



STRENGTHENING REGIONAL EMERGENCY COMMUNICATIONS CAPABILITY IN CDEMA PARTICIPATING STATES

REGIONAL EMERGENCY TELECOMMUNICATIONS PLAN

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The Regional Emergency Communication Plan was first developed by the consulting firm Business Tech Research Inc. comprising of a consulting team of Dr. Stephen Louis and Mr. Lionel Ellis in 2005. This revision is based on the document created by that team.

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GLOSSARY OF TERMS

Emergency Telecommunications - Communications required outside normal services due to overload or non-availability of regular communications services

HF - High Frequency

Public Service Agency - Any public or private non- commercial agency that provided service to the country e.g. Police , Fire, Hospital,

Simulated Emergency Test - A training exercise conducted if possible with the public service agencies to test the effectiveness of the mobilizations of the system.

UHF – Ultra High Frequency

VHF - Very High Frequency

Telecommunications - Any transmission, emission, or reception of signs signals, writing images and sounds or intelligence of any nature be it wire, radio, visual or other electromatic systems.

Blind Transmission

A transmission from one station to another station in circumstances where two way communication cannot be establish but where it is believed that the call station is able to receive the transmission.

Broadcast

A transmission of information relating to any subject that is not addressed to a specific station or stations.

Readback - A Procedure whereby the receiving station repeats a received message or an appropriate part thereof back to the transmitting station so as to obtain confirmation of correct reception.

Superfluous transmissions - transmission of unnecessary nature

All stations are to ensure that there is no wilful transmission of unnecessary or anonymous signals on the channel/ frequency.

ACRONYMS

| | |
|---------|---|
| CARICOM | The Caribbean Community |
| CDAC | CARICOM Disaster and Assessment Coordination Team |
| CDEMA | Caribbean Disaster Emergency Management Agency |
| CDM | Comprehensive Disaster Management |
| CDRU | CARICOM Disaster response Unit |
| COST | CARICOM Operational Support Team |
| DM | Disaster Management |
| DRM | Disaster Risk Management |
| ECDG | Eastern Caribbean Donor Group |
| EOC | Emergency Operation Centre |
| ESF | Emergency Support Function |
| ICS | Incident Command System |
| ISO | Initial Situation Overview |
| LSAR | Land Search and Rescue |
| MCM | Mass Casualty Management |
| NDC | National Disaster Coordinator |
| NDO | National Disaster Office/National Disaster Organisation |
| NEOC | National Emergency Operations Centre |
| PAHO | Pan American Health Organisation |
| PDRSC | Plan Development and Review Sub Committee |
| RECN | Regional Emergency Communications Network |
| RETP | Regional Emergency Telecommunications Plan |
| PS | Participating States (CDEMA) |
| RCC | Regional Coordination Centre |
| RCP | Regional Coordination Plan |
| RNAT | Rapid Needs Assessment Team |
| RRM | Regional Response Mechanism |
| RSS | Regional Security System |
| SOP | Standard Operating Procedure |
| SRCC | Sub Regional Coordination Centre |
| SRFP | Sub Regional Focal Point |

1. PURPOSE

The purpose of the Regional Emergency Telecommunications Plan (RETP) 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).

Additionally, this document provides guidance to all persons using the RECN on the correct use and the standard of performance as well as guidance on the maintenance and support of the radio system. Although it is not intended to provide details for handling every emergency that may occur as there is the need for flexibility and adaptation during disasters, this document does provide to the user the recommended approach when using the system.

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

2. SCOPE

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

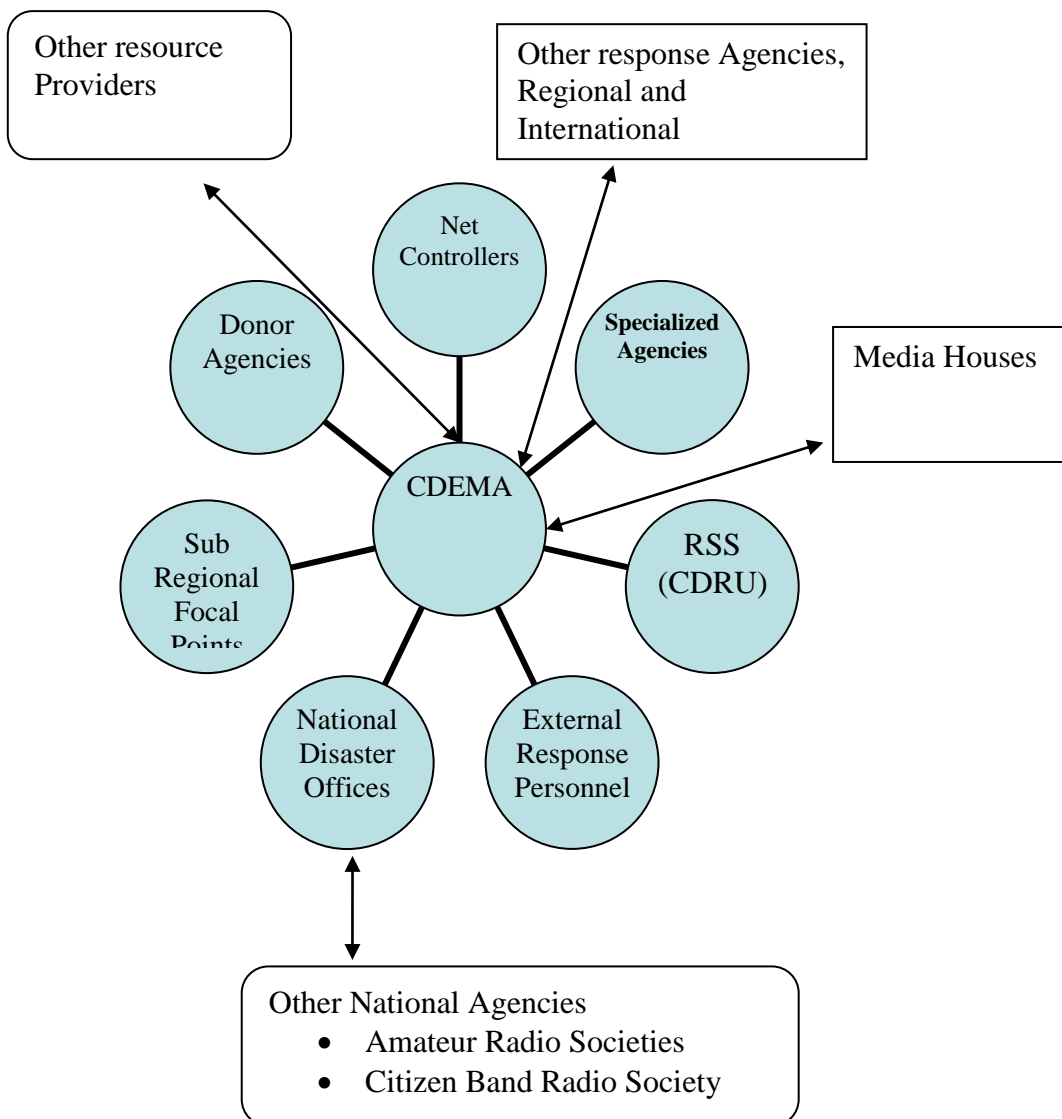
The Plan does not cover the emergency communications pertaining to response or coordination among national or local entities at the national level. It also does not cover communication among national, regional or international entities that takes place outside of the context of the RRM.

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 xxx

The chart below 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.



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 |
|--|--|
| CDEMA Coordinating Unit (CU) | 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 Telecommunications Plan |
| 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 its 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 CDEMA. 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 is the Seismic Research Centre (SRC) 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 | <p>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, the CDAC and the COST. 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 CDEMA CU within the RECN.</p> |
| Net Controllers | <p>This is not a separate entity but represents stations or individuals designated to function as Net Controllers on behalf of CDEMA. 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.</p> |

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 NGOs 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. |

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
- Entities with major roles during emergency operations – particularly the CDEMA CU, NDOs, and RSS/CDRU have at least one suitably skilled individual designated as the Communications Officer (CO), who is responsible for coordinating the emergency communications
- Where necessary, in addition to the CO, the above entities have access to an adequate pool of suitably skilled persons to operate emergency communications equipment and handle messages as required
- All entities have appropriate procedures for call-out of key personnel when required
- All entities adopt 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 telecommunications 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 activated under one of the following conditions:

- (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 CDEMA 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 certain types of disaster events – both natural and man-made – can occur without prior warning. In such cases there will be no *Alert* stage and 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 Actions to be taken during various Operating States

| State | Actions | Responsible |
|------------------------------------|---|---|
| Routine State | <ul style="list-style-type: none"> Verify availability of means for emergency communications | All |
| | <ul style="list-style-type: none"> Perform routine maintenance checks on all relevant equipment as per Maintenance Plan | All |
| | <ul style="list-style-type: none"> Develop roster of stations to function as Net Controller | CDEMA CU and NDOs |
| | <ul style="list-style-type: none"> Conduct regular communication checks with other participants in the network | Coordinated by Net Controllers. All stations to participate |
| | <ul style="list-style-type: none"> Maintain log of communications checks including date and time, organization and quality of communication | All |
| | <ul style="list-style-type: none"> Verify activation or subscription status of service contracts for satellite communications and other services | All users of such equipment |
| | <ul style="list-style-type: none"> Conduct annual communications exercise involving key participants in network and exercising all methods of communication | Coordinated by CDEMA CU. All relevant entities to participate |
| Alert State (Pre-Emergency) | <ul style="list-style-type: none"> Confirm operating status of all equipment and facilities needed to support communications (including backup equipment and supplies) | All |
| | <ul style="list-style-type: none"> Confirm Net Controllers for duty during alert and response phases | CDEMA CU and designated controllers |
| | <ul style="list-style-type: none"> Conduct radio checks with all stations that may need to participate in response | Designated Controllers. All stations to participate |
| | <ul style="list-style-type: none"> Activate call-up procedures or confirm availability of key personnel for radio operation, message handling, technical support, etc. | CDEMA CU, NDOs, Designated Net Controllers, SRFPs |
| | <ul style="list-style-type: none"> Confirm availability of adequate supplies such as message pads, food, water, etc. | All |
| | <ul style="list-style-type: none"> If located in the threatened area, secure communications equipment and facilities to minimize damage | All |
| | <ul style="list-style-type: none"> Confirm availability and operating status of CDRU communications packs for possible deployment | CDEMA CU, RSS/CLO |
| | <ul style="list-style-type: none"> Establish contact with threatened states and agree on procedures for communication during and after event | CDEMA CU, SRFPs |

| State | Actions | Responsible |
|---|--|--|
| Response State - Emergency (During event) | <ul style="list-style-type: none"> ▪ Maintain net control during event | Net Controllers |
| | <ul style="list-style-type: none"> ▪ Monitor designated communication channels for relevant messages including requests for assistance | Parties in non-affected areas |
| | <ul style="list-style-type: none"> ▪ If in the affected area and able to operate, provide periodic updates on event and conditions | Parties in affected areas |
| | <ul style="list-style-type: none"> ▪ Pass all messages received to the designated Message Controller (or team) for logging and routing | NEOC personnel; CDEMA CU operations staff, SRF |
| | <ul style="list-style-type: none"> ▪ Review situation reports and determine likely response requirements | CDERA, RSS/CLO |
| | <ul style="list-style-type: none"> ▪ Prepare and disseminate updates to key partners including Participating States, Donor and resource agencies | CDEMA CU |
| | | |
| Response State - Emergency (immediately after event) | <ul style="list-style-type: none"> ▪ Re-establish communication with NEOC if necessary | CDEMA CU, Net Controllers, SRF |
| | <ul style="list-style-type: none"> ▪ Provide initial situation assessment to CDEMA CU and issue request for external assistance (if required) | NDOs (affected states) |
| | <ul style="list-style-type: none"> ▪ Establish or re-establish communications with other RECN participants | CDEMA CU, All |
| | <ul style="list-style-type: none"> ▪ Deploy emergency communications equipment to affected state if necessary (Level 3) | CDEMA CU, RSS (CDRU) |
| | <ul style="list-style-type: none"> ▪ Establish contact with NEOC after deployment | CDRU, External Response Personnel |
| | <ul style="list-style-type: none"> ▪ Establish communications centre (including radio and satellite equipment) in affected state after deployment, if necessary | CDRU |
| Recovery State (Post-Emergency) | <ul style="list-style-type: none"> ▪ Provide ongoing updates to CDEMA CU for dissemination to partners | NDOs |
| | <ul style="list-style-type: none"> ▪ Disseminate periodic updates | CDEMA CU |
| | <ul style="list-style-type: none"> ▪ Phase deactivation of RECN | All |

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). |
| HF Radio Network | Consists of the HF radios and facilities available to the CDEMA 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 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 CDEMA CU, NDOs and key response partners. They allow calls to be made external to the public network – Satellite phone to Satellite phone. They also allow calls to be made to and from the public network (once available) 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. 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 data communications (particularly e-mail) where this 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 should aim to minimize the volume of data that needs to be transmitted, e.g. by compressing files. |

APPENDIX A: Designated Frequencies for Regional Coordination

Table 1: Frequencies for HF Network

| Frequency | Use |
|-----------------|---|
| 7.453.5 Mhz USB | CDEMA frequency for regional communication. For use in the Eastern Caribbean |
| 14.415 Mhz USB | CDEMA 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 | Remarks |
|-------------------------------|-----------|---------|
| Anguilla | | |
| Antigua & Barbuda | | |
| Bahamas | | |
| Barbados | | |
| Belize | | |
| British Virgin Islands | | |
| Dominica | | |
| Grenada | | |
| Guyana | | |
| Jamaica | | |
| Montserrat | | |
| St Kitts and Nevis | | |
| St Lucia | | |
| St Vincent and the Grenadines | | |
| Trinidad and Tobago | | |
| Turks and Caicos Islands | | |

APPENDIX B : Satellite Telephone Numbers

| Country / Organisation | Telephone # |
|-------------------------------|--------------------|
| Anguilla | 8816 414 34527 |
| Antigua & Barbuda | 8816 414 34528 |
| Bahamas | 8816 414 34529 |
| Barbados | 8816 414 34530 |
| Belize | 8816 414 34531 |
| BVI | 8816 414 34532 |
| Dominica | 8816 414 34533 |
| Grenada | 8816 414 34534 |
| Guyana | 8816 414 34546 |
| Jamaica | 8816 414 34535 |
| Montserrat | 8816 414 34536 |
| St. Kitts & Nevis | 8816 414 34537 |
| Saint Lucia | 8816 414 34538 |
| St. Vincent | 8816 414 34539 |
| Trinidad & Tobago | 8816 414 34540 |
| TCI | 8816 414 34541 |
| CDEMA | 8816 414 34542 |
| CDEMA | 8816 414 34543 |
| RSS | 8816 414 34544 |
| CDEMA | 8816 414 34545 |

APPENDIX C: Equipment Maintenance

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.

Use of Equipment.

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 use 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 caused 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 4 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 likelihood 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. However there are also other factors that must be considered such as internal defect that may occur within the equipment, and the cancellation of any radio frequency associated with the energy transmitted by the same equipment. 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.

Maintenance.

The maintenance procedures of radio communications equipment can be two fold. 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.
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 D Basic Radio Operations

TRAFFIC GUIDELINES

The CDEMA CU has a weekly net that operates from 10:00am to 10:30 am on 7.543.50 USB and from 3:00pm to 3:30 pm on 14.415.00 USB every Friday, which allows for the testing of the system by all operators. Upon completion of this net, all NDOs are required to run a national net to test the internal communication system. The following list the basic guidelines for operating either a base station or handheld.

When the Net is running:

- Listen before transmitting. Wait until the airwaves are clear, with no traffic, then call on the net controller.
- Communicate only with the net control station unless directed to do otherwise.
- If you want to speak to another station during the net, you must request permission from the net controller.
- Use “Plain English” and avoid codes or slangs, use phonetic alphabet where clarity is required.
- Under no circumstances should operators argue or criticise when using the radio talk groups. Keep the communication to the transfer of information.

In times of Emergency or Disaster

In times of emergency or disaster, the RCC will be activated and will assume control of the regional radio traffic. At the same time the relevant NEOC will also be activated and will assume control of the national traffic. The NEOC will have established an internal information flow and the emergency message form will be used. It is noted that there is a section for priority. There are four priorities, these are

- Emergency
- Priority
- Welfare and
- Routine

The use of these are as follows:

1. Use “Emergency” only if report refers to situations in which injury or death is threatened and immediate action should be taken.

2. Use “priority” to indicate traffic needing immediate relay or action required within a specific time limit.
3. Use “Welfare” to indicate traffic giving the health and welfare of a person or persons in the affected area.
4. Use “Routine” for traffic not covered in (1) (2) (3) above.

Other procedures to follow are listed below

5. Transmit Messages [MESSAGES] at handwriting speed. When sending long messages, take frequent breaks and ensure that the message is received correctly. This may not, however be necessary if the information is transmitted digitally.
6. Use “Plain English” and avoid codes or slangs, use phonetic alphabet where clarity is required.
7. Under no circumstances should operators argue or criticise when using the radio talk groups. Keep the communication to the transfer of information.
8. As far as possible verify all traffic to be transmitted. If not verified, include that as a statement in the report.
9. Traffic to be limited to requested information and should be abbreviated provided clarity is not affected.

Appendix E Radio Procedures

ESTABLISHMENT OF RADIO

All stations shall answer calls directed to them by other stations in the RECN and should exchange communication on request.

TRANSMITTING TECHNIQUES

Transmission shall be conducted concisely in a normal conversational tone.

MICROPHONE TECHNIQUES

Correct enunciation of words, spoken at a uniform rate in a voice pitched somewhat higher than normal but preserving the rhythm of ordinary conversation will do much to assist satisfactory reception of mechanically produced speech.

Most microphones are directionally functioning and an operator should therefore speak directly into them.

To avoid clipped transmission particularly where the transmitter is remote from the microphone, it is important to depress the transmit switch fully before speech is commenced and to avoid returning it before the transmission is completed.

The operator should try to use clear concise sentences and to eradicate such obvious faults as [1] hesitation sounds [2] verbosity [3] lowering of voice [4] blurring of consonants etc. By doing the aforementioned, it would prevent repetitions and ensure maximum efficiency.

Speech transmitting technique should be such that the highest possible intelligibility is incorporated in each transmission.

When a message is transmitted to another station and its contents need to be written down, the speaking rate should be a slower rate to allow for the writing process.

A slight pause preceding and following numerical make them easier to understand.

A slight pause preceding and following numerical make them easier to understand.

Radio operators should:

- a. Enunciate each word clearly and distinctly.
- b. Maintain an even rate of speech not exceeding 100 wpm.
- c. Maintain the speaking volume at a constant level
- d. Be familiar with the microphone.

A clear and decisive tone of voice is essential in establishing confidence between radio operators.

Speech techniques should afford the highest possible intelligibility. Any tendency to speak rapidly, shout or raise the pitch of voice reduces intelligibility and necessitates repetitions.

It is to be noted that from time to time, when transmitting along messages, the carrier should be interrupted momentarily during pause in speech . This will permit the transmitting operator to ascertain whether the channel / frequency is clear before continuing the transmission.

WORD SPELLING ALPHABET

The ICAO (International Civil Aviation Organization) spelling alphabet is given below with the syllables requiring emphasis being underlined.

| | | | |
|----------|-----------------------|----------|------------------------|
| A | ALFA | N | <u>NOVEMBER</u> |
| B | <u>BRAVO</u> | O | OSCAR |
| C | CHARLIE | P | <u>PAPA</u> |
| D | <u>DELTA</u> | Q | <u>QUEBEC</u> |
| E | <u>ECHO</u> | R | <u>ROMEO</u> |
| F | <u>FOXTROT</u> | S | <u>SIERRA</u> |
| G | GULF | T | <u>TANGO</u> |
| H | <u>HOTEL</u> | U | <u>UNIFORM</u> |
| I | <u>INDIA</u> | V | <u>VICTOR</u> |
| J | <u>JULIET</u> | W | <u>WHISKEY</u> |
| K | <u>KILO</u> | X | X-RAY |
| L | <u>LIMA</u> | Y | <u>YANKEE</u> |
| M | MIKE | Z | ZULU |

STANDARD SPEECH ABBREVIATION

| Phrase | Meaning |
|-----------------|---|
| Acknowledge | Let me know you have received and understand this message |
| Affirmative | Yes or permission granted I hereby indicate the separation between portions of the message |
| Correction | An error has been made in this transmission. The correct version is |
| Go ahead | Proceed with your message |
| How do you read | Self explanatory |
| I say again | Self explanatory |
| Negative | No or permission not granted or that is not correct |

| Phrase | Meaning |
|-----------------|--|
| Over | My transmission is ended and I expect a response from you |
| Out | My conversation is ended and no response is expected |
| Read back | Repeat all, or specified part of the message back to me exactly as received |
| Roger | I have received all your transmission (NB Under no circumstances to be used as an affirmative) |
| Say Again | Repeat all or the following part of your last transmission |
| Stand by | Self explanatory |
| That is correct | Self explanatory |
| Wilco | Your last message (or message indicated) received, understood and will be complied with |
| | |

Stations having a requirement to transmit information to all stations likely to intercept should preface such transmissions by the general call “ALL STATIONS” followed by the words “THIS IS” and the identification of the calling station. For example “ALL STATIONS” in the CDEMA CU RADIO NET

When a station is called but is uncertain of the identification of calling station, it should reply by transmitting the following:-

Station calling CDEMA CU – say again your call sign

Communications shall commence with a call and a reply when it is desired to establish contact, except that, when it is certain that the station called will receive the call, the calling station may transmit the message without waiting for a reply from the station called.

Eg; NADMA NEOC this is CDEMA CU. There is no need to call the call sign of the other station once again as you are positive that you are talking to him i.e. you have established contact

SUBSEQUENT RADIO/TELEPHONE COMMUNICATIONS

Abbreviated Radiotelephony call signals may be used:

After satisfactory communication has been established and provided that no confusion is likely to arise

After contact has been established, continuous two way communication shall be permitted without further identification or call (if no mistake in identify is likely to occur) until termination of the contact.

TEST PROCEDURES

To execute a test procedure the following steps can be taken:

- a. The identity of the station being called
- b. The words “that is”
- c. The station calling
- d. Signal check or radio check

Eg: NADMA this is CDEMA CU calling for a signal or radio check

READABILITY SCALE

1. Unreadable
2. Readable now and then
3. Readable but with difficulty
4. Readable
5. Perfectly readable

EXCHANGE OF COMMUNICATIONS

When no confusion is likely to arise, a shortened form of procedure shall be permitted

Eg. Standby, over, Roger, this is and other similar phrases may be omitted at the discretion of the operators after initial contact has been established

ACKNOWLEDGEMENT OF RECEIPT

The receiving operator shall make certain that the message has been received correctly before acknowledgement of receipt

END OF CONVERSATION

A radiotelephone conversation shall be terminated by the receiving station using its own identification followed by “OUT”. This will indicate that no response is expected.

EG. CDEMA CU OUT

Never use the term “OVER and OUT” this will be in fact saying “ I expect a response from you and I am finished with this conversation

CORRECTIONS AND REPETITIONS

When an error has been made in transmission, the word “CORRECTION” shall be spoken, the last correct group or phrase repeated and the correct version transmitted.

It is to noted that when an operator has transmitted a message, the reception of which he considers difficult, he should transmit the important elements of the message twice.

Useful References

- Arizona State Division of Emergency Management (1998) *Emergency Support Function #2 - Communications Annex*,
- CDEMA (1993) *Emergency Telecommunications Procedures Manual*, Barbados: CDERA.
- CDEMA (1993) *Guidelines for a National Disaster Telecommunications Plan*, Barbados: CDERA.
- CDEMA (1993) *Standing Operating Procedures: Guidelines for National Emergency Operating Centres*, Barbados: CDERA.
- Telecommunication Development Bureau (BDT) (2002) *Handbook on Disaster Communications*, Geneva: International Telecommunications Union.