The RAC Emergency Coordinator's Manual

Edited by
Doug Leach, VE3XK

Modified by Bob Cooke, VE3BDB

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TABLE OF CONTENTS

1 – INTRODUCTION

1.1 Welcome!

As an Emergency Coordinator (EC) or District Emergency Coordinator (DEC) in the RAC Amateur Radio Emergency Service (ARES), you have accepted one of the most challenging yet rewarding positions in the RAC Field Organization, if not in amateur radio itself. The RAC Emergency Coordinator's Manual is intended to help you acquire, develop and refine the skills which you need to function effectively in serving the public through amateur radio communications.

It takes a special person, a radio amateur with a strong desire to serve the community, to volunteer to become an EC. A truly effective EC, however, combines this desire with the ability to follow through and get the job done. By appointing you EC, your Section Manager and Section Emergency Coordinator have expressed implicit confidence in your abilities and your commitment to public service. This Manual presents many examples to aid you in getting the job done. If you need guidance on a particular matter, don't hesitate to consult your RAC Section leadership for guidance. The RAC Field Organization works best when we all work together. Certainly the EC position will test your mettle; if the function were easy, the title of Emergency Coordinator would not carry the respect it now has. (Please note that since the duties and responsibilities of the EC and the DEC are closely associated or overlapping, virtually all of the information in this Manual is applicable to both EC and DEC)

Your EC role is important to you, the ARES members you direct, the agencies you serve and your community. Your dedication to your responsibilities as EC today may indeed determine the safety of your neighbours tomorrow. Plan your response--prepare your response--respond. RAC congratulates you for accepting the appointment of EC and wishes you the very best in this important endeavor.

1.2 Purpose

The purpose of this Manual is intentionally quite straightforward. In addition to guidelines and procedures, this manual describes how other ARES units are operating, giving you enough information to adapt or improve upon the material to fit your particular circumstances. In short, the Manual is meant to make you a better EC and to assist you in better serving the public. The final result, of course, depends on you.

Obviously the Manual cannot anticipate every contingency that you may encounter in your tenure as EC. However, every attempt has been made to provide you with the tools you may need to perform appropriately. Working with your Section colleagues in the RAC Field Organization to address specific problems, as well as administrative support (such as this Manual) from RAC, will go a long way toward making your EC toolbox complete!

Amateur radio public service efforts must continue to grow in both quality and quantity. To achieve this, knowledge and experience must be shared for the benefit of all. The RAC Emergency Coordinator's Manual is an important step in this sharing process.

1.3 Acknowledgments

The original edition of this Manual, published in 1984, was compiled in a rather unique fashion. Michael R. Riley, KX1B, former Public Service Manager at ARRL HQ (and now Associate, Disaster Communications, at the American Red Cross) traveled across the United States gathering information from dedicated radio amateurs just like you. These fact-finding missions paid off handsomely. These dedicated individuals enthusiastically offered their time and ideas with one goal in mind: To get the information to you.

The work of many and their devotion to emergency communications and to ARRL is evident. Their input laid the cornerstone for this Manual. The remainder, by Mike and then Deputy Communications Manager Robert Halprin, K1XA, involved evaluating mountains of information, picking the best of the best, incorporating other material, and arranging it all in a logical format. This Manual, in its initial format and subsequent editions, constitutes a fresh start, with a new outlook on the modern role of ARES. As a popular song said, "the times, they are a changin'." ARES has changed as well, from the creation of the ARRL Emergency Corps in 1935 (the precursor of ARES) to the era of solid-state compact VHF equipment and repeaters, now to the implementation of digital modes and other high technology for improved emergency response.

The RAC editor thanks the original contributors and editors, and also ARRL for their kind permission to adapt the ARRL Emergency Coordinator's Manual to the Canadian emergency preparedness and response structures.

Contributing to the Canadian version were VE1CH, VA3PM, VE6AFO and VE3XK.

1.4 Emergency Preparedness Structure in Canada

In order to function effectively, it is important that the Emergency Coordinator understand the emergency preparedness and response structures that have been established to deal with emergencies or disasters in Canada. While many of these structures are similar to those in place in the United States of America, there are also significant differences which impact on the role of the Emergency Coordinator.

The following paragraphs in this chapter will explain the functions of the various agencies that have been established, at all levels of government, to deal with emergency or disaster situations.

Throughout these paragraphs references are made to specific emergency preparedness/response organization names at the various levels of government. It is important to note that these references are examples only. While the names and functions may not be exactly the same in all municipalities or provinces of Canada, the legislation creating these bodies is very similar.

1.5 Emergency Preparedness at Home

Emergency preparedness literally 'begins at home' with the individual and his/her family. It begins when parents teach their children how to telephone for emergency assistance. Numbers for the local fire and police service, ambulance and the poison control centre are but some of the numbers that should be readily available in the home, where 9-1-1 service has not yet been established.

In addition, parents must explain to children the dangers associated with fire and the precautions to be taken in the event of a fire or a lightning strike. Many families also teach their children escape routes from their homes and contact points where family members can meet and be united after the emergency situation is over.

1.6 Municipal Response

When a disaster situation has reached the level where it has the potential to have serious consequences for a community, the level of response escalates upward and becomes the responsibility of the local municipal government. A toxic chemical spill requiring mass evacuation of citizens is but one of many examples of a situation where local government officials would become involved. In order to prepare for the widespread intervention of municipal officials, municipalities pass by-laws and appoint a person to be responsible for the preparation of contingency plans for emergencies. Over 90 per cent of emergencies are handled at the municipal level.

1.7 Municipal Emergency Preparedness

Although emergency preparedness and response structures vary somewhat from one municipality to another, most municipalities have a similar structure. Virtually all municipalities in Canada have enacted by-laws to deal with emergency preparedness and response. These by-laws usually provide for the appointment of a person to be responsible for coordinating preparedness initiatives and for preparing emergency plans and exercises. The title of the person so designated may be Emergency Measures Coordinator (EMC), Emergency Planning Officer (EPO), Manager - Emergency Planning (MEP), or a similar title. In smaller cities and towns, the person may be a volunteer or an "honorarium employee" who may be paid only when "activated". In larger cities the role may be split, with an Emergency Telecommunications Officer (ETO) appointed to handle only the emergency telecommunications functions. Throughout the rest of the book, the generic title used will be Emergency Measures Coordinator (EMC). Feel free to translate that to the term used in your municipality.

1.8 The Municipal Emergency Measures Coordinator Functions

The following are excerpts from Halifax Regional Municipality By-Law E-100, "respecting a prompt and coordinated response to an emergency" within the regional municipality.

The first part of the by-law lists the responsibilities of the municipal Emergency Measures Coordinator.

"5. (3) The *Municipal Emergency Measures Coordinator* shall:

(a) coordinate and prepare municipal emergency measures plans, training and exercises; and
(b) be responsible for ongoing public self-help education programs related to emergency preparedness;
(c) following activation of the municipal plan or a declaration of state of local emergency, prescribe, as necessary, duties to be fulfilled by employees, agents and volunteer fire fighters of the Regional Municipality; and
(d) perform such other duties as may be required by Council."

1.9 The Municipal Emergency Plan

Each municipality is encouraged by the province to produce an Emergency Plan. This may cover only that one community, or it may be a Regional (County) Emergency Plan. Very small communities are encouraged to form a group to produce an Inter-Municipal Emergency Plan. As noted above, the Emergency Plan is a major responsibility of the municipal Emergency Measures Coordinator.

1.10 Where Does the Emergency Coordinator Fit Into the Picture

In virtually all communities in Canada, amateur radio, *where it forms part of the local emergency plans,* is considered to be a volunteer community resource. As such, it comes under the jurisdiction of the municipal Emergency Measures Coordinator (EMC). Amateur radio operators are generally considered to be a backup to, or a means to augment, existing telecommunication systems. In a disaster they may become the only telecommunications system available.

When initially offering assistance to the municipality, the proper approach for the Emergency Coordinator is through the municipal EMC. An initial approach to the police chief, fire chief or other service head is usually unproductive for a variety of reasons including: 1. The police, fire, ambulance or other officials do not usually understand what amateur radio is all about and can rarely appreciate how amateur radio could be utilized to assist them in an emergency. Most officials have difficulty contemplating telecommunication system failures. 2. Many municipal officials have little or no appreciation of the value of volunteers. They may consider them as untrained do-gooders who are likely to get under foot. 3. The terms 'amateur', 'ham' and 'volunteer' do not create a good mental image among some of these 'professionals'. To many senior officials, volunteers cannot be depended upon to be available when needed, regardless of their degree of commitment.

One of the principle tasks of the EMC is to anticipate where failure in telecommunications and other systems may occur and to make adequate provision for resolving such failures. If approached in a professional manner, the municipal Emergency Measures Coordinator will likely welcome a genuine offer of volunteer assistance by the Emergency Coordinator.

As noted above, the EMC is a busy person with broad responsibilities which go well beyond emergency telecommunications. He can recruit individual radio amateurs to form an emergency telecommunications backup group, and many EMCs have done exactly that. However, the EC can offer much more than just some "warm bodies". The ARES volunteers are a team, under the dedicated management of the EC, who will recruit, train, drill and supervise them. The EMC must first be reassured that the EC will be a willing management player on the municipal team, and not try to tell the EMC how to do the EMC's job, or otherwise second-guess him. Once that concern of the EMC is satisfied, he will welcome the management and supervision help of the EC. After all, without the EC at his side, the EMC would have the additional management responsibilities of the entire emergency amateur radio group, which would take time away from his many other management functions.

Once the ARES volunteers are accepted as part of the municipal team, the EMC will want to insure that they understand their role and have an acceptable level of training in order to pass official radio traffic as required. This traffic can take many forms, including administrative, logistic, and operational. (In Canada, the regulations on amateur radio message traffic content are relaxed during an emergency or simulated emergency exercise.) Traffic usually takes place between the disaster site or sites and the Emergency Operations Centre or such other sites as may be designated.

1.11 Advantages of This Approach

Once accepted by the EMC as a resource that can be depended upon in an emergency, the ARES members who are registered with the municipality are often automatically covered by Worker's Compensation. In some municipalities they are also covered by the municipal insurance policy.

Another advantage of establishing official standing with the EMC is that the ARES will often be provided with municipal identity cards. *Official* identity cards, signed by a recognized authority, may be essential for access to critical areas during an emergency or disaster. A RAC ARES identification card, while providing a sense of belonging to the ARES group, may not be "recognized" by emergency response officials (e.g. the policeman at the disaster site).

Both the insurance coverage and identification card issues must be discussed with the municipal EMC, as part of the terms of reference between the EC and the municipality. These two issues may be included in a Memorandum of Understanding or in the municipal Emergency Plan, or an appendix to it.

1.12 Provincial Emergency Preparedness

With the exception of one or two provinces in Canada, virtually *all* contact between amateur radio operators will be at the municipal level. However, each province and territory in Canada has enacted legislation creating an

organization responsible for emergency preparedness/planning. Like municipal organizations, these emergency measures organizations are similar in their structures, roles and responsibilities from one province to another.

Appendix IV contains a list of provincial agencies responsible in their respective province/territory for emergency measures, including those of their municipalities. The Emergency Coordinator who has difficulty locating the municipal EMC may contact the provincial emergency measures agency who will advise the EC who to contact at the local or neighbouring municipality. An EC with access to the Internet will also find information on municipal Emergency Measures personnel usually located under 'municipal government' for the city or town in question.

1.13 Emergency Preparedness Canada

The federal agency responsible for emergency preparedness in Canada is Emergency Preparedness Canada (EPC). While virtually all amateur radio assistance to government will be conducted at the municipal or provincial levels, Emergency Coordinators should be aware of EPC and its national responsibilities. EPC regional directors or members of their staff may also be available to speak to amateur radio clubs and to help spark an interest in ARES participation. Appendix III contains a list of the EPC addresses.

1.14 EPC Mission and Functions

Some of the highlights of an Emergency Preparedness Canada fact sheet are listed below:

"EPC's mission is to safeguard lives and reduce damage to property by fostering better preparedness for emergencies in Canada. The *Emergency Preparedness Act* provides a statutory basis for effective civil emergency preparedness, and for cooperation between federal and provincial governments in this area. The *Emergencies Act* enables the federal government to provide for the safety and security of Canadians during national emergencies. These are: public welfare emergencies, public order emergencies, international emergencies, and war."

"To fulfil its mission, EPC participates in a wide range of activities to ensure that Canada is prepared to deal with all types of emergencies. Some of these key activities are: Federal Civil Emergency Preparedness Planning, Federal-Provincial-Territorial Cooperation, International Cooperation, Education and Training, Research and Special Projects, Emergency Operations and Public Information."

"Through its Government Emergency Operations Coordination Centre (GEOCC) in Ottawa, EPC maintains an around the clock monitoring and information centre of actual, potential and imminent disasters. The GEOCC tracks indicators of emergencies and circulates advisory information on potential and actual emergencies that have implications for federal government and provincial authorities. The GEOCC is equipped and prepared to become the core of a federal emergency management system in the event the need arises."

"Through its Education and Training facilities at the Canadian Emergency Preparedness College (CEPC) in Arnprior, Ontario, more than 2,000 participants from all provinces and territories and from Federal government departments receive a variety of training each year. Over the course of the past number of years, many amateur radio operators have attended the Telecommunications Management Course at Arnprior. Many of these amateur radio operators are affiliated with their local emergency measures organizations in their home communities and are sent to CEPC as representatives of local EMOs. Most are volunteers whose expenses are paid by CEPC."

Persons wishing to participate in training courses at the CEPC must be *nominated* by their local Municipal Emergency Measures Coordinator, and have the nomination forwarded to the Provincial Emergency Measures agency which then forwards the nomination to EPC. Every attempt is made to include students from all Provinces and Territories on all courses. ***Do not*** make application directly to CEPC. The application will be rejected.

1.15 Industry Canada Role

Industry Canada is responsible for developing and maintaining civil emergency plans for the industrial production of goods and services, and also for telecommunications.

1.16 Typical Emergency Operations Structure

There is often confusion in the minds of amateur radio operators and others as to how emergency operations are carried out when a disaster occurs. While there are some differences from one jurisdiction to another, there are generally more similarities than differences. The rest of this chapter describes how emergency operations are carried out and the role that is or could be played by amateur radio operators.

1.17 The Four Assistance Phases in a Disaster

Although this is not a standard throughout all provinces and all municipalities, most municipalities recognize *four* assistance phases in relation to disasters. These phases are:

Phase 1 - Preparedness - This is the period in which emergency plans are drawn up and tested and other arrangements are made to deal with a disaster should one occur. It is during this phase that both primary and secondary Emergency Operations Centres (EOCs), are established and arrangements made for mutual aid. The prudent municipal EMC will identify both human and materiel resources that can be called upon to provide assistance. Training and exercising of plans are major parts of the preparedness phase.

Phase 2 - Immediate Response - The immediate response phase begins with the onset of the particular emergency/disaster situation and remains in effect until initial recovery begins. This period can be from a few hours to 30 days as in the case of the National Earthquake Support Plan for British Columbia. It is during this phase that 'responders' are activated and the emergency plan implemented.

Phase 3 - Initial Recovery - The initial recovery phase follows the immediate response phase and sometimes overlaps with it. It is during that period when temporary installations are made prior to the commencement of Phase 4.

Phase 4 - Long-Term Restoration - Once the emergency/disaster is over, long-term restoration is commenced. This can include such things as restoration of transportation and telecommunications systems, rebuilding of damaged equipment etc.

1.18 ARES Involvement

It is during Phase 1 and Phase 2 (and maybe part of Phase 3) that an ARES group likely would be involved. Without proper training and an understanding of the processes and responsibilities of the various agencies, the unsolicited offer of assistance to municipal authorities after an emergency response is underway may be viewed as being part of the 'problem' rather than as part of the 'solution'. The EC must establish the necessary links well in advance of a disaster. His contact must be first with the municipal EMC and then with the other emergency response and relief team members. The objective of that groundwork must be that the EC and the ARES group are added to the callout list and then are written into the municipal emergency plan.

1.19 Emergency Operations

Disasters come in a variety of types and sizes each requiring a specific type of response. There are, however, certain basic elements of the response initiative that are common to virtually all major emergencies or disasters. Some of these are as follows:

Designated Disaster Area(s) - For purposes of dealing with the problems created by a disaster, there are always one or more 'designated disaster areas'. These are usually the areas that are considered to be directly affected by the disaster.

Site Manager - There is always a 'site manager' who is usually appointed by the City Manager or Mayor to be in overall charge of the disaster site. Where several sites are involved, there will be a site manager for *each* site. All disaster related initiatives at the site go through the site manager.

Emergency Operations Centre (EOC) - In virtually all disasters an EOC is established. That EOC is generally a pre-designated room (sometimes a specially prepared board room at city hall) where senior officials of participating departments meet to coordinate the response initiative and support those at the disaster site. They do not tell the site manager what to do - they facilitate and coordinate the response efforts of those emergency officials at the site.

1.20 Telecommunications

Telecommunications between the disaster site and the Emergency Operations Centre (EOC) are critical. Without vital telecommunications links, it is impossible for the EOC to know what is going on, let alone coordinate activities. These telecommunications facilities are normally provided through the systems operated by the responding agencies i.e. Police to the EOC through the police radio system, Fire to the EOC through the fire radio system. It is customary for the EOC to have telecommunications facilities at their disposal to communicate with the agencies involved.

In recent years, Municipal EMCs have adopted cellular telephones as a backup to the telecommunication facilities of the primary responders. However, where cellular facilities are not yet available or likely to be overloaded, the EMC often tries to minimize telecommunications problems by having alternate telecommunications facilities available. These may take the form of rented commercial radios operating on non-amateur frequencies.

1.21 The Amateur Radio Role

Amateur radio operators, who understand the process and are properly trained and regularly exercised, can be of tremendous assistance to the Municipal Emergency Measures Coordinator. This requires that good relations and trust have been established in advance and a proper plan is in place detailing what is to be done should amateur radio operators be called out. A Memorandum of Understanding (MOU) may be put in place to formalize the role to be played by the EC and the ARES members. This may include an Emergency Telecommunications Plan prepared by the EMC, or by the EC in cooperation with the EMC. (See Chapter 9 for a model plan.)

When properly trained in formal message handling, amateur radio operators can be used to transmit a wide variety of messages on behalf of participating agencies - particularly those who do not have their own telecommunications resources. An example of such messages could include operational messages in which equipment needed at the site is requested from the Public Works department. Logistic and supply messages are often necessary to arrange for food and supplies needed at the site. Personnel and administrative messages dealing with the replacement of shift workers is also important. Messages on behalf of relief agencies may be of lower precedence than those originated by municipal emergency response groups and therefore must await the clearance of higher precedence traffic at a single busy radio position. The EC may be able to provide one or more additional teams who can support the Red Cross and other relief agencies using different operators and different frequencies. Such arrangements must be made in advance of the need, and approved by the groups concerned - especially the Municipal EMC.

1.21 Independent Emergency Measures Amateur Radio Groups

In some communities, independent emergency measures amateur radio groups have been established to work with the municipal Emergency Measures Coordinator. In such cases, the ARES Section Emergency Coordinator should offer the manager of that group an EC appointment, for the mutual benefit which this would provide. If this appointment cannot be negotiated for some reason, formation of a parallel ARES organization is probably counter-productive. It is far more constructive for the willing volunteers to make themselves known to the municipal EMC.

1.22 Summary

There is clearly a place for amateur radio operators in emergency operations as long as the details are worked out in advance, they are added to the municipal emergency callout list, and then become written into the municipal emergency plan.

The following chapters describe the functions of the Emergency Coordinator and the ARES members. You will read how those functions are applied in the context of the Canadian emergency structure. The objective is to produce both maximum group effectiveness. But it should also produce maximum satisfaction of the ARES team, in this most important support of their community.

2 - THE RAC FIELD ORGANIZATION

2.1 General

RAC makes providing emergency communications capability an objective of its Field Organization. ARES is the vehicle for accomplishing this. More information on the emergency communications can be found in the ARRL Public Service Communications Manual (FSD-235). In general, material in that booklet will not be repeated in this Manual unless necessary for clarity or emphasis.

2.2 Field Services

ARES functions primarily as a local organization with local control of activities under the aegis of the elected RAC Section Manager (see Fig 2.1). The RAC Field Services Manager supplies support assistance. This support help includes: effecting policies as delineated by the Board of Directors, supplying the EC with forms and training materials necessary to effectively do the job, recognition with certificates and documentation in TCA, advice where requested, and maintaining liaison at the national level with the government and user agencies.

2.3 Section Manager (SM)

Your RAC Section Manager (SM), a full RAC member who is elected by other RAC full members in your Section, is the overall manager, the "boss" of all RAC Field Organization activities in the section. These activities include emergency communications, message traffic, and on-the-air bulletins. The name, address, and phone number of each SM in the RAC Field Organization appear every month in TCA page 2.

The SM appoints Section-level assistants to administer the specialized functions mentioned above. With respect to emergency communications and ARES, the SM appoints the Section Emergency Coordinator.

2.4 Section Emergency Coordinator (SEC)

There is only one SEC appointed in each RAC section. The SEC (or SEC candidate) must be a RAC Full Member. The SEC duties are to:

1) Encourage all groups of community amateurs to establish a local emergency organization.
2) Provide recommendations to the SM on all Section emergency policy and planning, including the development of a section emergency communications plan.
3) Cooperate and coordinate with the Section Traffic Manager so that emergency nets and traffic nets in the section present a united public service front, particularly in the proper routing of Welfare traffic in emergency situations. Cooperation and coordination should also be maintained with other Section leadership officials as appropriate.
4) Recommend candidates for Emergency Coordinator and District Emergency Coordinator appointments (and cancellations) to the Section Manager and determine areas of jurisdiction of each amateur so appointed. At the discretion of the SM, the SEC may be directly in charge of making (and canceling) such appointments. In the same way, the SEC can administer the Official Emergency Station program.
5) Promote ARES membership drives, meetings, activities, tests, procedures, etc, at the section level.
6) Collect and consolidate EC (or DEC) monthly reports and submission of monthly progress summaries to RAC HQ. This includes the timely reporting of emergency and public safety communications rendered in the section for inclusion in TCA.
7) Maintain contact with other communication services and serve as liaison at the Section level with all agencies served in the public interest, particularly in connection with provincial and local government, Emergency Measures, Canadian Red Cross, and so on.

2.5 District Emergency Coordinator (DEC)

The DEC is appointed by the SEC to supervise a District of EC jurisdictional units. The DEC (or DEC candidate) must be a RAC Full Member. The duties of the DEC are to:

1) Coordinate the training, organization and emergency participation of each EC in the area of jurisdiction.
2) Make local decisions in the absence of the SEC or through coordination with the SEC concerning the allotment of available amateurs and equipment during an emergency.
3) Coordinate the interrelationship between local emergency plans and between communications networks within the area of jurisdiction.

FIGURE 2 - 1 RAC FIELD ORGANIZATION

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                    ┌──────────────────────────┐
                    │  Field Services Vice      │
                    │  President                │
                    └──────────────────────────┘
                                 │
                    ┌──────────────────────────┐
                    │  Section Manager          │
                    │  (SM)                     │
                    └──────────────────────────┘
              ┌──────────────┴───────────────────┐
┌─────────────────────────────┐      ┌─────────────────────────────┐
│ Section Emergency Coordinator│      │ Section Traffic Manager     │
│ (SEC)                        │      │ (STM)                       │
│ (One per Section)            │      │ (One per Section)           │
└─────────────────────────────┘      └─────────────────────────────┘
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Field Services Vice President

Section Manager (SM)

Section Emergency Coordinator (SEC) (One per Section)

Section Traffic Manager (STM) (One per Section)

District Emergency Coordinator (DEC) (only some Sections)

Bulletin Manager (BM) (only in some Sections)

Emergency Coordinator (EC) (As many as appointed by SEC)

Official Bulletin Station (OBS) (As many as required by BM) (only in some Sections)

Assistant Emergency Coordinator (AEC) (As many as appointed by EC)

Net Manager (NM) (one for each NTS net)

Assistant Emergency Coordinator (AEC) (As many as appointed by EC)

Assistant Net Manager (ANM) (As many as appointed by NM)

Official Emergency Station (OES) (as many as required by SEC)

Official Relay Station (ORS) (as many as required by STM)
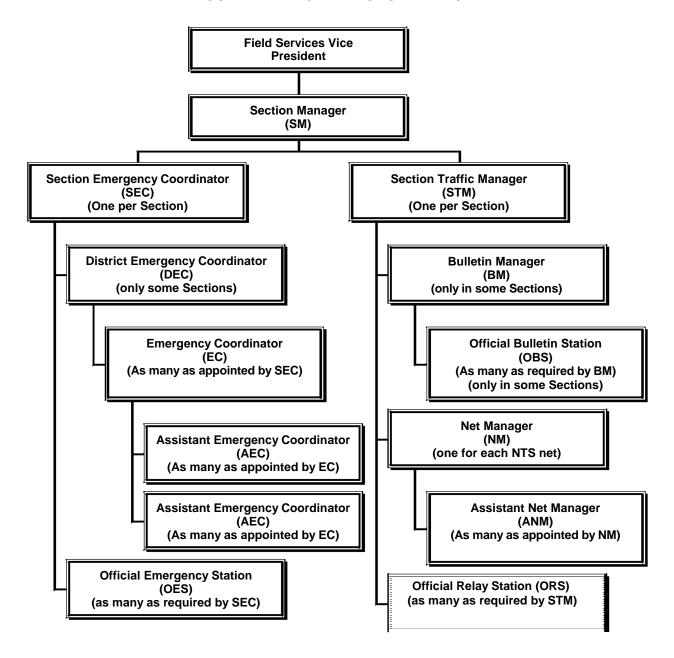
4) Act as backup for local areas without an EC and assist in maintaining contact with governmental and other agencies in the area of jurisdiction.

5) Provide direction in the routing and handling of formal emergency traffic.

6) Recommend EC appointments to the SEC.

7) Coordinate the reporting and documentation of ARES activities in the area of jurisdiction.

8) Act as a model emergency communicator as evidenced by dedication to purpose, reliability and understanding of emergency communications.

9) Be fully conversant in National Traffic System routing and procedures as well as have a thorough understanding of the locale and role of all vital governmental and volunteer agencies that could be involved in an emergency.

2.6 Emergency Coordinator (EC)

The main working level of ARES is headed by you--the EC. Appointed to a specific area of jurisdiction by the SM or SEC, you are responsible for all ARES activity in your area, not just one club or one service organization. Your job will be described in detail in the next chapter. You must be a RAC Full Member to be eligible to become an ARES EC.

2.7 Assistant Emergency Coordinator (AEC)

An AEC is selected and appointed by the EC. Each EC may have as many AEC positions as required to effectively manage the ARES unit. Possible duties of an AEC will be discussed in the following chapter. The AEC is strictly a local appointment, sometimes made on an ad hoc basis. Consequently, it does not require RAC membership, SM/SEC approval, or notification to RAC HQ.

2.8 ARES Members

Your ARES members are the lifeblood of your unit. All of the training, dedication and planning by you is for naught if your members are not *actively* involved in ARES. They are your main resource. Your ARES members are, of course, volunteers. This subject will be covered in depth in Chapter 5.

2.9 Official Emergency Station (OES)

Canadian licensed radio amateurs may be appointed OES by your SEC/SM, at your recommendation, if they are RAC members and interested in setting high standards of emergency preparedness and operation. A highly motivated AEC may be the ideal candidate for an OES appointment. The job description for the OES position is as follows:

1) Regular participation in the local ARES, if any, including all drills and tests, emergency nets and, of course, real emergency situations.

2) Ability to operate independent of commercial mains power including at least one-band mobile capability.

3) Must be fully acquainted with standard NTS and local municipal message forms and capable of using them in handling any third-party messages.

4) Report monthly to the EC/DEC or SEC.

Note: Recruitment of new hams and RAC members is an integral part of every RAC appointment. Appointees should take advantage of every opportunity to recruit a new ham or RAC member to foster growth of Field Organization programs and of our abilities to serve the public.

3 - DUTIES OF THE EMERGENCY COORDINATOR

3.1 General

The general duties and responsibilities of an EC include:

1) Establish a viable working relationship with all the municipal Emergency Measures Coordinator and the various private agencies in the ARES jurisdictional area which might need the services of ARES in emergencies.
2) Promote and enhance the activities of ARES for the benefit of the public as a voluntary, non-commercial communications service.
3) Manage and coordinate the training, organization and emergency participation of interested amateurs working in support of the communities, agencies or functions designated by the Section Emergency Coordinator/Section Manager.
3) Establish an emergency communications plan for the communities and agencies that will effectively utilize ARES members to cover the needs for formal message traffic.
5) Establish local communication networks run on a regular basis and periodic testing of those networks by realistic drills.
6) Establish an emergency traffic plan, if possible utilizing the National Traffic System as one active component for traffic handling. Establishment of an operational liaison with Local and Section nets, particularly for handling traffic in an emergency situation.
7) In times of disaster, evaluate the communication needs of the jurisdiction and responding quickly to those needs. The EC will assume authority and responsibility for emergency response and performance by ARES personnel under his jurisdiction.
8) Do all that is possible to further the favorable image of amateur radio by dedication to purpose and a thorough understanding of the mission of the Amateur Radio Service.
9) Additional duties and responsibilities of the Emergency Coordinator should include planning, organizing, coordinating and communicating.

3.2 Planning

1) Draft brief, specific ARES plans to fulfill community needs for emergency communications.
2) Develop training programs to fill special skill requirements of members as needed.
3) Establish a workable plan in coordination with other local two-way radio organizations for responding to non-emergency communications requests; e.g., walkathons, parades, special events.
4) Develop, implement and maintain a current "telephone tree" for use in alerting and activating ARES members in emergencies.
5) Establish regular, announced meetings of ARES members to plan programs and drills and to accomplish specific goals.
6) Develop a local ARES operating manual to include all essential operating aids and reference information, with annual updates.

3.3 Organizing

1) Appoint Assistant Emergency Coordinators (AECs) and issue AEC Certificates when needed. The AECs will be designated specific functions and/or agencies within the jurisdictional area.
2) Maintain current roster information on all enrolled ARES members. Record special skills and equipment useful in emergencies. Issue ARES and/or municipal identification cards and cancellation when appropriate.
3) Establish and foster such radio nets as required to maintain an active ARES unit, develop capable net control stations, transact a full range of traffic, and disseminate news and bulletins of value to the amateur population in general, and to ARES in particular.
4) Recommend OES candidates to the SM/SEC.

3.4 Coordinating

1) Establish effective liaison between ARES and emergency services' designees in local radio clubs and repeater associations.

2) Coordinate and cooperate with ECs of adjacent areas and sections.

3) Act as principal area representative from ARES to area coordinating councils of volunteer emergency response teams.

4) Through the SEC/STM, arrange for effective liaison and active cooperation with operators of the National Traffic System for both incoming and outgoing traffic during both normal and emergency conditions.

5) Develop and organize an emergency planning committee of all agencies that would be involved in a disaster in your jurisdiction with special emphasis on the agency with which RAC has an agreement - Canadian Red Cross.

3.5 Communicating

1) Prepare EC bulletins and releases for periodic issuance over radio nets and at meetings of amateurs to keep ARES members (and local amateurs in general) informed of ARES matters.

2) Conduct periodic meetings in person and on-the-air for the purpose of developing close coordination and a free exchange of information among ARES members.

3) Using the municipal Emergency Measures Manager, where possible, contact heads of agencies to be served to determine requirements and methods of introducing Amateur Radio into their operations. Communicate such plans to all ARES members.

4) Provide user-agencies with current contact information for alerting/activating ARES.

5) Submit monthly reports to the SEC/DEC (as directed) covering ARES news, achievements, events, problems, contacts with user agencies, etc.

6) Check into local and section nets regularly--on all modes possible-- to be accessible to the membership and be aware of their participation, keep members informed and support their efforts, and provide special bulletins of interest and importance to members.

7) Report regularly by radiogram, correspondence, or the official report form (FSD-21 1R) to the DEC/SEC on names, calls and telephone numbers of AECs and their areas of responsibility, public service events planned or impending, problems which should be of concern to the SEC/DEC, names and call signs of amateurs involved in communications, operations or exercises, and performance of individual members considered particularly noteworthy.

8) Following operations or exercises, provide prompt oral and written reports and critiques concerning user-agencies and ARES operations to agencies and SEC/DEC.

> Note: An Assistant Emergency Coordinator (AEC) can perform any of the above duties if so delegated.

3.6 Duties Delegated to an AEC

As an EC, you may appoint as many AECs as you need to provide additional leadership in your area. The AECs then become part of your Planning Committee. There are four main categories for an AEC: Operations, Administrative, Liaison, and Logistics. Below are some typical assignments you might give an AEC:

Operations AEC
-Net Manager for specific ARES nets
-Net Control Station for specific ARES nets
−Coordinator for ARES activities on a specific band
−AEC for packet radio/PBBS and/or digital modes
−Assembly point coordinator
−Operational assistant to EC during disasters
−Coordinator for subdivision of EC area
−"Team Captain" of ARES subgroup
-Novice AEC to encourage their participation

Administrative AEC
 −Recruiting
 −Public relations
 −Personnel records
 −Equipment inventory
 −Training
 −Reports

Liaison AEC
−Maintaining contact with assigned agencies
−Maintaining liaison with NTS
−Maintaining liaison with adjacent ECs

Logistics AEC
−Transportation
−Supplies--food, fuel, water, etc.
−Equipment--generators, batteries, antennas
−Repeater restoration--if damaged by disaster

Note: An AEC may have a pre-disaster assignment and a different assignment during disaster operations.

The general duties of any AEC should include:
1) Informing the EC of any developments in their region of responsibility.
2) Keeping records the EC deems necessary on their assignments and updating the records regularly.
3) Participating in as many ARES activities as possible.
4) Keeping the members of their assignment informed of ARES activities.

3.7 Image

As EC, you will soon learn that local amateurs will look to you for guidance on many problems of interest to amateurs in general -- not just pertaining to ARES matters.

As a highly visible RAC Leadership Official, your words and actions will reflect upon RAC. Your personal opinions could be misinterpreted by some as RAC policy. Some amateurs may even expect you to be available to answer their questions 24 hours a day.

If you get caught in situations such as these, it may be best to set your own personal policy regarding what you expect from the ARES members and what they should expect from you. This should solve many misunderstandings between you and your membership.

As an example, if you find that ARES matters are taking up your evenings--every evening--you may wish to set a time aside each week specifically for ARES. Inform your membership that you will be available during that time, and that time only (unless it is an emergency situation). Your membership will know that any questions they may have will be answered during your ARES time, and that any time other than that is reserved for your family.

When you have questions concerning ARES or RAC policy, contact your SEC/DEC.

3.8 What Does an EC Coordinate

When you become an EC you are supposed to coordinate things. Right? That means you don't do anything; you just coordinate what everyone else is doing! The only problem is somebody has to be doing something before you can coordinate it.

Even if you have not yet formed your ARES group, there are other emergency response groups already in operation. Before you can do any coordination with their activity you must first communicate with them. A meeting to share with each group the current and planned activities of the others is an excellent place to start. It is common experience that such an initial meeting does a good job of exposing what pieces are missing in the puzzle. Regular "coordination" or planning meetings result in order to discuss the progress towards a fully coordinated effort. For example, identification of your group is essential for access during a real emergency. The police stop potential looters at roadblocks. An ARES badge may mean nothing to them. Introducing your ARES group to the rest of the emergency response teams smoothes the way. Such meetings can discuss access limitations, required identification methods, and the myriad other obstacles which can impede a real emergency response These Emergency Preparedness meetings are an essential part of planning by the EC, AECs, the municipal Emergency Measures Coordinator and administrators of other served agencies.

It is often useful to hold joint training exercises with other groups to verify emergency preparedness. There is no substitute for practice. In fact, your municipal EMC will probably insist on joint exercises.

4 - ORGANIZING A LOCAL ARES GROUP

4.1 General

This chapter is for you, the EC, if you are in the process of forming an ARES group. If you already have an organized ARES group, many of the ideas in this chapter can be modified to increase membership in your present ARES unit.

If your area of jurisdiction is large, with several clubs and hundreds of amateurs to draw from, it may be wise to select several amateurs with leadership qualities to assist you in organizing your unit.

Every licensed amateur is eligible to be an ARES member. Those without an amateur license are not eligible. The amount and type of equipment owned by the amateur should not be considered a limiting factor. Amateurs with limited operating ability, because of license or equipment, can always be used as "second operators" or members of a "team". ARES members need not be members of RAC, though ARES members are encouraged to become RAC members so that they can stay informed of ARES activities and other amateur radio activities across the country.

4.2 Selecting Assistants

As an EC, you may have as many AECs as your local unit may need to function effectively. You may use your own judgment or solicit recommendations from capable amateurs prior to selecting your assistants. Keep in mind that not only must the AEC be a leader and a capable amateur, they must also be able to work smoothly with you.

Prior to selecting an AEC, it is important to determine exactly what responsibility each AEC will have. Once you've done that, pick your AEC accordingly. Don't get caught picking your AEC, then trying to make them "fit the job." See Chapter 3 for suggestions of AEC responsibilities.

Your AECs should be "self-starters," outgoing, and willing to follow your directions. Have them fill out the ARES Registration Form, issue them ARES membership cards and AEC Certificates, and your organization is underway.

With your AECs picked and their areas of responsibilities clearly defined, you may think that your next task will be recruitment. No. Your next task is to ask yourself, "Why should an amateur join my ARES unit?" Don't take this question lightly. Discuss this matter with your AECs as they will be recruiting new members also. There are obvious collective benefits to organizing an ARES group: public service, increasing knowledge of communications, ensuring the continuation of our service for years to come, and public recognition, to name a few. However, a prospective ARES member will want to know how ARES can help him--personally.

Once you and your AECs feel comfortable to answer the question, "What's in it for me?", you're ready to recruit.

4.3 Recruiting Members in Clubs

Local amateur radio clubs are excellent "pools" of potential ARES members. Club members tend to enjoy interacting with other club members--either in person or on-the-air. They are also more likely to own VHF equipment (such as 2-meter FM handhelds) to talk to other club members, and such gear is a definite necessity in an ARES unit. The club also probably meets regularly--a perfect time to discuss ARES before the group! Obviously you want to get these amateurs involved in ARES. How do you do it?

If you already belong to such a club, find out if ARES has been discussed before at a regular meeting. If it had been discussed, but no action taken, find out why. Possibly the person had a good idea, but didn't have the right information. Maybe ARES was looked upon as a burden--one more responsibility that would tie down club members' free time. You may even find that the club membership has changed significantly since ARES was first discussed. Last, but not least, there is the chance that the club members simply did not have a great deal of faith in the person who made the presentation. Again, if the club turned "thumbs down" to ARES in the past, find out why and plan your presentation accordingly.

If your club has okayed ARES, chances are that you've been delegated the responsibility of forming the ARES group. Later in this chapter is a sample format to use in presenting ARES to your club--and getting the members registered as ARES members (see Table 4-1).

If your club is already involved in emergency communications, count your blessings! Such an "involved" club should: identify what types of communications emergencies are most likely to occur; let local authorities know of your club's capabilities to assist and how to communicate with the RAC Field Organization; increase your club members' awareness and ability to deal with a crisis situation; and stand ready to assist local authorities, as appropriate.

If you are not already an EC, get yourself elected or appointed as "Emergency Coordinator" of your club. You must have this position of responsibility to (1) direct your club's efforts toward public service communications, and (2) gain recognition from the agencies you intend to serve.

Remember, however, that your formal appointment as an official ARES Emergency Coordinator must come from your SEC or SM. This can naturally follow the local club appointment with the concurrence of the SEC or SM.

Once your club recognizes your position, you can begin your recruitment efforts in earnest. Discuss ARES with other club members at every opportunity. Talk it up!

Note: If you have already selected your AECs, they may assist you during this organizational meeting.

When your club recognizes the importance of ARES activities and you, to coordinate efforts, explore the possibility of combined membership--joining the club automatically enrolls the person in the ARES group. Many clubs have been successful in this way.

If there are other clubs in your area of jurisdiction, don't leave them out! Those other clubs may just be anxious to hear your presentation during one of their meetings. You may possibly get some new ARES members as a result.

A list of RAC Affiliated Clubs is posted on the RAC web site, or can be obtained from RAC HQ. Of course, don't neglect those clubs which are not yet RAC Affiliated Clubs.

TABLE 4-1 TYPICAL STRUCTURE OF AN ARES ORGANIZATIONAL MEETING

(This may be modified into an ARES presentation)

1. Introduction.
2. Give a short talk on ARES explaining the organizational structure, how ARES has served the public in the past, and how your group intends to serve the public in future. Show the videotape "At Any Moment" (referred to in Chapter 8).
3. Question and answer session.
4. Hand out ARES Registration Forms (FSD-98R)
5. Collect completed ARES Registration Forms.
6. Hand out ARES ID cards (FSD-224R) to new members (Note: you may wish to bring a portable typewriter with you to type the new member's name and information on the ID card. Also several enterprising ARES units have added photographs and laminated the ID cards for a truly professional appearance.)
7. Set time and place for the next meeting.
8. Adjourn meeting.

4.4 Recruiting Members On-the-Air

You and your AECs should be alert at all times when you are on the air with local contacts to attempt to interest prospective members in registering with your ARES group. ARES nets in routine operation should have provisions in the net format for visitor check-ins. If a prospective member checks into the ARES net and shows an interest in joining, follow up by mail, phone or personal contact to register him.

Local non-ARES nets might also provide recruitment opportunities. Check into the net and mention ARES. Someone may show an interest. Keep a "high profile" in your capacity as EC when operating. You may be surprised at how many amateurs will want to discuss ARES with you.

4.5 Recruiting at Hamfests

Some ARES groups overlook this possibility because it is too obvious. If there is going to be a hamfest in your area in the near future, contact the club sponsoring it. Arrange to get a display booth and show up at the hamfest with a stack of ARES Registration Forms, information on ARES, and your greatest "selling tool"--a smile on your face! You may wish to coordinate the manpower at the booth, as well as expenses, with one or more ECs in your general area.

4.6 Recruiting at License Classes

Many Amateur Radio clubs sponsor one or more license classes annually. Contact the club and find out when and where the classes are to be held. Inquire as to whether or not they would like to have you give a short presentation on emergency communications and ARES to the prospective amateurs. The club will probably be happy to have a guest speaker for one of the classes.

When you speak before the class, hand out ARES Registration Forms to the students. You may wish to have those interested fill out the form, except for their call and the date, and hand the form back to you that night. When they get their license, they simply have to notify you and give you their new call sign which you fill in on their registration form, and they're an ARES member!

4.7 Recruiting using Direct Mail

The list of amateur radio station licences is on the ARAS web site. This may be downloaded and sorted by postal code so that you can create mailing labels. If you decide to use direct mail, a brief one-page letter explaining ARES, along with the name of someone to contact and a registration form, seems to work best (refer to Table 4-2). Enclosing an SASE should increase the chances of a prospective ARES member responding. A sample letter for recruitment purposes can be found later in this chapter.

4.8 Recruitment Summary

This chapter contains several ways to increase membership in your ARES group. There are many other ways, not listed here, which you may find work better.

Remember that recruitment is an ongoing process which ensures the life of your ARES group. Recruitment is extremely important--important enough that you may want to delegate recruitment responsibilities to one of your AECs as a full-time ARES job.

4.9 Organizational Meeting

As soon as possible, arrange a meeting of those who have indicated an interest in ARES or who have already registered. Pick a day, time and place which suits the greatest number. Remember that additional meetings for those who cannot attend the first one can always be scheduled.

The organizational meeting will serve as a "get acquainted" session. It will provide an opportunity to give more details about your plans, find out the capabilities of everyone there, and lay the groundwork for establishing ARES nets. As always, first impressions are important, so be as well prepared as possible to answer questions concerning ARES--and possibly RAC. Proper preparation pays off. Refer to Table 4-1 earlier in this chapter for a typical structure of an ARES organizational meeting.

4.10 Planning Committee

Once you've appointed the AECs in your group, you've formed your Planning Committee. The AECs will assist you in specific areas on which you've decided. Consequently, they are in an excellent position to advise you on subjects in that same area.

Your first Planning Committee meeting should take place soon after you've appointed the AECs. As your ARES unit grows in size, you may see the need to appoint additional AECs...which will increase membership in your Planning Committee as well.

At least two Florida groups, the Dade County (FL) ARES and the Palm Beach (FL) Amateur Radio Council, have evolved from Planning Committees into large-scale Emergency Preparedness Committees. These committees are comprised of amateurs, government officials, representatives of served agencies, the National Weather Service, and others. The Dade County group even has the Engineer-in-Charge of the FCC Field Office attending meetings.

In Dade County, presidents (or their representatives) of amateur clubs miles apart discuss matters of mutual concern during Planning Committee meetings. Because of the efforts of the committee members, English- and Spanish-speaking clubs share the same VHF spectrum in harmony. Communications plans for upcoming special events are presented with the intention of preventing the possibility of confusion on frequencies to be utilized. If one club needs additional operators to staff an event, the subject is brought up at the meeting. The Planning Committee ensures mutual understanding on these and other topics.

These monthly meetings also lay the groundwork for effective and professional cooperation during emergency and disaster conditions. The committee members are aware of the capabilities and limitations of their counterpart's organizations prior to a disaster.

When an emergency occurs and the assistance of ARES is requested, the EC begins the call-up procedures immediately. The emergency call-ups in Dade County are extremely efficient since the call-up is used to notify Emergency Preparedness Committee members of their meetings once a month.

After the call-up, the members meet on or monitor a local repeater for instructions. Those without VHF equipment inform the EC of their readiness by landline.

The nature of the emergency and the required course of action is broadcast by the EC or his representative on the repeater. Within minutes after the initial alert, the presidents of area amateur clubs and other public service oriented organizations have accurate information on the type of emergency and know whether or not their services are needed.

The possibilities of duplication of efforts, over-responding or under-responding, misinformation and lack of coordination are lessened by this highly effective committee.

The communications channels instigated by the committee don't end with the members themselves. Points of discussions, new ideas and possible new understandings of situations are brought back to each organization represented. Using the committee as a catalyst, the groups begin to learn more about each other. Amateurs of all backgrounds, as well as public service organizations, government officials, military personnel, law enforcement departments, pilots and educators have all joined the committee realizing that they can work much more effectively in an emergency by knowing more about each other.

4.11 Summary

Organization of your ARES group will probably be one of your most important tasks. Getting off "on the right foot" is essential if your group is to grow.

Many well-intentioned ECs have formed ARES units expecting great things only to see the group falter after a few months. Proper organization will prevent this from happening to your group.

Your ARES group must be organized in such a way that all amateurs are welcome, no member feels "left out," and everyone has a purpose for belonging. After all, the ARES group peforms best as a cohesive team. Lastly, all of your unit's members should realize that an effective ARES group is to their benefit, as well as to the benefit of their community.

TABLE 4-2 ARES LETTER OF INTRODUCTION

Dear   :

I am contacting amateurs in this area for the purpose of organizing/increasing membership in the Amateur Radio Emergency Service (ARES).

Radio Amateurs of Canada (RAC) sponsors the ARES, which provides emergency communications in time of need. Granted, most amateurs can provide some type of communications during a disaster, but ARES organizes our response.

You need not be a member of RAC to belong to ARES. You don't have to spend any money. You don't have to spend every other weekend training for a disaster. You only have to dedicate as much spare time as you want to public service.

Help Amateur Radio "pay its way." Please check into our ARES net which meets at_____ on _____ or fill out the enclosed ARES membership application and send it to me.
  _____
Thank you.

                        ~~Emergency Coordinator~~

5 - WORKING WITH VOLUNTEERS

5.1 Introduction

Volunteers are the lifeblood of ARES. They are difficult to find, more difficult to keep, and at times, difficult to work with. Volunteers come in a wide variety of shapes, colours, sizes, backgrounds, skills, experience, and levels of motivations. They have their own reason for participating and their own specific needs which must be met if they are to continue to volunteer. Their needs, abilities, and accomplishments determine the ultimate success or failure of ARES in your jurisdiction. Your task, as EC, is to discover and meet their needs while guiding them in the best use of their abilities. This helps them to achieve significant accomplishments in public service.

5.2 Who are Volunteers?

Volunteers are individuals who are willing to work with others to perform a necessary public service. They are human beings with human needs, goals, attitudes, abilities, strengths and weaknesses. Since volunteers will be the basic resource that you will be using, it will be to your advantage to get to know each of them as well as possible.

Generally, volunteers will do precisely what they want to do--no more--no less. It is up to you to convince them that the assignment you have selected for them is both needed and appropriate. Having their own likes and dislikes, it may be necessary to talk the volunteers into some assignments which are important though unpopular.

Volunteers must be convinced that what you are asking them to do is really needed. Volunteers don't like to be underutilized, and tend to disappear when kept cooling their heels for a significant length of time. They will work for long hours under the worst conditions as long as they can see the need for it. Most will do anything you ask as long as they're treated properly. If you mistreat or abuse them, they may not volunteer their help again.

5.3 Why They Volunteer

It would be physically impossible to discuss in this Manual every possible reason why people volunteer to join ARES. Generally speaking, volunteers join to satisfy a personal need. Some volunteers join to become a member of a group. Some join to become a "big wheel" in ARES. Some join simply because you asked the right question at the right time and at the right place. The majority of your volunteers, though, joined out of a desire to serve the public in a way they best know how: as communicators. These are the volunteers you should direct your efforts toward.

Find out why your volunteers joined ARES. You've got to find out what their needs are before you can attempt to satisfy them. The best way to find out why your ARES members volunteered is to ask them!

5.4 What Volunteers Expect From You

Your volunteers have a right to expect courteous, considerate, fair and impartial treatment from you. Courtesy is always in order; rudeness will cost you dearly. In addition to learning and compensating for their weaknesses and being tolerant of their faults, you must also consider their feelings. Don't forget that you are taking precious time from their families. They also have the right to expect you to make a reasonable effort to learn and apply the skills and techniques of disaster management. You will be expected to make mistakes, admit them openly, and learn from them as you grow into your new role. You will also be expected to keep them informed as to what is happening in ARES and why.

Unfortunately, some members will expect much more of you than they have a right to expect, and often more than you can do. They may expect you to change situations over which you have no control, force other volunteers to change their habits, provide them with privileged treatment or status, fire a useful assistant because they happen to dislike him, and other equally inappropriate actions. In short, they will tend to forget that you deserve the same treatment from them that they expect from you.

Each member has different job demands and family requirements, as well as other outside interests. This affects training and preparedness and is especially applicable to their availability in disasters, as some of them may be affected by the disaster. Some volunteers may join ARES and never be heard from again. Others will join and not find time for training, but will come out for disaster operations. The rest will be willing to take different amounts of training, and their availability for disaster service will change as their situations and interests change. Human traits are cyclic in nature and volunteers are no exception. Further, very few will be willing to take sufficient training to be able to lead, and even less will be willing to do the extra work. Remember that volunteers are individuals and should be treated as such.

5.5 The Cadre Concept

The "cadre concept" recognizes the variations in willingness to train for disasters and allows you to mitigate the problem by using a small, highly-trained and motivated group who will provide direction by example in a disaster. The concept is simple--you provide as much training to each member as he is willing to accept and absorb. Those who take the most training will usually be willing to assist you with the job of organizing and training the rest. They become the cadre of leaders--the nucleus of your ARES group.

This concept works simply because it takes maximum advantage of the fact that people are going to do exactly what they want to do. It operates on the assumption that no volunteer is worthless, that one day you may need all the volunteers you can get, and, finally, that you may have some claim on an amateur who carries an ARES card, while you have no claim on one who does not.

5.6 Keeping the Volunteer

Your volunteers will stay members of your ARES group if you make a dedicated effort to ensure that:

a) Your ARES training process is tailored specifically to the needs of your unit and the individuals who comprise it. Obviously your volunteers have skills which they are bringing to ARES, but increasing those skills and educating your volunteers in new skills will probably keep them interested in ARES.

b) You provide timely information to your ARES members. Keep them informed of ARES activities as a group. Don't tell one or two members and expect the rest to find out "on their own

c) You should be someone your members can turn to for assistance on ARES matters.

d) You should realize that, although some members may feel secure being given one responsibility and keeping that responsibility during their tenure with ARES, some members may enjoy being given different assignments. Those members who request different challenges may be your best AEC candidates.

e) You may wish to implement your own system of showing appreciation, recognition and rewarding of members for their services. Awarding certificates or having special occasions such as dinners are excellent means to reward your ARES members for a job well done.

5.7 Suggested Approaches

First, most volunteers don't respond well to orders. They will honor requests, particularly if you have time to include information on the need for that request. An example would be: "Bill, we need a replacement operator at Central High School shelter. Joe has to take his son to the doctor. Can you do it?"

Second, if you desire their loyalty, you must be prepared to give them yours. The responsibility for your ARES groups success or failure lies with you. Your loyalty must remain steadfast.

Third, do not criticize a member in public unless you absolutely must. People will respond better to criticism in private. Remember that their pride and dignity are at stake. If you must criticize a member in public, or in private, make it brief, make it positive if possible, and don't criticize the member personally--direct your criticism toward the person's actions.

Fourth, recognize that factions and cliques will develop within ARES as they do with any other group. You must not become identified with any subgroup within your ARES unit. Your impartiality will be questioned at times when it seems to members that you "always give Bill the best job."

Fifth, when a member of your group complains about another member's lack of knowledge or operating skills, keep in mind that some people simply learn quicker than others. In an emergency, you'll still want the member who is learning. You may wish to handle a problem such as this by asking the member who is upset to develop a training program in that area. Stress that his efforts will increase the effectiveness of the ARES unit.

Sixth, never discuss a member's weaknesses, faults or limitations on the air or in public. If someone complains to you publicly about another member, handle the situation as diplomatically as possible. If the conflict can be resolved by having the two members talk to each other, follow that route. If not, offer to discuss the problem privately. Your responsibility, as an EC in this situation, is to solve the problem--not to take sides.

Lastly, when you find that a member is causing more harm than good to your ARES unit, it is important that you are diplomatic in your actions while keeping the effectiveness of your group as your primary consideration.

5.8 Summary

Working with your volunteers is the most critical aspect of your job and will call for the most time and effort on your part. To work effectively with volunteers, you must first understand them and use that understanding to motivate them to do the job.

When you are leading your volunteers, you should not try to be "all things to all people." You must be a diplomat, a leader, a friend, an expert in your field, and an excellent listener. You probably won't be able to please all of the members in your group all of the time. However, you should attempt to please them whenever possible for the good of the ARES unit. Strive to "lead" your group, not simply "manage" it.

6 - ADMINISTRATIVE

6.1 General

Alongside your many operational duties as EC, you have administrative duties. These forms and reports may seem secondary to you now, but they will, in fact, assist you in performing your job under both routine and emergency circumstances.

The various forms and reports which you will be responsible for are, for the sake of convenience, listed under either "annual" or "as required" categories. Your SEC/DEC will determine when the "as required" forms are to be sent.

6.2 Monthly Administrative Duties

a) Begin an ARES membership roster listing each member's name, call, class of license, home and work addresses and phone numbers, equipment, availability, date of membership and any other pertinent information. Make this roster available to your AECs and general membership. You may wish to store this information on a personal computer which will aid in updating the data.

b) Keep an ample supply of ARES Membership Cards and issue them when needed.

c) Report to your SEC/DEC as required, preferably using the Monthly EC/DEC Report form.

d) Keep an ample supply of ARES Registration Forms and issue them as needed.

e) Issue certificates to AECs.

f) Keep an up-to-date inventory of all supplies and order new supplies as needed. A personal computer may aid you in keeping inventory.

g) Make Public Service Activity Reports when appropriate (this includes recommending outstanding and meritorious amateurs for Public Service Awards).

h) Keep an amply supply of Certificates of Merit and award them at your discretion.

i) When deemed appropriate by your SM/SEC, submit expense reimbursement form to your SM/SEC. Consult with them prior to applying for reimbursement to determine reimbursement policy in your section.

6.3 Annual Administrative Duties

Listed below are the reports which you must submit annually:

a) Submit your Canadian Simulated Emergency Test (CANSET) report to both SEC/DEC and FSM by year end.

b) Submit your EC Annual Report to both your SEC/DEC and FSM no later than yearend.

6.4 Forms Available from RAC FSM

Supplies you may request from RAC FSM for yourself and/or issuance to your ARES members include:

FSD-3R Listing of ARRL Numbered Radiograms
FSD-85R Net Registration Form
FSD-98R ARES Registration Form
FSD-124R Leadership Officials Requisition Form
FSD-1 56R Application for EC Form
FSD-210R Appointee Monthly Report Form
FSD-212R Monthly EC/DEC Report Form
FSD-224R ARES Wallet Membership ID Card
FSD-235 Public Service Communications Manual
FSD-256R Silent Key Report

CHAPTER SEVEN: TRAINING

7.1 Introduction

This chapter presents several ways to train your ARES group. Training your ARES group should be a continual process. Your goal should be to make each member an excellent communicator. But, what is an "excellent communicator?"

An operator may consider himself an excellent communicator if he can send CW at 50 wpm on a keyboard. He may think that regularly checking into your ARES net qualifies him as an excellent communicator. He may even think that his van which has enough radio equipment to be considered a "mobile Voice of America" makes him an excellent communicator. These qualities help, but our "Mr. Excellent Communicator" could probably use some training in procedures, operating practices and communication skills. Once he has mastered these skills, he can truly consider himself an "excellent communicator."

This may sound very basic, but training in these areas is essential if your ARES group is to be effective in an emergency. Remember: In an emergency, radios don't communicate, people do.

7.2 Team vs. Group Training

If you have a large ARES group or several members who are not available during regularly scheduled meetings or drills, you may wish to divide your group into "teams."

You should appoint a "team leader" (preferably an AEC) who will be responsible for the team. The team leader should be accessible 24 hours a day; if you can't locate them in an emergency, the effectiveness of the team is diminished. The team leader must also be available for "team leader meetings" you should call.

The key to the success of this concept is quality of your team leaders. If you have excellent leaders, this concept will work. If you don't, you may find yourself working harder to reach the same goals. On the other hand, small ARES groups can function effectively as one group. In all probability your newly-formed ARES group won't require team training, but as the group grows in membership, you may wish to reconsider. Both of these methods are meant to assist you in effectively training your ARES members.

7.3 Repeater Training

Get one of your more informed members to discuss local repeaters (what frequencies they use, autopatch facilities, (open or closed?) and their coverages.

While you probably have a good idea of what coverage your ARES repeater has, you may want to find out for sure. Schedule an afternoon for a repeater coverage check. Send your members out in different areas and request that they check into the repeater at pre-arranged times (i.e., every five minutes) or when they believe they are in a "bad spot." After the drill, compile the results and define your known repeater coverage on a map. Distribute the map to your members.

Your group may wish to offer similar services to other repeaters in your area of jurisdiction.

7.4 Traffic Handling Training

If one of your ARES members is involved with formal traffic handling on the National Traffic System (NTS), get them to discuss proper traffic handling procedures with the group. (For local traffic handling, as opposed to NTS outgoing/incoming traffic, it is usually necessary to use the standard message form in use by your municipality.)

After the discussion, you may wish to assign liaison duties to several of your ARES members, requiring them to check into your local or section NTS nets as representatives of your area of jurisdiction. By doing this, your ARES members will become accustomed to these nets and may give those NTS nets a much needed "outlet" for traffic destined for your area.

7.5 ARES Net Training

Ask the trustee of a repeater or repeater council if your ARES group can meet on the repeater and use the repeater in emergencies. Refer to Chapter 8 for hints on how to make your presentation. If at all possible, sign an agreement with the person or persons involved stating that the repeater may be used for net purposes and in emergency situations

without their prior approval. You won't have to locate a repeater trustee to get his approval in an emergency if you have a signed agreement in your possession.

Once you have the required approval to begin your ARES net, inform your members of the day, time and repeater you will be using.

Your net is the perfect vehicle to address your ARES group "en masse" and offer topics of discussion. You may also wish to practice traffic handling--both tactical (i.e., coordinating) and formal--on the net. Pass around the responsibility of being net control. Some nets have even held unrehearsed drills during the net or the EC has checked in with "EMERGENCY DRILL" traffic.

Your ARES net can be a weekly meeting where the members check in, make a comment, then check out; or it can be a lively get together for the purpose of ARES training. The ARES net is what YOU make of it!

7.6 Training at Club Meetings

At your club meetings (see Chapter 5), you should schedule topics of discussion, videotapes (see Chapter 8), drills and even speakers from served agencies, especially the municipal Emergency Measures Manager or ARES officials.

Don't limit your club meetings to ARES discussions. Many ARES groups design and build equipment which will increase their effectiveness in an emergency. One enthusiastic ARES member designed a VHF emergency antenna which the ARES group built and distributed. The antenna works better than a common handheld antenna and is perfect for use in hurricane shelters. Using these antennas, the ARES operators can transmit at low power for extended periods of time from their prearranged shelter. The antenna can be rolled up and stored in a pocket when not in use.

Intra-club contests will assist you in training your ARES group. For example, run a friendly competition among ARES members to find out who had the best equipped ARES "ready-box." The ready boxes may be surplus ammunition boxes purchased by the club. ARES members were given a list of equipment they may need in an emergency and given several weeks to collect the equipment. The ready-boxes--crammed with equipment – may be laid out on display at the next club meeting. Club members vote on who has the best equipped ready-box.

7.7 Basic Communications Theory Training

The RAC ARES Instructor's Training Manual was developed to provide the structure for a proper course for the members of an ARES group.

The following suggestions are intended to help you become a better operator whether in an amateur radio contest or on an ARES mission. As you will see, most of this material is directed toward phone operations. CW and digital operations are far better described in several other publications.

1)   To transmit in the voice mode, always remember to *talk across the face of the microphone!* It is unfortunate that TV shows don't use this technique when they present, for example, detective shows. Actually that mike the cop/actor appears to use is dead--they record him on a high fidelity system with a different mike. So to make the picture appealing, the actor holds the mike six inches away and talks directly into it. This is how bad habits are picked up! If you are using a push-to-talk mike, put your lips right at the edge of the mike and talk across it. If you have a fixed station microphone, it is still a good way to get crisp, clean speech across. Talking across the mike cuts down on sibilants, breath sounds, the "popping" of "P's" and similar sounds. This technique makes the communication more understandable.

2)   Speak slowly, distinctly, clearly, and do not let your voice trail off at the end of words or sentences.

3)   On FM, hold the transmit button down for a least a second before beginning your message. This will assure that the first part of the message is not cut off by a slow squelch system.

4)   Know what you are going to say before you push the mike button. Don't clutter the air up with: "Net Control, uh, this is VE, uh, Seven, uh, XYZ, and, uh will you call Mister, uh, uh, Black to uh, the radio uh, for Mister Green, uh, over?" It is very easy to confuse the whole transmission if the operator does not have the facts right on the tip of the tongue and ready to put out the message in a crisp and orderly fashion.

5)   Make sure you are not on the air with someone else. Listen before transmitting--the pause you hear from the Net Control Station (NCS) may be deliberate to allow two other stations to complete a transmission.

6)   Chewing gum, eating, and other similar activities tend to clutter up the clarity of your speech. Don't.

7) On 2-meter and other VHF bands, look for a receiving "hot-spot" site and use it, particularly when on the fringes of communications. Don't walk around talking while in communications fringe areas. Repeaters have much more power than your handheld. Even if you have a good signal from the machine, it does not mean you are good into the machine.

8) Under stress, many operators have a tendency to talk fast. Even if you are in the midst of the action, remember to talk slowly and clearly in order to get the message across correctly. ***Accuracy First. Speed Second.***

9) Avoid angry comments on the air at all costs. Also, obscene statements reflect on the Amateur Radio fraternity. Remember there are many "scanners" in use by unlicensed but interested people, including reporters, and your operating techniques are under observation all the time.

10) If you are relaying a message for another person, be sure you repeat the message exactly, word-for-word, as it is given to you. If it makes no sense to you, get an explanation before you put it on the air. Refer the message back to the originator for clarification.

11) Sound alert. Nothing destroys confidence as much as a bored or weary-sounding radio operator. If you are tired, get a relief operator.

12) Forget humor on the air during drills and obviously in real emergencies. A radio system suffers enough confusion without wisecracks and jokes. Amateur Radio may be a hobby to enjoy, but the ARES function is serious business and should be treated as such at all times.

13) Watch certain words. They sound almost like the opposite meaning. For example, "can't" almost sounds like "can," and with a poor signal--who knows. "Unable" is a better choice. Use "affirmative" instead of "yes."   Use negative" instead of "no." "Roger" is a good word. It means "message received," implying that it is understood. It does not mean "affirmative" or "yes." The use of Q signals on ARES voice circuits is not advisable! They are too easily misunderstood, rarely save time, and often result in errors.

14) Identification of units in a multi-station ARES network is a requirement under Industry Canada regulations. However, if the NCS and each of the outlying ARES stations give a complete identification at least once in a thirty-minute period during the contact, the use of abbreviated call-sign identification or tactical ID is acceptable. As an example, VE7XYZ can use "7XYZ" or "First-Aid 1" or "Command Central" as long as the complete call is given as VE7XYZ at 30-minute intervals during the contact and at the end of the communication.

15) Always identify your unit at the beginning of each transmission. The NCS, or anyone else for that matter, needs to know who is calling because voice identification may be difficult. Identify your unit again when the message exchange is completed, as required by the regulations.

16) ***The word "break" is never used unless there is an emergency.*** State your call letters to gain access to the net.

17) Remember that the strongest signal "captures" the receiver on FM. When two or more stations are on the air at the same time, confusion can result. Check to see that you are not overriding someone or blanking out their communications with your signal.

18) Do not act as a "relay station" unless the NCS, or another radio station, asks for a relay--and you can fulfill the requirement at your station.

19) When transmitting numbers (house numbers, street numbers, telephone numbers), always transmit the number sequences as a series of individual numbers. Never say numbers in combinations. Example: "12345 SW 148 Ave." is given as a series "one, two, three, four, five, south west, one, four, eight Avenue." Do not say: "Twelve three forty-five south west A-hundred forty-eight Avenue." There is much confusion when sending combinations of numbers.

20) There is no such thing as "common spelling" in ARES work. If there is a proper name to be transmitted, always spell it out using the ITU (International Telecommunication Union) phonetic alphabet. Do not improvise a phonetic alphabet; if you don't know the ITU-recommended phonetics, now is a good time to learn it and use it in your daily operations:

A Alfa	F Foxtrot	K Kilo	P Papa	U Uniform	Z Zulu
B Bravo	G Golf	L Lima	Q Quebec	V Victor	
C Charlie	H Hotel	M Mike	R Romeo	W Whiskey	
D Delta	I India	N November	S Sierra	X X-Ray	
E Echo	J Juliett	O Oscar	T Tango	Y Yankee	

21) Always acknowledge calls and instructions. You can acknowledge by just giving your unit identification or tactical call sign. Nothing is more disruptive to the smooth flow of communications than dead silence in response to a message. If you cannot copy, or respond to the call immediately, then tell the caller to repeat or stand by. Otherwise, acknowledge each call immediately.

22) Never acknowledge calls and instructions unless you understand the call or instructions perfectly. If you do not understand, ask for a repeat. Make sure you have the instruction right before acknowledgment.

23) NCS stations frequently are very busy with work that is not on the air. If you call the NCS and do not get a reply, be patient and call again in a minute or two. If it is an emergency, call more often and so state; otherwise, just

space the calls to the NCS until they answer. You may be in a dead spot; try moving your position slightly until acknowledged. Above all, be patient.

24) ***Only transmit facts.*** If your message is a question, deduction, educated guess, or hearsay, identify it as such. Do not clutter up the air with non-essential information. Particularly important is information regarding ARES emergency work where rumors can be started from overhearing a transmission on a scanner or other non-ARES receiver. Be careful what you say on the air!!

25)   Always know where you are located. If you are mobile or portable and moving around, always keep a sharp lookout for location identification. The NCS and many others may need to know exactly where you are physically located, so keep a sharp eye on surroundings. If called upon, you can accurately describe your location at any time. This is particularly important if you are with a search team or other mobile units.

26)   Always keep a monitor on the net frequency. If you must leave the frequency, ask permission from the NCS to change. Advise the NCS of the change and always report back to the NCS when you have returned to the net frequency. It is vital that the NCS knows the whereabouts of each station in the net. Keep the NCS advised.

27)   Stay off the air unless you are *sure* you can be of assistance. It does no good to offer advice, assistance, comments or other input to a net unless you can truly provide clarification. It is better to remain silent and be thought a fool than to open your mouth and remove all doubt!

28)   Many times radio conditions are poor and words must be over-exaggerated to be understandable. In general, speak very slowly and distinctly to carry through static or weak signals. The following list provides pronunciation of numbers in poor conditions:

One - "Wun"   Two - "Too"   Three - "Tharee" Four - "Fower"   Five - "Fiyuv"   Six - "Siks"
Seven - "Sevven"   Eight - "Ate"   Nine - "Niner"
Zero - "Zearow" (The number "zero" is never to be pronounced as "oh.")

29)   If you do not understand the whole message given to you or if you missed a word out of the transmission, reply with "Say again." Do not say "Please repeat" because it sounds too much like "Received" when conditions are poor.

30) When you have understood the message, acknowledge the receipt with the words "received" or "acknowledged." ***Do not say "QSL"*** since it may be misunderstood or even missed under poor conditions.

Above all, analyze your present operating methods and try to polish each element so your contribution to ARES is worthwhile. The NCS may have final authority, but good, crisp operating methods and procedures almost make a net run without an NCS.

7.8 Canadian Simulated Emergency Test (CANSET)

The RAC Canadian Simulated Emergency Test (CANSET) will be conducted annually from 1998 onward on or near the third weekend of October. The CANSET format tests the emergency capabilities of the RAC Field Organization, notably ARES, as well as other public-service-oriented-amateurs and groups. The end product is a better emergency response for the "real thing." Among other objectives, the CANSET aims to strengthen the relationship between ARES and served agencies, to encourage the use of digital modes for handling high-volume communications, and to improve cooperation between ARES and NTS volunteers, particularly at the local level. All RAC ARES and NTS leadership officials will receive a special detailed CANSET bulletin and reporting forms from the FSM in late summer.

At the local level, your CANSET can be as simple as an "envelope drill" in which you hand envelopes to your operators and they follow the instructions in each successive envelope, or as complex as the example at the end of this chapter. In conjunction with your SEC, you are in the best position to see which areas your ARES group needs additional training. CANSET is the perfect time in which to get the extra training.

The "score" of each ARES group that participates is based on several criteria, all of which are directed, of course, toward training the group in emergency communications. But your ARES group's score is simply a reference point by which you can judge your group's emergency preparedness. You should get a general idea of the direction your group's preparedness is going by referring to this year's score and comparing it to your group's score a couple of years from now.

During CANSET, each local ARES group simulates an emergency condition and goes into action accordingly. In some instances, the local emergency may be in concert with a Section-wide emergency test. NTS is tested by origination of traffic by participating ARES units and individuals. NTS is activated on a "simulated emergency" basis to enable handling of such traffic more swiftly than normal, just as it would be under real emergency conditions. To ensure that all enroute traffic handling stations respect and forward the possibly unusual message content, the title "Simulated Emergency" should be placed prominently above the body in all CANSET (and any other SET) messages.

7.9 Field Day Training

Although Field Day is contest oriented, it is an excellent opportunity to test your ARES unit's emergency preparedness. Planning your station's layout, determining who operates where, setting up the station in a minimum amount of time, pushing--and, occasionally, punishing--the equipment to the breaking point are all a part of the Field Day experience. In an actual emergency the knowledge and skills you've gained during Field Day may turn a marginal situation into a manageable one. Field Day occurs every year at the end of June, so you can plan ahead for best results.

7.10 RAC EC Training and Certification

Your completion of the open-book examination in the Appendix of this manual represents your commitment to excellence in modern emergency communications support. It serves to ensure that official Field Organization appointees engaged in ARES work will acquire, develop and refine the skills needed to perform at a high standard when asked to respond in any emergency communications situation. Every EC, DEC, SEC and SM now has the opportunity (on a voluntary basis) to take this open-book examination. The principle training materials suggested for successful completion of the examination are listed. If the exam receives a passing grade, the candidate will receive a special certification sticker for their appointment certificate, attesting to your successful completion of the certification examination.

7.12 Summary

Training an ARES group should be a continuous process. Every meeting, scheduled net, drill or real emergency should be considered a learning experience for all ARES members. The more effectively you train the members of your ARES group, the more effectively they will respond when needed.

8 - LIAISON WITH SERVED AGENCIES

8.1 Introduction

Your ARES group was formed to serve the public. If you're not serving the public, your unit isn't fulfilling its mission. In practical terms, this means that you must continually strive to establish and to maintain a close working relationship with public safety and disaster relief agencies. This chapter will assist you in determining the agencies you can serve, the proper method of contacting them and the approach to use in order to present ARES in a professional manner. The first responsibility of any Canadian emergency group is to the municipal Emergency Measures Coordinator. Contact with other served agencies can be made through the municipal EMC or direct with the agency administrator.

If an amateur radio emergency radio group has been formed outside of RAC ARES, then the Section Emergency Coordinator will do everything possible to appoint the manager of that group as a RAC Emergency Coordinator, for the obvious benefits that would provide the entire group. It is extremely undesirable and unlikely that a second group would be formed if that effort was not successful, even to serve non-government agencies.

The suggestions offered in this chapter are simply that - suggestions. Feel free to modify them to fit your situation.

8.2 RAC Agreements and You

RAC has signed several letters or memoranda of understanding with government and relief organizations that officially recognize mutual cooperation. These agreements lay the groundwork at the national and provincial levels for joint local efforts in disasters. As EC, it is your responsibility to implement these agreements at the local level. In Canada, the municipalities are considered to have the lead responsibility in emergency response. Therefore, it is essential that a relationship be developed with the municipal Emergency Measures Coordinator and the served emergency response agencies, well in advance of need. Welfare traffic can be handled only on a time-available basis.

The agreements will assist both you and the local office of the agency concerned. The agreements will give you a bearing of legitimacy when you are discussing ARES with the administrator of that agency. The agreements will also serve to inform the administrator that the agency officially recognizes ARES. When you discuss ARES with organizations with which we have no agreement, mention the agencies we do have agreements with, as well as the RAC involvement with Industry Canada and Emergency Preparedness Canada. The fact that we do have several agreements with national and governmental organizations, should impress upon the administrator that ARES is indeed a bona fide emergency communications service. Those agreements are reproduced in the appendix to this Manual.

8.3 RACES , SKYWARN, FEMA and NVOAD

RACES is a US government sponsored organization similar to ARES. SKYWARN is similar to our CANWARN. FEMA and NVOAD are US organizations with no relevance in Canada, and are mentioned here only for reference.

8.4 Canadian Red Cross

The Canadian Red Cross non-profit disaster relief agency, should be quite familiar to you as they have been RAC-allies of long standing (see Memorandum of Understanding in Appendix). Contacting the local office is simply a matter of looking them up in your telephone directory and asking for the person in charge of communications. When discussing your group's capabilities with the administrators, emphasize the role of ARES particularly in Welfare traffic. Have a photocopy of the MOU ready to show them to illustrate your opening remarks. Remember that their widespread use of internet e-mail may give the administrator the feeling that ARES no longer has relevance. You will have to discuss the problem of communication failure in telephone exchanges and cellular sites due to damage and overload. ARES and NTS may be their only backup, when other means fail (as they often do).

8.5 Salvation Army and Other Relief Agencies

As noted above, in Canada, the municipality has the lead role in disaster response, with backup by the provincial and then the federal governments. Canadian Red Cross has the lead among the relief agencies, and all other relief agencies are subordinate to them. However, there is much to be gained in developing a relationship with these other relief agencies such as the Salvation Army, St. John Ambulance, and any other group for whom you may provide communications support. Include them in your planning and planning meetings. This will pay off when the need arises.

Don't neglect charitable agencies that sponsor walk-a-thons, parades or other special events. Many of these organizations would welcome reliable communications provided by your ARES group, and these events help in maintaining on-air communication skills.

8.6 Local Hospitals

Your local hospitals may need back-up communications in an emergency. Some hospitals essentially lack emergency back-up communications and communications capacity between hospitals. In a large scale disaster, lateral communications (i.e., hospital to hospital, hospital to paramedic groups) is essential.

8.7 Lateral Communications

While you are contacting the agencies and organizations listed, mention lateral communications. ARES groups are in an optimum position to provide agency to agency communications in a disaster. Rarely, for example, can a public works manager talk to the Canadian Red Cross administrator, under routine conditions. In an emergency it may be impossible. Your well-trained ARES group can fill this void.

8.8 Environment Canada CANWARN

Though your ARES group is working with the municipal Emergency Measures Coordinator, they also could be of service in severe weather observation and reporting. The function of weather warning and emergency response are very complementary.

CANWARN (CANadian Weather Amateur Radio Network) is a joint project of Environment Canada and local amateur radio groups. The radio amateurs, who are trained in the recognition of severe weather elements, pass reports of sightings of such phenomena directly to Environment Canada via VHF and UHF amateur radio to a Net Controller and then through the internet. This allows Environment Canada to disseminate warnings to the general public about severe weather events. These might (sometimes) go unnoticed by normal forecasting and detection techniques.

When severe weather threatens an area, a designated radio amateur Net Controller is called by the Weather Specialist on duty at the regional weather centre. The Net Controller then reports to the designated Net Control site to operate the Environment Canada-provided amateur radio station and computer system which are set up there. The computer has internet access for reporting to the regional weather centre, but also has capability to display live weather radar and satellite imagery from the weather centre. The Net Controller opens the CANWARN Net on one of the local repeaters. Ham "spotters" around the area (base stations, mobiles, and portables) are alerted to the potential for severe weather by a variety of methods, and check into the CANWARN Net. As weather bulletins are updated by Environment Canada, the information is passed on to the spotters by the Net Controller. They then know what type of weather to look for.

When any of the spotters sees a severe weather indication such as large hail, or a funnel cloud, he passes it to the Net Controller, who enters into the computer where it becomes available to the Weather specialist on duty. Weather Warnings or Advisories to the public can then be updated utilizing this real time weather information. Early detection and warning are essential to saving lives, when dealing with killers like tornados.

CANWARN was started as a pilot project in 1987 in the Windsor area by Randy Mawson, now VE3TRW, of Environment Canada. Since then it has expanded to Trenton/Belleville, Kitchener, Kincardine, Sarnia, Toronto, Niagara, Shelburne, Hamilton, Thunder Bay, Fort Frances, Kenora and Ottawa, in Ontario Region, and also to Alberta and parts of the Maritime provinces.

Any licensed radio amateur can become a CANWARN severe weather spotter. Radio amateurs are trained in the art of severe weather spotting by representatives of Environment Canada, and other local experts. CANWARN is an ideal complement to normal ARES emergency response activities. ARES groups can become complete spotter groups, or can form a nucleus of such a group. If a severe storm creates an emergency event, the ARES group will already be involved and active, ready to move over to their response role. Interested groups should contact their Environment Canada Regional Office to register. In Alberta, CANWARN is called ALTAWATCH. Other Regions may have other names, but all should recognize the name CANWARN. (See Appendix V).

There may be even more you can do in the area of weather. W9QBH (the SEC of Illinois) developed an excellent RTTY network which effectively covers the state of Illinois and is used to disseminate National Weather Service information to ARES groups and individuals. The completed system took years of dedication and work. Because of his unselfish efforts, critical weather information is relayed from the NWS to SKYWARN personnel as soon as it "hits the wire." An excellent working relationship with the NWS, cultivated over many years, is the main reason why this network is in operation on a daily basis.

8.9 Search and Rescue Agencies

Even though your ARES group is working with the municipal Emergency Measures Coordinator, you may be able to assist any search and rescue groups in your area. Many of these groups rely on CB/GRS radio for communication. They may prefer amateur radio technology and reliability, or may wish to use your ARES group in a supplemental communications capacity. ARES groups and REACT teams may be able to complement each other in many situations at the local level. The civil air rescue agencies assist in downed aircraft searches and other aviation-related services. In most instances they have their own air communications. However, your ARES unit may be able to assist in specialized instances, and in ground-coordination, where combined searching is required. The Appendix contains a list of the main addresses for the Canadian Civil Air Rescue Services, as well as for the Ground Search and Rescue organizations.

8.10 Selling the Agencies on ARES

In contacting a possible ARES user, remember that your final goal is to "sell" the user on your ARES groups services. Unlike professional sales, no money changes hands, but an agreement is reached benefiting both parties.

The mechanics of professional sales will assist you in your efforts to increase your ARES users list. The sales approach best suited to your needs, as an EC, is consultative selling. This approach follows the rationale that the better you understand or know your user, the better position you are in to assist him.

If you're not a professional "salesperson", here are some pointers on how to "close" the sale:

1) Know Your Product: It's terribly hard to attempt to sell something you know nothing about! Take the time to consider both the positive as well as the negative aspects of your ARES group. The better you know your group's capabilities, the less likely you are to overstate or understate them.

2) Prospect: Sit down, preferably with your AECs, and think of agencies, organizations and groups that may need the services of ARES. The agencies and organizations RAC has agreements with should top your list. Write all of your "prospects" down on paper. Once you've done that, think of ways you can find groups or organizations of which you may not be familiar. If you're unsure as to whether or not a group can use the assistance of your ARES group---list them anyway, at least for discussion purposes. You should have quite a list of "prospects" by this time.

3) Qualify: Consider each organization in depth. Can they really use the assistance of ARES? If so, how can they use ARES? Qualify each agency organization and group by listing at least two ways in which each can use the assistance of ARES. Those which, in your estimation, can use ARES at least three different ways will be considered your primary prospects. Those which can benefit from ARES in possibly one to two ways will be considered your secondary prospects. Those left over should be placed on a separate list and considered possibilities.

4) Contact: Set up appointments with or personally visit your primary prospects by a pre-determined date (in this way, you are setting a goal for yourself and your AECs). Your secondary prospects can be contacted at a later date (i.e., within six months). Your possibilities list can be delegated to an AEC for research, who can determine if any of the possibilities are viable. Contact them later if they are; file them for reference if they aren't. How do you contact your prospects? The following paragraphs will deal with that question. Throughout the process, however, remember that your final goal in contacting the agency or organization is to personally meet with the person in charge and give your ARES presentation. Follow through the process one step at a time.

− If you decide to initially contact the agency by telephone, you may wish to use the following introduction (although it may be modified to suit your personal style and/or the uniqueness of a particular situation): - EC: "Hello, my name is _____ . I would like to talk to the person in charge of communications." (Experience has shown that a short introduction tends to get a better initial response than a paragraph.)

−Ask for the person's name and immediately write it down.

−When you get to talk to the person, you should explain briefly who you are and what you would like to discuss during your presentation. Don't attempt to make your "sales pitch" over the telephone. If at all possible, set up a definite appointment. Remember, the purpose of the phone call is to set up an appointment--not to discuss all of the advantages provided by ARES. You will cover ARES in depth during your presentation.

−Once you've set up the appointment, thank the person. You've done your job.

−Occasionally, you may have to simply walk into the agency and ask for the person in charge of communications. Do this only if repeated telephone calls have not been returned and only if you can determine that this approach will not alienate the official. If you follow this approach, remember to write that person's name down for future reference. If that person has the time to see you, you're in luck. Get ready to give your presentation.

5) Presentation: Your ARES presentation is probably the most critical element in selling ARES. This is your chance to close the "sale"! Refer Table 8-1 for a basic scenario for a successful presentation.

Table 8-1 General Format of Your Presentation

1. Formal Introduction.
2. Brief explanation of your duties and responsibilities.
3. Brief explanation of the RAC Field Organization.
4. Statement of Purpose.
5. Demonstration (handheld, videotape, etc.).
6. Question and answers.
7. Comments about your local ARES group.
8. Determine the agency's needs.
9. Leave information.
10.   Schedule second appointment
11.   Thank the administrator.
12.   Leave.
13. Pat yourself on the back!

Go over your presentation several times. Consider the agency/organization and person you will be meeting. What do you know about the agency? What do you know about the person? Is the information you have factual or hearsay? Have you properly and adequately researched the agency? Are you up to speed on the capabilities of your own ARES group? It is imperative that you evaluate everything you will say or do completely--from the minute you walk in the door until the minute you leave. Remember, you are representing Amateur Radio, RAC, ARES and yourself. Ensure that all the information you intend to give during your presentation is accurate.

If you plan to demonstrate ham radio communications (through handhelds, etc.), it would be extremely wise to check and double-check that your rig is in full working order prior to your presentation. If you're going to do a roll call, make sure that as many ARES members as you can muster are standing by for you. If you're going to demonstrate the use of the autopatch, verify the following: Is the repeater up? Are you sure you can hit it? Is someone listening? Do you have the correct access codes for the autopatch? Are your batteries good?

If you're planning to use a video or audio cassette, is it rewound to the proper point or do you have five minutes of leader prior to the program? Are you sure which format the VCR uses?

One of the best ways of getting the Amateur Radio public service message across is by showing the video "At Any Moment" which is one of several titles on the Public Service video tape which may be purchased from the RAC Audio/Video Library.

Before leaving your home or place of business for the presentation, dress in a neat and professional manner; a conservative business suit is preferred. Please leave your bright orange ARES jumpsuit, baseball cap with scrambled eggs on the bill and your matching pocket protectors at home. Look both professional and comfortable. Try to put yourself in the place of the administrator. What would he expect to see you wearing?

When you walk into the administrator's office, make immediate eye contact, and walk toward him and shake hands. Introduce yourself by giving your name and title. Forget the call sign. It means nothing to a non-amateur. Speak clearly.

Thank the administrator for his interest and mention that you realize his time is important so you will "get down to business." In so doing, the administrator should realize that you have no intention of "wasting" his time, and that you are acting in a professional manner.

Begin your presentation. It may go something like this:

"Mr. _ I am the Amateur Radio Emergency Service Emergency Coordinator for (area of jurisdiction). I have been appointed to this position by my Section Manager who is in charge of (SM's section)

"If you're not familiar with the Amateur Radio Emergency Service, here is an organizational flow chart (such as the one depicted in Fig 2-1) showing the persons I am responsible to and the personnel I am responsible for.

By giving him the flow chart, you've accomplished three goals:

1)   he knows that you're part of a large organization
2)   he may know someone on the chart, which will aid in your credibility, and

3) he knows that you've prepared for this presentation.

"The Amateur Radio Emergency Service has been a service to the public in a communications capacity since 1935. We are sponsored by the Radio Amateurs of Canada which is our national organization, and work solely on a volunteer basis. We have national working agreements with Industry Canada, representing the federal government and the Canadian Red Cross, as well as several provincial governments, and many Canadian municipalities.

"As Amateur Radio operators, we are licensed by Industry Canada only after passing written exams on electronic theory, communications skills, radio regulations and Morse code. We are equipped and licensed to operate battery-powered voice and data radios to back up normal telephone, internet e-mail, and cellular radio communications. "You're probably asking yourself, "what does he want from me?"

I am only asking for your assistance. My role is to serve the public in a communications capacity--and only in a communications capacity--when needed. Our Amateur Radio Emergency Service group is waiting to assist you in an emergency, when telephones and cellular radio communications are down. We just need to know how we can help.

Now you have all your cards on the table. The administrator should know exactly why you are there. With that out of the way, you can get a bit more specific in your comments.

"We cannot, and will not, guarantee that we can solve any communications problems that you may have. We can guarantee that we can assist you, and possibly help you in any communications problem you may encounter in an emergency. We will furnish the manpower, equipment and expertise at no cost to your organization when you want us to.

Stress the fact that your group wishes to help him in a communications capacity only.

> Most Important: Reassure him that he is the boss. You will not tell him how to run his operation, and neither will RAC or the ARES leadership. Tell him you *will* use the local municipal standard message forms for local traffic.

"Our Amateur Radio Emergency Service group totals _____ members who serve in a volunteer capacity. We hold drills (weekly, etc.) to maintain our communications skills and to improve our emergency procedures.

"Here is a list of our ARES members which doubles as a call-up list in an emergency. (Again, this will reinforce the goals you met with the flow chart.) If an emergency should happen, we can have _____ operators on the air in _____ minutes ready to provide communications. I am sure of this, as we practice our call-up procedure every _____ ."

If you have a demonstration planned, now is the time to begin.

If you have a handheld--and are certain that you can contact someone on frequency or hit the autopatch--show him the handheld and explain that virtually all of your ARES members have similar radios. Explain, in general terms, what a handheld is, how you use it, and the fact that you can legally use the autopatch. Experience has shown that the more comfortable the administrator feels about the radio, the more impressed he will be with your demonstration. When explaining how to use the radio, you may wish to explain that the proper way to talk into a microphone is by speaking across the microphone at an angle rather than speaking directly into the microphone.

If using a handheld with an autopatch, you may wish to call the administrator's office, home or friend. You may even wish to have the administrator "dial" the number. Ensure that he knows how to operate the handheld in autopatch operation, i.e., when to depress the push-to-talk button.

Mention to the administrator that the handheld operates just as well out in a field or wooded area as it does in his office. Tell him, in generalized terms, how long your handheld can operate on battery power, the range of your handheld and the range of a mobile in your area.

If you have planned to show the videotape, now is the time to do it. Give a short introduction to the video which you should have previewed several times to increase your familiarity of the tape's topics.

If the administrator has any questions during your presentation and demonstration, consider it an indication of interest. If he doesn't, you're going to have to decide on some way to interest him. You may want to invite him to listen to your ARES net during its next session or to visit a ham shack.

It is extremely important not to get "bogged down" in technical details or ham jargon when answering his questions. Answer his questions honestly, and in a way that he can understand.

If the administrator has no questions--or after the question and answer session--you may wish to add any additional information about your ARES group, as appropriate.

Your next step will be to determine the agency's (or user's) communications needs. By consulting with the agency, you must find out exactly: a) how they communicate on a daily basis; b) how they plan to communicate under extreme circumstances; c) how effective and realistic their plans are; and d) how an ARES group can assist. Refer to Table 8-2, a questionnaire to assist you during your initial consultation.

Don't make the mistake of talking to an administrator for 15 minutes during your initial presentation and then saying, "You can depend on us in an emergency." You are in no position to even attempt to make such a statement until you thoroughly understand the communications needs of that specific agency.

If you are referred to another person to get the answers from, write that person's name down immediately, but stay in the administrator's office. He is the person who will ultimately decide whether or not your ARES unit will be utilized.

Now is the time to leave any pertinent hand-outs or brochures . Give him something to read, but don't burden him with stacks of information. Consult with your SEC/DEC about the information you should leave, if you are in doubt. Ensure that you leave a letter of introduction and your name, call, address and telephone number for his files. Refer to Table 8-3. You may wish to design a folder for the hand-outs. This will look more professional and will aid in keeping your information together in his files.

Arrange to have a second, follow-up, meeting with the administrator to discuss your communications plans for his agency. If at all possible, arrange to meet within the next two weeks when the administrator will be more likely to have the initial meeting fresh in his memory.

Thank the administrator for his time. Shake his hand and leave the office. Don't overstay your welcome. You've done your job.

6) Follow-up: Within two days, send a letter to the administrator thanking him for his time and interest. Type the letter on RAC Leadership Official stationery, or the stationery of your amateur radio club or ARES group.

TABLE 8-2: SAMPLE ARES QUESTIONNAIRE FOR USER AGENCIES

1. Has your agency been in an emergency situation in this area? What emergency? When?
2. If so, how would you rate your present communications systems? Why?
3. If your local agency has not been involved in an emergency situation, do you think your communications systems are sufficient? Why?
4. Do you depend on telephone for communications in an emergency situation?
5. If so, would lack of telephone service cause a problem with your agency in an emergency? How would you correct the problem?
6. In an emergency, would your agency need personnel in the local area of the disaster?
7. Would you need communications with these people? Which people (i.e. supervisors, key people, etc.)?
8. If so, how would you communicate?
9. Would your agency find it advantageous to have interagency communications with other agencies in an emergency? Which agencies?
10. What area does your agency cover? Will your personnel be mobile or on foot in an emergency?
11. Would you need a communications outlet in this building? Where?
12. Do you depend on a commercial repeater for mobile or pager communications? If so, do they have emergency power?
13. Do you have a back-up communications system? Does it work as well as expected? Has it been tried in an emergency?
14. Would your personnel be in favor of having a radio operator "shadowing" them and relaying your decisions and comments to them?
15. (Optional) Would your agency find it advantageous to have a telephone via radio from the disaster area?

TABLE 8-3: SAMPLE LETTER OF INTRODUCTION

The Amateur Radio Emergency Service (ARES) comprises volunteer Amateur Radio operators who desire to assist other public service agencies and non-profit organizations whenever needed.

ARES is sponsored by Radio Amateurs of Canada (RAC), and is dedicated to public service, not to any governmental agency. ARES is organized from the national to the local level through a series of managers, each with specific duties and responsibilities.

Local level managers, or Emergency Coordinators (ECs), are appointed by a Section Manager (who usually has jurisdiction over one or more provinces), and have certain parameters in which they must operate. ECs are appointed on the basis of expertise in communications, dedication to public service and a sense of responsibility to their community.

Amateur Radio operators daily communicate next door, across town, across the province, around the world, and even to orbiting satellites which they have built.. They have assisted thousands of times providing back-up communications, and in hundreds of instances, provided the only communications outlet.

ARES members simply desire to offer their services--at no fee whatsoever--for the public good.

ARES will assist you in a communications capacity only.

For more information on ARES, please contact:

_____, Emergency Coordinator

_____

_____

Telephone

8.11 Achieving Effective Liaison

From his dual perspective as a radio amateur and a municipal official, Jerry Boyd, KG6LF, Chief of Police in Coronado, California, and former ARRL Public Information Officer for the San Diego section, offers these useful guidelines for effective interface with served agencies. Although this information is primarily oriented toward working with law enforcement, the guidelines below can be generally employed in assisting the wide-range of public safety and disaster relief agencies that you as an EC may come in contact with.

"Public service communications rendered by amateurs is based on a series of factors. Specifically, amateurs must be accepted by authorities, and once accepted, our continued ability to contribute in times of disaster is based on the efficiency and effectiveness of our performance. While acceptance, image, efficiency and effectiveness are all important to the ongoing working relationships between amateurs and police/fire officials, it is the initial acceptance that is often difficult to achieve.

"The primary question, then, is how amateurs can be more readily accepted by local public safety personnel. A significant part of the answer is understanding something about what appeals to police officers and firefighters, and what doesn't. Police and fire officials tend to be very cautious and skeptical concerning those who are not members of the public safety professions. This posture is based primarily on experiences in which well-intended but somewhat overzealous volunteers have complicated, and in some cases jeopardized, efforts in emergencies. The amateur operator or other volunteer who wishes to be of assistance must be aware of this perception.

"The police have generally had their fill of 'groupies' or 'hangers on'. They can ill afford to tolerate frustrated individuals who have always wanted to be police officers or firefighters, but for one reason or another have never reached that objective. There seems to be an abundance of people, especially during a crisis, who, if given any opportunity to assist in an official capacity, will quickly overstep the limits of their authority and responsibility. In their zest, such persons often inhibit the actions of trained personnel; but worse yet, they make an already dangerous situation even more so by their reckless abandon. With rare exception, Amateur Radio operators do not fall into this category. The problem is, however, that police officers in the midst of stressful operations may have extreme difficulty in distinguishing between those volunteers who are problem solvers and those who are problem makers.

"Those very few hams who behave emotionally, are overzealous in offering their services or in describing their abilities, or who abuse the established limits of their authority, are doing the amateur fraternity a real disservice. The typical police officer or firefighter, like the typical civilian, does not understand the vast differences among various radio services, the types of licensing involved or the high level or expertise and discipline that is characteristic of the Amateur Radio Service.

"Moreover, keep in mind that state-of-the-art technology, and the capabilities that technology affords us amateurs, are foreign to most police officers or firefighters. When an amateur arrives at a scene and jumps out of a vehicle with a handheld in each fist and two more clipped to the belt, all squawking at once, officials simply don't know how to respond. They are either overwhelmed by equipment they don't understand, or so awestruck that they try to avoid what they perceive as threatening.

"How Amateur Radio volunteers are accepted depends on their establishing a track record of competent performance in important activities. And it begins with convincing officials that amateurs offer a cost-effective (otherwise known as free) substitute for functions previously paid for by the taxpayer. Local radio amateurs also must demonstrate that they are organized, disciplined and reliable, and have sincere interest in community service.

"The most effective way to accomplish this is for you as the EC to initiate the contact with public safety agencies in an official capacity. This is better than having individual amateurs, particularly outside the ARES structure, making uncoordinated and poorly prepared contacts that often result in an impression that the local ARES group is disorganized.

"1) Approach that first meeting with municipal officials well-prepared, and give a concise presentation of Amateur Radio's capabilities. Illustrate accomplishments with newspaper clippings, QST (and TCA) articles, etc., highlighting Amateur Radio public service. Discuss the existing ARES structure, emphasizing that a certain number of qualified operators will be able to respond in a timely manner during emergencies (you might provide them with a copy of your call-up or ARES roster).

"2) Demonstrate the reliability and clarity of amateur gear. Nothing is more impressive than asking for a roll call on a 2-meter repeater, using a handheld radio in the police or fire chief's office and having amateurs respond with full-quieting signals from locations where municipal radios are normally ineffective. Such a demonstration two years ago convinced officials in Laguna Beach, California, to ask for the assistance of the South Orange County ARES, the wisdom of which became evident a short time later when that seaside resort community was hit by a series of local emergencies.

"3) Suggest specific ways in which amateurs can be of assistance. Indicate you are aware that police and fire radio frequencies are usually saturated with tactical or operational traffic in emergencies, and offer to provide an administrative frequency for use in overall management and coordination of the emergency relief effort. More important, offer to demonstrate what you are capable of doing by supplying communications for an upcoming parade. It is of tremendous importance that you emphasize that the services supplied by your group will free public safety officers for other duties.

"4) Demonstrate how easily amateurs and their equipment can interface with public safety efforts. Equipment that can be made operational quickly inside the headquarters building, in a mobile command post or in field units is ideal.

"5) Express your group's willingness to meet the needs of the agency with which you are dealing. Show a readiness to provide training to your membership. Offer public safety officials the opportunity to have their own representatives appear before your group and provide orientation and training they feel is essential.

"Finally, be realistic and objective in terms of what your group promises to provide to public service agencies. Be fully prepared to keep all promises you make. Remember to be organized and competent. Once you have implemented these suggestions, be patient. The requests for your services will be forthcoming, perhaps in a volume you had not anticipated!"

8.12 Summary

Grass-roots action is the name of the game when it comes to achieving effective liaison. Formalized memoranda as discussed earlier in this chapter serve to facilitate the interface between RAC officials at the section and local level with your counterparts in the served agencies. With the proper groundwork accomplished in advance, recognition among those agencies having communications needs can be dramatically increased. It's symbiotic. These agencies need us, and we want to help. Now that all the necessary introductions have been made, the rest is easy, for we are indeed the experts in meeting communications requirements of every sort.

9 - THE EMERGENCY TELECOMMUNICATIONS PLAN

9.1 General

As noted in Chapter 1, you as EC may be asked to write or to assist the municipal EMC to write an Emergency Telecommunications Plan. Your ARES Emergency Telecommunications Plan is the culmination of your efforts as EC. It may be only one page in length or as long as a short novel. The scope of your plan depends upon the responsibilities your ARES unit has been given and the resources at your disposal.

When developing your plan, remember that it should be Flexible, Understandable and Rational (FUR) to your group and to the agencies you serve. It is impossible to plan for every emergency, so lay the groundwork which can be adapted to fit the need. Don't get caught using jargon indigenous to Amateur Radio. You may find yourself left out in an emergency simply because an official couldn't understand exactly what your group is supposed to do. Finally, your plan should be rational to all concerned. Know your personnel, their capabilities and their resources. Don't rely on a member of your group with a one-watt handheld 30 miles away to act as a relay station. You should also realize that your group should respond in a different fashion in a flood watch as compared to a search for a missing person.

Determining repeater usage coordination, selection of good net controllers, and establishing the chain of command and reporting relationships must be done in advance. These are all reflected in a good Emergency Telecommunications Plan.

9.2 Standard Operating Procedure (SOP)

In any emergency, situations change constantly. Your ARES group's performance will be determined by how quickly and effectively you respond to those changes. However, you do have several "constants" on which you can depend in an emergency. Your constants should be called your Standard Operating Procedure (SOP). You may add the SOP as an appendix to your emergency telecommunications plan, but in any case add it to this manual after Appendix X.

Your SOP should include:

−Members of your ARES group, their calls, responsibilities, addresses, (at home and work), telephone numbers, equipment, availability, a relative (to contact in an emergency) and any specialized training or vocation which may be pertinent.

−Frequencies and modes you plan to use (including back-up frequencies).

−List of those authorized to call an alert including alerting procedures.

−A detailed map (or maps) showing the staging positions (if any) for your group, offices or buildings of importance (Red Cross, etc.) and repeater sites including their coverage areas.

−Training procedures listing types of training and frequency of training.

−Floor plans of buildings your group may need to enter (such as a hospital or county courthouse).

−Mobilization procedures, and possibly as a "check-off" sheet.

−List of equipment the ARES member should have ready for an emergency.

−Net and message handling procedures on ARES and NTS nets.

−Samples of paperwork needed and examples of how to properly utilize it.

-Names, addresses and phone numbers of key people you may need to contact in an emergency, such as:

    Ambulance services

    Elected officials

    Fire departments

    Government administrators (health, social services, public works)

    Hospitals

    Media (radio, TV and newspaper)

    Pharmacies

    Police (municipal and provincial)

    Schools

    Utilities

Your ARES group's SOP should provide quick reference to your members when they are in an emergency situation. When they are in doubt, they should "read the SOP." As with the emergency telecommunications plan, the SOP should be flexible (as the demands on your ARES group change), understandable (in any emergency), and rational (to an operator who may be "drafted" into service during an emergency).

Your SOP should cover disaster communications, equipment checklists, dangerous goods/hazardous materials information, personnel rosters, net procedures, message format and NTS operating procedures.

9.3 Example of Basic Emergency Telcommunications Plan

Below is an emergency telecommunications plan (edited for use in this Manual) after which you may model your specific plan, tailored to your specific needs. This model plan can be adapted to your use by replacing the place names with the name of your town/city and province. It is simple but covers all the bases. Such a plan may be included within a municipal emergency or disaster plan or it may be attached as an Appendix to the municipal emergency plan. Even if you are not asked to make such a plan, it is a good exercise to do one for your own planning purposes, as it forces you to examine the problems and the potential solutions you can provide. It may help your municipal EMC with his plan.

Table 9 – 1 Amateur Radio Emergency Service Emergency Telcommunications Plan for Small City

1. INTRODUCTION

1.1 The Small City Amateur Radio Emergency Service (ARES) is composed of licensed Amateur Radio operators who have voluntarily registered their capabilities and equipment for public service communications duty.

1.2 Under Industry Canada regulations, Amateur Radio public service communications are furnished without compensation of any kind.

1.3 The Small City ARES functions under this Emergency Telecommunications Plan under the direction of the Small City Emergency Coordinator (EC), who is appointed by the Section Emergency Coordinator in consultation with the District Emergency Coordinator. The EC reports to the Small City Emergency Measures Coordinator. 1.4 The EC may appoint Assistant Emergency Coordinators (AEC) as needed.

2. PURPOSE

2.1 The purpose of this plan is to provide a written guide containing the minimum information that would be needed in an emergency. Each emergency is different and flexibility to provide an adequate response to each is a necessity.

2.2 The primary responsibility of the Small City ARES is to furnish communications in the event of an emergency or disaster, when regular communications fail or are inadequate.

2.3 All drills, training and instruction shall be carried out to insure readiness to respond quickly in providing effective amateur emergency communications whenever an occasion may arise.

2.4 The following agencies could be served during a communications emergency: Small City Emergency Measures Coordinator representing City Hall, Fire Department and Police Department; Canadian Red Cross; Small City Hospital; and any other agencies requesting assistance from the ARES.

3. ACTIVATING THE PLAN

3.1 Any member of the Small City ARES who for any reason suspects a communications emergency exists should monitor the assigned net for activity.

3.2 If local telephone service is available, the EC and/or AECs should be notified by telephone.

3.3 In an emergency in which Amateur Radio might serve the community, Amateur Radio operators may be alerted by any city, Red Cross, Emergency Measures, or similar official notifying the ARES Emergency Coordinator.

4. ARES MOBILIZATION PROCEDURE

4.1 Local broadcast station CBXX will be contacted by the EC or his representative, as possible, for spot announcements alerting ARES members.

4.2 If telephone service is available, the telephone tree is activated.

4.3 Upon the awareness or notification that a communications emergency exists, members of the Small City ARES will call into the Small City Emergency Net on the 147.1 50/.750 FM repeater with 146.52 FM simplex as an alternate frequency.

4.4 Mobile units are activated and dispatched.

4.5 The EC will assume Net Control Station (NCS) or delegate another amateur as NCS. Control will be from Small City Emergency Measures Emergency Operating Center (EOC). This station is designated as a "Key Station" and will be extensively utilized during a communications emergency. Key Stations have full emergency power capability with relief operators assigned to ensure continuous operation.

5. DUTIES OF NCS

5.1 The Small City Emergency Net will be called to order by the NCS.

5.2 Members of the Small City ARES are checked into the net from their mobiles and home stations to await further instructions.

5.3 Liaison stations to the following National Traffic System nets will be assigned:
- XXXXXX Phone Net, 3.965 MHz, 6 PM
- YYYYYY Net, 3.640 MHz. 7 PM and 10 PM
- ZZZZZZZ VHF Net, 146.28/88 FM repeater, 9:30 PM

A liaison station is also sent to 146.04/64, the FM repeater link to the "Key City" of Capitaltown.

5.4 Mobiles are dispatched as needed to the Small City Canadian Red Cross Headquarters and the Small City Hospital and any other agencies as required.

5.5 Operators of home stations not on emergency power are coordinated to effectively operate the "Key Stations" as required.

6. OPERATIONS

6.1 All written messages must be on standard message forms – for local traffic, the standard message form in use by Small City, and for outgoing and incoming traffic over the NTS, the standard NTS message form.

6.2 All messages must be signed by the official who originates them, with his title, taking responsibility for their contents.

6.3 Message precedences shall be used on all messages, as appropriate to the message form in use.

6.4 Stations do not transmit unless invited to do so by net control. The only exception to this is for a station having EMERGENCY traffic.

6.5 A log shall be maintained by the NCS, showing all message transactions and events with the time in UTC.

7. DRILLS, TESTS AND ALERTS

7.1 An annual test will be conducted in conjunction with the Canadian Simulated Emergency Test (CANSET)

7.2 The Small City ARES will regularly supply public safety communications in conjunction with local events, to test the effectiveness of the operation.

7.3 The Small City Emergency Net meets the first Tuesday of the month at 8 PM.

7.4 At the discretion of the EC, the Small City ARES group will be activated unannounced via the telephone tree at least once per year.

10 - DISASTER COMMUNICATIONS

10.1 Introduction

Most public-safety radio systems are designed to perform in emergencies at any time of day or night. Such systems generally fulfill the demands placed on them by "normal" (i.e., limited duration) emergencies and operate within the limits of the system's design. The inadequacies of radio systems emerge when they are over-extended or expected to perform functions beyond their design as in disasters. Communications in a bona fide disaster constitute a minor portion of any organization's yearly efforts, but constitute a critical element in the preservation of lives, property and the public welfare.

Significant technological advances have been made in radio communications equipment in recent years. Yet, while most agencies' systems perform well during everyday emergencies, it is extremely rare that any agency or jurisdiction communications system is capable of coping with a major disaster.

Disaster communications can be well-organized, chaotic or somewhere in-between. Not only do disaster communications vary from disaster to disaster, they vary minute by minute in each disaster.

Preparation is the key. Your organized, well-trained ARES group with a flexible, understandable and rational emergency plan will provide communications in a professional manner, be it an emergency or full-blown disaster.

However, it's difficult to know exactly what to expect when a disaster strikes. This chapter should give you a few "pointers" on what may happen. Your planning, plus the knowledge you'll gain from two real-life experiences presented here, should assist you in recognizing potential problems before they occur and allow you to modify your plans accordingly.

10.2 A Post-Disaster Review

In 1979, a tornado extensively damaged the city of Wichita Falls, Texas. In the aftermath of the disaster, the local ARES group compiled the following summary of their operations. Note how problems were encountered and met. The lessons learned can be of benefit to every ARES group.

"The following is a list of recommendations we offer for consideration by any EC:

1) First priority is a strong, efficient EC who can verbally communicate with others to sell his ideas.

2) You must have a detailed plan on paper that is flexible and will serve all of your needs.

3) You must plan for the worst type of disaster. We did not. Develop your plan to work when you have nothing to support you but your own ARES group. When our plan was developed, little did we know that the disaster in Wichita Falls would be so vast. This is a special reason why you should coordinate with other ARES groups in your area for mutual support.

4) The EC must be free in any type of operational plan to move about his operational area and make changes as necessary. He cannot be tied down to an operating position. This is why we utilize a chief of staff AEC position. In our operation, the EC allowed himself to be tied to generally one position area. This did not allow him the flexibility he needed to move about the entire operational area to provide good guidance and direction where needed.

5) Train your ARES group as a team appropriately utilizing individual talents. For example, utilize a traffic man for traffic nets, not as a message runner, etc.

6) Have scheduled training drills to put your group in under-fire conditions to see just what they can do under pressure and how they best utilize their equipment. The two drills we had here prior to the disaster were most beneficial. After completing the second drill, we made minor changes which did pay off for us in the actual disaster one week later.

7) Plan for backup in each position. Some of your operators may be personally affected by a disaster and not be able to participate. Sixteen operators in our disaster were otherwise occupied because their own homes were totally destroyed.

8) Get everyone involved in any drill. Use everyone for some meaningful job. Double up in areas if required so that all personnel can be utilized. Rotate people around so they become familiar with other types of jobs. We rotated operators on a shift basis, moving them from generally one area to another as needed.

9) Prepare an emergency travel box which contains all you will need for operating out of your own immediate area. This includes radio equipment and personal items. Since we live in Tornado Alley, most everyone in our organization has some sort of travel box ready to go at all times.

10) Remember that you are to provide communications only in any type of operation. Do not in any way get involved in politics or make decisions that city officials should be making.

11) Keep accurate logs of all messages placed in your traffic system. For priority and official traffic, you should **secure authentication signatures on all messages.** This will protect you and will also provide a chronological record of events.

12) Try your best to develop good working relationships with the proper city officials and civil defense directors. It took our ARES organization four years to develop a good working relationship with city officials. In most cases, a disaster must occur before these officials see the value of an emergency operation. Invite your civil defense director to participate in club activities, etc. Be persistent but not pushy.

13) Coordinate with all agencies for which you are capable of providing emergency communications, including public utility companies and hospitals. One of the local hospitals has appreciated our assistance to the point that they have invited us to place our repeater on top of their hospital building and provides both commercial and emergency power. The regional hospital at the nearby Air Force base authorized the purchase and maintenance of a 2-meter rig and antenna system to be left permanently in the hospital with ARES operators to man the station when necessary. In addition, our electric utility authorized the purchase of an HF rig and antenna system to provide communications in emergency situations utilizing ARES members as operators.

14)   Develop your own ARES plan to assist and supplement your local emergency measures plan. **You must work closely with the emergency measures director."**

"The above items are only a brief list of those things to do. You will most assuredly uncover many other areas needing further work. The following are some problem areas we encountered during our operation:

1) Two-meter communication requirements during our disaster operation severely depleted our ham population. You will in most cases need outside help. Plan for it. We did not have any effective coordination plans with any other ARES groups. This should be worked out in advance if at all possible. In our case, it did not seem to matter too much since other organizations contacted us and sent hams in four or five hours after the tornado struck.

2) Our entire city was without electric power for quite some time. The disaster area itself, which was quite large, was without power for several days. In addition, telephone service throughout the entire city was interrupted and would have been interrupted longer had it not been for the fact that a new microwave linkup between Wichita Falls and Dallas was in the process of being installed by the telephone company. Emergency telephone crews placed this operation in working order and began utilizing it the night of the storm. One or two of you must have emergency power available. For example, our ambulance them to their base station and also to the hospitals. In general, agencies affected where we provided communications were hospitals, emergency operation centers, the Red Cross, the state police, the federal agencies.

3) With the demands for 2-meter operators, we did not have sufficient operators to properly conduct HF nets. Our HF operation area was disorganized for some time until outside help came in. We did, however, have two or three local amateurs with HF capabilities who got on the air immediately after the disaster struck. This was, however, an uncoordinated effort. Even with outside help, we had no real method of control over them as far as their operation was concerned. But they set up and began operations without direction and did an excellent job.

4) The amount of disorganization in handling the HF traffic pointed out the need for a central clearinghouse for all types of traffic. Our EC was not free to do this. You must be on top of this situation at all times. One of the AECs for HF could be in charge of this type of message clearinghouse operation.

 5) Be sure to obtain emergency power for your equipment and especially the repeaters. We had one repeater on emergency power that did remain on during the entire storm. Our primary repeater was out for approximately 24 hours before emergency power could be obtained. We had two repeaters located outside Wichita Falls that did stay in operation, and these were lifesavers during the initial phases of the operation.

 6) Establish contact with the news media. Only one local AM station remained on the air following the storm. Incorrect information was being put out by this station until we placed a 2-meter operator at the station with direct communications with the EOC. Now all of our TV and radio stations monitor our repeaters with their scanners.

7) Keep excitable operators out of key positions. Good voice and calm voice characteristics are necessary for all net control stations.

"The following are general comments for your consideration. Some may repeat previous statements where emphasis is needed:

1) We provided communications for one EOC and two command posts. The vast size of the disaster area would not allow one EOC to cover the entire area; therefore, two command posts were set up and communications links were established.

2) Be prepared to handle a heavy volume of message traffic. Approximately 15,000 Welfare and 350 Priority messages were handled during the operation.

3) Thirty-eight ARES members were used during the first twelve hours with a total of 60 operators being utilized the following four days. Approximately 20 operators remained on the scene during the last three days. Because of

the extent of the disaster, rotating shifts were established as soon as it was practical. By planning ahead, manpower requirements were effectively handled."

"In summary, we would like to advise you to **plan for the worst type of disaster.** Develop a workable plan which will allow you to utilize your personnel effectively. At the same time, you must coordinate with others and be flexible so as to be ready to provide any type of emergency communications."

10.3 Some More Thoughts on Disaster Communications

The late Bob Dyruff, W6POU, was a noted authority on disaster communications. Bob assisted governmental and volunteer agencies in disaster planning for years and was an ARRL Assistant Director for Emergency Communications in the Southwestern Division among other posts in the ARRL Field Organization.

The following portions of a thought-provoking paper written by Bob exclusively for this Manual are intended to introduce you to the enormity of challenges presented by a widespread disaster. A "taste" of what you might be facing in such a calamity will no doubt be of benefit to you in your organizational and operational preparations. This offers a challenge to you, the practicing EC, to meet the communications needs of the public.

I. Critical Communications Requirements in a Disaster

A.   Large increases in the volume of message traffic per channel are experienced on public-safety radios accompanied by prolonged waiting to gain access.

B.   Equipment outages occur at key locations.

C.   A need arises for agencies to communicate with other agencies operating incompatible radio systems, using unfamiliar/unattainable frequencies, names, terms, procedures. In general, the management of most agencies is reluctant to use another agency's system or to allow theirs to be used by others.

D.   A need arises to contact locations at distances beyond the range of a given radio or system (50 to 350 miles or more).

E.   Message reply delays are experienced, leading to deferred decisions on crucial matters, message duplication and confusion.

F.   A need arises to generate and decipher handwritten messages sent through relaying stations.

G. Alternative modes of communicating are required in addition to voice:
   1) Volume data in printed form - teletype, high speed packet, facsimile.
   2) Morse code under difficult reception conditions.
   3) Encoded data for extreme privacy (not allowed in Canada on amateur bands ed)
   4) Television--mobile, portable, aeronautical, marine.
   5) Telephone interconnections from/to radio systems.

H. A need arises to cope, simultaneously, with high-volume message traffic containing widely differing priorities (priority/precedence designations differ among agencies).

I. Operational problems arise such as: high-volume traffic circuits with no supply of message forms; using the only printed forms available, designed for a different, unrelated agency/function; attempting to decipher scribbling from untrained message writers; using scribes who cannot understand radio parlance or read through interference; and being inundated with traffic volume so heavy it results in confusion over which messages are to be sent, were sent, received for delivery, or are to be filed for ready reference.

II. The First 72 Hours

A.   In the early hours of an emergency turning into a disaster, it takes precious life-ebbing time and an overcoming of obstacles to place fully-activated mutual aid resources into operating position in a disaster area. Communications is one of those vital resources.

B.   The greatest concentration of relief efforts is generally to be found in the incorporated cities served by agencies with paid professionals--assuming their equipment, facilities and personnel remain operable.

C.   On-scene commanders need to receive important information and aid to issue orders for action in the field. Mutual aid requests to/from other agencies require wide-area communications not possessed by local agencies. With telephones overloaded or out of service, and local government and public safety radio channels jammed, communications problems develop rapidly.

D.   While urban areas experience more concentrated damage, suburbs and isolated areas of a county suffer from remoteness from fire, public works, law enforcement and the services of all other agencies as well. All organizations scramble to respond to a unprecedented demand for service within their authorized jurisdiction. The public is often isolated, unable to call for help or determine the nature and extent of the disaster so as to make plans

1) "wait it out."
2) prepare to evacuate.
3) actually evacuate with some possessions to some safe place then unknown.
4) obtain physical aid for an impending catastrophe.
5) offer aid to a relative, friend or neighbor.

E. Lack of information results in further attempted use of the telephone when the system is overloaded if still operating. Calls can often be received from out-of-town but not made across town.

F. Those living or traveling outside urban areas or in the unincorporated portions of a county are less able to receive essential services quickly, if at all, because of personnel being stretched over a wider destroyed area and encountering less accessibility and poorer to non-existent communications.

G. The opportunity to call for help is often unavailable to most citizens during the first 72 hours. Occasionally, a passing public safety vehicle or one equipped with an operational commercial, utility, amateur or CB radio can be accessed--assuming it is in contact with a person who can help.

H. Too little information is gathered about the public's immediate needs and ways to meet them. Distorted public perceptions are gained through misinformation. Yet, essential damage-assessment report data are needed by higher agencies to initiate relief aid from outside the disaster area.

I. Broadcast stations (those still on the air), initially disseminate rumors in the absence of factual information. Only those people who possess an operating battery-powered broadcast band radio can tune until they find a local station which can provide helpful information. Others receive such information second hand, if at all.

J. Everywhere, people walk aimlessly seeking a route to family and friends. Many, fearful of looting, remain in hazardous buildings, or return, as do shopkeepers, to salvage valuables. As darkness falls rumors of looting are generated--some true.

K. Word circulates about shelter locations. Some displaced persons stay at homes of friends, relatives or strangers. Others are housed at public shelters into the fourth day still searching for family members elsewhere and without communications. The opportunity to notify concerned distant relatives is not afforded except via Amateur Radio if such service is provided.

L. Later, often too late, information trickles in about problem areas/cases which have been overlooked due to the lack of communications. Some potential evacuees are overlooked.

M. Once the immediate threat to life has passed, survival instincts prevail, printed "What to Do" instructions are located and followed, and people operate essentially on their own for an indefinite period while public agencies respond to the most urgent problems of which their communications make them aware.

N. After-shocks, flare-up of fires, weakening or breaking of dams and new flood crests, build-up of winds, etc., result in some relief work being undone and the posing of new threats.

O. Inter-organizational (multi-organizational) communications is poor to non-existent. At the end of 72 hours, the disaster area remains in virtual isolation except for helicopter service for known critical cases and official use.

P. Little centralized information is available. Amateur Radio operators from neighboring counties/states offer to help but are often unable to cross the roadblocks established to limit access by sightseers and potential looters. Disorganized local volunteers often lack essential skills and orientation. Costly mistakes are made and systems bog down.

Q. The dead pose a serious health problem. Stress rises among the citizenry. Little overall assessment emerges in the first 72 hours about available emergency resources and relief supplies. Shortages are apparent and growing.

R. Traffic continues to be difficult and slow. Relief supplies trickle in to uncertain storage locations. Some supplies are useless.

S. Restaurants remaining open are unable to cook without gas or to serve the masses who flood them. Food and water shortages have become critical. Normal water sources may have been cut off or contaminated.

T. Eventually, essential functional communications networks evolve as priorities are asserted and clusters of traffic emerge. Relief efforts are mounted when someone takes charge, makes a decision, and directs the efforts of others. The Command/Control process of directing requires communication-- the ingredient in short supply in disasters.

U. At critiques following a disaster, as always, the cry is heard: "Next time we must be better prepared!"

III. The Challenge

A. The need for a combined response to communications emergencies has always been apparent. Concerned amateurs regularly band together under a local ARES and local clubs or service groups in support of local agencies.

B. Over the years, there have been, and still are, some very effective Amateur Radio response groups working closely with the fire service, the Red Cross, Salvation Army, a group of hospitals, a city or county government

unit, a search & rescue team, and so on.

C. In some disasters:

    1)   it's the solitary volunteer who, alone and by chance, happens upon the disaster scene and serves with distinction.

    2)   it's a small, unaffiliated group of amateurs (or, perhaps, the CB-REACT operators) which responds with some assistance.

D. Increasingly, however (especially in large emergencies) it is the nationally organized ARES which is being pressed into action in disasters involving multiple public and private organizations at more than one jurisdictional level across wide geographical areas; no longer simply single-agency or even single-community responses, but many operators working together in a joint effort.

E. It is the National Traffic System which is tasked with the high-volume outgoing Welfare and incoming Welfare formal traffic which inevitably attends disasters. And, it is the local and Section ARES leadership which must provide the necessary coupling with these traffic operators and the NTS leadership so as to make such communications possible and efficient.

F. The challenge to ECs, DECs and SECs, STMs and NMs alike is to integrate the efforts of ARES, NTS and other amateur organizations (public service nets, repeater associations, clubs) and non-amateur volunteer response units (REACT, etc) in coordinated support of the many separate agencies serving in a disaster--and, to do it in such an effective manner that the public is truly well-served. That challenge has still to be fully met by amateurs and agency professionals alike.

G. Since no public or private institution is perpetually effective or enduring, it is up to RAC, through its widespread field organization, and with active support from its executive and field leadership, to continue to introduce Amateur Radio to the ever-changing stream of new agency officials and to continue to build on-going, enduring relationships between RAC and those agencies at all levels.

Amateur Radio has served the public with distinction across the nation and the world for two-thirds of a century. Yet, so little is still known or understood about this life-saving capability by succeeding generations of officials responsible for the public welfare. It is crucially important that this public service "lifeline" be universally understood and fully utilized at every level before the next disaster occurs.

10.4 The Canadian Experience

There are countless examples of Canadian radio amateur communication assistance in emergencies and major disasters over the history of amateur radio. Events like the 1950 Manitoba flood, Hurricane Hazel in Southern Ontario in 1954, through to the 1997 Manitoba flood have seen extensive amateur radio participation in support of emergency response teams, and in the handling of massive amounts of message traffic out of the affected areas. Operations by Alberta amateurs following the Edmonton tornado are a major subject in an RAC video which shows how even out-ofprovince message traffic was huge, and requiring massive support by distant traffic handlers. The Mississauga train derailment, Barrie tornado, Saguenay floods, and many other events across Canada were other opportunities for radio amateurs to commit large numbers of willing communicators to the relief effort. Amateurs served not just on the scene but hundreds or thousands of miles way giving countless hours to the handling of inquiries from and to anxious relatives.

As a result of every emergency communications event, lessons were learned, documented and the resultant improved methods applied to future exercises and real emergency situations. Equipment and modes are much improved over the past fifty years, and continue to evolve with experience. The EC is at the heart of the events and is in the best position to ensure that the benefits of those experiences are passed along to others.

10.5 Summary

If a large-scale emergency were to happen in your area right now, which would you have: effective disaster communications or effectively disastrous communications?

Your ARES group may wish to adopt the motto of the Boy Scouts, which is "Be Prepared." Understandably, you may not be able to plan for every possibility, but you can design your plans to be flexible enough to adapt to the needs of a given situation.

Effective response in a large-scale emergency or disaster requires immediate and sustained coordination between organizations for the duration of the emergency. Preparing your ARES group for this type of coordination through effective training and planning is your responsibility. Remember: "Be Prepared!"

11 - PACKET RADIO

11.1 Introduction

Floodwaters surge through your community. Normal communications channels are bogged down with tactical messages. Your ARES group is handling the situation well. Your emergency plan was excellent, including the provisions for handling Welfare traffic.

As the floodwaters recede, your group is asked to take on two additional responsibilities: 1) continue assisting with the tactical messages while providing additional manpower to ensure that possible looting of the area is kept in check, and 2) set up several stations for the reception and transmittal of Welfare traffic. Do you have the resources to do both at once?

Enter packet radio. You immediately set up a small low-power packet-radio simplex-frequency digipeater on a nearby hill, contact a "gateway" packet station within VHF range of the "digi," yet outside the affected area, send out two packet radio "teams" with equipment, and you're ready to go.

Since the frequencies and procedures have been prearranged, you are in a superb position to be transmitting and receiving formal messages over the packet system within minutes. Your packet teams are much more efficient than even a large number of ARES members handling traffic conventionally (remember, packet has the capability of providing error-free traffic at over a thousand words per minute!), which means you are using less of your manpower resources while getting the same job done. Also, your packet teams will be much less prone to fatigue than operators using voice or Morse code.

What is this "miracle" called packet radio? It's not revolutionary; it's just one more step forward in the logical evolution of communications. Many thousands of radio operators are already fluent with packet radio techniques, and are now applying packet radio to several amateur activities, including ARES. Many groups are experimenting with emergency repeaters the size of a pack of cigarettes, formal message format (discussed later in this chapter) and portable stations using small amounts of battery power. Packet is here to stay. The internet depends on telephone lines.

11.2 The TAPR Primer on Packet Radio

The following information is adapted from a paper published by Tucson Amateur Packet Radio Corporation (TAPR).

A. What is Packet Radio?

Packet radio is a communication system in which information is digitally encoded. In this respect, it is similar to RTTY, ASCII, or AMTOR but with important differences. These differences are the key to insuring error-free reception and at the same time allowing maximum use of the spectrum through shared frequency use.

Data integrity is provided by packet radio through a "hand-shaking" technique and error detection. Along with each transmission, a computed value called a "Frame Check Sequence" (FCS) is sent, which allows the receiving station to check for errors. The receiving station acknowledges an error-free packet with a special acknowledgment (ACK) signal. If the sending station does not receive such a signal within a certain period of time, it automatically retransmits the packet.

A packet also contains identification of the destination station, permitting several contacts to take place on the same frequency. A packet radio station can automatically ignore any packets which are not addressed to it. Because the duration of most packet transmissions is very short, a user does not need the channel most of the time. The time between transmissions is available to other users on frequency. This system is called time-domain multiplexing. On a very busy channel, the user will notice an increased delay time before getting replies to transmissions, but the packet radio equipment will take care of automatic retransmissions and sorting out the replies meant for the station and never "hears" the interference.

B. What is a Packet Radio Station?

Packet radio requires the use of a microprocessor-based controller at each station, and it obviously appeals to the ham who already has a computer in his shack. However, it does not require that the operator be a programmer, or even that the station have a personal computer. All that is really necessary is a terminal, a terminal node controller (TNC), and an Amateur Radio transceiver.

The terminal can be a simple display (CRT) or typewriter terminal that produces ASCII characters, a personal computer, or even a commercial mainframe computer. What you need is a terminal with a keyboard to allow you to talk and a screen or printer to allow you to read incoming information. You can even get an inexpensive terminal that uses a TV set for the display. The terminal node controller is the heart of the packet-radio system. It has one port that

is connected to the terminal or computer, and communicates through it by asynchronous ASCII format at the signaling rate required by the terminal. The TNC converts the data stream from the terminal to a packet by attaching a "header" showing the destination of the packet and control information for the network, a "tail" containing the result of the FCS calculation for error detection, and flags to mark the beginning and end of the packet.

The second port of the TNC connects it to the transceiver microphone and speaker audio lines, and the PTT line. Ordinarily, the TNC will produce AFSK modulation by putting one of two tones into the microphone input, corresponding to a "mark" or "space". In this fashion, the packet is sent out on the air at the packet channel signaling rate, which is unrelated to the terminal baud rate at the other port of the TNC.

The receiving TNC reverses this procedure, decoding the audio tones from the speaker audio line of the radio, removing and reading the header and tail information, and passing a successfully received packet to the terminal at the terminal baud rate.

The part of the TNC that does the translation between the sequence of tone levels and the characters is called a "modem," short for MOdulator-DEModulator. This device may or may not be built into the TNC board. Most packet-radio modems operate at 1200 baud, which corresponds to about 1200 wpm, although (you can use) much higher signaling rates on some amateur bands. The audio tones used are 1200 Hz and 2200 Hz. This choice of frequencies is that of the Bell 202 modem, which is available as surplus.

The final component of a packet radio station is an Amateur Radio transceiver. Most packet-radio activity so far has been in the 2-meter band. The only important requirement of the radio is that its audio frequency response at 2200 Hz be adequate. In other words, the 2-meter FM rig you already have is probably just fine.

C. What the TNC Does

The TNC consists of a special-purpose microcomputer, containing all the necessary software and hardware to communicate with your terminal, assemble a packet, operate your transmitter and receiver to send and receive a packet, and decode a packet. The special functions of the TNC which would be difficult to implement with an ordinary personal computer are the use of protocol to communicate with other TNCs and real-time control.

The encoding and decoding of packets involves a carefully standardized set of procedures called "protocol." The protocol basically determines the exact form of the header and tail parts of the packet. The header allows receiving TNCs to automatically determine the purpose of the packet, e.g., net check-in, part of a contact, or ACK to a previous transmission. The tail contains the FCS, which allows the TNC to automatically determine whether the packet was received correctly, and if so, to automatically acknowledge it. Since the protocol is programmed into the TNC, the operator does not need to know exactly what his packet "looks" like. In particular, he does not need to know how the destination of his packet is indicated. The operator communicates with other amateurs by call sign, and the TNC translates the call sign into the identification required by the protocol.

D. What is a Packet?

A packet is the basic message unit in packet radio. It ordinarily consists of text message typed in by the operator, sandwiched between the header and tail information required by the protocol. In a typical amateur radio contact, a packet would be encoded and sent out by the TNC when the operator ends a line of typing by hitting the RETURN or ENTER key. In any event, the length of a packet is limited, a maximum of 256 characters of information. This helps to prevent a single user from "hogging" the channel, as well as making sure that the sending and receiving TNCs don't get swamped with information.

A packet need not consist of ASCII or Baudot character strings, however. It could contain information in other coding systems, such as BCD or EBCDIC, or even binary data such as a compiled computer program. The TNC, which uses a "bit-oriented protocol" based on a standard called High-level Data Link Control (HDLC), can encode any of these equally easily. An advantage to this choice of protocol is that the functions it requires are available on a single large-scale integration (LSI) chip, which simplifies the TNC hardware and software. A second advantage of HDLC protocol is that the beginning and end of the entire message are flagged, making the "start" and "stop" bits for each character unnecessary when the packet is transmitted in "synchronous" format.

The "frame" of an HDLC is represented below. Each field of the packet is encoded as a sequence of 1s and 0s (bits) to be transmitted as "mark" and "space" tones. With the exception of the information field, all these fields are generated by the TNC as it assembles the packet for transmission. The operator is concerned only with the contents of the information field.

! FLAG ! ADDRESS ! CONTROL ! INFORMATION ! FCS ! FLAG !

The flag is a unique bit sequence that identifies the beginning of a frame to the HDLC controller. This pattern corresponds to no sequence that would be encountered in any of the other fields, except possibly in the transmission of binary data. Even in this case, there are provisions for distinguishing data from the flag sequence.

The address field contains the call sign of the destination station, the originating station, and possibly one to eight repeater stations. Each station address has six characters, such as WA1ABC or W1AW space space, and a Secondary Station Identifier (SSID). The SSID is there to specifically identify more than one packet-radio station operating under the same call sign.

The control field identifies the type of frame being transmitted and assigns sequence numbers that rotate from 0 to 7 and back to 0 again so that frames don't get lost. The different types of frames are called supervisory, information, and unnumbered.

The information field contains the message being sent, which will ordinarily be the text typed in by the user, converted into an ASCII data string. In the case of a frame identified in the control field as performing a supervisory function, the information field may be absent.

The FCS allows the receiving station to verify that the frame has been received correctly. If the FCS calculated by the receiving TNC matches the FCS of the frame, an acknowledgment is sent; otherwise the frame is ignored. The final flag marks the end of the frame.

E. What is a Packet Network?

One form of a local-area packet-radio network (LAN) consists of a net control station and a number of individual operators. The net control station is sometimes referred to as the "station node" and the individual stations as "terminal nodes." The net may also contain a digital repeater or "digipeater." The repeater station may be a single-frequency simplex repeater that retransmits any correctly received frames, or it can be "normal" split-frequency repeater.

When activating a packet-radio station, the operator may wish to have it in "monitor mode" so that all transmissions on the channel may be received and displayed. If the operator wants to talk to another station, a connection (QSO) is established with the other station. After that, each station will receive only those frames specifically intended for it. Other stations can be carrying on separate conversations on the same frequencies without getting their messages mixed up with others.

A more sophisticated reality is that of a "gateway" station, which is a specialized station having access to either a longer-distance band or simply another frequency on the same band. The gateway station can often automatically transmit to another gateway station in a distant LAN. There are presently at least three gateway functions that are being used for long-distance links in today's exciting world of packet radio communications. The EC would do well to explore these for his team's out-of-disaster-area requirements:

(1) VHF/UHF Terrestrial Relay: VHF repeaters are now being use to connect packet users in most areas of the of Canada and the US. While they are being gradually augmented by high-speed UHF and microwave radio relays in a backbone radio-relay network covering North America, VHF (2 meters in particular) is where the majority of action lies, which is of interest to the EC.

(2) Satellite Relay:

    a) OSCAR 10, OSCAR 13, Fuji-OSCAR 12, and even commercial satellites have been used for relay of packet-radio messages. A number of "teleports" will operate as intermediaries between networks and the satellite.

    b) PACSAT is a another class of satellite designed solely for digital communications. Current designs call for uplinks on various UHF bands into low-earth orbiting (LEO) OSCAR satellites containing packet radio digipeaters and full-featured Packet Bulletin Board Systems.

(3) HF Relay: Regular operation between packet-radio stations, including those with Packet Bulletin Board Service (PBBS), began on the HF bands in early 1984. HF is expected to be used in combination with satellite relay to provide long-distance packet-radio network communications. APlink (AMTOR-Packet link) stations are HF/VHF gateways.

Packet radio can also effectively use meteor-scatter propagation to relay messages over distances up to 1200 miles. Amateur experimentation with meteor-scatter packet-radio began in August 1984. It is expected to play an important part in the packet network after an experimental period.

11.3 Packet Radio Applications in ARES

The following material is adapted from two papers presented by Bob Neben, K9BL, at the Second and Third ARRL Amateur Radio Computer Networking Conferences and shows a great deal of thought and effort in attempting to "mesh" ARES/NTS and packet radio into a reliable and realistic communications alternative in the future.

Traffic handling originated in radio, using CW, as a continuance from the landline systems. This limits copy to about 15 to 25 words per minute, depending upon the operator's ability. The reliability of this system is very good,

since a CW signal can punch its way through a lot of interference and noise. Accuracy, however, is limited to the accuracy of the sending operator and the receiving operator, both of whom are subject to fatigue.

SSB or FM adds a new dimension, though, and we can talk about 150 to 200 words per minute. At these speeds, however, QRM is more of a problem. Also, traffic cannot be passed at that speed. Assuming we have to write the traffic on a message form, speed decreases to about 25 words per minute, and we are really not much ahead of the process than with CW.

RTTY somewhat automates what we were doing manually at speeds of 60 to 100 words per minute. Reliability is about the same as voice, and accuracy is only slightly better, due to the lack of error correction. Maintaining good accuracy requires careful tuning, listening for a "hit," and human attention while typing.

The type of traffic influences both speed and accuracy. Ragchewing requires neither speed, accuracy, nor hardcopy. Formal traffic, is, however, certainly different. Any media or system used has a maximum capacity. For instance, suppose we are passing messages using 100 words per minute RTTY, with no interference. The system capacity would approach 100 words per minute in this case, and accuracy of the system would be very good.

Normal day-to-day message traffic demands only a small percentage of system capacity. When at peak periods such as holiday traffic, it can normally be handled during the alloted time for the traffic net. Traffic supplied equals traffic demanded, which is still below system capacity. System accuracy is fairly good since there is time for retransmission requests, and no one is under any particular pressure.

Special events such as weather nets or public service events are difficult, as the traffic is not constant. System capacity is still constraining us, and the traffic demanded begins, reaches a peak, and tapers off. In the case of a weather watch, there is a scramble to get the watchers in position. Traffic builds as the NWS, EOC or whatever agency being assisted, demands more information. Occasionally just about the time information is most critical, such as when the storm is directly overhead, the system becomes overloaded, and traffic demands exceed capacity. What happens? Well, if the net control can keep a cool head and the net is well disciplined, some of the more routine traffic becomes delayed. Accuracy decreases, however, and sorting priorities becomes a problem. Is the Mayor's "routine" acted upon before the NWS "priority"? In time, the delayed traffic is transmitted, but some of it will disappear, because it is no longer timely. This is not important, but we missed our chance. Somehow we need a better way of conducting traffic nets.

Disaster nets have less efficiency. The traffic demands build to gargantuan proportions following tornado touchdowns and other major events. The system is worked to capacity, but it takes days and even weeks to chip away at the workload. Accuracy is horrible, and faith in the system and Amateur Radio suffers in the long run. I could justify this scenario in the 1930s, but what do we answer in the computer age?

The answer to this problem is to move that system capacity line up so high that we couldn't run into it if we tried and at the same time do error checking to insure 100% system accuracy. This is exactly what packet radio will do for us in the amateur community, and it will do this at a relatively low cost.

A packet radio station consists of your present rig (1930 vintage if you so desire, but preferably a modern FM transceiver), some kind of terminal or personal computer, and a TNC, which does the packet formatting, error checking and several other functions. TNCs generally sell in the $ 100-500 range. So the cost to upgrade your station to packet radio is perhaps the cost of a 2-meter rig.

Packet radio will do a number of things for you. It will change the system capacity line from 100 words per minute in our example (74 baud to 1200 baud on VHF). On paper, that's a sixteen-fold increase. In reality, it will be less because of packet overhead, but the increase is still phenomenal. The accuracy is virtually 100%, because of error checking and system acknowledgments. Previously, the net controls could talk to one station at a time. In packet radio, numerous stations can send data to other stations on the same channel simultaneously.

The use of computers has an enormous effect on today's Amateur Radio Emergency Service capabilities. While in the past, human intervention was usually required to check status, accuracy and system efficiency, today's use of digital modes for net operation allows for messages to be sorted for a station not yet logged in, on-line inquiries of emergency shelter occupancy to be made, etc. All of this is routinely accomplished by even a newcomer to amateur radio.

Traditionally, traffic nets have been single function in nature: VHF for local coverage, HF for larger areas, etc. By using computerized gateway functions, today's systems can access worldwide via satellite. This provides a means to get traffic in and out of the local system. Perhaps we need local stations to handle the LAN. The other four stations (or more) could link to other LANs, gateways, computers, etc.

What could happen if the national emergency evacuation plan were implemented? Imagine moving 100,000 people in your community to an area 50 miles away. It is logical that Amateur Radio would be used to help coordinate this massive effort. How would we handle this? The logistics would involve massive vehicle movement, fuel, food, medical care, etc. A packet radio system could easily accommodate this. If one LAN becomes overloaded, just initiate

another. The gateways would also be heavily used and again, if a gateway becomes overloaded, another gateway would be initiated.

We are still using old technological equipment. Old communications techniques are effective for day-to-day operation, but may become overloaded at the first sign of large scale activity. We have the technology to correct the situation, but we need to act now to adapt packet radio technology and procedures to our traffic-handling.

There is no such thing as a typical disaster as various officials will confirm; each one is different and unique. However, take a typical situation such as a flood. A flood affects a large area to some degree, but the flood is disastrous to only a localized area at any one time. This area is often densely populated although geologically limited to a few square miles. Consequently it affects many people. The first priority is warning these people of danger and if necessary evacuating them to shelters. Then comes monitoring conditions, maintaining the shelters and finally cleanup. When things are habitable again, the people return to their homes and the shelters close down. The emergency is over.

The type of radio activity varies widely during the operation. Let's analyze the situation to see if there's a better way.

As soon as conditions warrant, you, as EC (or your designee) go into the area and establish the net in the temporary or permanent EOC. Local officials should already be located and have communications of their own to local public services including Red Cross and other agencies. Although slower, telephone service to these agencies can keep the amount of radio traffic manageable. Often however, telephone service is either very limited or unavailable.

The EOCs tend to be beehives of activity. Everyone wants to head the effort to get the job done. Your group will be getting communications requests from all these agencies for everything from trivial to critical. It's nearly impossible to say "no" to the Mayor and other officials.

The communication volume of traffic within the disaster area is higher than anywhere else. The farther you get from the disaster area, the less volume of traffic. With voice communication, there is no choice but to impact this high volume of traffic in the EOC. The high volume of traffic continues in the EOC and surrounding area; however, people outside the area also get on the same repeater or frequency and make the rest of the net wait.

Remember, only so many stations can actively be on a net with their traffic at one time before the frequency becomes saturated. The outlying stations with priority traffic are just as important as EOC priority traffic. Getting the activity away from the EOC doesn't help unless you can get that traffic off frequency also. You may be partially successful by using 220 MHz as an "administrative frequency," but that means listening to voice conversations on two radios. Another 2-meter frequency rig won't help because it will overpower the main 2-meter frequency and block reception. Is there a solution to this dilemma? Yes, packet radio! But how do you implement it?

For fast communication, there will never be a replacement for voice. Don't even think about asking the Mayor to please type his or her message! So the net at the EOC will continue on 2 meters, utilizing a base station and operators with mobile or handheld radios doing their thing. What we can do to relieve the bottleneck at the EOC is to establish an effective co-located packet-radio system. How do we do this and how can it be used effectively?

Lots of traffic can be digitized including all routine requests, shelter traffic, Red Cross inquiries, damage assessment reports, ARES status, etc. I propose parallel systems, one running traditional FM voice on 2-meters, with the other running packet on 220 MHz .

I chose 220 MHz for several reasons. 220 MHz can transmit without interfering with 2-meter reception and vice versa. Most scanners cannot receive 220 MHz, so confidentiality of the information is somewhat protected. Also, it is impractical to simulcast the packet over the repeater voice--the packet attracts too much curiosity and tends to splatter on the adjacent channels.

The 2-meter voice net would be handled pretty much business as usual, with a few exceptions. Routine requests should be significantly reduced, and your manpower efficiency will be increased.

EOCs usually have a least two people operating radios. One person serves as net control, and the other interfaces with officials, monitors conditions, maintains status boards, etc. It is usually difficult if not impossible for one person to serve all these functions. What's needed is one operator to be net control of the VHF FM net while the other operates the packet keyboard. Ideally, the keyboard operator screens the requests so only the urgent information is processed.

Lots of information can be transferred via packet, and a record of the traffic can be recorded to disk at one of the stations. If an item demands immediate attention at a particular station, the sender can ring the bell on that person's keyboard. Most traffic, however, will fall in the categories of either inquiry, status or update.

Any station can initiate an inquiry. Usually an inquiry is directed at the likely respondent, but perhaps it should go to everyone. If every station uses their own call, we do not have a vehicle for an all-call. If they use a particular call sign for the duration of the emergency, such as the club call or repeaters trustee's call, then the extensions O-15 take on a new meaning. We can call selectively (i.e., VE9KB-3) or all call (VE9BL). This is possible as a packet station uses a Secondary Station Identifier (1-15) at the end of the station's call sign.

Computers and packet radio go hand in glove. By using a data base program on our home or club microcomputer, disaster information can be managed like it has never been done before. Gone forever are the little scraps of paper all over the EOC. Instead there are neat, organized files that can be called out immediately by any station. It's a lot more professional to check a listing rather than searching through a yellow pad. Chances are a computer listing will be more accurate and up to date, too.

These messages and associated programs will form the data base that can be examined by any of the packet stations desiring information. Within a short period of time, these data bases will contain a large amount of accurate information that will greatly aid the disaster effort and keep the workload manageable on the voice net. This means attaining a degree of efficiency never before realized while serving the needs of our community.

11.4 Packet Radio and the National Traffic System

11.4, 11.5 and 11.6 were originally written under the title "A Marriage Made in Heaven – Packet Radio and the North American National Traffic System" by Steve Czaikowski - WB4ZTR and Deni Waters - WB0TAX, and revised by Ken Oelke - VE6AFO and Alan Faint - VE6TZY in the CARA CARES Level One Course. Reprinted with permission.

Note - All occurrences of the word "traffic" in this article mean National Traffic System message traffic.

The following procedures were written to assist both the Packet BBS system operator (sysop) and the new NTS operator in the use of the packet radio network. Your assistance in following these procedures will result in a smoother liaison between packet radio and the National Traffic System which covers all of North America. (There are restrictions on passing third party traffic to many countries on other continents).

A Packet BBS (PBBS) forwards its traffic (mail) through the use of a forwarding file which, for NTS purposes, includes a list of ZIP Codes and 5 letter State and Province Designators. The designators consist of the letters "NTS" followed by the two letter postal abbreviation for the state or province. For example,
"NTSCA" means "route this message to California" and "NTSBC" means "route this message to British Columbia"
A properly addressed packet message headed for Hampton, VA would look like: "ST 23666 @ NTSVA".

Regardless of where this message entered the packet system, it would end up in Virginia. Once inside that state, the "NTSVA" is stripped, and the traffic is forwarded to the closest BBS serving the ZIP Code of the addressee. An NTS traffic handler in the area must reclaim the traffic from the local BBS and deliver it to the addressee.

Traffic addressed to Canada would include the appropriate Postal Code in place of the Zip Code. Note that the Canadian Postal Codes are six characters, with alternating numerals and letters. A piece of traffic destined for Hamilton, Ontario would look like: "ST M1P1T7 @ NTSON".

Note: The space normally placed between the "M1P" and the "1T7" in Canada's Postal Code is NOT used in packet.

If you are originating traffic destined for somewhere within your State or Province (called in-state traffic) the "@NTSVA" is not required. The header will simply be "ST 23666" for Hampton, VA and "ST M1P1T7" for Hamilton, ON. If you elect to use the "NTSVA" for in-state traffic, it will be stripped at the first BBS in line.

It is very important to use only the recognized two letter State and Province abbreviations. Traffic sent to "@NTSONT" will not go anywhere! "ONT" is not two letters. The traffic will not move because ONT does not appear in the forwarding file of the BBSs. The listing of recognized two letter abbreviations appears in the ARRL Public Service Communications Manual as well as in the ARRL Net Directory.

11.5 How to Originate NTS Traffic at a Packet BBS

Once logged in or connected to a Packet BBS, you will be given a prompt. This is normally a "greater than" or caret sign (>) and is the indication that the BBS is ready for further instructions.

1. Send the ST command to (S)end (T)raffic, followed by a space, the Zip Code (or Postal Code) of the addressee, a space, the @ sign, a space, and the NTSxx of the state or province (where xx is the two letter abbreviation for the state or province). The transfer would look like:

    VE6AFO BBS> ST 10016 @ NTSMB (Traffic for Manitoba).

2 After entering the command information, you will be prompted for the subject of the message.

At the subject line, enter the city or town, followed by the first six digits of the phone number:

QTC Calgary 403/234

(403 234 are the first six digits of the telephone number, including Area Code. The use of QTC is optional).

3. Once the subject is entered, you will be prompted for the actual message. Upon reaching this point, you should send the traffic according to the standard NTS message format including message number, precedence, check, originating station, call sign, city and province of origin, and the date. You may separate the preamble, address, text and signature with the <enter> key to make the packet message easier to read.

    Please remember that even though you may be originating the traffic on packet, it is likely that the message may be relayed at some point by other NTS methods – CW, SBB or AMTOR for example. Keep the check (word count) to less than 25 words, if possible. An example of a proper message preamble as originated on packet is:

    NR 1 R HXG WB4ZTR 8 HAMPTON VA FEB 1

4. After entering the signature, end the message with either a <CTRL Z > or /EX. This will complete the sending of the traffic.

You can check your work by sending either "L@ NTSxx, where xx is the two letter abbbreviation of the state/province destined to receive the traffic, or "LT" which stands for (L)ist (T)raffic. It will show you all traffic on the BBS. You may also read traffic by sending (R)ead and the BBS-assigned message number.

11.6 How to Remove Traffic From a Packet BBS

There are several things you should consider before removing NTS traffic from a packet BBS:

− Is the traffic for your area ?
− Is the addressee best served if the traffic is removed at your location ?
− If left, will the traffic continue to be forwarded by the packet network ?

If the traffic is destined for another location, it may be better for you to just leave it alone, but keep an eye on it to make sure it eventually does move. Traffic listed on a BBS by Zip Code (Postal Code) probably will be forwarded automatically to its destination.

If you decide to remove the traffic, here is how to proceed:

1. Issue the LT command to the BBS and check all traffic on the BBS. You should note the BBS-assigned message number of the listed traffic that you want to remove.
2. Turn on your printer and direct the copy to it, or save it to disk. This is important so that you will have a copy of the message to view when you relay or deliver the traffic.
3. Issue the (R)ead command, followed by the BBS-assigned message number of the traffic you want to take. Check your printer or the disk copy to be sure you have saved it
4. Once you have read the message and verified your copy, then issue the (K)ill command followed by the BBS-assigned message number of the traffic you took. To kill the traffic you must use its BBS-assigned message number. Do not confuse this BBS-assigned message number with the originator's message number in the preamble of the message.
5. Relay or deliver the traffic. This is a good time to send a message back to the originating operator telling them when, where, and by whom the message was delivered, if he so requested. Also, ask the addressee if they want to send a reply and be prepared to take it down and send it out. (Use the (S)end (R)eply command to do this.)

If you are interested in handling traffic, whether you are wanting to break into it for the first time, or have been doing it for years, please advise the Section Traffic Manager (STM) which Packet BBS you monitor and how often you check into that BBS. Daily monitoring of all BBSs is essential if we are to maintain quick deliveries of traffic. Notify the sysop of your local Packet BBS if you are interested in handling traffic, and provide a list of Postal Codes that you are willing to handle traffic for. Make a habit of using the (L)ist (T)raffic command whenever you log onto a BBS. This will ensure that there is no traffic left there that you can properly handle. Be sure to contact your Section Manager, Section Traffic Manager, or Section Emergency Coordinator if you need further information on traffic handling.

11.7 Packet Bulletin Board Systems – No Better Than Your Participation

As noted above, packet radio allows communication directly to a destination Packet Bulletin Board System. This eliminates various potential delays and errors enroute to that point. However, packet's weak link is at the destination. Another amateur has to copy the message off the bulletin board system, "kill" the listing and deliver the message to the addressee. It is also very important for the delivering operator to ask the addressee if they wish to send a reply to the originator, and to be ready to take down and send the reply. The delivery process is where ARES and NTS units can be of great help to each other. If all traffic is cleared off the BBS and delivered promptly, there would be considerable improvement in amateur radio traffic efficiency and effectiveness. This would prepare the country for more effective emergency communications when that is needed.

11.8 PBBS Third Party Traffic Incompatibility

North American PPBS software has been developed with third party traffic considerations taken into account. However, early versions of a European-developed system had problems in this area, as third party traffic is not a consideration in Europe. The F6FBB PBBS and the associated TPK terminal software have excellent features and have become very popular among PBBS system operators (sysops). However, initially there was no provision to handle third party messages. Early versions did not allow anyone other than the addressee to kill a message. This meant that a traffic-handler could read the message and deliver it to the addressee, but the message remained on the PBBS until the sysop deleted it manually. Meanwhile other well-meaning traffic-handlers may have read and delivered that same message again and again. This has resulted in complaints by the addressee to the sysop. As a result third party traffic messages were no longer allowed on certain PBBS. The new FBB v7.00c solves the earlier problems.

Before you select a PBBS to use as your packet address, ensure it has third party traffic compatibility. If your local PBBS is using an earlier version of FBB, encourage the sysop to upgrade to FBB v7.00c for mutual benefit
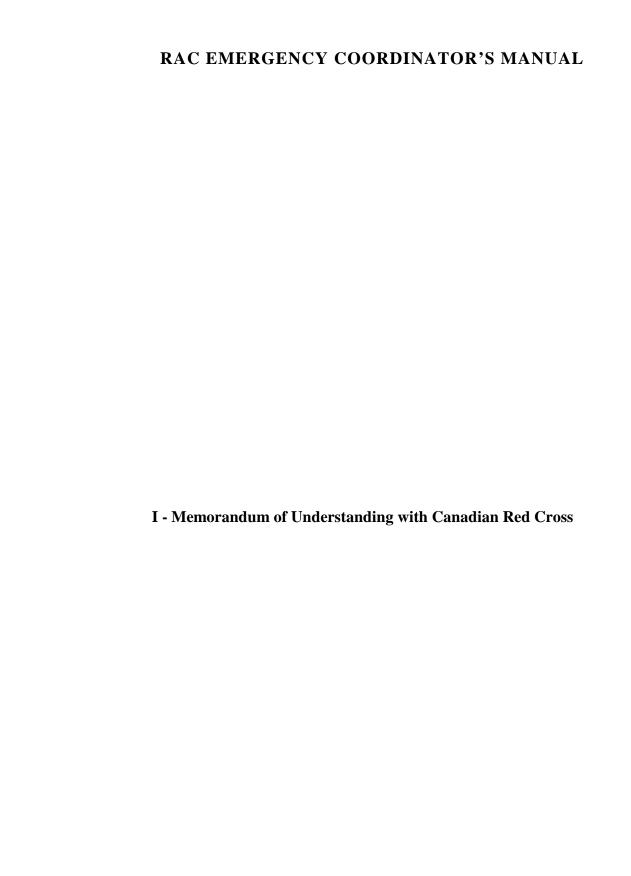
11.9 Summary

Experts believe that packet radio's future is limited only by the imagination of the pioneers in this field. As more and more amateurs become "packeteers" (packet radio users), this mode of communication continues to grow.

As indicated earlier in this chapter, packet-radio applications in ARES/public service are being developed, fine-tuned, and implemented. For example, amateurs in the Washington, DC, area were once asked to provide communications during an endurance race which covered many square miles of open territory. Communications were needed to keep the race officials informed of the status of the entrants, course conditions, and more importantly, to maintain the safety of the competitors, particularly in the case of life-threatening injuries requiring an immediate response from medical personnel. The group decided that packet radio was the perfect mode of communications for this assignment. After many hours spent solving problems, the system (or network) was up and running--ready for the race. By utilizing packet radio, amateurs enabled the race officials to have real-time information at their fingertips. The computers exchanged information automatically; in this way, the information was constantly being updated. The computers did not depend on one computer to store the memory--they all had the same memory which was up to date!

Your ARES group needs packet radio for high-volume and accurate communications in an emergency. Arm yourself with the knowledge of packet radio to which you have been introduced in this chapter. Combine that with your desire to serve the public, and join the ranks of the packeteers!

Don't rate packet against internet e-mail solely for convenience. When the phone lines are down in an emergency there will be no internet e-mail either. Make sure your emergency packet capability is ready and able to take up the slack. You will need your emergency-powered packet equipment, but you will also need to be practised and confident. If you don't exercise your packet capability frequently because you have gone to internet e-mail, you won't be ready.

Appendix

I - Memorandum of Understanding with Canadian Red Cross

MEMORANDUM OF UNDERSTANDING
between
The Radio Amateurs of Canada Inc.
and
The Canadian Red Cross Society

The Canadian Red Cross Society recognizes that the Radio Amateurs of Canada Inc., because of its excellent geographical coverage, can render valuable aid in maintaining the continuity of communications during disasters and emergencies when normal communications facilities are disrupted or overloaded.

The Radio Amateurs of Canada Inc. recognizes The Canadian Red Cross Society as an agency that provides assistance to individuals and families affected by disasters in Canada and around the world through the International Committee of the Red Cross and the International Federation of Red Cross and Red Crescent Societies.

Whenever there is a disaster or an emergency requiring the use of radio communications facilities, the Radio Amateurs of Canada Inc. agrees to provide, whenever and wherever possible:

1.   The alerting and mobilization of volunteer emergency communications personnel and equipment in accordance with a pre-determined plan.

2.   The establishment and maintenance of fixed, mobile and portable emergency communications facilities for local radio coverage and point-to-point contact between Red Cross and various locations, as required; and

3. Adequate provision of service for the duration of the emergency or until substantial regular communications are restored and stand down is ordered by Red Cross Emergency Services.

This Memorandum of Understanding will remain in effect provided that either party may terminate this Memorandum of Understanding by giving the other party three months notice in writing of its intention to so terminate.

Further details concerning the method of cooperation are outlined in Appendix A. Information on the organization of The Canadian Red Cross Society and the Radio Amateurs of Canada Inc. is attached as Appendix B. Signed by:

President
Radio Amateurs of Canada Inc.

National Director, Field Operations
The Canadian Red Cross Society
April 28, 1994

APPENDIX A Guidelines for Cooperation

1.   Through its executive level, Radio Amateurs of Canada Inc. will maintain liaison with The Canadian Red Cross Society's Emergency Services in order that there may be the closest possible cooperation in emergency communications planning and the coordination of radio communication facilities for disaster relief operations.

2.   Red Cross Divisions, Regions and Branches are encouraged to invite one or more members of the amateur radio community to serve as Red Cross volunteers for emergency preparedness and relief.

3.   Personnel of the Radio Amateurs of Canada Inc. are eligible for reimbursement by Red Cross for reasonable out-of-pocket and travelling expenses while conducting approved business on behalf of the Society.

4.   Detailed operating plans for the full utilization of the communications facilities of the Amateur Radio Emergency Service should be developed by the local Red Cross in cooperation with the Radio Amateurs of Canada Inc.'s local Emergency Coordinator.

5. The Canadian Red Cross Society will recommend to its Divisions that membership on disaster preparedness and relief committees include representation from the appropriate officials of the Radio Amateurs of Canada Inc.

6. The Canadian Red Cross Society will furnish Divisions with copies of this statement of understanding and the Radio Amateurs of Canada Inc. will similarly furnish copies to its Field Officials.

OCTOBER 25, 1993

APPENDIX B Organization of The Canadian Red Cross Society

1. The National Headquarters of The Canadian Red Cross Society is located in Ottawa. For administrative purposes, Canada is divided into ten Divisions with each Division having jurisdiction within its own Province. Divisional Offices are located in the following cities: Burnaby, B.C.; Calgary, Alberta; Regina, Saskatchewan; Winnipeg, Manitoba; Mississauga, Ontario; Verdun, Quebec; Saint John, New Brunswick; Halifax, Nova Scotia; Charlottetown, Prince Edward Island; and St. John's, Newfoundland. The B.C/Yukon Division and the Alberta/NWT Divisions are responsible for Red Cross operations in their respective Territory.

2. Regions and Branches are the local units within each Division of The Canadian Red Cross Society. These units are responsible for all local activities of the Red Cross within its territory, subject to the policies and regulations of the divisional and national organization.

3. Each Region and Branch is responsible for developing an Emergency Services Committee of the best qualified volunteers available. This Committee studies the disaster hazards of the territory and surveys local resources for personnel, equipment and supplies, including transportation and emergency communication facilities, that are available for disaster relief. It also formulates co-operative plans and procedures with local governmental agencies, private and other volunteer organizations for carrying on relief operations should a disaster occur.

Organization of the Radio Amateurs of Canada Inc.

4. The American Radio Relay League Inc., (ARRL) was founded in 1914 to encourage and support every aspect of amateur radio. The ARRL became a bi-national organization in 1920 with the formation of the Canadian Division and Canadian membership.

5. The Canadian Division was known in Canada as the Canadian Radio Relay League Inc., (CRRL) giving it a distinctly national entity. The CRRL elected officers were charged with policy administration as established by their Executive Committees and Board of Directors. On May 2, 1993 the Canadian Amateur Radio Federation and the Canadian Radio Relay League Inc. ceased operation and merged together on that day to form the Radio Amateurs of Canada Inc. This agreement will then continue in force with Radio Amateurs of Canada Inc. who will carry on with the Field Services Organization.

6. The Radio Amateurs of Canada Inc.'s Field Services Organization operations are administered by the Field Services Manager through elected Section Managers (SM). Canada is divided into seven sections: British Columbia-Yukon, Alberta and the North-West Territories, Saskatchewan, Manitoba, Ontario, Quebec and the Atlantic Provinces, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland forming the Maritime/Newfoundland Section.

7. The Radio Amateurs of Canada Inc. sponsored Amateur Radio Emergency Service (ARES) consists of two branches: the Amateur Radio Emergency Service (ARES) and the National Traffic System (NTS). Both branches work together, are supported by thousands of licensed radio amateurs and are under the jurisdiction of their Section Manager.

8. ARES - Amateur Radio Emergency Service. The ARES is an organization of licensed radio amateurs who have voluntarily registered their qualifications and equipment with the Radio Amateurs of Canada Inc. for communication duty when disaster strikes. It is supported and directed by Radio Amateur of Canada Inc. appointees. The leading provincial ARES official is the Section Emergency Coordinator (SEC) who appoints individual Emergency Coordinators (ECs) and District Emergency Coordinators (DECs) across the province to assist locally. It should be noted that membership in ARES is not restricted to members of RAC.

9. NTS - National Traffic System. The NTS compliments the ARES and functions daily in the handling of medium and long distance formal message traffic and whose network operations can be stepped up to meet the needs of an emergency situation. The leading NTS official is the Section Traffic Manager (STM) who is assisted by carefully trained and selected Net Managers (NMs). Traffic nets link with other nets throughout North America and South America, the Caribbean and Australia and operate every day and night of the year. Further-training, tests and drills for the ARES and NTS members maintain a disciplined readiness in providing emergency communications.

10. Radio Amateurs of Canada Inc.'s Section officials (SM), (SEC), (STM) work closely together daily as well as with the organization's Headquarters and/or Government officials as required during emergency situations.

Don Shropshire
February 11, 1994

II - Emergency Preparedness Canada Addresses

These offices are primarily for liaison with the provincial governments. However the Director, or his representative may be willing to speak at a local amateur radio club in support of ARES and other emergency preparedness topics.

Emergency Preparedness Canada Addresses

Headquarters

Emergency Preparedness Canada
Communications Directorate
122 Bank Street
2nd Floor, Jackson Building
Ottawa, Ont.
K1A 0W6
Tel: (613) 991-7077
Fax: (613) 998-9589
E-Mail (Internet): Communications@epc-pcc.x400.gc.ca
Web site: http://hoshi.cic.sfu.ca/epc

Safe Guard Secretariat
122 Bank St 2nd Flr
Ottawa, ON K1A 0W6
Tel: 613 991 7035
Fax: 613 998 9589
E-Mail (Internet): safeguard@jackson.epc.epc-pcc400.x400.gc.ca
Web Site: http://hoshi.cic.sfu.ca/epc

Regional Directors

Newfoundland
Mr. Len Le Riche
Emergency Preparedness Canada
Box 73, Atlantic Place, Suite 504
215 Water Street
St. John's, Newfoundland
A1C 6C9
Tel: (709) 772-5522
Fax: (709) 772-4532
E-Mail (Internet): nfl3@jackson.epc.epc-pcc.x400.gc.ca

Nova Scotia
Mr. R.B. O'Sullivan
Emergency Preparedness Canada
6009 Quinpool Road
Suite 801
Halifax, N.S.
B3K 5J7
Tel: (902) 426-2082
Fax: (902) 426-2087
E-Mail: ns3@jackson.epc.epc-pcc.x400.gc.ca

Prince Edward Island
Mr. Shawn Clark (Regional Officer)
Emergency Preparedness Canada
Courier address:
Dominion Building

97 Queen Street, Suite 210
Charlottetown, P.E.I.
C1A 4A9
Postal address:
P.O. Box 1175
Charlottetown, P.E.I.
C1A 7M8
Tel: (902) 566-7047
Fax: (902) 566-7045
E-Mail (Internet): pei3@jackson.epc.epc-pcc.x400.gc.ca

New Brunswick
Mr. John McCallan
Emergency Preparedness Canada
Courier address:
77 Westmorland Street, Suite 350
Fredericton, N.B.
E3B 6Z3
Postal address:
P.O. Box 534
Fredericton, N.B.
E3B 5A6
Tel: (506) 452-3020
Fax: (506) 452-3906
E-Mail (Internet): nb3@jackson.epc.epc-pcc.x400.gc.ca

Québec
Mr. André Tremblay
Emergency Preparedness Canada
250 ouest, Grande-Allée, Suite 701
Québec, Québec
G1R 2H4
Tel: (418) 648-3111
Fax: (418) 648-4923
E-Mail (Internet): que3@jackson.epc.epc-pcc.x400.gc.ca

Ontario
Mr. W.A. Brocklehurst
Emergency Preparedness Canada
20 Holly Street, Suite 205
Toronto, Ont.
M4S 3B1
Tel: (416) 973-6343
Fax: (416) 973-2362
E-Mail (Internet): ont3@jackson.epc.epc-pcc.x400.gc.ca

Manitoba
Mr. L.F. French
Emergency Preparedness Canada
Suite 403, MacDonald Building
344 Edmonton Street
Winnipeg,   Manitoba
R3B 2L4
Tel: (204) 983-6790
Fax: (204) 983-3886
E-Mail (Internet): man3@jackson.epc.epc-pcc.x400.gc.ca

Saskatchewan
Mr. H.F.E. Swain
Emergency Preparedness Canada
Avord Tower, Suite 850
2002 Victoria Avenue
Regina, Sask.
S4P 0R7
Tel: (306) 780-5005
Fax: (306) 780-6461
E-Mail (Internet): sas3@jackson.epc.epc-pcc.x400.gc.ca

Alberta and Northwest Territories
Mr. Don Campbell
Emergency Preparedness Canada
9700 Jasper Avenue
Edmonton, Alta.
T5J 4C3
Tel: (403) 495-3005
Fax: (403) 495-4492
E-Mail (Internet): alb3@jackson.epc.epc-pcc.x400.gc.ca

British Columbia and Yukon
Mr. Roberto Gonzalez
Emergency Preparedness Canada
Courier address:
4220 Commerce Circle, Suite 104
Victoria, B.C.
V8Z 6N6
Mailing address:
P.O. Box 10000
Victoria, B.C.
V8W 3A5
Tel: (250) 363-3621
Fax: (250) 363-3995
E-Mail (Internet): bc3@jackson.epc.epc-pcc.x400.gc.ca

III - Provincial Emergency Measures Organizations

The provincial organization will be able to provide the contact name for the municipal Emergency Measures Coordinator, and the address and telephone number. This information may be important if you live in a small town which may have combined with one or more other communities for the purpose of emergency measures. The provincial Emergency Measures Organization may also be able to provide speakers for amateur radio clubs, in support of ARES and other emergency measures topics.

Provincial and Territorial Emergency Measures Organizations

Newfoundland
Emergency Measures Division
Department of Municipal Affairs
P.O. Box 8700
St. John's, Newfoundland A1B 4J6
(709) 729-3703
http://www.gov.nf.ca/mpa/finance/emerg.htm

Prince Edward Island
Emergency Measures Organization
P.O. Box 2063
Summerside, Prince Edward Island C1A 5L2
(902) 888-8050
http://www.gov.pe.ca/caag/planinsp/index.dsp

Nova Scotia
Emergency Measures Organization
P.O. Box 2107
Halifax, Nova Scotia B3J 3B7
(902) 424-5620
http://www.gov.ns.ca/emo/

New Brunswick
New Bruswick Public Safety Services
Department of Municipalities, Culture and Housing
P.O. Box 6000
Fredericton, New Brunswick E3B 5H1
(506) 453-2133
http://www.gov.nb.ca/pss/

Québec
Direction générale de la Sécurité et de la prévention
Ministère de la Sécurité publique
2525, boul. Laurier, 2e étage
Sainte-Foy, Qu ébec G1V 2L2
(418) 643-3256
http://www.cspq.qc.ca/cse

Ontario
Emergency Measures Ontario
Ministry of the Solicitor General & Correctional Services
25 Grosvenor Street, 19th Floor
Toronto, Ontario M7A 1Y6
(416) 314-3723
http://hoshi.cic.sfu.ca/ont/

Manitoba
Emergency Measures Organization
15th Floor, Woodsworth Building
405 Broadway Avenue
Winnipeg, Manitoba R3C 3L6
(204) 945-4789
http://www.gov.mb.ca/gs/memo/index.html

Saskatchewan
Emergency Planning
1855 Victoria Avenue, Room 220
Regina, Saskatchewan S4P 3V5
(306) 787-9563
http://www.gov.sk.ca/munigov/muniserv/

Alberta
Disaster Services Branch
Alberta Transportation and Utilities
4999, 98th Avenue NW
Twin Atria Building, 2nd Floor
Edmonton, Alberta T6B 2X3
(403) 422-9000
http://www.gov.ab.ca/DIS000.htm

British Columbia
Provincial Emergency Program
455 Boleskine Road
Victoria, British Columbia V8Z 1E7
(604) 387-5956
http://hoshi.cic.sfu.ca/~pep/

Northwest Territories
Emergency Measures
Department of Municipal and Community Affairs
Government of Northwest Territories
P.O. Box 1320
Yellowknife, Northwest Territories X1A 2L9
(403) 920-6133

Yukon
Emergency Measures Organization
Department of Community Services and Transportation Services
Government of Yukon
P.O. Box 2703
Whitehorse, Yukon Y1A 2C6
(403) 667-5220

IV - Environment Canada Regional Offices

Those wishing to express interest in forming or joining a CANWARN network should contact the Environment Canada Regional Office in your region for information. If your contact is unfamiliar with CANWARN, have them e-mail Randy Mawson, VE3TRW at this e-mail address: randy.mawson@ec.gc.ca

Environment Canada Regional Offices

Atlantic Region – Halifax

Environment Canada, Atlantic Region
15th Floor, Queen Centre
45 Alderney Drive
Dartmouth, NS B2Y 2N6

Regional Director - Bill Appleby
426-9120

Quebec Region - Montreal

Environment Canada, Quebec Region
100 Alexis-Nihon Blvd.
Room 300
St. Laurent, Quebec
H4M 2N8

Regional Director - Jacques Vanier
283-1600

Canadian Meteorological Centre
2121 North Service Road
Transcanadiane Route
Dorval, Quebec
H9P 1J3

Director - Angele Simard
421-4654

Ontario Region - Downsview

Environment Canada, Ontario Region
4905 Dufferin Street
Downsview Ontario
M3H 5T4

Regional Director - Anne O'Toole
416-739-4356

Prairie and Northern Regions - Edmonton

Environment Canada
Prairie and Northern Region
Twin Atria Building
Room 200, 4999-98th Avenue
Edmonton, Alberta
T6B 2X3

Regional Director - Brian O'Donnell
951- 8847

Pacific and Yukon Region - Vancouver

Environment Canada
Pacific and Yukon Region
700-1200 West 73rd Avenue
Vancouver, B.C.
V6P 6H9

Regional Director General - Art Martell
664-9145

V - Canadian Red Cross National and Zone Offices

Note – Contact with Canadian Red Cross should be at the local level, between the ARES Emergency Coordinator and the local Canadian Red Cross office, listed in your local telephone directory. The Zone offices are shown, in case it is necessary to determine which local office covers your municipality. It is likely that your Municipal Emergency Measures Coordinator also will be able to provide this information.

Canadian Red Cross National and Zone Offices

Canadian Red Cross Society
1800 Alta Vista Drive
Ottawa ON K1G 4J5
Phone: (613) 739-2085
FAX: (613) 739-2599
E-mail: Gredmond@redcross.ca
Contact: Gary Redmond, Acting National Coordinator – Emergency Services

Web Site: http://www.redcross.ca

There are 4 zone offices across Canada, and hundreds of branch offices. The zone offices are:

Canadian Red Cross Society — Western Zone
815 8th Avenue South West, 6th floor
Calgary AB T2P 3P2
Phone: (403) 261-6224
FAX: (403) 205-3463
Contact: Coordinator, Disaster Management

Canadian Red Cross Society — Atlantic Zone
P.O. Box 39
405 University Avenue
Saint John NB E2L 4G7
Phone: (506) 648-5002
FAX: (506) 648-5095
Contact: Director of Community Response

Canadian Red Cross Society — Ontario Zone
5700 Cancross Court
Mississauga ON L5R 3E9
Phone: (905) 890 1203, ext. 325
FAX: (905) 890-1008
Contact: Manager, Emergency Services

Canadian Red Cross Society — Quebec Zone
6 Place du Commerce
Ile-des-Soeurs
Verdun QC H3E 1P4
Phone: (514) 362-2930, ext. 2942
FAX: (514) 362-9991
Contact: Director of Emergency Preparedness

VI - Canadian Civil Air Rescue Services

Contact should be made between local groups. Contact the provincial address shown for your nearest local organization. Remember that the aircraft will probably be radio equipped. Your involvement might be to assist through coordinating ground search.

Canadian Civil Air Rescue Services

WESTERN REGION

CARES Alberta
Contact: Jerry Mulder, Director
Tel 403 343 6927 Fax 403 342 7243
e-mail jjmulder@agt.net
4309 Grandview Blvd
Red Deer, AB T4N 3E7

PEP British Columbia
Contact: Charles Pachal, Director
Tel 250 769 7503 Fax 250 769 6312
e-mail charles_pachal@bc.sympatico.ca
421 Abel Place
Kelowna, BC V1Z 3E1

CASARA Manitoba
Contact: John Davidson
Tel 204 895 4523 Fax 204 983 4444
161 Rodney St.
Headingley, MB R4J 1A6

CASARA NWT
Contact: Blair Jensen, Director
Tel 403 588 4141 Fax 403 588 4131
General Delivery
Norman Wells, NT X0E 0K0

CASARA Saskatchewan
Contact: Delbert Minter, Director
Tel 306 446 7761 Fax 306 445 0020
2252 – 95 St
North Battleford, SK S9A 3K5

CASARA Yukon
Contact: Bill Reid, Director
Tel/Fax 403 633 5663
139 Ponderosa Dr
Whitehorse, YK Y1A 5G9

CENTRAL REGION

CASARA Ontario
Contact: J. Michael Daniels, Director
905 871 2529 Fax 905 871 7702
e-mail machi@iaw.on.ca
1133 Benner Rd
Fort Erie, ON L2A 4N8

SARABEC Quebec
Contact: R. Proteau
Tel/Fax 819 682 4742
316 Edey
Aylmer, QC J9J 2K5

EASTERN REGION

CASARA New Brunswick
Contact: Dwight Ough, Director
Tel 506 658 9736 Fax 506 658 9736
C/O 36 Edith Ave
Saint John, NB E2J 1P1

CASARA Newfoundland/Labrador
Contact: Brian Bishop, Director
Tel 709 368 9112 Fax 709 368 8974
8 Dollard Pl
Mt Pearl, NF A1N 4K5

CASARA NS
Contact: Douglas Betts, Director
Tel/Fax 902 897 4300
RR #1
Brookfield, NS B0N 1C0

CASARA PEI
Contact: Don MacKay
Tel 902 436 7668 Fax 902 436 8037
127 Gamble Ave
Summerside, PEI C1N 4R3

VII - Ground Search and Rescue Organizations

Note 1 - Contact with the Ground and Urban Search and Rescue organizations should be at the local level, between the ARES Emergency Coordinator and the local Ground SAR group. It is beyond the scope of this manual to list the hundreds of Ground and Urban SAR groups across Canada. A biennial SAR directory is published by the National Search and Rescue Secretariat, whose mail, e-mail and web site addresses are shown on the next page. A new version of this directory will be available for download from their web site by late Fall 1997.

In the meantime, you can obtain the contact information on the nearest SAR group from the provincial organization listed on the next page, or contact National Search and Rescue Secretariat.

Note 2 – Another special form of ground search and rescue is the Heavy Urban Search and Rescue (HUSAR). Ground SAR is concerned with locating people lost in wilderness areas, and occasionally children, and elderly or mentally handicapped people who have wandered in urban areas. HUSAR deals with pinpoint location of people in collapsed buildings, trenches, subways, etc where the primary concern is extrication – often using heavy construction equipment and special techniques. HUSAR is usually provided by the local fire department augmented by other agencies with special skills. Amateur radio can support such efforts as it does other municipal emergency communications.

Ground Search and Rescue Organizations

National

National Search and Rescue Secretariat
4th Floor, 275 Slater St
Ottawa, ON K1A 0K2
Tel 613 996 1616
Fax 613 996
1 800 727 9414
e-mail: jroy@nss.gc.ca
http://www.nss.gc.ca

Search and Rescue Volunteer Association of Canada
Alan Lang - President
26 Arbor Drive
Sault Ste Marie, ON P6C 5L6

Provincial

Alberta
Search and Rescue Alberta
Suite 142
9768-170 Street
Edmonton AB T5T 5L4

British Columbia
Search and Rescue Society of British Columbia
2 3 W e s t B u r n s i d e R o a d
V i c t o r i a B . C . V 9 A 6 Z 7
Mail:
P.O. Box 187, Victoria, B.C. V8W 2M6
Voice - [250] 383-1011
Fax - [250] 383-6849
Data - [250] 383-7681
e-mail - sarbc@sarbc.org
www - http://www.sarbc.org

New Brunswick
New Brunswick Ground Search and Rescue
Association
Scott Mullen – President

P.O. Box 3206, Stn B
Fredericton, NB E3A 5G9
Tel (506) 622 5600
Fax (506) 622 5601

Nova Scotia
Nova Scotia Ground Search and Rescue
Emergency Measures Organization
P.O. Box 2107
Halifax, Nova Scotia B3J 3B7
Tel (902) 424-5620
Fax (902) 424-5376

Saskatchewan
Search and Rescue Saskatchewan Association of
Volunteers
Bonnie Goebel – Chair
P.O. Box 1240
Melville, SK S0A 2P0
Tel (306) 728 5710 (H)
   (306) 728 6849 (W)
Fax (306) 728 5911

VIII - Dangerous Goods and Hazardous Materials

Dangerous Goods and Hazardous Materials

Every community has some hazardous materials transported on its streets, in pipelines under its roadways and in use in its homes and businesses. It is important that amateur radio operators recognize the widespread presence of these materials, understand the possible consequences of a spill or release and be prepared to take appropriate action in case of an incident involving hazardous materials.

What are Hazardous Materials and Dangerous Goods?

These are substances which, because of their physical and chemical properties (e.g. their ability to burn, explode or cause sickness), present a high risk to people, property and the environment if they are released from their container. Examples of such materials are gasoline, natural or liquified petroleum gas (propane or butane), strong acids or alkalis, and pesticides. When such materials are transported they become "dangerous goods".

Be a Trained Observer

If you should witness or come upon a transportation incident, your first concern should be for your own safety. If a highway or railway accident has occurred, dangerous goods may or may not be present, people may or may not be injured, and the authorities will certainly need to be notified.

As a trained observer, you should be cautious and prepared to take action to protect yourself. If you see a placarded vehicle or rail car, or packages or containers with coloured warning labels, you should move away from the incident.

Other recommended actions include notifying local or provincial authorities, trying to keep people away from the scene, not walking into or touching any spilled material and avoiding inhalation of fumes, smoke or vapour. Do not smoke near any transportation incident. It is recommended that you try to note markings and colours of placards. A trained observer will also notice if a package, bottle or cylinder is in a place in which it does not belong and report all this to the authorities as well. Don't overestimate your own ability to handle the situation. A delay in getting help may result in greater consequences.

Getting Their Attention

When reporting an incident involving dangerous goods, it is important to describe the situation using words which will trigger an appropriate and informed response by the emergency services. Describe any injuries as well as warning labels or placards, the condition of containers and any leakage. Your accurate reporting will provide emergency responders with the warning they would not have had until their own arrival. Forewarned is forearmed.

Amateur Radio Assistance

Transportation incidents often occur away from towns, quickly tying up the emergency services' radio channels. There is a need for reliable supplementary communications between incident site and outside assistance.

As an amateur radio operator, your phone patch capability may allow direct contact with CANUTEC, the Chemical Accident Emergency Advisory Service, which is staffed 24-hours-a-day by bilingual professional chemists who specialize in dangerous goods incidents. Call COLLECT to 613 996-6666.

Dangerous Goods – Classification and Safety Marks

The Transportation of Dangerous Goods Act divides dangerous goods into nine classes according to the type of danger they represent. Some of these classes are divided into divisions which are also associated with hazard characteristics.

A system of diamond-shaped placards and labels is used to identify dangerous goods. Different colours and symbols depict dangers peculiar to each regulated product. Safety marks communicate by colour and symbol the degree and nature of the hazard of dangerous goods. These safety marks are displayed on containers, packages, tanks and cylinders on transport units. There are four groups of safety marks: labels, placards, signs and other safety marks. Labels indicate the primary classification of dangerous goods, and, in some cases, the subsidiary classification. They must be applied to containers, packages and cylinders that contain dangerous goods. They need not be applied to inner receptacles in packages. Placards also indicate the primary and subsidiary classification of dangerous goods by colour, symbol, and in some cases, product identification number. Unless otherwise specified, they must be applied on each side and each end of the large container or the transport unit so that they are visible from any direction.

The following table shows the labels and placards in use in Canada, which are based on United Nations standards. They are displayed in full colour on the website: http://www.tc.gc.ca - "Dangerous Goods" - "Who we Are" and in the North American Emergency Response Guidebook (NAERG96) available from Transport Canada – Dangerous Goods Directorate, 330 Sparks St, Ottawa, ON K1A 0N5. The book has full details on precautions to be observed at spills.

SAFETY MARKS

Class 1 - Explosives

1.1 A substance or article with a mass explosion hazard

1.2 A substance or article with a fragment projection hazard, but not a mass explosion hazard.

1.3 A substance of article which has a fire hazard along with either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.

1.4 A substance or article which presents no significant hazard; explosion effects are largely confined to the package and no projection or fragments of appreciable size or range are to be expected.

1.5 A very sensitive substance which nevertheless has a mass explosion hazard like those substances in 1.1.

1.6 An extremely insensitive substance which does not have a mass explosion hazard.

Class 2 – Gases

2.1 A flammable gas

2.2 A non-flammable, non-poisonous, non-corrosive gas

2.3 A poisonous (toxic) gas

2.4 A corrosive gas

Class 3 – Flammable Liquids

A liquid which has a closed-cup flash point not greater than 61C

Class 4 Flammable Solids; Substances liable to spontaneous combustion; Substances that on contact with water emit flammable gases.

4.1 A solid that under normal conditions of transport is readily combustible, or would cause or contribute to fire through friction or from heat retained from manufacturing or processing, or is a self-reactive substance that is liable to undergo a strongly exothermic reaction, or is a desensitized explosive that is liable to explode if not diluted sufficiently to suppress its explosive properties.

4.2 A substance liable to spontaneous combustion under normal conditions of transport, or when in contact with air, liable to spontaneous heating to the point where it ignites.A substance that, on contact with water emits dangerous quantities of flammable gases or becomes spontaneously combustible on contact with water or water vapour.

4.3 A substance that, on contact with water emits dangerous quantities of flammable gases or becomes spontaneously combustible on contact with water.

Class 5 – Oxidizing Substances and Organic Peroxides

5.1 A substance which causes or contributes to the combustion of other material by yielding oxygen or other oxidizing substances whether or not the substance itself is combustible.

5.2 An organic compound that contains the bivalent "-O-O-" structure which is a strong oxidizing agent and may be liable to explosive decomposition, be sensitive to heat, shock or friction, react dangerously with other dangerous goods or may cause damage to the eyes.

Class 6 – Poisonous Substances and Infectious Substances

6.1 A solid or liquid that is poisonous through inhalation of its vapours, by skin contact or by ingestion.

6.2 Infectious substances

Class 7 – Radioactive Materials

Radioactive materials within the meaning of the Atomic Energy Control Act with activity greater 74 kBq/kg.

Class 8 – Corrosive Substances

A substance that causes a visible necrosis of the skin or corrodes steel or non-clad aluminum.

Class 9 – Miscellaneous Products and Substances

9.1 Miscellaneous dangerous goods; a substance or product presenting dangers sufficient to warrant regulation in transport but which cannot be ascribed to any other class.

9.2 An environmentally hazardous substance.

9.3 A dangerous waste

Mixed Loads of Dangerous Goods

For most "mixed loads" of dangerous goods having different classifications the "DANGER" placard may be used for large containers transported by road and rail.

Labels and Placards

IX - Open-Book Certification Examination

The RAC Certified Emergency Coordinator Examination

Instructions to Exam Candidates (Retain this page for reference.)

Dear Fellow Radio Amateur:

   One of the primary reasons for the existence of the Amateur Radio Service is its ability to serve the public, especially through emergency communications. Radio Amateurs of Canada recognizes this fact with its commitment to its Amateur Radio Emergency Service and with several formal agreements in place with disaster and emergency-oriented civil and government agencies. Amateur Radio truly is a vital community resource.

   This RAC Emergency Coordinator's Manual is the next phase of the RAC commitment to excellence in modern emergency communications support. It will help Field Organization official appointees to acquire, develop and refine the skills needed to perform at a high standard in an emergency communications situation.

   All Emergency Coordinators, District Emergency Coordinators and Section Emergency Coordinators now have the opportunity, but are not required, to successfully pass the certification examination that follows.

   Others with an interest in being part of this community resource may also write the exam and become RAC Certified Emergency Coordinators, regardless of whether they are current active ARES participants. RAC membership, while greatly encouraged, is not a requirement. However, non-RAC members might consider including a donation with their completed exam to help defer associated administrative and processing costs. A handsome CEC badge is available to all CECs, directly from the VPFS. See details on the RAC website Certified Emergency Coordinator page.

   The examination is "open book". That is, the candidate is encouraged to refer to the training materials while writing the exam. The four source documents for successful completion of the examination are available for download from the RAC world wide web site at: http://www.rac.ca/fieldorg/raccecp.htm. **ALL four sources are required!**

1. RAC Emergency Coordinator's Manual: This book.
2. Public Service Communications Manual – ARRL: contains a wealth of information of interest to those engaged in emergency communications (covers both Canadian and US ARES and NTS organization and operations)
3. Standards for the Operation of Radio Stations in the Amateur Radio Service - Industry Canada (RIC-2): This is the document which defines the major Industry Canada regulations under the Radiocommunication Act
4. Radiocommunication Regulations – Industry Canada (RR): This document covers additional regulations that apply to the Amateur Radio Service in Canada.

   You may wish to photocopy the examination pages before writing your answers on the photocopied sheets. Questions are of the fill-in-the-blank and short-answer type. Throughout the examination, you will be asked to give a reference to every answer you supply. Please use short answers and type or print legibly. During the course of your studies, if you develop any questions, please don't hesitate to contact the VPFS for assistance.

   When you have completed the exam, make a photocopy of the completed examination for future reference and send the original of your examination to me (or other designated examination administrator) for grading to the Vice President for Field Services, care of RAC Headquarters in Ottawa. A minimum 90% mark is required. If successful, you will receive the appropriate certification and be listed as a CEC on the RAC website. The completed exam will NOT be returned to you, nor will you be advised of your mark only that you passed or failed. In the latter case, you may re-write immediately. Allow <u>at least</u> six weeks for processing.

   Thanks for serving the public through amateur radio and for your participation in the RAC Amateur Radio Emergency Service. Good luck in the exam!

   73,
   R. D. (Bob) Cooke VE3BDB
   Vice President Field Services
   Radio Amateurs of Canada
   720 Belfast Road, Suite 217
   Ottawa ON K1G 0Z5

RAC EMERGENCY COORDINATOR'S CERTIFICATION EXAMINATION

Candidate Name, Call Sign, Telephone Number, Mailing Address and E-mail Address. Please PRINT or type:

_____

_____

_____**Date:**_____

Beside each "Reference"please note document number and paragraph number(s) containing your associated answer(s).

1. List three titles which may be given to the person responsible for managing emergency preparedness initiatives at the municipal level:

    1)

    2)

    3)

    Reference:

2. List three typical responsibilities of the municipal Emergency Measures Coordinator:

    1)

    2)

    3)

    Reference:

3. List the three types of municipal emergency plan:

    1)

    2)

    3)

    Reference:

4. Who should be your primary initial contact with municipal government when offering ARES services?

    Reference:

5. What personal benefit would the municipal Emergency Measures Coordinator gain from working with a competent and effective Emergency Coordinator?

    Reference:

6. What two issues of concern to your ARES members should be discussed with the municipal Emergency Measures Coordinator?

    1)

    2)

    Reference:

7. Which level of government sets the guidelines for municipal emergency measures?

    Reference:

8. List the four types of national emergencies:

    1)

    2)

    3)

    4)

    Reference:

9. What is the CEPC and how does it relate to the Emergency Coordinator?

    Reference:

10. Who must nominate an Emergency Coordinator to attend the CEPC?

Reference:

11. What are the four assistance phases in a disaster?
    1)
    2)
    3)
    4)

    Reference:

12. Name two methods of formalizing the relationship between an ARES group and the municipality:

    1)

    2)

    Reference:

13. What single action is required of the municipal Emergency Measures Coordinator before the ARES group is able to assist in an emergency?

    Reference:

14. Who are the three appointment levels within the ARES portion of the RAC Field Organization?

    1)

    2)

    3)

    Reference:

15. Give three general duties of the RAC Emergency Coordinator:

    1)

    2)

    3)

    Reference:

16. Give three planning duties of the RAC Emergency Coordinator:

    1)

    2)

    3)

    Reference:

17. Give three organizing duties of the RAC Emergency Coordinator:
    1)

    2)

    3)

    Reference:

18. Give three coordinating duties of the RAC Emergency Coordinator:

    1)

    2)

    3)

    Reference:

19. Give three communicating duties of the RAC Emergency Coordinator:

    1)

    2)

    3)

    Reference:

20. What are the four main categories of Assistant Emergency Coordinators? (Give a brief description of each)

    1)

    2)

    3)

    4)

    Reference:

21. List four duties delegated to an Assistant Emergency Coordinator:

    1)

    2)

    3)

    4)

    Reference:

22. List four primary ARES recruitment target groups in your area:

1)   2)

3)   4)

    Reference:

23. List four "as required" administrative duties of the Emergency Coordinator:

1)

2)

3)

4)

Reference:

24. Of the 30 ways given, what six ways do you consider most important to improve radiotelephone communications? (Give brief description of each.)

1)

2)

3)

4)

5)

6)

Reference:

25. What is CANSET (1)? What does its purpose (2)?

1)

2)

Reference:

26. To ensure proper handling by possibly uninvolved enroute stations, the body of a simulated emergency traffic message, which does not meet the normal criteria for amateur radio message traffic, should be prominently titled:

Reference:

27. In what four ways can your unit be exercised prior to and during the annual Field Day?

1)   2)

3)   4)

Reference:

28. What is the purpose of a memorandum of understanding (MOU) with a served agency?

   Reference:

29.Give three examples of non-government served agencies:

   1)

   2)

   3)

   Reference:

30. What is the name of Environment Canada's severe weather reporting program?

   Reference:

31. What unusual communications capability can amateur radio provide served agencies?

   Reference:

32. Name the six steps in the consultative selling process recommended for your contacts with served agencies:

   1)

   2)

   3)

   4)

   5)

   6)

   Reference:

33. Name the three attributes of a successful Emergency Telecommunications Plan:

   1)

   2)

   3)

   Reference:

34. List six items which should be created, filed and put into operation as part of your Standard Operating Procedure, whether or not you are asked to write or assist in writing an Emergency Telecommunication Plan?

1)

2)

3)

4)

5)

6)

Reference:

35. What is the difference between "emergency" and "disaster" communications?

Reference:

36. What does effective response in a large-scale emergency or disaster require (1), and who is responsible for training and planning for that (2)?

1)

2)

Reference:

37. What two methods does packet radio employ to provide data integrity?

1)

2)

Reference:

38.   What does a packet contain, which permits several contacts at the same time on the same frequency?

Reference:

39.   What does the Terminal Node Controller attach to the data stream to make it into a packet?

1)
2)

3)

Reference:

40. What are three packet gateway functions used to extend the range of normal VHF packet radio?

1)

2)

3)

Reference:

41. What principle function does an APlink station perform?

Reference:

42. What are three advantages of using packet radio in emergency communications?

1)

2)

3)

Reference:

43. What is the principal problem in getting a packet radio message from the originator to the addressee?

Reference:

44. Within the ICS System define "unity of command" ?

1)

2)

3)

4)

Reference:

45. A single coordinated incident action plan (IAP) includes which elements?

    1)

    2)

    3)

    4)

    5)

    6)

    Reference:

46. ICS positions fall into 5 types of management. Name them?

    1)

    2)

    3)

    4)

    5)

    Reference:

47. Define an incident command post?

    1)

    2)

    3)

    4)

    5)

    6)

    Reference:

48. Can third party welfare traffic addressed to a non-amateur in the United Kingdom be handled during an emergency?

    (Does the UK permit third party traffic?)

    Reference:

49.   Is it legal for a portable, mobile or fixed amateur radio station to communicate with a station not in the amateur service?

Reference:

50.   In a real or simulated emergency, the operator of an amateur station may communicate any message that relates to the real or simulated emergency on behalf of:

1)

2)

3)

Reference:

Feedback

I found the content of the RAC Emergency Coordinator's Manual:
Useless – nothing new (   ) Fairly useful – learned something (   ) Very useful – learned a lot (   )

I found the Certification Examination questions:
Very easy (   ) Fairly easy (   ) Just right (   ) Difficult (   ) Too Difficult (   )

Suggestions for RAC <u>EC Manual</u> additions, deletions, corrections (where possible please use paragraph # references).

Suggestions for Certification <u>Exam</u> questions - additions, deletions, corrections (please use question # references).

Please forward completed examination to the RAC Vice President for Field Services. Allow six weeks for processing.

You may wish to install 3-ring binder A-Z divider tabs for the following "Standard Operating Procedure" (Para 9.2) enclosures, as needed:

A - ARES Call-Up Tree

B - Frequencies and Modes, with backup frequencies and modes

C - List of those authorized to call and ALERT

D - Maps and drawings for staging positions, repeater sites, etc

E - Training procedures and schedule

F - Floor plans of buildings ARES may be required to enter

G - Mobilization procedure, with checklist

H - Equipment list for ARES members

I - Net and Message Handling procedures – NTS and Municipal

J - Samples of forms with proper use

K - Emergency Contact List –
    ambulance, elected officials, fire, police (local and provincial), hospitals, schools, pharmacies, utilities

L - Disaster Communications procedures

M - Radio and Other Equipment Checklists (e.g. generator set)

N - Local Emergency Telecommunications Plan

O - Memorandum of Understanding with Municipality

P - Municipal Emergency/Disaster Plan

Q - Planning Committee Membership List

R - Emergency Preparedness Committee Membership List

S -

T-

U -

V-

W -

X -

Y –

Z -