

What is Amateur Radio?

Why is it a Community Resource?



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WHAT IS AMATEUR RADIO?

The FCC definition of the Amateur Service is "A radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest." Amateur Radio operators, licensed by the FCC, can be found in every corner of the US. They use Amateur Radio as a hobby and contact other Amateur Radio operators halfway around the world or even across town! "Hams", as they are known, are known for their public service activities. Amateurs may not transmit communications on behalf of their employer. For a brief overview of Amateur Radio, see <http://www.arrl.org/pio/bwhatis.html> See the [PowerPoint presentation](#), written and produced by William J Barrett, KW1B, on the basics of Amateur Radio. This does not include the information on Hurricane Katrina..

Narrated by former CBS news anchorman Walter Cronkite, KB2GSD, *Amateur Radio Today* is a video which showcases the public service contributions made by hams throughout the country. *Amateur Radio Today*, which is [available for download](#) on the ARRL Web site is ideal for presentation at clubs, government meetings, civic organizations and any other venue where you want to vividly illustrate what Amateur Radio has to offer the public. The total running time is just 6 minutes.

NEARLY 700,000 U.S. AMATEUR RADIO LICENSEES TODAY...

Amateur Licenses by State through February 2001
(sorted by state postal code, ascending)

State (postal abbreviation)	Population	Amateurs per Thousand Population	Total
AA			67
AE			307
AK	626,932	5.13	3,215
AL	4,447,100	2.38	10,583
AP			302
AR	2,673,400	2.60	6,949
AS	63,000	1.67	105
AZ	5,130,632	3.07	15,726
CA	33,871,648	3.03	102,788
CO	4,310,261	2.83	12,203
CT	3,405,565	2.44	8,322
DC	572,059	0.73	416
DE	783,600	1.77	1,385
FL	15,982,378	2.50	40,007
GA	8,186,453	1.78	14,605
GU	156,974	3.29	516
HI	1,211,537	2.73	3,306
IA	2,926,324	2.23	6,520
ID	1,293,953	3.40	4,397
IL	12,419,293	1.83	22,777
IN	6,080,485	2.46	14,930
KS	2,688,418	2.71	7,292
KY	4,041,769	2.19	8,849
LA	4,468,976	1.52	6,790
MA	6,349,097	2.28	14,473
MD	5,296,486	2.12	11,204
ME	1,274,923	3.47	4,419
MI	9,938,444	2.13	21,172
MN	4,919,479	2.18	10,701
MO	5,595,211	2.28	12,753

MP	50,865	7.16	364
MS	2,844,658	1.65	4,707
MT	902,195	3.42	3,087
NC	8,049,313	2.31	18,615
ND	642,200	2.42	1,556
NE	1,711,263	2.28	3,898
NH	1,235,786	4.00	4,939
NJ	8,414,350	1.87	15,769
NM	1,819,046	2.98	5,417
NV	1,998,257	2.36	4,722
NY	18,976,457	1.71	32,475
OH	11,353,140	2.67	30,291
OK	3,450,654	2.67	9,209
OR	3,421,399	3.83	13,105
PA	12,281,054	1.98	24,357
PR	3,808,610	1.68	6,387
RI	1,048,319	2.24	2,344
SC	4,012,012	1.71	6,858
SD	754,844	2.08	1,569
TN	5,689,283	2.47	14,033
TX	20,851,820	2.01	41,908
UM			3
UT	2,233,169	3.90	8,717
VA	7,078,515	2.40	17,011
VI	97,120	3.19	310
VT	608,827	3.66	2,228
WA	5,894,121	4.10	24,139
WI	5,363,675	1.98	10,610
WV	1,808,344	3.58	6,468
WY	493,782	3.28	1,619
Total	285,607,475	2.39	683,794



AMATEUR RADIO OPERATORS ARE A COMMUNITY RESOURCE BECAUSE... WHEN TROUBLE STRIKES, "HAMS" HELP YOUR COMMUNITY

Traditionally, trained volunteer Amateur Radio operators have provided communication support services to government and private relief agencies in times of major local and national disaster. Amateur Radio operators are organized through two primary organizations: Amateur Radio Emergency Service (ARES), and Radio Amateur Civil Emergency Services (RACES). In addition to assisting local authorities and emergency relief operations with radio communication services, amateurs also organize "health and welfare" networks to relay messages from victims in the affected area to loved ones in other locations.

Amateur Radio emergency communications in the wake of the World Trade Center terrorist strike made the country aware of the emergency communications Amateur Radio operators have been providing for decades. See [World Trade Center and Pentagon terrorist attacks](#). Even before the WTC attack, ARRL was already working on preparations for the Amateur Radio Emergency Communications Courses which help train Amateur Radio operators as how to best use their skills in emergencies through the [ARRL Certification and Continuing Education Programs](#). These courses have trained thousands of amateurs. This is why the [Department of Homeland Defense called Amateur Radio operators the "first of the first responders"](#). ARRL is now an official affiliate of the [Citizen Corps](#), an initiative within the [Department of Homeland Security](#) to enhance public preparedness and safety.

President Jim Haynie, W5JBP, signed the [formal Statement of Affiliation](#) between DHS, President Bush's Citizen Corps and ARRL during the ARRL 2003 National Convention June 21. Chief Operating Officer of the Emergency Preparedness and Response Directorate (FEMA) Ron Castleman represented Under Secretary for Emergency Preparedness and Response Michael D. Brown at the signing. Citizen Corps Liaison to the White House Liz DiGregorio called ham radio operators the "first of the first responders."

Some recent emergencies where amateurs have helped out include:

Event	Occurred
Hurricane Katrina: Louisiana, Mississippi, Alabama, Florida: SATERN Volunteers Have Pivotal Roles in Rooftop, Attic Rescues ARRL President Urges Orderly Amateur Radio Response in Katrina Recovery Amateur Radio Volunteers Involved in Katrina Recovery Ham Radio Ready as Residents Flee "Potentially Catastrophic" Katrina Hurricane Watch Net, Secure After Katrina Comes Ashore in Florida	August 2005
Wisconsin Tornado: Tornado String Prompts Wisconsin ARES/RACES Response	August 2005
Mexican Sea Rescue: Radio Amateurs Aid in Pacific Maritime Rescue	August 2005
Hurricane Emily: Texas, Mexico: Hurricane Watch Net, WX4NHC, ARES Secure Emily Operations Hurricane Watch Net Activates for Emily	July 2005
Tampere, Finland: Amateur Radio Emergency Communication Focus of World Conference	June 2005
Amateurs Draw Praise from Drill: Connecticut Amateurs, Others, Participate in Massive DHS Drill This is a Drill! ARES Supporting Red Cross Participation in TOPOFF3 Amateur Radio to Have Role in Largest-Ever Mass Casualty Exercise	April 2005
Amateur Radio Receives High Level Praise: Amateur Radio is "Poster Child" of Homeland Security Grantees Gathering	March 2005
California Floods: ARES/RACES Aid in California Flood Response	January 2005
Indian Ocean Tsunami Amateur Radio Praised as Lifeline in South Asia Tsunami "Angel of the Seas": Post-Tsunami News Coverage Raises Ham Radio's Global Visibility Winlink 2000 Helping with Southern Asia Disaster Amateur Radio "Saved Lives" in South Asia Asian Radio Amateurs Bridging Communication Gap following Tsunami Earthquake, Tsunamis Hit Southern Asia; Laccadives and Nicobar Islands DXpedition in Emergency Mode	December 2004
Haitian Flood Disaster Amateur Radio Relief Team Helps with Disaster Communications Radio Amateur to Spearhead DERA Relief Mission to Haiti	September/November 2004
Hurricane Jeanne: Florida, East Coast Storm-Weary Amateur Radio Volunteers Confront Hurricane's Aftermath	September 2004
Hurricane Ivan: Florida, Alabama, Caribbean	September 2004

**"HAMS" HAVE AGREEMENTS WITH NATIONAL EMERGENCY
MANAGEMENT GROUPS TO SERVE YOUR COMMUNITY. . .**

Memorandum of Understanding between the
[National Weather Service](#)
and the
American Radio Relay League, Inc.
since 1986

Statement of Understanding between the
American Radio Relay League, Inc.
and the
[American National Red Cross](#)
since 1940 and updated 1994

Memorandum of Understanding between the
American Radio Relay League, Inc.
and the
Federal Emergency Management Agency
since 1984

Memorandum of Understanding between the
American Radio Relay League, Inc.
and the
[National Communications System](#)
since 1983

Memorandum of Understanding between the
American Radio Relay League, Inc.
and the
[Associated Public Safety Communications Officers, Inc.](#)
since 1984

Memorandum of Understanding between the
American Radio Relay League, Inc.
and the
[National Association of Radio and Telecommunications Engineers, Inc.](#)
since 2000

Memorandum of Understanding between the
American Radio Relay League, Inc.

and the
Salvation Army
Revised 1996

Memorandum of Understanding between the
American Radio Relay League, Inc.
and the
Society of Broadcast Engineers, Inc.
Since 2000

Memorandum of Understanding between the
American Radio Relay League, Inc.
and
REACT International, Inc. (Radio Emergency Associated Communications Teams)
Since 2000

Additional information on these organizations can be found on the [ARRLWeb](#).

...AND THEY ALSO HELP:

- The Office of Foreign Disaster Assistance (US Agency for International Development)
- The National Disaster Medical Service
- State and local emergency management organizations
- Search and rescue organizations
- Police, fire, ambulance and similar groups
- Relief organizations united in National Volunteer Organizations Active in Disaster (NVOAD)
- Civic organizations, road races and other local functions

**"HAMS" ARE A NATIONAL RESERVOIR OF NEW IDEAS,
VALUABLE TECHNOLOGY AND HOMELAND DEFENSE SECURITY**

Since the earliest days of radio, new technology and the activities of Amateur Radio operators have gone hand-in-hand. Driven by scientific curiosity and unconstrained by bureaucracy, self-funded amateur experimenters have found better ways to utilize the radio spectrum. In professional capacities in research organizations, Amateur Radio operators work as engineers and researchers, often motivated by their early enthusiasm as "hams." Among their well-known contributions:

- Pioneers in early radio experimentation
- Promoted continuous wave modulation instead of "spark gap"
- Early explorers of ionospheric propagation for world wide radio
- Developed use of frequencies beyond the High Frequency bands
- Developed early mobile gear for automobiles and aircraft
- Experimented with Single Sideband mode

- Built first civilian communications satellite and pioneered use of inexpensive "microsats"
- Developed early packet radio networks (wireless LANs)
- Developed early linked repeaters (prototype for cellular phone)
- Early experiments in digital signal processing
- Developed new antenna configurations
- Explored new modes of VHF propagation including tropospheric refraction, sporadic-e, auroral, meteor scatter, tropospheric scatter and moonbounce
- Development of new digital modes such as PSK 31

Here is a good overview of the goals of ARRL with respect to [homeland security](#). These are the comments submitted by ARRL to the subcommittee on Science and Technology of the Senate Committee on Commerce, Science and Transportation and were prepared for hearings on Senator Wyden's NetGuard proposal and submitted on December 5, 2001. Further, the November 2001 *QST* article on the [events of September 11](#) appears on the Web. The [Amateur Radio Emergency Service \(ARES\) brochure](#) gives a very brief overview of the Amateur Service with respect to emergency.

CONGRESS CONTINUES TO RECOGNIZE AMATEUR RADIO'S IMPORTANCE

- **1993: [Public Law 103-408 \(S.J. Res. 90\)](#):** To recognize the achievements of radio amateurs, and to establish support for such amateurs as national policy.
- **1993: Omnibus Budget Reconciliation Act (OBRA):** "In determining whether a band of frequencies meets the criteria specified in subsection (a)(2), the Secretary shall...seek to avoid...excessive disruption of existing use of Federal Government frequencies by amateur radio licensees..."
- **Public law 100-594 (S. 1048)** "Government agencies shall take into account the valuable contributions made by amateur radio operators when considering actions affecting the Amateur Radio Service."

THE ISSUES FACED BY AMATEUR RADIO OPERATORS TODAY

- Amateur Radio operators are a valuable asset to the community, but they need antennas to communicate
- Amateur Radio operators are almost exclusively located in residential areas and use radio as a personal hobby, but are often severely restricted local government zoning ordinances and by homeowners association covenants
- Amateur Radio operators are licensed by the Federal Communications Commission do not participate in frequency auctions
- Local zoning authorities are required to reasonably accommodate the antenna needs of Amateur Radio operators as stated in PRB-1 and various court cases
- Amateur Radio operators are prohibited by the FCC from conducting business on the air

WHY THE FCC SUPPORTS AMATEUR RADIO

"When a disaster strikes...amateur systems assist with relief operations immediately. Often, it is from an amateur...that the world first learns of the disaster."

"Many of our engineers, scientists, astronauts, educators and technicians took their first steps toward their careers when they became amateur operators."

"The concept of broadcasting began when listeners overheard amateur stations exchanging weather reports and baseball scores. The first land mobile systems were built by amateurs. The first hand-held radios were built by amateurs."

"The first satellite station authorized by the FCC was an amateur station. Today, more than 30 [amateur] satellites have been launched."

"This service is ever at the forefront of communications technology."

Remarks by FCC official during an FCC hearing on Amateur Radio issues, 1990