LESSONS FROM ...

Emily has come and gone. The Caribbean needs to ensure that her lessons are not forgotten. Although Emily will not be remembered as a particularly powerful hurricane (she just got up to category 2 strength before hitting the Dominican Republic) or a very damaging (preliminary damage reports seem to total US$75m) disaster event, she will be remembered for the difficulties she created for forecasters, emergency managers and other interest groups.

LESSON 1. Emily formed so close to Barbados, St. Vincent and St. Lucia that she did not give those islands time to go through a full alert, watch, warning sequence. The lesson here is that we must be in a constant state of alert for any similar development in the future. Caribbean countries should therefore include this kind of 'Worst Case' scenario when planning future severe weather responses.

LESSON 2. Emily reached Tropical Storm status on a Sunday afternoon and some of the arrangements for media dissemination of public safety information in the Eastern Caribbean appear to have failed because it was a Sunday. A concerted effort must be made to ensure that regardless of the day of the week or the hour of the day appropriate public safety information is disseminated in a timely fashion. All Caribbean States need to review their written public warning procedures and seek to ensure that radio stations carry the required information at fixed times preferably on the hour and on the half hour.

LESSON 3. Emily intensified quickly at two points in her short life, once near Barbados and then as she approached Bermuda taking everyone (including the forecasters) by surprise. The lesson here is that we need to understand the limits of the forecasting system and try to appreciate the rapid changes which these tropical systems can manifest. Being prepared for Hurricanes and Tropical Storms must include being prepared for such changes and our contingency plans must be flexible enough to include and cater to this kind of rapid change.

LESSON 4. Emily has again shown up our surprisingly high vulnerability to roof damage (even on modern buildings) at wind speeds below the design limits. Engineers in the region, and the officials responsible for building safety need to give us some explanations for the extensive failure of roofs even in the modern construction sector. This Newsletter will provide space for their response.

LESSON 5. We need to continue to improve systems for emergency shelter, damage assessment and rehabilitation and reconstruction. Many improvements have been made, much remains to be done. The PCDPPP is organizing a case study of Emily and it is hoped that many more relevant learning experiences will be identified, analyzed and documented for the benefit of the region.
LECONS D’EMILY

Emily est venue et repartie. Aux Antilles, on doit s’assurer que les leçons ne sont pas oubliées. Même si on ne garde le souvenir d’Emily comme un cyclone particulièrement puissant (elle était classée à la puissance de catégorie 2 juste avant de frapper la République Dominicaine) ou une catastrophe qui a engendré beaucoup de dégâts (les rapports preliminaires des dommages semblent se montrer à U.S. 75m.), on se souviendra Emily pour les difficultés qu’elle a créées pour les météorologistes, pour les administrateurs des cas d’urgence et pour d’autres groupes intéressés.

LECON 1. Emily est née si pres de Barbados, Saint - Vincent et Sainte - Lucie qu’elle ne leur a pas donné le temps de signaler l’alerte générale et l’advertissement. Le leçon qu’elle nous enseigne est qu’il faut rester en état d’alerte perpétuel pour tout evenement semblable dans l’avenir. Les pays des Antilles doivent donc ne pas oublier ce genre de scenario du "plus mauvais cas" quand ils font face à l’avenir aux inémerelles sévères.

LECON 2. Emily a atteint le statut d’un orage tropical pendant un dimanche après-midi et quelques - uns des mesures pour disseminer aux medias les renseignements pour le salut public aux Antilles semblent avoir ete un echec du fait que ce soit un dimanche. Quelque soit le jour de la semaine ou l’heure du jour, on doit faire un effort concerte pour assurer que des renseignements appropries pour le salut public sont transmis sans perte de temps. Tous les etats des Antilles doivent revoir leurs methodes ecrites d’advertissement du public et essayer d’assurer que les stations de radio transmettent les informations exigées a une heure fixe, de preference toutes les heures et toutes les demi - heures.

LECON 3. Emily s’est raffermie rapidement a deux points precis de sa courte vie; une fois pres de Barbados et puis quand elle s’approchait de Bermuda, prenant par surprise toute le monde (y compris les meteorologues). Le lecon enseigne est que nous devons comprendre les limites du systeme de meteorologie et d’essayer de tenir compte des changements rapides que ces systemes tropicaux peuvent manifester. Pour être bien prepare aux cyclones et aux orages tropicaux, nous devons aussi être prepare aux changements et nos projets en cas d’imprevu doivent etre assez souples pour s’adapter et pour pouvoir a ce genre de changement rapide.

LECON 4. Emily a encore demontrer notre vulnérabilité, qui est etonnamment grande, aux degats des toits (meme sur les batiments modernes) aux vitesse de vent au-dessus des limites du plan etabli par l’architecte. Les ingénieurs de la region et les responsables dans le domaine de la securite des immeubles doivent nous donner des explications satisfaisantes au sujet du defaut repar du des toits, meme dans le secteur moderne de la construction. Cette gazette leur permettra de faire connaître leur reponse.

LECON 5. Nous devons continuer a ameliorer les systemes pour les abris en cas d’urgence, pour l’évaluation des degats et pour la rehabilitation et la reconstruction. On a fait beaucoup de progres, mais il reste encore beaucoup a faire.

Le PCDEPP est en train d’organiser une etude detaillee d’Emily, et on espere pouvoir isoler beaucoup d’autres experiences utilies qui nous apprendront beaucoup et que l’on pourra analyser et documenter pour le profit de la region.

HURRICANE AWARD

Photo of Franklin McDonald Director, Office of Disaster Preparedness Jamaica (PCDPPP Project Manager since July 15th, 1989) receiving award at the 1987 US National Hurricane Conference, Orlando, Florida for outstanding contribution to Hurricane and Disaster Preparedness in the Caribbean Region. The Award was presented by Neil Frank Retiring Director of the National Hurricane Centre.

"CARIBBEAN DISASTER NEWS" is a Newsletter covering the Disaster/ Emergency Management Field in the Caribbean. It is published by the PAN-CARIBBEAN DISASTER PREPAREDNESS AND PREVENTION PROJECT (PCDPPP), an Antigua based Project managed by the UN DISASTER RELIEF OFFICE (UNDRO), with the technical support and collaboration of the PAN-AMERICAN HEALTH ORGANIZATION (PAHO) and the LEAGUE OF RED CROSS SOCIETIES (LRCS).

The PCDPPP was established in 1981 for the purpose of reducing the negative effects of future disaster events in the region. The PCDPPP is funded by the governments of the Caribbean, Canada and the Netherlands.

Comments, Articles, Information on Disaster Management Activities, Research in Progress etc. would be greatly appreciated. Contact the Editor:

"CARIBBEAN DISASTER NEWS"
PCDPPP
DOCUMENTATION CENTRE
P.O. BOX 1399
ST. JOHN’S
ANTIGUA

Caribbean Disaster News, September 1987
LECCIONES DE EMILY

Emily vino y se fue. El Caribe necesita asegurarse de que sus lecciones no se olviden. Si bien, Emily no será recordado como un huracán particularmente fuerte (se eleva a la segunda categoría de fuerza antes de golpear a la República Dominicana) o bien como un ento desastrosos muy danino (las informaciones preliminares sobre daños parecen alcanzar un total de US$75 millones), si será recordado por las dificultades que creo a los que lo pronosticaron, al personal especialmente en emergencias y a otros grupos interesados.

LECCION 1: Emily se formo tan cerca de Barbados, St. Vincent y Santa Lucía, que no le dio tiempo a estas islas realizar la secuencia relativa a la observación, vigilancia y alerta general. La lección aquí es que debemos estar en constante alerta para cualquier acontecimiento similar que pueda tener lugar en el futuro. Los países del Caribe deberán por consiguiente tender en cuenta este "pequeño" caso cuando planifiquen respuestas a casos climatológicos severos.

LECCION 2: Emily alcanzo el "status" de una Tormenta Tropical un domingo por la tarde y algunos de los preparativos para los medios de información sobre medidas de seguridad para el publico en el Caribe Oriental, parecen haber fallado porque era domingo.

Debe lograrse un acuerdo concertado para asegurar, que sin importar el día o la hora de la semana, sea posible diseminar en un tiempo apropiado la necesaria información sobre seguridad al público.

Todas los países del Caribe necesitan revisar los procedimientos escritos de alerta al público y asegurarse de que las estaciones de radio transmitan la información pertinente preferiblemente cada hora y cada media hora.

LECCION 3: El huracán Emily se intensifico rápidamente en dos puntos, en su corta vida; una vez cerca de Barbados y luego cuando se acercó a Bermuda tomando a todo el mundo por sorpresa. (Inclusive a los que lo pronosticaron).

La lección aquí es que debemos entender los límites del sistema de pronostico y tratar de apreciar los rápidos cambios que pueden manifestar estos huracanes tropicales. El estar preparados para tormentas y huracanes tropicales debe incluir estar preparados para tales cambios y neustras programas de contingencia deben ser lo suficientemente flexibles como para incluir un abastecimiento de comida.

LECCION 4: Emily nos ha demostrado una vez más, la gran vulnerabilidad de los techos (inclusive en los edificios modernos) causados por la velocidad del viento sin límites. Ingenieros de las regiones, los responsables de los sistemas de serguridad en la construcción, necesitan dar los algunos explicaciones por los extensivos daños a los techos, inclusive en las modernas construcciones. Este boletín suministrara espacio para sus respuestas.

LECCION 5: Debemos continuar mejorando los sistemas de emergencia, protección, rehabilitación y construcción. Se han hecho muchas mejoras, sin embargo queda mucho por hacer.

El PCDPPP está organizando un estudio del caso de Emily, en el cual esperamos identificar, analizar y suministrar documentación, en beneficio de la región sobre estas experiencias aprendidas.

PCDPPP EVENTS

PAST

1. June 1-3 A Meeting of National Health Coordinators on Emergency Preparedness and Disaster Relief Coordinators was sponsored by PAHO and held in Barbados. Suggested functions of the Health Coordinators were developed by the participants for the guidance of National Disaster Coordinators to be considered for endorsement during a second Inter-sessional meeting of the regional agencies scheduled for 12-14 October, 1987. Copies of the guidelines can be obtained from the Health Emergency Coordinators, local PAHO offices or the PCDPPP. The meeting also proposed that a Regional Mass Casualty Management System be developed.

2. July 15-17 A Workshop on "The Role of the Health Sector in Disaster Management" was held in Tobago. The purpose of the Workshop was to strengthen the capabilities of the health personnel and Disaster Management health sector in Tobago by reviewing types and effects of disaster, identifying the role of the health personnel, discussing mass casualties and psychological factors in Disaster Management.

3. August 23-28 A Pan-Caribbean Red-Cross Workshop was held in St. Kitts with participation of National Red Cross Representatives from 26 countries and Branches of the British Red-Cross. The activities of this meeting are discussed on page 9 of this newsletter.

4. August 29-31 A Two-Day Seminar For Amateur and CB Radio Operators was held in St. Lucia. This Seminar emphasized the importance of telecommunications in development communication and disaster management and was organized by the Committee responsible for Emergency Communication Planning in St. Lucia.

The Seminar broke into three workshops on Policy, Training, and Emergencies and the Role of Cont. on page 14

WELCOME to the (recently named) Newsletter of the PCDPPP "CARIBBEAN DISASTER NEWS". Our last issue highlighted preparations for the 1987 Hurricane Season. In this issue, we focus on the impact of EMILY, the first significant Hurricane to affect the Caribbean since the year 1980.
ENIGMATIC EMILY:  
A Preliminary assessment of our first Hurricane since 1980

Emily, the first hurricane since Allen (in 1980) to significantly affect the Caribbean swept through the Caribbean and North Atlantic between September 20th and 27th. Its rains winds, and high seas affected seven PCDPPP member states (Barbados, St. Vincent, St. Lucia, The Dominican Republic, the Turks and Caicos, the Bahamas and Bermuda) causing the loss of three lives and damage estimated at over US$75 Million (preliminary figures).

The loss of life was kept low partly by the effective emergency response measures taken particularly in the Dominican Republic where the system made landfall as a hurricane of category 2.

Miraculously there was no loss of life in Bermuda which was caught napping by a rejuvenated Emily travelling at the unusually high forward speed of 45 mph early on the morning of September 25th.

This article summarises Emily's progress through the region and some of her effects. Elsewhere in this newsletter there are photographs and newspaper articles which it is hoped will convey to readers a feel for Emily's impact in the region.

BARBADOS

Tropical Storm Emily put fear in the hearts of all Barbadians when Barbados was put on storm warning 32 years after the unwelcomed visit of Hurricane Janet in 1955.

It was on 22 September, 1955 that Janet followed a southerly path and left in her wake loss of lives, thousands homeless and destruction to property which amounted to millions of dollars.

Tropical storm Emily, though not as furious, followed an almost identical southerly path and brought discomfort to 46 homeowners whose roofs were damaged. Several utility lines and trees were also uprooted blocking major access roads and disrupting utility services. One boat was destroyed by the rough seas which resulted from the storm and several others were damaged. The damage in Barbados was estimated to be $100,000 US.

The Director of Meteorological Services, Mr. Delghton Best issued an advisory in mid-afternoon of Sunday, 22 September 1987 and immediately the Central Emergency Relief Organization was activated, putting the Emergency Services on first alert.

Subsequent advisories were issued and by 7.00 pm storm warnings were in effect for Barbados and the islands of St. Vincent. The storm brought winds of 45 mph and some gusts of 60 mph; and residents in Barbados and the neighbouring islands were advised to take precautions against rough seas and high winds.

Radio stations remained on the air throughout the night and by 2.30 a.m. on 21st September, 1987 the system had passed within 80 miles of the south coast of Barbados.

Emily is the second storm in the space of one year to cause some damage in Barbados. In September 1986 Tropical Storm Danielle also damaged houses, uprooted trees and disrupted utility services, particularly in the eastern part of the island.

(Contributed by CERO Barbados)

ST. VINCENT

As Emily approached St. Vincent in the early hours of Monday 21st September she was intensifying and packing sustained winds of 60 mph. As the center passed just South of St. Vincent, Emily brought strong winds (up to 65 mph in gusts) and heavy rain (76.14 mm 30 inches in 6 hours) to that island. Several boats were driven ashore and several others were damaged.

Hurricane Emily, bending rules and foiling forecasters, zoomed right into the heart of Bermuda.
as they tried to make shelter in the Villa area South of Kingstown. Two hundred (200) families were made homeless and had to seek shelter. Several Primary Schools suffered roof damage from the wind and damage from flooding was also reported to some school buildings.

The most extensive damage caused by Emily in St. Vincent and the Grenadines, however, was in the main banana-producing area, the Marriaqua Valley. Banana, the main export crop in St. Vincent and the Grenadines has been destroyed by Emily. Other agricultural crops such as breadfruit, nutmeg, plantain, peas, corn, cassava, tomato and sorrel were also damaged.

The turbulent seas caused by Emily grounded eight vessels on mainland St. Vincent, Mustique and the Grenadines. And as the storm continued its west north westerly course, the Greater and Lesser Antilles were warned to monitor its progress.

No lives were lost in St. Vincent. But, following the effect last year of Tropical Storm Danielle it was a serious economic blow to the nation.

SAINT LUCIA

In St. Lucia the estimate for banana production in terms of tonnage has been reduced by 15 percent (from 100,000 tons to 85,000 tons) as a result of Emily which affected the island early in the morning of September 21.

Fortunately, however, no lives were lost despite some flooding due to heavy rain, and gusty winds of up to 85 miles per hour. And while schools and some businesses were closed for the day, minimal damage was done to property and the country's infrastructure.

THE DOMINICAN REPUBLIC

After entering the Caribbean on Monday 21st, Emily continued to strengthen and all the Greater Antilles states initiated their hurricane alert procedures as it was not clear whether she would curve north or continue on a westerly track.

By the evening of Monday 21st the Puerto Rican authorities began to stand down their forces as it was clear that the likely target would be Jamaica or Western Hispaniola. During the night of the 21st, Emily was upgraded from a Tropical Storm to a Hurricane and she began to veer north toward Hispaniola causing hurricane warnings to be issued for the Dominican Republic and Haiti.

Emily made landfall early in the evening of the 22nd September in the Barraconas area west of Santo Domingo but her rains, winds and furious seas affected most of the Dominican Republic. Emily quickly weakened as she moved over land through the Dominican Republic. At least four lives were lost, 100 houses were damaged or destroyed and severe damage was done to crops in the south west of the country.

The Dominican Republic emergency services, (Civil Defence, Red Cross, Government Ministries -- Health, Public Works, Agriculture etc.) and other agencies were mobilized and many residents of low lying and flood prone areas (remembering Hurricane David in 1979) were moved to safety.

In spite of the damage done by Emily she also brought the benefit of heavy rains, breaking a long dry spell and saving the farmers crops in many rural areas.

Preliminary estimates of damage in the Dominican Republic indicate Emily cost the country 115 million pesos (25.8 MS).

TURKS, CAICOS AND THE BAHAMAS

Emily emerged from the Dominican Republic as a tropical storm and her center passed between the Turks and the Caicos Islands but no significant damage was done. Compared to hurricane Kate (November 1985) the residents of the Turks and Caicos were 'let off' by Emily.

One disturbing factor reported by the Turks and Caicos authorities however was the failure of the formal severe weather warning system through which the Bahamas is supposed to warn the Turks and Caicos of impending hazardous weather conditions. (The breakdown is under review and readers will be kept informed on this).
Emily, still a weak tropical storm passed close to the islands of Inagua and Mayaguana in the Bahamas apparently doing little damage. For a brief period tropical storm warnings were posted for Nassau but Emily began to recurve to the northeast and moved out into the North Atlantic heading in the general direction of Bermuda.

BERMUDA

As Tropical Storm Emily moved toward Bermuda it appeared that she would not pose a serious threat. However she again showed up the need for emergency managers and interests in this region to remain prepared for unusual behaviour once a storm or hurricane is around.

Emily intensified and accelerated in the evening of Thursday 24th and struck Bermuda early on the morning of Friday 25th at the unusually high forward speed of 45 mph packing winds of 110 mph.

Most interests in Bermuda had planned for Emily's arrival in the early afternoon so her early arrival caught Bermuda napping. Elsewhere in this newsletter (center spread) are details of her impact. Damage was estimated (preliminary) at US$50M.

CONCLUSION

Emily has reminded us of the difficulties of managing one of our best understood hazards. The PCDPPP urges all the countries affected to review their severe weather procedures and ensure that Emily's lessons are not lost. The PCDPPP is trying to collect documentation, videotapes etc. on Emily so that the entire region can benefit from this experience. It is hoped that a 'case history' of Emily (and future disasters) will be published and circulated for use in the region.

PAN CARIBBEAN RED CROSS CONFERENCE

Over 80 representatives from National Red Cross Societies and Branches of the British Red Cross Society in the Caribbean and the Hong Kong Red Cross attended a conference, August 22 - 28, 1987. The conference which was hosted by the St. Kitts and Nevis Red Cross Society was sponsored by the British Red Cross Society.

The objective of the conference was to examine the status of the programmes of the Caribbean Red Cross Societies and focussed on Youth, Blood, Water Safety, Fund Raising and Dissemination of Red Cross Principles. The conference also discussed the Regional Cooperation and Collaboration in Disaster Preparedness. In relation to this subject, a team from the Pan-Caribbean Disaster Preparedness and Prevention Project made presentations on the work of the project. Presenters from the PCDPPP were the Project Manager, Franklin McDonald, Health Emergency Co-ordinator (PAHO/WHO), Gloria Noel, the Public Information and Education Officer, Cyrus Tajbakhsh and League of Red Cross and Red Crescent Societies Regional Delegate, Audrey Mullings.

Discussions in the disaster workshops identified the following areas as priorities.

- Public Education Programmes on disaster, generated both by Red Cross and government.
- Improving disaster response capabilities of the Red Cross through constant education, training testing and updating of disaster plans.
- The utilization and incorporation of Disaster Preparedness in development plans of National Red Cross Societies.
- Development and improvement of capabilities through regional cooperation and mutual assistance programmes.
- Development of cooperation and collaboration programmes with national and regional non-government Organizations.
- Unification of Red Cross disaster training programmes on a regional basis.

HELP US TO HELP YOU

If you have reports, photographs, slides, or videotapes of disasters please inform the PCDPPP as we are trying to create a Regional Data Base on Disaster Documentation.
FLOOD SAFETY EDUCATION: JAMAICA PILOT PROGRAMME

The Jamaica Flood Plain Mapping Project (FPMP) is a Government of Jamaica/UNDP/WMO activity designed to reduce losses in future flood events by a mix of management methods including better definition of flood risk areas, implementation of structural and non-structural flood control measures, installing flood warning systems and appropriate public education activities. In March, 1987, the FPMP contracted the firm of Lorna Gordon & Associate (Caribbean) Ltd. Development Communications Specialists to implement Phase one of the Community Education and Public Awareness Component of the FPMP. Among the activities executed were:

- A media briefing involving the Minister of Construction and senior technical staff of the Ministry of Works Office of Disaster Preparedness, Met Service, Underground Water Authority, and Dr. M. Molina team leader of the FPMP.

- Establishment of a media Task Force to review, design, promote and disseminate flood information. All the major media houses in Jamaica volunteered senior staff to this task force.

- Design and distribution of Flood Safety material including a Press Kit, Safety Posters, Fact Sheets, News Releases in order to familiarize various publics with the issues relating to flooding in Jamaica including historical data, economic costs, goals of the FPMP, the National Hazard Management Programme as well as special objectives and strategies for the community education and public awareness components.

- Meetings with the local Government Councils, Community Leaders and Citizens in three pilot areas which have a history of frequent flood events to involve the affected communities in the programme design and execution. The public meetings were facilitated by the Jamaican Information Service which showed the PCDPPP sponsored Video Tapes on the June 1986 floods to the citizens. (The viewing was usually followed by lively discussions as to how the damage suffered could have been reduced or avoided.)

- A survey executed by senior students of schools in the selected areas to determine knowledge/attitude/practice related to flood safety in order to design appropriate outreach and community education activities. An analysis of this proved invaluable in the planning of the programme.

- Production of TV and Radio spots focusing Flood Safety and Flood Warnings and emphasizing self-help activities. The media house participation in the Task Force greatly enhanced the quality of the media spots.

- Arranging for disaster issues to be discussed on Prime Time media panels (one of the most interesting of the panels featured Fred Cuny (INTERTEC), Hans Einhaus (UNDRO), Judy Thomas (NDC Barbados), Franklin McDonald (then NDC Jamaica).

- Approaching Private Sector Firms to obtain sponsorship for flood safety material (Brochures, Posters, etc.)

The first phase of this programme is to be followed by at least two more phases in which the pilot material and methodology will be used island wide. In later issues of this Newsletter we will carry more information on both the technical developments and the public education methods being developed in Jamaica. (The back page of this Newsletter features one of the Posters produced by FPMP)

For more information on the FPMP or examples of their information or publications, please contact Mrs. Charmaine Whyte, Head, Public Education, Information and Training Branch, Office of Disaster Preparedness, P.O. Box 122, Kingston 5, Jamaica.

HAZARD MAPPING MEETING, NOV. 30 - DEC. 4, JAMAICA

The Pan Caribbean Disaster Preparedness and Preventive Project is organizing a regional meeting of experts to review "Hazard Mapping" programmes, research, and needs for the future.

The meeting is being organized in collaboration with the Geography Department of the University of the West Indies and will take place in Jamaica between November 30 and December 4, 1987.

The intent of the meeting is to bring together persons in the Caribbean area directly involved in hazard or risk mapping or research related to natural disasters. The meeting will study disasters such as landslide, flood, earthquake etc. in the region, work already accomplished, and will compare methodologies and results. It will discuss joint programmes and will make recommendations for future networking, training, research and regional prioritization.

For information please contact PDCPPP, St. John's, Antigua.
Hurricane Emily smashed through Bermuda yesterday, leaving a trail of devastation and damage estimated in the millions of dollars in its wake.

Hundreds of houses and public buildings lost their roofs in the first hurricane to hit Bermuda directly since 1963, while the island's only television channel and six radio stations were knocked out.

Hotels, particularly along the South Shore, were badly damaged and the Mermaid Beach Club took a direct hit from a giant waterspout in the middle of the hurricane.

As the first damage reports started coming in early yesterday morning, Government spokesmen is sitting in the middle of the road. "At Hog Bay Level, the road was completely blocked and no traffic could get through at all in either direction."

Former Government Youth Advisor Mr. Reginald Ming said the area around his Devonshire Marsh home had been flattened when Emily blew through. "I'm a prisoner in my own home," he said. "Every single tree is down, all the driveways and walkways are covered in debris and the barns at the dairy farm across the road are all over the place."

I've never seen such chaos on Jubilee Road before in my life and I've lived here for 50 years," And Bermuda's chief librarian, Mr. Cyril Page wood, yesterday morning reported severe damage in the old town of St. George's where despite what one Government official termed a "desperate" shortage of the sheeting.

At King Edward VII Memorial Hospital, emergency room staff worked frantically to keep up with a steady stream of injured people seeking treatment.

"There are more than 50 people in the emergency room when I was there and the poor staff was working like mad to cope with them all," said Mermaid Beach Club owner Mr. Brian Alkon said the hotel's dining room was blown out after it was hit at the East End, St. George's. Club spokesman Ms Liz Ward said that the time-sharing operation sustained damage to the roof of the Margaret Rose restaurant and minor damage to several cottages.

"But our beach club at Achilles Bay is completely demolished," she said. "The four walls are still standing but everything else is gone."

At 8 p.m. last night, the Fire Service had responded to 275 calls. "And they're still coming in," said spokesman Lt. John Pacheco. "One of our fire fighters was sent to the hospital with an eye irritation, but was later released and is back on duty."

The staff member about 65 people were eventually evacuated from the old wing into the new building where Island's only mental hospital, calmly organised the evacuation of scores of patients into another wing when the roof of the main hospital blew off. "It was a life and death situation upstairs in the old wing," said one staff member who asked not to be named. "All the staff and patients were sheltering in one room and then the windows started breaking and the roof began caving in."

There was complete hysterics because the patients didn't know what was going on but the staff all worked together and everyone just hung in there."
Some may be weeks without electricity, Belco says

Hurricane Emily's destruction was so extensive that many residents may spend weeks without power. Belco manager Mr. Alf Oughton last night said the two-hour storm created an unprecedented disaster.

"I haven't seen anything like this in my life," he said. "It's going to be a long, long job." As of last night, power had been restored in Prospect, Hamilton and most of the major hotels.

Mr. Oughton said that the rest of the island is without power. "We have had the service up and running," he said. "We have been able to restore power to most of the island." As of last night, Belco had 22 megawatts on line.

The company's operations yesterday were hampered by the collapse of its 250-foot communication tower at Ocean View Golf Course. Instructions to road crews had to be passed via radio until late afternoon when a temporary repair system was rigged up.
New Cordinators

ANGUILLA

Following a recent Civil Service reorganization, Mrs. Countess Rey, Permanent Secretary, Chief Minister’s Office, will carry out the functions of National Disaster Coordinator in Anguilla.

BARBADOS

Judy Thomas confirmed as Supervisor of CERO

The main ambitions of the newly-appointed Barbados’ Supervisor of Emergency Services are to raise the level of public awareness and regional participation in disaster preparedness.

Miss Thomas has been confirmed in her appointment effective 1 August, 1987.

Miss Thomas joined the National Emergency Relief Organisation (CERO BARBADOS) in 1983 having been seconded from the Barbados Government Information Service. She is a graduate of the Huber College of Applied Arts in Canada and holds an honours diploma in Public Relations. Since 1985 she has been responsible for the disaster preparedness programme in Barbados.

Miss Thomas has participated in several overseas conferences and workshops sponsored by the PCDPPP and Office of Foreign Disaster Assistance (OFDA).

BELIZE

Mr. Henry Gordon, Permanent Secretary Office of the Prime Minister, has been designated National Disaster Coordinator with effect from 24th August, 1987. Mr. Gordon’s previous posts were Permanent Secretary of the Ministry of Electricity, Transport and Communications (1985-1987) and Chief Meteorologist (1981-1985).

ANTIGUA: Night Light

On September 1st a group of strange lights were observed in the early evening sky, moving in an approximately north-south direction. Many persons observed these lights from Antigua in the north to as far south as Trinidad. Information released recently suggests that it was a Polar Orbiting Satellite falling out of Orbit. (Maybe we should list this as a potential disaster type for our region).

BELIZE

A Partial Hurricane simulation exercise was held on 12 August 1987 as part of the National Hurricane Preparedness Programme. The purpose of the exercise was to assess the strength and weaknesses of the Hurricane Preparedness Plan.

BRITISH VIRGIN ISLANDS:

Radio System

The National Emergency Operations Centre (EOC) is now fully operational with VHF radio equipment which provides reliable radio communication between the EOC and the District Emergency Organizations on Tortola and the Out-Islands of the BVI. The radios were obtained through a grant from the Canadian High Commission.

GRENADA: Emergency Workshop

A one-day workshop, involving 33 members of the St. David’s district Emergency Committee was held in July. The purpose of this workshop was to sensitize members committee of their roles and responsibilities in the event of a disaster.

Similar workshops are planned for the 14 other district committees throughout Grenada.

JAMAICA: ODP Staff Training

During the month of August, two staff members of the ODP attended courses in Washington D.C. Major Richard Reese, Coordinator of Emergency Operations Branch participated in a 5-day workshop on “Emergency Team Development”, while Mrs. Barbara Roach, Coordinator of Emergency Relief, attended a 5-day course entitled “Training for Trainers”. Both courses were sponsored by USAID/OFDA.

JAMAICA: 1000 Acre landslides

The first meeting of the Preston Landing landslide Task Force took place on September 2, 1987. The task force has been established to make recommendations to the Jamaican Government on the relocation and compensation to be given to persons affected by the earth movements at Preston in St. Mary on the North coast of Jamaica.

In March of 1986, earth movements in Preston affecting over one thousand acres of land resulted in 17 families having to abandon their homes and farming lands. The movement has continued, resulting in the sliding of a block being displaced downhill by about sixty feet.

JAMAICA: Cadet Force Training

During the months of July and August, approximately three hundred (300) members of the Jamaica combined Cadet Force were exposed to disasters training as part of an ODP programme to provide basic disaster skills to uniformed youth groups in Jamaica.

The cadets who were from all parts of the island were enthusiastic about taken the message of disaster preparedness back to their homes and schools. Cont on page 11
EARTHQUAKE AWARENESS WEEK IN ANTIGUA AND BARBUDA

A week of activities to promote greater public awareness of earthquake risk and public safety is being organized in Antigua and Barbuda from October 2 to 8, 1987. These activities, which are intended to prepare the Nation in the event of a serious earthquake, coincided with the anniversary of the earthquake of October 8, 1974, when millions of dollars of damage was done. So great was the damage for Antigua that in 1987 many of the affected buildings have not yet been returned to their former condition.

Antigua and Barbuda's Earthquake Awareness Week is being organized by a working group led by National Disaster Coordinator, Mrs. Connie Michael, who is attached to the Ministry of Home Affairs. Participants in the working group include other Ministries of Government, schools, the private sector and the activity is being supported by Antigua based Pan Caribbean Disaster Preparedness and Prevention Project (PCDPPP). The main focus in the week's programme will be to increase public awareness of earthquake safety measures. Particular efforts will be made to reach the school-age population, the commercial sector and those responsible for the safe keeping of vital documents and records. Activities during the week include an exhibition at the island's National Museum - which was itself damaged in 1974 - radio and television programmes, interviews with Antiguans who remember past earthquakes and public lectures on earthquakes.

As part of its contribution to Earthquake Awareness Week in Antigua, the PCDPPP will sponsor Dr. William McLean, Associate Professor of Geology, University of Puerto Rico (Mayaguez) to come to the island to deliver a public lecture, radio interviews and give a talk to the students of the Antigua State College.

The Project Manager of the PCDPPP Franklin McDonald has indicated that the Project is promoting the concept of building public awareness initiatives around the anniversary dates of major historic events such as the Antigua earthquake in order to focus attention on all the disasters, types capable of affecting the region since too many persons in the Caribbean assume that hurricanes are the only disasters that we need to plan for.

Ruined by the Antigua's 1974 Earthquake

UPDATE

MONTserrat: Heavy Rains
The heavy rainfall experienced in Montserrat caused much damage to the roadways. The resulting erosion of overhanging cliff-sides and vegetation which was deposited on roads led to the clogging of drains and the washing away of sidewalks and ditches.

TRINIDAD/TOBAGO: Policy Review
A Cabinet Sub-Committee under the chairmanship of the Minister of Works has been carrying out a review of the Disaster and Emergency Management System of the Twin Island Republic. It is anticipated that the Sub-Committee and the Task Force it has set up will formulate actions aimed at rationalizing and modifying the Disaster Management arrangements.

TURKS AND CAICOS ISLANDS: Warning System
Due to difficulties experienced in TCI during hurricane Emily regarding receipt of bulletins/warnings from Nassau, Bahamas, it has been suggested that National Disaster Coordinator Hartley Coabroke should visit Nassau to discuss these problems with the Bahamian Officials who have the responsibility under the Regional Hurricane Plan for warning the Turks and Caicos Islands.
Sub-Regional Fire Management Training
Seminar Port of Spain, Trinidad
July 6 - 10, 1987

A sub-regional Fire Management Training Seminar sponsored by the United States Office of Foreign Disaster Assistance (OFDA) in collaboration with the Pan Caribbean Disaster Preparedness and Prevention Project (PCDPPP) was held at the Joint Services Staff College, Port of Spain, Trinidad, during the period July 6 to 10, 1987.

2. The Seminar conducted by Captain William Gustin and Lieutenant Joaquin Delcueto of Dade County, U.S.A. Participants included ten (10) fire officers from Dominica, St. Lucia, St. Vincent, Grenada and Guyana, one of whom was the Chief Fire Officer Clebert Burton of Dominica.

3. The objective of the seminar was to enhance the Fire Fighting procedures and techniques of participating countries as well as provide training in rescue and recovery.

4. The Minister of National Security, Senator and Honourable Herbert Artwell officially opened the seminar. In his address he extended a warm welcome to instructors and participants and on behalf of the Government of Trinidad and Tobago conveyed appreciation to the United States Government and the Pan Caribbean Disaster Preparedness and Prevention Project (PCDPPP) for the assistance provided in enhancing the overall capabilities for disaster preparedness in the region.

5. The Training took the form of classroom exercises and discussions in the following:

- Incident Command/Fire Rescue
- Extrication/Heavy Rescue
- High Rise Building Fires
- Fundamentals of extinguishing agents
- Flammable liquid and gas fires
- Shipboard Fire Fighting
- Fire Fighter safety
- Aircraft crash . . . Fire/Rescue
- Disaster Planning
- Forcible entry
- Advance Rescue

The exercises were supplemented by out-door demonstrations and visits to the Financial Towers, offshore oil installations at Trintoc, Point-a-Pierre, the British West Indian Airways (B.W.I.A) Hangar and the Fire Station at Piarco International Airport.

6. At the closing ceremony, addresses were given by Instructor Captain Gustin and the acting Chief Fire Officer, Mr. Adrian Peterson. Replies were made by the participants, one from each country. Certificates of participation were also distributed and a Vote of thanks was given by Acting Divisional Fire Officer Carlton Johnson, Trinidad.

7. Based on reports during the seminar and at the closing ceremony, the training was an overall success. It was intensive and informative and also provided the opportunity for the overseas participants to be exposed to the operation and use of advanced Fire Fighting and Rescue equipment. The exchange of ideas and the issues raised proved to be beneficial both to the instructors and the participants.

8. On behalf of the Government of Trinidad and Tobago, the National Emergency Relief Organisation (NERO) wishes to express sincere thanks and appreciation to the United States Office of Foreign Disaster Assistance (OFDA), the Pan Caribbean Disaster Preparedness and Prevention Project (PCDPPP), and the participating countries for making the seminar a success. The National Emergency Relief Organisation (NERO) looks forward to continued support from PCDPPP.

News of other Regional Programmes
"CAP" AND THE "RCU"

On May 11, 1987 the Executive Director of the United Nations Environmental Programme (UNEP) Dr. M. Tolba formally announced the coming into force of the Cartagena Convention for the Protection and Development of the Marine Environment of the wider Caribbean region and its protocols (which includes protocols for cooperation in combating oil spills).

Dr. Tolbas announcement coincided with the official opening of the Regional Coordinating Unit (RCU) for the Caribbean Action Plan (CAP) in Kingston Jamaica. The Caribbean Action Plan includes projects of great interest to the Caribbean Disaster Management Community. These projects include managing watersheds to reduce floods; landslides and severe erosion; Protecting reefs; Mangroves and Tropical Forests; Mitigating coastal pollution; Developing Fisheries and Aquaculture and studying the impact of tourism and industry on the environment.

The RCU will be paying particular attention to environmental awareness and expanding its contacts with various interest groups in the Caribbean. It will be producing a Newsletter In the near future, and can support activities falling under its mandate through the trust fund subscribed to by all the Caribbean states (including yours!)

For more information on the Caribbean Action Plan check with your National Environmental Agency or the RCU Documentation Centre, Law of the Sea Headquarters, 14 - 24 Port Royal Street, Kingston, Jamaica. (Telex 2340 UNLOS JA; Phone 809-29296).

We wish the RCU success and hope its effort will lead to reduce disaster impacts on our region as well as sustainable development raised on sound environmental management.
BOOKS AND ITEMS OF INTEREST

New Releases

The Caribbean Disaster and Emergency Management Specialist should be aware of the following New Releases:

**SESAME ST/CTW HURRICANE KIT:** This kit is now available to the public. It is the first of a series related to natural hazards featuring Big Bird and the Sesame St. cast of characters funded by FEMA, American Red Cross and the US Natural Wealth Service. The CTW team is also producing a video tape to support the hurricane kit. Simple copies of the Hurricane Kit can be obtained free from FEMA; P.O. Box 70274; Washington D.C. CTW will be releasing a similar kit dealing with Earthquakes early in 1988.

**REDUCING EARTHQUAKE HAZARDS: LESSONS LEARNT FROM EARTHQUAKES** has been released by the Earthquake Engineering Research Institute (EERI). The volume is based on over 200 post quake investigations done by EERI. Copies may be obtained by ordering from EERI at 6431 Fairmont Avenue, Site 7, El Cerrito, Lailiana CA 84530.

PSYCHOLOGICAL ASPECTS

Our June 1987 Newsletter contained an article on Psychological Aspect of Disasters. For further information on this subject readers may wish to acquire some new publications from the US National Institutes of Mental Health. Their titles are:

1. "Prevention and Control of Stress Among Emergency Workers"

2. "Human Problems in Major Disasters: A Training Curriculum for Emergency Medical Personnel"

These titles may be ordered from the Emergency Services Branch; Alcohol, Drug Abuse and Mental Health Administration; Rockville, Maryland; MD 20587 USA.

The Natural Hazards Research Applications Information Centre; IBS #6, Campus Box 482; University of Colorado, Boulder, Colorado, CO 80309 has recently published the following titles:

1. "THE PROFESSIONAL EMERGENCY MANAGER: STRUCTURES & STRATEGIES FOR SUCCESS".

2. "URBAN LANDSLIDE DISASTER AT ANACOWA, ITALY"

[Copied from page two of the newsletter - if readers have information on new studies, publication, slides sets, video tapes etc please share them with the others through this Newsletter]

"A MANUAL - for town, village, and regional clerks."

This is a 24 page document written by Leo St. Helen of St. Lucia, and is the result of a one-day workshop held in St. Lucia on "The Identification and Monitoring of Hazardous and Risk Areas of Coastal Settlements". Participants and resource persons have broadly contributed in the compilation of the information in this Manual. The Manual is divided into two sections, the first of which contains background information relevant to identification and mitigation of hazards. The second, contains a systematic description of every element at risk, the actions to be taken and the responsible agencies. It is a simple handbook with tables and lists, which leads the reader directly to the required information. Most of the information compiled in this Manual can very well apply to many other Caribbean States. Copies of the Manual may be obtained from the PCDPPP Documentation Centre.

Coping With Children's Reactions To Earthquakes And Other Disasters

Developed by San Fernando Valley Child Guidance Clinic and Published by FEMA, this is a concise description of how to deal with children in case of disaster. It advises parents of how to understand the children, their fear and anxiety, their regressive behaviour, and when to seek professional help. The book is available from FEMA Office of Public Affairs, Washington, D.C. 20472, Phone (202)646-3989.

SUPPORT DISASTER PREPAREDNESS

A MESSAGE FROM THE PCDPPP
(Pan Caribbean Disaster Preparedness and Prevention Project)

APOLOGY

Our June, 1987, newsletter omitted mention of the fact that the article "Report on the PCDPPP Regional Disaster Coordinators Training Seminar" (page 7 - 8) was contributed by Montserrat National Disaster Coordinator Ms. Rachel Collis.
EARTHQUAKES
Checklist for Business Survival

☐ Have you conducted both a structural and non-structural vulnerability analysis of your structures?

☐ Have agreements been made with vendors and suppliers to assure continuity of business?

☐ Have inventories been developed and maintained of critical supplies, equipment and employment skills?

☐ Have you developed a plan for informing clients, the general public and media about company operations following an earthquake?

☐ Have company vital records been identified?

☐ Have you established a continuous records duplication program possibly including off-site storage for such records?

☐ Have you taken steps to identify vulnerabilities and protect your computer facility and equipment?

☐ Are there back-up facilities and equipment for data processing?

☐ Have you established contracts with engineers and suppliers to survey building damage and perform clean up following an earthquake?

☐ Are there plans for business restoration including essential facilities and/or establishing temporary facilities, ensuring key personnel report to work sites or alternate headquarters, restoring damaged utility systems and controlling access to company facilities?

☐ Have you identified alternate sources of essential supplies and replacement parts if your normal vendors are unable to function after an earthquake?

☐ Have you developed alternate marketing strategies for either marketing your present products or moving into other markets under post earthquake conditions?

☐ Have you developed post-earthquake financing and investment strategies to protect corporate assets?

☐ Does your banker know your disaster contingency planning to assure confidence and quick response to your post-earthquake needs?

☐ Have you reviewed existing intercompany mutual aid agreements to establish what needs might be following an earthquake?

☐ Have you made sure that your local government emergency response agencies are aware of your perceived post-earthquake needs in order to facilitate recovery?

Source: BAREPP Network
Vol. 2 No. 2

Cont. from page 3
Private Radio Operators was elaborated. It was concluded that private radio operators could play an important role during emergencies and warning period.

COMING EVENTS

1. October 2-8 Antigua Earthquake Week (See article on page 11).

2. October 5 A UWIDITE Regional Programme on "Disaster Management" will begin for community health personnel -- Public Health Nurses, Public Health Inspectors, District Medical Officers -- from Jamaica, Dominica, St. Lucia, Antigua, Trinidad, Barbados and Grenada. The programme using interactive video conference and print material continues for 12 weeks for a total of 18 hours (1 and 1/2 hours per week). The objective of the programme is to provide participants with information on Emergency Management after National Disaster and develop skills in planning and implementing National Disaster Plans.

3. November 16-18 A "3 day Media Workshop" planned by PAHO/WHO in coordination with UNESCO and CARICOM will be held in Barbados. The Workshop will cover issues in Health Communication as well as Health and Nutritional problems of the Caribbean and an overview of Disaster Preparedness in the region. Participants will be from the major media houses in the Caribbean.

4. November 15 An Emergency Planning Workshop for the emergency services, public utilities and support agencies will be held in Trinidad to review the roles and functions of the agencies in planning for and responding to emergencies.

5. November 30-December 4 A Hazard Mapping Workshop will be held in Jamaica (See article on page 14).

6. December 10-11 A planning meeting on "Infusion of Disaster Concepts in Schools' Curriculum" will be held in Barbados.

The purpose of the meeting is to design a regional workshop on the same topic to be conducted during the first quarter of 1988.
Proposals made for an International Decade for Natural Hazard Reduction (IDNHR)

Throughout history, natural disasters have exacted a heavy toll of death and human suffering. Natural hazards such as earthquakes, landslides, tsunamis (tidal waves), hurricanes, tornadoes, floods, volcanic eruptions, and wildfires have claimed more than 2.8 million lives worldwide in the past 20 years, adversely affecting 820 million people. Since 1949, at least 17 individual disasters have killed more than 10,000 people each; on two occasions in Bangladesh and China - single disasters took more than a quarter-million lives.

Accompanying the loss of life has been devastating economic loss and the hardships it entails for survivors. A single hazardous event can destroy crops, buildings, highways, ports, and dams. It can severely disrupt community lifelines - the systems that provide food distribution, water supply, waste disposal, and communication locally and with the rest of the world. In the last two decades, property damage estimated at $25-100 billion resulted from natural disasters; total losses are much higher, reflecting shattered economies and disrupted social structures in the wake of a disaster. For example, tropical cyclones have caused worldwide losses of an estimated $6-7 billion annually. The comparable loss for landslides exceeds $5 billion. These figures merely hint at the human impact of natural catastrophe. Mudflows from the eruption of Columbia’s Nevado del Ruiz volcano in 1985, for example, killed 22,000 people and left 10,000 more homeless. More than 600,000 people lost their homes in Dominica and Dominican Republic because of Hurricane David in 1979. The Managua earthquake in 1972 left more than 300,000 homeless in Nicaragua, with damages equal to a year’s GNP for that country. Nearly all countries risk devastation by natural hazards. Truly, such hazards recognize no geopolitical boundaries. Yet losses from these events rise each year, despite progress in understanding natural hazards and how to mitigate their effects. Though economic losses are highest - in monetary value - in industrialized nations, the greatest burden from natural catastrophes falls on developing nations, where high death tolls and greater relative economic loss deal a double blow.

The magnitude of the problem worldwide might seem to defy solution. Yet hazard reduction successes clearly show that heavy losses at the hands of nature are not inevitable. It may not be possible to prevent the occurrence of natural hazards, but the disasters they generate can often be avoided. In general, hazard reduction refers to the process of lessening the impacts of a potential event on the social and built environments. In essence, this means reducing deaths, injuries, and property damage, and minimizing the destruction of a community’s social and economic fabric.

Experience demonstrates that we have enough knowledge already, if properly applied, to reduce both human and property losses substantially. In fact, progress in scientific and technical understanding of natural hazards, as well as in techniques to mitigate their effects, has led to the proposal for an International Decade for National Hazard Reduction (IDNHR).

In view of the expanding groundwork of support for the IDNHR, the time is ripe to call the attention of governments (including those in this region) and to harness the energies of our scientists, engineers, and other professionals who must devote their talents to the task of creating a more hazard-resilient world. The global scope of the enterprise makes it natural to turn to the United Nations and its system of organizations to launch the Decade officially and to ensure that an appropriate plan of action is developed and accepted internationally.

The proposed International Decade for Natural Hazards Reduction emphasizes four related goals to be attained through a coordinated worldwide effort:

- to devise new mechanisms and strategies for applying existing knowledge, taking into account the cultural and economic diversities among nations;
- to foster scientific and engineering endeavours aimed at closing critical gaps in knowledge that stand in the way of reducing losses;
- to disseminate existing and new information related to measures for assessment, prediction and mitigation of natural hazards;
- to implement these measures through programs of technical assistance and technology transfer, demonstration projects, education and training - all tailored to specific hazards and locations and evaluated for their effectiveness.

It is expected that various national and regional groups which have an interest in the Decade, and others joining this effort, will approach their respective governments with a view to an appropriate resolution by the U.N. General Assembly, at its 42nd session (in October 1987).

This Decade should be one of intense activity, commencing at the outset with the effort to pool and implement existing capabilities with a view towards early fruition. The series of interrelated goals is intended to achieve life-saving economic advantages during and after the Decade and, in so doing, to lay the groundwork for continuing wider achievements that will lead to a world wherein mankind may live more harmoniously with the violent forces of nature and achieve the goals of sustainable development.


Caribbean Disaster News, September 1987
FLOOD SAFETY
If your house is likely to be flooded...

MAKE FAMILY EMERGENCY PLANS

Make an EMERGENCY PLAN to protect your family. Arrange to stay with relatives or friends in safe locations. Secure your roof, windows and doors against flood waters and high winds.

STOCK EMERGENCY SUPPLIES

Invest early in a transistor radio and extra supplies of batteries, flashlights, candles, fuel, plastic bags, tinned foods, hand tools and building materials. Keep these emergency supplies handy.

PROTECT PERSONAL & HOUSEHOLD ITEMS

Secure important documents. Wrap other personal items, appliances, pictures in plastic bags and place on very high shelves or in any safe place. Raise large items and furniture off the floor or secure to the wall.

GO TO A SAFE SHELTER

You must be prepared to leave at short notice. Take important documents and personal items including medication, with you. If you do not have a relative or friend to stay with, go to a public shelter. Ask your Parish Disaster Committee at the Parish Council, the Police or Fire Brigade for shelter information.

DISASTERS DO HAPPEN - BE PREPARED!

odp