AFTER-ACTION REPORT OF THE

HURRICANE HUGO OFDA DISASTER RELIEF TEAM

February 19, 1990

AFTER-ACTION REPORT OF THE

HURRICANE HUGO OFDA DISASTER RELIEF TEAM

February 19, 1990

Report prepared by Cindy Davis, with Kate Farnsworth

TABLE OF CONTENTS

REPORT

Introduction 1

Hurricane Hugo - The Disaster 1

U.S. Relief and Rehabilitation Assistance 2

- OFDA and Field Team Mobilization 2
- Further Relief Efforts 4
- Team Organization 5
- Communications 6
- Rehabilitation Response 8

Donor Coordination 9

- Overall Coordination in Barbados and Antigua 9
- CARICOM Assistance 10
- USG Team Involvement in Donor Coordination 10
- Evaluation of Donor Coordination 11

Island Operations 11

- Montserrat 12
- St. Kitts 14
- Nevis 17
- Antigua 18

Recommendations 19

MAPS

Eastern Caribbean Islands 1

Affected Islands 11

APPENDICES

Appendix 1 - Team Members and Other Relief Workers 21

Appendix 2 - Log of Activities 24

Appendix 3 - USG Relief Supplies for Hurricane Hugo 40

Appendix 4 - Cost of the USG Relief and Rehabilitation Effort 41

Appendix 5 - Team Debriefing Notes 43

Appendix 6 - Chart of Relief Supplies 46

Appendix 7 - Donations from the International Community 51

INTRODUCTION

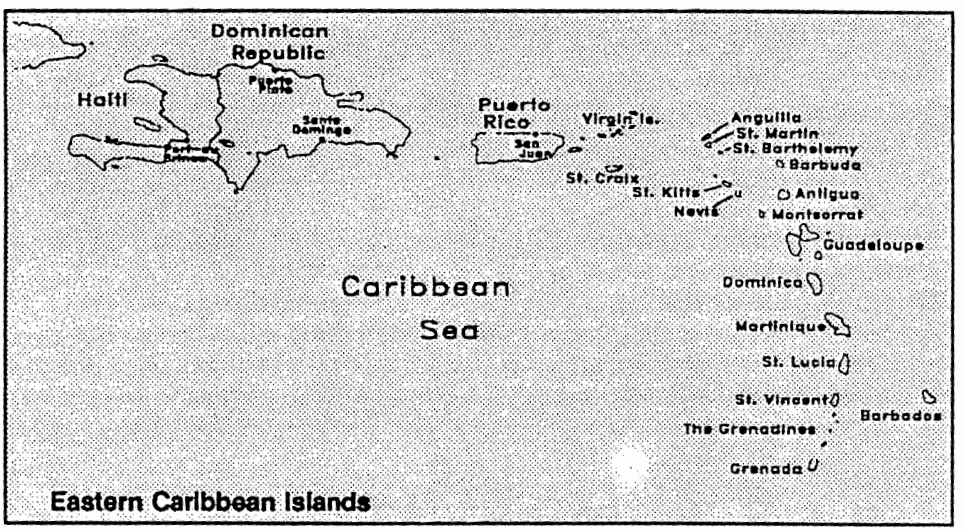
This constitutes the final report of the OFDA team sent to the eastern Caribbean to coordinate U.S. government (USG) relief assistance after Hurricane Hugo hit the region in mid-September 1989. It focuses on the U.S. government relief and rehabilitation program, but also summarizes host government and international relief efforts from September 17 - October 23, 1989. There are five sections to the report: the first describes the damage caused by the storm on each of the affected islands; the second reports on the U.S. relief and rehabilitation response; the third describes the organization of the multinational relief effort; the fourth provides details of hurricane damage and relief assistance by island; and the fifth contains the team's recommendations.

There are also seven appendices. They include lists of the team members and other relief officials and workers, the team's daily log of activities, listings of USG relief supplies, cost and funding of the USG response, the notes from the team's debriefing, the Lotus chart of all relief supplies sent to the affected islands, and a summary of other international assistance.

HURRICANE HUGO —— THE DISASTER

On September 16-17, 1989, Hurricane Hugo ripped through the eastern Caribbean, causing massive destruction of housing, public buildings, and infrastructure, and leaving thousands homeless. It was the sixth hurricane of the 1989 Atlantic season, and the most powerful storm to hit the Leeward islands in at least a decade. The storm moved into the U.S. Virgin Islands and Puerto Rico on Monday, September 18, skirted the northern coast of the Dominican Republic on the night of September 18, and slammed into the mainland U.S. at Charleston, South Carolina on September 22.

On September 17 and 18, initial damage assessments in the eastern Caribbean were conducted by an international team comprising representatives from the Office of U.S. Foreign Disaster Assistance (OFDA), the Canadian International Development Agency (CIDA), the Pan American Health Organization (PAHO), and the League of Red Cross Societies. A ground survey was done of Antigua and aerial surveys of Montserrat, St. Kitts, and Nevis. Over the next several days, more detailed damage and needs assessments began to flow in from the islands, and it became clear that the islands of Montserrat and Guadeloupe had been the most severely affected. Because Guadeloupe is a French department, relief efforts for that island were handled by France. The relief efforts for the other affected islands, whether independent nations or British colonies, were handled as a multinational effort. Below is a map of the eastern Caribbean and a summary of the damage by island.



Eastern Caribbean Islands

Montserrat, a British Crown Colony with a population of 12,000, took the full force of Hurricane Hugo. Ten people were killed. Ninety percent of the houses were affected: 30% were destroyed, 30% severely damaged, and 30% somewhat damaged. An estimated 10,000 to 11,000 people were left homeless. The storm stripped the island of the lush vegetation for which it is famous (Montserrat is often referred to as "the emerald isle"). The hospital, half of the island's twelve health clinics, the police station, and two of the larger schools were badly damaged. The port was virtually destroyed.

Guadeloupe, a French department with a population of 300,000, reported seven people killed and 84 injured by Hugo. About 12,000 people were rendered homeless. The storm severed telephone lines and seriously damaged houses and tourist hotels. About 70% of the roads were made impassable and an estimated 3,000 head of livestock perished.

The neighboring islands of *St. Kitts and Nevis*---the two islands form an independent nation with a population of 45,000---were also hit by the hurricane. Two people were confirmed dead, and the sugar crop was devastated. On St. Kitts, about 5% of the houses were damaged and 20% of the power poles were downed. The principal hospital in St. Kitts suffered severe damage: its roof was blown away and serious water leaks made many wards unusable. Hugo caused more extensive damage to Nevis: 20% of the roofs were destroyed and 60% sustained moderate to serious damage. The main hospital lost its roof, mattresses (from water damage), and vaccines (from the power outage). Damage to the electric lines on both islands was serious.

On *Antigua*---the nation of Antigua and Barbuda has a population of 78,500---the hospital, the Home for the Aged, and the Pan Caribbean Disaster Preparedness and Prevention Project (PCDPPP) sustained damage. Two people were confirmed dead. The storm disrupted the electrical system, and damaged between 10% to 15% of residences and five hotels. Damage was concentrated in the southwestern corner of the island.

On *Dominica*, a nation of 77,900, extensive flooding and landslides severely damaged coastal roads and the island's seawall. The water supply was also disrupted. More devastating, over 75% of the banana crop, Dominica's major source of foreign exchange, was destroyed.

Finally, on the island of *Tortola* (population 10,200) in the British Virgin Islands, an estimated 25% of the houses were damaged by the storm. Coastal roads and infrastructure were also substantially damaged.

U.S. RELIEF AND REHABILITATION ASSISTANCE

OFDA AND FIELD TEAM MOBILIZATION

By Friday morning, September 15, the National Hurricane Center was predicting that the path of Hugo, a Category IV hurricane, would pass through the Caribbean, although it was still unclear which islands would be the most affected. OFDA staff in Washington called a planning meeting early Friday. Barry Heyman, OFDA's Assistant Director for Latin America and the Caribbean, was appointed Planning Director for the disaster operations, and Ollie Davidson, OFDA's Assistant Director for Operations, was named Operations Director. At the meeting, the planning group decided to immediately dispatch OFDA Regional Advisors Paul Bell and Alejandro James, who are based in Costa Rica, and two Metro Dade fire

and rescue specialists, Carlos Castillo and John Carroll, with their communications and other equipment, to Barbados in order for them to be in the region when the storm hit. Paul Bell was appointed head of the team. OFDA staff in Washington activated the Operations Center.

Paul Bell and Alex James managed to get as far as St. John's, Antigua by Saturday, September 16 before most of the airports in the region closed to brace for the hurricane. Since Hugo's path was now expected to pass close to Antigua, they decided to stay there. Meanwhile, Carlos Castillo and John Carroll had gotten to Bridgetown, Barbados on Friday evening. Hugo hit the Leeward islands during the night of September 16, with strong winds continuing through the next morning, Sunday, September 17. That day, through ham radio operators, Paul Bell contacted Carlos Castillo and John Carroll and asked them to deploy to Antigua as soon as possible. In Antigua, Paul Bell met with Franklin McDonald of the Pan Caribbean Disaster Preparedness and Prevention Project (PCDPPP) and Audrey Mullins, the League of Red Cross and Red Crescent Societies delegate, to drive around Antigua and do an initial "windshield assessment" of the damage. After that, they returned to St. John's and together with Jean Luc Poncelet, the Pan American Health Organization (PAHO) health advisor to PCDPPP, who had also done an assessment of parts of Antigua, drafted a joint statement on the damage and needs. At 5:00 that afternoon, they were able to relay this statement to OFDA, PAHO, the League, and the U.N. Disaster Relief Organization (UNDRO) via a ham operator.

The next day, Monday, September 18, Paul Bell, Alex James, and Franklin McDonald made initial contacts with Antiguan government officials. Later in the morning, Paul Bell, Franklin McDonald, Jean Luc Poncelet, Audrey Mullins, and a Canadian official chartered a plane to do fly-over assessments of the neighboring islands of Montserrat, Nevis, and St. Kitts; storm damage prevented landing in any of those islands. Meanwhile, Carlos Castillo and John Carroll flew to Antigua on a chartered plane with Jim Baird, the Mission Disaster Relief Officer based at USAID/Bridgetown, Enzo Benzi and J.C. Barbosa, both from PAHO/Washington, two other PAHO staff, and communications equipment. In Antigua, the headquarters for the multidonor disaster relief operations were already set up at PCDPPP. John Carroll and Carlos Castillo set up two TCS-9000 satellite terminals on the roof of the PCDPPP building, thereby establishing a communications link for Antigua with the outside world.

The initial assessments indicated that Montserrat was exceptionally hard hit, with Antigua, Nevis, and St. Kitts also having received significant damage. The most crucial emergency needs were for temporary shelter materials—for both residences and hospitals—and for the health sector. The multidonor team agreed that PAHO would coordinate the response to the emergency medical needs. That evening, Paul Bell called OFDA to request the first batch of relief supplies for the Leeward islands: a C-130 loaded with as much plastic sheeting as possible, as many chain saw kits as were in the Panama stockpile, twelve tents, and twelve 3,000-gallon water bladders. The plastic sheeting stored in OFDA's stockpiles is specially manufactured for disaster relief: it is sturdy enough to serve as excellent temporary roofing and to last for several years, and is tan in color so that dwellings and other buildings will not get too hot. The water tanks were to be placed in areas where the water systems had been disrupted. The chain saw kits were for distribution to crews working on road clearing—vital for the distribution of relief supplies. Paul Bell also asked for additional personnel support to help with logistics, reporting, assessments, tracking, and monitoring.

Also on September 18, the U.S. Charge d'Affaires for the eastern Caribbean, R. James McHugh, declared that a state of disaster existed in the region and requested that the Ambassador's authority of $25,000 be made available to USAID/Bridgetown to support the OFDA team's disaster response operations. OFDA decided to concentrate its efforts on the islands of Montserrat, St. Kitts, Nevis and Antigua, with Montserrat having priority for receipt of emergency supplies.

The next day, Tuesday, September 19, saw more organization in the multidonor relief effort. Planes were able to land in the affected islands, allowing for more detailed ground assessments on Montserrat, St. Kitts, and Nevis. PCDPPP established daily donor meetings to allow for sharing of information among the donors, non-governmental organizations (NGOs), and host government officials. Relief workers for the Red Cross and other NGOs began to arrive. PAHO sent Enzo Benzi and J.C. Barbosa to Montserrat to set up a TCS-9000 satellite terminal in the capital of Plymouth, thereby establishing a communications link on that island. Within the OFDA team, Jim Baird and Carlos Castillo went to Montserrat to do a damage and needs assessment and meet with local officials. Paul Bell and Alex James worked with PCDPPP and PAHO on Antigua to pull together data on damage from the affected islands. Plans were made to visit Dominica to survey the damage and needs there. Hand-held radios brought by Metro Dade were distributed to key donors. That evening, four members of the OFDA team arrived in Antigua (a fifth member arrived two days later); the team brought along a fax machine to further improve communications. Finally, a USG C-130 arrived from Panama with relief supplies from OFDA's stockpile: 140 rolls of plastic sheeting, seven chain saw kits, twelve tents, and three water tanks. This was the first planeload of supplies to reach the region.

FURTHER RELIEF EFFORTS

These supplies were distributed among the four islands over the next three days, with somewhat more than half of the plastic sheeting going to Montserrat the next day, Wednesday, September 20. On Wednesday, Paul Bell requested that OFDA send more relief supplies from the Panama stockpile, as it had become apparent that more goods, particularly plastic sheeting, would be needed. Two planes arrived over the weekend, on Saturday, September 23 and Sunday, September 24, with the following supplies: 236 rolls of plastic sheeting, thirteen water tanks, and 500 pairs of work gloves. These supplies were distributed during the early part of the week of September 25. From the three shipments of USG relief goods, 268 (71%) of the 376 rolls of plastic were sent to Montserrat. After Franklin McDonald and other relief coordinators visited Tortola and saw the extent of the damage there, the team decided to donate 27 rolls of plastic sheeting from the third plane to be used to cover schools. (See Appendix 3, *USG Relief Supplies for Hurricane Hugo*, for detailed information on the amount and distribution of the goods sent by OFDA.) OFDA paid for the relief supplies, their air transport from Panama to Antigua, and for the team, and provided the funds for the ambassador's authorities for both the Leeward Islands and Dominica.

The USG relief supplies were part of the larger international response. Supplies donated by other donors included medical supplies, plastic sheeting, water containers, food, clothes, generators, blankets, tents, tarp, flashlights, and toiletries. A primary worry during the first week of the relief effort was air transport for the supplies from V.C. Bird Airport in Antigua to the other affected islands. OFDA offered to provide planes for inter-island transport. However, the Royal Air Force was able to keep its C-130 in the region longer than expected—in fact, the RAF crew and plane, based in Belize, stayed almost three weeks—and the Caribbean forces provided several small aircraft, so it was not necessary for OFDA to make this contribution.

OFDA team members accompanied some of the shipments of the supplies to the affected islands to ensure that they were consigned properly. Team members also held discussions with local government officials in charge of distribution and the relief effort, gave demonstrations on how to cut and use the plastic sheeting, and observed some of the distribution. Later, the team toured Montserrat, St. Kitts, Nevis, and Antigua to monitor the end use of USG-donated supplies.

In addition, the USG provided some assistance to Dominica. On Tuesday, September 19, John Clark, U.S. Charge d'Affaires in Barbados, and Larry Laird, USAID/Bridgetown agricultural officer traveled

to Dominica and assessed the damage there. Alex James also toured the island the next day. As a result of these assessments, John Clark declared on Wednesday, September 27 that a disaster existed on Dominica, and donated the $25,000 ambassador's authority, provided by OFDA, to be used to assist in clearing roads.

TEAM ORGANIZATION

The OFDA disaster response team numbered nine people when all had arrived. Many members of the team performed more than one function, but each had a primary role: Paul Bell was the team leader; Alex James did logistics and assessments; Kate Farnsworth was Paul Bell's assistant and did assessments, monitoring, and reporting; Carlos Castillo did logistics, assessments, and backed up the communications officer (Carlos Castillo was later replaced by Raul Chavez); John Carroll was the communications officer; Michael Harvey did reporting and assessments; Renee Bafalis was the press officer; Tom Frey did logistics and tracking; and Cindy Davis did reporting and monitoring (including preparation of this report). Most of the team members did their own typing, but some secretarial and clerical support was provided by Coreen Riccardi, the Charge's secretary.

The OFDA team's headquarters were initially established at the PCDPPP office in Antigua. However, due to the extensive hurricane damage and general overcrowding there, the team moved to the U.S. Embassy on Tuesday, September 19. Several empty offices in U.S. Charge Jim McHugh's suite were put at the disposal of the OFDA team. The next day, Wednesday, September 20, a documentation system was set up on the one available Wang terminal, and team members Cindy Davis and Mike Harvey began producing daily situation reports for OFDA/Washington and USAID/Bridgetown. Kate Farnsworth established a team operations center where maps, a team locator chart, and daily schedules, including relief flight arrival times and cargos, were posted. John Carroll moved the two TCS-9000 satellite terminals from PCDPPP and installed them at the Embassy, giving the team voice and fax capability and providing a back-up in case of system failure. Since cables from the Embassy were transmitted through the U.S. Naval Station located about 20 minutes away, and this system was very slow, the team used the TCS-9000 fax extensively to communicate with OFDA/W. John Carroll established the team's radio network in the operations center, and one member of the team was designated each day as the main team contact with OFDA/W and USAID/Barbados. This person was also responsible for relaying radio messages among the various networks and for keeping the log of activities up to date. Usually, this position rotated among Kate Farnsworth, Mike Harvey, and Cindy Davis. John Carroll kept the repeaters and radios working, did troubleshooting for any communications problems, and placed most of the TCS calls and faxes. One person was designated to attend the daily PCDPPP meetings, usually Kate Farnsworth or Tom Frey, and Tom Frey (and occasionally other team members) attended the daily CARICOM Disaster Relief Unit (CDRU) logistics meetings.

The team met every morning at 7:00 for a breakfast meeting and a review of the day's planned activities. Each night at dinner, the team held a debriefing and planned the following day's activities. Many workers with other relief agencies resided at the same hotel as the OFDA team, thus enhancing coordination in the early morning or evening outside the regularly scheduled donor meetings.

The $25,000 Ambassador's authority was used to purchase charter or plane tickets for team members to do assessments or monitoring on other islands (although for Montserrat, it was often possible for relief workers to hitch rides on the RAF C-130 or the Caribbean Defense Forces planes). It was also used to lease a vehicle for the team leader and to hire a local taxi driver. This driver also ran errands for the team, delivered messages, picked up airline tickets, and generally assisted team logistics. Later, additional cars were rented as team members became familiar with the roads and comfortable with the left-hand driving in Antigua.

Telephone communications from the Embassy to the United States using the regular Embassy lines were, for the most part, excellent, although for two weeks after the disaster, it was still necessary for Washington to use the TCS satellite terminals to call Antigua. Communications between Antigua and Barbados, in both directions, had to go through the TCS for more than ten days as well. The Embassy building itself had suffered minor water damage from the hurricane. This did not interfere with the team's operations, but frequent power surges and constant adjustments from city power to generators seriously disrupted computer functions. On numerous occasions the team lost documents, was unable to print, or otherwise was frustrated in producing documents for OFDA/W. As the team began to prepare the final report in Antigua, a power surge destroyed the document. After a brief conference the team decided to start producing this report at the regional USAID office in Barbados where electrical power was more reliable, and the computer systems more sophisticated.

The OFDA team was supplemented throughout the disaster by experts from USAID/Bridgetown, USAID/Kingston, and A.I.D./Washington. These experts, plus USAID/Bridgetown Mission Director Aaron Williams and USAID/Kingston Mission Director Bill Joslin, came to the area to meet with the team and host government officials to check on the relief operations and prepare for the transition to the rehabilitation stage, when projects to restore power and provide more permanent roofing were being planned (see the section on *Rehabilitation Response* on page 8). To help with financial and administrative matters, USAID/Bridgetown provided the services of an accountant, Elson Harewood, to authorize purchase orders and assist in miscellaneous financial matters. USAID/Bridgetown's controller, Tom Fallon, also provided financial and administrative assistance.

COMMUNICATIONS

Power and communications on all the affected islands were knocked out by Hurricane Hugo. For the first day after the storm, the only way to communicate to or from the islands was through ham radio operators. Disaster relief workers also had no way to communicate with each other. OFDA, working through a grant agreement with the Metro Dade Fire Department, dispatched two members of Metro Dade to Barbados on Friday, September 15 to be pre-positioned for the hurricane, as mentioned previously. These two, Carlos Castillo and John Carroll, carried with them 2,000 lbs. of communications equipment.

Metro Dade's communications equipment and personnel were used for several purposes: 1) to provide a phone link (and later a fax link) for the OFDA team in Antigua with OFDA/Washington and USAID/Bridgetown; 2) to provide communications for the OFDA team within Antigua; 3) to provide communications for the other donors within Antigua, both among themselves and with the OFDA team; 4) to provide inter-island communications; 5) to provide emergency communications to the outside world for other donors; and 6) to provide technical communications assistance for the multidonor relief effort. The equipment comprised satellite terminals, hand-held radios, repeaters, and base stations, and is more fully described below. The equipment and technical assistance provided by Metro Dade were essential to the entire multidonor relief operation. Not only were the OFDA team members and others able to communicate, but the USG made a visible and vital contribution to the group effort.

(All equipment owned and operated by Metro Dade unless otherwise noted.)

Satellite Communications

1. TCS-9000 #1 - located at the U.S. Embassy/St. John's, Antigua - used for both voice and fax communication. The primary function of this TCS was to provide phone and fax communication for the OFDA team with OFDA/Washington and USAID/Bridgetown. However, upon request, it

was also used by Jean Luc Poncelet (PAHO advisor to PCDPPP) to call the PAHO terminal in Montserrat, various other donors, and by the U.S. Embassy in St. John's.

2. TCS-9000 #2 - located at the U.S. Embassy/St. John's, Antigua - used as a hot stand-by.

3. TCS-9000 - owned and operated by PAHO - located in Plymouth, the capital of Montserrat. John Carroll assisted PAHO in the field repair of the fax machine on PAHO's terminal.

4. Magnivox Sky Phone - owned and operated by the League of Red Cross Societies - installed at the PCDPPP office, St. John's, Antigua. John Carroll, and Art Feller of OFDA/W, assisted in the field repair of the Sky Phone.

Repeaters and Saber Hand-Held Radios

1. UHF 450 #1 with Tone Remote - located at the U.S. Embassy/St. John's, Antigua - used as a Logistical Network - 18 UHF Saber hand-held radios ("walkie-talkies") issued to various donor groups for coordination of incoming relief supplies; these groups included: League of Red Cross Societies delegates, PCDPPP, CIDA, CARICOM Disaster Relief Unit at the airport, and PAHO. U.S. Charge Jim McHugh was also in the network.

2. UHF 450 #2 with Tone Remote - located at the U.S. Embassy/St. John's, Antigua - used as an Operations Network - 7 UHF Sabers issued to members of the OFDA/Antigua relief team.

3. UHF 450 #3 - installed on a 250-ft. SKANTEL T.V. tower on St. Kitts - configured to cover the southeastern coast and peninsula of St. Kitts and the northern part of Nevis; this system was battery backed-up - used to facilitate the power crews by allowing both intra-island and inter-island communication. This system was on loan to Lloyd Electric by Jamaica Power and Light.

Remote Control Points

1. Remote Control Point #1/Repeaters #1 and #2 - located at Blackburne Airport in Montserrat - used for two purposes: a) the primary function was for communications between OFDA assessment teams and the U.S. Embassy in Antigua; and b) it was also used as a back-up communications link for the RAF relief flights to Montserrat (when the RAF crew could not get through on the CARICOM radio). This control point was the primary link between Blackburne and V.C. Bird airports for several days until the Canadians installed a temporary emergency tower.

2. Remote Control Point #2/Repeater #3 - located at the U.S. Embassy/St. John's, Antigua - used to connect with the St. Kitts system to coordinate with the Lloyd personnel.

Point-to-Point Communications

1. 5 hand-held radios issued to the RAF team at the loading/unloading facility at V.C. Bird International Airport in Antigua.

2. 3 hand-helds issued to the PAHO team on Montserrat.

3. 5 hand-helds issued to the government disaster coordination team on Montserrat.

REHABILITATION RESPONSE

The immediate post-disaster needs consisted of medical supplies, temporary roofing and shelter, food, and clean water. Donors concentrated their early efforts on providing these goods, transporting them to the region, ensuring that they were properly stored and safeguarded until onward movement, delivering them to the affected islands, and ensuring that the local distribution systems were functioning adequately to get the supplies to the victims as quickly as possible.

However, at the beginning of the relief effort, donors also began to think about the rehabilitation stage. This stage would consist of restoring vital services destroyed or damaged by the hurricane, in this case, electricity, airports, and housing. Early in the emergency phase of the program, OFDA/Washington and Paul Bell initiated discussions with USAID/Bridgetown (which also serves as the Regional Development Office for the Caribbean---RDO/C) and A.I.D./W concerning A.I.D.'s strategy for medium-term rehabilitation on the islands. Both the team and OFDA viewed power restoration and the provision of permanent roofing materials as the most appropriate potential interventions by the U.S. However, they wanted to ensure that the U.S., Canada, and Britain coordinated their rehabilitation assistance (this was done in Jamaica after Hurricane Gilbert in 1988 with power restoration and it worked very well). Representatives of the three countries met in Barbados on Thursday, September 21 to discuss coordination of the rehabilitation phase and decided that Canada would focus its efforts on airports (Canada originally built or expanded many of the airports in the region) and the water sector; Britain would take responsibility for power restoration on Montserrat and Antigua; and the U.S. would concentrate on power restoration on St. Kitts and Nevis, and assist the British if necessary. Work would begin as soon as circumstances allowed.

Engineer Jim Baird, MDRO from USAID/Barbados, conducted island-by-island assessments beginning on September 18. Based on his reports, a decision was made to bring in Dean Moody, an electrical engineer from USAID/Barbados, to review the power restoration requirements on the islands. Dean Moody arrived on September 21. In the meantime, Jay Carter, a civil and electrical engineer with USAID/Kingston, and Richard Harrell, General Superintendent of Lloyd Electric Company (contracted to implement power restoration in Jamaica following Hurricane Gilbert), arrived in Antigua on Wednesday, September 20 at the request of OFDA/W. These three experts met with Antigua Power and Utility Authority (APUA) officials in Antigua and the power authorities in St. Kitts. They recommended that USAID offer to implement a power restoration program on the islands of St. Kitts and Nevis. Planning for that activity began immediately, with contracting completed by OFDA before the end of the fiscal year.

Jay Carter, Dean Moody, and Richard Harrell returned to their respective offices on Saturday, September 23 to make arrangements for the power project. During the next week, OFDA, RDO/C, and Lloyd Electric conducted negotiations and made arrangements for the arrival of the crews and necessary equipment. The next Friday, September 29, and Saturday, September 30, two U.S. Department of Defense C5As arrived in St. Kitts with trucks and equipment for the project. The crews also arrived that weekend. Work began on the project on Tuesday, October 3. Power was 95% restored to St. Kitts by October 16, at which time, the Lloyd Electric crews moved to Nevis. After that, the crews will proceed to Montserrat to assist in power restoration there. The contract with Lloyd Electric was initially paid for by OFDA, but A.I.D.'s Bureau for Latin America and the Caribbean reimbursed OFDA for part of the cost. USAID/Bridgetown provided oversight of the work. OFDA also funded the cost of the C5A airlifts.

Meanwhile, there was concern over the devastation to the housing sector, particularly on Montserrat. Bill Joslin, USAID/Kingston Mission Director, informed OFDA and the team that there was a substantial amount of zinc sheeting in Jamaica, left over from the USG contribution after Hurricane Gilbert the previous year. Zinc sheeting is a common roofing material in the Caribbean. The government of Jamaica agreed to donate the surplus roofing sheets to the Leeward islands. Discussions

then took place among USAID/Kingston, OFDA, the team, and local government officials regarding the roofing sheets. Bill Joslin arrived in Antigua on Monday, September 25, and he and the team made initial assessments and met with government officials. OFDA agreed to pay for the shipping costs of the roofing to Montserrat, St. Kitts, Nevis, Antigua, and Tortola. A housing team, consisting of Aaron Benjamin from A.I.D.'s Office of Housing, Maureen Webber from USAID/Jamaica, and Peter Bradford from RDO/C Barbados, arrived in the area on October 2 and held discussions with the relevant government officials to finalize distribution procedures and delivery schedules.

Jamaica donated a total of 342 bundles of zinc sheeting of 200 sheets each (for a total of 68,400 sheets), which amounted to 582.24 short tons (1,176,480 lb.), or 534.76 MT. Also donated with the zinc sheeting were six bundles (4,350 lb.) of ridge capping, six pallets (7,750 lb.) of tie-down straps, ten pallets (30,000 lb.) of zinc nails, and six boxes (80 lb.) of washers. The roofing sheets left Jamaica on Wednesday, October 11 on the ship *Nordic*. It travelled first to Tortola, arriving on Sunday, October 15 and unloading six bundles of zinc (10.32 short tons). The ship then proceeded to St. Kitts and Nevis, unloading 30 bundles (51.6 short tons) on the first island and 43 bundles (73.96 short tons) on the second. Then, the *Nordic* went to Antigua to unload 30 bundles (51.6 short tons). Finally, the ship reached Montserrat on Friday, October 20 and left the largest amount, 233 bundles (400.76 short tons).

Finally, for Dominica, USAID/Bridgetown developed a bilateral program with the government to rehabilitate the agricultural sector, particularly bananas and fisheries, and to clear the roads. OFDA provided the funds, but USAID/Bridgetown administered the project; A.I.D.'s Latin America and the Caribbean Bureau plans to reimburse OFDA for these costs.

DONOR COORDINATION

OVERALL COORDINATION IN BARBADOS AND ANTIGUA

Donor coordination meetings were held in both Barbados and Antigua. In Barbados, the meetings were chaired by the U.N. Development Program (UNDP) resident representative. The daily coordination meetings in Antigua were chaired by Franklin McDonald, Project Director of the Pan Caribbean Disaster Preparedness and Prevention Project (PCDPPP), and later also by Dr. Carl Mitchell of the OECS (Organization of Eastern Caribbean States). Franklin McDonald attempted to be the link between the two groups, and both he and Dr. Mitchell went to the donor meeting in Bridgetown on Friday, September 22 in order to facilitate communication between the two groups. Pledge lists were kept by the Barbados group, as most of the donors are represented in Bridgetown.

The first PCDPPP meeting was held on Tuesday, September 19, and they were subsequently held each evening at 7:00 p.m. They were attended by representatives of USAID, the EEC, PAHO, CIDA, the League of Red Cross Societies, the CARICOM defense forces, Partners of the Americas, the British Red Cross, Christian Children's Fund, Caribbean Council of Churches, and other NGOs. The meetings provided an opportunity for the various representatives to meet and discuss the situation on the islands, but they did not prove efficacious in determining needs or coordinating responses.

PAHO was responsible for coordinating medical assistance. It conducted assessments of the health sector in all affected islands and provided assistance where needed. PAHO sent water engineers to Montserrat and an engineer to St. Kitts and Nevis to monitor water quality.

CARICOM ASSISTANCE

On Friday, September 22, a disaster relief unit was set up by CARICOM at V.C. Bird Airport in Antigua to coordinate logistics and to monitor the relief goods arriving there for all the affected islands. This unit, called the CDRU, was headed by Commander Peter Brady of the Jamaica Defense Forces, and operations meetings were held every day at 6:00 p.m. The meetings were attended by representatives of the various defense forces, pilots flying relief flights, and many of the same people who attended the PCDPPP meetings. Commander Brady and the CDRU greatly contributed to an increased efficiency in the movement of goods. He was assisted by four officers (two of whom were pilots), a staff sergeant, and soldiers from various Caribbean defense forces.

The CDRU coordinated the logistics and loading of relief supplies. The Jamaica Defense Forces (JDF), the Guyana Defense Forces (the GDF), the Trinidad and Tobago Defense Forces (TTDF), and the Barbados Defense Forces (BDF) all contributed manpower to work with the CDRU. More than 140 soldiers from these four Caribbean forces came to the area to help in the relief effort. Besides loading supplies at V.C. Bird Airport and doing other logistical work, the TTDF, GDF, and BDF worked throughout Montserrat, St. Kitts, and Nevis, assisting in distribution, power restoration, public works restoration, and repairs. The JDF soldiers assisted in power restoration on Antigua and in repairing the hospital. The Antigua and Barbuda Defense Forces (ABDF) helped in transportation, lodging, and meals for the other defense forces.

The CARICOM defense forces also contributed airplanes to improve inter-island ferrying of goods and personnel: the GDF provided a Sky Van and an Islander and the JDF loaned the relief operation an Islander. Besides coordinating these flights, the CDRU also coordinated relief flights made by the RAF C-130, the Canadian C-130, and the Piper piloted by a private citizen, Bill Collier. These various CDRU and other planes provided some of the transportation for the multidonor relief workers, including the OFDA team members, particularly to Montserrat.

Cargo was coordinated on the tarmac by a mixed team of British Red Cross and CARICOM forces representatives. The planes flew all the donors' cargo with priority being determined by needs assessments developed through donor coordination meetings.

USG TEAM INVOLVEMENT IN DONOR COORDINATION

Members of the OFDA team attended both the PCDPPP and CDRU meetings. Tom Frey, the team's logistics officer, spent much of his time at the airport working on a response and logistics chart to help the multi-donor—and multi-island—relief operation. He attempted to develop a needs list and chart, but neither the PCDPPP nor CARICOM meetings proved able to provide reliable specific requirements information.

Working from a model which Paul Bell had used for Hurricane Gilbert in 1988, a Lotus spreadsheet was developed to track the island destination of relief supplies provided by all the donors. It was maintained and updated for the first ten days by Dan Arlotti, a Peace Corps volunteer. Later, Kate Farnsworth and Cindy Davis maintained the spreadsheet. The information was gathered from the manifests of the planes ferrying the supplies and included the type of supplies or equipment, the island they were sent to, and the date and method of conveyance (see Appendix 6, *Chart of Relief Supplies*, for a summary).

EVALUATION OF DONOR COORDINATION

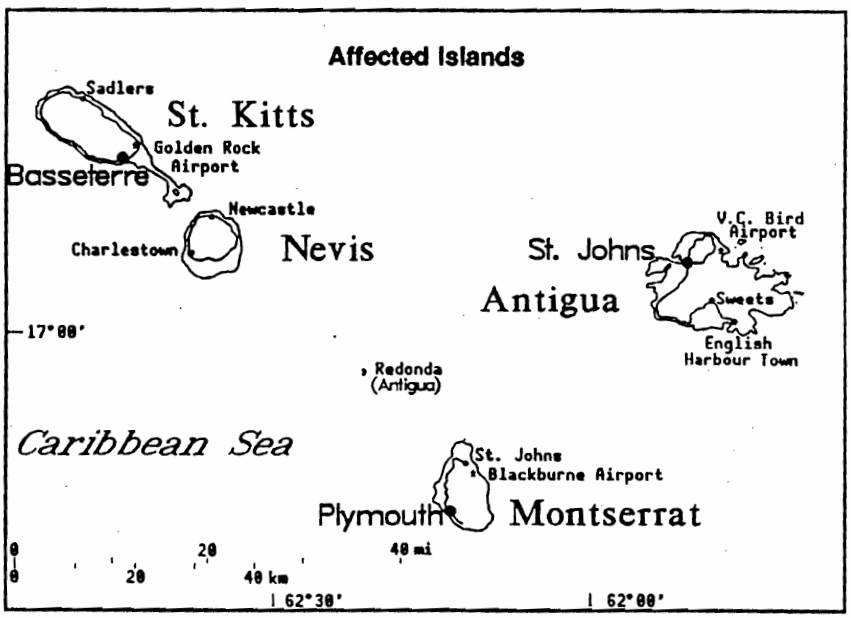
The CDRU filled a gaping hole in coordinating and managing the relief supplies pouring into Antigua and ensuring that they got to the affected islands. The CDRU Operations Center at the airport became an important nerve center of the entire disaster relief effort. The donors were able to have confidence that loading and offloading of the supplies at V.C. Bird, and onward movement were being handled competently and honestly. The CDRU meetings were also considered useful and efficient by the donors. Commander Brady set the agenda, which usually covered the following topics: what had been moved that day and where, what had arrived that day in Antigua, where that day's arrivals should be sent, and problems/concerns with logistics and manpower.

The PCDPPP meetings, on the other hand, were less structured. Assessments were provided by whomever had visited an island, but if a need was identified, there was limited follow-up. With the CDRU providing coordination of operations and logistics, PCDPPP could have concentrated on identifying needs and responses. Franklin McDonald proved invaluable, however, in working with Antiguan government officials to help ensure the use of Antigua as the base for relief operations for all the islands, and in conducting assessments.

The tracking system maintained at the airport by Dan Arlotti proved valuable in ascertaining what each island had received and when. The spreadsheet did not, however, identify the donor. Several factors contributed to this: a) manifests of the outgoing flights did not contain donor information; b) supplies were stacked on the tarmac by island destination, not by donor; c) many of the incoming supplies were not marked; and d) many donors do not maintain representation in Antigua and had no personnel present to monitor or track their contributions.

ISLAND OPERATIONS

The multidonor relief effort concentrated on the four islands of Montserrat, St. Kitts, Nevis, and Antigua, and also provided some supplies for Tortola in the British Virgin Islands. Of the two other affected islands, Guadeloupe received extensive assistance from France, which did not request other donor help, while the major damage in Dominica was to the agricultural sector.



MONTSERRAT

The initial fly-over assessment on Sunday, September 17 revealed that Montserrat had been particularly devastated by the hurricane. Many houses had been washed away or blown apart by the winds, 90% of the buildings sustained at least some roofing or water damage, power and communications were cut, the airport tower was damaged, the roads were blocked by downed power lines and debris, trees were completely stripped of their vegetation, and the jetty in the capital of Plymouth was destroyed. Donors agreed that Montserrat should receive top priority.

The British frigate *Alacrity* was in the area when Hurricane Hugo hit, and it sailed to the coast off Montserrat as soon as possible. The day after the hurricane, on Sunday, September 17, the crew began flying small loads of relief supplies onto the island by helicopter. These were the first supplies to reach devastated Montserrat. Crew from the *Alacrity* began clearing the roads and the airstrip of debris.

Governor Christopher Turner declared a state of emergency and assumed overall command of the relief effort. He appointed a Disaster Management Team, comprising the permanent secretaries of the relevant ministries and other important officials. Individual ministries were given responsibility for coordinating different aspects of the relief effort: shelter, road clearing, water, and electricity was coordinated by Florence Daley, Permanent Secretary for Public Works and Communication, and food assistance by Tony Maloney, the Permanent Secretary for Agriculture.

On Tuesday, September 19, relief workers based in Antigua could finally start making ground assessments. Jim Baird and Carlos Castillo, along with PAHO personnel and a Canadian representative, chartered a plane for Montserrat. They met with Governor Turner and public utility officials, and visited the hospital, the power station, and other parts of Plymouth. Jim Baird and Carlos Castillo confirmed the reported extent of the destruction along the 40-minute drive from Blackburne airport to the capital and in the town of Plymouth. Relief supplies, particularly temporary roofing (it continued to rain in Montserrat at least part of every day for two weeks following Hugo) and food, were needed urgently. Paul Bell had already requested a planeload of supplies from OFDA, and the team decided that as much plastic sheeting from that plane as possible would go to Montserrat. The British Red Cross declared that it would provide food aid.

Meanwhile, Enzo Benzi and J.C. Barbosa of PAHO set up a TCS-9000 satellite terminal in a half-destroyed hotel in Plymouth, thereby establishing a communications link for Montserrat with the outside world. This satellite telephone was used mostly by the government and relief workers to relay needs and requirements to donors, but also by private citizens (who paid PAHO for their calls) who needed to contact relatives and friends; during the next week, people would line up for hours to wait their turn to use the terminal.

The U.S. C-130 arrived in Antigua from Panama that evening. Because the airstrip at Blackburne was so short (about 2,500 ft.), getting supplies quickly to Montserrat was at first a dilemma. A C-130 had never landed at Blackburne, and it seemed dubious whether Blackburne's airstrip was long enough and sturdy enough to handle a C-130. Both the Royal Air Force C-130 crew in Antigua and the U.S. Air Force crew requested permission from their superiors to land in Montserrat, and the next day, Wednesday, September 20, the USAF crew decided to put half a load of plastic sheeting (72 rolls) on the plane---to put less stress on the airstrip if the permission was granted---and fly over to Montserrat to view the airport. In mid-flight, the crew believed they received clearance and proceeded to land at Blackburne. The landing was successful, although the shortness of the airstrip required the Hercules to put on the brakes very quickly, and---because there is no room for such an aircraft to turn around---to back up to the terminal when it reached the end of the runway. Kate Farnsworth of the OFDA team accompanied this first C-130 flight to Montserrat. The crew and the team later learned, however, that the

plane had actually *not* received clearance to land. Fortunately for the relief effort on Montserrat, the USAF Hercules landed anyway and showed that Blackburne could withstand a C-130.

The USAF C-130 had to leave Antigua the next day, but with its successful landing at Blackburne, the RAF began to fly to Montserrat several times a day for almost three weeks. Initial deliveries brought plastic sheeting, tents, blankets, and medical supplies. During the next week, relief workers began to make assessment trips to the islands, their findings being reported at the daily donor coordinating meetings at PCDPPP. The Governor's office organized an Incident Center at the police station to handle the flow of people and supplies. All incoming relief workers were required to check in at the incident center before proceeding to meet with other officials or make needs assessments. By Thursday, the government of Montserrat had instituted a check-in system at the airport to register all incoming relief workers and cargo. Government and relief workers also published a four-page newsletter, *The Hugo News*, three times a week to inform the public about the relief effort and possible post-disaster health hazards.

On Thursday, September 21, Kate Farnsworth, Renee Bafalis, and Carlos Castillo met with Florence Daley and organized a demonstration on how to use the plastic sheeting for the Public Works teams who would be distributing the material. Warehousing of relief goods was not a problem as supplies were being distributed almost as quickly as they arrived. Transportation on the island, however, was a problem; there were too few trucks to both haul relief supplies from the airport and to distribute supplies to outlying areas. As a result, it became obvious to the visitor that relief distribution had been heavily concentrated, at least initially, in Plymouth town itself.

On Friday, September 22, Carlos Castillo delivered five chain saw kits and two water bladders to Montserrat. Over the weekend, John Carroll, Raul Chavez, and Mike Harvey set up a base station in the Blackburne air traffic control tower to improve the communications link. The OFDA base was now able to contact the Montserrat tower. This base station also supplemented the communications link between V.C. Bird and Blackburne airports; the system already there often did not work. John Carroll also distributed five hand-held radios to the disaster coordinators on the island.

The team had designated another 34 rolls from the first plane to go to Montserrat, but these were inadvertently sent to St. Kitts and Nevis, so when the other two U.S. planes arrived over the weekend of September 23 and 24, all the plastic from the first plane---128 rolls---and most from the second (68 rolls out of 108) went to Montserrat. Paul Bell had requested that 500 pairs of gloves be sent with the plastic and the water tanks; these work gloves were distributed to Montserratan school children who were going to participate in a clean-up campaign on Monday, September 26.

During the week of September 26, the relief effort on Montserrat was in full swing. Besides the U.S. plastic sheeting and gloves, there were other donations of plastic sheeting and tarp, food, water purification tablets, blankets, and clothes. The EEC contributed a barge to be used as a temporary jetty at the Plymouth port for several weeks; this cost thousands of dollars a day to operate, but without this barge, no sea shipments could have been offloaded. When John Carroll and Cindy Davis went to Montserrat on Wednesday, September 27 to monitor the end use of the plastic sheeting, they also assessed the ability of the temporary jetty to receive the boatload of zinc sheeting which the U.S. and Jamaica were donating to the area. Port officials said they thought that the barge would be able to handle the offloading. When Kate Farnsworth went to Montserrat the next day with Paul Bell to have meetings with Montserratan officials on the zinc sheeting, she saw a boat of similar size unload without difficulty, so the team was able to proceed with plans to ship the zinc sheeting. The Canadians began to bring in equipment to restore the Blackburne airport that week as well. Within several days, a temporary tower had been built for use while the original one was being repaired.

Monitoring by the team was done by John Carroll and Cindy Davis on Wednesday, September 27 and Tuesday, October 3, and by Paul Bell on Tuesday, October 10. What they found confirmed earlier reports that the distribution system on Montserrat was relatively efficient and quick. Even on the first monitoring visit, there was only a small amount of supplies which had not been distributed. The closer one got to the town of Plymouth on the drive from Blackburne, the more plastic one saw. There had also been more plastic distributed to the towns along the road north of Plymouth than along the drive from Blackburne. Because of the shortage of vehicles on the island, much of the distribution of the plastic sheeting took place in Plymouth. At the Public Works building, recipients would register and receive a number. As the relief workers cut up the plastic (generally, one roll went to three families), they would call out numbers. The system apparently went quite smoothly. The big drawback, however, was that not enough plastic got to villages outside Plymouth. The Public Works Ministry had designated certain amounts of the plastic to go to recognized community leaders in villages for distribution there; some of the villages got plastic in a timely fashion, but many got none or very little. Also, it is possible that Public Works distributed the plastic *too* fast: not knowing how much plastic would be sent by all the donors, and perhaps assuming that more would be coming, the workers distributed it almost as fast as it came in, rather than holding some back for the outlying areas when transport eased up. However, shipments of plastic had virtually ended by September 29; the focus had shifted to attempting to get more permanent roofing materials to those in need.

A significant amount of the USG plastic appeared to be on private homes, but much of it was on public buildings (clinics, schools, Public Works, etc.). The U.S. plastic was recognized as the best quality and that is perhaps why it was concentrated on government buildings. Although this was an appropriate use of the plastic, the team felt that it would have been preferable to have had more of it distributed to low-income individuals; therefore, one of the team's recommendations is for a certain amount of plastic sheeting to be pre-cut for family size.

For the rehabilitation stage of U.S. assistance, Montserrat received the bulk of the zinc sheeting for permanent roofing: 233 bundles (or 400.76 tons). The zinc arrived on Friday, October 20 and was offloaded the following Monday. Alex James, when he returned to the region in early December, went to Montserrat to monitor the distribution.

The British assumed primary responsibility for power restoration in Montserrat, but as the electrical system was almost entirely destroyed, the Lloyd Electric crews were asked to help after they finished work on St. Kitts and Nevis. The crews arrived on November 18, at which time about 25% of the power on Montserrat had been restored. Lloyd Electric was asked to concentrate on restoring the low voltage distribution system of Old Towne, Olveston, and Woodlands. This area had an extensive distribution system which served about 400 vacation villas; 90% of Montserrat's tourism income is derviced from the rental of these villas. OFDA and USAID/Bridgetown funded Lloyd Electric's work on the island until January 9, 1990. Electrical service to the three villages assigned to the company was 90% restored. Montserrat Electric Services Ltd. (MONLEC) then contracted Llyod Electric to work on the island until February 16.

ST. KITTS

An assessment team comprising RDO/C engineer Jim Baird, U.S. Charge d'Affaires Jim McHugh, and Carlos Castillo first visited St. Kitts on Wednesday, September 20. In the capital of Basseterre, many of the shops were still closed. Bakeries and some supermarkets were open, although there were long lines outside. A portion of the power had already been restored to Basseterre. About 150 people were staying in shelters, and many others were living with friends and relatives.

Jim Baird drove all around the island and reported that about 5% of the houses were damaged and that 5% of the power poles were down (the Lloyd Electric team later revised that estimate to about a 20% loss of the electric power distribution system). He also reported that there was some erosion of the sea wall and that a 150-foot section had been washed out, exposing a section of the main road which links the oil depot with Basseterre. However, this was not causing major problems and its repair would be a routine public works project.

In the health sector, the most serious damage was to the hospital, which had lost its roof. Water leaks had made many of the wards unusable. PAHO reported that the water and electric supplies to the hospital were still working. PAHO did not believe that there was a problem with medical supplies or drugs, but assigned a water engineer to monitor the water quality on both St. Kitts and Nevis. Many vaccines were lost when the power was knocked out, and PAHO later replaced them.

On Friday, September 22, Kate Farnsworth visited St. Kitts to deliver twelve rolls of OFDA plastic sheeting for use at the hospital. She met with Ray John, St. Kitts' disaster relief coordinator and his VSO (British volunteer) assistant to get an update on the situation on the island. A visit to the hospital confirmed that it was badly damaged; the roof had been torn off, mattresses damaged, and equipment ruined. Many patients had been relocated from the heavily damaged areas and those that could be released had been sent home. Kate Farnsworth also discovered 24 boxes of U.S. plastic sheeting already at the hospital, having arrived on a shipment that had been destined for Montserrat the previous day. The total of 36 rolls of plastic sheeting was put on the hospital roof during the next few days, allowing normal patient care activities to resume.

The team worked on several activities to prepare for the power restoration project. On Friday, September 22, Jay Carter, Dean Moody, and Richard Harrell went to St. Kitts to meet with the power authorities and other officials to do the preliminary work to set up the project; they went again the next day for more thorough meetings. On Sunday, September 24, John Carroll and Raul Chavez went to St. Kitts to check on possible sites to set up a base station for the communications needs for the power teams. After touring the island and holding discussions with officials from SKANTEL (St. Kitts and Nevis Telecommunications Ltd.), they chose a 250-ft. SKANTEL T.V. tower on Bay Fords Hill. The next day, Alejandro James and Renee Bafalis traveled to St. Kitts (and Nevis) to make hotel and transportation arrangements for the power crew. They made initial reservations at the Ocean Terrace Inn in Basseterre, where the crews did indeed end up staying. On Wednesday, September 27, Paul Bell and ALex James went to Basseterre to ensure that all arrangements were in place for the arrival of both the Lloyd Electric crew and the Department of Defense C-5As which OFDA had arranged to fly the equipment and vehicles needed for the project. They met with Prime Minister Kennedy A. Simmonds and were assured of the complete cooperation of the Government of St. Kitts and Nevis.

On Thursday, September 28, the team received word that two C5As would arrive in the next several days, with the first one probably arriving the next day, possibly as early as 7:00 a.m. The team therefore decided to move its base of operations to Basseterre for the weekend. Also on this day, Lloyd Electric sent an advance team of five men---Walter Shaw, Patrick Lambert, Kelly Evans, Dewey Defoe, and Ron Akins---from Jamaica to join Richard Harrell in St. Kitts to prepare for the offloading of the C5As and the arrival of the remaining 27 crew members.

Alex James, Renee Bafalis, John Carroll, Raul Chavez, and Cindy Davis arrived in St. Kitts very early the next morning. John Carroll, Raul Chavez, and Cindy Davis, along with Walter Shaw and Patrick Lambert, spent the morning setting up the repeater and antenna on Bay Fords Hill. They received substantial help from SKANTEL and Cable & Wireless officials and workers. This repeater was configured to cover the southeastern coast and peninsula of St. Kitts and the northern part of Nevis; this allowed both intra-island and inter-island communication for the power crews.

The team had received word that the first C5A would arrive that day at 3:30 p.m., but it actually landed at Golden Rock Airport at 2:00 p.m. Alex James, Renee Bafalls, John Carroll, Raul Chavez, and Cindy Davis got to the airport within fifteen minutes of the plane's arrival to supervise the offloading of the supplies with the Lloyd Electric advance team. The C5A is a huge aircraft, one of the biggest in the world. The plane weighs 375,000 lb. when it is empty, and can carry 300,000 lb. of cargo (even more in wartime conditions). This was the first time this type of plane had ever landed at Golden Rock Airport and hundreds of onlookers had crowded into the terminal building and around the airport perimeter to witness this unusual event. Prime Minister Simmonds, other government officials, and a large local press crew were on hand to greet the plane. The C5A was a major story on the local evening news and in the next day's newspaper. (The St. Kitts television interviewer focused on the two female crew members, one of whom was one of the pilots.)

The C5A had originated in Shepherd Air Force Base (AFB) in Texas, near Lloyd Electric Co. headquarters, proceeded to Dobbins AFB near Atlanta, where it picked up more equipment and vehicles, and then flew four hours to Golden Rock. There were eight crew members, including three pilots (for a list of the crew members from both planes, see Appendix 1, *Team Members and Other Relief Workers*). By 3:25 p.m., offloading had been completed and the plane's nose was closed up (loading and unloading a C5A is done from the front of the plane; the plane's belly can be lowered, like a camel, to facilitate the process). Paul Bell, Kate Farnsworth, and Tom Frey, the remaining OFDA team members, arrived a few minutes later from Antigua, and Paul Bell was able to meet and talk with Prime Minister Simmonds. The plane departed a few minutes before 4:00 p.m.

The next day, Saturday, September 30, the second C5, in this case, a C5*B*, arrived at 12:45 p.m. This plane also had a crew of eight, and had arrived from Dobbins AFB. The cargo from both the planes included two digger trucks, five bucket trucks, three pick-up trucks with crew cabs, one Chevy pick-up, and one cargo trailer containing miscellaneous equipment. Bobby Lloyd, President of Lloyd Electric Co., was also on the plane. A large crowd was again at the airport, both to greet the plane and to greet Jesse Jackson and Cicily Tyson, who coincidentally arrived while the C5B was unloading. Jesse Jackson and Cicily Tyson, whose parents are from Nevis, were visiting the affected islands to see how they could provide assistance.

The next morning, Raul Chavez conducted a first aid class at the Ocean Terrace Inn for the Lloyd Electric crewmen, all of whom had now arrived (the Metro Dade personnel are trained paramedics). On Tuesday, October 3, the crews began work on both islands. However, they concentrated their work first on St. Kitts, restoring 95% of the power by October 16. Lloyd Electric worked closely with St. Kitts' Department of Electricity to accomplish this task. According to Lloyd Electric's final report on the project, the restoration of power on the island was expedited because of the arrangements and plans made by Ray John, the National Disaster Coordinator of St. Kitts, and the Department of Electricity. Another helpful circumstance was that before Hurricane Hugo, St. Kitts had a reasonably maintained and adequately designed power system.

As for USG relief supplies, St. Kitts received 36 rolls of plastic sheeting and one water tank. Monitoring done by Kate Farnsworth and Alex James on Saturday, September 30 showed that all the plastic sheeting was used to cover the main hospital, the purpose for which it had been designated; the water tank was also stationed at the hospital. As part of USAID's roofing project, St. Kitts was due to receive 30 bundles (51.6 short tons) of zinc sheeting. Alex James returned to St. Kitts on Sunday, October 22, and verified that this amount of zinc had arrived on October 17. He discussed the proposed distribution with Ray John, the disaster coordinator, and checked on the progress of the power project. Alex James returned to the island on December 6 to monitor the zinc distribution and pulled down the repeater on Bay Fords Hill to return it to Metro Dade in Miami.

NEVIS

On Wednesday, September 20, after assessing the situation on St. Kitts, Jim Baird, U.S. Charge Jim McHugh, and Carlos Castillo visited Nevis. The situation there was far more serious than on St. Kitts. Both private homes and the power distribution system had been badly damaged. With a smaller airstrip than either Montserrat or St. Kitts, Nevis was relying on delivery of emergency supplies by barge from St. Kitts, and by small aircraft from Antigua. The pilot of the Piper aircraft, Bill Collier, was enthusiastically hauling small loads to Nevis free of charge. His energy and dedication were significant in the relief effort for Nevis.

Over the ensuing days, word began to come back to Antigua that distribution of relief supplies by the disaster committee in Nevis was proceeding poorly. The reports were provided by Doug Lundgren, a U.S. citizen who described himself as the official agent of the St. Kitts-Nevis Ambassador to the United Nations. He said that local officials had failed to organize a structure through which relief goods could be received, inventoried, and distributed. As a result, he asserted, relief goods meant for Nevis were not all getting to the island from St. Kitts, and those which did reach the island were being looted upon arrival. He suggested a cessation of deliveries until a system could be put into place, and requested twenty soldiers from the Caribbean defense forces to help establish that system. He added that a volunteer relief committee had been established to coordinate relief shipments.

The seriousness of this report prompted Commander Brady to send his deputy, Major Peter Simmons, to the island on Sunday, September 24. Paul Bell sent Alex James and Michael Harvey to Nevis on that day to investigate as well. Upon arrival on Nevis, the team observed the off-loading of relief supplies from a Twin Otter chartered from Windward Aviation. These items turned out to be part of a much larger effort being organized by the Four Seasons Hotel Corporation, which is developing a large resort on the island. The goods originated in Toronto, Canada, where the corporation is headquartered, and Newark, New Jersey, where its U.S. operations are based. The Four Seasons operation appeared to be well run and was providing aid in response to clearly identified needs. Team members observed chain saws, hammers, nails, food, clothing, generators, and power tools being offloaded.

Receipt of relief supplies at the airport was supervised by Wendell Huggins, the island's Permanent Secretary and its disaster coordinator. Management personnel, equipment and workers provided by the Four Seasons assisted Mr. Huggins. Goods were taken from the airport directly to the Four Seasons warehouse and then moved out through the parishes.

Alex James and Mike Harvey also visited Victor Martin, Minister of Water and Electricity, and Joseph Parry, Minister of Agriculture, both of whom were members of the island's official disaster relief committee. Both appeared to be reluctant to discuss the structure of the relief effort. When asked about the status of the volunteer relief committee organized by Doug Lundgren, they stated that they could not explain its role because they did not know who he was or from whom he had received his authority. They added, however, that the committee had been helpful early in the relief effort because it had maintained communications links off the island, especially to the United States.

The ministers directed the team to the government's warehouse outside the capital of Charlestown. Mike Harvey and Alex James were disappointed to see that the fourteen rolls of OFDA plastic sheeting, eight of which had been delivered from St. Kitts on September 21 or 22 (these eight were part of the shipment which had been designated for Montserrat) and six of which had been delivered by Alex James on September 22, were still sitting unused. There were also two 5-kW generators, bails of blankets, water jugs, boxes of used clothes, canned food, and other relief supplies. No one was able to explain how the goods were being allocated and distributed. More confusing, team members could not determine how this warehouse related to the one operated by Four Seasons.

The team met members of the volunteer committee at their headquarters at the Old Manor Inn. It was evident that these private citizens, mostly expatriates, were well intentioned but not working with any governmental structures or authorities. The existence of the committee was due in large part to the fact that it was able to maintain communications links off the island and had access to a fax machine. With this communications capability, the committee sent messages to the United States, insisting that Nevis needed many more relief supplies than it was receiving.

In final conversations with Wendell Huggins, it became apparent that he had mistakenly believed that Doug Lundgren was a representative of USAID and OFDA. There was a great deal of resentment among the Nevisians that outsiders were coming in assuming the islanders could not manage their affairs. Officials from the Four Seasons echoed Wendell Huggins' comments and assured team members that the operation was running smoothly.

As result of this visit, relief coordinators on Antigua decided to rely upon the Four Seasons airlift to meet most of the needs on Nevis. Nearly all emergency needs on the island were being met through that program. There was still a need for two 100-kVA generators to re-establish the water pumping system, four water bladders, and electrical teams to help repair the power distribution system. The CDRU sent sixteen TTDF soldiers to help as carpenters, electricians, and plumbers. Alex James returned to Nevis on Tuesday, October 3 to monitor the distribution of the fourteen rolls of plastic sheeting, the two chain saws, and four water tanks. The plastic had all been distributed to the hospital and private homes. Nevis also received 30 bundles (51.6 short tons) of zinc roofing sheets, offloaded from the ship *Nordic* on October 18; this was verified by Alex James on October 22 through a phone call with Wendell Huggins.

As mentioned in the section on St. Kitts, the team made arrangements for the power restoration project for Nevis. A ten-man crew began work on the outlying areas of Charlestown on Tuesday, October 3, with the full complement of Lloyd Electric crews arriving on October 17 after work was completed on St. Kitts. According to the Lloyd Electric final report, Nevis's power system sustained significant damage during Hurricane Hugo; about 50% of the poles were downed, and 80% of the service lines were no longer attached. This severe loss was caused by poor maintenance; a high proportion of the poles were seriously decayed and had needed replacement for years. The Department of Electricity on Nevis helped Lloyd Electric with the restoration effort, but the project was hindered by a shortage of materials and repair parts. The terrain also caused difficulties: digging in the hard volcanic rock often had to be done with a jack hammer and conductor restoration was hindered by undergrowth and trees. Nevertheless, the electricity was restored on November 14, and Lloyd Electric concluded its work three days later.

ANTIGUA

Damage to the island of Antigua by Hurricane Hugo was, by comparison with surrounding islands, minimal. The hospital roof in St. John's was damaged as was the roof of the Public Works building. Most of the damage to private property occurred in the southwestern section of the island. There, several homes were totally destroyed, water lines damaged, and power systems disrupted.

Because damage was relatively minimal in Antigua and because PCDPPP is based in St. John's, most donors and relief workers based their relief effort for the region in Antigua. The government provided full cooperation for this regional, multidonor effort: it provided offices, personnel, and equipment at the airport, smoothed official clearances, and hosted the CARICOM forces.

The U.S. provided 31 rolls of plastic sheeting, nine water tanks, and 30 bundles (51.6 tons) of zinc sheeting. One of the water tanks was stationed in the town of Old Road, in southwestern Antigua, and four rolls of the plastic were used for the hospital in St. John's and for PCDPPP. The rest of the plastic sheeting was stored. When Alex James returned to Antigua in early December, he checked on the distribution of this plastic sheeting and the water tanks as well as of the zinc sheeting.

RECOMMENDATIONS

The team developed the following twenty recommendations for future disaster operations. The first seven deal with field operations.

1. The non-technical, multi-purpose team members should each have a primary function, but should also be rotated among the various roles (situation reports, airport liaison, working the radios and phones). This will give different members an opportunity to learn other functions, enable them to better understand their primary roles, and cut down on fatigue.

2. The team leader should brief the team members upon their arrival in the field on each person's function and role.

3. At the daily debriefings of the team, plans for the following day should be set, and general plans for the next several days should be discussed.

4. The team should set up a room that functions as an operations center. This Operations Center should contain a poster-sized calendar to track important events and plans (arrival of supplies, etc.), a board for team members to note their location throughout the day, maps, and other important charts (such as a list of USG supplies or funds). The center will serve two functions: a) it will be easy for team members to see at a glance what is happening and who is where; and b) it will provide an appropriate place to brief visitors, such as Mission Directors, the media, or host government officials.

5. The Operations Center should also be where the repeater(s) and TCS-9000 phones are; a log should be kept by whomever is responsible for outside liaison that day.

6. A surge protector should be brought for laptop computers or other equipment the team brings.

7. When pictures and videos are taken within the first few days of the disaster, the film should be sent out of the area for dissemination as quickly as possible.

The next three are recommendations to improve OFDA-field communication.

1. OFDA/Washington should fax its cables to the field; the disaster can disrupt the normal communications channels.

2. OFDA/Washington should write up a short list of actions taken and possible plans at the end of each day and fax it to the field; this should lead to fewer "surprises".

3. OFDA/Washington should not ask the field for information which can be gotten in Washington; usually the team is stretched as far as it can go. For the same reason, OFDA/Washington should prioritize its requests.

The next two recommendations deal specifically with the Caribbean region.

1. DOD should conduct capability assessments of all the airstrips in the region before the next hurricane season; host governments and donors would then know what kinds of aircraft each airstrip could handle.

2. The role of CARICOM defense forces in disaster relief should be institutionalized. Training programs in logistics and tracking could be provided. PCDPPP's focus should be re-oriented towards public awareness and education.

The next eight are general recommendations.

1. The vital role of communications equipment—hand-held radios, TCS-9000 terminals, repeaters, base stations—cannot be overstated. The communications officer(s) should bring as much equipment as possible when they are first deployed.

2. Some of the plastic sheeting could be cut into smaller sizes, either in the stockpile or at the offloading area; this would enable more of the sheeting to go to individual families.

3. There should be a roster of names and functions in order to choose participants for a particular DART.

4. The individual support kits are very good. One thing that could be added is laundry soap. Also, the type of rope should be changed, and except for an earthquake, there is little use for the hard hat. Perhaps there could be two different knapsacks: one for the tropics and one for dry climates; or one for Latin America and the Caribbean and one for Africa. The food packs are also not very useful; if a disaster site requires that the team bring food, separate knapsacks could carry that. There should be thought given to a *team* support kit, too.

5. OFDA/Washington should have a petty cash fund so that DART team members can take at least a small advance with them.

6. The DOD manifests of OFDA stockpile supplies should be better written; the size and weight should also be included. This will make tracking and monitoring easier and more accurate.

7. Once every six months or a year, OFDA should have a demonstration of the supplies in its stockpiles, such as plastic sheeting, water tanks and jugs, and tents. Also, the TCS-9000 terminals and hand-held radios should be demonstrated.

8. All OFDA team members, whether direct-hire, contractors, or grantees, should receive the same per diem. Currently, Metro Dade personnel receive hotel costs plus $21/day; this was considerably less than what the other team members got and did not cover their expenses.

APPENDIX 1

TEAM MEMBERS AND OTHER RELIEF WORKERS

1. OFDA Team Members

Paul Bell - OFDA Regional Advisor, based in Costa Rica - Team Leader
Alejandro James - OFDA Regional Office, based in Costa Rica - logistics/assessment
Kate Farnsworth - OFDA Regional Advisor, based in Addis Ababa - assistant to Paul Bell
Carlos Castillo - Metro Dade Fire Department, based in Miami - logistics/assessment
John Carroll - Metro Dade Fire Department, based in Miami - communications
Raul Chavez - Metro Dade Fire Department, based in Miami - communications/paramedic
Michael Harvey - OFDA/Washington - reporting/assessment
Renee Bafalis - OFDA/Washington - press officer
Tom Frey - OFDA/Washington, U.S. Forest Service - logistics/monitoring
Cindy Davis - OFDA/Washington, contractor - reporting/monitoring

2. Other USG Involvement

Jim Baird - USAID/Bridgetown - Mission Disaster Relief Officer (MDRO) and engineer
Jay Carter - USAID/Kingston, contractor - civil engineer; Project Manager for power restoration project
Dean Moody - USAID/Bridgetown - civil and electrical engineer; Project Officer for power restoration project
Bill Joslin - USAID/Kingston - Mission Director
Aaron Williams - USAID/Bridgetown - Mission Director
Elson Harewood - USAID/Bridgetown - accountant
Tom Fallon - USAID/Bridgetown - controller
R. James McHugh - U.S. Embassy/St. John's, Antigua - Charge d'Affaires
Coreen Riccardi - U.S. Embassy/St. John's, Antigua - secretary
Aaron Benjamin - AID/Washington - housing
Maureen Webber - USAID/Kingston - housing
Peter Bradford - USAID/Bridgetown - housing
John Clark - U.S. Embassy/Bridgetown, Barbados - Charge d'Affaires
Larry Laird - USAID/Bridgetown - Agricultural Officer
Matt McGrath - USIS/Bridgetown - Press Officer

3. Crew of First C-5A

Arrived Golden Rock Airport, St. Kitts, Friday, Sept. 29, 1989 2:00 p.m.
Based at Travis AFB, California

Major S.M. Earl - pilot
Captain Steve J. Laurenzo - pilot
Captain Diane Bingley - pilot
Master SGT Arthur Walker - engineer
Staff SGT Lorraine Woods - engineer
Staff SGT David Cheezum - load master
Staff SGT Richard James - load master
Airman First Class Patrick Moore - load master

4. Crew of Second C-5B

Arrived Golden Rock Airport, St. Kitts, Saturday, Sept. 30, 1989 12:40 p.m.
Based at Dover AFB, Delaware

Captain John L. Dees - pilot
Major Howard R. Bohlin - pilot
Captain Timothy J. Labarge - pilot
Master SGT William D. Becker
Master SGT Allan F. Thacker
Master SGT Dale R. Bielema
Staff SGT Robert L. Minch
SGT Raymond L. Chaudoin

5. Lloyd Electric Advance Team

Richard Harrell - General Superintendent - assessment/foreman
Bobby Lloyd - President
Walter Shaw - linesman
Patrick Lambert - linesman
Kelly Evans - linesman
Dewey Defoe - linesman
Ron Akins - linesman

6. SKANTEL and Cable & Wireless Involvement - St. Kitts

Gene Howell - Manager Engineering
Richard Challinor - Engineer, Switching
Roy Sutton - Field Installation Manager
Jim Sharkey - Rigger
Charles "Spin" Chapman - Handyman/Rigger
Cosbert Manchester - Engineer Switching and Networks Servicing

7. CARICOM Force Leaders

Commander Peter Brady - overall command of the CARICOM Disaster Relief Unit (CDRU) and Jamaica Defense Forces (JDF) leader
Major Peter Simmons - CDRU Second-in-Command - Royal Marines
Major Stanley Ford - Peter Brady's assistant - JDF
Captain Storm - Guyana Defense Forces (GDF) leader
Major Williams - Trinidad and Tobago Defense Forces (TTDF) leader
Major Parris - Barbados Defense Forces (BDF) leader
Captain Walker - Antigua and Barbuda Defense Forces (ABDF) leader

8. International Relief Organizations/Workers in Antigua and Montserrat

Franklin McDonald - Pan Caribbean Disaster Preparedness and Prevention Project (PCDPPP), Project Director
Jean Luc Poncelet - Pan American Health Organization (PAHO) health advisor to PCDPPP
Audrey Mullins - League of Red Cross Societies head delegate

Dan Arlotti - Peace Corps Volunteer - worked on tracking chart
Captain Damian McKinney - captain of the Royal Air Force C-130
Bill Collier - independent pilot
Iain Thompson - Canadian International Development Agency (CIDA) representative
John Simpson - EEC representative
David Horobin - British Red Cross
Richard Aspen - Partners of the Americas
Enzo Benzi - PAHO - operated PAHO TCS-9000 terminal in Plymouth, Montserrat
J.C. Barbosa - PAHO - operated PAHO TCS-9000 terminal in Plymouth, Montserrat

9. Host Government Officials Involved in the Relief Effort

Connie Michaels - *Antigua* - National Disaster Coordinator
Bert Joseph - *Antigua* - V.C. Bird Airport Director
Christopher Turner - *Montserrat* - Governor
Florence Daley - *Montserrat* - Permanent Secretary - Ministry of Public Works
Reuben Meade - *Montserrat* - Development Unit Director
Tony Maloney - *Montserrat* - Permanent Secretary - Ministry of Agriculture
Franklyn Greenaway - *Montserrat* - Port Manager
Dr. Kennedy A. Simmonds - *St. Kitts and Nevis* - Prime Minister
Ray John - *St. Kitts* - National Disaster Coordinator
Royden Benjamin - *St. Kitts* - Assistant Minister of Communications, Public Works and Utilities
P.H.L. Huggins -*St. Kitts* - Department of Electricity Manager
Wendell Huggins - *Nevis* - National Disaster Coordinator
Victor Martin - *Nevis* - Minister of Water and Electricity
Joseph Parry - *Nevis* - Minister of Agriculture
Robert Creque - *Tortola* - National Disaster Coordinator

APPENDIX 2

LOG OF ACTIVITIES

FRIDAY, SEPTEMBER 15
AM

-- At 0930, Costa Rica time, OFDA phoned Paul Bell, Regional Advisor for Latin America and the Caribbean, that Hurricane Hugo was heading toward the Eastern Caribbean, and to deploy to Barbados.

-- At 1100, OFDA called Metro Dade County Fire Department requesting support for impending Hurricane Hugo disaster.

-- At 1400, Paul Bell and Alejandro James board a flight to San Juan.

-- 1600 Carlos Castillo and John Carroll board PanAm flight in Miami to Barbados taking with them: 2 TCS-9000 satellite terminals, 2 MCX portable repeaters UHF with tone remotes, 15 Saber hand-held radios UHF, 2 7-kW generators, tools, batteries, chargers, spare parts for the TCSs and repeaters, test equipment, and 2 base station antennas with Coax cables; total weight: 2,000 lbs.

-- At 1830, Paul Bell and Alejandro James arrive in San Juan and are met by a Customs official to expedite their transfer for an American Airlines flight to Barbados; however, AA cancelled the flight due to the weather.

-- At 2000, Carlos Castillo and John Carroll arrive in Bridgetown. Their equipment was stored at the house of Jim Baird (the MDRO and an engineer with USAID/Bridgetown).

-- Paul Bell and Alex James attempt to find flights to the eastern Caribbean, but are unable to do so and overnight in San Juan.

SATURDAY, SEPTEMBER 16
AM

-- At 0600, Paul Bell and Alex James get on an AA flight to St. Thomas. In St. Thomas, they are able to get a LIAT flight to St. Martin at 0930, and from there, they arrive in Antigua at 1100.

-- After Paul Bell and Alex James arrive in Antigua, the airport closes and the island prepares for Hurricane Hugo; current predictions have the storm heading for Guadeloupe. They decide to stay in Antigua. Paul Bell and Alex James call Franklin McDonald and help PCDPPP batten down and get ready for the hurricane. They then help the Cortsland Hotel do the same thing.

-- In Barbados, the Metro-Dade team inspects and tests the TCS-9000s and other equipment and re-charge all the batteries. Per OFDA/Washington's request, they also find Enzo Benzi and J.C. Barbosa from PAHO/Washington, who had also been pre-positioned in Barbados with a TCS-9000.

-- Carlos Castillo and John Carroll are in indirect communication with Paul Bell and Alejandro James via a ham operator.

-- Hugo hits Leeward islands during the night: at 6:00 pm, the Antigua power company (APUA) shuts down the generators and the power system; at 7:00 pm, the wind starts; at 8:00 pm, the rain starts; and by 11:00 pm, hurricane force winds whip Antigua.

SUNDAY, SEPTEMBER 17

-- Strong winds continue until about 0800.

-- Paul Bell instructs Metro-Dade to move to Antigua.

-- Paul and Alex get in touch with Audrey Mullins, the League of Red Cross Societies delegate in Antigua; the three of them go in Audrey's car to Franklin McDonald's house to get him and a machete. They then drive around the island for an initial assessment.

-- After the assessment, they return to St. John's and together with PAHO, draft a joint statement on the damage and needs.

-- Via a ham operator, Paul tells Ollie Davidson in OFDA/Washington that a joint statement would be relayed at 1700.

-- At 1700, they relay the statement for OFDA, PAHO, the League, and UNDRO.

MONDAY, SEPTEMBER 18

-- At 0800, Franklin McDonald comes over to the Cortsland and he, Paul, and Alex go talk with the police, Connie Michaels (Antigua's disaster relief coordinator), and Minister of Home Affairs O'Marde.

-- At 1100, Paul, Audrey, Franklin, Jean Luc Poncelet (PAHO health advisor to the PCDPPP), and Mr. Pennington (Canadian High Commissioner, based in Barbados) charter a CARIB flight to do fly-over assessments of the other islands (it was not possible to land). They flew over Montserrat first, then Nevis, and then St. Kitts. This assessment took about three hours.

-- Meanwhile in Barbados, Jim Baird charters a LIAT plane for himself, Carlos Castillo, John Carroll, Enzo Benzi, J.C. Barbosa, two other PAHO people, and all the communications equipment. The plane departs Bridgetown at 1200, and arrives in Antigua at 1345.

-- In Antigua, the headquarters for the disaster relief operations were already set up at PCDPPP. The Project office itself was a mess, half the roof was off, power was off, the stand-by generator was overloaded, standing water was everywhere, and the office was overcrowded.

-- Carlos and John install the two TCS-9000 terminals on the roof of the PCDPPP building.

-- At 1800, Paul calls OFDA and asks for a team from OFDA and a C-130 with 12 tents, 7 chain saws (that was as many chain saws as were available in the Panama stockpile), 12 water tanks, and as much plastic sheeting as possible. He also tells OFDA that he can't say if more will be needed later on.

-- Late in the evening, Carlos and John take down the TCS-9000s to prevent damage from the still heavy weather.

TUESDAY, SEPTEMBER 19
AM

-- TCS-9000 terminals reinstalled for outgoing traffic.

-- Paul Bell and John Carroll inspect the U.S. Embassy to see if it could be used as the OFDA base since PCDPPP was already overcrowded.

-- Jim Baird and Carlos Castillo charter a flight for Montserrat with Enzo Benzi, J.C. Barbosa, and Dr. Hospidales, an epidemiologist with PAHO. Jim and Carlos meet with Governor Christopher Turner and public utility officials, and visit the hospital, the power station, and other parts of Plymouth. Enzo and J.C. set up PAHO's TCS-9000 terminal in a half-destroyed hotel in Plymouth, thereby establishing a communications link for Montserrat with the outside world.

-- Paul and Alex work with Franklin and Jean Luc at PCDPPP to pull together data on damages on the affected islands.

PM

-- Paul meets with the Antiguan Foreign Minister twice, and with the Police Commissioner. He visits Holberton Hospital and goes to the airport to discuss offloading and forklift arrangements.

-- At 1805, the OFDA/Washington team, comprising Mike Harvey, Renee Bafalis, Kate Farnsworth, and Cindy Davis, arrives with a fax machine and a laptop computer.

-- At 1930, the team goes to the first PCDPPP daily coordinating meeting. While at the meeting, a CBS crew comes and interviews Paul Bell and films part of the meeting.

-- At 2030, the C-130 arrives from Panama with 140 rolls of plastic sheeting, 3 water bladders, 12 tents, and 7 chain saws. The crew overnight at the Halcyon Cove Hotel.

WEDNESDAY, SEPTEMBER 20
AM

-- The team assembles at 0700 for breakfast and a meeting on the day's activities and issues.

-- Jim Baird travels to St. Kitts with U.S. Charge from Antigua, Jim McHugh, to do an assessment.

-- Alejandro James travels to Dominica. U.S. Charge from Barbados and Larry Laird, agricultural officer from USAID/Bridgetown are due to join him first in Antigua. Instead, they had gone directly to Dominica.

-- Cindy and Mike begin organizing sitreps, etc. at the new OFDA base at the U.S. Embassy.

-- John moves the two TCS-9000 terminals from PCDPPP to the Embassy, giving team voice and fax capability. The first repeater is put up at the Embassy.

PM

-- The C-130 crew report to work at the airport to offload in the afternoon after a 12-hour rest. Kate, Renee, and Paul spend all day at the airport to assist in offloading the C-130. All cargo is offloaded except two pallets of plastic sheeting in anticipation of possible clearance to fly to Montserrat. However, the C-130 is grounded, awaiting clearance from the 21st Battalion to fly into Montserrat (it is not clear if the airstrip at Blackburne Airport is capable of handling a Hercules). A Royal Air Force C-130 is also on the tarmac awaiting clearance from Whitehall.

-- At 1630, the USAF crew decide to go airborne to check out the island and view the runway. The crew believe they receive clearance in mid-flight and proceed to land in Montserrat. It is the first relief flight to arrive on the island since the hurricane. Kate Farnsworth accompanies the cargo.

-- Upon landing, the plane is met by a representative of the Relief Coordinator's office. The cargo is registered and immediately removed to a storage area in the capital of Plymouth, located approximately 25 minutes from the airport. The road is steep, with many hairpin turns. CBS News is at the airport when the C-130 arrived and filmed some of the offloading.

-- At 1900, the team attends the PCDPPP donor coordination meeting.

-- Jay Carter (USAID/Kingston) and Richard Harrell (with the Lloyd Electric Company, currently completing electric power restoration in Jamaica) arrive to do a power assessment of the affected islands.

-- The C-130 crew are told they had not had clearance to land at Blackburne Airport in Montserrat.

-- Paul calls OFDA/Washington and asks for a C-141 or two more C-130s. He requests more plastic sheeting and water tanks.

THURSDAY, SEPTEMBER 21
AM

-- The team assembles at 0700 for a breakfast meeting.

-- Kate, Renee, and Carlos travel to Montserrat to meet with the Relief Coordinator, Public Works officials, and to demonstrate use of the plastic sheeting.

-- Jay Carter and Richard Harrell meet with Antigua Public Utilities Authority (APUA) officials.

-- Jim Baird suggests that Dean Moody, an engineer with USAID/Bridgetown, come to evaluate electricity needs. Decision yet to be made as to who will take responsibility for which islands in the area of power restoration.

-- The USG C-130 is still grounded, awaiting a decision from the Batallion as to whether flights to Montserrat could continue. The plane had been loaded with tents and blankets, part of the British Red Cross donation. By 0930, permission had been denied, and the cargo was offloaded. The RAF C-130 then begins making flights, and was given permission to stay at least several days.

-- Two light planes belonging to private citizens begin operations in support of the relief effort. One plane, a Cherokee, makes numerous runs from Antigua to Montserrat and to Nevis.

PM

-- Tom Frey from OFDA/Washington and Dean Moody from USAID/Bridgetown arrive.

-- Tom and Kate attend the donor coordination meeting at PCDPPP.

-- The team meets at 2030 for a debriefing of the day's activities and to discuss plans for the next day.

FRIDAY, SEPTEMBER 22
AM

-- The team assembles at 0700 for a meeting and breakfast.

-- Alejandro James goes to Nevis with six rolls of plastic sheeting and two chain saws.

-- Kate Farnsworth goes to St. Kitts with twelve rolls of plastic sheeting. She meets with the relief coordinator and visits the hospital. She finds 24 rolls of U.S. plastic sheeting already there.

-- Jay Carter, Dean Moody, and Richard Harrell also go to St. Kitts and meet with officials to discuss power restoration.

-- Carlos Castillo goes to Montserrat to deliver five chain saws and two water bladders.

-- A power surge at the Embassy destroys the laptop computer and one of the Embassy's printers.

PM

-- Carlos departs for Miami.

-- Dan Arlotti, Peace Corps volunteer, produces the first print-out of relief supplies distribution spreadsheet.

-- CARICOM sets up a CARICOM Disaster Relief Unit (CDRU) office at V.C. Bird Airport. This logistics center is headed by Commander Peter Brady of the Jamaica Defense Forces. Tom Frey presents plan to develop a consolidated needs listing.

-- Tom Frey attends the first CDRU daily operations meeting at 1800.

-- Tom Frey attends the PCDPPP meeting at 1900.

-- Raul Chavez, Metro Dade, arrives from Miami with additional equipment: two base stations, twelve more Saber hand-held radios, two additional base station antennas, and batteries.

-- Elson Harewood, an accountant from USAID/Bridgetown, arrives.

-- The team meets at 2030 for a debriefing of the day's activities.

SATURDAY, SEPTEMBER 23
AM

-- The team assembles at 0700 for a meeting.

-- Jay Carter, Dean Moody, and Richard Harrell travel again to St. Kitts for more thorough meetings with their counterparts.

-- A Texaco plane arrives with relief supplies for their personnel and others; the plane onloads some relief supplies at V.C. Bird to take to other affected islands. Tom and Cindy go to watch part of the onloading.

-- John Carroll and Mike Harvey go to Montserrat to set up a communications link in the Blackburne air traffic control tower. The OFDA base at the U.S. Embassy is now in contact with the Montserrat tower. This communications link is used frequently by others since the HF system already installed there is not working.

PM

-- The OFDA team issues five ICOM hand-held radios to the international logistics team at V.C. Bird Airport.

-- Jay Carter and Dean Moody return to Barbados to begin preparing documentation for the Lloyd Electric contract. Richard Harrell returns to Jamaica.

-- A second C-130 arrives with USG relief supplies: 128 rolls of plastic sheeting and 13 water tanks. Renee, Paul, Alejandro, and Tom are all present for the offloading.

-- Tom Frey and Cindy Davis attend the CDRU operations meeting at 1800.

-- Tom Frey and Cindy Davis attend the PCDPPP meeting at 1900.

-- The team meets at 2100 for a debriefing of the day's activities.

SUNDAY, SEPTEMBER 24
AM

-- The team assembles at 0700 for a meeting and breakfast.

-- Raul Chavez and John Carroll go to Montserrat to work on the communications set-up. Later they go to St. Kitts and Nevis to check for possible sites to set up base stations on those islands.

-- OFDA calls at 0930 to inform the team that a Venezuelan C-141 carrying relief supplies is due between 1000 and 1100. Paul Bell and Tom Frey handle the logistics for their arrival.

-- Mike and Alejandro go to Nevis to assess the distribution system.

-- Kate sets up an operations center room at the Embassy, with a wall calendar, personnel chart, and maps.

PM

-- The Venezuelan C-123 (not a C-141) arrives at 1230.

-- Renee, Cindy, and Elson drive around Antigua and find the water bladder set up by a school in Old Road. They assess the damage a week after the storm.

-- After discussions with CDRU Commander Brady, the Venezuelan C-123 offloads its medical supplies and departs for Venezuela.

-- Paul begins conversations with OFDA/W on the phase-out of the team and plans for the transition from emergency to rehabilitation assistance.

-- A third C-130 arrives from Panama carrying USG relief supplies: 108 rolls of plastic sheeting and 500 pairs of gloves. The supplies are combat-offloaded. The gloves are for Montserrat where a community clean-up campaign is being planned.

-- Tom Frey attends the CDRU operations meeting at 1800.

-- The team meets at 2030 to go over the day's activities.

MONDAY, SEPTEMBER 25
AM

-- The team assembles at 0700 for a meeting and breakfast.

-- Alejandro James and Renee Bafalis go to St. Kitts and Nevis to make arrangements for the lodging and transportation of Lloyd Electric crews.

PM

-- OFDA calls to discuss the power project contract. Two C-5As will be necessary to bring all the equipment and vehicles needed for the project.

-- A repeater arrives from Barbados.

-- A K-loader is needed to offload the RAF C-130. Renee Bafalis contacts Major Yarborough at the AFB in Antigua.

-- Bill Joslin, Mission Director, USAID/Kingston, arrives for discussions with the team and various island officials concerning the possibility of shipping excess zinc sheeting from Jamaica to the eastern Caribbean.

-- Tom Frey attends the CDRU operations meeting at 1800.

-- Tom Frey attends the PCDPPP meeting at 1900.

TUESDAY, SEPTEMBER 26
AM

-- The team assembles at 0700 for a meeting.

-- Aaron Williams, Mission Director, USAID/Bridgetown, and Tom Fallon, USAID/Bridgetown Controller, arrive to participate in discussions on the zinc roofing materials.

-- Kate Farnsworth and Renee Bafalis travel to Montserrat on the RAF to advance trip of Mission Directors and Paul Bell.

-- Tom Frey investigates the possibility of obtaining generators from Linde Enterprises, which has operations in Antigua. Linde does not have any available.

PM

-- Paul Bell, Aaron Williams, and Bill Joslin (USAID/Jamaica) arrive in Montserrat and meet with Governor Christopher Turner concerning the USAID donation of zinc sheeting to Montserrat.

-- Tom Frey attends the CDRU operations meeting at 1800.

-- The team meets with Aaron Williams, Bill Joslin, and Tom Fallon at 1900.

-- At 2210, Bobby Lloyd, president of Lloyd Electric, calls Paul Bell to inform the team that the entire crew would be arriving the next day. Paul requests that only a skeleton crew of five come, just enough to offload the first C-5A.

WEDNESDAY, SEPTEMBER 27

-- The team assembles at 0700 for a meeting.

-- John Carroll and Cindy Davis go to Montserrat on the RAF for to monitor the distribution of the plastic sheeting, check on the communications equipment, and assess the ability of the temporary jetty to receive that boatload of zinc sheeting.

-- Paul and Alejandro go to St. Kitts and Nevis to continue discussions on electric power restoration.

-- U.S. Charge d'Affaires in Barbados, John Clark, declares that a disaster exists in Dominica and donates his disaster assistance authority of $25,000 to be used to clear roads.

-- OFDA calls to confirm figures submitted by team on zinc sheeting deliveries.

-- OFDA calls to confirm that the zinc transport contract should be from Jamaica to each island dock, and will not include internal transport.

-- Tom Frey attends the CDRU operations meeting at 1800.

-- Tom Frey and Kate Farnsworth attend the PCDPPP meeting at 1900.

-- The team meets at 2030 for the day's debriefing.

THURSDAY, SEPTEMBER 28
AM

-- The team assembles at 0700 for a meeting.

-- The team begins preparations for the arrival of the C5-As, expected on or about Friday. OFDA is not able to confirm the ETA of the flights.

-- Several discussions are held with OFDA about the bundling of the zinc sheeting. Paul tells Barry Heyman (OFDA/LAC) that the bundling should be small so that a maximum of four people can handle it.

-- Barry Heyman informs the team that a Canadian C-130 is arriving today and will be available for one relief run, if needed. The team refers this to the CDRU.

-- Paul Bell and Kate Farnsworth go to Montserrat for discussions with the governor and Public Works on zinc sheeting.

PM

-- Alejandro, Raul, and John go to St. Kitts for to check on communications in preparation for the arrival of the Lloyd Electric crews.

-- Charlie Mathews, the MDRO at USAID/Kingston, reports that the zinc is now bundled in 410 bales, 145 sheets per bale, weighing 1.5 tons per bale. It will take one week to repackage. The final decision is made not to rebale. Montserrat has made arrangements to receive large cargo using a barge as a temporary wharf. Jamaica can therefore proceed immediately to prepare for shipping.

-- Additional radio equipment from Metro-Dade arrives.

-- USIS/Barbados phones and wants copies of sitreps and more information on OFDA activities. This request is referred to Renee Bafalis for action.

-- Cindy, stationed at the Embassy, is informed by Jim Baird at USAID/Barbados that McGill AFB called with the ETAs of two C-5As; both are due September 29, at 0700 and 1400. McGuill is concerned that landing clearance be granted at Golden Rock.

-- The Lloyd Electric advance team arrives. This team comprises Walter Shaw, Patrick Lambert, Kelly Evans, Dewey Defoe, and Ron Akins.

-- Plans are made to charter early morning flights to St. Kitts to in time to meet the C-5A.

-- OFDA cannot confirm arrival times.

-- CDRU Operations Center calls to say that five individuals from Partners of the Americas are in need of assistance. Tom Frey proceeds to the airport to assist.

-- Tom Frey attends the CDRU operations meeting at 1800.

FRIDAY, SEPTEMBER 29
AM

-- At 0530, Renee and Alejandro go to St. Kitts on the Cherokee.

-- At 0600, John Carroll, Raul Chavez, and Cindy Davis go to St. Kitts with radio equipment on the GDF Islander.

-- OFDA/W calls Paul Bell to confirm the 1530 arrival of the C5A (not 0700).

-- A press release is faxed to OFDA.

-- From 0930 until 1120, John and Raul work with Walter Shaw and Patrick Lambert (both part of Lloyd Electric's advance team) to set up the antenna on a SKANTEL radio tower. They and Cindy first proceed to the engineering office at Taylor's Ridge. After consultation with Roy Sutton and Richard Challinor of SKANTEL and Cable and Wireless, they then proceed to the tower on Bay Fords Hill. Gene Howell, Manager Engineer of SKANTEL, participates in the work. John, Raul, Patrick, and Walter receive substantial help from Jim Sharkey, on contract from Cable and Wireless from Manchester, England, and Charles "Spin" Chapman, a handyman/rigger with SKANTEL.

-- By 1120, the antenna is up and working.

-- Lloyd Electric tells the team that the C5A departed Atlanta at 1030. The crews will arrive in groups over next few days.

-- The C5A arrives at Golden Rock Airport on St. Kitts at 1400. It offloads by 1500. St. Kitts Prime Minister Kennedy A. Simmonds is in attendance as well as local news crews.

-- Tom Frey, Paul Bell, and Kate Farnsworth arrive at Golden Rock Airport on a LIAT flight at 1535. Paul Bell meets and talks to Prime Minister.

-- At 1540, the C5A turns on engine #1; at 1547, the plane begins taxiing. At 1558, the wheels are up; the C5A makes a sweep around the island as it lifts into the sky.

SATURDAY, SEPTEMBER 30
AM

-- From 1000 to 1230, the OFDA team conducts a debriefing and lessons learned session in the conference room at the Ocean Terrace Inn, St. Kitts. (See Appendix 5 for the report of this meeting.)

-- The Lloyd Electric crews arrive.

-- At 1245, Paul Bell is informed that the second C5A will arrive at 1345. Five minutes later he is told that the plane had already landed.

-- The team proceeds to Golden Rock Airport for offloading. The plane contains more vehicles and equipment for the power restoration project. Bobby Lloyd, President of Lloyd Electric, is on the plane.

-- Jesse Jackson arrives at Golden Rock Airport with Cecily Tyson; he is conducting an inspection tour of the region.

-- Alejandro James and Kate Farnsworth verify inventory of Lloyd's equipment.

-- Paul Bell returns to Antigua for onward travel to Costa Rica.

SUNDAY, OCTOBER 1
AM

-- From 0830 to 1030, Raul Chavez conducts a first-aid course for the Lloyd Electric employees.

PM

-- The team returns to Antigua at 1715.

-- Aaron Benjamin from AID/Washington housing office arrives. The team holds discussions with him concerning the zinc sheeting.

MONDAY, OCTOBER 2
AM

-- Raul Chavez returns to Miami.

-- Maureen Webber, USAID/Kingston housing officer, and Peter Bradford, USAID/Bridgetown housing officer, arrive.

-- The team meets with Aaron Benjamin and Maureen Webber. Kate introduces them to Charge d'Affaires and assists them in obtaining an appointment at PCDPPP. Peter Bradford spends the day at the Embassy with the OFDA team.

-- Alejandro, Tom, and Renee meet with the Antigua police commissioner to discuss the distribution of relief supplies.

PM

-- Kate, Alejandro, John, and Renee drive around Antigua in different directions to monitor the use of plastic sheeting and other USAID-donated relief material (water bladders). No plastic sheeting is in evidence except at Public Works. In general, the condition of the island is not critical. Work on power lines is proceeding slowly, but steadily. The team reports back to Charge who questions GOAB official in the evening. He is told plastic sheeting is also on the hospital and the hotel training school.

TUESDAY, OCTOBER 3
AM

-- Lloyd Electric crews start restoration work on St. Kitts.

-- Cindy Davis and John Carroll go to Montserrat to monitor the use of USAID plastic sheeting, water bladders, chain saws, gloves. Much of the OFDA plastic sheeting is on public buildings near Plymouth, but a substantial amount is also on individual homes.

-- Alejandro James spends the day in Nevis monitoring distribution of USAID plastic sheeting, chain saws, water bladders.

-- OFDA/W calls because of concern over a discrepancy in plastic sheeting figures. The team prepares a document showing the arrival and distribution of all emergency relief supplies. Tom Frey xeroxes manifests to take back to OFDA.

-- Charge d'Affaires requests that the team investigate with OFDA/W the possibility of assisting the GOAB to transport two digger trucks from Jamaica to Antigua for the power restoration crews. This request was faxed to OFDA/W.

-- The A.I.D. housing team travels to Montserrat to discuss zinc roofing.

-- Kate Farnsworth updates the Lotus spreadsheet at the airport.

-- Tom and Renee return to Washington.

-- Paul Bell returns from Costa Rica.

WEDNESDAY, OCTOBER 4

-- Paul Bell travels to St. Kitts to inspect the work of Lloyd Electric.

-- The A.I.D. housing team travels to St. Kitts.

-- The team begins preparation of the final report. A power surge at the Embassy destroys the documents.

-- OFDA/W indicates willingness to pay for the transport of the digger trucks from Jamaica to Antigua, one-way only.

-- The Charge relays a request from APUA concerning transport to the States of a broken rotor from the desalinization plant generator for urgently needed repairs. This is a surprise since APUA had informed the Embassy that there were no problems with the generators.

-- Metro-Dade calls in all radios on the repeater system. A base station is set up at the Embassy for better communications with St. Kitts and the Lloyd team.

THURSDAY, OCTOBER 5
AM

-- Paul Bell talks to OFDA/W about backhauling the rotor. OFDA/W approves action on a regular C5A channel flight; the C5A is due in to St. John's over the coming weekend. If the rotor is boxed and ready, it could be delivered to Dover AFB. Paul Bell talks to Bob Keesecker (OFDA Logistics Officer) and gives him the consignee's name and address. A draft DOD tasking cable is sent to the team.

PM

-- The radio equipment is packed and taken to BWIA for return to Miami.

-- USAID/Barbados faxes draft letter to Governor Turner of Montserrat concerning the provision of the zinc sheeting. Jim McHugh clears it and the fax is returned.

-- At 1845, Paul, Kate, and Cindy leave for Bridgetown.

FRIDAY, OCTOBER 6

-- At 0900, Paul, Cindy, and Kate attend a meeting at USAID/Bridgetown, headed by Mission Director Aaron Williams, on the rehabilitation phase of Hurricane Hugo.

-- In Barbados, Kate and Cindy work on the final report.

-- In Antigua, John Carroll repairs the U.S. Embassy's radio network: the base station at the Naval base, the base radio at the Charge's house, the remote at the security gate, and the remote for the Embassy net in the Charge's office.

-- Alex James works on information requests for Barry Heyman, tries to track down the plastic sheeting in Antigua, and works on the rotor problem.

-- At 2200, Paul, Kate, and Cindy return to St. John's.

SATURDAY, OCTOBER 7

-- At 0800, the team meets for breakfast and a meeting.

-- The team meets with Franklin McDonald to discuss a PCDPPP request to OFDA for $20,000 to pay for half the CDRU expenses.

SUNDAY, OCTOBER 8

-- John returns to Miami and Alex returns to Costa Rica.

-- The rotor gets on the C5A for Dover AFB.

-- Paul goes to Nevis to meet with Lloyd Electric crews and local officials and to see about the distribution of USG supplies.

-- Kate and Cindy return to Washington.

MONDAY, OCTOBER 9

-- Paul Bell stays in Antigua to check up on the distribution of relief supplies, discuss issues with Jim McHugh, meet with local officials, and make final payments.

TUESDAY, OCTOBER 10

-- Paul Bell goes to Montserrat to check on the plastic sheeting and discuss the zinc sheeting project with local officials.

WEDNESDAY, OCTOBER 11

-- Paul Bell stays in Antigua wrapping up loose ends.

-- The shipment of zinc sheeting departs Kingston on the *Nordic*.

THURSDAY, OCTOBER 12

-- Paul Bell returns to Costa Rica.

SUNDAY, OCTOBER 15

-- The *Nordic* arrives in Tortola and six bundles (10.32 short tons) of zinc sheeting are offloaded.

-- Lloyd Electric crews finish power restoration work on St. Kitts.

MONDAY, OCTOBER 16

-- The Lloyd Electric crews working on St. Kitts leave for Nevis to begin power restoration on that island.

TUESDAY, OCTOBER 17

-- The *Nordic* arrives in St. Kitts and offloads 30 bundles (51.6 short tons) of zinc sheeting.

WEDNESDAY, OCTOBER 18

-- The *Nordic* offloads 43 bundles (73.96 short tons) of zinc sheeting in Nevis.

THURSDAY, OCTOBER 19

-- The *Nordic* offloads 30 bundles (51.6 short tons) of zinc sheeting in Antigua.

-- Lloyd Electric formulates a basic work plan to restore power on Nevis.

FRIDAY, OCTOBER 20

-- The *Nordic* offloads 233 bundles (400.76 short tons) of zinc sheeting in Montserrat.

SATURDAY, OCTOBER 21

-- Alex James returns to Antigua; he meets with Franklin McDonald and Jean Luc Poncelet.

SUNDAY, OCTOBER 22

-- Alex James flies to St. Kitts to meet with Ray John to talk about the zinc sheeting. Alex verifies the arrival of the zinc in St. Kitts. He also checks up on the power project.

-- Alex James calls Wendell Huggins in Nevis and has a long discussion about the zinc. Wendell Huggins says that Nevis would like some plywood.

MONDAY, OCTOBER 23

-- At 0600, Alex James flies to Montserrat. He meets with Florence Daley, Reuben Meade, and F. V. Michael.

-- Alex verifies that the zinc had arrived on Friday and then witnesses its offloading at the Plymouth pier.

-- Alex returns to Antigua at 1700.

TUESDAY, OCTOBER 24, 1989

-- Alex James leaves Antigua for Washington to attend the Hurricane Hugo Workshop.

-- Paul Bell leaves Costa Rica for Washington.

-- Carlos Castillo, John Carroll, and Raul Chavez leave Miami for Washington.

WEDNESDAY, OCTOBER 25

-- All members of the team plus OFDA and some PAHO staff attend the Hurricane Hugo Workshop. This workshop is sponsored by OFDA and takes place at PAHO/Washington from 0900 until 1600. It was organized by Tom Frey and Bob Mutch (from the U.S. Forest Service RSSA agreement with OFDA) and facilitated by Jerry Williams, under contract with the USFS.

-- The workshop generated some disagreement (several OFDA/Washington staff felt that procedures had not been followed), but most agreed that the USG disaster response to Hugo was generally appropriate and good.

TUESDAY, NOVEMBER 14

-- Electricity is restored to Nevis by Lloyd Electric work.

FRIDAY, NOVEMBER 17

-- The Lloyd Electric crews conclude their work on Nevis and move on to Montserrat.

SATURDAY, NOVEMBER 18

-- Lloyd Electric crews begin work on Montserrat.

SUNDAY, DECEMBER 3

-- Alex James returns to Antigua.

MONDAY, DECEMBER 4

-- Alex James meets with Jim McHugh concerning the distribution of the zinc sheeting.

TUESDAY, DECEMBER 5

-- Alex James goes to Montserrat to discuss the distribution of the zinc sheeting and to pick up the five radios distributed to government officials.

WEDNESDAY, DECEMBER 6

-- Alex James goes to St. Kitts to pull down the repeater and discuss the distribution of the zinc sheeting.

THURSDAY, DECEMBER 7

-- Alex James leaves Antigua to return to Costa Rica. He stops off in Miami to return the repeater to Metro Dade.

TUESDAY, JANUARY 9

-- Lloyd Electric crews conclude work on Montserrat under the USAID/OFDA contract. The company continued work on Montserrat under a contract with Montserrat Electric Services Ltd. (MONLEC).

THURSDAY, FEBRUARY 8

-- Lloyd Electric submits a final report on its power restoration project and conducts a debriefing of the project at USAID/Bridgetown for USAID and OFDA personnel.

FRIDAY, FEBRUARY 16

-- Lloyd Electric contract with MONLEC concludes.

APPENDIX 3

USG RELIEF SUPPLIES FOR HURRICANE HUGO

1. USG Supplies on the C-130s

First flight: Arrived 9/19	140 rolls of plastic sheeting 3 water tanks 7 chain saws
Second flight: Arrived 9/23	128 rolls of plastic sheeting 13 water tanks
Third flight: Arrived 9/24	108 rolls of plastic sheeting 500 pairs of gloves
TOTAL	376 rolls of plastic sheeting 16 water tanks 7 chain saws 500 pairs of gloves

2. Distribution of USG Relief Supplies by Island

Distribution of USG Assistance

COMMODITY/COUNTRY	MONTSERRAT	ST. KITTS	NEVIS	ANTIGUA	TORTOLA	TOTAL
Plastic Sheeting	268 rolls	36 rolls	14 rolls	31 rolls	27 rolls	376 rolls
Chain Saws	5		2			7
Water Tanks	2	1	4	9		16
Work Gloves	500 pairs					500 pairs
Zinc Sheeting*	400.76 tons	51.6 tons	73.96 tons	51.6 tons	10.32 tons	588.24 tons

* Included appropriate roof capping, tie-down straps, zinc nails, and washers.

3. Distribution of Plastic Sheeting by Island and Flight

	Montserrat	St. Kitts	Nevis	Antigua	Tortola
First	72	36	14	18	0
Second	128	0	0	0	0
Third	68	0	0	13	27
TOTAL	268	36	14	31	27
	71%	10%	4%	8%	7%

APPENDIX 4

COST OF THE USG RELIEF AND REHABILITATION EFFORT

1. RELIEF SUPPLIES AND TRANSPORT

376 rolls of plastic (at $289.80 per roll): $108,965
16 3,000-gallon water tanks (at $2,400 per tank): $38,400
500 pairs of work gloves (at $3.00 per pair) $1,500
7 chain saw kits (at $257 per kit) $1,799
TOTAL $150,664

Transport for the above supplies from Panama to
Antigua (3 C-130s) $47,800

TOTAL $198,464

2. OFDA RESPONSE TEAM AND SUPPORT COSTS

Per diem and transport costs for Kate Farnsworth, Tom Frey,
and Cindy Davis $10,525

Per diem and transport costs for Michael Harvey and
Renee Bafalis $6,462

(Per diem and transport costs for Paul Bell, Alejandro James, Carlos Castillo, John Carroll, and Raul Chavez came out of their respective contracts and are not separately available.)

Air charter from Barbados to Antigua for Carlos Castillo, John Carroll,
Jim Baird, PAHO personnel, and communications equipment . . . $332

Ambassador's authority for Antigua declaration for
team support $17,815

3 cases of meals-ready-to-eat (MREs) (at $24 per case) $72

10 individual support kits (at $150 per kit) $1,500

12 tents (at $420 per tent) $5,040

Transport of extra batteries and cases from Miami to Antigua $516

Grant to PCDPPP to help pay for the costs of the CDRU $20,000

TOTAL $62,262

3. REHABILITATION PROJECT COSTS FOR LEEWARD ISLANDS

Per diem and transport costs for Jay Carter and Richard Harrell
to do power assessments $4,000

Transport of Lloyd Electric equipment and vehicles on 2 DOD C5As $150,000

Contract with Lloyd Electric to restore power on St. Kitts and Nevis $1,589,202

Shipping and handling costs of the 588 tons of zinc sheeting from Jamaica to Tortola, St. Kitts, Nevis, Antigua, and Montserrat . . $84,000

Transport cost of a rotor from Antigua to Dover AFB on a DOD C5A (at the request of the Government of Antigua and Barbuda) . . . $2,100

TOTAL $1,829,302

4. **REHABILITATION PROJECTS FOR DOMINICA**

Ambassador's authority given to the Government of Dominica for clearing roads $25,000

Bilateral grant to the Government of Dominica for rehabilitation of bananas and fisheries and for road clearance $2,600,000

TOTAL $2,625,000

5. **TOTAL FUNDS BY FISCAL YEAR**

FY 1989 . . . . . $1,902,166
FY 1990 . . . . . $2,812,862
TOTAL $4,715,028

6. **FUNDS BY SOURCE**

Most funds were from OFDA, either from its regular International Disaster Assistance Account (IDA account) or from "borrowed" funds. A.I.D.'s Bureau for Latin America and the Caribbean (AID/LAC) reimbursed OFDA $1,800,000 in January 1990 and is planning to reimburse OFDA a further $1,400,00 (for a total of $3,200,000) for part of the power restoration project and the rehabilitation of the agricultural sector in Dominica.

Currently, the funds come from the following sources:

FY 1989 IDA account $738,428
FY 1989 borrowed funds (reimbused by AID/LAC in FY90) . . $1,000,000
FY 1989 stockpile items $157,276
FY 1989 disaster travel operating expenses $6,462
FY 1990 IDA account $2,012,862
FY 1990 AID/LAC funds $800,000

TOTAL $4,715,028

APPENDIX 5

TEAM DEBRIEFING NOTES

The team held a debriefing and lessons learned session on Saturday, September 30 on St. Kitts. At Paul Bell's request, Tom Frey and Kate Farnsworth drew up an agenda and list of issues, and Tom Frey led the hour-and-a-half session. Below are the notes from that meeting.

OUTLINE

1. BRIEFINGS
   - -- Pre-departure
   - -- During assignment
   - -- At arrival
2. TEAM COMPOSITION
   - -- Size
   - -- Roles
3. SUPPORT SYSTEMS
   - -- AID/W
   - -- Communications
   - -- Equipment
   - -- Additional personnel
4. A.I.D. CONTRIBUTIONS
   - -- Timeliness
   - -- Appropriateness
5. IDEAS/SUGGESTIONS

NOTES FROM THE DEBRIEFING

1. Briefings

** No one on the team received a pre-departure briefing. Most team members were notified late in the day for a next day departure.

** Metro Dade was requested to bring only one TCS-9000. They took the initiative to bring complete communications set-up, which proved invaluable.

** OFDA/W team arrived in the evening of Sept. 19 and went straight to a briefing/meeting at PCDPPP. Excellent way to get a feeling for what was going on and who the players were. After that, Paul Bell briefed the team on USAID intervention.

** Daily debriefing during the mission was very useful. The debriefings included what happened during the day and a brief outline of the next day's activities. All team members are encouraged to contribute their ideas, take initiative, and help make decisions.

** RECOMMENDATION: Since people are ready to relax by dinnertime, it may be better to have the debriefings before dinner. To ensure that everyone is up to date, a special planner is needed, during large disasters especially.

2. Team Composition

** Good size; small group allowed more flexibility. Large group would have needed clearer definition of responsibilities.

** Roles: Important that team members be multi-faceted but this very characteristic requires that some ordering of a person's responsibilities be laid out at the beginning of the mission. Useful to rotate personnel on assignments that several can fill, but it is extremely important to be sure that the new person is thoroughly briefed.

** Recognize fatigue and do not be afraid to call for a time out.

** Need local inhabitant to help on errands (the team noted that Chris Oliver was useful in that capacity).

** It is useful to have a person who can act as coordinator/liaison with certain institutions and individuals.

3. Support Systems

** It was very useful to have had Paul Bell and Alex James on site early. AID/W should call the field as soon as a situation begins to attract attention in Washington.

** Communications were excellent, thanks to Metro Dade's foresight. Need communications equipment to be complete, not just in bits and pieces. Suggestions were made for pre-positioning communications equipment in the region: a Metro Dade package ready for OFDA deployment, for example. Hand-helds and repeaters are essential. Recognize that A.I.D. often has to supply other international organizations with communications.

** Other equipment such as generators might be pre-positioned also in Miami. Fax equipment is invaluable.

** Additional personnel: controller/financial assistance is imperative. It is important to have a petty cash source and authority for disbursement.

** The additional USG, but non-OFDA, personnel who worked on the disaster were sent or requested by the following people:

Paul Bell asked for Jim Baird
AID/W sent Jay Carter
Jay Carter brought Richard Harrell
OFDA sent the Venezuelans
Jim Baird requested Dean Moody
Bill Joslin was requested by Paul Bell
Aaron Williams and Tom Fallon were requested by Paul Bell

4. A.I.D. Contributions

** We didn't get anything we didn't ask for.

** We couldn't get 5-gallon water jugs.

** Other countries remarked on superior quality of U.S. plastic sheeting.

** OFDA should have gloves in women's sizes.

** We need metallic handshake plates and windshield stickers for cars.

** We need quality video equipment to feed film to networks.

** The contributions were timely; the pre-positioning of Paul Bell and Alex James was essential in this respect.

5. **Ideas and Recommendations**

** Get the Embassy to help with airport passes, etc.

** Have Metro Dade bring medical supplies for the team's health.

** Pre-position team support kits in Miami.

** Standardize pallet size and weights (is this reasonable?).

** Badges are needed for OFDA personnel (this could be in lieu of uniforms; the League delegates all had badges---this gave them an official look).

** OFDA could have an annual "field day" to explain the use of all OFDA emergency equipment and supplies.

** Metro Dade needs some training in OFDA/AID administrative procedures.

** Everyone should keep a daily log of actions and phone calls.

** In pre-hurricane assessments, check the Embassy facilities and limits of Embassy support for a disaster team.

** Plan a disaster secretarial package, especially if it is a large disaster response.

** Don't assume team members will fill secretarial roles--make it clear beforehand or make arrangements specifically for secretarial help.

APPENDIX 6

CHART OF RELIEF SUPPLIES SENT BETWEEN 09/21/89 AND 10/05/89

Below is the cumulative dispatch listing of all relief supplies provided by all the donors. It was kept in a Lotus 1-2-3 chart at V.C. Bird Airport to track what supplies had been sent to which island. It is based on a larger chart, also kept in Lotus, which tracked the supplies by flight, island, and date and time delivered.

MONTSERRAT CUMULATIVE DISPATCH LISTING
LAST UPDATED: 10/05/89 (INFO.START DATE: 09/21/89)

HEALTH	TOTAL PERSONNEL	11
	TOTAL MEDICAL SUPPLIES	213
	WATER TABLETS	500,000
	TOTAL WATER TABLETS (BOXES)	5
	TOTAL DIAPERS (BOXES)	31
	MAXI PADS (BOXES)	1
SHELTER	TOTAL BLANKET (BAILS)	165
	TOTAL TENTS	104
	TOTAL PLASTIC (ROLLS)	766
	TOTAL PLASTIC (BOXES)	82
	TOTAL COTS	16
	TOTAL NAILS (BOXES)	16
	TOTAL NON-ZINC ROOFING	204
	TOTAL ZINC ROOFING	2,154
	TOTAL PLASTIC TARP	366
TOOLS/ SUPPLIES	TOTAL GENERATORS	83
	TOTAL CHAIN SAWS	21
	SPARE PARTS--GENERATORS (BOXES)	4
	TOTAL WATER CONTAINERS (BOXES)	131
	TOTAL WATER CARRIERS	7
	TOTAL CANDLES	20
	ROPE (ROLLS)	1
	WIRE (ROLLS)	128
	BLACK DROP WIRE (ROLLS)	79
	DROP WIRE	50
	FOUR-MAN CARPENTER SET	1
	ELECTRONIC EQUIPMENT (BOXES)	2
	AIR CONDITIONING UNIT	2
	ELECTRICAL WIRES AND LAMPS	1
	ELECTRICAL WIRE (REELS)	55
	HAMMERS	2
	TRANSMISSION WIRE (ROLLS)	2
	TRANSMISSION CABLE (ROLLS)	1

	CHAIN SAW BLADES	11
	BATTERIES	3
	D-GYNO FOR MACHINE	21
	MATCHES	2
	BENNETT GAS PUMP	1
	AIR COMPRESSORS	2
	FAIRBANKS SCALES (BOXES)	2
	RUCKSACK	1
	LAND ROVERS	2
	HOOD CARRIAGE	2
	PICK AXE HEAD	1
FOOD/ TOILETRIES	TOTAL CANNED MEATS	116
	TOTAL BANANAS (BOXES)	412
	TOTAL FOOD STUFFS	1,105
	BLEACH (BOXES)	5
	TOTAL TOILETRIES	401
	TORCHLIGHTS (BOXES)	21
	CANVAS	9
UTILITIES	ENGINE OIL (BOXES)	1
	OIL (BOXES)	2
	CHAIN OIL (BOXES)	6
	LUBRICATING OIL (BOXES)	14
OTHER	SHOES (BOXES)	1
	CLOTHES (BOXES)	175
	CLOTHES (BAGS)	20
	CLOTHES AND FOOD	98
	HAND GLOVES (BOXES)	1
	BABY STUFF (BOXES)	1
	SWIM SUITS	2
	PILLOWS (BALES)	1
	MATTRESSES	25
	COTTON SHEETS (ROLLS)	21
	SHEETS (BALES)	10
	RELIEF SUPPLIES	10
	MUGS (BOXES)	4
	COMMUNICATION KITS	7
	HF RADIO	1
	RADIO	1
	ANTENNA AND TRANSMISSION SET	2

****

ST. KITTS CUMULATIVE DISPATCH LISTING
LAST UPDATED: 10/05/89 (INFO.START DATE: 09/21/89)

HEALTH	CHLORINE (DRUMS)	1
	WATER TABLETS (PACKS)	5
	WATER PUR. TABS (PACKS)	5
	SALINE SOLUTION	15
	COMFORT KITS	85
	MEDICAL SUPPLIES	1
PERSONNEL	TOTAL PERSONNEL	41
SHELTER	TOTAL BLANKET (BAILS)	94
	TOTAL PLASTIC (ROLLS)	68
	WOVEN PLASTIC MATERIAL (BOXES)	36
	PLASTIC COVERING (ROLLS)	5
	BLACK PLASTIC TARP	75
	TOTAL SHEETS (BAILS)	38
SUPPLIES	WATER CONTAINERS	2
	WATER CONTAINERS (BOXES)	0.5
	CANDLES (BOXES)	6
	SAFETY EQUIPMENT (BOXES)	2
	PORTABLE WATER CARRIERS	1
	ROLL DROP WIRE	1
EQUIPMENT	GENERATORS	3
	WATER TANKS	1
	ANTENNA	2
FOOD	TOTAL FOOD STUFFS	151
	BANANAS (BOXES)	30
UTILITIES	CHAIN SAW OIL (BOXES)	4
OTHER	USAID PERSONNEL	2

****

NEVIS CUMULATIVE DISPATCH LISTING
LAST UPDATED: 10/05/89 (INFO.START DATE: 09/21/89)

HEALTH	MEDICAL SUPPLIES (BOXES)	27
	SALINE SOLUTION (BOXES)	24
	SOAP POWDER (BOXES)	1
	PLASTIC RED CROSS BAGS (BOXES)	1
	WATER TABLETS (BOXES)	3
	RED CROSS PERSONNEL	2

SHELTER	TOTAL PLASTIC (ROLLS)	19
	BLACK PLASTIC TARP	125
	TOTAL BLANKET (BALES)	11
	BEDSHEETS (BALES)	6
TOOLS/ SUPPLIES	WATER BOTTLES (BOXES)	3
EQUIPMENT	TOTAL GENERATORS	7
	NAILS (BOXES)	5
	WATER TANKS	4
FOOD	TOTAL FOOD STUFFS	302
	BANANAS (BOXES)	1

****

ANTIGUA CUMULATIVE DISPATCH LISTING
LAST UPDATED: 10/05/89 (INFO.START DATE: 09/21/89)

HEALTH	WATER TABLETS (BOXES)	1
	DIAPERS (CASES)	9
	RINGER'S LACTATE (BOTTLES)	13
	SALINE SOLUTION (BOTTLES)	51
	MEDICAL SUPPLIES (PIECES)	9
SHELTER	TOTAL PLASTIC (ROLLS)	70
	TOTAL BLANKETS (BALES)	25
	TOTAL BLANKETS (PACKETS)	233
	TENTS	3
SUPPLIES	WATER CONTAINERS (BOXES)	20
	WATER TANKS	3
	GENERATORS	1
FOOD	TOTAL FOOD STUFFS (BOXES)	71
	DRINKING WATER (BOXES)	30
	HONEY (GALLONS)	6
OTHER	CLOTHING	48
	TOTAL COMFORT KITS (BOXES)	174

****

BVI CUMULATIVE DISPATCH LISTING
LAST UPDATED: 10/05/89 (INFO.START DATE: 09/21/89)

PURIFICATION TABLETS (BOXES)	2
TOTAL PLASTIC (ROLLS)	55
TOTAL BLANKETS (BALES)	27
PLASTIC TARP (BOXES)	27
WATER BOTTLES (BOXES)	100
C-RATIONS	165

****

APPENDIX 7

DONATIONS FROM THE INTERNATIONAL COMMUNITY

Assistance Provided by U.S. Private Voluntary Agencies

Adventist Development and Relief Agency (ADRA) - worked on Guadeloupe, St. Croix, Antigua, Montserrat, St. Vincent, St. Lucia, Martinique, St. Ktts-Nevis, and Dominica. ADRA sent 150 tents, blankets, water purification tablets, plastic sheeting, powdered milk, medical supplies, food, and $150,000 to affected islands.

Allied Universal - donated chlorine through the Chlorine Institute.

American Airlines - provided transportation of ADRA supplies on September 21.

American Red Cross (ARC) - sent a delegate and a communications specialist to assist the LRCS delegate in Antigua, and loaned telecommunications equipment worth $20,000; one representative traveled to Montserrat and the other to St. Kitts, where they established satellite communication links. The ARC also sent 10,000 comfort kits, worth $24,500. Total ARC assistance to the eastern Caribbean emergency, as of Sept. 28, was $52,000.

AmeriCares - donated water pumps, medical supplies, and plastic sheeting

Catholic Relief Services - donated $10,000 to Caritas/Antilles for the local purchase of food, cooking utensils, and other supplies for Antigua and Dominica.

Chlorine Institute - coordinated the donation of over 90 tons of chlorine provided by its member companies to the Pan American Development Foundation for the affected Caribbean islands.

Christian Children's Fund (CCF) - has field offices on Montserrat, Antigua-Barbuda, Dominica, St. Vincent, Anguilla, and St. Kitts-Nevis, and appealed for food, water purification tablets, medical supplies, and building supplies. CCF will also assist with long-term reconstruction.

Church World Service (CWS) - donated $5,000 to the Caribbean Conference of Churches for relief activities on the affected islands, and appealed to its constituency for $100,000.

Four Seasons Hotel - contributed 9 MT of food and other goods, including chain-saws, hammers, nails, clothing, generators, and power tools to Nevis. The commodities arrived on September 24.

Intertran - donated its services in emergency supplies preparation and delivery to the Texaco-chartered 707 in Miami.

Jones Chemicals - donated chlorine through the Chlorine Institute.

Northwest Medical Teams - sent medical supplies, water purification tablets, food and blankets to Antigua to be forwarded to St. Kitts. The value of the donation was approximately $75,000.

Oxfam - provided assistance on Montserrat, Dominica, and St. Kitts-Nevis. It donated $20,000 to an indigenous NGO coalition for an agricultural fund and coordinated assistance from the Boston area.

Pan American Development Foundation (PADF) - provided first aid items, blankets, tools, generators, electrical supplies, shovels, blankets, tents, and plastic sheeting worth $68,000. PADF worked with several U.S. companies in providing assistance after Hurricane Hugo. It also provided $25,000 for self-help rehabilitation of houses on Nevis and Montserrat.

PB & S Chemical Co. - donated chlorine through the Chlorine Institute.

Pittsburgh Plate Glass - donated chlorine through the Chlorine Institute.

Stanley Works - donated hand tools and reconstruction equipment to St. Kitts, Nevis, and Antigua.

Texaco - sent a relief flight to Antigua on Sept. 23, carrying supplies donated by Texaco and U.S. Red Cross chapters. After unloading supplies for Texaco employees at Antigua, the plane carried relief goods to St. Kitts.

The following U.S. Voluntary Organizations also provided assistance to various Caribbean islands: American Friends Service Committee, Direct Relief International, Lutheran World Relief, Operation USA, Partners of the Americas, Presiding Bishop's Fund for World Relief, Salvation Army World Service, Save the Children, and World Relief.

Assistance Provided by the International Community

International Organizations

EC - funded a Sept. 20 British Red Cross airlift (see *U.K. Red Cross*, below). The relief items were divided among the islands. In addition, the EC pledged $1,309,410 for Guadeloupe, and $1,050,000 for the cost of the airlift and aid for the following islands: Antigua, Dominica, St. Kitts/Nevis, Anguilla, British Virgin Islands, and Montserrat.

League of Red Cross Societies (LRCS) - provided $40,000 for Antigua and Dominica and received pledges of $313,000 from an appeal. A LRCS representative in Antigua coordinated INTELSAT communications in Antigua. LRCS organized a regional team, comprising volunteers from national chapters in Jamaica, Bahamas, and Trinidad/Tobago.

PAHO - provided $30,000 for relief efforts on St.Kitts-Nevis, Montserrat, and Antigua. PAHO stationed a ten-person team with a satellite telephone unit, valued at $20,000, two radio operators, one physician, and three cameramen in Montserrat. PAHO also sent water engineers to St. Kitts-Nevis and Montserrat, a representative to Dominica, and an environmental engineer to St. Kitts to assist the Ministry of Health. PAHO replaced the vaccines destroyed on Nevis.

Pan-Caribbean Disaster Preparedness and Prevention Project (PCDPPP) - coordinated assistance at its headquarters in Antigua.

UNDP - furnished $150,000 for the British Virgin Islands, Montserrat, St. Kitts-Nevis, and Dominica, divided equally among the islands.

UNDRO - provided $10,000 for Montserrat, $5,000 for Anguilla, $5,000 for the British Virgin Islands, and $30,000 for Antigua, St. Kitts-Nevis, and Dominica.

Governments

Barbados - sent 32 defense forces personnel to work with the CARICOM Disaster Releif Unit (CDRU).

Canada - donated $65,000 through PAHO for hospital repairs and emergency medical needs, and $275,000 through the LRCS. The LRCS funds were used to purchase and transport generators, blankets, rolls of plastic, water bottles, and water purification tablets. Canada also provided personnel and equipment to repair airports and water supplies.

Dominica - sent two doctors and two nurses to Montserrat.

France - France sent two DC-8s carrying 450 civil defense personnel and 50 tons of equipment to Guadeloupe on September 17.

Germany, Fed. Rep. - sent building supplies, twelve generators, batteries, and kitchen sets.

Guyana - dispatched defense forces personnel to work with the CARICOM Disaster Relief Unit (CDRU) and positioned a Sky Van in Antigua to assist with inter-island transportation.

Jamaica - sent members of the Jamaican Defence Forces to work with the CARICOM Disaster Relief Unit (CDRU). Jamaica also gave excess zinc roofing provided to the island after Hurricane Gilbert. A Jamaican Defense Forces plane provided inter-island personnel transport. The Jamaica Public Service Company (JPS) sent a 9-person team of their best linemen to Antigua on Sept. 30 to work with other power restoration crews for a month.

Trinidad/Tobago - provided defense forces personnel to work with the CARICOM Disaster Releif Unit (CDRU).

United Kingdom - sent two naval vessels: one to St. Kitts, and one to Montserrat. The U.K. sent an initial assessment team by helicopter to Montserrat. A British Airways flight arrived in Antigua on September 19, carrying 11.5 MT of supplies from the British Red Cross. The cargo comprised 154 tents, 640 rolls of plastic sheeting, 2,500 blankets, 1,000,000 water purification tablets, and antibiotics. A Royal Air Force crew and C-130 was dispatched from its base in Belize to provide inter-island transport. British emergency assistance to the region totaled $639,700. Rehabilitation assistance was valued at $2,238,950, and included financing power restoration teams from British Electricity Boards for Montserrat, and equipment and materials for restoring essential infrastructure.

United States - provided assistance valued at $4,715,028.

Venezuela - donated and transported medical supplies and deployed a 21-person defense force contingent to St. Kitts.

Non-Governmental Organizations

The following national societies of the Red Cross contributed to the relief effort:

Australia - $3,846
Austria - $5,988
Bahamas - two volunteers for the LRCS international team
Belgium - $10,805

Canada - a relief flight to Antigua on September 21 with $275,000 worth of the following goods: plastic sheeting, collapsible plastic water containers, 18,000 blankets, 18,000 cots, purification tablets, and twelve 6-kW generators. A representative assisted the regional delegate in preparing reports for donors.

Denmark - $13,750

Fed. Rep. of Germany - charter flight carrying hand tools, nails, generators, flashlights, batteries, and kerosene lanterns.

France - a team of 30 construction engineers and four radio technicians with high-frequency radio equipment went to Guadeloupe; some of the radio technicians went on to Martinique and Dominica. The French Red Cross also accepted disaster welfare requests for concerned family members.

Jamaica - two volunteers for the LRCS team

Japan - $9,790

Netherlands - $5,688

Norway - $14,084

St. Vincent and the Grenadines - a shipment of food, clothing, cooking gas, and blankets to Montserrat.

Trinidad and Tobago - two volunteers for the LRCS international team

United Kingdom - a relief flight carrying food, 460 rolls of plastic sheeting, 10 1,500-liter collapsible water tanks, 15,000 tropical blankets, 2,000,000 water purification tablets, and two delegates, arrived in Antigua on September 22. The British Red Cross delivered 4 MT of food to Antigua and designated 1 MT for Montserrat, 1.5 MT for St. Kitts, and 1.5 MT for Nevis.

Tear Fund/UK - donated $3,174 worth of relief supplies.

International Rescue Corps/UK - donated a team with communications equipment for Montserrat.

GRAND TOTAL **$11,633,213**