Oswego County Emergency Communicators/
RACES - Skywarn
Emergency Management Office, Fulton, NY 13069

MEMBERSHIP APPLICATION

Welcome,

Thank you for your interest in the Radio Amateur Civil Emergency Service (RACES) program for Oswego County. Your contributions will be very much appreciated, whether they are in the field of radio communications or using your specialized skills to maintain communications during periods of need.

Purpose

The Oswego County Emergency Communicators (OCEC)/RACES are a resource that provides the government of Oswego County with a variety of professional unpaid volunteer skills. These include:

- administrative, technical and operational assistance;

- emergency tactical, administrative and logistical communications to its agencies, cities within the County, neighboring governments and the State Emergency Management Office.

Its mission is to operate and maintain Amateur, Public Service and other communication systems;

- to perform unique, accurate and efficient communications services;

- to assist government officials, in the protection of life and property.

OCEC/RACES works hard to insure the reliability and professionalism of all personnel through on going training. Performance standards are established for registered members who may be activated to provide communications on behalf of the served agencies requesting our volunteer assistance.

OCEC/RACES members demonstrate qualities and personal values such as;
- Being responsible and accountable.
- Having integrity and initiative.
- Being truthful and respectful.
- Maintaining competence to perform assigned duties and responsibilities.

Registration is required for RACES participation in Oswego County. Picture ID's will be issued after completion of the introductory training units. Members are considered Emergency Workers and are provides protection under the Workman's Compensation Act. Certain legal protection against civil liability may be covered under the Federal Volunteer Protection Act of 1997, 42 USC 132 when serving in accordance with established plans, procedures and directives of the leadership of RACES. These actions are usually considered "reasonable" and therefore fall under this Act.

Anyone not registered is "on their own" and may be asked to leave an area in order to protect us all

MEMBERSHIP APPLICATION

Application Procedures

1. Fill out both sides of the attached Membership Application Form.

2. Finish reading this document and answer the short quiz at the end.

3. Turn in the application and the answer sheets to the Radio Officer. Arrangement will be made for obtaining a picture ID card and an Emergency Worker card.

4. Within six months of membership acceptance, you need to complete the ICS 100 and the IS 700 courses. (An explanation of these courses appears later in this document).

5. Within one year of membership acceptance, you must attend a Radiological Training session. We devote one meeting during the year for this training. If you cannot make that meeting, arrangements can be made for you to attend sessions.

Defining RACES and ARES

The following paragraphs are designed to give the new entering member an overview of what RACES is and how it relates to the Emergency Management operation and goals.

- What is RACES – Radio Amateur Civil Emergency Service
    - Primary purpose is providing emergency communications whenever asked to do so in the interest of public safety on behalf of local and state governments.
    - Authority for operation is covered under 47 CFR, FCC Rules and Regulations, Part 97, subpart E.
    - RACES is not part of ARRL nor does it require membership in the ARRL.

- What is ARES – Amateur Radio Emergency Service
    - Part of the field organization of the ARRL
    - Primary purpose is supporting private entities with auxiliary communications
    - Also active in recovery phase of emergencies

ACTIVATION

Whenever the assistance of the Oswego County Emergency Communicators (OCEC) is needed, a request is made to the Director of Oswego County Emergency Management for review. If the request is in the best interest of the public and/or its safety, the Director will notify the Radio Officer and request activation of the Communicators. The Service Plan provides for alternate paths for activation whenever the Director is not available.

MEMBERSHIP APPLICATION

RACES ID cards indicate to the served agencies that the person is well trained, knowledgeable, disciplined and part of an organized team. Remember, amateurs can be heroes or headaches, depending on conduct.

When working with the served agencies, our main job is to communicate using good radio techniques. Leave the operation of the agency to the agency's professionals.

OCEC/RACES personnel are expected to know and follow our Standard Operating Guidelines and plans. There may be special plans of operation for different events and you will be expected to adhere to these requirements. Sticking with the plan keeps all of us out of trouble, so that you will be safe, wanted, and welcomed.

Inactive and unprepared hams are a liability. Not staying involved and participating with the group reduces your value to assist during emergencies.

Why use amateur radio for emergency communications?

- Independent from normal systems
- Equipment in use every day, therefore it is maintained
- Flexibility
- Technically trained operators
- Amateurs bring more resources than most localities can afford to keep in reserve for emergencies on their own.

MEMBERSHIP APPLICATION

The EOC

The Emergency Operations Center (EOC) is located in the lower section of the Oswego County Building on Route 481 North, out of Fulton. The following discussion is intended to give you a quick tour of what you can expect to see during an event.

The EOC provides areas for Command, Operations, Dose Assessment and a communications area. The Dose Assessment area serves as a conference room when there has been an activation that is not associated with the nuclear power Plants. The Command Operation resides in the EMO Directors office where you will find officials keeping track and guiding the progress of the emergency. Decisions affecting money and manpower are made at this spot.

The Operations room, where we generally have our monthly meeting, has positions for the various agencies that respond to the emergency at hand. Here information is collected and disbursed as needed. Not all positions are filled for every emergency, as emergencies are varied from nuclear to ice storm to other natural and man made events.

The Dose Assessment room is where the data from field teams, that are sent out to monitor the country side during a nuclear event, are collected. The field teams monitor the air quality so that if a radiological release occurs, decisions can be made to protect the public. When a nuclear incident is not the emergency, this room is used as a conference room or put to other needed uses.

Communications out of the EOC may be via phone, fax, internet, public safety radio and/or ham radio. The radio room houses the last two subjects. The front room is a backup to the E911 center in Oswego. All public safety transmissions can be handled at this location. The area behind the E911 room houses operating stations for New York State Troopers, Highway Department, Health Department, Sheriff and ham radio. Ham radio is the backup communications system for the whole room.

There are other offsite locations that perform a specific operation during major emergencies. The Joint Information Center (JIC) near the County Airport handles information going to the public. News media people meet at this facility so that they can be kept up to date on what is happening.

The Emergency Offsite Facility (EOF), also near the County Airport, contains the offsite nerve center of the nuclear power plants. From here the decision makers can monitor and respond to what is taking place.

A Personnel Monitoring Center (PMC) gets established at the County Highway garage at Parish to check field teams for exposure during a power plant incident. Antennas are mounted there for our use and one for the Health Department. Any significant data gets relayed to the Dose Assessment group for evaluation.

MEMBERSHIP APPLICATION

There are other sites around the county that have antennas installed for our use during emergencies. Some of these locations are: the staging area at the County Airport, Alltel building for the Local Human Needs group, Fulton Police Department, and the Oswego and Fulton Hospitals. Any or all of these locations may be active during emergencies.

Access to the EOC during an emergency is by a picture ID card that will be issued upon completion of the application. This card is recognized by the county agencies and will give access to restricted sites when our help is needed. You will be expected to have this card with you at all events for personal identification.

During activation, all documents, such as copies of messages, logs, etc., become the property of the County so that the history of the event can be reviewed and possibly steps taken to improve mitigation, response or improve policy planning.

NETS AND MESSAGES

RACES' training takes many different shapes throughout the year. Our ability to respond to different situations is viewed as an asset by the many organizations that we serve. We hold bi-monthly on-the-air training nets and a monthly meeting to go over operations and techniques. Members are expected to participate and maintain their training level.

On the air nets

Our on-the-air nets are all directed nets; That is, stations follow the directions of the net control station and use the guidelines that are outlined in our Standard Operating Guide. During our on-the-air nets, we practice the handling of messages using the Standard Message Form developed by the Emergency Management Office for all official messages. An official message is initiated by an agency or representative that will be responsible for handling any costs that may occur as a result of the message text. Most of our message handling, about 99%, will be in this form. There are other message forms that we may have to deal with such as the FEMA Form 213 and the ARRL Standard Message Form.

Because we serve governmental agencies, we do not utilize ARRL terminology, as it is geared to a different group of agencies. New York State RACES, however, does use the ARRL protocol for State RACES traffic. We do need to recognize the format and be sufficiently proficient to handle it.

Most of our traffic will be handled on VHF and UHF frequencies, although the HF bands will be utilized when needed. Modes of operation will be FM, packet and other digital modes for VHF/UHF and SSB and CW for HF.

MEMBERSHIP APPLICATION

Operating in a net

During net activation, all stations will follow the directions of the Net Control Station (NCS). The NCS is the traffic cop keeping the communication paths open and running in an orderly fashion. Generally, we try to keep all transmissions short and to the point. Remember, our transmissions are always being monitored by others, and some of them may use our comments for commercial reasons.

All messages, whether sending or receiving are to be copied just as they are given. We do not modify any message without authorization from the originator. We generally do not initiate any formal traffic. All formal traffic that is out going from the EOC will be prepared by someone in the Operations or Command positions. Informal or general traffic will be copied to a plain sheet of paper or a message logging form that may be in use at the time.

Accuracy is at the top of the list of achievement when copying or sending messages. There are checks for word count and the receiving station will review the content before accepting or "rogering" the message received.

Remember the ABC's of emergency communications are:

1. Accuracy – Repeat critical information. Acknowledge transmissions.

2. Brevity – Keep transmissions short and to the point

3. Clarity – When needed, use the standard phonetic alphabet to spell tricky words and use plain language, not "ham speak."

MEMBERSHIP APPLICATION

INTRODUCTION TO PACKET RADIO

I. What is packet radio?

Packet radio is a form of digital radio communications that has proven its value in emergency situations. It gets its name from the fact that information to be transmitted via packet radio is first broken down into a series of information packets. These packets are then transmitted individually to the receiving station and finally recombined after reception, into a duplicate of the original information. The transmission and reception of the packets is performed by radio equipment very similar to that used by other communication modes on the same frequency bands. For example, on the 2 meter band, the radios used in a packet radio station look very similar, or identical to, those used for FM voice communications.

A computer performs the conversion of the information to be transmitted into packets. These computers are usually modest personal computers, which may be obtained at little cost. Similarly, after the packet radio station has received packets, the computer reassembles the packets to reproduce the original, transmitted, information.

In order for the radio and computer to perform their functions in packet radio, a special interface device is required. This interface device is termed the terminal node controller (TNC). The TNC acts as a modem, in that it converts the analog output of the radio into a digital form used by the computer. It also performs the reverse function of converting the digital output of the computer into analog signals to be transmitted by the radio. Thus, a packet radio station is comprised of three major components: A radio transceiver and its antenna, a computer, and a TNC.

II. Why is packet radio so useful in emergency communications?

Compared to the customary voice modes of communications, packet radio has a built-in error correction technique that minimizes errors caused by radio noise, interfering signals, or propagation. Furthermore, this ability to correct transmission errors makes it possible for a series of radio operators to handle a message without introducing further operator errors.

Experience has shown that packet radio is better adapted to delivering long, complicated messages or lists of data. Once the operator has typed the information into a message, the packet radio system will handle it in an error-free manner. Additionally, such tactical messages can be printed out by the receiving station

and delivered as a hard copy, which is easier for the recipients to use and facilitates record keeping. Formal messages must be copied over to the Oswego County SMF01 form.

There are some types of information that should never be transmitted during an emergency, such as knowledge of fatalities or the medical condition of emergency personnel. However, when other sensitive information must be transmitted during an emergency, packet radio offers a modest increase in security over voice transmission, since technical knowledge and specialized equipment are required to monitor packet radio. Packet radio is so valuable to the mission of Oswego County RACES, that all members are required to be skilled in its use.

III. The Oswego County packet radio network

We have discussed packet radio by using the example of one packet radio station exchanging messages with another. Such messages can be exchanged more efficiently and reliably, and over a larger area, if several packet radio stations are linked through a packet radio network. These networks are very similar to computer wire networks, with the exception that radio links take the place of Ethernet or fiber optic links. Packet radio networks are made up of automatic relay stations, called digital repeaters (digipeaters or digis). In Oswego County, our emergency packet radio network currently consists of 5 digis connected by radio links on the 222 MHz and 440 MHz bands. Each of the digis features a User Port, which is a radio transceiver that listens on a specified frequency on the 2 meter band for any stations wishing to communicate through the network. An operator (the user), who wishes to send a message over the network, tunes his or her packet radio station to the 2 meter frequency monitored by the User Port of a nearby digi, and connects with that digi. At that point, the operator can send messages to any other station or facility (such as a bulletin board) that is connected with the network.

The Oswego County packet network consists of nodes located at the Emergency Operations Center in Fulton (K2QQY), Scriba (KA2AON), Hannibal (K1YHR), Clay (K2JFK), and Syracuse (N2MKH). This local network is, in turn, linked to a larger packet radio network that currently extends from western New York to New Jersey, Pennsylvania, and New England.

When our RACES unit is activated, packet operators may be assigned to one of several previously prepared sites where radio communications are almost always desired. These sites have permanent antennas installed for packet and voice operations. Some of them also have packet equipment installed. Other operators may use portable or mobile packet stations.

IV. Introduction to packet radio terminology

Operation of a packet radio station is easily mastered. In this section, some basic commands and jargon will be reviewed. A more in-depth discussion of packet operations will be found in the Oswego County RACES Standard Operating Guidelines.

A. **Node** and **Digipeater** (**digi**): The automatic packet relay stations that comprise a packet radio network. These terms are often used interchangeably, even though, in contemporary amateur radio usage, "node" refers to a packet relay station that is supported by TheNet networking software, whereas a "digi" is supported by PC FlexNet networking software. Basically, nodes or digi's are similar to computer servers. They receive digital packets and redirect them to their addressed destinations.

B. **Terminal Node Controller** (**TNC**): The TNC acts as a modem, in that it converts the analog output of the radio into a digital form used by the computer. It also performs the reverse function of converting the digital output of the computer into analog signals to be transmitted by the radio. Much like a computer modem, a TNC is an essential part of digital communications. Descriptions and operations are usually covered in the manual that comes with the unit. It requires a cable for connection to the computer and a cable to connect to the radio's microphone input and the audio output. With cables and radio connected, the digital world awaits.

C. **User Port** Each digi in a packet radio network features a User Port, which is a radio transceiver that listens on a specified frequency on the 2 meter band for any stations wishing to communicate with that digi.

D. **COMMANDS:**

- **C** <name of user port or next connection on the network> This is the "connect" command and is needed when starting out to communicate on the packet network.
- **H** This is the "help" command and it will cause the node or digi to list the various other commands for the site.
- **MH** This command will produce a list of other packet stations that have been "heard" by the digi to which you have connected.
- **Q:** The quit command. This will disconnect you from the digi with which you were last connected.

V. Conclusion

MEMBERSHIP APPLICATION

In this Introduction to Packet Radio, we have described packet radio, the components of a packet radio station, the uses of packet radio in emergency communications, and the concept of a packet radio network. Finally, some common packet radio terminology was reviewed. You will receive training in the operation of a packet station, at which time the more detailed information, contained in the Packet Radio section of the Oswego County RACES SOG, will be reviewed.

Incident Command System

The Department of Homeland Security has decreed that all emergency responding organizations, organizations having emergency response plans and emergency management offices to be trained in, and to use when responding to an emergency, the Incident Command System. All responders are expected to complete the ICS 100, Introduction to the Incident Command System and IS 700, National Incident Management System. Both coursed are taught in a classroom environment and the nearest class can be found at the NY State web site, www.nysemo.state.ny.us. Follow the links to training and then to the calendar. The coursed are also available as home study courses from the FEMA web site, http://training.fema.gov/EMIWeb/IS. Copies of your certificates of completion are kept at the EMO to assure that training has been met.

Expanding your knowledge base

The Federal Emergency Management Agency has available a number of independent home study courses that will expand your knowledge of the workings of the many parts of emergency preparedness.

The internet address for these programs is http://training.fema.gov/EMIWeb/IS

A sample of what is available:

IS-2 Emergency Preparedness.

IS-3 Radiological Preparedness, USA

IS-5 Hazardous Materials: A Citizen's Orientation

IS-100 Introduction to the Incident Command System

IS-200 ICS for Single Resources

IS 195 Basic Incident Command System

IS-271 Anticipating Hazardous Weather and Community Risk

IS-292 Disaster Basics

IS-700 National Incident Management System

IS-800 National Response Plan

MEMBERSHIP APPLICATION

There are many more courses and you are encouraged to try them. These are online courses and you may take the exam more than once. If you complete any courses, please give the Radio Officer a copy of your certificate so that it can be added to your record.

NEW MEMBERS

New members are required to attain certificates of completion for ICS-100, Introduction to the Incident Command System and IS-700, National Incident Management System. These may be obtained in local classes held periodically in Oswego County or taken on line at the FEMA Home Study web site.

New members must also complete a class in Radiological training during the first year.

The sequence of call out upon the request of the Emergency Management Office will start with the Active roster, then the Reserve roster to fill out the needed operators.

The Active roster will be comprised of those that meet the following criteria.

1. Attend at least 4 of the regularly scheduled formal Wednesday night meetings.
2. Participate in at least 10 scheduled net sessions: the Sunday night on the air meetings and/or the scheduled packet nets.
3. Participate in at least 2 EMO sanctioned drills.
4. Participate in other activities as may be designated by the Radio Officer.

Active members will be equipped with a pager and be listed in the first call Active roster.

The Reserve consists of those that are unable to participate at the more vigorous level, but do make an effort as circumstances permit.

Reserve members will be issued a desk top tone alert monitor and be listed on the Reserve roster.

MEMBERSHIP APPLICATION

QUESTIONAIRE

Name:_____Date_____

Please circle the letter of the best answer.

1. Is RACES part of the ARRL?

    A. Yes

    B. No

2. Amateurs radio emergency communications provide:

    A. Communications on VHF only

    B. Flexibility

    C. Independent operations

    D. Hats and shirts with their call signs

3. During emergencies, access to the EOC is by:

    A. Call sign badge

    B. Letter requesting you presence

    C. Picture ID issued by the EMO.

    D. Driver license picture ID

4. Official messages are?

    A. Ones that only come from the ARRL.

    B. Initiated by an agency or its representative.

    C. Discarded after copying.

    D. Not really "official", just a good place to write stuff down.

5. The Net Control Station:

    A. Monitors what is going on

    B. Calls CQ, CQ, CQ to get a net started

    C. Acts as a traffic cop

    D. Is an old long winded codger.

6. The Dose Assessment Room at the EOC

   A. Hands out aspirin during emergencies

   B. Collects data from libraries

   C. Measures amount of food being used.

   D. Collects data from field teams

6. The A, B, C's of emergency communications are Accuracy, Brevity and ?

   A. Composure

   B. Clarity

   C. Complexity

   D. Compromise

7. The packet TNC

   A. Acts as an interface device between a radio and a computer.

   B. Converts digital signals to analog signals

   C. Converts analog signals to digital signal

   D. All of the above.

8. Packet is good for transmitting sensitive information because

   A. Digital communications is more secure than voice.

   B. It is easier to type a message than to say it.

   C. Scanner listeners can't hear the packet signals.

   D. The typist never makes a mistake.

9. The packet command "C" means

   A. Call.

   B. Connect.

   C. Close.

   D. Condition.

OSWEGO COUNTY EMERGENCY COMMUNICATORS
MEMBERSHIP APPLICATION
(NEW YORK - UNIFIED EMERGENCY RADIO SERVICE APPLICATION)
Radio Amateur Civil Emergency Service

LAST NAME	FIRST	M.I.	RACES ID #

ADDRESS	CITY	New York	ZIP

PHONE(A/C)	HOME	WORK	CELL	PAGER

OCCUPATION	EMPLOYER

DATE OF BIRTH	U. S. CITIZEN?	MILITARY STATUS (NONE) (ACTIVE) (RESERVE) (VET)(N. G.)

AMATEUR CALL	CLASS	EXIP. DATE	COMMERCIAL LICENSE	EXIP. DATE

OTHER AFFILIATIONS (Check all that apply**)**

ARRL ☐ MARS ☐ SKYWARN ☐ CAP ☐ REACT-☐ OTHER-

OPERATING SKILLS (Check all that apply**)**

CW ☐ HF DIGITAL ☐ VHF PACKET ☐ SSTV-☐ ATV ☐ SATELLITE ☐

E-MAIL ADDRESS

LIST ANY SPECIAL EQUIPMENT OR SKILLS YOU POSSES THAT MIGHT BE HELPFUL IN TIMES OF AN EMERGENCY AND/OR COMMENTS. ALSO LIST ANY NIMS CERTIFICATES THAT YOU POSSESS.

I ACKNOWLEDGE AND AGREE TO A LIMITED BACKGROUND CHECK AS MAY BE REQUIRED	INITIAL	DATE

XXXXXXXXXXXXXXXXXXXXXXXXXXXXX(Do not write below this line)XXXXXXXXXXXXXXXXXXXXXXXXXXXXX

I CERTIFY THAT _____**IS AN ENROLLED VOLUNTEER AND HAS AN ASSIGNMENT IN THE OSWEGO COUNTY EMERGENCY COMMUNICATORS/RACES, FOR THE OSWEGO COUNTY EMERGENCY MANAGEMENT OFFICE**

SIGNATURE OF EMO OFFICIAL	DATE	TITLE

Equipment Survey

EQUIPMENT AND BAND	HOME STATION	PORTABLE	MOBILE	PORTABLE ANTENNA/TYPE
HF (80 thru 15 mtrs)				
Digital HF				
6 Meters				
2 Meters				
220 mHz				
444 mHz				
VHF Packet				
ATV				
CB				
Other				
BACKUP POWER	PORTABLE	HOME	SIZE	
Battery				
Generator				
JUMP KIT	24 HOURS	48 HOURS	72 HOURS	LONGER

Name_____Call_____