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# REGIONAL EMERGENCY COMMUNICATIONS PLAN AND STRATEGY

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## ACRONYMS

| | |
|---|---|
| **CDERA** | Caribbean Disaster Emergency Response Agency |
| **CDRU** | CARICOM Disaster Relief Unit |
| **CO** | Communications Officer |
| **CU** | Coordinating Unit (CDERA) |
| **EOC** | Emergency Operations Centre |
| **HF** | High Frequency |
| **NDC** | National Disaster Coordinator |
| **NDO** | National Disaster Organization |
| **NEOC** | National Emergency Operations Centre |
| **OO** | Operations Officer |
| **RCC** | Regional Coordination Centre |
| **RCP** | Regional Coordination Plan |
| **RECN** | Regional Emergency Communications Network |
| **RECP** | Regional Emergency Communications Plan |
| **RRM** | Regional Response Mechanism |
| **RSS/CLO** | Regional Security System/ Central Liaison Office |
| **SRFP** | Sub-regional Focal Point |
| **UHF** | Ultra High Frequency |
| **USB** | Upper Sideband |
| **VHF** | Very High Frequency |

# REGIONAL EMERGENCY COMMUNICATIONS PLAN

## 1. PURPOSE

The purpose of the Regional Emergency Communications Plan is to outline the structure and operation of the Regional Emergency Communications Network (RECN). The RECN is designed to support the functioning of the Regional Response Mechanism (RRM) and specifically, the execution of the Regional Coordination Plan (RCP).

The Plan:

- Identifies the main resources available to support regional emergency communications in the context of the RRM;
- Identifies the key participants in the RECN and their roles
- Provides guidelines on the activities to be undertaken during each phase of execution of the RCP

Execution of Plan will be coordinated by the CDERA Coordinating Unit through the Regional Coordination Centre (RCC).

## 2. SCOPE

The Plan covers regional-level coordination and response to disaster events affecting one or more CDERA Participating States. It involves entities that have a defined role, whether individually or as a group, within the Regional Response Mechanism.

The Plan does not cover the emergency communications pertaining to response or coordination among national or local entities at the national level. It also does not cover communication among national, regional or international entities that takes place outside of the context of the RRM.

This Plan pertains to all types of hazards that may affect CDERA Participating States and that may warrant the activation of the RRM. However, the Plan recognises that some hazards may not have an “Alert Phase” as described in the *Concept of Operations*. The Plan also recognises that Specialized Agencies responding to specific types of hazards may have specific plans that address their communications requirements.

## 3. OVERVIEW OF THE REGIONAL NETWORK

The Regional Emergency Communications Network is the combination of communication equipment, facilities and personnel available to support communication and coordination within the RRM in preparation for, or in response to, disaster events affecting Participating States. The RECN consists of dedicated resources that are maintained specifically to support emergency communications as well as non-dedicated resources that are used as available when required.

The available resources and their expected use is described in section 6. A resource list is shown at Appendix F.

The chart in Figure 1 identifies the main entities involved in the RECN. Those entities falling inside the oval represent the core of the network while those on the periphery represent other entities whose may also interact with the RECN, depending on the nature and scope of a particular event. The participants and their roles are identified below.

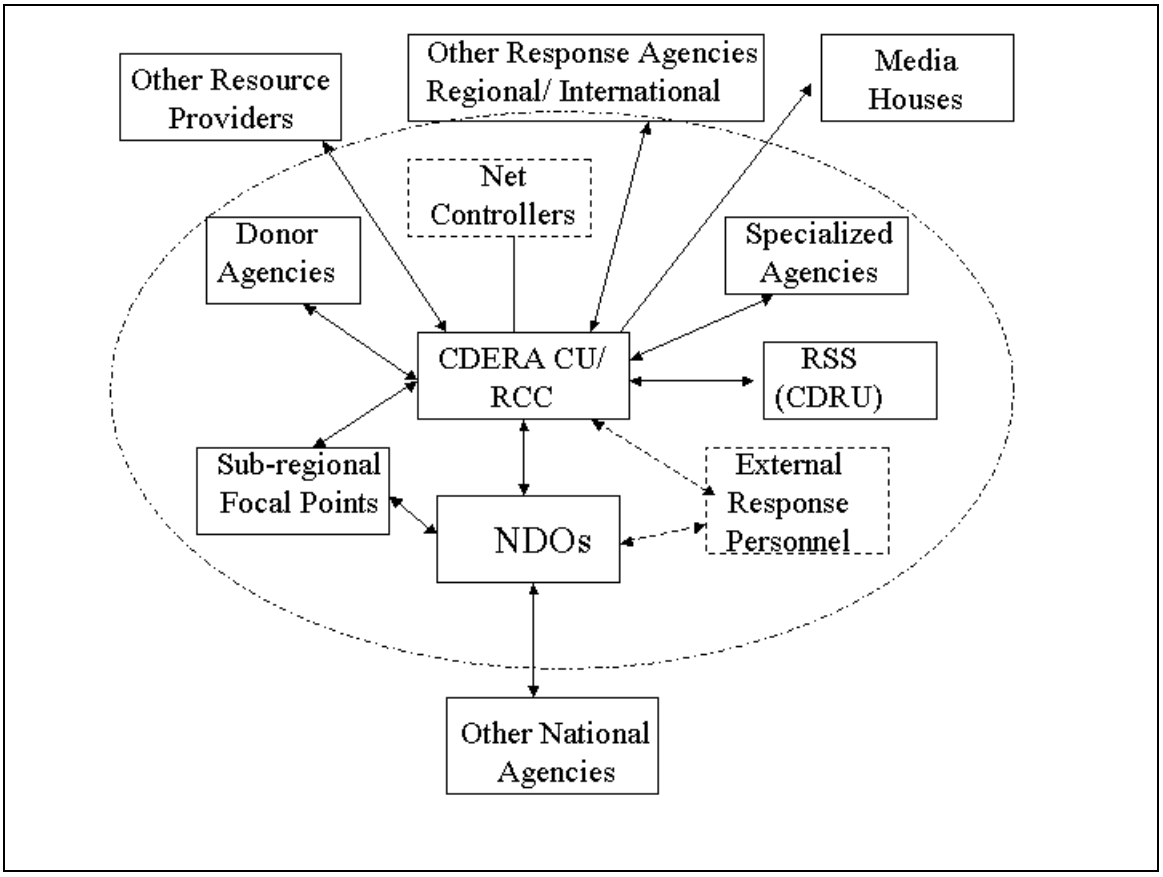

Figure 1: Network participants and links

### 3.1 Participants and Roles

#### 3.1.1 Core Participants

The entities or groups in the table below have been identified as core participants in the RECN because of the defined roles within the RRM:

| Participant | Role and Remarks |
|---|---|
| **CDERA Coordinating Unit (CU)/ Regional Coordination Centre** | Has lead responsibility for coordination of the RRM and execution of the RCP. Therefore, has to play a lead role in the coordination of the RECN and execution of the Regional Emergency Communications Plan. The CDERA CU participation will be facilitated through the *Regional Coordination Centre (RCC)***.** |
| **National Disaster Organizations (NDOs)** | The NDOs (typically through the National EOCs), function as the national nodes in the RECN and are responsible for channelling information between national-level entities and the RRM. |
| **Sub-regional Focal Points (SRFPs)** | SRFPs are a subset of the NDOs who have additional responsibilities for assisting in coordinating response within specific geographical subregions. Within the RECN, the SRFPs may need to provide communications capability to support the logistics of the response operation and to facilitate communication between the NDO of the affected state and the rest of the RECN. |
| **Donor Coordinating Groups** | These groups coordinate the assistance of Donors to affected states in response to an event. The scope of responsibility may be a single state, multiple states or a defined subregion. Donor Groups are responsible for receiving reports on needs and identifying and rationalizing the resources that can be made available to support affected states. |
| **Regional Security System (RSS)/ CDRU** | The RSS, through it Central Liaison Office (CLO), has specific responsibility for coordinating the preparation, mobilization and deployment and operation of the CARICOM Disaster Relief Unit (CDRU) on behalf of CDERA. In addition to providing manpower and logistical support for regional response, the CDRU is also responsible for managing and deploying additional communications resources in the affected areas to support the RECN. |
| **Specialized Agencies** | These agencies provide specific technical expertise within the RRM. Typically, this expertise applies to a particular hazard or threat. One example Seismic Research Unit (SRU) of the University of the West Indies (UWI) for seismic hazards, the CIMH for meteorological hazards, etc. The role of these entities depends on the nature of the threat being faced. |

| Participant | Role and Remarks |
|---|---|
| **External Response Personnel** | This is not a fixed entity but represents persons deployed to assist affected states within the framework of the RRM. During a Level 3 response the major component of this will be the CDRU. However, this can also include Disaster Management professionals from other PS, technical specialists or other professionals. Such persons will need to interact with both the NDOs and the CDERA CU within the RECN. |
| **Net Controllers** | This is not a separate entity but represents stations or individuals designated to function as Net Controllers on behalf of CDERA. This can include NDO or volunteer personnel. Must ensure that operation of radio network and message handling is done in accordance with the requirements of the RECN. |

### 3.1.2 Other Participants

In addition to these core entities above, there are several other entities on the periphery of the network that may interact with the network in specific situation as they warrant. This includes the following:

| Participant | Role and Remarks |
|---|---|
| **Other National Agencies** | At the national level, information from several agencies which may or may not form part of the NDO needs to be collated, consolidated and disseminated through the RECN to support the functioning of the RRM. |
| **Media Houses** | These entities can support the functioning of the RRM and specifically the RECN by disseminating information to interested parties and the public, and facilitating communication at the national, regional or international levels. |
| **Other Response Agencies (Regional/ International)** | Other regional and international entities such as the Red Cross and other NDOs may be actively involved in response operations and thus may need to interact with the RECN from time to time to allow for better coordination with the RRM. |
| **Other Resource Providers** | The functioning of the RRM may require the services of several resource providers according to the nature of the response. For example, transportation services may be required to support deployment of response personnel and supplies. In such cases the entities will need to interact with the RRM. Also included in the category is the Amateur Radio Service, which can provide a supplementary emergency communication service as well as personnel and equipment to support the RECN. |

### 3.2 Information flow among network participants

The information flow among participants in the network can be classified in various ways. One way is to classify according to the purpose of the information as follows:

| Purpose of Information | Description |
|---|---|
| Alert and Warning | Information on current or possible threats, whether of an impending situation or of ongoing risks in a current situation. Examples include severe weather advisories, seismic hazard warnings |
| Coordination | Information to support coordination among participants in the RRM. This includes, for example, contact information, information on status of readiness, and information on current locations and activities. |
| Situational Updates | Information on current status within specific areas (national, local or regional), before, during or after a disaster event. |
| Relief, Supply and Logistics | Specific details of needs, requests, resources available, resources committed, personnel deployed and supplies received. |

Each type of information can occur in any of the non-routine states.

The structure of the RECN allows for multi-dimensional and multi-directional information flow among nodes, according to the purpose of the information as indicated above. Figure 2 illustrates the information flow among the key categories of participants in the network.

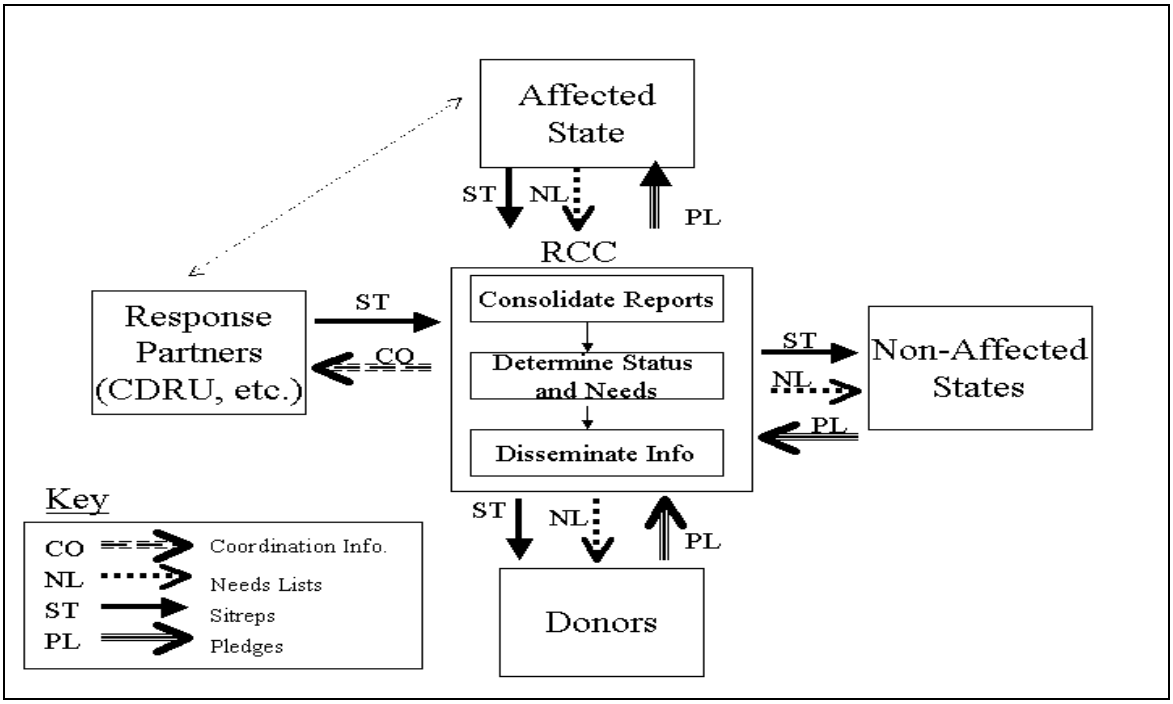

Fig 2: Information flow in RECN

## 4. ASSUMPTIONS

The Plan assumes the following with regard to the ability of the specified entities to participate in the RECN and to fulfil their designated roles:

- Participants have suitable communications resources available to communicate with other entities in the RECN.
- Participants understand and are willing to undertake their responsibilities within the RECN
- Each entity within the RRM that has a role during emergency operations has suitably skilled persons available to function in the required roles as stated in section 5.5.
- All entities have appropriate procedures for call-out of key personnel when required
- All entities adopt and maintain appropriate internal procedures for information-handling and decision-making during emergencies

## 5. CONCEPT OF OPERATIONS

### 5.1 Operating States

For consistency, with the structure of National Plans, operations of the RECN will be divided into four (4) operating states. These are:

- **Routine.** This is a normal operating state. While in this state, RECN participants are expected to conduct preparedness activities to develop the necessary capability to communicate in the event of a disaster.

- **Alert.** A warning has been issued of an imminent or impending event likely to affect one or more Participating States. During this period, resources are put in a state of mobilization.

- **Response.** This covers the period during and immediately after an event. During this period, activities are focussed on responding to the direct effects of the event and its immediate consequences.

- **Recovery**. This covers the period after the initial response where the focus is on restoration of services and a return to the Routine state.

These operating states are related to the phases defined in the Regional Coordination Plan as follows:

| **Operating State** | **RCP Phase** | **Remarks** |
|---|---|---|
| Routine | | This is a normal operating states and is not defined in RCP |
| Alert | Pre-Emergency | At this stage a likely or imminent threat has been identified and the RRM is put on standby |
| Response | Emergency | For the purpose of articulating the Plan, this will be subdivided into “During Event” and “Immediately After Event” phases. The duration of this phase will be determined by the nature and severity of the event |
| Recovery | Post-emergency | At this stage the focus is the restoration of services and return to normalcy. |

The RECN is expected to be most active during the Alert and Response states.

### 5.2 Levels of Response

The RCP defines 3 levels of response according to the severity of an event and its effect on a Participating State. The role of the RECN at each level of response is summarised below:

| Level | Characteristics | RECN actions |
|---|---|---|
| 1 | Localized event within a Participating State. National resources adequate | No regional response. No Activation of RECN. Information disseminated via public network |
| 2 | Event within a Participating State for which local resources and response capacity are limited Focussed specialized regional assistance required | Not likely to result in sustained disruption of national public network. Communication via routine means using public network still possible. Activation of RECN not likely to be required. |
| 3 | Event that overwhelms the capacity of the affected Participating State to respond. RCP activated on request of the state. | RECN activated to support RCP. Likely that event on this scale will cause significant disruption to public network, requiring the use of emergency communications resources. |

In general, the RECN is most likely to be activated and used during a Level III event.

### 5.3 Activation of Plan

The non-routine aspects of the Plan, as defined above, will be deemed to have been activated whenever the RRM is activated or is placed on standby. The Plan can also be explicitly activated when one of the following occur:

(a) There is an imminent or significant threat of an event that is likely to cause significant disruption to the functioning of the public telecommunications network in one or more Participating States. Typically such activation will be done during the Alert Phase.

(b) An event has occurred that has resulted in significant disruption of the routine channels available through the public network in one or more Participating States. This will typically occur after a Level 3 event.

(c) The CDERA CU otherwise determines that the nature of an impending threat or of an event that has occurred is such that use of the RECN is the most effective way to communicate.

**It is recognised that in the case of *sudden onset* events there may be no *Alert* stage. Therefore activation of the Plan will commence at the *Response* or *Emergency* stage.**

**Also, in such cases, some of the actions stipulated for the *Alert* stage below will have to be performed during the *Response* stage.**

### 5.4 Deactivation of the Plan

The Plan will be deemed to have been deactivated when the RRM is stood down unless a specific statement to the contrary issued by the CDERA CU/RCC.

### 5.5 Personnel

Each organization within the RRM that has a role during emergency operations should have at least one suitably skilled individual designated as the **Communications Officer** (CO), who is responsible for coordinating the organization's emergency communications activities. The CO will be the responsible for ensuring that the organization is able to establish and maintain communications with other parties in the RECN as required. This includes overall responsibility for transmitting and receiving messages.

While the role of CO does not have to be the only responsibility of the designated individual, the duties and responsibilities of the role should be clearly articulated in the job description. Further, for organization with major roles in the RRM – particularly the CDERA CU, NDOs, and RSS/CDRU – the role of CO should be a substantive or primary responsibility for the designated individual.

Responsibility for ensuring that all messages received are acted on and followed up should be assigned to an Operations Officer (OO). Thus the OO will receive incoming messages from the CO and pass outgoing messages to the CO for transmission by the appropriate medium.

During low-intensity operations, the role of CO and OO can be played by the same individual, if that individual has the required skills. However, during high intensity operations, the CO and OO should each be assigned a team of suitable skilled individuals who can be tasked to operate emergency communications equipment, handle messages and undertake other responsibilities as required.

### 5.6 Actions to be taken during various Operating States

The following summarises the key action to be taken during each operating state, and the RECN participants expected to take these actions. In all cases, the CO is the individual expected to coordinate these actions.

| State | Actions | Participants Responsible |
|---|---|---|
| **Routine State** | ▪ Verify availability of means for emergency communications | All |
| | ▪ Perform routine maintenance checks on all relevant equipment as per Maintenance Plan | All |
| | ▪ Develop roster of stations to function as Net Controllers | CDERA CU and NDOs |
| | ▪ Conduct regular communication checks with other participants in the network | Coordinated by Net Controllers. All stations to participate |
| | ▪ Maintain log of communications checks including date and time, organization and quality of communication | All |
| | ▪ Ensure valid service contracts in place for satellite communications, Internet and any other emergency communications service dependent on external providers. | All users of such equipment |
| | ▪ Conduct periodic internal or national communications exercise to test information flow between internal nodes and RECN focal point. (At least one per year). | All |
| | ▪ Conduct periodic communications exercise involving key participants in RECN and exercising all methods of communication. (At least one per year) | Coordinated by CDERA CU. All relevant entities to participate |
| **Alert State (Pre-Emergency)** | ▪ Verify operating status of all equipment and facilities needed to support communications (including backup equipment and supplies) | All |
| | ▪ Identify Net Controllers for duty during alert and response phases and confirm readiness to operate | CDERA CU and designated controllers |
| | ▪ Conduct radio checks with all stations that may need to participate in response | Designated Controllers. All stations to participate |
| | ▪ Activate call-up procedures or confirm availability of key personnel for radio operation, message handling, technical support, etc. | CDERA CU, NDOs, Designated Net Controllers, SRFPs |
| | ▪ Verify availability of adequate supplies such as message pads, food, water, etc. | All |

| State | Actions | Participants Responsible |
|---|---|---|
| | ▪ If located in the threatened area, secure communications equipment and facilities to minimize damage | All |
| | ▪ Confirm availability and operating status of CDRU communications packs for possible deployment | CDERA CU, RSS/CLO |
| | ▪ Establish contact with threatened states and agree on procedures for communication during and after event | CDERA CU, SRFPs |
| **Response State - Emergency (During event)** | ▪ Maintain net control during event | Net Controllers |
| | ▪ Monitor designated communication channels for relevant messages including requests for assistance | All parties in non-affected areas |
| | ▪ If in the affected area and able to operate, provide periodic updates on event and conditions | Parties in affected areas |
| | ▪ Pass all messages received to the designated Message Controller (or team) for logging and routing | NEOC personnel; CDERA CU/RCC operations staff, SRFP |
| | ▪ Review situation reports and determine likely response requirements | CDERA/RCC, RSS/CLO |
| | ▪ Prepare and disseminate updates to key partners including Participating States, Donor and resource agencies | CDERA/RCC |
| **Response State - Emergency (immediately after event)** | ▪ Re-establish communication with NEOC if necessary | CDERA/RCC, Net Controllers, SRFP |
| | ▪ Provide initial situation assessment (using designated Form) to CDERA CU/RCC and issue request for external assistance (if required) | NDOs (affected states) |
| | ▪ Establish or re-establish communications with other RECN participants | CDERA/RCC, All |
| | ▪ Deploy emergency communications equipment to affected state if necessary (Level 3) | CDERA/RCC, RSS (CDRU) |
| | ▪ Establish contact with NEOC after deployment | CDRU, External Response Personnel |

| State | Actions | Participants Responsible |
|---|---|---|
| | ▪ Establish communications centre (including radio and satellite equipment) in affected state after deployment, if necessary | CDRU |
| **Recovery State (Post-Emergency)** | ▪ Provide ongoing updates to CDERA CU for dissemination to partners | NDOs |
| | ▪ Disseminate periodic updates | CDERA CU |
| | ▪ Phase deactivation of RECN | All |

### 5.7 Information Security

Network participants are required to take all reasonable measures to ensure the security of information communicated via the network. In particular, participants will ensure that messages of a sensitive or confidential nature are not communicated via open or broadcast methods (e.g. via HF or VHF radio).

Network participants are also responsible for ensuring the security of communications equipment under their control, and in particular, should prevent access to such equipment and facilities by unauthorised persons.

## 6. RECN RESOURCES AND EXPECTED USE

The key resources available for the RECN and their expected uses are as follows:

| Resource | Description | Expected Use |
|---|---|---|
| Public Tele-communications Network | Consists of the terrestrial telecommunications resources normally available for use by the public. This includes telephone (both fixed and mobile), fax, internet and data services. It is widely available and accessible and familiar to most persons. | The public network should be used whenever it is available and appropriate. It can be used during all operating states and for all levels of response (if available). Special services can be used for alert and notification. For example, the SMS ("text message") service offered by mobile phone operators can be used to quickly broadcast alert and warning messages to different groups, including emergency management personnel and the public. |
| HF Radio Network | Consists of the HF radios and facilities available to the CDERA CU, NEOCs, CDRU and other key players in the RRM. Providing these are correctly set up and used, they can be used for national, regional and international communications before, during and after a disaster event. | Should be used when the public network is disrupted or disabled in one or more Participating States, or where the nature of an event is such that use of this network simplifies coordination among RECN participants at the regional level. The HF radio network will primarily be used during the Alert and Response phases and will be more heavily used during a Level 3 event. However, the network should be periodically tested during the Routine state. Network participants should monitor the designated frequencies whenever the Plan has been activated or whenever it is known or suspected that an event has disrupted communications in a Participating state. |
| VHF/UHF Radio Networks | These are operated by NDOs and by other entities such as the UN Agencies, and are mainly suited for national-level communications. In the event of external response personnel being deployed to an affected state, these networks can be used for communication and coordination with local authorities and other responders. | These networks are often used for routine coordination among participants on a regular basis as well as for emergency response. During regional response operations, the NDO of the affected state should monitor the frequency designated for coordination with external response personnel, when such personnel are expected. The external response personnel should use these designated frequencies to make initial contact with the NEOC on arrival in the affected state. |

| Resource | Description | Expected Use |
|---|---|---|
| Satellite telephones | These are available to the CDERA CU/RCC, NDOs and key response partners. They allow calls to be made to and from the public network and are intended for use when the other methods identified above are not available or not suitable. | Should be used when the other means are unavailable or are unsuitable. RECN participants who have lost communication with the RECN by other means should ensure that satellite telephones are turned on to receive calls via this medium. Also, when contact cannot be made with an affected state by other means, calls can be made to the identified satellite phone number. Satellite telephones can also be used in cases where messages are of a confidential or sensitive nature and unsuitable for transmission via open radio networks. This will apply particularly to communication involving the Executive. |
| Satellite Data Communications | This includes satellite Internet and data services such as ISDN. These can be deployed to affected areas and should be used to transmit messages that cannot be effectively or easily communicated via voice methods. | The satellite data facilities are intended to be used when the corresponding facilities are not available through the public network. This medium, and particularly satellite Internet, should be used to send and receive data communications (particularly e-mail) where this is more efficient or cost effective than communicating via voice. It can also be used for communications that cannot be sent by voice – e.g. for communicating still or video images, or for direct input of data into emergency management systems. As the bandwidth is likely to be limited, users should aim to minimize the volume of data that needs to be transmitted, e.g. by compressing files. |

## APPENDIX A: MESSAGE HANDLING

For the purpose of this discussion, the Emergency Operations Centre (EOC) refers to any facility activated by a specific organization for the purpose of coordinating a response to a disaster or emergency operation. This could include a National EOC, a temporary operations room set up by a specific agency or a facility such as the Regional Coordination Centre operated by the CDERA CU.

### Modes of Communication

Messages can be grouped into the categories of voice, written and data, according to the mode of communication, as explained below:

| | |
|---|---|
| **Voice** | Communicated to the EOC verbally, typically via radio or telephone. These messages can also be communicated in person (e.g. at coordination meetings) and occasionally via broadcast media such as radio or television. |
| **Written** | Communicated to the EOC on paper or "hard copy" format. This includes faxes and documents received physically (e.g at meetings). |
| **Data** | Received by electronic methods and can also be routed and stored electronically. Includes messages entered directly into online databases or messaging systems, e-mail messages, messages transmitted as electronic files (e.g. images), and SMS (text) messages sent via land mobile (cellular) and satellite phones. Data messages can often be converted to written messages by printing (e.g. e-mail). |

The following table described the proposed handling of messages transmitted by the various modes.

| Mode of Comms | Incoming Messages | Outgoing Messages |
|---|---|---|
| General – applicable to all modes of communication | In all cases, messages passed to the OO are to be reviewed, numbered logged and passed for action as appropriate. In reviewing the document, the OO will assign a priority. The OO can override the priority assigned by the originator of the message based on the assessment of the content. The OO will ensure that all messages are reviewed promptly to determine their urgency and passed for action in a timely manner. | In all cases the messages are to be logged by the OO so that there is a record of the communication. |

| Mode of Comms | Incoming Messages | Outgoing Messages |
|---|---|---|
| Voice – Radio | Radio operator will record the message on the message form and pass to the Operations Officer for action. Wherever possible, radio messages should be recorded verbatim. OO will review message and determine to whom the message will be routed to for action. OO will have message numbered, logged in Incoming Message Log and then forwarded for action. Note that OO can change the priority designation of the message if necessary. | The drafter of the message will prepare an Emergency Message form. This will be logged by the OO and passed to the CO for transmission. Radio messages should be short and concise, and suitable for transmission verbatim. |
| Voice-Telephone | EOC representative engaging in the telephone conversation will summarise the main points of the message on the Emergency Message Form. This will then be passed to the OO, who will treat the message the same manner described for radio messages above. | Where practical, the message form should be prepared and logged as described for radio. However, the urgency and the nature of the message may not allow for that. In such cases, the content of the message should be summarised on a message form after the conversation and provided to the OO for logging. |
| Voice – In person | EOC representative engaged in the discussion will summarise the main points of the meeting. If the discussion is short, it can be summarised on the designated message form. Otherwise, it should be summarised as a separate document and attached to the message form. | The same procedure applies to both incoming and outgoing messages. |
| Written | Messages will be passed to OO for logging and action as described above. | Messages to be transmitted in writing (e.g. faxes), should be logged by the OO prior to being passed to the CO for transmission. |

| Mode of Comms | Incoming Messages | Outgoing Messages |
|---|---|---|
| Data | If the OO has the capability to receive, log, and forward messages electronically, then data messages should be processed electronically. Otherwise the messages should be printed and processed as described above for written messages. | Where possible, messages transmitted electronically should be copied to a specially designated address or location, so that they can be examined if necessary. The sender of the message should also provide the OO with the details of the message to allow logging. |

**Emergency Message Content**

The content below is based on the sample Emergency Message form shown at Appendix B.

| Field | Description |
|---|---|
| *Fields to be completed when message being taken* | |
| Date and Time | Date and time the message was received |
| To | Person or organization the message is addressed to |
| From | Originator of the message |
| Location | Where the message originates |
| | |
| Message | The specific message. In the case of radio messages, this should be recorded verbatim wherever possible |
| *Information to be completed when message is logged* | |
| Message no. | The sequence number assigned to the message at the receiving location. If messages are being received by several persons, it may be best to have the number assigned by the Operations Officer |
| Priority | The priority assigned to the message. Note that if the originator specifies a priority, the operator should record it here. However, the OO will decide the priority level at which the message is to be handled when received. |
| Assign to | Whom the message is forwarded to for action. To be specified by the OO. |
| *Fields to be completed after action is taken* | |
| Action Taken | Description of action taken by individual or organization to whom the message was assigned |
| Time taken | Time the action was taken |
| Name | Name of person taking or reporting the action |
| Signature | Signature of person taking or reporting the action. |
| | |

**Message Prioritization**

Messages should be prioritized to ensure that messages of greatest urgency are reviewed and responded to as quickly as possible. As a general rule, messages from the stricken area should be given greater priority.

The following is a commonly-used classification for assigning message priorities. It is based on the levels of *message precedence* defined by the American Radio Relay League (ARRL).

| **Precedence** | **Meaning** |
|---|---|
| Emergency | Messages having life and death urgency to any person or group of persons. This includes official messages authorized by the Director of the EOC during emergencies requesting supplies, materials, or instructions vital to relief of stricken populace in emergency areas. The "Emergency" precedence is rarely used. |
| Priority | Important messages having a specific time limit. It can be allocated to official messages not covered in the Emergency category; press dispatches and other emergency related traffic not of the utmost urgency; notification of death in a disaster area; personal or official. |
| Welfare | It includes enquiries as to health and welfare of an individual in the disaster area; and advisory messages from the disaster area indicating that all is well. |
| Routine | Messages related to the disaster or emergency situation that are less urgent than those defined above. |

During activation of the RECN, most messages are likely to have a precedence of "Priority". It may therefore be necessary to have a secondary classification level.

## APPENDIX B: EMERGENCY MESSAGE FORM

### EMERGENCY MESSAGE

TO.....  DATE.....

FROM.....  TIME.....

LOCATION.....  MESSAGE NO .....

PRIORITY NO .....

ASSIGN TO .....

MESSAGE

| |
|---|
| |

ACTION TAKEN

| |
|---|
| |

TIME TAKEN.....

SIGNATURE.....

NAME.....

## APPENDIX C: Designated Frequencies for Regional Coordination

### Table 1: Frequencies for HF Network

| Frequency | Use |
|---|---|
| 7.453.5 Mhz USB | CDERA frequency for regional communication. For use in the Eastern Caribbean |
| 14.415 Mhz USB | CDERA frequency for regional communication. For communication between Eastern and Western Caribbean |
| 7.850 Mhz USB | Regional Police and Military Network. For initial contact and coordination with police and military forces in the region. |

### Table 2: VHF Frequencies for Coordination

The following lists the frequencies to be used by external response personnel to make contact with the NEOC on arrival in the country.

| Country | Frequency TX | Frequency RX | Remarks |
|---|---|---|---|
| Anguilla | 153.550 | 153.550 | Simplex |
| Antigua & Barbuda | 167.600<br>172.800<br>173.200 | 172.600<br>172.800<br>173.200 | Repeater –TPL 100.0 Hz<br>Simplex<br>Simplex |
| Bahamas | | | |
| Barbados | 169.980<br>168.970 | 164.980<br>168.970 | Repeater<br>Simplex |
| Belize | | | |
| British Virgin Islands | 158.500<br>158.500<br>153.545<br>158.525<br>150.100<br>151.100 | 157.900<br>153.545<br>158.500<br>153.525<br>150.100<br>151.100 | RPT. at Chalwell<br>RPT. at Peter Island<br>RPT. at North Sound<br>RPT. for Executives<br>Simplex<br>Simplex<br>All Repeaters with Tone 114.8Hz |
| Dominica | 148.250<br>149.250<br>148.250<br>149.250 | 148.850<br>149.850<br>148.250<br>149.250 | Repeater 1<br>Repeater 2<br>Simplex<br>Simplex |
| Grenada | 168.500<br>164.500<br>162.500 | 163.500<br>169.500<br>167.500 | Repeater at Fort Frederick<br>Repeater at Grand Etang<br>Repeater at Kublall |
| Guyana | | | |

| **Country** | **Frequency TX** | **Frequency RX** | **Remarks** |
|---|---|---|---|
| Jamaica | 173.1625 | 173.1625 | Simplex |
| Montserrat | 150.500 | 155.500 | Repeater |
| St Kitts and Nevis | 150.500<br>150.525 | 150.500<br>150.525 | Simplex<br>Simplex |
| St Lucia | 155.025 | 150.025 | RPT. At Castries TPL 123.0 Hz |
| St Vincent and the Grenadines | | | |
| Trinidad and Tobago | 147.800<br>148.800 | 147.200<br>148.200 | Repeater 1<br>Repeater 2 |
| Turks and Caicos Islands | 162.075 | 167.075 | Repeater on Providenciales |

## APPENDIX D: Frequencies For Amateur Radio Emergency Operations

The following lists HF and VHF frequencies in the Amateur bands that are currently being used or are available to support national, regional or extra-regional emergency communications if necessary. **Note that existing international radio communication regulations specify a very limited set of circumstances under which Amateur Radio frequencies can be used by non-Amateur operators for emergency communication. All persons responsible for managing emergency communications should familiarize themselves with the relevant regulations.**

### 1 INTERNAL COMMUNICATIONS

| Country | HF Freq. MHz. | VHF Repeater | Simplex | Other Remarks |
|---|---|---|---|---|
| **Anguilla** | | | 146.520 | Very little activity |
| **Antigua & Barbuda** | | 146.940 - 600KHz. | 147.550 | Simplex activity daily |
| **Bahamas** | 14.130.00 | | | No information |
| **Barbados** | 3.805.00<br>7.185.00 | 146.910 – 600KHz.<br>145.310 - 600KHz. | | HF active on Sundays<br>VHF activity daily |
| **Belize** | 14.130.00 | | | No information |
| **Dominica** | 7.210.00 | 147.360 + 600KHz. | | VHF activity daily |
| **Grenada & Carriacou** | 7.175.00 | 146.760 – 600KHz. | | New repeater- very little traffic |
| **Guyana** | | 145.250 – 600KHz. | | Out of service |
| **Jamaica**<br>Kingston<br>St.Catherine<br>Montego Bay<br>Ocho Rios | 7.153.00 | <br>147.960 – 600KHz<br>147.840 – 600KHz<br>147.800 – 600KHz.<br>147.600 – 600KHz<br>All Tone 114.8 Hz. | | HF – Sunday mornings only<br>Repeaters linked –very active<br>. |
| **Montserrat** | | 146.970 – 600KHz. | | Regular use |
| **St. Kitts & Nevis** | 7.145.00 | 146.820 – 600KHz.<br>146.680 – 600KHz. | | HF on Sunday morning<br>VHF traffic daily |
| **St. Lucia** | 3.800.00<br>7.200.00 | 146.940 – 600KHz. | 146.520 | VHF- occasional traffic |
| **St. Vincent & the Grenadines** | 3.750.00<br>7.150.00 | 146.850 – 600KHz. | 146.520 | VHF |
| **Trinidad**<br><br>Tobago | 3.855.00<br>7.159.00 | 146.940 – 600KHz.<br>147.930 – 600KHz.<br>147.760 – 600KHz. | 146.520 | HF –Daily<br>HF- Sunday morning<br>VHF- Regular |
| **Turks & Caicos Is.** | | | 146.520 | |

## 2. REGIONAL "NETS"

| | |
|---|---|
| Caribbean Emergency & Weather Net | 3.815.00 MHz. LSB (nightime)<br>7.162.00 MHz. LSB (daytime)<br>10.115.00 MHz. USB |
| Talk Shop Amateur Radio Net | 3.828.00 MHz LSB (nightime)<br>7.195.00 MHz. LSB (daytime)<br>14.214.00 MHz. USB (nightime) |

## 3. EXTRA-REGIONAL COMMUNICATIONS

| | |
|---|---|
| Talk Shop Amateur Radio Net | 14.214.00 MHz. USB |
| CARIBUS Connection | 14.283.00 MHz. USB |
| International Assistance and Traffic Net | 14.303.00 MHz. USB |
| Inter-continental Net | 14.313.00 MHz USB |
| Hurricane Watch Net | 14.325.00 MHz. USB |
| Maritime Mobile Net | 21.400.00 MHz USB |

## APPENDIX E : Contact List

| Country/Agency/Contact | Tel | Mobile | Fax | E-mail | Satphone | Call Sign |
|---|---|---|---|---|---|---|
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## APPENDIX F: Resource List

| Country | Equipment Available | Remarks |
|---|---|---|
| **Anguilla** | | |
| **Antigua and Barbuda** | | |
| **Bahamas** | | |
| **Barbados** | | |
| **Belize** | | |
| **British Virgin Islands** | | |
| **Dominica** | | |
| **Grenada** | | |
| **Jamaica** | | |
| **Montserrat** | | |
| **St Kitts & Nevis** | | |
| **Saint Lucia** | | |
| **St Vincent & the Grenadines** | | |
| **Trinidad and Tobago** | | |
| **Turks and Caicos Islands** | | |
| | | |
| **CDERA CU** | | |
| **CDRU** | | |
| **UN System in Barbados** | | |

## APPENDIX G: Equipment Maintenance and Loss Reduction Guidelines

### Procedures for proper use and maintenance of communications equipment.

Radio communications equipment provide many years of good service when operated within manufacturers information supplied in the operating manuals. These manuals generally provide in very simple, easy to understand ways the operations of the equipment, the description of the controls and functions, the procedure for the operations, the additional accessories available for the equipment, the technical specifications, trouble shooting guide and basic care. Some manufacturers include an overall schematic diagram that is not intended for carrying out any repairs due to congested information.

### External Installation.

- The external installation of equipment must be to a standard that will withstand normal and adverse weather conditions to ensure safety and longevity
- Proper grounding of equipment, guying of antenna towers and other supports must be done by professionals so as to ensure manufacturers specification.
- Antenna support bases should not be able to accumulate water that increases deterioration, corrosion and weakening of materials used.
- Antenna cables must be tied down and drip loops made at the point of entry into the building.
- Proper heavy duty ground rods, straps and cables should be used to handle very high current levels from lightning strikes.
- Exposed outdoor electrical cables and sockets should be water-sealed types to prevent electrical leaks and shocks.
- Generators should not be operated inside the building or near any operating area. Refuelling of gas generators must be done with units turned off and cooled down. This must be done by some experienced individual.

### Internal installation

- The importance of internal standard should be met to ensure safety and proper operation of equipment.
- The electrical system should meet the standards set by the country's electrical code.
- A separate grounding system should be installed to provide a better ground system to the equipment by reducing the run of the electrical ground and for guarantee grounding in the event the electrical ground fails.
- All units should be grounded.
- The installer must ensure the equipment is installed to the required specifications. Proper grounding system, adequate power supply, properly installed AC plugs, antenna connectors etc.
- The installer should ensure that the all units perform satisfactory before allowing other operators.
- Install equipment with adequate space to allow circulation of air around the unit.

- Check and make sure the correct power supply is used. In the case of DC equipment, the correct polarity is important.
- Check input  a. c. voltages
- Please read the operations manual and be guided always by step by step procedures.
- Batteries should be used in a well ventilated area. Acid fumes etc should be well away from operators and radio equipment.
- Generators should not be operated inside the building or near any operating area. Refuelling of gas generators must be done with units turned off and cooled down. This must be done by some experienced individual.

**Use of Equipment.**

The correct procedures for using the radio equipment on a regular basis will permit a more effective method of operation during an emergency

To ensure the proper use of radio equipment the following steps must be followed:

1. Ensure proper ventilation around equipment particularly if the area is not air-conditioned.

2. Before connecting any power to the equipment, check the require ac or dc voltage required as indicate by the specification indicated on the equipment. For ac voltage it is normally either 110 or 220 volts 50/60Hz., whereas for dc it is normally 13.8 volts. In the case of dc, the polarity of the connections is a critical factor, where red must be connected to the positive terminal and black to the negative one.

3. In the case of transceivers, the correct procedure is to check the receiving performance of the unit before attempting to transmit. This will verify that volume, operating frequency/channel, mode of operation, as well whether the frequency/channel is clear and ready to accept your information.

4. Most accessories such as power supplies, antenna tuners, standing wave ratio meters etc. will be user friendly with simple procedures to follow.

5. The operator should be aware of the frequencies or channels that are permitted for the stations operations. There are specific individual frequencies for the operations of the CDERA's network. This really means that they are confined to these frequencies whether or not the propagation on those frequencies are suitable. The amateur radio operators however have several bands of frequencies, which they could use at will depending on the propagation conditions.

6. For single side band (SSB), the operator must ensure that his equipment operates on the correct mode: lower side band LSB or upper side band USB. If this is not determined and checked it would be impossible to effect communications with a station operating on an opposite mode.

7. Most transceivers today are equipped with memory channels where regular used frequencies can be stored. This makes it easy for multi-operator stations where non-technical persons can easily use the equipment by simply going to a prescribed channel. Remembering a channel number between 1 and 100 is a lot easier than remembering a frequency say 7453.5MHz.

8. Microphones are the most used part of any voice communications equipment, and are subject to the most abuse from the operators. There are two basic types, hand-held and desk top units. The hand-held type suffers greater physical abuse by the constant pick-up and drop down action without due care and attention. The damage is often due to breakages in the cable due to over stretching, and also defects that occur within the microphone cause by the constant dropping on the desk or floor. Both types of microphone can give many years of service despite the corrosion buildup caused by saliva spray. Normal speaking distance is 3 to 6 inches.

9. As microphones in most cases are in constant physical touch with the operator, it is important to remember the importance of a proper grounding system. Grounding a radio communications system is a very important safety factor. A proper ground reduces the likeliness of an electrical charge similar to that of a lightning strike from affecting the operator. This fact should be foremost on the minds of all persons responsible for setting up a station. A separate ground system from the electrical ground is always recommended and positioned as close as physically possible to the communications room with the shortest possible cable. A separate ground should be placed at the base of all antenna support structures. Copper ground rods between 6 to 8 feet are required.

10. Head phones are used when operating in noisy environments or when reception is not of a high quality. High levels when using headphones must be avoided.

**Loss reduction before/ during severe weather conditions.**

- Antenna tower supports should be lowered to minimum height, and/ or extra guy wires should be installed.
- Consideration should be made to remove all antenna except wire type antennas if storm force winds and higher are expected. Spare wire antennas should be placed in readiness to be installed after the all clear is given.
- Extra fuel for generators should be stored. Topping up gas generators should only be attempted after unit has cooled down.
- Switch antennas out of circuit with antenna switch, or disconnect antennas from equipment during severed lightning storms.
- Switch off power supplies or disconnect from mains power.
- If master power switch is available, place to the off position. Use battery operated equipment only if absolutely necessary.

**Maintenance.**

The maintenance procedures of radio communications equipment can be two fold. The there is the day-to-day maintenance that is associated with the operations of the equipment and technical inspection required over a period of time in use.

**Day to day Maintenance:**

1. This form of maintenance requires that the entire room is kept clean and as much as possible dust free. Desks and floors wet cleaned frequently.

2. Equipment should be wiped with a damp cloth, especially microphones and headsets.

3. All drinks and cigarettes should be kept well away from the immediate area of the equipment. Accidents with these items are some of the usual causes of equipment failure, fires etc.

4. Someone should be made responsible for this duty.

**Technical inspection:**

This inspection should be done at least once every three months by a qualified technician.

1. Inspection of antennas and cable for physical damage such as breakages, corrosion and normal wear and tear.

2. Electrical checks to ensure specification measurements such as SWR etc

3. Power output and receiver sensitivity checks using test instruments.

4. General operations by contacting network stations to verify performance.

5. Make recommendations for technical improvement

6. Preparing a technical report for record keeping.

## APPENDIX H: GLOSSARY OF COMMUNICATIONS TERMINOLOGY

| | |
|---|---|
| **Aeronautical mobile service:** | A mobile service between aeronautical and aircraft stations, or between aircraft stations. |
| **Alternating current (AC):** | Electrical current that flows first in one direction in a wire and then in the other direction. This direction reversal continues at a rate that depends on the frequency of the ac. |
| **Amateur communications**: | Non-commercial radio communications by or among amateur stations solely with a personal aim and without personal or business interest. |
| **Amateur service:** | A radio communications service for the purpose of self-training and technical investigations carried on by amateurs, who are duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest. |
| **Amateur operator/station License:** | An instrument of authority for operating or setting up an amateur radio station. |
| **Antenna gain:** | The increase as a result of the physical construction of the antenna which confines the radiation to desired or useful directions. Usually specified in db, reference to gain of a dipole. |
| **Antenna structure:** | A tower or support mast on which an antenna is mounted. |
| **Assigned frequency:** | The center of a frequency that is assigned by the licensing authority. |
| **Automatic volume control:** | A circuit that continually maintains a constant audio output in spite of variations in input signal strength. |
| **Balun:** | A transformer used between a balance and an unbalance system, such as for feeding a balance antenna with an unbalanced feed line. |
| **Band plan:** | An agreement for operating within a certain portion of the radio spectrum. Band plans set aside certain frequencies for each different mode of amateur operation, such as CW, SSB, repeaters, and simplex. |

| | |
|---|---|
| **Bandwidth:** | The frequency range over which a signal extends. |
| **Base station:** | A station at a specific site. |
| **Beam or Yagi antenna:** | An antenna that receive and transmits RF energy in a particular direction. |
| **Block diagram:** | A simplified outline of an electronic circuit or components that are shown in boxes. |
| **Business communications:** | Any transmission or communication for the purpose of regular business or commercial affairs of any party. |
| **Capacitor:** | An electrical component composed of two or more conductive plates separated by an insulating material. A capacitor stores energy in an electrostatic field. |
| **Carrier frequency:** | The frequency of an un-modulated electromagnetic wave, usually specified in kilohertz or megahertz. |
| **Coaxial cable:** | A concentric 2-conductor cable, which has an insulated conductor. |
| **Coil:** | A conductor wound into series of loops. |
| **Coordinated Universal TIME (UTC):** | Sometimes referred to as Greenwich Mean Time or Zulu. The time at the zero-degree Meridian which passes through Greenwich, England. A universal time among all amateur operators. |
| **CTCSS:** | Continuous tone-code squelch system. This mute the receiver until a certain frequency is received along with the signal carrier. |
| **Current;** | A flow of electrons in an electrical circuit. |
| **CW:** | Continuous wave, another term for the International Morse code. |
| **Decibel (db):** | The smallest change in sound level that can be detected by the human ear. Power gains and losses are also expressed in decibels. |
| **Delta loop:** | A wire antenna with elements shaped into a triangle |
| **Dipole antenna:** | The most common wire antenna. Length is equal to one-half of the wavelength, fed by coaxial cable. |

| | |
|---|---|
| **Disaster** | Any situation that is beyond the ability of the community to cope and where outside assistance has to be sought. |
| **DTMF** | Dual Tone Multi Frequency, telephone type touch tone keypad signalling |
| **Duplex:** | Transmitting on one frequency, and receiving on another. |
| **Duplexer:** | A device which permits a unit to use a single antenna for two frequencies |
| **FAX:** | Facsimile, transmitting or receiving a visual image via radio or phone line |
| **FCC:** | Federal Communications Commission. A board of commissioners appointed by the President, having the power to regulate wire and radio telecommunications in the United States. |
| **Filter:** | A device used to block or reduce alternating currents or signals at certain frequencies while allowing others to pass unimpeded. |
| **Frequency:** | The number of cycles of alternating current in one second. |
| **Frequency modulation: (FM)** | A method of modulation in which the transmitted carrier wave is varied according to the input signal |
| **Front to back ratio:** | The energy radiated from the front of a directive antenna divided by the energy radiated from the back of the antenna. |
| **Gain:** | **A**n increase in the effective power radiated by an antenna in a certain desired direction, or an increase in received signal strength from a certain direction**.** |
| **Gamma match:** | A method of matching coaxial feed line to the driven element of an antenna. |
| **Ground:** | A connection, accidental or intentional between a device or circuit and the earth or some common body serving as the earth. |

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|---|---|
| **Ground plane antenna:** | A vertical antenna built with a central radiating element one-quarter of a wavelength long and several radials extending horizontally from the base. |
| **Harmonic:** | A radio waves that is a multiple of the fundamental frequency**.** |
| **Hertz (Hz):** | The international unit of frequency, defined as cycles per second. |
| **High frequency (HF):** | The band of frequencies that lie between 3 and 30 megacycles. It is from these frequencies that radio waves are returned to earth from the ionosphere**.** |
| **Interference:** | The effect that occurs when two or more radio signals are transmitting on the same frequency at the same time. This includes undesired noise that can affect radio signals**.** |
| **Impedance:** | A term used to describe a combination of reactance and resistance in a circuit. |
| **Inductor:** | An electrical component usually composed of a coil of wire wound on a central core. An inductor stores energy in a magnetic field. |
| **International Telecommunications Union. (ITU)** | The international body that regulates the use of the radio spectrum. |
| **Ionosphere:** | Outer limits of atmosphere from which HF communications are returned to earth. |
| **Jamming:** | Deliberate interference to a transmission with the intent of making reception impossible. |
| **Kilohertz (KHz):** | A frequency of 1000Hz**.** |
| **Kilowatt (KW):** | 1000 watts. |
| **Land mobile:** | A service between base stations and land mobiles stations or between land mobiles, and other land mobiles. |
| **Line of sight:** | The unobstructed or optical path between two points. |

**Long Wire:** A horizontal wire antenna that is one wavelength or greater in length.

**Lower side band (LSB):** One of the operating modes for transmission in the amateur radio bands. Amateurs generally operate USB at 20 meters and higher, LSB at 40 meters and lower.

**Low pass filter:** A device connected to worldwide transmitters that inhibit the passage of higher frequencies**.**

**Medium frequency (MF):** The band of frequencies that lies between 300 and 3000 KHz.

**Megahertz (MHz):** One million hertz**.**

**Mobile station:** A station in the land mobile system, which can be operated when it is in motion**.**

**Modulation:** A process by which a transmitted carrier wave is varied in frequency, phase, or amplitude by imposing upon it the frequencies corresponding to the code, control, sound or signals representing the information to be transmitted**.**

**Multi-band antenna:** An antenna that is capable of operating on several bands using a single feed line.

**NCCC:** National Communications Control Center.

**Noise level:** The strengths of extraneous audible sounds in a given location, usually measured in decibels**.**

**Ohm:** The basic unit of resistance.

**Ohm's law:** The basic electrical law explaining the relationship between voltage, current and resistance**.** The current I is equal to the voltage E divided by the resistance R. That is I=E/R

**Offset:** The difference between a repeater's input and output frequencies.

**Output power:** The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load of the impedance recommended by the manufacturer.

| | |
|---|---|
| **Paging;** | A one-way communications service from a base station to mobile or fixed receivers that provide signaling or information transfer by such means as tones, tone-voice, optical read-outs and digital transmissions. |
| **Phone patch:** | Interconnection of a radio service to the public telephone network. |
| **Power supply:** | A device or circuit that provides the appropriate voltage and current to another device or circuit**.** |
| **Propagation:** | The means by which radio waves travel from one place to another. |
| **Radio Frequency (RF):** | The range of frequencies over 20 kilohertz that can be propagated through space. |
| **Range:** | The maximum distance at which a radio signal is useful. |
| **Rectifier;** | An electronic component that allows current to pass through it in only one direction. |
| **Remote control:** | The control of a function or equipment from a distance by wire or wireless methods. |
| **Repeater station:** | An intermediate station in a system, which is a configured to receive a signal from a station, and retransmit the signal to another station. Usually performs this function in both directions |
| **RST report:** | A telegraphy signal reporting system of Readability, Strength and Tone. |
| **Sensitivity:** | **T**he degree to which a radio receiver can reproduce weak signals with satisfactory levels. |
| **Short-wave:** | The high frequencies that lie between 3 and 30 megahertz that can propagate over long distances. |
| **Simplex:** | A method of communications that can receive and transmit on the same frequency, but not simultaneously. |

| | |
|---|---|
| **Single-sideband (SSB):** | A method of radio transmission in which the RF carrier and one of the sidebands are suppressed and all of the information is carried on the remaining sideband. |
| **Skip zone:** | A region between the farthest reach of ground-wave communications, extended to a further reach where communication is possible. |
| **Standing wave ratio (SWR):** | The ratio of maximum voltage to minimum voltage along a feed line, and also the ratio of antenna impedance when the antenna is in a pure resistive load. |
| **Transceiver:** | A radio transmitter and receiver combined into one unit and sometimes contain common components, which are switched between the transmitter and receiver. |
| **Transmitter:** | Equipment used to generate radio waves, |
| **Trunked radio system:** | Methods of operation in which a number of radio frequency channel pairs are assigned to mobile and base stations in the system for use as groups. |
| **Ultra high frequency (UHF):** | Radio waves that are in the range of 300 to 3000 MHz. |
| **Upper sideband (USB):** | One of the operating modes for transmission in the amateur radio bands. Amateurs generally operate USB at 20 meters and higher, LSB at 40 meters and lower**.** |
| **Very high Frequency (VHF):** | Very high radio waves that are in the range of 30 to 300MHZ. |
| **Very Low Frequency (VLF):** | Radio waves that are in the range of 3 to 30 KHz. |
| **Voltage:** | The electro magnetic force of pressure that causes electrons to move through an electrical circuit**.** |
| **VOX:** | Voice operated transmitter. |
| **Yagi:** | A directive antenna made with a half-wavelength driven element, and two or more elements arranged in the same horizontal plane. |

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