

# National SOS Radio Network Hamwatch

**National SOS<sup>SM</sup>  
Radio Network**

[www.NationalSOS.com](http://www.NationalSOS.com)



***Community and neighborhood emergency communications  
when the cell phones aren't working.***

# The Amateur Radio Service

- Active in disaster response for over 100-years.
- Proven Survivability.
- Universal.
- Voluntary.
- Diverse: Radiotelegraph, voice and digital methods.
- Manual or automated: Hybrid mesh networks, Internet gateways, and more.

*Amateur Radio provides a longstanding infrastructure that has evolved with the times.*

## Amateur Radio - Advantages & Disadvantages

- Survivable.
- Decentralized.
- Dispersed.
- Diversity of skills.
- “Improvise, Adapt, Overcome.”
- Limited personnel.
- High demand from government agencies.
- Broader culture has less community service focus.
- Mostly invisible to general public.

**Volunteer resources must be utilized efficiently. Two imperatives must be recognized, one of which is assistance to government and relief agencies, and the other of which is direct assistance to the public.**

# **National SOS<sup>SM</sup> Radio Network**

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**Q: “How does the public request assistance when cellular data networks fail?”**

**A: “The solution is at your local sporting goods or department store.”**

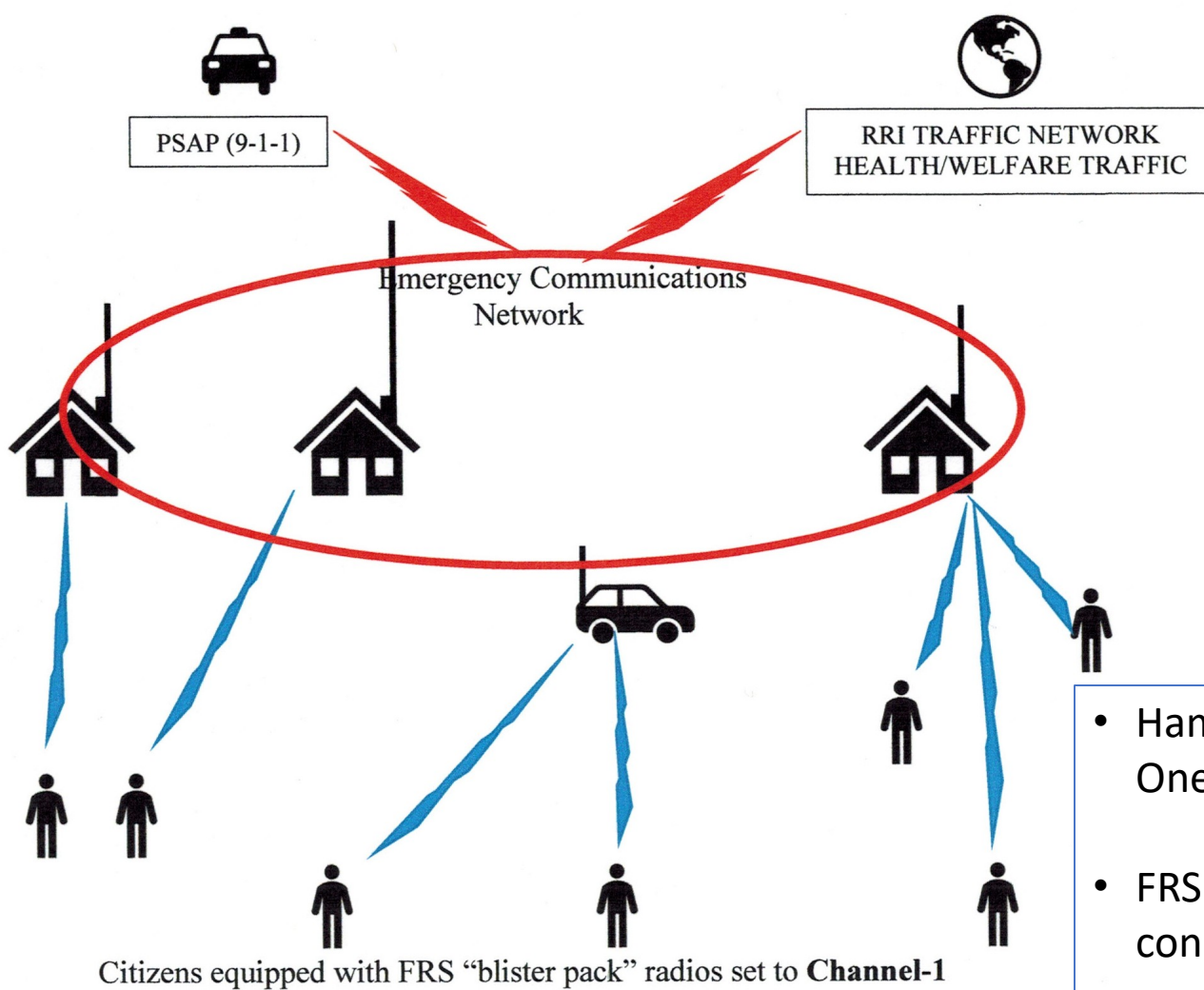
# FRS Radios and AA-Cells



- FRS radios are inexpensive and ubiquitous.
- Can be stored in an emergency supplies kit with good quality alkaline batteries (long shelf life).
- No license or exams required.
- Even a child can operate the simple device.
- Range is limited to a few miles at best, but they function without infrastructure.

# How it works....

- Radio amateurs monitor FRS Channel One (462.5625 MHz).
- Citizens request emergency services (police, fire, EMS) on FRS Channel One.
- Ham operators passes request to PSAP or EOC.
- Ham operators distribute information such as disaster instructions, answer questions about shelter locations, road closures, etc.
- When circuit capacity is available, health and welfare messages originated to an out-of-town (emergency contact).



- Hams monitor FRS Channel One.
- FRS Radio traffic concentrated at top of hour.
- Hams serve as gateways to both public safety and a national messaging infrastructure.



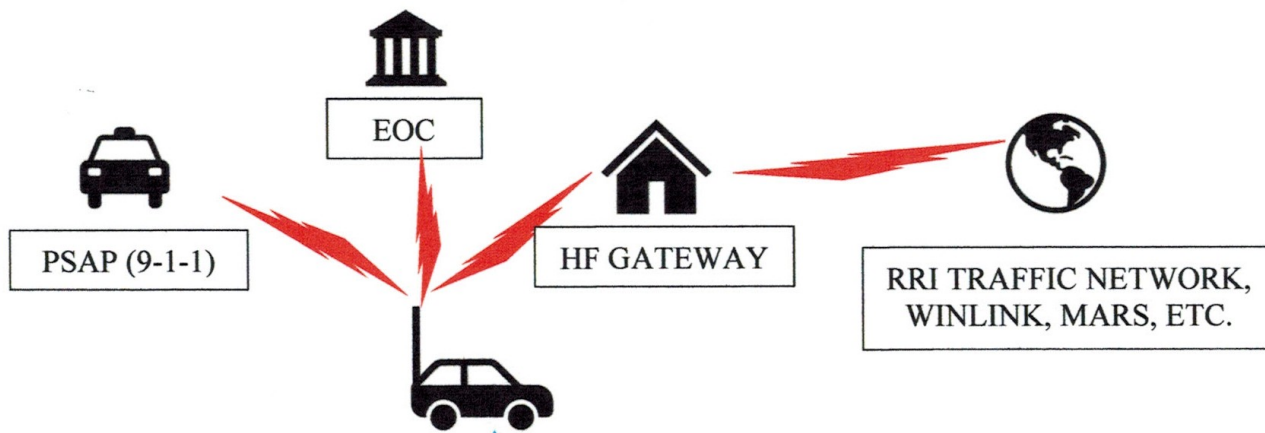
- Focus on support of community organizations.
- Utilizes both FRS and GMRS resources.
- A **force multiplier**; more efficient use of limited Amateur Radio resources.
- Flexible, scalable open to improvisation.
- Reaches into neighborhoods and small volunteer organizations.



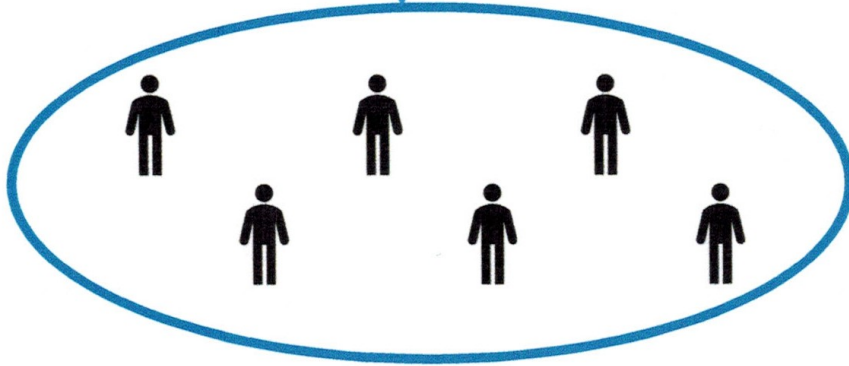
# GMRS Radios

- Share 22 channels with FRS – Interoperability.
- Higher power levels.
- Hand-held or mobile units.
- Repeaters can be established.
- Simple licensing (registration).
- Compatible with a range of type-accepted units.





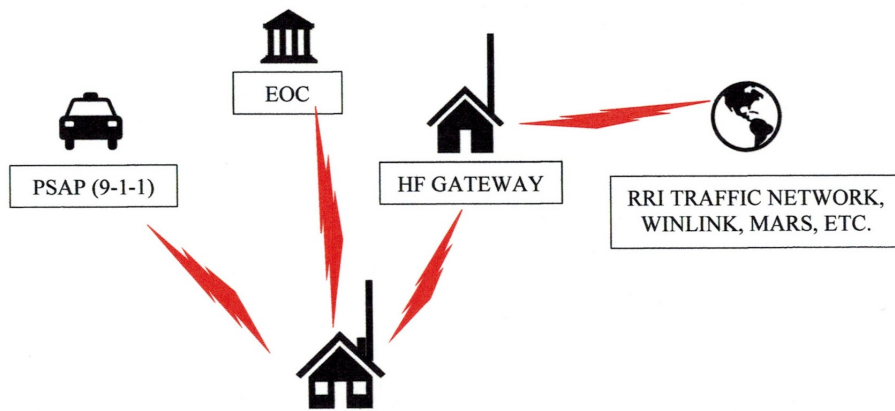
Radio amateur links to SAR team via FRS



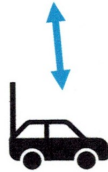
FRS radios link SAR team working a neighborhood

### Example – FRS Radios:

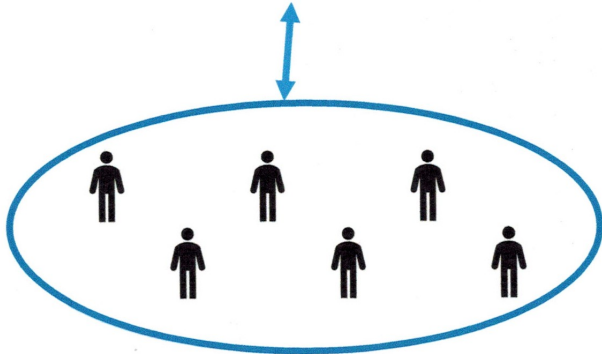
- SAR unit uses FRS for intra-unit comms.
- Hams assigned to team interacts with team members via FRS.
- Traffic to EOC, central dispatch or “outside world” transferred to ham radio frequencies via gateway.



Amateur Radio gateway to local emergency network and traffic system.  
 QSX GMRS Frequency.



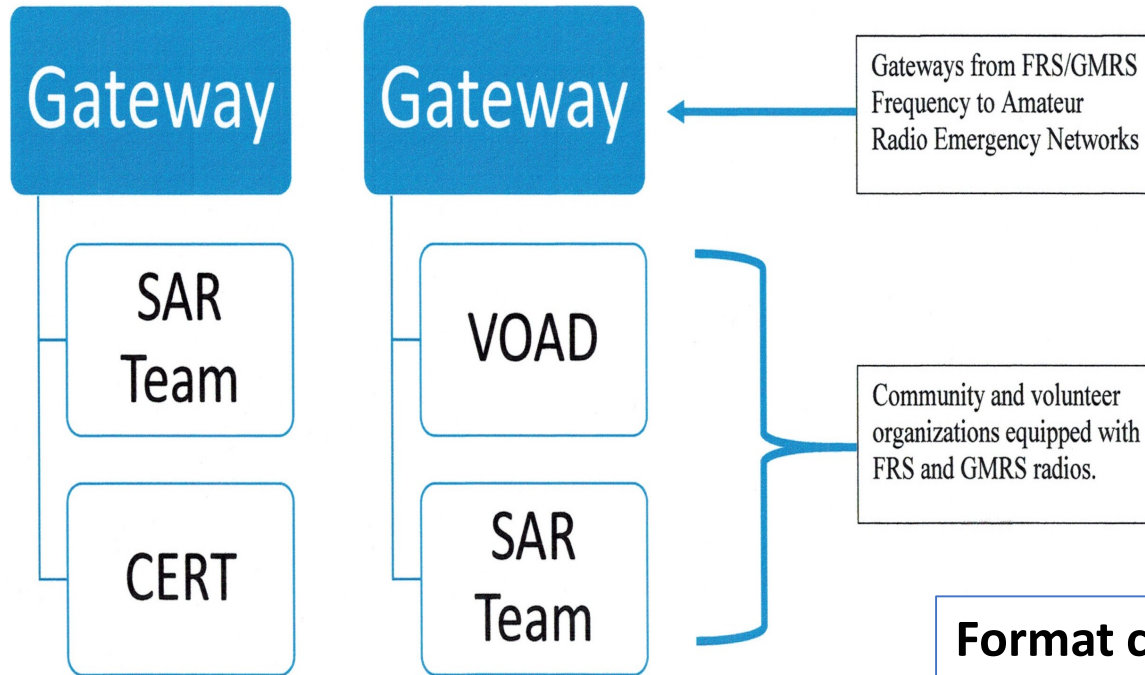
SAR Supervisor has 25 to 50-watt simplex or repeater programmed GMRS radio.



GMRS handheld radios link SAR team working a neighborhood.

### Example – GMRS Radios:

- SAR Team uses five-watt GMRS hand-held radios.
- Team supervisor uses higher power GMRS mobile transceiver or manpack configuration to communicate with fixed station ham radio gateway.
- Gateway can be a home station, a key station at nearby fire station, NGO facility, police station, or EOC.
- Instead of six hams shadowing six team members, one radio amateur can support several teams.



**Format can support any community volunteer organization:**

- CERT
- Social Service
- Faith-based.
- SAR
- Humane/RSPCA
- Scouting organizations

*Scalable*  
*Dynamic response*  
*Contracts or expands based on needs.*

# The Ham Radio Operator's Role

- Monitors FRS Channel One and/or GMRS Channel(s) used by community organizations.
- Interfaces to local EmComm networks.
- Interfaces to national messaging layer.

***A simple scanner connected to an elevated outdoor antenna is ideal for monitoring FRS/GMRS channels.***

# The Role of Emergency Management



- Promote National SOS Radio Network information in brochures, documents and on-line content.
- Familiarize central dispatch staff with program.
- Brief radio amateurs on methodology and sequence of data to be collected and transferred to central dispatch.
- Coordinate with local EmComm organization to develop method to disseminate important local data to gateway/FRS monitoring participants (e.g. shelter locations, medical services, etc.).



# The Gateway Station



- May be a home, mobile or served agency station.
- Should be operational on FRS and GMRS frequencies.
- Should be operational on local VHF/UHF EmComm networks.
- Should have direct or indirect (via a nearby HF gateway) access to wide coverage nets (traffic system).

**FREQUENCY/CHANNEL CHART**  
**FRS/GMRS Transceivers in the United States**  
**As of September 28, 2017**

Channel	Frequency MHz	Radio Service	Max Permitted Power		Detachable Antenna OK?	
			FRS	GMRS	FRS	GMRS
1	462.5625	FRS or GMRS	2 watts	5 watts	no	yes
2	462.5875	FRS or GMRS	2 watts	5 watts	no	yes
3	462.6125	FRS or GMRS	2 watts	5 watts	no	yes
4	462.6375	FRS or GMRS	2 watts	5 watts	no	yes
5	462.6625	FRS or GMRS	2 watts	5 watts	no	yes
6	462.6875	FRS or GMRS	2 watts	5 watts	no	yes
7	462.7125	FRS or GMRS	2 watts	5 watts	no	yes
8	467.5625	FRS or GMRS	.5 watts	.5 watts	no	no
9	467.5875	FRS or GMRS	.5 watts	.5 watts	no	no
10	467.6125	FRS or GMRS	.5 watts	.5 watts	no	no
11	467.6375	FRS or GMRS	.5 watts	.5 watts	no	no
12	467.6625	FRS or GMRS	.5 watts	.5 watts	no	no
13	467.6875	FRS or GMRS	.5 watts	.5 watts	no	no
14	467.7125	FRS or GMRS	.5 watts	.5 watts	no	no
15	462.5500	FRS or GMRS	2 watts	50 watts	no	yes
16	462.5750	FRS or GMRS	2 watts	50 watts	no	yes
17	462.6000	FRS or GMRS	2 watts	50 watts	no	yes
18	462.6250	FRS or GMRS	2 watts	50 watts	no	yes
19	462.6500	FRS or GMRS	2 watts	50 watts	no	yes
20	462.6750	FRS or GMRS	2 watts	50 watts	no	yes
21	462.7000	FRS or GMRS	2 watts	50 watts	no	yes
22	462.7250	FRS or GMRS	2 watts	50 watts	no	yes
15RP*	467.5500	GMRS	Prohibited	50 watts	Not Applicable	yes
16RP*	467.5750	GMRS	Prohibited	50 watts	Not Applicable	yes
17RP*	467.6000	GMRS	Prohibited	50 watts	Not Applicable	yes
18RP*	467.6250	GMRS	Prohibited	50 watts	Not Applicable	yes
19RP*	467.6500	GMRS	Prohibited	50 watts	Not Applicable	yes
20RP*	467.6750	GMRS	Prohibited	50 watts	Not Applicable	yes
21RP*	467.7000	GMRS	Prohibited	50 watts	Not Applicable	yes
22RP*	467.7250	GMRS	Prohibited	50 watts	Not Applicable	yes

\*Midland MicroMobile repeater channel designations

Chart courtesy Midland, USA.



## Mobile Units



- A mobile unit can be deployed to a high location to serve several VOAD units or monitor the National SOS Frequency.
- Mobile capability adds flexibility to response as disaster evolves.
- Particularly valuable if home stations are impacted by disaster.

# Value-Added Benefits

A large, faint watermark of the Radio Relay International logo is centered in the background. The logo features a globe with latitude and longitude lines, surrounded by a laurel wreath. The text 'RADIO RELAY INTERNATIONAL' is written in a circular path around the globe, with a registered trademark symbol (®) at the bottom. Above the globe, the letters 'RRRI' are visible in a stylized font.

- Builds relationships with community organizations.
- Introduces new people to the purposeful use of two-way radio.
- Encourages motivated individuals to explore the Amateur Radio Service.
- Ideal for scouting organizations.

# Keys to Success



- The program must be exercised regularly.
- Apply model to community events (parades, festivals, races, etc.).
- Use the two-way radios instead of cell phones during routine operations.
- Explain benefits of two-way radio:
  - Survivability
  - Quickly disseminate information to multiple points (broadcast).
  - Spontaneous problem solving due to monitoring of traffic.

# Radio Relay International



- Provides training materials and field manuals.
- Provides a national messaging infrastructure.
- Organizes radio nets.
- A national emergency communications response plan.
- Collaborative – Interfaces with *Winlink*, local and state (section) EmComm and various traffic nets.
- Provides prepared *Public Service Announcements* (PSAs) for dissemination by broadcast media in time of emergency.



[www.radio-relay.org](http://www.radio-relay.org)

[Info@radio-relay.org](mailto:Info@radio-relay.org)

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