

HAMFAQ.TXT

| 30-Jul-91 10:10 dls update, see changebars (|)
The following is a monthly posting of frequently asked questions for Amateur Radio. Due to the increasing size of this list, I've broken it into 4 Parts (and will break it further if necessary) to keep each Part under 10K bytes.

- Part 1 - Beginning Amateur Radio questions
- Part 2 - "Where can I find ..." computer questions
- Part 3 - Amateur Radio Organizations and Publications
- Part 4 - Common Advanced and Technical questions

If you have any questions you think should be added, please email to me at dls@genrad.com.

This FAQ should ONLY be reposted once a month. If someone asks a question that is answered by this FAQ, I suggest emailing to that person, or, alternately, post only the section that answers the question, NOT the entire FAQ posting. Read news.announce.newusers for proper net etiquette.

|This FAQ is available via anonymous FTP from [ftp.cs.buffalo.edu](ftp://ftp.cs.buffalo.edu).

FREQUENTLY ASKED QUESTIONS

Part 1 - Beginning Amateur Radio questions

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- ** What is Amateur Radio?
- ** Who can become a ham in the United States?
- ** OK, so how do I become a ham in the United States?
- ** Where can I locate information and books on Amateur Radio?
- ** How much does it cost?
- ** Where can I take the tests?
- ** What are the tests like?
- ** What can I do with a ham radio license?
- ** What can't I do with an Amateur Radio license?
- ** I'm interested, who will help me?
- ** Should I build my own equipment?
- ** Should I build my own antenna?
- ** Do I need a huge antenna and tower like my neighbor?
- ** Where do I buy equipment?
- ** I've only got one 'meter' on the front of my radio - does this mean it's a 'one meter' radio? (Wow - some guys have 80 of 'em??? :-)

** What is Amateur Radio?

Amateur Radio is a non-commercial radio communication service whose primary aim is public service and communication between private persons. Amateur Radio operators are commonly called hams. It's great fun to talk to someone in Japan on the radio! Here's one ham's description of Amateur Radio: "Climbing towers, roofs, trees, or any other fixed object to hang antennas. Restoring ancient equipment to operation. Playing with glitzy new equipment. Blowing up finals. Cutting holes in your (or your buddie's) car."

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Building your own stuff. Wiping out your neighbor's TV and then having to explain and fix it. The joy and magic of communicating with someone half way around the world with a few bits of glass and wire."

** Who can become a ham in the United States?

Anyone who is not a representative of a foreign government can be an Amateur Radio operator in the USA. There are tests that you must pass to get a license, however the tests are not insurmountable. There are 7-year-old hams and 80-year-old hams. There are many handicapped hams who get great enjoyment out of Amateur Radio.

** OK, so how do I become a ham in the United States?

There are now two entry-level class licenses in Amateur Radio. A Novice license requires passing a 30-question written test and a Morse code test given at 5 words per minute. A Technician license requires passing the 30-question written Novice test and a 25-question written Technician test, but no Morse code test. See local radio clubs or radio stores in your area for more information. Note that you can get a higher class license instead, simply by passing the required tests.

** Where can I locate information and books on Amateur Radio?

Your local Radio Shack sells some ham radios and Amateur Radio license books. Books can also be obtained through the mail from ham radio organizations, such as ARRL in Newington, CT (203-666-1541) and W5YI in Dallas, TX (1-800-669-9594). There may be one or two ham radio stores in the local area (ie, within 50 miles). Try looking in the Yellow Pages under Radio Communications. Be assured that once you get a callsign, the mail order ham radio companies will find you :-). For the Novice license, get a Novice License manual, plus 5-word-per-minute Morse code tapes, costing around \$25. For the Technician license, get a Novice License manual, a Technician License manual, and an FCC Rules manual, costing around \$32. The FCC Rules manual is a good idea for Novice also, but not necessary, since the Novice License manual contains all the FCC Rules that are required for the Novice License.

** How much does it cost?

To take the Novice tests, it's free. To take the Technician or higher class tests, there is a small charge (around \$5 currently) to cover copying costs and running the testing sessions. The cost of a radio is really dependent on what you want to do. You can make your own radio and antenna for under \$150. You can buy a used single-band radio for \$150-\$300. Or you can buy a new multi-band multi-mode radio with all the doodads for \$300-\$3000. I'd suggest

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you learn more about ham radio, talk to local hams, find out what you want to do with ham radio first.

** Where can I take the tests?

The Novice tests can be given by any two qualified hams of General class license or above. The Technician tests and all higher class license tests are given by three qualified Volunteer Examiners (VEs) who volunteer their time.

** What are the tests like?

Each of the written tests (Novice, Technician, General, Advanced, and Extra) are generally a multiple choice test of approximately one-tenth of the question pool. For example, if the question pool is approximately 300 questions, then the test will be a 30-question test. You need to get 75% correct to pass. Note that they truncate to determine the correct number of questions. That means for a 30 question test, you need to get 22 right, which is actually only 73.3%.

Once you've paid the small fee for Technician-Extra tests, it costs no extra to take another test, so I'd suggest you keep taking the next more advanced test until you fail. If you pass the written but not the Morse code (or vice versa) for a specific class license, you have up to one year to take the other test before you would have to retake the written test again. Note that some VEs will not allow you to take the written test unless you've first taken the Morse code test.

The Morse code test is a receiving test only. The test run 5 to 7 minutes. After the test, you are given a 10-question multiple-choice or fill-in-the-blank test. Passing grade is 7 or more. If you fail the 10-question test, the examiner team will examine your copy sheet to see if you have 1 minute of solid copy with no errors. For 5 wpm, that's 25 characters, for 13 wpm, that's 65 characters, for 20 wpm, that's 100 characters. If they can find 1 minute solid copy, you've still passed.

Hints on Morse code tests: Generally, it will be a standard QSO (conversation), and it MUST contain at least one of each of the following:

26 letters A-Z, 10 numbers 0-9, comma (,), period (.), slant or slash (/), question mark (?), double dash prosign (BT), end of message prosign (AR), end of contact prosign (SK).

The letters count as one character, all others count as two characters. There are a couple other prosigns which are worth knowing, but will not be on the test, like "I'm done talking, next" is K, "I'm done talking, back to you" is KN, "Please wait" is AS.

** What can I do with a ham radio license?

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There are so many things, it's a difficult question to answer, but here's some ideas:

- * Talk to people in foreign countries.
- * Talk to people (both local and far away) on your drive to work.
- * Help in emergencies by providing communications.
- * Provide communications in parades or walkathons.
- * Help other people become hams.
- * Hook your computer to your radio and communicate by computers.
- * Collect QSL cards (cards from other hams) from all over the United States and foreign countries and receive awards.
- * Participate in contests or Field Day events.
- * Provide radio services to your local Civil Defense organization thru ARES (Amateur Radio Emergency Service) or RACES (Radio Amateur Civil Emergency Service).
- * Aid members of the US military by joining MARS (Military Affiliate Radio System).
- * Have someone to talk to on those sleepless nights at home.
- * Receive weather pictures via satellites.
- * Build radios, antennas, learn some electronics and radio theory.
- * Talk to astronauts in space, or use the moon to bounce signals back to people on the Earth.
- * Experiment with Amateur TV (SSTV) or send still-frame pictures by facsimile.
- * Experiment with amateur satellite communications.

** What can't I do with an Amateur Radio license?

The most important thing you can't do is transact business of any kind over ham radio. Interference to other hams or services, as well as obscene, profane or indecent language is not tolerated and is illegal. Music and broadcasting are not allowed on ham radio. Some personal conversations may not be appropriate to Amateur Radio. Do you really want the whole world to hear about Aunt Mabel's hemorrhoids?

** I'm interested, who will help me?

There are hams who are willing to become "Elmers" (mentors, helpers) in your local area. Look around and ask local hams. Search out local radio clubs. As well, some people have volunteered to be an Elmer over the Usenet. Paul has volunteered to maintain that list. If anyone wants to be an Elmer, or needs an Elmer, email him:

Paul W. Schleck, KD3FU, acmnews@zeus.unomaha.edu

** Should I build my own equipment?

"Homebrewing" is a fun and educational part of ham radio. It is a thrill to build your own transmitter and put it on the air. However, building your own receiver can be quite complicated; if you don't have electronics experience, you may want to buy a receiver instead. Most homebrew Utransmitters are QRP (transmit very low power). That's fine

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for an experienced ham with a very good antenna, but a Novice ham will just get frustrated. Your first rig, therefore should NOT be a home-brew.

** Should I build my own antenna?

Most hams build their own antennas for base station use and buy antennas for mobile (car) use. Most beginner ham books describe how to build different types of antennas. Order of difficulty, from easiest to more difficult, for some common antennas are: wire dipole, Zepp, Yagi, Quad.

** Do I need a huge antenna and tower like my neighbor?

No! Large beam antennas and 40-foot towers are very expensive. As a beginner, a simple dipole antenna is perfectly adequate. As you gain experience (and money :-), you may want to invest in something bigger.

** Where do I buy equipment?

If you can afford new rigs, there are many mail order stores that advertise in ham radio magazines. If you want to buy a used rig, the best place is at a "hamfest" (ham flea market). You should take along an experienced ham, since some of the used equipment may be inoperative, overpriced or poor quality. You can also answer ads in ham magazines or posted at ham radio stores, although often, by the time you call, the equipment has already been sold.

** I've only got one 'meter' on the front of my radio - does this mean it's a 'one meter' radio? (Wow - some guys have 80 of 'em??? :-)

Meter refers to the wavelength of the signal at which you are transmitting. There is an inverse relationship between the frequency (specified in kilohertz or megahertz) and the wavelength (specified in meters or centimeters).

->Diana L. Syriac	dls@genrad.com	Ham: KC1SP (Sweet Pea)	<-
->I'D RATHER BE FLYING! P-ASEL, INST		CAP: 1LT, Freedom 690 Mobile	<-
->GenRad		AD ASTRA, PER ASPERA	<-
->MS/6, 300 Baker Ave, Concord, Mass. 01742		(508) 369-4400 x2459	<-

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FREQUENTLY ASKED QUESTIONS

Part 2 - "Where can I find ..." computer questions

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- ** I can read news at my site, but I don't have posting privileges. How can I post?
- ** I don't have FTP capability at my site. Can I get files via email?
- |** Where can I find ftp sites that have ham-related files?
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- ** Are there any Telephone BBS's which have ham related files?
- ** Are there Dialup News services for Amateur Radio?
- ** Are there any on-line callbooks?
- ** Where can I find modifications for my radio to extend its capabilities?

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- ** I don't have a news server at my site, how can I subscribe to the rec.radio.amateur groups?

To subscribe to rec.radio.amateur.misc, send email to:

Info-Hams-Request@ucsd.edu

In the body of the message, write:

subscribe Info-Hams

Similarly, to subscribe to rec.radio.amateur.packet, send email to Packet-Radio-Request@ucsd.edu, message is "subscribe Packet-Radio", and to subscribe to rec.radio.amateur.policy, send email to Ham-Policy-Request@ucsd.edu, message is "subscribe Ham-Policy", and to subscribe to rec.radio.shortwave, send email to listserv@cuvma.columbia.edu, message is "subscribe swl-1 (your name)". To unsubscribe, follow directions above, changing the command word "subscribe" to "unsubscribe". Help is available by using the command word "help". Note that command words MUST begin the first word on each line of the message.

- ** I can read news at my site, but I don't have posting privileges. How
- ** can I post?

You can post to rec.radio.amateur.{misc,packet,policy}
by sending your posting email to Info-Hams, Packet-Radio, or

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Ham-Policy, all at ucsd.edu. To post to other newsgroups, send the posting email to (groupname)@ucbvax.berkeley.edu and for the groupname, replace periods with dashes.

For example, to post to sci.space, you would send your posting to sci-space@ucbvax.berkeley.edu.

All of the Amateur radio newsgroups are archived on ucsd.edu under subdirectory mailarchives/{Ham-Policy,Info-Hams,Packet-Radio}.

- ** I don't have FTP capability at my site. Can I get files via email?
ANY BITNET, EARN, or NorthNET site can access the Princeton mail server. It will be most efficient if you know the complete path and filename for anything you wish to transfer, but you can use 'cd' and 'ls -l' commands to move about and browse the reemote site's directories. Remember, though, that each request to the BITFTP server may take several hours (or longer) to be fulfilled.

For access to the FTP server, send email to bitftp@pucc.bitnet (for BITNET, EARN and NorthNET users ONLY!). Subject doesn't matter. The text of the email is the FTP commands one after another. For example, suppose you wanted to access the FTP site lcs.mit.edu:

re FTP lcs.mit.edu
USER anonymous
PASS yourname@yoursite (not required)
ASCII
CD telecom-archives
GET filenames
BYE

A help file is available giving detailed instructions by putting the single word HELP into the text of the email.

For nonBITNET users, there is also a FTPMAIL server at ftpmail@decwrl.dec.com. Commands include: REPLY <mailaddr>, CONNECT [HOST [user [pass]]], ASCII, BINARY, COMPRESS, COMPACT, UUENCODE, BTOA, LS <directory>, DIR <directory>, GET <file>, QUIT, HELP. Get the help file for more information by sending meail with the single line "help". The ftpmail site may complain if you try try to get more than 1 file per email request. Here is an example of a request:

reply your_name@your_site
connect uxc.cso.uiuc.edu
binary
uuencode
get pub/ham-radio/Tech.v3.3.sit.hqx.Z
quit

A note on the use of FTP mailservers: If you want to use FTP mailservers, like FTPMAIL, please be considerate of any systems that your mail must pass through. The quickest way to find youerself cut

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off from the world is to make the admins of sites that pass your mail pass 60Mb of X11 graphics system source. If you need large amounts of information from a mailserver, contact your admin for help -- it may already be available, or he may know a better way to get it.

** Where can I find ftp sites that have ham-related files?

There is a fairly definitive list of anonymous FTP sites available from pilot.njin.net under subdirectory /pub/ftp-list in file ftp.list. You can also have the latest copy (published monthly) via mailing list by emailing to odin@pilot.njin.net, subject "listserv-request", body of message "send help". Revision info for the ftp list should be send to odin@pilot.njin.net.

General files for any computer and informational archive:

ftp.cs.buffalo.edu (submissions to this ftp site should be made to bowen@cs.buffalo.edu) - contains many ham radio files, including the FAQs, Elmer list, SWL and scanner info and the KA2UGQ worldwi alde BBS list on ~pub/ham-radio/phone_bbs_list
freja.diku.dk - mirror image of ~pub/ham-radio on ftp.cs.buffalo.edu, for access by Northwestern European countries only (server is in Denmark)

wsmr-simtel20.army.mil (submissions to this ftp site should be made to w8sdz@wsmr-simtel20.army.mil) or wuarchive.wustl.edu (ONLY BITNET users!) - these are mirror images of each other - These contain ham radio mods and ham radio software
A wide assortment of files covering many topics can be

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obtained from the SIMTEL archives. If you cannot directly FTP from wsmr-simtel20, there is a mail server that can help. Send mail with the text "help" to listserv@vm.ecs.rpi.edu.

quiche.cs.mcgill.ca (comments toarchie-l@cs.mcgill.ca) - contains ham related software on /pub/ham-radio and /hamradio, including the FAQs, Elmer lists and geoclk (try the command 'prog geoclk' to find all files whose name contains "geoclk") ***NOTE***
This Archie site is no longer available. Doe

Is anyone have

the new FTP site for Archie?

martini.eecs.umich.edu 3000 - contains a Geographic Name Server
archive.cs.ruu.nl, armstrong.cs.buffalo.edu, sol.cs.ruu.nl - contains the FAQs for rec.radio.amateur (may not be current)
ftp uxc.cso.uiuc.edu, log in as "anonymous", password is your email address, cd pub/ham-radio - This contains the HyperCard Hamstacks written by Diana Syriac as well as ASCII readable ham radio question pools

apple.com, cd pub/ham-radio - Ham software and information, especially MacIntosh software

Amiga computers:

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ab20.larc.nasa.gov - don't know if there are any ham files here.

** I'm having trouble using FTP....HELP!
Here's some hints to check what's wrong:
* If on Internet, does it support telnet and/or FTP? Not all sites do!
* Can you telnet to other hosts and get a login prompt?
* If on Internet and telnet or FTP is supported, is there a host table or name server lookup capability on your host that can parse a fully qualified domain name, like marvin.cs.buffalo.edu?
* If you get "host not in host table" or "host unknown" or similar error, try telnetting via the IP number, a set of four 1-3-digit numbers separated by periods (eg, 137.48.1.1). The exact IP number for the site can be obtained via the nslookup utility, if your computer supports it....or check the FAQs.
* If telnet is supported and you can telnet to the default login port (ie, no qualifiers), then the manner at which the socket qualifier is entered may be system dependent.
* Syntax for FTPing from different operating systems differ. Berkeley Unix or VMS with Wollongong TCP/IP uses syntax:
telnet <host> <socket#>
Other possibilities to try:
telnet console <host>
telnet <CR> open <host>:2000
telnet <host>/2000
* If all else fails, ASK your system administrator or check system documentation.

** Are there any Telephone BBS's which have ham related files?
WB3FFV has one, phone is 301-625-0817 for 1200 and 2400 baud modems. This also supports UUCP. Login is uucpanon, no password. For a listing of available archived, try:
uucp wb3ffv!~/FILES /usr/spool/uucppublic

** Are there Dialup News services for Amateur Radio?
There are two major news services for ham radio. Both are run by volunteer hams and provide bulletins of specific interest to amateurs, hence they are perfectly legal to rebroadcast on ham bands according to FCC Regulation 97.111B(6). To lessen the load on the dialup lines, consider getting your local repeater operator to rebroadcast it, or tape record it to play at your favorite HF net.

RAIN (Radio Amateur Information Network) is produced by Hap Holly, KC9RP, located in Illinois. The news is typically updated 8am CST Fridays. Phone numbers are 1-708-299-INFO (299-4636) and 1-708-827-RAIN (827-7246).

NEWSLINE is another, produced by Bill Pasternak, WA6ITF. Donations for NEWSLINE are accepted at Newsline Support Fund, c/o Dr. Norm

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Chalfin K6PGX, Pasadena, CA 91102. Phone numbers are:

Chicago	1-708-289-0423
N.Florida	1-407-259-4479
Los Angeles	1-805-296-2407

** Are there any on-line callbooks?

If you are at an Internet site you can connect using telnet to one of the two primary servers:

callsign.cs.buffalo.edu (currently 128.205.32.4)
ham.njit.edu (currently 128.235.1.10) (alias plan9.njit.edu)

The servers sit on port number 2000 which is a different port number than what telnet usually defaults to. So if you just telnet to these machines, you will get a login prompt instead of the server. How you tell your telnet program to connect to port 2000 instead of the default port is operating system dependent but it is usually done with a line like

```
telnet callsign.cs.Buffalo.EDU 2000
```

If this doesn't work, consult your local systems guru for the proper command string.

The interactive servers are designed to be somewhat self-explanatory and they support fairly detailed help facilities. The first command you should execute when connecting to one of these servers is "info". This will list general info about that server and how to use it. You should then type "help" to list the various commands available. Typing "help" followed by a command name will give you a little more detail about that command. Servers allow searches by call, last name, zip code or city and also provide regular expression filters to trim your searches so you get a reasonable amount of output.

Both these servers are built from a database distributed by Rusty Carruth, N7IKQ. This database currently contains US and Canadian callsigns and it does not contain club calls. A new version of the database is sent around approximately once a year.

There is also an email callsign server at callbook@sat.datapoint.com (The UUCP address is ...!uunet!dptspd!callbook). In the body of the text, say "lookup" followed by callsigns you want to look up. If your mailer appends signature files, you should put a line "quit" at the end of your request (before the signature file). If you want help, put the word "help" on a line by itself. Here is what a request might look like:

```
help
lookup kc1sp wn4bbj
```

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lookup n0fzd
quit

If you are a packet radio station, callserver data is available from REQQTH@WA4ONG.VA.USA.NA, subject line should be up to 5 US callsigns, separated by spaces. Body of message is ignored. The server is an g OS interface to the MBL packet BBS using the Buckmaster CD-ROM callsign database.

** Where can I find modifications for my radio to extend its capabilities?

There are two ftp servers that has this data:
wsmr-simtel20.army.mil or wuarchive.wustl.edu (BITNET ONLY)
Another FTP site to try is 129.100.22.100.

There is a new server at pcserver@novell.business.uwo.ca. In the body of the email, send the command HELP.

There is a packet radio Mods Server. To get the directories, sendg a packet as follows:

SP REQFIL@N2IMC.NJ.USA.NA
Subject: MODS\Dir.1
/EX

To get the mod, send to same place, with Subject MODS\Filename.ext.

REMEMBER that any modification is likely to void your warrantee and that these mods are NOT guaranteed to work.

->Diana L. Syriac	dls@genrad.com	Ham: KC1SP (Sweet Pea)	<-
->I'D RATHER BE FLYING! P-ASEL, INST		CAP: 1LT, Freedom 690 Mobile	<-
->GenRad		AD ASTRA, PER ASPERA	<-
->MS/6, 300 Baker Ave, Concord, Mass. 01dg742		(508) 369-4400 x2459	<-

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FREQUENTLY ASKED QUESTIONS

Part 3 - Amateur Radio Organizations and Publications

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- ** How do I use the incoming and outgoing QSL bureau?
- ** Are there any news groups for CAP?
- ** What's the name of the QRP club that issues QRP numbers?
- ** Can I send ARRL electronic mail?
- ** What magazines are available for Ham Radio?
- ** How do I join MARS?
- ** How do I join RACES?
- ** What organizations are available to help handicapped hams?
- ** Is there any information on antique radios?
- ** I am looking for a specific ham, can anyone help me find him?
- ** Is there an on-line copy of the FCC Part 97, or FCC Amateur Radio allocations?
- ** Can I post my neat new ham related program on rec.radio.amateur.misc?

-
- ** Where can I find VE sessions in my local area?

VE sessions are often announced in the local newspapers, but more often, they are announced by local radio bulletin boards. The local packet BBS will most likely have a monthly updated schedule for VE sessions. ARRL or W5YI can generally be called and asked for local VE sessions as well. Don't forget that you will need the following when you go in for an upgrade: a copy of your current Amateur license; your original Amateur license; any CSCEs (duplicate not required), if applicable and less than a year old; a picture ID, preferably a driver's license, passport or visa; and the VE test fee (approximately \$5 right now).

- ** How do I use the incoming and outgoing QSL bureau?

To use the outgoing QSL bureau, you must be a member of ARRL. In general, you send a bundle of foreign (not States!) QSL cards to the outgoing bureau in Newington, Connecticut, along with a label off of your QST magazine (which shows ARRL membership), along with \$2 per pound of cards (approximately 150 cards) or \$1 for 10 cards or less.

To use the incoming QSL bureau, you do NOT have to be a member of ARRL. Send one or more Self-Addressed Stamped Envelopes (size 5x7 or 6x9, no bigger, no smaller) with one ounce of postage attached

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and with your callsign in 3/4" letters in top left hand corner where the return address label would go. If you expect a large quantity of foreign QSL cards, attach extra money or postage with a paper clip. Send the envelopes to the QSL bureau for your callsign area. If your callsign is xx3xxx/5, you would send it to the 3rd call area, NOT the 5th call area. Addresses for QSL bureaus are listed in QST; if you don't have access to a QST magazine, ask another ham. IMPORTANT: BE PATIENT! Turnaround time for a US QSL bureau, not considering foreign QSL bureaus, is about 3 months. Foreign QSL bureaus and hams can be as fast as 2 months or as slow as TEN YEARS, while average is about 6-12 months.

** Are there any news groups for CAP?

There is no news group just for Civil Air Patrol discussions. However, rec.aviation is appropriate for CAP aviation discussions and for CAP radio information, these rec.radio.amateur.* groups are available. In addition, there is a mail digest just for CAP. Subscribe by emailing to capital-request@cps.udayton.edu. Submit articles by emailing to capital@cps.udayton.edu. CAP related files are also stored on the FTP site sunburn.cps.udayton.edu in pub/capital.

** What's the name of the QRP club that issues QRP numbers?

QRP Amateur Radio Club International, c/o Bill Hardin ag K4AHK, 10923 Carters Oak Way, Burke, VA 22015.

** Can I send ARRL electronic mail?

Several ARRL HQ staffers can be contacted via the net, using the address username%arrlhq.UUCP@uhasun.hartford.edu, replace username as shown below:

Jon Bloom, KE3Z, Laboratory Supervisor	jbloom
Tammy Bosco, Technical Secretary	tbosco
Ed Hare, KA1CV, Laboratory Engineer	ehare
Rus Healy, NJ2L, QST Asst Tech Ed, Product Rev	rhealy
Dave Newkirk, WJ1Z, QST Asst Tech Ed, Hints	dnewkirk
Paul Pagel, aN1FB, QST Asst Tech Ed, Tech Corres	ppagel
Mark Wilson, AA2Z, QST Managing Editor	mwilson
Technical Information Service, tech questions	tis

For other questions (VE program, Field Organization matters, ARRL policy issues, etc.), try 2155052@mcimail.com, which sends them to the front office.

** What magazines are available for Ham Radio?

Your local ham store may have some, but here's some popular ones (this is NOT a complete list!):

QST, ARRL, 225 Main St, Newington, CT 06111 - baasic projects and contesting

CQ The Radio Amateur's Journal, 76 North Broadway, Hicksville, NY

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11801 - beginner ham radio articles

73 Amateur Radio Today, WGE Center, Forest Rd, Hancock, NH 03449,

FAX (603) 525-4423, email: COMPUSERVE 70310,775 or Internet

70310.775@compuserve.com - more technical ham radio articles

QEX, ARRL, 225 Main St, Newington, CT 06111 - more technical projects

WorldRadio, 2120 28th St, Sacramento, CA 95818, (916) 457-3655.

Subscriptions to 201 Latrhop Waay, Ste D, Cacramento, CA 95815,

(800) 365-SUBS - lots of special interst columns, like QRP,

ATV, YL, etc.

W5YI Report, PO Box 565101, Dallas, TX 75356, 1-800-669-9594 -

up-to-date information on Amateur Radio happenings, including

VE information and statistics

** How do I join MARS?

To join MARS, you have to be 14 years or older (parental consent required under age 17), be a US citizen or resident alien, possess a valid Amateur Radio license, possess a station capable of operating on MARS HF frequencies, and be able to operate the minimum amount of time for each quarter (12 hours for Army and Air Force; 18 hours for Navy-Marines). Novices must upgrade to Technician within 6 months, else be dropped from MARS. No-Code Techs can apply, provided they have transmit and receive HF capability for MARS frequencies (they don't need transmit capability for Amateur HF frequencies). For application forms contact:

Chief, Air Force MARS

TIC/DLTXM

Scott AFB, ILL 62225-6001

(618) 256-5552. Or, contact via Internet goes to

__daniels@server.af.mil, put "Pass to MSgt Trimmer" in subject line.

Chief, Army MARS

HQ, US Army Information Systems Command

ATTN: AS-OPS-OA

Fort Huachuca, AZ 85613-5000

Chief, Navy-Marine Corps MARS

Naval Communication Unit

Washington, DC 20397-5161

** How do I join RACES?

Contact your nearest Civil Defense or Emergency Management Agency. The Radio Amateur Civil Emergency Service is a part of a municipa l, county, or state government. This does not mean, however, that every such government has a RACES program. If your government does not have a RACES, ask them to refer you to the nearest jurisdiction that does have a RACES program.

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- ** What organizations are available to help handicapped hams?
Courage Center
Handihams
2915 Golden Valley Rd
Golden Valley, MN 55422
(612) 520-0515
ARRL has a Handihams information package (get it by requesting it
thru 2155052@mcimail.com) and a book called "The ARRL Plan for the
Disabled", available at no charge from the ARRL Regulatory
Information Branch.
- ** Is there any information on antique radios?
Antique radio classifieds: ARC, PO Box 802-B6, Carlisle, MA 01741 -
old radios, TVs, ham equipment, 40s and 50s radios,
telegraph, books, etc.
Hallicrafter Service manuals: Ardco Electronics, PO Box 95, Dept Q,
Berwyn, IL 60402
Antique Wireless Association, Bruce Kelley, W2ICE, Route 3, Holcomb,
NY 14469 - sponsors the Wireless Museum
- ** I am looking for a specific ham, can anyone help me find him?
Rather than sending out a message on Usenet, you might first try
directory assistance from the phone company or the locator service
provided by the Salvation Army. A Salvation Army post in your
local area may be able to help you. If you have his/her callsign
or name, you might also try one of the on-line callservers shown
above.
- ** Is there an on-line copy of the FCC Part 97, or FCC Amateur Radio
allocations?
Part 97 is available by ftp from wuarchive.wustl.edu, file is
mirrors/misc/hamradio/part97.txt.
- ** Can I post my neat new ham related program on rec.radio.amateur.misc?
This is really not a good idea, since many of the readers receive
these newsgroups as mail digests. Posting is also a one-shot thing.
If you post and someone missed it, it is gone. A better way would be
to announce the existence of your program here, along with
information on how to obtain a copy of your program. You can also
submit it to one of the FTP archive sites, which will allow the world
to access it without you having to mail it to each requestor. If you
just GOTTA post it somewhere, post it to more appropriate groups,
like comp.sources.unix or alt.sources or comp.binaries.pc.

->Diana L. Syriac dls@genrad.com
->I'D RATHER BE FLYING! P-ASEL, INST
->GenRad

Ham: KC1SP (Sweet Pea) <-
CAP: 1LT, Freedom 690 Mobile<-
AD ASTRA, PER ASPERA <-

->MS/6i, 300 Baker Ave, Concord, Mass. 01742 (508) 369-4400 x2459 <-

| 30-Jul-91 10:13 dls update, see changebars (|)
 The following is a monthly posting of frequently asked questions for
 Amateur Radio. Due to the increasing size of this list, I've broken it into
 4 Parts (and will break it further if necessary) to keep each Part under
 10K bytes.

- Part 1 - Beginning Amateur Radio questions
- Part 2 - "Where can I find ..." computer questions
- Part 3 - Amateur Radio Organizations and Publications
- Part 4 - Common Advanced and Technical questions

If you have any questions you think should be added, please email to me at
 dls@genrad.com.

This FAQ should ONLY be reposted once a month. If someone asks a question
 that is answered by this FAQ, I suggest emailing to that person, or,
 alternately, post only the section that answers the question, NOT the entire
 FAQ posting. Read news.announce.newusers for proper net etiquette.

|This FAQ is available via anonymous FTP from ftp.cs.buffalo.aedu.

FREQUENTLY ASKED QUESTIONS

Part 4 - Common Advanced and Technical questions

Table of Contents:

- ** What are the different US amateur classes and what can each of them do?
- ** I'm confused. What do all those abbreviations mean???
- ** What do all those "tones" mean?
- ** Where can I learn more about Amateur Radio if I live outside the USA?
- ** How can I get a "reciprocal license" if I am a licensed ham from another country?
- ** My apartment complex does not allow outdoor antennas, now what do I do?
- ** I got TVI...HELP!!!
- ** What do you need to get started in packet radio?
- ** What do I need to get started in satellite communications?
- ** Did you know that you can get college credit for being a ham?
- ** On what frequencies does JPL and GSFC retransmit the shuttle audio?

-
- ** What are the different US amateur classes and what can each of them do?
 - Novice - has CW (Morse code) privileges on 4 HF bands (80, 40, 15, and 10 meter), Voice privileges on 10 meters, and full privileges on 2 VHF/UHF bands (220 MHz and 1290 MHz).
 Required are 5 wpm Morse code test and 30-question Novice test.
 - Technician - has full privileges on all VHF/UHF bands above 30 MHz.
 Required are Novice test and 25-question Tech test.
 Technician may access Novice HF bands by passing the 5 wpm Morse code test.
 - General - has all Technician privileges, plus larger access to more HF bands, including CW and Voice on 160, 80, 40, 30, 20, 17, 15, 12, and 10 meter bands. A General class amateur can give Novice

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tests.

Required are 13 wpm Morse code test, Novice, Tech and 25-question General test.

Advanced - has all General privileges, plus wider band access on 80, 40, 20, and 15 meter bands. An Advanced class amateur can also become a VE and give tests to Novice and Tech tests.

Required are 13 wpm Morse code test, Novice, Tech, General and 50-question Advanced test. The Advanced test is the most difficult of the five written tests.

Amateur Extra - has full privileges on all amateur bands. An Extra can become a VE and give all amateur tests.

Required are 20 wpm Morse code test, Novice, Tech, General, Advanced and 40-question Extra test.

** I'm confused. What do all those abbreviations mean???

AM Amplitude Modulation

AMTOR Amateur Teleprinter Over Radio. A more sophisticated version of RTTY. Also used commercially as SITOR (Simplex Teleprinter Over Radio).

ATV Amateur Television - a way to see who you're talking to!

CAP Civil Air Patrol is a volunteer organization that searches for downed aircraft and missing kids and uses frequencies just outside of the ham bands and often uses modified Amateur radios

CB Citizen's Band radio, this is NOT part of Amateur Radio and does not require any license to operate

CQ An on-the-air request for a conversation with anyone

FM Frequency Modulation

FieldDay A June activity to practice emergency communications for 24 hours....wives call it 'an exercise in male bonding' :-).

HF High Frequency - 3 MHz to 30 MHz

HT Handy-Talky, a shorthand for "hand held radio"

LF Low Frequency - 30 kHz to 3 MHz

MARS Military Affiliate Radio System, military affiliated Amateurs who provide free communications for overseas GIs and other Federal services. MARS operators are licensed under DoD instead of FCC.

NTS National Traffic System, a way to send radiograms

OM Old Man, refers to any ham, including female hams

packet computer bulletin boards/electronic mail via Amateur Radio

QSO One of the Q signals used in Morse code to mean "conversation"

RTTY Radio Teletype - older form of computer communications on HF

SAREX In Amateur Radio talk, Shuttle Amateur Radio EXperiment, a chance to talk to astronauts in space. In CAP talk, Search and Rescue EXercise, practicing for the real thing.

SSB Single Side Band - need less band width than AM or FM

SSTV Like ATV but slower and used on lower bands

UHF Ultra High Frequency - 300 MHz and above

ULF Ultra Low Frequency - 30 Hz to 300 Hz

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VHF Very High Frequency - 30 MHz to 300 MHz
VLF Very Low Frequency - 300 Hz to 30 kHz, audio frequencies
YL Young Lady, non-ham girlfriend or female ham
XYL eX-Young Lady, or wife
2m Shorthand for "2 meters", which is a reference to the wavelength of a common Amateur frequency band used for local communications

** What do all those "tones" mean?

Sub-Audible Tone: A low tone that you're not supposed to be able to hear. It's used as a "PL Tone." PL is "Private Line", a trademark of Motorola for their implementation of CTCSS (Continuous Tone Coded Squelch System). Basically, the transmitter sends the signal with the Sub-Audible tone and the receiver only opens when it hears signals with that tone. Signals without the proper tone are ignored. This is useful for "closed" repeaters, or for repeaters on the same frequency that have overlapping geographic areas.
Tone encode refers to the feature of providing the tone on transmit.
Tone decode refers to the feature of responding to the tone on receive.
Tone squelch refers to all of the above. DTMF refers to Dual Tone Multi-Frequency, or "Touch Tone" which is a trademark of AT&T. DTSS probably means Dual Tone Squelch System and refers to the feature of providing a predefined sequence of Touch Tone digits to open the repeater for transmit. DTSS is an alternate method from CTCSS, which provides a way to use a "closed" repeater even if your radio doesn't do Sub-Audible Tones.

** Where can I learn more about Amateur Radio if I live outside the USA?
Write to the ARRL and ask. They can usually tell you how to get a license in your country.

** How can I get a "reciprocal license" if I am a licensed ham from another country?

You need to submit a FCC Form 610-A to the FCC, PO Box 1020, Gettysburg, PA 17326. They will then send you a reciprocal permit for alien amateur licensee (FCC Form 610-AL). You must be a citizen of a country with which the United States has arrangements to grant reciprocal operating permits to visiting alien Amateur operators.

** My apartment complex does not allow outdoor antennas, now what do I do?
First of all, don't despair. Many hams have similar problems. Many books offer advice for the growing group of hams that cannot put up antennas. Some options are:
* Install an "invisible" antenna made of magnet wire.
* Disguise an antenna as a flag pole.
* Install an antenna in the attic.
* ASK the apartment manager. You may find they will let you put up something as long as it "is invisible" or "doesn't disturb you"

neighbors" or "doesn't attract lightning".

- * Operate primarily from your car.

** I got TVI...HELP!!!

Here's some hints on Television interference, but this is not a complete list. There are also books on the subject available from ARRL.

- * If cable TV is an underground feed, look for central distribution box. Check for a grounding rod.
- * Try installing torroids on the cable TV cable close to the TV, and maybe torroids on the AC cord as well.
- * VCRs are notorious for RF leakers, try disconnecting the VCR.
- * Check to see if interference is better or worse when cable is disconnected and you use rabbit ears instead. It could be the cable company's problem!
- * Calling the cable company may get results, since they are also responsible for RF leakage from their equipment. However, they are very often obstinate. Good luck!
- * Try moving the radio antenna further away from the TV sets. Make sure the SWR is LOW.

** What do you need to get started in packet radio?

Packet radio is a digital form of communication using radios. There are OTHER digital forms, as well, like CW, RTTY and AMTOR. To use packet radio, you'll need a radio (2 meters or 1.25 meters is most popular), a box that converts radio signals to digital signals that a computer can understand (called a TNC or terminal node controller) and a computer or terminal. For some computers or TNCs you may need special software as well. However, most TNCs and computers get along quite well with just a terminal emulator software package. Most personal computers can be interfaced to use with packet radio. Since there are many digipeaters, generally even an HT will work with packet radio.

For more information on packet radio, you might try TAPR (Tucson Amateur Packet Radio), PO Box 12925, Tucson, AZ 85732 (602-749-9479).

** What do I need to get started in satellite communications?

For more information about Amateur Satellite Communications, try AMSAT (Radio Amateur Satellite Corporation), PO Box 27, Washington, DC 20044 (301-589-6062). They also have an international net on Sundays on 14.282 MHz at 1900Z.

** Did you know that you can get college credit for being a ham?

It's true! You can receive up to 14 credits in electronics and engineering thru placement tests for CLEP (College Level Entrance Placement) exams and DANTES (Defense Activity for Non-Traditional Educational Support) exams if you have an Advanced or Extra class

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Amateur license. For more information, ask your campus education office or (for DANTES) your military education office.

** On what frequencies does JPL and GSFC retransmit the shuttle audio?

Station	VHF	10m	15m	20m	40m	80m
WA3NAN	147.45	28.650	21.395	14.295	7.185	3.860
W6VIO	224.04		21.280	14.282	7.165	3.840
W6FXN	145.46					
K6MF	145.585				7.165	3.840

All frequencies are in MHz. Use FM on VHF, USB on 10-20m, LSB on 40-80m.

WA3NAN - Goddard Space Flight Center (GSFC), Greenbelt, MD

W6VIO - Jet Propulsion Laboratory (JPL), Pasadena, CA

W6FXN - Los Angeles, CA

K6MF - San Francisco, CA

->Diana L. Syriac dls@genrad.com

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