



The AARCOVER

Bulletin of the Austin Amateur Radio Club
November 1990

MANCHACA SWAPFEST REPORT

MEETING

Tuesday, November 13, at 8:00 pm. Even better, come early and eat dinner with everybody!

Luby's Cafeteria on North Loop (in the back room).



Robert S. Logan, NZ5A will tell us about "QRP Fun"

Bob has been a consistent QRP contest leader for years. He now has kits to allow new QRP enthusiasts to master the fun and challenge of low power operation.

Come and find out how to enjoy amateur radio without a kilowatt!

The club's No Smoking policy at meetings and programs has not been changed.



BAGHDAD ROSE

The "Voice of Peace from Baghdad", Iraq's broadcasts in English to American soldiers in Saudi Arabia, are carried at 1000-1200 on 21675 kHz., 1600-1800 on 6055 and 11990 kHz. and 2000-2200 on 21675 kHz. The latter frequency is used by UAE in Dubai and by Radio Canada International at 1000 and 2000.

de Wojciech Zaremba and BBCM

The Fall '90 AARC/Manchaca Swapfest was held on Saturday, October 13, amid some very strange phenomena: beautiful DRY weather. Unknown to us at the time, this strange phenomena would continue all day long, (i.e., Texas 14, Oklahoma 13) and make for one of the most pleasant swapfests we've had. As usual, things started right at four-something o'clock in the morning and went into the early afternoon. New this time was a breakfast buffet aimed at speeding up service in the cafe.

The crowd size this time matched the crowd size last time, with several folks from out of town reporting the AARC has "the nicest little swapfest in the state"—something we can all be proud of. Thanks go to Joe, N5HPC, for talk-in duty and for helping me collect for the table and tailgate spaces and to Stu, K5KVH, for helping us with the cleanup duties.

de Darrell, WD5CDY

ROBOT OLYMPICS

The first Robot Olympics was held this Fall at a university in Scotland. Machines from seven countries engaged in ping-pong, a two-legged race, javelin toss, wall-climbing, and a swim meet(!). Fifty-four creatures participated, as a way of letting researchers measure their progress against each other.

de Miles, N5KOB

Newsletter of the S
ho Society

ENCOURAGING NOVICES

I just upgraded to Advanced last week, and had a pleasant experience I wanted to share. I was the only person in the room who was taking the Advanced test... everyone else was there for their Novice test, or to upgrade to Tech. I was sitting next to this twelve year old boy who wanted more than anything to upgrade to his Tech. I mean, this kid wanted it bad. I managed to do all 50 of the questions on my test before he was done with his. I just had to stick around and see how he did. The whole room was pulling for this kid because, speaking with him in the hall, he was the embodiment of the excitement of ham radio. When he passed, most of the people in the room stood and clapped for him and he was the happiest young guy I've seen in a long time. Now he's got dreams of getting his General.

It sounds sort of silly to those of us who have been in the hobby for a long time, but it's really not. Becoming worthy of a ham ticket is much like achieving an academic degree. From this kid's excitement you'd have thought that he had just received his PhD. We've all worked hard for our licenses, but sometimes we take them for granted.

If you ever want to rekindle that spark of excitement for Ham Radio, sit in on a testing session. See those applicants sweat before the test. Watch them slave over Ohm's law. See the relief and excitement when they pass the test, or the disappointment and determination that failure brings. These people think YOU are something special because you have already done what they are trying to do.

My point? It's simple: HAMRADIO: It's a great hobby. If you can encourage someone to become a ham, do it!

de Darren Leno, WD0EWJ

HAM EXAM RESULTS

The following individuals upgraded at the VE exams on October 6, 1990:

Name	Call	Upgraded TO
Jennifer Matyear	—Novice
Virgil Dobson	—Novice
Michael Nolan	— Technician
Ellice Smart	— Technician
Robert Moeser	— Technician
Michael Harvey	N5NSE	General
Rick Zerr	N5PQN	Advanced
Ralph Encarnacion ...	N5PAJ	Advanced
Michael Middleton ...	N5MPA	Advanced
Connie Williamson ...	KB5MBU ..	Advanced

Congratulations to all that upgraded.

I would like to thank the following VE's that came down and gave their time: Dave Harper, Charlie Doughtie, and Al VanAllen. The next exams will be on November 10, 1990, and the last exams of the year will be on December 8, 1990. So plan ahead, because the fee will surely go up in January, 1991.

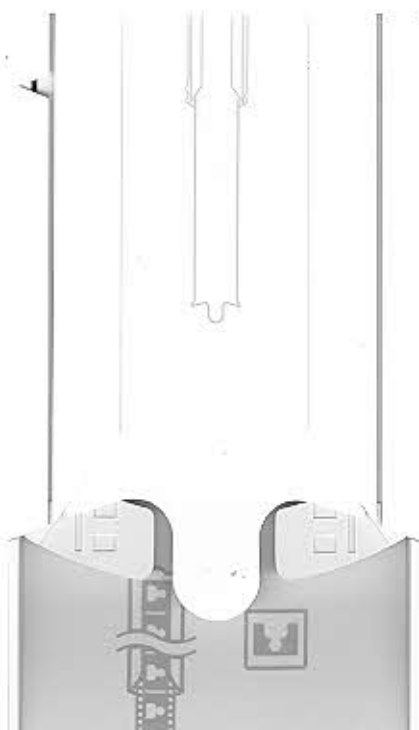
de KF5NB

SOME SCANNER FREQUENCIES

The following information is provided for those times when the pileups on 20 start to get to you, and you need to take a break.

Cordless Phones: You can set these channels up on most scanners so you can listen in on the neighborhood gossip, etc. The frequencies listed

continued on page 6



MINUTES

Meeting of the Austin Amateur Radio Club: On October 9, 1990. President Mike Kellam, AA5JP, called the meeting to order at 8:00 PM at Luby's on North Loop.

VISITORS: Two visitors introduced themselves: Mr. and Mrs. Dobson who are studying for their novice license.

OFFICER REPORTS: The minutes in the AARCOVER were accepted with the addition that those helping WA5RON, Ron, with putting on "Newline" each Sunday evening will be reimbursed for all long distance calls. Rick Herndon, K5FNI, the AARCOVER Editor, gave away two sets of "EE Master", a product source catalog. One set was donated by Rick, the other by Les, WD4IFU. Rick also has extra copies of the newsletter. Amado Ramirez, N5PCP, the club Treasurer reports that the checking account contains \$1366.65. The American Red Cross has sent a letter of appreciation for the Club's donation. Activities Manager Darrell, WD5CDY, tried to convince everyone that the Manchaca swapfest was last Saturday. Failing this, he admitted that it was this coming weekend, starting at 7:00 AM. Table space will be \$3.00 and tailgating space is \$1.00. Parking is free at the adjacent fenced parking area to the East. Talk-in is on the club repeater on 146.780. There will also be a breakfast buffet at the adjacent cafe.

OLD BUSINESS: The Secretary still has the Skywarn cards and decals.

NEW BUSINESS: President Kellam announced the appointment of a nominating committee to develop a slate of officers for the December election. The members include Joe, W5EBJ; Mickie, K5IOJ; and Dave, WD5N. Nominations from the floor are welcome and are encouraged but please be sure that the nominee is willing to serve.

The committee will welcome input from club members.

NEW MEMBERS: New members include Jack, N5RBI; Dwaine, KB2HV; Richard, KA5SFC; David, WD5AER; and David, KW9Z. Only KW9Z was present. New members were urged to attend so that we may meet them.

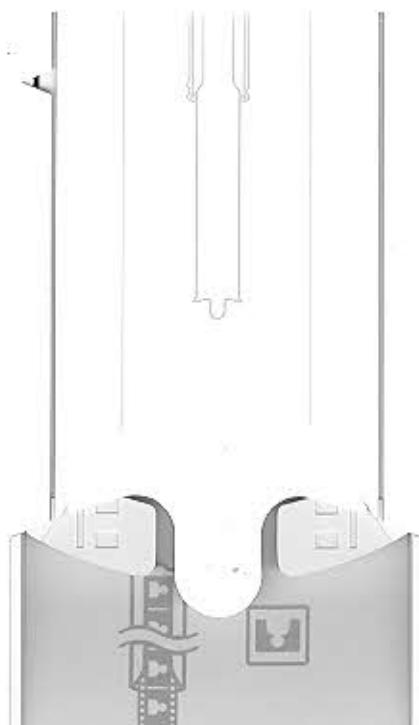
ANNOUNCEMENTS: Stu, K5KVH had news that former member, Ken Frank, WB5AKI, has become a Silent Key. Several upgraded last Saturday, Jennifer became a Novice and Mike Nolan became a Tech. Also Bud, KB5MBU, and Ralph, N5PAJ, got their Advanced tickets. The next ARRL VEC exams will be Saturday, November 10 at the School for the Blind. Contact Larry, WB5BEK for information. Joe, W5EBJ, reminds all the ARRL Director ballot is now out. He asks that you consider voting for Tom Comstock, N5TC.

PROGRAM: Our guest speakers this evening were from the local chapter of the American Red Cross: Laurie Packson, Assistant Director, Health and Safety Education Programs with Sam Langford, a volunteer instructor. Laurie and Sam gave a short program about the activities of the Centex Chapter of the Red Cross. This chapter covers five counties: Bastrop, Burnet, Lee, Travis, and Williamson. These include CPR and first-aid courses, aid to those whose homes have been burned out, and assistance to military families. They also noted that the Red Cross will soon celebrate its 75th anniversary.

Respectfully submitted by: Joe Canfield N5HPC, AARC Secretary.

AARCOVER SUPPORTERS

Stationery Sales & Services (printing, copying, rubber stamps) 453-5471.



BETTER GROUNDING

Scientists working on an Army Grounding Analysis report have shown that grounding with the standard 6' metal rod, or even several rods in parallel, is often unsafe and more often inadequate for good low-noise communications.

They have found that a better ground can be established by stapling a 100' length of standard 1/8" stranded steel wire to the earth every 4' with 6" pegs. A 3 lb. hammer (in lieu of the usually 10 lb. sledgehammer used with the ground rod) would be sufficient to drive in the pegs.

Tests at all sites in the country show that surface wire to be from 32% to 95% more efficient than the 6' grounding rod.

"The Readout", SARA, Modesto CA, Sept., '90

THE GOOD OLD DAYS?

According to "A Tower of Babel, A History of Broadcasting in the United States," one of the earliest radio stations was started by a Dr. Charles D. Herrold in San Jose, California. By 1912 there was a weekly broadcast, consisting of news bulletins and records from a local music store. The voice quality was OK at the beginning of each broadcast, but it steadily deteriorated as the carbon microphone slowly burned. When the microphone finally burned out, the broadcast ceased for the evening.



de George Riggins, in Radio World magazine

Due to the random effects of atmospheric refraction, modern astronomers cannot predict the time of sunrise or sunset closer than 4 minutes.

GOOD TIPS FOR CALCULATING RESONANT FREQUENCIES...

$$1 + 1 = 2,$$

or more precisely, 1 pF and 1 μ H = 2 meters (wavelength) (about 150 MHz).

This relation holds as long as the inductance in μ H and the capacitance in pF are the same number. Thus,

$$5 \mu\text{H} + 5 \text{pF} = 10 \text{ meters}$$

$$20 \mu\text{H} + 20 \text{pF} = 40 \text{ meters}$$

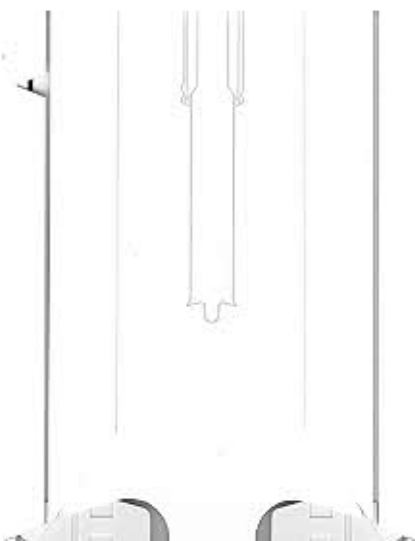
and so on.

If the μ H and the pF are not the same number, here's how to deal with it: The resonant frequency stays the same if you increase the μ H and decrease the pF by the same factor, or vice versa.

For example, we said that $20 \mu\text{H} + 20 \text{pF} = 40$ meters. Suppose you divide one of the numbers by 4 and multiply the other by 4. Then you see that 5 μ H and 80 pF will also resonate on 40 meters. This is good for ballpark approximations to confirm that you haven't dropped a decimal in your calculations.

This was submitted to QST's "Hints and Kinks" a couple of years ago, and rejected. You saw it here first...

de Michael Covington, Athens, GA ["Here" was the national Ham Echo copied from Boardwalk BBS (258-5528)-ed.]



LOOK MA! NO KEYBOARD!

Are you one of those folks who figures he will never learn to use a computer because you cannot type? Well, things may be about to change.

NCR is developing a 4-pound notebook size computer with no keyboard. To input information, you use a special stylus and "write" on the screen. Special software reads your writing. If your job is to fill in forms, the form appears on the screen and you "write" in the blanks, with the computer reading what you write. The screen can display whatever forms are required. If NCR decides to sell the computer, expect it out in Spring 1991.

One software company says several computer manufacturers are developing machines for stylus input, ranging from 5-pound 2-screen models down to 1-1/2 pound handhelds.

Once such machines are available, they should be readily adaptable to the digital modes: packet, RTTY, and AMTOR.

de Miles, N5KOB

Scanner Freq's from p. 3

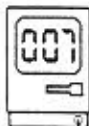
are in MHz.

CHANNEL	BASE	HANDSET
1	46.610	49.670
2	46.630	49.845
3	46.670	49.860
4	46.710	49.770
5	46.730	49.875
6	46.770	49.830
7	46.830	49.890
8	46.870	49.930
9	46.930	49.990
10	46.970	46.970

You should be able to hear both sides of the conversation on either the base or handset frequency.
continued on page 10

MACS TO MOSCOW

A recent news item indicates that the C.I.A.'s job may soon get a lot easier. It seems that aides to Mikhail Gorbachev recently met with a delegation from Apple Computer in Moscow, to arrange for purchasing a bunch of Macintosh computers for the Supreme Soviet. Now if we can persuade the Russians that those little microphones and antennas on their new computers are just standard equipment....



de Miles, N5KOB

(After this was written, Apple announced that two new Macintosh models would indeed have microphones on them as standard equipment, along with audio digitizing hardware and software. No antennas, though.)

AUTHORITATIVE SPACE INFORMATION

To get information about space activities, call NASA's computer bulletin board. NASA JSC's Electronic Space Information



BBS is intended to provide 24-hour access to biographies of NASA officials and astronauts, news releases, space flight mission presskits and television schedules, space shuttle systems information, flight manifests and schedules, and other info about the space program.

To access the BBS, call 713-483-2500 using 1200 baud, 8-N-1, at the "ENTER NUMBER:" prompt, enter "62511" and you will be connected to the BBS.

de Dave, N2AAM, Metuchen, NJ

I.A.R.N. RADIO PROGRAM

The I A R N (International Amateur Radio Network) airs a 45-minute program six times daily simultaneously on 3975 KHz, (1KW LSB to an extended Zepp fed with open line at 70 feet); 14275, (2KW USB to a delta loop up 70 feet; 28475 KHz, (200 watts USB to a dipole up 50 feet) at these UTC times: 0745, 11, 13, 17, 21, and 00 hours. When the I A R N is activated on 14.275 during emergencies, the program may be moved down to 14.270 KHz or cancelled. (3975 and 28475 may be affected.) There are two additional Sunday transmissions on 3890 KHz, (1KW AM) at 22 hours; and 7290 KHz, (1KW AM) at 23 hours. The I A R N program is transmitted by Glenn Baxter/K1MAN from Belgrade Lakes, ME.

de Hap Holly, KC9RP

COTHERN INFORMATION

Here's a list of the US Customs Service primary COTHERN (Customs Over The Horizon Enforcement Radio Net) channels. The COTHERN system is a digitally controlled scanning system. Units send a control blurb of data every so often on each channel for propagation test and ID, and when a unit wants another unit online, sends a digital selcal on each channel until it finds a response of good quality. The units then stop scan on that channel and begin USB voice comms. If they want to scramble, a TDM (Time Division Multiplex) scramble is used.


Frequencies for the primary scan net (in KHz):

7,527.0	15,867.0
8,912.0	18,594.0
10,242.0	20,890.0
11,494.0	23,214.0
13,907.0	25,350.0

You will be able to tell if there are units are

KILLER TORNADO

Alabamians will always remember the afternoon of November 15th, 1989. So will members of the Huntsville Amateur Radio Club, who played a major role in the killer tornado that devastated their city.

HARC members were on the scene almost immediately after the 4:30 p.m. storm slammed into the city's southeastern side. At least 17 people were killed—nearly a thousand people were left homeless.  Hundreds were injured—power and telephone service was knocked out to a large area. At least one amateur's home was heavily damaged.

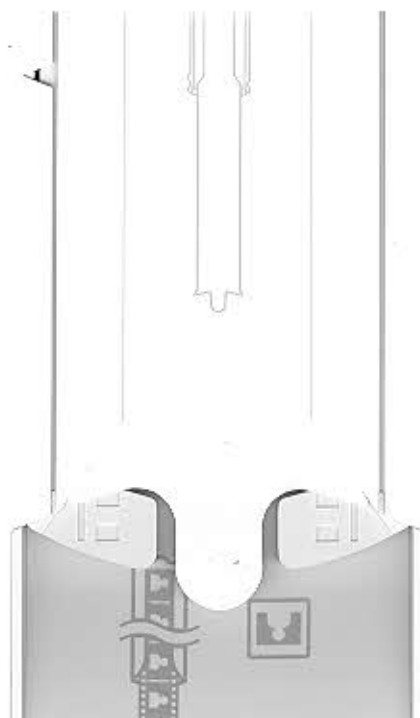
Amateurs assisted emergency crews as they sifted through shattered homes and helped relief agencies including the Red Cross set up facilities.

Frequencies ranging from HF to VHF were pressed into use. HARC members manned the Club station at the Emergency Operations Center, the local office of the National Weather Service and the Red Cross. Amateurs from Birmingham also went to the scene on behalf of the Red Cross. One local repeater was filled with hundreds of requests for health and welfare checks from people concerned about family members who were in or close to the affected areas.

de David Black, KB4KCH, a reporter at WTVM-TV in Birmingham Alabama, and Bryan Turner, AB4AP

receivable on a channel that you are listening to by hearing the "buzzing" sort of data beeps that the units send occasionally regardless of whether there are voice comms going on. When a communication is finished, you'll hear the units say they are "going back to scan".

de Skip Sanders, N6IMN



RADIO MODIFICATION INFORMATION

To all interested, I recently found out about a packet BBS in California that has mods available as reply messages. To access this board, you can get into your own BBS and type:

SP REQFIL @ KJ6FY. #NOCAL.CA.USA.NA

just as if you were entering a private message. When your BBS asks you what the subject is, type:

DD <Equipment>

where <Equipment> is the model number of the rig, TNC, etc. WITHOUT DASHES or SLASHES, i.e., FT411, PK232, TS440S, etc. Then just enter a CTRL-Z for the text of the message.

There are also sub-files such as TS440S.1 but without having the listing on your BBS, you cannot tell what they are.

I recently checked FT411.2 and here's what it says:

"FOR THOSE THAT WISH TO CONNECT A FT 411 TO PACKET VIA A MFJ TNC THE FOLLOWING MODIFICATIONS ARE NEEDED. IN THE BLACK LEAD FROM THE TX AUDIO OUT INSERT A .01 - 0.1UF CAP. IN THE RED LEAD FROM THE PTT, INSERT A 2.2K RST. THEN COMBINE THESE INTO A COMMON SINGLE LEAD CONNECTED TO THE TIP OF THE SMALL MIKE PLUG. THE YELLOW RX AUDIO GOES TO THE TIP OF THE LARGE SPEAKER PLUG AND THE SHIELD GOES TO THE RING OF THE LARGE PLUG. THIS INFORMATION CAN BE FOUND IN THE 1989 AUGUST ISSUE OF 73, PAGE 58."

de Rich Nascak, KA4NAI, Citrus Hts, CA

CHANGE CALLS?

The FCC routinely denies requests for specific call signs. The closest thing you can do to change your call is to 'swap' it for another one issued in the regular sequence.

In a Public Notice issued April 19, 1990, the FCC said requests to change a call sign must be made by filing a Form 610 completing section 2E.

The applicant will be issued a new call sign appropriate for his/her class of license from the standard rotation of new calls being issued at that time.

This does not mean that you can apply for a specific call. You only change calls and you have to take potluck as far as what the call will be.

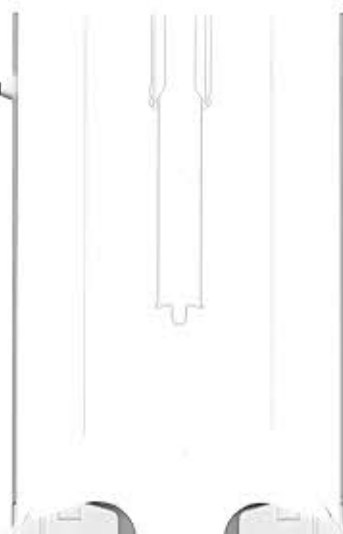
"The Readout", SARA, Modesto CA, Sept., '90

DENSER MEMORY

So, you're a computer hacker who always needs more data storage? You started out with a shoebox full of punch cards, then a cabinet full of cassette tapes, then mega disk drives, and now a room full of CD-ROM's? You are running out of space, what can you do??

Relax, there is hope on the horizon. As reported in EDN magazine, scientists at Philips Research Laboratories in the Netherlands are using a scanning tunneling electron microscope to prick minute holes in a silicon surface. With this technique, they are able to store information at a density 10,000 times that of today's CD-ROM's. The microscope uses a tungsten needle in a vacuum to (electrically) poke holes into the silicon, leaving craters only 1/2 of a nanometer apart. No word yet on when the process will be commercialized.

de Miles, N5KOB



ORIGIN OF THE WORD "HAM" (Another Theory)

Have you ever wondered why radio amateurs are called "HAMS"? Well, it goes like this:

The word "HAM" was the station Call Sign of the first amateur wireless stations operated by three members of the Harvard Radio Club, in 1908. They were Albert S. Hyman, Bob Almy and P. Murray. At first they called their station "Hyman-Almy-Murray". Tapping out such a long name in code soon became tiresome, and called for a

*...symbol for all the little
amateur stations crying to be
saved from the menace and
greed of big commercial
stations...*

revision. They changed it to "Hy-Al-Mu", using the first two letters of each of their names.

Early in 1909 some confusion resulted between signals from amateur wireless "HYALMU" and a Mexican ship named "Hyalmo". They then decided to use only the first letter of each name and the station Call Sign became "HAM".

In the early pioneer days of unregulated radio, amateur operators picked their own frequency and call letters. Then, as now, some amateurs had better signals than commercial stations. The resulting interference came to the attention of Congressional Committees in Washington D.C., and Congress gave much time to proposed legislation designed to critically limit amateur radio activity.

In 1911, Albert Hyman chose the controversial

Wireless Regulation Bill as the topic for his Thesis at Harvard. His instructor insisted that a copy be sent to Senator David I. Walsh, a member of one of the committees hearing the Bill. The bill imposed stiff license fees and other requirements on amateur stations.

Congressional debate began on the Wireless Regulation Bill and the little station "HAM" became the symbol for all the little amateur stations in the country crying to be saved from the menace and greed of big commercial stations who didn't want them around. The Bill finally got to the floor of the Congress and every speaker talked about the "...poor little station 'HAM'".

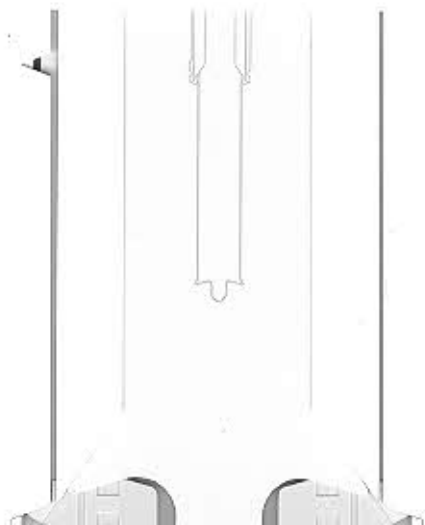
That's how it all started. You will find the whole story in the Congressional Record. Nationwide publicity associated station "HAM" with amateur radio operators. From that day to this, and probably until the end of time in radio; an amateur is a "HAM".

de Alex, KC4JQZ and Radio Scan magazine

Q&A SESSION WITH FCC STAFF AT DAYTON

Q: What is the FCC position on the pseudo-amateur operations on 25.9-28 MHz?

A: Those frequencies are allocated to various Government operations. People who operate there without a license are subject to the normal penalties. It is a known problem. Government users have certainly raised this issue within the Interagency Radio Advisory Committee. We have not heard of a solution yet.





OFFICERS, COMMITTEES, BULLETIN

OFFICERS

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Labels & Roster	Pete Jordahl, K5GM	454-7889	913

(Numbers after the call signs are phone # and autodial # on the 146.78 repeater.)

BULLETIN

Contributions of articles, cartoons, etc. should be addressed to 1809 W. Saint Johns Ave., Austin, TX 78757-2238. Phone numbers for editor: home 454-1670 / work 465-6338.

The deadline for articles is twelve days before the FIRST TUESDAY of each month.

Material received after that will be saved for the following month. Permission is granted to reprint articles appearing in the AARCOVER, provided credit is given to The AARCOVER and a copy of your publication is mailed to the author. The AARCOVER Editor would appreciate receiving a copy of your publication, also.

Commercial ads are cheerfully accepted, at only \$15 for a full page, \$10 for a half page. Members may advertise ham-related For Sale or Wanted ads free if space is available.

Scanner Freq's from p. 6

frequencies due to the telephone hybrid circuitry.

Fast Food Restaurants: By the way, those order-taking boxes you see at some McDonald's and Jack-in-the-Box drive-thru restaurants...you will find them operating simplex on one or more of the following frequencies (MHz):

35.020
154.570
154.600
157.595

Cordless Mics: Those cute little wireless micro-

phones you see professional singers using? Snoop around:

36.70
37.10 These aren't the cheap Radio Shack
37.16 variety of wireless mike-they're the
40.68 expensive, professional variety...
42.89
44.87
47.27

Keep in mind that it may be unlawful for you to divulge information you hear on your scanner, or even to listen at all.

de B. Rueger via GENie

SWL'ING GAINS POPULARITY

Shortwave listening (SWL'ing) is booming! Industry sources say that the hobby is increasing at a rate of 20 to 30% per year. Larry Magne, editor-in-chief of *Passport to World Band Radio 1990*, says that sales of the book are "going through the roof. We're selling 500 a day." And this was even before the invasion of Kuwait by Iraq!

Listeners fall into two categories, news hounds and DX'ers. Most of the growth seems to be in the former category. This group of listeners wants a global perspective on the news, with viewpoints that the 3 TV networks and CNN do not provide.

Myles Mustoe, a public school teacher in Wenatchee, WA, uses shortwave radio as an "electronic field trip" for his geography classes at the elementary and secondary level. Mustoe is the author of the new book, *Shortwave Goes to School: A Teacher's Guide to Using Shortwave Radio in the Classroom*. Dr. Michael Fulda of Fairmont University, Fairmont, W. Va., uses university-owned shortwave receivers in his teaching. Fulda says that listening to foreign programming is helpful in the students' political science studies. It accounts for 20 to 25% of their grade.

Years ago the average SWL was a recent immigrant, a young person hungry for news from back home in the mother tongue. Today the average SWL was born before 1950. He is a non-Black, non-immigrant male who usually listens to English-language programs.

One factor in the increase in listeners is the number of powerhouse broadcasters, transmitting 24 hours a day with plenty of power on multiple bands. The BBC claims 120 million listeners a week, the Voice of America 130 million, the Christian Science Monitor World Service 5 million listeners. Armed Forces Radio & TV

The BBC claims 120 million listeners a week, the Voice of America 130 million

used to be another powerhouse, but they have abandoned shortwave for satellites. Other well-heard stations include Radio Canada, Radio Moscow, Deutsche Wholly, Radio Havana, Radio Nederland, and Radio Australia.

Another factor in the growth is the availability of moderately-priced high-tech SW receivers. Sony's ICF-SW1, for example, fits in the palm of a hand, has digital tuning, AM/FM-stereo/LW/SW, memory presets, alarm clock, weighs just 8 oz., and costs as little as \$320.

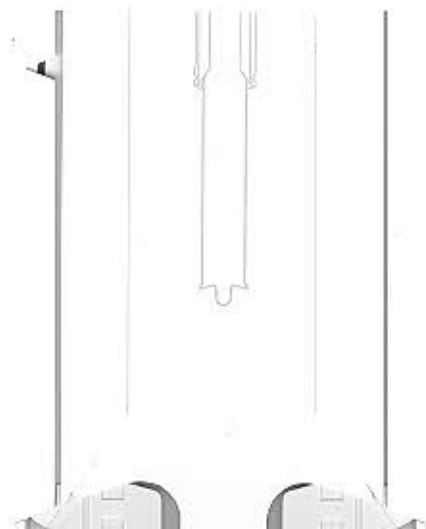
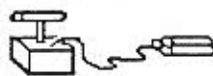
de Miles, N5KOB

TOWER WITHSTANDS BLAST

An estimated 50 pounds of explosives planted by terrorists failed to topple a Voice of America antenna tower in the Philippines. The concrete base of the 150-foot tower was demolished by the blast, but the tower sank about 3 feet straight into the dirt and remained upright. "I've never seen anything quite like it," said VOA Engineer Dean Bartelt. "The whole thing just dropped down. The guy wires just pulled it down. With the slack in the guys, you would think it would lean, but it's standing straight."

Although the tower withstood the blast, it was damaged and will have to be taken down for repair. The VOA believes the terrorists were trying to influence negotiations over basing rights for U.S. Navy vessels in the Philippines.

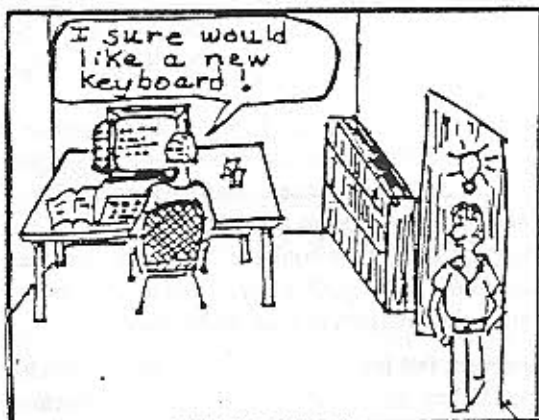
de John Gatski, Radio World



THE ENDURING TANDY 100/102

Back in 1983 Radio Shack introduced the Model 100 laptop computer, and they are still selling them! Actually, they call it the Model 102 now, but it has almost the same set of features as the original 100. Tandy 100's, 102's, and 200's are popular among ham radio packeteers, who use them as part of a portable packet system for travelling and emergency usage. The computer will run for several hours on 4 AA cells.

According to Portable 100 Magazine (POB 428, Peterborough, NH 03458), Tandy has had three

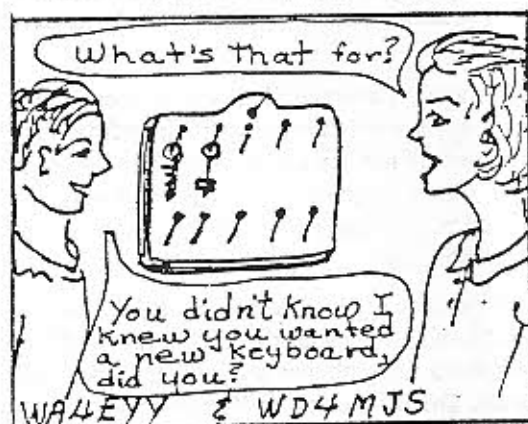


...sales of the 102 actually increased after the introduction of [inexpensive] MS-DOS compatibles...

separate production runs (in 1982, 1985, and 1987) of about 250,000 computers each. Ed Juge, WSTOO, Tandy's Director of Marketing, says they sell about as many 102's now as they did 100's back in 1984, a number Portable 100 estimates to be about 5000 per month. In fact, sales of the 102 actually increased slightly after the introduction of under-\$1000 MS-DOS computers like the Toshiba 1000.

A 2-meter talkie, Tandy 100, and TNC will fit comfortably in a briefcase. In fact, one company has demonstrated Tandy 100's with tiny TNC's built in! A good way to find a second-hand Tandy 100 is to place a want-ad in the newspaper classifieds. I did, and received calls from about 12 folks willing to sell. I wound up getting a Tandy 200 that works fine for \$90.

de Miles, N5KOB



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