In November 1996, the First Regional Workshop on Emergency Telecommunications for the Central American and Caribbean Region was organized by the United Nations Department of Humanitarian Affairs (UNDHA).

The workshop served a double purpose: first as a Forum in which experts from almost all countries, islands and territories in the Region discussed international cooperation; second but just as important, a Forum in which those responsible for disaster management and those responsible for telecommunications got to know each others needs and views. Corresponding to the two groups, respective regional organizations, the Caribbean Disaster Emergency Response Agency (CDERA) and the Caribbean Telecommunication Union (CTU), played lead roles in the workshop.

The Report on the Workshop is based on the notes of the rapporteur and contains, as Documents and Annexes, texts presented by participants. The conclusions and recommendations of the various Parallel Working Groups have been summarized in Annex 7.

The workshop would not have been possible without the financial contribution of the Swiss Government, who has provided most of the funding for the emergency telecommunications project of DHA since 1994. The telecommunications industry, equipment manufacturers and service providers, supported the event through the participation of experts and through sponsorships. The Secretariat of the CTU and the Trinidad office of the United Nations Development Programme (UNDP) ensured administrative support for the workshop. International organizations, including the International Telecommunication Union (ITU) and the International Amateur Radio Union (IARU), and regional organizations, in particular the Pan American Health Organization (PAHO) as well as individual experts from academic institutions and disaster management centres contributed most valuable inputs for all sessions.

On behalf of all participants we would like to express our sincere gratitude to all those, who made this event possible. This First Regional Workshop on Emergency Telecommunications was, beyond its importance for the Region, an important milestone on the way to a solution for the major problem still confronting all partners in humanitarian assistance: The regulatory barriers which, in may cases, still prevent the optimum use of what telecommunications technology makes available to those who work in the service of the most noble of causes - the prevention, and the alleviation of human suffering caused by disasters.

Geneva, 24 June 1997

Hans Zimmermann,
United Nations Department of
Humanitarian Affairs (UNDHA).

Goli Farrell,
Secretariat of the Working Group on
Emergency Telecommunications (WGET).

First Regional Workshop on
Emergency Telecommunications for the
Central American and Caribbean Region

Document G-1

Port of Spain, Trinidad and Tobago,
4 to 9 November 1996

Trinidad Hilton and Conference Centre

4 November 1996

LIST OF DOCUMENTS

General Documents:

G-1   List of Documents for the First Regional Workshop on Emergency Telecommunications for the Central American and Caribbean Region.

G-2   Agenda and Schedule of the First Regional Workshop on Emergency Telecommunications for the Central American and Caribbean Region, Port of Spain, 4 to 9 November 1996.

G-3   List of Participants of the First Regional Workshop on Emergency Telecommunications for the Central American and Caribbean Region.

G-4   Summary of the Proceedings of the First Regional Workshop on Emergency Telecommunications for the Central American and Caribbean Region, Port of Spain, 4 to 9 November 1997.

Documents for the Opening Session:

OS-1   Opening Statement, by the President of the Caribbean Telecommunications Union, The Honourable Jeremiah Scott.

OS-2   Opening Statement, by Mr. Jeremy Collymore, CDERA Coordinator.

OS-3   Opening Statement, by Mr. Mohamed Harbi, Special Adviser to the ITU Secretary General, International Telecommunications Union, Geneva, Swtzerland.

OS-4   Opening Statement, by The Honourable Senator Brigadier Joseph Theodore, Minister of National Security.

OS-5   Opening Statement, by Mr. Hans Zimmermann, United Nations Department of Humanitarian Affairs, Geneva, Switzerland.

<u>Annexes:</u>

ANNEX 1 **Further Policy Considerations on Emergency Telecommunications.** Discussions Points, by the CTU Secretariat.

ANNEX 2 **Telecommunications Satellite Systems:** "The Odyssey Satellite System and Disaster/Emergency Communications." Presentation made by Mr. D.R. Grout, Director, Administration, Odyssey-Teleglobe, Montreal, Quebec.

ANNEX 3 **Reprint of an Essay written for the Working Group on Emergency Telecommunications:** "To what extent is the normal public cellular phone system of use in a disaster situation ?", by Mr Mark Wood, DRCF.

ANNEX 4 **Social Science Research on Disaster Warnings: Previous Research and a Proposed Model for the Future,** by Dr. Dennis Wenger, Director, Hazard Reduction & Recovery Center, Texas A & M University.

ANNEX 5 **NVI - The Disaster Relief Communications Foundation:** "Near vertical incidence communications: A promising application for Disaster Communications. A summary of papers by experts in this mode.

ANNEX 6 **Los Angeles County Emergency Operations Center,** by Sam Snyder, Ph.D. and S/R Sergeant David L. Peltz.

ANNEX 7 **Summary of Working Groups' Recommendations** prepared by John Scott, Centre for Public Communications, Arlington, VA, USA.

irst Regional Workshop on   Document G-2
Emergency Telecommunications
for the Central American and Caribbean Region

Port of Spain, Trinidad and Tobago,
4 to 9 November 1996

Trinidad Hilton and Conference Centre   4 November 1996

AGENDA AND SCHEDULE

Monday, 4 November 1996

13.00 - 18.00	Arrival of participants, Registration (at Savannah Lounge).
18.00	Meeting of Speakers and Sessions Chairpersons (at Savannah Lounge).
20.00 - 22.00	Get-together (Savannah Terrace).

Tuesday, 5 November 1996

09.00 - 09.45   Opening Session:
                     Chairman: Mr. Roderick Sanatan, Secretary General (CTU).

- National Anthem,
- Welcome,
- Statements by:
    - Hon. Jeremiah Scott, President, CTU,
    - Mr. J. Collymore, CDERA,
    - Mr. Mohamed Harbi, ITU,
    - Snr. Edgardo Acosta, PAHO,
    - Mr. Hans Zimmermann, UN/DHA,

- Address by Minister of National Security,
  The Honourable Senator, Joseph Theodore.

- Address by the Prime Minister of
  Trinidad and Tobago, The Honourable Basdeo Panday.

09.45 - 10.15   Coffee Break.

10.15 - 10.30   Special Presentation: "Amateur Radio, a National and International Resource", by Snr. Eduardo Estrada, (Ecuador).

10.35 - 12.00   **First Plenary Session:**

- "The Disaster Scenarios and Response Mechanisms in the Region - Case Study: "Hurricane Luis".
  Chairman : Mr. Stephen Louis, Executive Director (CDERA).

- "The Exercise Region RAP: Use of Simulation Exercises to test Regional Emergency Communications".
  Mr. Shelton De Four (Belize).

- "The Role of the Amateur Radio Service in Disaster Management: A model". Major Richard B. Reece (ODPEM).

- "Impact of the Hurricane Luis on Emergency Telecommunications in Dominica".
  Mr. Cecil Shillingford (Dominica).

- "Emergency Broadcasting during Hurricane Luis".
  Mr. Timothy James, Co-ordinator National Disaster (St. Lucia).

12.00 - 13.30   **Lunch**

13.30 - 15.50   **Second Plenary Session:**

Telecommunications Resources for Administering Emergencies in the CTU Countries (A role for Policy Makers, Regulators and Operators).
Chairman: Mr Roderick Sanatan, Secretary General (CTU).

- Presentations:

  - "The Resource Context of Emergency Telecommunications in the CTU" by Mr. Roderick Sanatan.

  - "Caribbean Meteorology and the use of Telecommunications", by Mr. Cyril Berridge, Director (CMO).

  - "Structuring the Role of the Amateur Radio Services in Disaster Management", by Mr. Campbell Matthew, (Antigua and Barbuda).

  - "Perspectives on the Role of National Carriers in Emergency Telecommunications", by Lincoln Robinson, (CANTO).

  - "The Roles of Policy Makers, Regulators and Operators in Disaster Administration", by Oliver Finley.

.5.50 - 16.20   **Coffee Break.**

16.20 - 17.30   **Parallel Working Groups:**

       A1:   Telecommunications Requirements of Disaster Mitigation and Response Mechanisms.
(Comments by Trinidad and Tobago, Mr. Winston Ragbir).

       B1:   The Vulnerability of Telecommunications Networks.
(comments by Grenada, Mr Oliver Finley):
-        by natural disasters,
-        by "man - made disaster",
-        by other events (CME, etc.).

       C1:   Structuring the Role of the Amateur Radio Service in Management
- Case Study: The case of Antigua and Barbuda .

Wednesday, 6 November 1996

08.30 - 10.00   **Telecommunications Satellite Systems.**

       Illustrated presentations by:
- The Iridium System,
-        The Odyssey Satellite System,
-        Orbcomm,
-        Comsat,
-        IDB.

10.30 - 12.30   **Third Plenary Session:**

       Presentation of Results of Working Group Sessions A1, B1 and C1.

12.30 - 13.30   **Lunch.**

13.30 - 16.30   **Visit(s) to Installations/Institutions.**

Thursday, 7 November 1996

08,30 - 10.00   **Fourth Plenary Session:**

-        Regulatory and Policy Issues of Emergency Telecommunications : GMPCS Issues.
Chairman: Mr. Mohamed Harbi, ITU.

\- The Convention on the Provision of Telecommunications Resources for Disaster Mitigation and Relief Operations, by Professor Fred Cate. Comments: Mr. Hans Zimmermann.

\- Model Legislation for Disaster Preparedness and Response, by Professor A.R. Carnegie (UWI, Barbados).

10.00 - 10.30   **Coffee Break.**

10.30 - 11.30   **Special Plenary Session:**

\- The Emergency Operations Centre in Los Angeles, Ca. Presenters: Lt. Stephen Gattis and Sgt. James Coffmann.

11.30 - 12.30   **Special Plenary Session:**

\- Early Warning and Preparedness. Presenter: Professor Dennis Wenger and Mr. John Scott. Comments from Mr. Stephen Louis, CDERA.

12.30 - 13.30   **Lunch.**

13.30 - 14.30   **Parallel Working Groups:**

A2:   The Trans-border use of Telecommunications equipment; licensing requirements. Chairman: Mr. Jean Arry Ceant. Proposals from Mr. Christian Dowe (St. Kitts/Nevis).

B2:   Cost Effectiveness and Tariff Structures for Emergency Telecommunications. Comments from Jamaica/CANTO.

C2:   National Coordination Mechanisms among the Governmental Agencies for Emergency Management and for Telecommunications Services. Chairman: Mr. Stephen Louis.

14.30 - 14.45   **Coffee Break.**

14.45 - 15.45   **Parallel Working Groups:**

A3:   Proposals for Improved Regional Mechanisms in Telecommunications, presented by the CTU.

B3:   Recommendations for Compatibility and Standardisation, proposed by CANTO.

C3:	The role of the Internet in Regional Emergency Telecommunications in the Region.
	Chairman: Mr. John Scott, PAHO.
	Comments by Mr. Perry Mason, Saint Lucia, and Mr. Sylvester Vital, Dominica.
15.45 - 16.45	**Fifth Plenary Session:**
	Presentation of the Recommendations of Working Groups A2, B2, C2.
17.00	**Meeting of the Drafting Team.**

Friday, 8 November, 1996

08.30 - 10.15	**Presentations of equipment and Services by:**
-	T.S.T.T. , TESSCO, BARRET (La Boucan).
-	Motorola (Savannah Lounge).
	Special Presentation:
-	NVIS propagation, by Mr. Mark Wood, DRCF.
10.15 - 10.45	**Coffee Break**
10.45 - 12.30	**Sixth Plenary Session:**
-	Adoption of the Recommendations prepared by Working Groups A3, B3 and C3 together and possible revised version of recommendations submitted by Working Groups A1, B1, C1 and A2, B2, C2.
12.30 - 13.30	**Lunch.**
13.30 - 15.00	**Seventh Plenary Session:**
-	Adoption of Recommendations.

Saturday, 9 November 1996

-	Departure of Participants.

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Port of Spain, Trinidad and Tobago,
4 to 9 November 1996

Trinidad Hilton and Conference Centre

13 June 1997

SUMMARY OF THE PROCEEDINGS

During an unparalleled gathering of telecommunication experts, emergency Managers and Government officials from 30 countries and territories in this particularly disaster prone region, an extraordinarily rich exchange of information took place in seven Plenary Sessions and 3 sets of parallel Working Groups.

Official Opening Session:

See Opening Statements Documents OS-1, OS-2, OS-3, OS-4, OS-5.

Special Session:
The role of the Amateur Radio Service in Emergency Telecommunications.

Mr. Eduardo Estrada, Emergency Coordinator, International Amateur Radio Union (IARU), Region II, presented the numerous benefits of amateur radio both on national and international levels in providing communication in times of emergency. The IARU, representing more than two million amateur radio operators world-wide, enjoys observer status in a number of International Organizations including the International

Telecommunication Union (ITU), and is actively promoting the amateur radio and amateur satellite services. Referring on the wide range of disasters to which the region is prone, and to the fact that more than 800'000 amateur radio stations are registered in region II of the IARU, which includes the Americas and Hawaii,

Mr. Estrada emphasized the traditionally important role of the amateur radio service in emergency response throughout its history.

First Plenary Session:
The Disaster Scenarios and the Response Mechanisms in the Region.

The role of CDERA in regional Emergency Telecommunications:

A case study of hurricane Luis (1995) and an examination of structural and administrative challenges to amateur radio in the Caribbean dominated this session.

Mr. Stephen Louis, Information Systems Manager of the Caribbean Disaster Emergency Response Agency (CDERA), gave an overview of the

agency's activities since its establishment in 1991 by agreement of regional heads of Government, and of its specific interest in building and maintaining emergency telecommunications.

The main elements of CDERA in respect to emergency communications are:

a)   review of regional emergency telecommunications structures;

b)   facilitation of training;

c)   organization of simulation exercises;

d)   establishment of a CDERA Web site;

e)   collaboration with other agencies with common interest with a particular view on avoiding duplication of efforts.

Major Richard B. Reese, Director General, Jamaica's Office of Disaster Preparedness and Emergency Management (ODPEM), stated that Jamaica has made substantial progress in enhancing its emergency telecommunication system with all key response agencies, including the Jamaica Amateur Radio Association (JARA). He mentioned some weaknesses identified, including shortcomings in adequate planning and coordination among institutions, which resulted in increased operational costs due to unnecessary duplications. A glaring weakness is the lack of possibility for a duty-free importation of telecommunication equipment for JARA and Citizens' Band Clubs.

Major Reese called for closer cooperation and networking between district, parish, national and international levels, including an appropriate Memorandum of Understanding, for training of Jamaica's fire and police officers as radio operators and for free concessions for the import of equipment needed by JARA stations.

Major Shelton De Four, Belize Defence Force, described the two Regional RAP exercises conducted in 1994 and 1996 (with Grenada as the simulated emergency location in the latter), designed to test emergency telecommunication links between the organizations and individuals likely to be involved in operations. The exercises concentrated on information handling procedures through an emergency operations centre in all phases of a simulated disaster.

As a result of these RAP exercises, the following needs were identified:

1.   the necessity of early liaison with private and public radio communicators for better synchronization;

2.   the availability of alternative means of communication such as satellite links, back up radio links;

3.   the appointment of personnel along operational rather than administrative lines;

4.   a continuous disaster management training in areas such as education, public relations and organization and management of an Emergency Operations Centre (EOC);

5. the allocation of appropriate radio frequencies for emergency traffic;

6. the establishment of Standard Operations Procedures (SOP) upon the activation of an EOC;

7. a management accounting system to document reception and distribution of relief goods.

Advocating more future RAP exercises, Major De Four recommended in particular an examination of allocated radio frequencies and clarification of government expectations during a disaster.

Mr. Cecil Shillingford, Assistant National Disaster Coordinator, Office of Disaster Preparedness, Ministry of Communications & Works, Dominica, pointed out that during the passage of hurricane Luis in 1995 all communication systems, including commercial radio stations, were rendered inoperative due to heavy rains and lightning strokes. Amateur radio became the main carrier of local and international communications during the disaster. The operators went on foot, four wheel drive, and by sea, mostly accompanying government officials assessing damages.

Based on his recent first hand experiences during three major storms affecting Dominica, Cecil Shillingford recommended:

a) establishment of close cooperation with the amateur radio fraternity;

b) the installation of two repeater systems on the two highest points in Dominica;

c) exploring alternative power sources such as solar and wind;

d) including amateur radio as an integral part of public education with training programs in rural communities;

e) deployment of a well planned network of HF and VHF radios with a maximum coverage of an entire island to the extent its topography permits this.

Mr. Timothy James, National Disaster Coordinator, St.Lucia, gave a graphic description of a similar experience during hurricane Luis, when the only voice from the disaster struck island of Montserrat was that of a amateur radio "ham" operator operating his station from under his bed.

Mr. Timothy James specifically recommended to ensure:

1. better coordination with neighbouring islands' facilities and an inter-island broadcast protocol;

2. availability of stand-by emergency power for radio stations;

3. assignment of amateur radio operators to all national disaster offices;

4. approaching UNESCO concerning low power broadcast facilities;

5. establishing links between the Caribbean News Agency (CANA) and national disaster offices to facilitate broadcast via CANA's satellite network.