telephone Phil at 334/272-7980 after 5 p.m.; fax 334/365-0558 or e-mail WB4OZN@worldnet.att.net Talk-in on 146.84(-), 146.92(-), 147.18(+) or 444.5(+).

California

The **Livermore ARK** will hold a swap meet on 3 November, 7 a.m. to 12 noon at Las Positas College, 3033 Collier Canyon Rd. (Airway Blvd. exit to north of 580 highway) in Livermore. Features include new, used, surplus ham, computer gear, misc. electronics and testing equipment, refreshments. Admission and parking is free. No VE exams. Sellers pay $10 space fee. Contact Noel Anklam, KC6QZK, at 510/447-3857 eves. or leave message days at 510/783-2803. Talk-in on 147.045(+) (PL 94.8) and 145.350(-).

Connecticut

The **SouthCentral Connecticut ARA** will hold its annual flea market on 10 November from 9 a.m. (vendors 7 a.m.) at the Branford Intermediate School, 185 Damascus Rd., in Branford. Tables $15/advance, $20/door. Admission is $5. VE exams. Information or reservations, please send SASE (none by phone) by 1 November, to: SCARA, P.O. Box 705, Branford, CT 06405. For information, telephone 203/265-9983. Talk-in on 146.61(-).

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The **Tri City ARC** will hold its annual fall auction on 2 November, from 10 a.m. until sold out (setup 9 a.m.) at the Senior Citizens Center, Waterford Municipal Complex (Rt. 85, south of Exit 77 of I-395 or north of Exit 82 of I-95). Admission is free and food will be available. Wheelchair accessible. Bring your equipment to be auctioned. For information, call Bob, KA1BB at 203/739-8016. Talk-in on 146.37(+).

Florida

The **Lake Amateur Radio Association, Inc.** will hold a hamfest and electronic expo on 2 November from 8 a.m. to 4 p.m. (setup 6-8 a.m.) at the East Lake Chamber of Commerce in Sorrento. Admission is $5, sellers $10 (includes one admission ticket). VE exams at 10 a.m., walk-ins okay. Contact Tony Summerlin, KE4NLG, 9210 Fernery Rd., Leesburg, FL 34788; 352/360-1380. Talk-in on 147.25(+) or 442.90(+).

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The **Pelican Chapter #128, QCWA,** will host its annual Catered Fried Chicken Picnic on 20 November from 10:30 a.m. in Shelter #13 at Lake Seminole Park in St. Petersburg. The menu is fried chicken with all the trimmings, including dessert and drink. There will be prizes and goodies before the picnic. The price will be $7.50. QCWA members and guests are invited. Tickets and reservations can be made through Don Bice, W4PCO, at 813/347-2707 or via the *Callbook*™ address. Talk-in on the QCWA repeater 145.29(-).

Illinois

The **Lamoine Emergency ARC** will hold a hamfest on 10 November from 8 a.m. (vendors 7 a.m.) at the Washington Street Gym, 2 blocks west of the Macomb town square on Route 136 (West Jackson) and one block south on Johnson. Admission is $3/advance, $4/door. Tables $5, or donation of door prize (vendors may also set up the night of 9 November from 7-10 p.m.). Door prizes hourly. Talk-in on 147.06(+), 444.300(+) or 146.52(S).

Indiana

The **Allen County ARTS** will hold their Fort Wayne Hamfest and Computer Expo on 16 and 17 November from 9 a.m. (both days) at the Allen County War Memorial Coliseum on U.S. 30 in Fort Wayne. Features include commercial and flea market tables all under one roof, containing both new and used radio, computer, and general electronic items and several international ham equipment manufacturers. Activities include forums, VE testing (on Saturday) and ladies events and presentations by special guest Gordon West, WB6NOA. Shuttle bus service provided from commuter airport (Smith Field) and shopping centers. Admission is $5 at the door only. Parking is $2.

For more information about tables contact John Rufner, KB9BNI at 219/483-8163 For general information contact, Don Gagnon, WB8HQS at 219/484-1314, send an SASE to ACARTS, P.O. Box 10342, Fort Wayne, IN 46851 or visit our web site at http://pwp.usa.pipeline.com/~dagagnon/ Talk-in on 146.88(-).

Massachusetts

The **Waltham ARA & 1200 Radio Club** will hold an Amateur Radio and electronics auction on 30 November, from 11 a.m. to 4 p.m. at Newton Masonic Hall, 460 Newtonville Ave., Newtonville, MA. Admission is $2. Snack bar available. Seller check-in at 9:30 a.m. Commission is 15%, $1 minimum, $30 maximum. No commission for owner buy-back. For more information, contact Eliot Mayer, W1MJ at 508/664-0773; e-mail W1MJ@AMSAT.ORG. Auction web page: http://ourworld.compuserve.com/homepages/emayer/auction.htm

Mississippi

The **West Jackson County ARC, Inc.** will hold a hamfest/swapfest 22-23 November, at the Latimer Community Center, north of the City of Ocean Springs. Admission is $2 per person. Swap and flea market tables are $5 each (in advance). Parking is free. Mail table reservations to WJCARC, P.O. Box 1822, Ocean Springs, MS 39564.

Contact persons are C.F. Kimmerly, N5XGI, 601/826-5811 or Mike Gurley, KC5QXE, 601/475-6161 (after 5 p.m.).

North Carolina

The **Johnston ARS** is sponsoring the 8th Annual JARSFEST on 17 November from 8 a.m. to 4 p.m. (vendor setup 6 a.m.) at the American Legion Complex in Benson. Admission is $4/advance, $5/door, and children accompanied by an adult enter free. Vendor tables are $8, and tailgating spaces are $4. Contact Bill Lambert, AK4H, 8917 NC 50 N., Benson NC 27504, 919/894-3352 eves between 7 and 10 p.m. Talk-in on 147.27(+).

Oklahoma

The **Enid Hamfest Group** is sponsoring the Enid Hamfest on 2 November from 8 a.m. to 5 p.m. in the Hoover Building at the Garfield County Fairgrounds. Features include free hot dogs and soda in the afternoon. VE testing is at 1 p.m. Admission is $2, tables are $1 each. Contact Fred, N5QXJ, Tom, N5LWT, Dick, N5HEL, Jeff, N5UBY via e-mail at EnidARC @AOL.COM or write: Enid ARC, P.O.. Box 261, Enid, OK 73702. Talk-in on 145.290(+), or 444.400(+).

Pennsylvania

The **Central Pennsylvania Repeater Assoc.** will sponsor their Hershey Hamfest on 9 November from 8 a.m. to 2 p.m. (vendor/ tailgate setup at 7 a.m.) at the Hershey Armory, 28th Div. Infantry on Baum St. in Hershey. Features include heated inside dealers' stands, outdoor tailgating, free parking. VE testing sign-up by 8:30 a.m. Admission is $4. Advance tables are $16, tailgate spaces are $5 each. Contact Harold Baer, KE3TM, 619 W. 2nd St., Hummelstown, PA 17036; 717/566-8895. Talk-in on 145.47(-).

Texas

The **West Texas ARC** will hold its annual Odessa Hamfest on 2 November from 8 a.m. to 5 p.m. (Friday setup 4-10 p.m. and Sat. 7 a.m.) and 3 November from 9 a.m. to 2 p.m. at the Ector County Coliseum, Exhibit Building C located at 42nd and Andrews Highway. Admission is $7/advance, $8/door, tables $8. Features include hourly prizes and lots of dealers. For information, contact Robert Jordan, N5RKN, e-mail N5RKN@aol.com or telephone 915/335-7980. Talk-in on 145.47(-).

Wisconsin

The **Milwaukee Repeater Club** is sponsoring their "Friendly Fest" on 2 November from 8 a.m. to 1 p.m. (vendor setup 6:30 a.m.) at the Waukesha County Expo Arena "Forum." Features include swapfest, indoor ground access and exams. Admission is $4; vendor tables are $4/four-foot table, $8/eight-foot table, reserved. Please call Burt, N9VBI, 414/328-0535. Send SASE to The Milwaukee Repeater Club, P.O. Box 2123, Milwaukee, WI 53201. Talk-in on 146.91(-) and 146.52(S).

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The **Fox Cities ARC** will hold their annual hamfest on 3 November from 8 a.m. at the Starlite Club, located at the corner of Highway 55 and City Road JJ, in Kaukauna. Features include great deals, food and refreshments, prizes, nearby lodging and VE testing. VE exams 9 a.m. (registration starts at 8 a.m., no walk-ins after 9 a.m.) Admission is $4, tables $8/eight-foot. For more information, contact Larry Siebers, KD9IA at 414/757-1167. Talk-in on 146.76(-) repeater. WR

UNDERSTAND YOU PEOPLE ARE LOOKING FOR A LITTLE ENFORCEMENT ON SOME OF THE BANDS

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

Match Alert™ V.S.W.R. Monitor/Alarm

RF Application, Inc. introduces the availability of the Match Alert™, their newest product. Designed to offer economical protection for HF transmitting systems, the microprocessor-based Match Alert™ monitors V.S.W.R. and provides a fast visual and electrical alarm if a preset V.S.W.R. level is exceeded. Eight different levels are dipswitch selectable, and an LED is provided to indicate when RF is being detected.

The Match Alert™ covers 1.8 to 30 MHz and is rated at 3,000 watts, but has been tested to 5,000 watts. The unit is housed in a cast aluminum enclosure measuring approximately 3" x 4" x 5" and requires 11 to 16V DC for operation. A form-C relay contact rated at 1 ampere is available via a three foot wire harness. The Match Alert™ is available from stock to four weeks, and the list price is $129.95.

RF Applications, Inc. develops, manufacturers and markets RF power and V.S.W.R. monitoring equipment. For further information, write: 9310 Little Mountain Rd., Mentor, OH 44060; 800/423-7252 (international 216/974-1961), or fax 216/974-9506. Visit us on the Internet at http://www.rfapps.com, or e-mail to sales@rfapps.com

MFJ-864 Cross-Needle SWR Wattmeter

You can read forward and reflected power and SWR simultaneously at a single glance with the MFJ-864. It features separate HF and VHF/UHF directional couplers, each with its own set of SO-239 coaxial connectors.

You can connect your HF and VHF/UHF transceivers at the same time. You can then monitor SWR and power of either transceiver at the flick of a switch.

With the MFJ-864, you get two power ranges — 30/300 watts forward and 6/60 watts reflected. Each power range for each band is individually calibrated and Schottky diodes are used for maximum accuracy. A single knob operation makes it easy to use and the meter is lighted (meter lamp uses 12 volts) for easy reading. An attractive all-metal cabinet has a tough vinyl cladding that won't scratch or chip off.

The MFJ-862 is similar to the 864 but covers 144 MHz, 220 MHz, and 440 MHz with 30/300 watts forward and 6/60 watts on reflected ranges. The 862 and 864 measure in at 6¾ x 2½ x 2¼ inches.

The MFJ-860 is similar to the 864 and 862 but only covers 1.8-60 MHz and a push button selects 30/300 watts forward or 6/60 watts on reflected ranges. This meter measures 4½ x 2¼ x 3 inches.

The MFJ-864, 862, and 860 come with MFJ's one-year unconditional warranty.

For more information or to order, contact any MFJ dealer or MFJ Enterprises, Inc., P.O. Box 494, Mississippi State, MS 39762 or call 601/323-5869; fax 601/323-6551, or order toll-free at 800/647-1800.

contact east® catalog

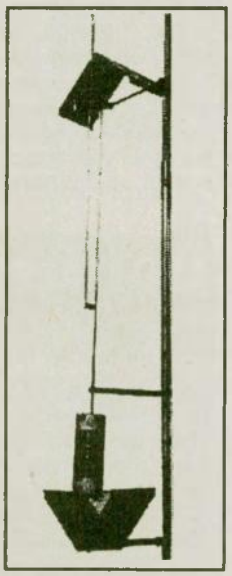
This 48-page supplement catalog comes packed with hundreds of new test instruments and tools for engineers, managers, technicians and radio hobbyists. Featured are quality products from brand-name manufacturers for testing, repairing, and assembling electronic equipment. Product highlights include new: DMMs and accessories, soldering tools, custom tool kits, EPROM programmers, power supplies, "create your own" tool kits, ELF meters, milliammeters, megohmmeters, wavemeters, breadboards and helpful reference books. Also included are our popular lines of communication test equipment, scopemeters, datacom tools and testers, adhesives, measuring tools, precision hand tools, portable and bench top digital storage scopes, soldering/desoldering systems, static protection, ozone-safe cleaners, magnifiers, inspection equipment, tool bags, workbenches, cases and more.

Some brand names include: Tektronix, Fluke, BK Precision, Weller, Locite, 3M, Pace, Extech, Microcare and many more.

All products are fully guaranteed and orders placed by 4 p.m. ship the same day. To receive your FREE copy, call 508/682-2000; fax 508/688-7829, or write to Contact East, Inc., 335 Willow St., North Andover, MA 01845.

ISOTRON 160C Antenna for 160M

The Bilal Company introduces the ISOTRON 160C antenna for the 160 Meter band. With the sunspot cycle at a low, much of the HF activity is on the lower frequency bands. The compact size of the 160C, a maximum height of 9.5 feet, mounts on a conventional mast.



This is a resonant antenna and needs no radials. It is coax-fed and can be tuned to a preferred portion of the band. The price is $159.95.

For more information and a free catalog on the full line of ISOTRON antennas, contact: Bilal Company, 137 Manchester Dr., Florissant, CO 80816; 719/687-0650.

Personalized clocks

Personalized Photo introduces a way to personalize your shack with your own special clock. The clocks measure '10 inches in diameter, have a quartz movement and sweep second hand. They operate on one AA battery (not included) in black or white for only $19.95. The clocks can be personalized with MARS or ARES logs, your QSL card, your call sign, club logo, or photo of shack, etc.

Other great ham items offered: Plastic mug, 11 oz. (designed to hold standard QSL card, $5.95; adjustable caps with name & call sign, $6.95; Mouse/CW key pad (made from your QSL card or photo), $10.95.

Free brochure with order. Add $3.50 shipping and handling minimum or 10% of order. Send check or money order to: Personalized Photo, Dept. W, P.O. Box 370244, West Hartford, CT 06137, telephone 860/233-7277; fax 860/236-3719.

DSP Blaster™

Brian Beezley, K6STI, announces the availability of *DSP Blaster™*, the first PC software for real-time, DSP filtering of audio signals from radio receivers. *DSP Blaster* uses your PC's sound card, optimized DSP algorithms, and 100% assembly language to functionally replace DSP filters implemented in hardware. *DSP Blaster is* intended for routine, daily use by Amateur Radio operators at HF and above.

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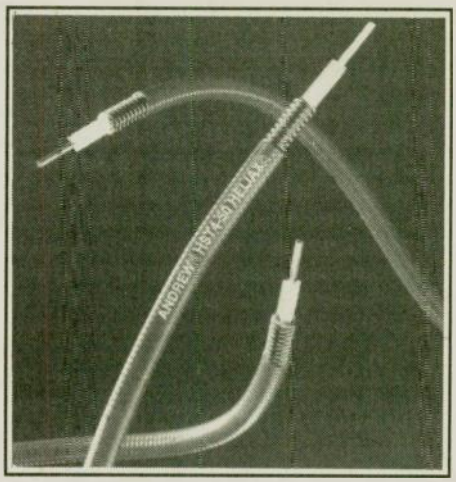
For more information, contact Brian Beezley, K6STI, 3532 Linda Vista, San Marcos, CA 92069 619/599-4962.



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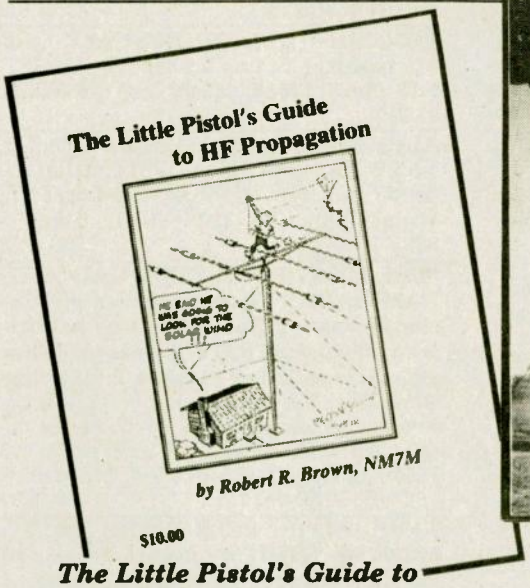

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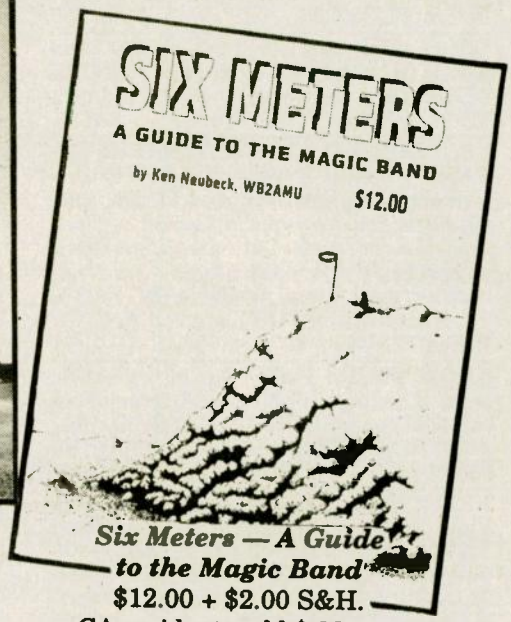

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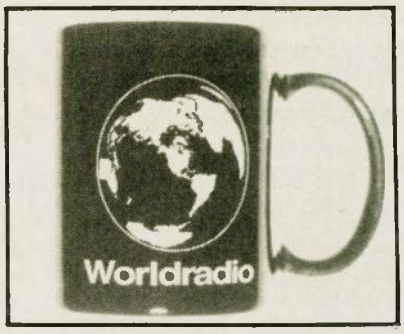

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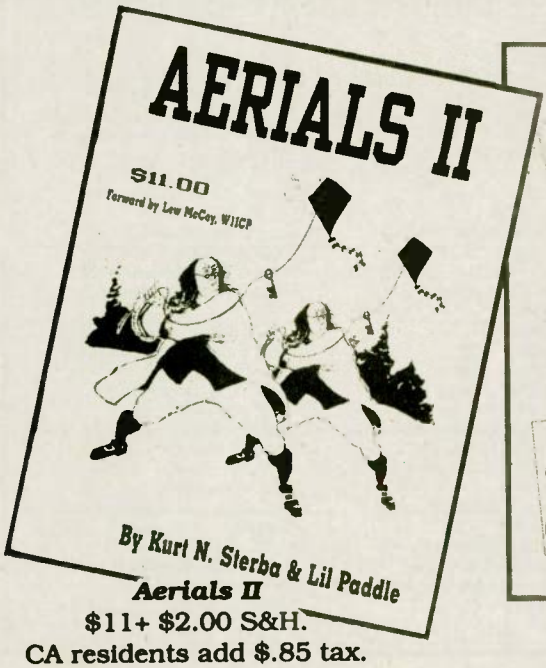

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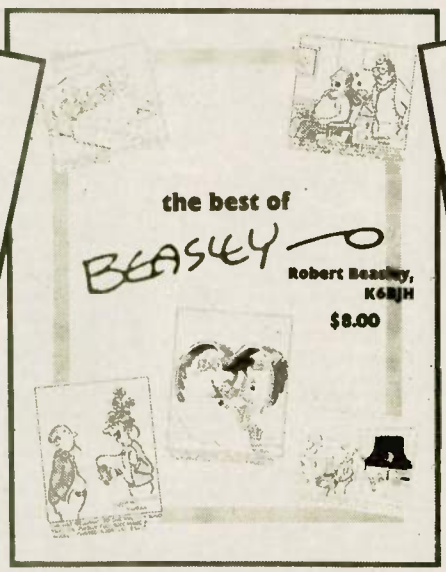

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Shannon Lucid comes home

Roy Neal, K6DUE

Astronaut Shannon Lucid has come home after setting a new American record for time spent in orbit. Her record setting time on the space station MIR included ham radio.

After six months in space, Shannon Lucid returned to earth. It may be weeks before she is back to normal. She may have to learn how to walk all over again, getting used to the effects of gravity.

During re-entry, she rode in a special recumbent seat on the mid deck so that she could remain supine after landing. Scientists could then examine her before she started working against gravity.

Shannon used ham radio to stay in touch with the folks back home during all those months aboard the MIR space station. She had been too busy to get an amateur license before she took off, so the Russians made special arrangements that allowed her to operate as RØMIR under the supervision of her ham radio Cosmonaut companions.

Her unorthodox technique on the air elicited comments among the amateur fraternity, but she did operate, and managed a few general QSOs in the process. These are valid for QSL cards if you were lucky enough to work her.

John Blaha, KC5TZQ, has taken Shannon's place aboard the MIR and John is an avid ham. Indeed, he even used the space shuttle radio to make a few contacts on the way up to orbit! He has been exercising the MIR ham radio station ever since the MIR and the space shuttle separated. You can look for him on 145.55 MHz simplex when MIR is in range. Check the AMSAT BBS for the best times. John will be on MIR for the next four months.

While the two spacecraft were docked, Jay Apt, N5QWL, checked out the MIR radio station and made a few contacts. Jay and teammate Carl Walz, KC5TIE, also used the shuttle's SAREX equipment and were very active throughout the mission.

Some excellent pictures of all of these hams working their stations have been released by NASA. They were photographed using an electronic still-store camera and can be found in the "NASA Images" files on the Internet.

SAREX, of course, arranges for shuttle astronauts to talk to students and some successful contacts were reported with the Andover Middle School in Kansas, the Immaculate Conception Elementary School in Celina, Ohio, and the Royal School for Girls at Haslemere, Surrey, England.

It's another fine success story for Amateur Radio in space. WR

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