

# GUIDANCE FOR RADIO AMATEUR CIVIL EMERGENCY SERVICE



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## **Civil Preparedness Guide**

**Federal Emergency Management Agency**

Washington, D.C. 20472

CPG 1-15

March 18, 1991

## **Guidance for Radio Amateur Civil Emergency Service**

### **Foreword**

This Civil Preparedness Guide (CPG) has been prepared as a reference to assist State and local emergency management officials in establishing and operating Radio Amateur Civil Emergency Service (RACES) capabilities for use in responding to and managing emergencies and disasters. This CPG outlines the procedures for developing a RACES plan and provides an example of a plan format.

(Signed)

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Grant C. Peterson  
Associate Director  
State and Local Programs And Support Directorate

Distribution: Special

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## Chapter 1 - General Information

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This Civil Preparedness Guide (CPG) provides guidance to State and local governments that utilize Radio Amateur Civil Emergency Service (RACES) as a means of emergency communications.

1-2. Applicability and Scope.

a. The provisions of this CPG are applicable to State and local Governments that Utilize RACES in emergencies.

b. In cases of conflict, Federal Communications Commission (FCC) Rules and Regulations will take precedence over the provisions of this CPG.

### 1-3. Authorities.

- a. The Communications Act of 1934, Section 606, as amended.
- b. Executive Order 12472, Assignment of National Security and Emergency Preparedness Telecommunications Functions.

### 1-4. Reference.

Title 47 Code of Federal Regulations (CFR), Part 97, Subpart F, and RACES.

### 1-5. Background.

- a. RACES is an organization of amateur radio operators who volunteer to provide radio communications for State and local governments in times of emergency. Created in 1952 primarily to serve in civil defense emergencies, RACES provides essential communications and warning links to supplement State and local government assets during emergencies.
- b. RACES is a special part of the amateur operation sponsored by the Federal Emergency Management Agency (FEMA). RACES provides emergency communications for civil preparedness purposes only. RACES is conducted by amateurs using their primary station licenses or by existing RACES stations. In the event that the President invokes the War Emergency powers, amateurs officially enrolled in the local civil preparedness group would become limited to certain frequencies, while all other amateur operations would be silenced.

### 1-6. Definitions.

- a. RACES is a radio communications service, conducted by volunteer licensed amateur radio operators, for providing emergency communications support to State and local governments.
- b. RACES Station is an amateur radio station licensed civil defense organization, at a specific land location, to provide the facilities for amateur radio communications in the RACES.
- c. Amateur Radio Communications is noncommercial radio communications by or among amateur radio stations solely with a personal aim and without pecuniary or business interest.

### 1-7. The Role of State and Local Governments.

- a. Local Governments. The role of local governments is to establish and train a RACES organization designed to provide or supplement essential emergency communications within their local jurisdiction.
- b. State Governments. The role of State governments is to establish and train a RACES organization designed to provide or supplement emergency communications between elements of State Government and between State and local governments.

### 1-8. FEMA's Role.

FEMA's role is to provide planning guidance, technical assistance, and funding for establishing a RACES organization at the State and local government level.

## 1-9. Emergency Situations.

The RACES organization provides or supplements communications during emergencies where normal communication systems have sustained damage. It may be used in a wide variety of situations, including:

- a. Natural Disasters;
- b. Technological Disasters;
- c. Nuclear Accidents;
- d. Nuclear Attack;
- e. Terrorist Incidents; and
- f. Bomb Threats.

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## Chapter 2 - Eligibility and Procedures for RACES

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## 2-1. General.

This chapter provides information on the requirements and procedures for establishing a RACES organization. Operator privileges in RACES are dependent upon the class of license held by the amateur.

## 2-2. RACES Eligibility.

Any United States citizen, who possesses a valid FCC Amateur Radio Operator License, technician or higher, is eligible to become a member of RACES. The services of amateurs who have a Novice Class license may be used, but this is not recommended due to the privilege limitations.

## 2-3. Procedures for Establishing a RACES Organization.

The following procedures are to be followed for establishing a RACES organization:

- a. To establish a RACES organization, the Director, State or local government Emergency Operating Center (EOC) or Director of Emergency Management (or designated representative) should first appoint, in writing, a reliable amateur to serve as the RACES Officer. This individual serves as a liaison between the RACES organization and the Director's office and assists in the development of the RACES organization, recruits members, and keeps the Director, EOC, informed of all RACES activities, progress, and needs.
- b. The RACES Officer is a General Class Amateur, or higher, thoroughly knowledgeable of FCC Rules and Regulations and familiar with the functions of the Amateur Radio Relay League (ARRL) and the Amateur Radio Emergency Services of the ARRL. Individuals with strong organizational abilities, good verbal and written communications skills, and experience in emergency center operations are ideal candidates.

## 2-4. Recruitment and Retention.

- a. Each prospective member completes a RACES Operator Application and returns it to the RACES Officer. The RACES Officer designs the application to meet local requirements. The application must not contain information that is protected under the Privacy Act. The RACES Officer recommends acceptance or nonacceptance to the Emergency Management Director. Once approval is granted, the Director prepares a letter designating the applicant as a certified RACES member. A photograph identification card for each RACES member is highly recommended.
- b. In order to serve effectively as a volunteer member of the emergency staff, access to otherwise restricted areas, such as the EOC or the jurisdiction's communications center, may be associated with RACES participation and assignments. To the extent that similar requirements exist for other members of the emergency staff with access to restricted areas, a limited background check for RACES applicants is also recommended. This should be performed in accordance with the jurisdiction's regulations and procedures.
- c. RACES members are responsible for:
  - (1) Participating in the training sessions;

- (2) Briefing the RACES Officer of any changes in equipment or amateur status that may affect operation in the RACES program;
- (3) Developing a strong background in emergency procedures, FCC Rules and Regulations, and network procedures;
- (4) Being available when emergency communications are required by the appointing Director;
- (5) Helping strengthen the organization by offering suggestions and positive feedback to correct deficiencies;
- (6) Complying with volunteer standards established by the jurisdiction; and,
- (7) Notifying the RACES Officer, in writing, when terminating membership.

d. Membership participation should be evaluated every 2 years. If a member's participation is lacking, membership terminates; if deemed adequate, membership continues for another 2 years.

#### 2-5. Training.

- a. Training sessions should be scheduled to exercise the efficiency of the emergency plan and the proficiency of the RACES members. On the average 1 hour per week should be devoted to RACES activities and training.
- b. RACES organizations may be utilized during drills and exercises in order to train members and exercise the emergency plan. RACES exercises will help with updates or revisions to the RACES plan. Special RACES drills and exercises serve as a mechanism for honing skills in emergency communications procedures in general and for training in any specific or unusual protocols used by the jurisdiction. Periodic participation in full scale exercises is also beneficial in promoting familiarity with other elements of the jurisdiction's emergency plans and procedures the communications function must support.
- c. All training must be recorded in the participant's and RACES unit's files.

#### 2-6. Development of a RACES Plan.

- a. Once membership reaches a strength that is considered adequate by the RACES Officer, bylaws and an emergency plan that meet local requirements must be written.
- b. Development of a RACES plan is vital to the organization and its importance cannot be overemphasized. A plan must be prepared in accordance with the local area needs and the facilities available within that particular area. Written plans must clearly describe each area to be covered. All local government RACES plans are forwarded to the State disaster preparedness communications officer for coordination and retention. All State Government RACES plans are forwarded to the FEMA Regional Communications Officer for coordination and retention.
- c. The following items should be addressed, at a minimum, within the plan and provisions made to cover them:
  - (1) Identify the community or area where coverage is required;

- (2) Identify the type of support needed, i.e., shelter, communications, hospital, etc.
  - (3) Identify the network to be used to provide each type of support, the operating frequency, mode of operation, and location of the network control station for each network;
  - (4) Establish the RACES Unit's chain of command, identifying the emergency management organization's communications officer (or other official) to whom the RACES unit reports;
  - (5) Identify frequencies--high frequency and very high frequency--to be used by the mobile, portable, repeater, and fixed stations;
  - (6) Provide the addresses of all known fixed station locations required to support each network;
  - (7) Define the areas of operation of mobile stations required to support each network;
  - (8) Describe, briefly, the communications equipment required for portable, mobile, and fixed operations;
  - (9) Describe, briefly, the communications equipment, antenna, and power source required for portable, mobile, and fixed operations;
  - (10) Include a statement that states, "FCC Rules and Regulations apply to the operation of a radio in the amateur service and therefore apply to the RACES organization."
- d. A checklist unique to the local requirements may be developed and incorporated into the plan. Testing and drills may be scheduled but must not exceed a total time of 1 hour per week.
- e. The appendix provides an example of a local plan which may aid in the development of a local plan.

#### 2-7. RACES Activation.

- a. RACES may be activated by the appointed Director of an Emergency Management Office, or authorized representative, for a particular area. The activation is in accordance with an approved civil defense communications plan in any emergency concerning the following:
- (1) Safety of life;
  - (2) Preservation of property;
  - (3) Alleviation of human suffering and need;
  - (4) Any disaster endangering the public;
  - (5) Act of sabotage; or
  - (6) Testing and drills.
- b. RACES stations and operators supplement surviving communications facilities, or provide emergency communications requirements.

#### 2-8. RACES Unit Records.

It is recommended that the Emergency Management organizations provide appropriate space and maintain custody of these records. The following records should be maintained by the RACES Unit:

- a. The jurisdiction's current RACES plan;
- b. Records of all RACES Unit activation, drills, and training;
- c. Individual RACES Unit member files, including application form, copy of license, and a record of participation in activation, drills, and training;
- d. Equipment manuals, with additional operating instructions, where appropriate. This includes equipment owned by RACES Unit members, but made available for common use (e.g., equipment including personal equipment on loan and installed in the EOC); and
- e. Additional records or other documentation, as required by the Emergency Management Office.

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## Chapter 3 - Operations - War Time Emergency Situations and RACES Drills

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#### 3-1. General.

This chapter provides information on the use of frequencies in emergency situations when the War Emergency Powers, under the provisions of the Communications Act of 1934, Section 606, as amended, have been invoked by the President.

#### 3-2. List of Frequencies (Wartime Emergency Situations).

- a. The frequency bands listed below are available to stations transmitting communications in RACES on a shared basis with the amateur service. In the event of an emergency that necessitates the invoking of the President's War Emergency powers under the provision of Section 706 of the Communications Act of 1934, as amended, only RACES stations and amateur stations participating in RACES may transmit

on the following frequencies:

Frequency or Frequency Bands

KHz :

1800-1825

1975-2000

3500-3550

3930-3980

3984-4000

7079-7125

7245-7255

10100-10150

14047-14053

14220-14230

14331-14350

21047-21053

21228-21267

MHz :

28.55-28.75

29.237-29.273

29.45-29.6

50.35-50.75

52-54

144.50-145.71

146-148

2390-2450

- b. In addition, 1.25 cm (220.0-225.0), 70 cm (420.0- 450.0), and 23 cm (1240-1300 MHz) are available.
- c. Frequencies at 3.997.0 MHz and 53.30 MHz are used in emergency areas to make initial contact with a military unit and for communications with military stations on matters requiring coordination.

### 3-3. Message Format and Transmission Mode.

- a. The RACES message format should parallel other communications services such as ARRL, United States Army Military Affiliated Radio System and/or FEMA.
- b. Each message element should be defined to minimize confusion. In emergency communications, most messages are assigned immediate transmission precedence. The emergency communication individual must understand the order of transmission and the precedence governing its sequence. The following defines message precedence:
  - (1) IMMEDIATE precedence messages are processed ahead of all other precedence messages and sent or delivered in the order of receipt.
  - (2) PRIORITY precedence messages are processed in the order of receipt and processed after IMMEDIATE precedence messages and ahead of all ROUTINE precedence messages. PRIORITY precedence messages are sent or delivered in the order of receipt.
  - (3) ROUTINE precedence messages are processed in the order of receipt and after the IMMEDIATE and PRIORITY precedence messages.
- c. The mode of transmission should be selected to suit the emergency situation and to utilize the available communication resources. The mode must remain flexible in the emergency plan. To eliminate confusion, list modes in order of preference. The following are several recommended modes:
  - (1) Voice Communications (telephone)-In most situations, voice fulfills the communications requirement. Use voice communications when a printed copy is not necessary.
  - (2) Radio Teletype (ASCII/BAUDOT)-When printed copy is essential, select one of these.
  - (3) Packet (High Frequency/Very High Frequency (VHF))- VHF Packet operation is synonymous with the transfer of information between amateur stations throughout the United States. Packet is an extremely accurate mode that could be used for most local emergency communications. Information may be passed between packet stations at high speed with complete accuracy. Packet is highly recommended when an accurate printed copy is required for an emergency operation.
- d. Many other modes are available that could be used for emergency communications; however, the modes listed in subparagraphs 3-3c(1), (2), and (3) should be considered before other modes. Mode selection must be within the boundaries of FCC Rules and Regulations and the authorized modes for the frequencies listed in this plan. VHF frequency modulation could provide a reliable voice link between mobile units, pedestrians, and the EOC.

### 3-4 General Limitations.

- a. RACES stations operating in any of the frequency bands listed in this plan shall not cause harmful interference to other services that might share the frequencies.

- b. All messages transmitted by a RACES station must be authorized by the emergency organization for the affected area.
- c. All messages transmitted in connection with drills or tests are plainly identified as such by use of the words drill or test in the body of the messages.

### 3-5. Limitation on the Use of RACES Stations (Wartime Emergency Situations).

- a. While performing duties as a RACES operator, members may not communicate with amateurs who are not RACES members. Only emergency communications may be transmitted as defined in FCC Rules and Regulations. No amateur radio station shall be operated in the RACES unless it is certified as registered in a disaster service organization.
- b. No RACES station shall be used to transmit or receive messages for hire, nor for communications for compensation, direct or indirect, paid or promised.

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## **Appendix.**

RACES Service Plan  
for the Support of Local  
Government During Emergencies

(Based on the plan developed at Tacoma, Washington)

To convert this plan for use in your community, replace the underlined portions of the sample plan with the information you compile in completing the worksheets, and provide annexes applicable to your community.

For statistical information purposes, it is requested that a copy of your community's amateur plan be sent to:

The FEMA region and the disaster services office you serve.

Limited planning assistance is also available by contacting the FEMA region that supports your state.

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**APPROVALS**

This plan has been reviewed and approved by the following authorities:

Name

Date

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Defense Commissioner,  
Federal Communications Commission.

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FEMA Regional Communications Officer .

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State RACES Officer.

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Director, Tacoma Department of  
Emergency Services.

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Chairman, Washington State  
Emergency Communications Committee.

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Chairman, Tacoma/Pierce County  
Operational Area Emergency  
Communications Committee.

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RACES Coordinator, Tacoma/  
Pierce County Amateur Radio  
Support Group.

1. Introduction.

a. Scope. This plan provides guidance for the Radio Amateur Civil Emergency Service (RACES) to support local government officials during certain emergency conditions.

b. Purpose. This plan is intended to provide coordinated operation between the City of Tacoma government officials and the RACES organization during times when there are extraordinary threats to the safety of life and/or property. Maximum benefits from a RACES organization can be obtained only through careful planning which identifies the organizations, agencies, and individuals concerned and assigns a definitive role to each. This plan enables agencies and organizations having emergency responsibilities to include the RACES organization in local emergency plans and programs.

c. Operations. This plan becomes official for the City of Tacoma, Washington when signed by the Federal Communications Commission (FCC); Director of Emergency Services; Chairman of the State Emergency Area Emergency Communications Committee; and authorized RACES representatives. Under this plan, the Director of Emergency Services is empowered to request the use of Available volunteer communications facilities and personnel. Acceptance of or participation in this plan shall not be deemed as a relinquishment of license control, and shall not be deemed to prohibit an amateur radio service licensee or broadcast licensee from exercising independent discretion and responsibility in any given situation under the terms of its license.

2. Authority. Part 97 Subpart A, Federal Communications Commission Rules and Regulations.

3. Authentication. The form of authentication that will be used between the activating official and the RACES organization is personal identification or knowledge of the individuals involved.

4. Identification. The methods used to identify a RACES member and key personnel during a communications support operation are the following:

a. Local Emergency Services Identification Card, and

b. Personal Acquaintance.

## 5. Implementation Procedures.

a. Procedures for Government Officials. Upon notification or determination of an emergency condition or situation posing an extraordinary threat to life and/or property, the City of Tacoma, Washington Director of Emergency Services will contact the RACES Liaison Officer.

The Director of Emergency Services will use the following format when contacting the RACES Liaison Officer:

"This is Lee Clark, Director of the City of Tacoma Department of Emergency Services. I request that the RACES organization be activated for Tacoma, Washington because of (description of emergency situation)."

In order to speed personnel activation during emergency conditions or provide other announcements, an authorized official may contact the Tacoma/Pierce County Operational Area- emergency broadcast system station and request that a public service announcement be made to assist activation of the RACES organization.

Upon request of the emergency condition, a termination notice will be issued by appropriate government officials.

b. Procedures For Amateur Radio Operators. Upon request by authorized authorities, the designated RACES member(s) will report to the EOC and activate the required emergency nets using the frequencies below:

|                |               |
|----------------|---------------|
| Shelter net    | 29.5 MHz USB  |
| Evacuation net | 146.52 MHz FM |
| Hospital net   | 223.5 MHz FM  |

RACES members missing a designated assignment by the EOC network control are encouraged to in at any time.

In the event that assistance is offered by amateurs not living within the immediate area, amateurs will contact the EOC on the previously listed simplex frequencies or locally used repeater frequencies for assignment and dispatch.

At the cessation of the emergency, authorized officials initiate roll call from the EOC using any one or more of the previously listed simplex frequencies and local repeater frequencies. RACES members will then acknowledge and confirm receipt of termination message.

## 6. Tests. Tests of the system include:

a. One test per week of the RACES organization.

b. Annual emergency exercises.

## 7. Annexes.

- a. Annex A: Lists Key personnel and their telephone numbers.
- b. Annex B: Lists authorized RACES Radio Frequencies.
- c. Annex C: Lists RACES members and resources.
- d. Annex D: Functional block diagram of agencies that interface with the emergency organization.
- e. Annex E: Local Checklists.
- f. Annex F: Glossary of terms.

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