

Natural Hazard Research

**MASS MEDIA OPERATIONS IN A QUICK-ONSET
NATURAL DISASTER: HURRICANE DAVID IN
DOMINICA**

by

**Everett M. Rogers and Rahul Sood
Institute for Communication Research
Stanford University**

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SUMMARY

"Hurricane David in Dominica was a classic case of problems encountered in reporting a disaster," according to Richard Morin of The Miami Herald.

The purpose of this study is to describe mass media operations in a quick-onset natural disaster, in this case, Hurricane David's impact on the Caribbean island-nation of Dominica on August 29, 1979.

This case study is unusual in several respects. The hurricane destroyed the entire nation. Secondly, all conventional external communication channels in Dominica were destroyed. Lastly, the island-nation of Dominica is a relatively small system. Its small size simplified the investigation in many important ways, but it also complicated the research in the sense that gaining physical access to the disaster site and traveling within Dominica were very difficult.

The time frame for the present research study encompassed mainly the "survival" phase (the impact of the event) and the "remedial" phase (recuperation and short-term post-impact measures).

Data-gathering was conducted by means of (1) personal interviews and observations of the disaster, its impacted area, how the mass media covered the disaster, and the relief operations that were underway; (2) a content analysis of the media messages on Hurricane David in Dominica; and (3) personal experience and participation in this disaster.

Research was organized around six research questions:

#1. What is distinctive about mass media news-gathering operations in a disaster?

#2. What are the media personnel's relations with local civil authorities and relief officials in the disaster area?

#3. How do the different media cooperate in covering a disaster?

#4. What restraints and bottlenecks impede the optimum operation of mass media personnel in a disaster?

#5. How is the content of mass media coverage affected by mass media operations?

#6. What are the criteria by which the news value of a disaster is judged by the mass media; who in a media institution determines the news value of a disaster; and what items are considered newsworthy enough by the mass media to be included in their reports?

In addition to answering the six research questions that guided our study, we learned certain lessons about methods suited to study the media in a quick-onset disaster context. Among our main recommendations are:

(1) Mass communicators travelling to the disaster site should carry enough supplies for their personal consumption and for distribution to victims, work within the rules laid down by local authorities, orient themselves to the area prior to arriving, place the disaster victims' needs ahead of their own, report on the disaster in an ethical and compassionate manner, realize that there is substantial risk involved in newsgathering activities, attend to estimates provided by local authorities while determining the reliability and accuracy of these estimates, and recognize that media reports are often the only "complete" interpretation of the disaster available to both the media's audience and to local authorities.

(2) When a natural hazard has the potential to affect a large area, additional news teams should be assigned to the story; disaster prepared-

ness information should be regularly presented during normal conditions.

(3) Quick-response disaster researchers must plan maximally for the study, keep a complete travelling kit in readiness, and be extremely resourceful in assessing the disaster site as soon as possible.

(4) Communication infrastructure should be widely dispersed in any given area, backup emergency equipment should be kept handy, and ham operators and media personnel should be given due recognition by local authorities.

TABLE OF CONTENTS

List of Tables	viii
List of Figures	viii
Preface	ix
Acknowledgements	x
Introduction	1
Chronology of Hurricane David	4
Cast of Characters	13
Hurricane David's Impact on Dominica	14
Mass Media Activities in Dominica	23
Distinctive Aspects of Newsgathering Operations	43
Mass Media Relations with Authorities	51
Cooperation Among the Mass Media	53
Restraints on Mass Media Operations	57
Content of Disaster Coverage by the Mass Media	64
The Mass Media's News Value and Newsworthiness Criteria	76
Methods for Quick-Response Field Research on Disasters	82
Recommendations	85
Appendix A	
Chronology of Relief at Melville-Hall Airport	
Appendix B	
Relief Chronology: Relief and Reconstruction Activities	
Appendix C	
Chronology: Forming Communication Links After Hurricane David	

LIST OF TABLES

TABLE

1	Mass Media Availability in Dominica (under normal circumstances)	23
2	Changes in Death Estimates from Hurricane David in Dominica	65
3	U.S. Network Coverage of Hurricane David	68

LIST OF FIGURES

FIGURE

1	Path of Hurricane David August 28, 1979 to September 3, 1979	7
2	Hurricane David in the Caribbean Wednesday, August 29, over Dominica	10

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INTRODUCTION

The purpose of this report is to describe mass media operations in a quick-onset, natural disaster--the destruction on the Caribbean island-nation of Dominica by Hurricane David in late August, 1979.

The research reported here is unusual in several important respects. Our work was funded as "a quick-response investigation of hazardous events" by the Natural Hazards Research and Applications Information Center in the Institute of Behavioral Science at the University of Colorado; we had received this support in late 1978 so that when the next major disaster occurred, we could proceed immediately to the site to begin our data gathering. Disasters seldom occur with much advance warning, so it was essential that we be prepared to conduct our study before the disaster happened. Dr. Gilbert F. White and Susan Tubbesing of the University of Colorado had faith in the type of inquiry that we proposed to conduct. Funding for their research program came from the National Science Foundation.

For almost a year, we sought to identify a disaster in Central America or the Caribbean* that met our basic criteria: important enough to be a major event in the mass media and within the range of our budgeted travel funds. We knew that the peak season for hurricanes in the Caribbean area was around September, especially for the so-called "Cape Verde hurricanes" that originate off the coast of Africa and are especial-

* We were also funded through the National Academy of Sciences' Committee on Disasters and the Mass Media to investigate a quick-onset disaster in the U.S. On January 7-9, 1980, we studied mass media operations in the snow storm which affected Seattle and other parts of the Northwest United States.

ly dangerous. We had arranged with Mike Mogil of the National Weather Service in Washington, D.C. to telephone us when a disaster meeting our two criteria was expected.

At 8:30 a.m. (California time) on Tuesday, August 28, Mogil called Rahul Sood to ask, "Why aren't you guys in Barbados?" Hurricane David had been born on the previous Friday, August 24, off the coast of Africa near the Canary Islands. Then it was just a "tropical depression," with winds of less than 39 miles per hour. However, on the 28th it became apparent to Rogers that Hurricane David was probably the disaster that we should investigate. Hurricane David had not yet become a killer, but it seemed that a hurricane of such force would soon cause loss of life and property damage.* At that time, the hurricane was predicted to hit Barbados, the furthestmost east of the Windward Islands, that Tuesday evening.

That evening, we learned from television news broadcasts and the AP wire that Hurricane David had missed Barbados. Instead, the hurricane veered north, heading toward Martinique. The next morning, Wednesday, August 29, television news programs stated that Martinique would be hit. On Thursday midafternoon, Rogers learned from a television news bulletin of heavy property damage and at least one death in Dominica. Our decision to travel to Dominica was settled. By the following morning (Friday), we were in Miami; by that midafternoon in San Juan, Puerto Rico; and by that

*This occurred the following day in Dominica; Hurricane David was eventually to claim more than 1,000 lives in Dominica, Puerto Rico, the Dominican Republic, Haiti, and the Eastern Seaboard of the United States.

evening in Martinique. Early the next morning, Saturday, September 1, we arrived on LIAT Flight 300 at Melville-Hall Airport in Dominica.

Thus began our investigation of Hurricane David in Dominica, a research that was organized around the following six research question:

- (1) What is distinctive about mass media news-gathering operations in a disaster? For example, many disasters destroy telephone lines; how do the media operate under these conditions?
- (2) What are the media's relations with local civil authorities in the disaster area, with relief officials, etc.? What tensions are created, and how are they handled?
- (3) How do different media cooperate in covering a disaster (as in newspooling)?
- (4) What restraints and bottlenecks impede the optimum operation of the mass media, in a disaster context?
- (5) How is the content of mass media coverage affected by mass media operations?
- (6) What are the criteria by which the news value of a disaster is judged by the mass media (for example, the number of deaths, amount of property damage, whether the affected are children or minorities, whether the disaster occurs in the U.S.), who in a media institution determines the news value of a disaster, and what items are considered newsworthy enough by the mass media to be included in their reports?

Answers to these six research questions were obtained by (1) personal interviews and observations of the disaster, its impacted area, how the mass media covered the disaster, and the relief operations that were underway; (2) content analysis of the media messages on Hurricane David in Dominica; and (3) personal experience and participation in this disaster. Our method is unusual for communication research, but we feel it was the most appropriate for the research problem that we addressed.

We cannot claim that Hurricane David in Dominica is entirely typical. Dominica is a Third World island-nation, a relatively small system that was almost totally impacted by the disaster. The uniqueness

of the present case is both an advantage and a disadvantage for our purposes; it simplified our investigation in many important ways, but it also complicated our research in the sense that gaining physical access to the disaster site, and traveling within Dominica, were very difficult.

Unless otherwise stated in this report, Tuesday refers to August 28, 1979; Wednesday to August 29; Thursday to August 30; Friday to August 31; Saturday to September 1; Sunday to September 2; and Monday to September 3.

Finally, the relative dearth of references to relevant literature in this report points to the fact that our subject matter has been studied only minimally by scholars in the past.

CHRONOLOGY OF HURRICANE DAVID^{*}

August 15 to 21

Over the parched Sahara Desert, daily temperatures of 95 to 100 degrees send dry heat billowing off the sands into the atmosphere. At high altitudes, huge sheets of hot desert air collide with moist bands of cooler air from densely foliated regions of Africa. The result is turbulence. At about 10,000 feet, an easterly jet current propels oscillating pressure waves towards Africa's western coast. Each new wave journeys five to six days before leaving the continent.

August 22 (Wednesday)

Scientists at a government weather station in Dakar, Senegal launch a small weather balloon into a wide trough of low pressure which is

*The source of much of the following account in this section is the bulletins issued by the National Hurricane Center, Coral Gables, Florida, and an article in The Miami Herald's September 9, 1979 edition, "Ten Days of Wrath."

pushing off the African west coast past the Cape Verde Islands in the Atlantic Ocean. At the time, nobody at the weather station is alarmed. After all, this trough is the 31st to blow off the Sahara Desert in 1979. Only one in ten is likely to grow into a tropical storm.

August 25 (Saturday)

Still nameless, a gestating Hurricane David becomes a "tropical depression." The National Weather Service (NWS) issues a tropical depression advisory, the first of a long series, locating the depression about midway between Africa and the Lesser Antilles, or about 1,600 miles east of the Windward Islands in the Caribbean. Highest sustained winds are about 35 mph, moving west at about 20 mph. NWS states, "Conditions appear favorable for the depression to reach tropical storm strength within the next 24 hours."

August 26 (Sunday)

Nourished by the warm vapors from tropical waters, the depression becomes the season's fourth tropical storm, with sustained winds of 45 mph, and is named "David." The NWS locates the storm at latitude 11.7°N and longitude 45.5°W, or about 1,000 miles east of the easternmost islands of the Lesser Antilles. Forecasters confidently predict hurricane status will come soon.

August 27 (Monday)

The forecasters are correct. The NWS 6 a.m. report states that David has developed an eye and has maximum sustained winds of 75 mph. It is officially a hurricane. Gale force winds extend 125 miles north and 50 miles south of the center. It is located about 700 miles east of the Lesser Antilles, and moving west at 15 mph.

By noon EDT, with David 600 miles east of Barbados, the government of Barbados issues a Hurricane Watch* for that island.

The NWS's 6 p.m. advisory calls David "an extremely dangerous hurricane and the most intense to threaten the Lesser Antilles since Hurricane Donna in 1960."

By late evening, hurricane watches have been extended to Grenada and its dependencies and to Tobago. Highest sustained winds have increased dramatically to 125 mph. Hurricane David's location is 400 miles east of Barbadoes at 10:30 p.m. EDT.

David is expected to pass quite close to Barbados late Tuesday, and through the remainder of the Central Windward Islands early Wednesday.

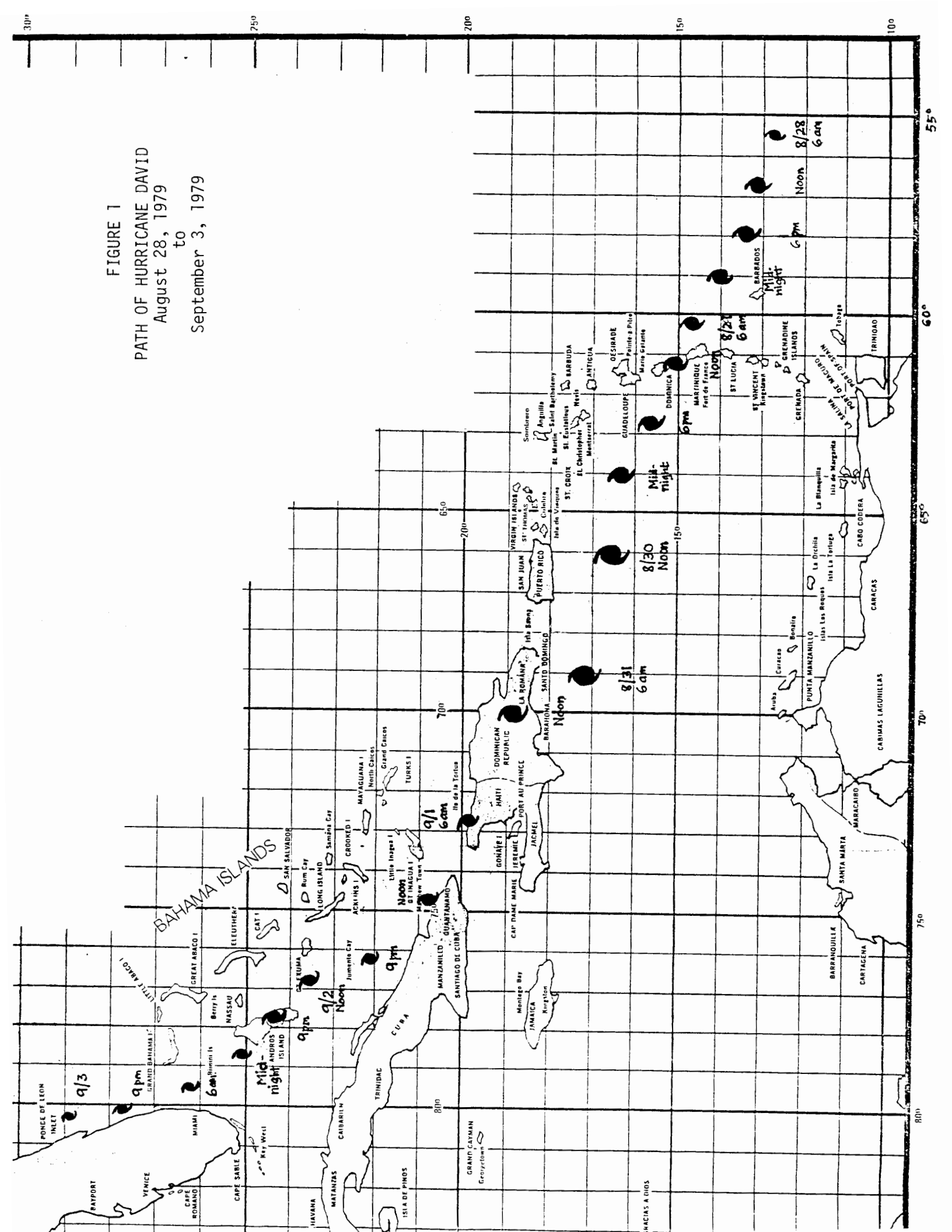
August 28 (Tuesday)

"This is the strongest storm to threaten this group of islands in this century," declares Neil Frank, of the National Hurricane Center in Coral Gables, Florida, "I fear it's going to be a real disaster."

At 9:00 a.m. EDT, David's location is 13°N, 56°W, or about 250 miles east of Barbados (Figure 1). The hurricane is on a direct course to skirt the northern coast of Barbados, population 250,000, and is expected to pass the island Tuesday night. It is expected to continue through the Central and Northern Windward Islands early Wednesday.

* A Hurricane Watch is an announcement for a specific area that a hurricane or hurricane condition poses a threat to coastal and inland communities. All people in the indicated area should take stock of their preparedness requirements, keep abreast of the latest advisories and bulletins, and be ready for quick action in case a warning is issued.

FIGURE 1
PATH OF HURRICANE DAVID
 August 28, 1979
 to
 September 3, 1979



Hurricane warnings* have been issued by the governments of Barbados, St. Vincent, Martinique, and St. Lucia; there is a hurricane watch for Tobago.

At 3 p.m. EDT, Dominica issues a hurricane watch.

By 6 p.m. EDT, hurricane warnings are also in effect for Guadeloupe and Dominica.

U.S. Air Force reconnaissance planes send information to the National Hurricane Center in Coral Gables, reporting that highest sustained winds have increased since yesterday to 150 mph, with gale force winds now extending 150 miles to the north and 100 miles to the south. David is moving in a direction slightly north of due west at a speed of 15 mph.

At 9 p.m., the storm mysteriously shows signs of weakening. Winds drop to 140 mph and pressure at the center increases from 942 to 954 millibars.

August 29 (Wednesday)

Shortly after midnight, David cuts neatly to the north of Barbados, lashing the island's northern coast with 75 mph winds. There are no reports of heavy damage or loss of life.

By early morning, David hits Martinique. Hurricane warnings continue in effect for the islands of Martinique, Dominica, and Guadeloupe,

* A Hurricane Warning is a warning that one or more of the following dangerous effects of a hurricane are expected in specified coastal areas within twenty-four hours or less: (a) Hurricane force winds (74 mph or higher); (b) Dangerously high water, or a combination of high water and exceptionally high waves, even though winds may be of less than hurricane force.

but are discontinued for St. Lucia, Barbados, St. Vincent, and the Grenadines.

By late morning, David strikes Dominica (Figure 2). Winds reach 140 mph. Trees fly through the air, rooftops are torn off homes. Relative peace returns only at 6 p.m.

Neither Martinique nor Dominica is ready to count casualties. Martinique officials eventually figure that David injured 15 people, wiped out the homes of 500 more, sunk 80 boats at Case Pilote, and badly damaged agricultural fields in the northern part of the nation.

But it is in Dominica that David becomes a killer. The final toll is put at 56 dead. Three out of four islanders are homeless. It will take at least a year for the economy to recover. For details on David's impact in Dominica, see our later section on "Hurricane David's Impact on Dominica."

After raking Dominica, the hurricane enters the Caribbean Sea by threading the Martinique Passage. Already, heavy rains and gusts up to 50 mph are throttling the Virgin Islands and Puerto Rico, next in Hurricane David's path.

August 30 (Thursday)

The U.S. Air Force and the National Oceanic and Atmospheric Administration start sending "hurricane hunter" airplanes from Miami into the gut of the storm, transmitting observations back to a computer at the National Hurricane Center in Coral Gables by radio.

David's eye is now 25 miles across (it was only 10 miles wide the day before), and winds are a deafening 150 miles per hour. Storm tentacles extend from Puerto Rico southwards nearly 500 miles to the Venezuelan coast.

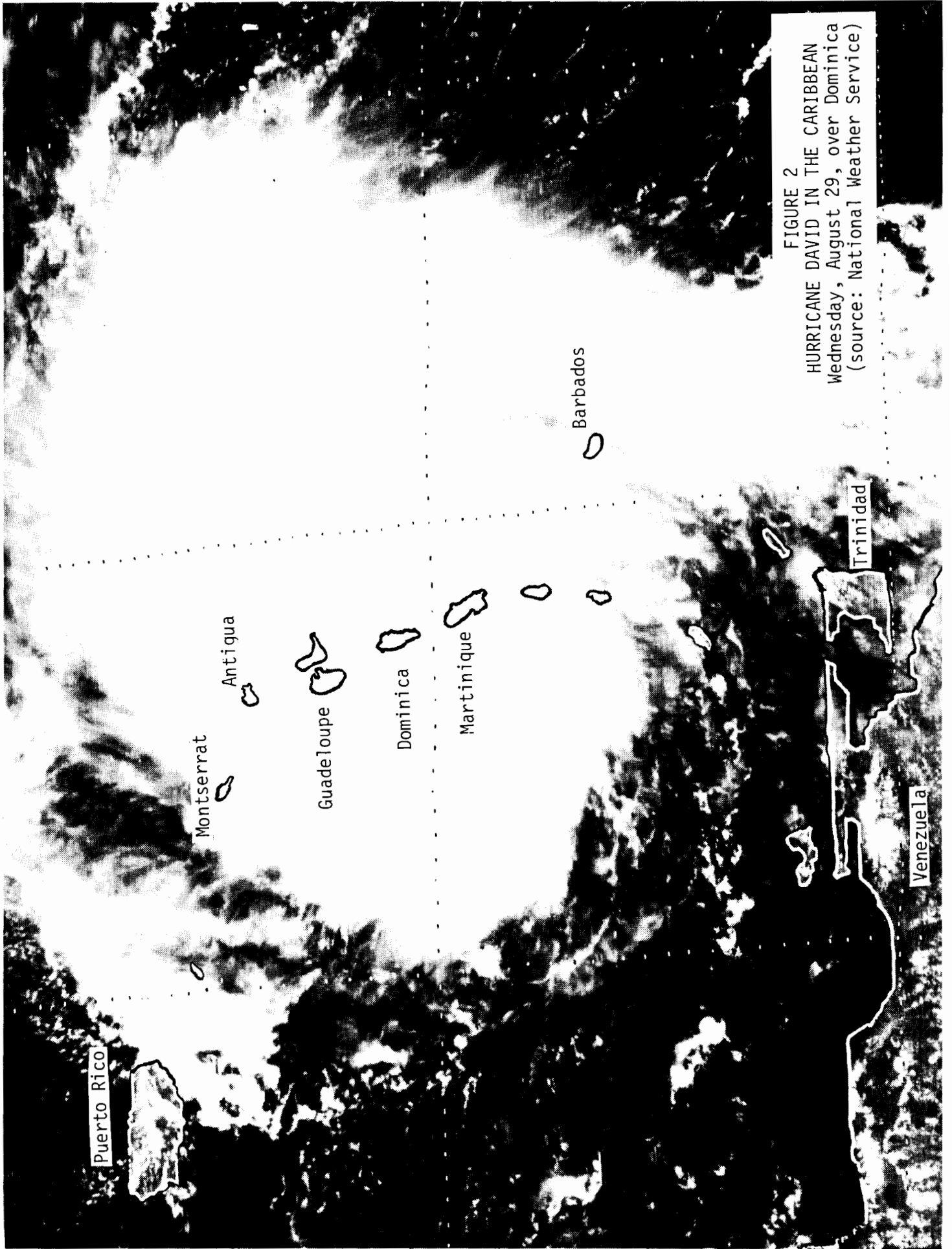


FIGURE 2
HURRICANE DAVID IN THE CARIBBEAN
Wednesday, August 29, over Dominica
(source: National Weather Service)

Gale force winds and steady rain batter Ponce, a town on Puerto Rico's south coast. The water is blown up from the ocean, and heavy flooding takes place in some coastal villages. About 6,000 residents of Ponce are evacuated to 31 refugee centers. A total of 13 people die in the flooding.

August 31 (Friday)

At 9 p.m., the hurricane moves first northwest, heading toward the southwestern shore of the Dominican Republic, then suddenly jags to the north, its core scoring a direct hit on San Cristobal and Santo Domingo. Waves the size of four-story buildings slam into the seashore capital of Santo Domingo as David comes ashore.

David storms through the heart of the Dominican Republic's rugged interior. People huddle together for shelter in what permanent structure they can find. All are not lucky enough to survive David's onslaught: one such building (some say a church, others say a schoolhouse) disintegrates in Padre Las Casas, killing an estimated 400 people inside.

Crossing over the large island, David loses some of its strength as its storm currents clash with high mountains. The consequent friction and the lack of water below to feed it has its effect.

September 1 (Saturday)

Hurricane David moves out of the Dominican Republic, clipping the west regions of Haiti, before edging into the Windward Passage between Hispaniola and Cuba.

Wind speeds have diminished to 75 mph, barely hurricane strength. Neil Frank estimates that David's impact is only one-fourth as dangerous as it was when it hit Santo Domingo. It is downgraded from a "class four" to a "class one" storm.

For much of the afternoon, David drifts slowly to the northwest, showing no rejuvenation while the center lingers over the Cuban coastline. Then, in the last afternoon, David's eye finally moves off Cuba's Oriente Province into the Atlantic Ocean. On its present course, David would hit Miami dead center. Since it will cross a wide expanse of water, David is expected to strengthen.

At 6 p.m. a hurricane watch is ordered for South Florida, from Palm Beach southward to the Dry Tortugas off Key West. Soon, the Governor of Florida consults with Neil Frank and decides to ask residents of the low-lying Keys to leave their homes and head for the mainland. David is 400 miles southeast of Miami, moving northwest at 12 mph.

September 2 (Sunday)

At 9 a.m., a hurricane warning is issued for South Florida. Governor Graham signs an executive order to begin immediate evacuation of low-lying coastal areas in the state's southernmost counties. By evening, 50,000 people in South Florida are refugees. Customers go berserk at hardware stores, creating near total panic.

By afternoon, Hurricane David is churning northwest up the Bahamas Bank with top winds of 105 mph. David is upgraded to a class two storm.

High winds spank the Bahamian out-islands, but damage is remarkably light and no injuries are reported. Winds surpass 100 mph as David crosses Andros Island, moving toward the Gold Coast.

By midnight, David is within 100 miles of the U.S. mainland.

September 3 (Monday)

Coming from over Andros Island, David charts a new course, heading north to a new U.S. landfall somewhere in Palm Beach County, Florida. It loses strength over the Bimini chain, with winds dropping back to 80 to

90 mph.

Top gusts to hit Miami are timed at 70 mph in the pre-dawn hours.

By daybreak, David is heading north and away from Miami and its winds are already beginning to falter. It comes inland north of Singer Island, dropping rain and some tornados.

By midnight it has moved off-shore again, heading north for South Carolina. Hurricane warnings are issued for South Carolina and points southward.

September 4 and Later

David saves more rain, thunderstorms, and killer floods for the U.S. eastern seaboard after it comes ashore in Georgia. The area suffers some damage and makes life wet and wretched for thousands of people.

By the time it hits Virginia, David is a tropical storm.

CAST OF CHARACTERS

Bernard Alfred	Teenage resident of Marigot Village, near Melville-Hall Airport, Dominica.
Peter Alfred	Teenage brother of Bernard Alfred. Local guide and main information source for us at the airport.
Abu Bakr	News Editor, Radio Antilles. Leader of Radio Antilles news team sent to Dominica.
George Buckmire	Chief Technician, Radio Dominica.
Ellsworth Carter	Dominica correspondent for Radio Antilles and UPI, and record librarian at Radio Dominica. Designated Information Services Coordinator by Prime Minister Seraphine during the immediate post-impact phase.
Tim Chapman	<u>Miami Herald</u> photographer.
Edward Cumberbatch	<u>The Nation</u> , Barbados, reporter.

Mike Findlay	BBC and Radio Antilles correspondent based at St. Vincent.
Larry Galloway	Pilot of a private Cessna plane flying the Caribbean circuit.
John Harrison	Relief Operations Coordinator at the airport. Sociologist (Social Development Advisor) with the British Development Division, Overseas Development Administration.
Gordon Henderson	Recently appointed manager of Dominica Broadcasting Corporation, and brother-in-law to Prime Minister Seraphine.
Al Johnson	News correspondent for NBC-TV, New York. Assigned to cover Hurricane David between August 28 and September 5.
Dianne Klein	UPI reporter.
Raymond Lawrence	Announcer at Radio Antilles. A Dominican by birth, he was part of Radio Antilles' news team sent to Dominica.
Brian Lawson	Chief Boatswain's Mate and Watermaster for HMC Fife.
Frank Liburd	Program Director with Antigua Broadcasting Service's television station. Leader of ABS-TV's news team in Dominica.
Brian Meade	Sales Director, Radio Antilles. A Dominican by birth, he was part of the Radio Antilles news team sent to Dominica.
Richard Morin	Reporter for the <u>Miami Herald</u> .
Francis Moses	Production Assistant and reporter with ABS-TV, Antigua.
Ferdinand Parillon	Home Affairs Minister with the Dominican government.
Peter Richards	Dominica correspondent with Reuters and Caribbean News Agency (CANA). Acting senior production assistant with Radio Dominica.
Julian Rogers	Program Manager, Radio Antilles. In charge of in-house operations at Radio Antilles during the disaster.
Roso Sabalones	UPI photographer (stringer).

Bill Sargent	Relief Coordinator for the U.S. at Roseau's Relief Operations Center. Ex-Red Cross official, stationed at San Juan, Puerto Rico.
Oliver Seraphine	Interim Prime Minister of Dominica.
Linda Walrond	Producer at Radio Antilles. Part of the Radio Antilles news team sent to Dominica.
Fred White	28-year-old amateur (ham) radio operator residing in a suburb of Roseau. Popularly called "Operator Fred."
Robert G. White	Church World Service consultant to the Disaster Emergency Relief and Welfare program of the Caribbean Conference of Churches. Evaluated disaster relief needs in Dominica for CCC.
Commander John Wright	Coordinator of HMS Fife's relief operations at Roseau. Second-in-Command of Fife.

HURRICANE DAVID'S IMPACT ON DOMINICA

A description of activities related to Hurricane David and the extent of its impact on Dominica and its residents between Tuesday, August 28, and Sunday, September 2, is given here.

Pre-Disaster

Although the Eastern Caribbean (including Dominica) was under a "hurricane watch" and had been since Monday (on the advice of the Barbados Meteorological Office), on Tuesday morning, August 28, Dominicans had no idea David might hit their island. Although most radio stations receivable in Dominica were carrying reports of David's approach to the Caribbean, only Barbados and the Central Windward Islands of St. Lucia and St. Vincent were considered to be truly threatened.

Dominica was officially placed under a "Hurricane Watch" by the National Weather Service at 3 p.m. EDT on Tuesday, August 28, and under a "Hurricane Warning" at 6 p.m. the same evening. At 5 p.m. that Tuesday,

Dominica's Disaster Committee (a permanent, apolitical body) met. At 8 p.m. that evening Home Affairs Minister Parillon (a member of the Disaster Committee) broadcast a message over Radio Dominica's FM frequency. Information available in Dominica was so confused that Parillon's message warned local residents of David's possible onset in *two or three* days. Life on Dominica went on as usual; it did rain, but businesses remained open and students went to school.

Media exposure in Dominica is fairly high, particularly radio listenership. The impression obtained from our interviews with several residents of the Island is that they knew which radio stations could be received. For example, they had knowledge of the timing, style, content, and formats of news and other programs on several radio stations. (See Table 1, p. ____).

English language programs were most often attended to. News programs on the following stations were most popular (under normal circumstances): Radio Antilles, Radio Dominica, Radio Barbados, and BBC's External Services. Weather reports are regularly issued over Radio Antilles. Weather information is received via international phone link from Coolidge Airport, Antigua's Meteorological Office. The Caribbean region is divided into five zones and weather reports (of particular importance to marine traffic) are issued for each zone.

Radio Dominica (DBS-Radio) monitors Radio Guadeloupe (or, on occasion Radio Antilles) every morning in order to pick up its weather report. This report is rebroadcast by Radio Dominica the same morning. Though Radio Dominica does receive the CANA teletype news service, this service is not used as a source of weather information, since it does not provide a forecast specific to the Dominica region.

Most respondents claimed to have first received word of Hurricane David's *existence* by Monday from a radio station's report. Others received this information from a friend or family member through word-of-mouth channels. Since Dominica is a somewhat traditional society, interpersonal communication is an important means by which news and opinions are disseminated. Signe and Jano Fuchs, an Austrian couple vacationing on the island, first heard of Hurricane David only on Wednesday morning when they visited a store in a neighboring village and the storekeeper just happened to mention the fact.

Only "general" preparedness information, broadcast as a matter of course to Caribbean islands during the hurricane season, was broadcast over Radio Antilles and Radio Dominica prior to Tuesday night, according to some respondents. More-educated respondents could recall having heard messages prior to David directing local residents to store water, canned food, kerosene, and candles. Less-educated respondents could not remember any specific information items. According to Dominica Broadcasting Corporation's Manager Gordon Henderson, "Warning messages were too bland, too abstract, too much talk--listing mainly safety steps that residents could take....The messages did poorly on a motivational dimension."

Although Dominica had been put under a "Hurricane Warning" by weather service authorities by the evening of Tuesday, August 28, most local residents only realized this fact when they awoke Wednesday morning and tuned into Radio Dominica's FM frequency or to Radio Antilles. Officials at Radio Dominica only learned of the hurricane warning for Dominica on Wednesday morning when Parillon broadcast a warning: early on Wednesday, Home Affairs Minister Parillon had been informed by Radio Antilles correspondent Ellsworth Carter that David's strike was imminent rather than a

day or two away). Parillon immediately went on the air over Radio Dominica and, with a sense of urgency in his voice, conveyed this information to the few local residents around Roseau that may have been listening in to Radio Dominica.

With the exception of a few, Dominican families did not adequately prepare for Hurricane David for the following reasons:

- (1) A lack of monetary and other resources inhibited sufficient preparation. Most of the Dominican labor force is paid at the beginning of a month, at which time provisions are bought for the entire month. Hurricane David hit the island at the end of the month, a time when the typical Dominican's disposable income was at its lowest.
- (2) A short lead-time was given the local population by the weather service and the mass media, and especially by local authorities. Not only are there a limited number of hammers and nails available in any urban center, but the typical Dominican works at a leisurely pace.
- (3) There were very few Dominicans still alive who had experienced the last major hurricane to hit Dominica in the 1920's. Those few did retain vivid memories of that disaster; unfortunately, these memories were inadequate to prod many people into concerted action to prepare for Hurricane David.
- (4) Authorities had not set up hurricane shelters prior to David's impact on the island. On Wednesday morning, Dominica's Minister of Home Affairs announced over Radio Dominica that all local residents should stay at home that day. No evacuation orders were issued. Refugee shelters were only set up on Thursday, and information about them first issued over Radio Antilles on Friday.
- (5) The Dominican's perception of risk was too low. He held a false sense of security, believing that David would miss Dominica, and that, at any rate, Dominica's hilly terrain would serve as a buffer and protect him.

During the Disaster

"The winds are really howling now," Reuter and CANA correspondent Peter Richards told CANA headquarters, Barbados, in a telephone message just before his telephone line went down late Wednesday morning. "Trees are flying through the air. The storm is now tearing several rooftops

off homes...."

In the village of Marigot a group of teenagers went through the nearby fields in search of villagers who might have been out working or stranded by the storm. It was only when some flying corrugated tin roofing missed them by a few inches that they scurried back to shelter in their homes.

Periods of relative calm alternated with wicked winds over a period of about six hours. Darkness fell over the city of Roseau just before mid-day on Wednesday. Heavy rain fell continuously. Most of the people waited in their homes, frightened and wet. While trees, crops and homes were being demolished, a number of urban residents in Roseau continued to madly run around the shopping areas of the city, looting warehouses and stores.

Out of a population of 85,000 some 60,000 were eventually rendered homeless, between 1,500 and 2,000 suffered injuries and, at final count, 56 died.

Some local respondents claimed that, in retrospect, Hurricane David provided them with a certain amount of "excitement." The vast majority, though, were clearly shaken by the frightening experience.

Ham operator Fred White stayed in his house on Wednesday, even though his roof blew off and one of his walls caved in. At 6:00 p.m. the same day, after relative calm had returned, a message he broadcast stated that he could see the remains of up to 200 roofless houses.

For the rest of Wednesday evening and night, the main concern of the Dominicans was personal safety and the safety of their friends and relatives.

Post-Disaster

It was estimated that as much as 95% of the banana crop, 85% of the coconut crop, and much of the other crops on the island were destroyed.

Power lines, telecommunication lines, roads, and factories suffered a near-total loss.

Few risked venturing out of their homes on Wednesday night. The first concern on Thursday morning was personal and immediate family needs: treating the injured, locating relatives, and searching for scattered belongings.

Several buildings, including schools, churches, and offices were designated as shelters for the homeless. They were soon filled with refugees.

According to Commander John Wright of HMS Fife, when he landed by helicopter on a soccer field near President Jenner Armour's residence at 6:00 a.m. on Thursday, he found the President in a state of shock. Consequently, Wright and his crew members from Fife took over the initial organization and management of relief activities in the small country.

Thursday also saw some looting. Several stores in Roseau were stripped, and people continued to run off with anything and everything.

All conventional local communication channels had been destroyed, and local residents began exchanging information with others and listening to radio broadcasts from neighboring islands to fill the information void. In a disaster context, "Informal interpersonal chains of communication form extremely rapidly throughout the community, usually starting from the scene of the event itself and passed on by word-of-mouth...." (Office of the UN Disaster Relief Coordinator, 1975, p. 19). It is also widely recognized that, "in the wake of a disaster people turn to the media,

especially the electronic media, in a way well beyond the normal. This means that [these] media have substantial audiences and those audiences are concerned about one specific story (Scanlon, 1979).

Relief management was slow to gain momentum, but under the "guidance" and following the suggestions of Commander Wright, who had been trained in disaster relief, preliminary surveys and relief activities were initiated at mid-day on Thursday.

Operator Fred White moved his ham radio to the police station in Roseau, making it the communications center for Dominica. By Friday, the police station also housed the relief operations center, as Interim Prime Minister Seraphine and government and relief officials moved in. It is widely recognized that communications are so important in times of crisis that centers of communication are often, and equally, centers of operational control (Office of the UN Disaster Relief Coordinator, 1979, p. 7).

Home rebuilding began. People washed their clothes and picked edible crops lying in the fields. Normalcy was slowly returning, although there was no running water, electricity, or sanitation.

Almost unbelievably, Sunday, September 2, news of Hurricane Frederic's imminent landfall on Dominica reached the dazed victims of David. Since the Dominicans had only just experienced David, we asked some people how preparedness activities for Frederic compared with those for David. A majority of the responses were of this nature: "David certainly taught me a lesson. Hereafter, I will always keep the roof on my house tied down with rope..." "There will be no more mistakes in the future; hurricanes can be nasty."

A few respondents expressed a more demoralized attitude: "Hurricane Frederic cannot possibly hurt us any more; all has been lost already..."

Hurricane David had also left its mark on islands neighboring Dominica. Consequently, preparedness efforts for Frederic on Antigua (in the direct path of the storm) were widespread, as in the Virgin Islands. Both had learned a valuable lesson from David's strike on Dominica. Fortunately, Dominica was spared the brunt of Frederic's power.

Several weeks after David, some farmers had replaced their destroyed banana crops with quick-yielding crops (e.g., beans) to stave off starvation, several thousands had left Dominica to seek employment on neighboring islands, and the government had not compensated people for any losses incurred.

Six months after David struck the island, Sood returned to Dominica and found the situation to be as follows:

(1) The main source of power--a hydroelectric plant outside Roseau, had been repaired by British engineers as of February, 1980. The power distribution system across the island, on the other hand, had yet to be repaired. British workers, working on a "shift-system" (whereby workers come from England for 2-3 month stretches before returning home), had been helping in Dominica's reconstruction effort.

(2) Twenty-five emergency power generators, sent through external relief channels, had been installed at key points throughout Dominica. One had been placed at Radio Dominica's studio facility in Roseau.

(3) Most conventional communication channels had been restored: telephone lines in Roseau and to some points outside Roseau, Radio Dominica, and all external telephone and telegraph links at the Cable and Wireless Office in Roseau. On the other hand, the DBS-TV's studio had not been rebuilt nor did any plans exist for doing so. Most transportation links within Dominica had also been restored.

(4) The massive international relief effort was proving somewhat counterproductive: many residents of Dominica continued to receive free relief aid in the form of food and clothing, and thus had little incentive to work.

(5) Dominica had probably become more vulnerable to hurricanes than it was when David struck. Home reconstruction had been relatively haphazard: roofs were a patchwork of unmatched galvanized sheets, randomly nailed together, and home building along the river banks continued unabated. On the other hand, several large buildings destroyed during David, such as churches and schools, were in the process of being rebuilt. This would make sheltering members of vulnerable communities prior to another disaster a safer activity (provided that better building standards were being used).

(6) There had been several political repercussions to the disaster: not only did opposition parties use the interim government's imperfect relief management as the key issue in recent national elections (a new government led by Mrs. Eugenia Charles was overwhelmingly voted into office in May, 1980), but many members of PM Seraphine's interim government left their political jobs or quit his party over feelings of inability to effectively conduct post-disaster relief and reconstruction in their country.

(7) On a more positive note, almost miraculously, Dominica's agricultural sector was flourishing again: the first post-disaster banana harvest was due to take place in the near future, and it was expected to be a sizeable one. (Unfortunately, Dominica's economy suffered another setback when Hurricane Allen sideswept the island on its way through the Caribbean in late 1980).

(8) Finally, and quite significantly, the neighboring station Radio Antilles, due mainly to its superlative performance during the disaster (see section on "Mass Media Activities in Dominica"), was enjoying an unprecedented popularity on Dominica: the 6:00 p.m. news broadcast over Radio Antilles had become a way of life not only for most local residents, but also for approximately 80% of the English-speaking Eastern Caribbean radio audience.

MASS MEDIA ACTIVITIES IN DOMINICA

We were able to observe and learn about the newsgathering activities of several media personnel in Dominica. The media institutions represented in the present study are divided into three categories: (1) local media, (2) Caribbean media, and (3) U.S. media. For a complete list of mass media, see Table 1, pages 24 and 25.

Local Media

The Dominica Broadcasting Corporation, a government entity, operates both Radio Dominica and DBS-TV. Radio Dominica's AM broadcast, on 595 KHz and with a range covering the entire island, went off the air at 8:00 p.m. on Tuesday, August 28, due to a power failure in the area where the transmitter is located. The station's standby power generator had been out-of-order for 18 months.

The FM broadcast on 88.1 has a very limited range (Roseau and its immediate environs). This frequency went off the air at 10:00 a.m. on Wednesday, August 29. It is not known whether this shut-off was due to a break in the power line outside the station or if the utility company turned the area's power off as a normal precautionary measure.

TABLE 1
 MASS MEDIA IN DOMINICA (under normal circumstances)

<u>Station Name</u>	<u>Ownership</u>	<u>Frequency</u>	<u>Power</u>	<u>Reception Quality** (from 1 to 10)</u>	<u>Language</u>
I. <u>RADIO (on medium wave band)</u>					
1. Radio ZDK, Antigua	Pvt. ²	1100MW	10kW	8	English
2. Radio Antigua (Antigua Broadcasting Service)	Govt. ¹	620MW	5kW	6	English
3. Radio Antilles* (Funding: Deutsche Welle, Montserrat)	Pvt. ²	930MW	200kW	9	English French/Spanish
4. Radio Barbados* (Caribbean Broadcasting Corp.)	Govt. ¹	900MW	10kW	7	English
5. Radio Dominica* (Dominica Broadcasting Corp.)	Govt. ¹	595MW	10kW	9	English
6. Radio Grenada*	Govt. ¹	535MW	1kW	5	English
7. Radio Jumbo, Dominica* (Relay in St. Lucia)	Pvt. ²	545MW	50kW	9	French
8. Radio Guadeloupe	Govt. ¹	640MW	20kW	8	French
9. Radio Martinique	Govt. ¹	1310MW	50kW	9	French
10. Radio NBS, Trinidad (National Broadcasting Service)	Govt. ¹	610MW	10kW	7	English

<u>Station Name</u>	<u>Ownership</u>	<u>Frequency</u>	<u>Power</u>	<u>Reception Quality** (from 1 to 10)</u>	<u>Language</u>
11. Radio Paradise, St. Kitts	Church ²	1265MW	50kW	7	English/French
12. Radio ZIZ, St. Kitts	Govt. ¹	555MW	20kW	7	English
13. Radio St. Vincent	Govt. ¹	705MW	10kW	3	English
14. Radio St. Lucia*	Govt. ¹	660MW	10kW	8	English
15. Radio Trinidad & Rediffusion (Trinidad Broadcasting Co.)	Pvt. ²	730MW	20kW	8	English

* Stations with more than ten newscasts per day.

** According to Dr. Jeff Charles, former Manager of Radio Dominica.

¹Regular members of the Caribbean Broadcasting Union.

²Associate members of the Caribbean Broadcasting Union.

II. PRINT

1. The Dominica Chronicle (local daily). Ownership: Catholic Church.
2. Link (biweekly news magazine). Ownership: Private.

III. TELEVISION

1. DBS-TV (essentially a relay of Barbados TV, with approximately one hour of daily local programming).

A hurricane watch for the entire Eastern Caribbean was put into effect on Monday, August 27 (on the advice of the Barbados Meteorological Office), although it was emphasized that Barbados was particularly threatened by Hurricane David. Between August 27 and August 29, until the station went off the air, a pre-hurricane international precautionary released by Dominica's Ministry of Home Affairs was read as often as every half-hour until the station went off the air. This was the extent of the preparedness information presented by Radio Dominica.

At 5:30 a.m. on Wednesday, August 29, Ellsworth Carter received a telephone call from UPI's San Juan, Puerto Rico Bureau Chief Van Benicken. Benicken asked Carter, "Are you aware that David is headed for Dominica and is likely to hit very shortly?" Carter, as also the rest of Dominica's population, was largely unaware. Carter promptly called Home Affairs Minister Ferdinand Parillon and informed him of David's imminent onset. Parillon, taken entirely by surprise, quickly formulated a warning message, emphasizing David's imminent onset and directing residents to move to safer buildings or higher ground if they felt such a move was warranted.

Parillon read this message over the phone to Carter, who taped it directly onto an audio cassette recorder/player attached to his phone, and played it back via the telephone to Radio Antilles in Plymouth, Montserrat. Radio Antilles rebroadcast this lengthy message, in its entirety, after its 8:00 a.m. news program. (See "Radio Antilles" later in this section.)

Radio Dominica obtained first information of David's impending onset when it routinely monitored Radio Guadeloupe's 6:00 a.m. weather report Wednesday morning. "This was the first time that any news of such a

nature had reached the station," according to Gordon Henderson, Manager of DBC.

The Radio Guadeloupe forecast was rebroadcast, as usual, over Radio Dominica's limited range FM channel at 7:00 a.m. This was the first message sent out by the local government's official voice, Radio Dominica, that could be called a "hurricane warning". It was disseminated less than three hours before David's strike on Dominica. At 7:30 a.m. Parillon arrived at Radio Dominica and broadcast his official warnings message to the listeners around the capital city of Roseau.

By 10:00 a.m. the station was off the air. George Buckmire, Chief Technician, remained at the station through the hurricane, covering valuable equipment with tarpaulin and disconnecting electrical items. The station suffered a broken roof, extensive equipment damage, and severe flooding. Between Friday, August 31, and Monday, September 2, the few Radio Dominica staff that did come in to work were involved in salvaging and reinstalling the station's equipment in order to resume broadcasts. Radio Dominica resumed operations--with limited power, shorter hours, and restricted range--on Monday, September 3, six days after the hurricane's onset.

The British frigate HMS Fife (specially trained in disaster relief), following in the wake of Hurricane David as it churned through the Eastern Caribbean, arrived off Dominica early Thursday morning, a mere 15 hours after David had passed Dominica. By Friday evening Fife's communication engineers had put their ship's radio transmitter on Radio Dominica's AM frequency, and for the next two days broadcast music, news, and official messages to listeners on Dominica. According to HMS Fife's Commander Wright, "The radio is being used mainly to keep the population's morale

up." On Sunday evening the ship left Dominica's waters to avoid the potential onset of Hurricane Frederic that night.

Dominica Broadcasting Corporation's television operation, DBS-TV, was devoted mainly to relaying Barbados TV's signal. Daily local programming was limited to an hour of news and public affairs programming, accomplished by lowering a microwave dish so that it pointed at the television relay tower and "overrode" this signal.

No preparedness or warning information was disseminated via DBS-TV. Hurricane David completely destroyed the studio building; it is as yet unclear whether the studio's electronic equipment was lost in the storm or whether it was taken by looters.

Peter Richards, Dominican correspondent from CANA (the Caribbean News Agency) and Reuters, sent in his last pre-onset status report via telephone to CANA headquarters in Barbados at 11:00 a.m. on Wednesday. He mentioned the extent of damage observable from his Roseau apartment, and that he anticipated the rivers would soon start flooding. One minute later the phone line outside his apartment snapped off. Between August 30 and September 10, he sent up to five reports a day via Operator Fred's ham radio unit (see "Operator Fred" later in this section) to CANA. He was so busy gathering news--obtaining the latest disaster estimates, interviewing victims, observing the relief operations, and writing news reports, that he did not return to his Radio Dominica job for some weeks after David's onset. After September 10 he sent out numerous reports every day via the Cable and Wireless telex, which had only then been restored.

Amateur ham operator Fred White, or, as he came to be more popularly known, Operator Fred, received first information about the existence of

the storm system named David on Sunday, August 26, through his links with a network of Caribbean hams. This network routinely exchanges weather and other news and information at 6:30 a.m. and 6:30 p.m. every day.

At midnight Tuesday, August 28, Fred received the first hurricane warning message from Antiguan ham Hyacinth Mathews. Though Fred attempted to give this information to the authorities, there was no one available at that late hour, and Fred knew he lacked the necessary credibility to get his voice heard.

After a few hours sleep he called Radio Dominica at 6:00 Wednesday morning, informing a junior staff member on duty that the station should record and rebroadcast immediately the latest weather report as it came over the ham network at 6:30 a.m.

At 7:00 a.m. that morning electrical power in Roseau started falling off, and Operator Fred hooked his Kenwood radio unit onto 12-volt car batteries. He continued sending reports out to his ham contacts until around 11:00 a.m.

While Hurricane David struck Dominica, Fred's behavior was truly heroic; although he was uncertain whether his broadcasts were being received outside Dominica, he continued to transmit messages throughout the afternoon. Unfortunately, due to the storm conditions, his messages did not reach the outside world. He lost the roof of his home and spent the better part of the afternoon crouched behind a wall, protecting his radio from the raging winds and rain.

By 6:00 p.m., after the storm had subsided, Operator Fred moved to a more protected building, hooked his radio back onto his batteries, and got in touch with his ham network, providing them with a sketchy descrip-

tion of the hurricane's impact around the Kingsdale suburb of Roseau. Later in the evening he asked the hams to contact Radio Antilles and to tell them to broadcast the fact that he was available to help the local government in their communication requirements. Ellsworth Carter heard this information transmitted by Radio Antilles; he knew that Operator Fred was the only external communication channel left on Dominica. Carter walked to the police headquarters through the debris and darkness, met PM Seraphine there, and took an official message for Fred to broadcast: "Dominica is a disaster area".

One of the Caribbean hams in contact with Operator Fred that night was the Venezuelan Ambassador to the neighboring island of St. Vincent, resulting in the first of many Venezuelan relief shipments arriving at Dominica's Melville-Hall Airport on Friday, August 31, almost 24 hours earlier than even the first U.S. relief plane.

The next day (Thursday), Fred moved his unit to the police station in Roseau. He was authorized to hook up his radio to the only emergency power generator on the island; such was the priority given to external communication. Later official "S.O.S.'s" broadcast by Operator Fred on behalf of PM Seraphine Thursday morning were picked up by George Naftziger, an amateur ham in Florida. Naftziger relayed this message to the State Department in Washington D.C.

It was perhaps the first time that the State Department heard and contemplated acting upon an unsubstantiated "official" message received via two ham radio operators. USAID's Office of Foreign Disaster Assistance relief supplies first began arriving on Saturday morning in Dominica, after two AID officials visited Dominica on Friday.

Between August 30 and September 1, Operator Fred was the only source of external communication immediately accessible for official local government emergency messages, personal messages to and from local residents, and news reports filed out of Roseau by correspondents Carter and Richards. HMS Fife, another possible external link, was used only by the British officers of the frigate to communicate with naval officers on Barbados.

Clearly, Operator Fred was the lifeline for Dominica both during the hurricane and for several days afterwards at the Operations Center in Roseau. He stayed awake from Wednesday morning to Saturday evening and, after a night's rest (when he was relieved by Robert Denison from Tortuga), Operator Fred was back on the job Sunday morning, when we interviewed him about his experiences.

Caribbean Media

Edward Cumberbatch, reporter for the daily newspaper, The Nation, published in Bridgetown, Barbados, flew over Dominica on Thursday, August 30, and wrote a front page report about David's impact there for Friday's edition of his paper. Cumberbatch is a Barbadian, but has worked and lived in Dominica, and this first-hand knowledge of the devastated country helped him better analyze the post-disaster situation there.

Two reporters from The Nation flew from Barbados to neighboring Martinique on Thursday, and travelled into Roseau by boat on Friday. Willie Alleyne, a reporter for the daily newspaper, the Advocate-News, also from Barbados, flew over Dominica on Thursday. His Friday front page report on the situation in Dominica included his first-hand aerial observations of the country.

Radio Antilles was outstanding in the extent and style of coverage it gave to news items related to the post-hurricane information needs of the Dominicans. Radio Antilles is a very powerful (200,000 watts, with a signal covering an area of approximately 800,000 square miles), two-channel (on the AM band), three-language (English and Spanish on one channel, and French on the other) radio station, owned by Germany's Deutsche Welle Corporation, and based in Plymouth, Montserrat, a small British colony (population 12,000) located 100 miles north of Dominica.

As a consequence of its clear signal and superior programming quality, Radio Antilles is one of the most frequently attended to stations in Dominica. Another possible reason for its popularity is that, being a relatively non-partisan, commercial station, staffed by journalists entirely of Caribbean origin, its information programs have more objectivity and thus greater credibility for its listeners than do the various government-owned stations.

Though Radio Antilles suspected something serious had occurred on Dominica August 29 when its local correspondent Carter did not send in his usual report, the station received first "official" word of David's impact on Dominica only on the afternoon of August 30, when a Carter message (transmitted by Operator Fred) relating PM Seraphine's declaration of a "disaster" was picked up by another amateur ham on the nearby island of St. Vincent, and relayed to Radio Antilles via the station's St. Vincent correspondent Mike Findlay.

Soon Hans Birkhauser, a Radio Antilles engineer, Mr. Hollatz, a resident of Plymouth, Montserrat, and other local hams on the small island tuned into Operator Fred and created a tie-line for relaying the

latest news on Dominica to Radio Antilles. The station, in turn, promptly broadcast each news item as it was received.

By August 31, Radio Antilles was well on its way to becoming "Radio Dominica"--the official and complete source of news and information about the situation in Dominica. The same afternoon a five-person team of reporters (Abu Bakr, Raymond Lawrence and Linda Walrond from the English service, Brian Meade from the Sales Department, and Jean Francois from the French service) left Montserrat by plane for Dominica. Immediately upon their arrival at Melville-Hall Airport, Brian Meade, carrying a Heathkit ham radio transmitter and a Sony Orbiter radio receiver, was allowed to take his valuable communication equipment aboard the Fife helicopter to Roseau, on the other side of the mountainous island.

The next morning (Saturday, September 1), the rest of the Radio Antilles team rented a pickup truck and left for Roseau by road. Since the main road between the airport and Roseau was still officially closed (due to several severe mudslides), the news team travelled a longer route. They were able to drive only part of the way before confronting the first of a number of mudslides and breakages in the road; the rest of their hazardous, 80-mile journey was spent clambering over the mudslides, hiking over hills, and hitching rides on passing automobiles.

Meanwhile, Brian Meade and Ellsworth Carter met PM Seraphine at the police headquarters (now the "Relief Operations Center") in Roseau, and arranged that Radio Antilles be allowed 24-hour free access to one of the four international telephone lines (of a total of 13 lines that exist out of Dominica) just re-opened by the local Cable and Wireless Office. In return, Meade offered to make Radio Antilles the official communication channel for Dominican relief information.

For the next two weeks the Radio Antilles team filed reports to their parent station in Montserrat: disaster status reports, interviews with victims and officials, eyewitness reports of relief management and looting behavior, and a flood of personal messages from local residents to friends and relatives living abroad.

At Radio Antilles in Montserrat, Program Manager Julian Rogers organized the station's response to the severe disaster in Dominica: between September 1 and 20, a seven-person team of volunteers (composed mainly of friends and relatives of Radio Antilles staff members) manned the "message distribution center", and all regular staff members worked very long hours (typically from 5:00 a.m. to 11:00 p.m. every day). Hans Birkauser's ham radio was brought in to the station to receive Operator Fred's broadcasts, and the numerous phones at Radio Antilles were constantly in use taking personal messages to and from Dominican residents, receiving aid contributions for the victims in Dominica, and responding to inquiries regarding the disaster.

In Dominica, Carter concentrated both on executing his official responsibility--coordinating information services for the government--as well as filing an occasional news report of his own to Radio Antilles.

The rest of the Radio Antilles team split up their activities: Abu Bakr, the leader, wrote and voiced reports and made staff news-gathering assignments; Brian Meade and Linda Walrond gathered the news; Raymond Lawrence collected personal messages from around Roseau; and Jean Francois operated independently of the other team members.

Walrond left for Montserrat on Wednesday, September 5. Bakr, Meade and Francois left on September 12, and Lawrence returned on September 16. Thereafter, Carter became the only Radio Antilles member in Dominica, and

he continued to send his regular news reports to the station.

The Venezuelan relief effort was prompt and valuable. In addition to bringing in a power generator for the airport and medical personnel for the victims of Hurricane David, the Venezuelans flew in a two-way radio unit and a television news crew. Their radio provided the airport with a communication link to the Operations Center in Roseau as well as an external link to Caracas, Venezuela. The television crew did some news-gathering in the island, but tended to focus mainly on Venezuelan relief activities.

The Venezuelan relief operation began on Friday morning. By afternoon their communication team had installed a two-way, five-channel radio receiver/transmitter at the airport. The radio linked the airport with Operator Fred's unit at the Operations Center in Roseau and with Venezuelan authorities in Caracas. The Roseau-airport link was critical to the management of relief operations. Relief supplies were arriving at the airport, which was 40 miles away from Roseau and other more severely affected areas. The external link to Caracas was vital to the relief effort, too. In addition, one media person, UPI's Dianne Klein, used this radio link to send her first news report out of Dominica on Friday night.

The Antigua television crew (ABS-TV)^{*} showed how excellence in news reporting can be achieved, even in the absence of sophisticated equipment and with minimal financial resources. Their criteria for news value underplayed the sensational and negative side of the disaster, high-

^{*}ABS-TV is located in St. Johns, Antigua. It uses a 1,500-foot-high transmission, and its signal covers a circular area with a radius of about 150 miles.

lighting instead the positive aspects.

A three-person television news production team from the Antigua Broadcasting Corporation's Antigua Broadcasting (television) Service arrived on Friday at Melville-Hall Airport by one of the first commercial flights to land in Dominica after David's strike. Frank Liburd, 35, program director, Peter Gordon, 28, and Nat Moses, 27, reporters, came to cover the story of Hurricane David in Dominica for their Antiguan viewers. Liburd and his colleagues left for Dominica without obtaining any "authorization" from their superiors at Antigua's Ministry of Information. These concerned journalists preferred not to risk either getting caught in a bureaucratic delay or being refused the assignment; they collected all their personal savings and left for Dominica as soon as they could.

On Friday, access to points beyond the airport was nearly impossible, unless one could get a ride aboard Galloway's Cessna or HMS Fife's helicopter. Liburd and his crew did not have the necessary "clout"; they had to gather news from areas near the airport. Peter Gordon sent a voice report to ham operator Hyacinth Mathews in Antigua via Antiguan ham Stanley Humphreys, who had travelled to Dominica with the ABS-TV team and had set up his unit at Melville-Hall Airport. This report was broadcast over Antigua's government-owned ABS-Radio; it was the first on-site report from the airport area to be broadcast over any Antiguan media outlet of post-impact Dominica.

On Saturday, the team tried to drive to Roseau, but the road was still impassable. Somewhat frustrated, they had once again to limit their news-gathering to areas near the airport. They sent their video-

taped report back to Antigua with a commercial airline staff member.

Early Sunday morning, after a second night of sleeping on the airport floor, the television team prepared to travel to Roseau in a chartered Land Rover. The road finally had been cleared only the night before. Liburd and his crew were in one of the first private vehicles to cross the island in four days. Rogers and Sood travelled to Roseau with this TV news team, spent the day with them there, and returned to the airport with them that evening.

All day Sunday the team recorded their report on David's impact on Roseau and its people. Since Channel 10 does not have video editing equipment for the team's half-inch JVC semi-professional video recorders, Liburd had to shoot his report exactly as he wanted it to be presented to his viewers. Both the sequence and length of segments had to be planned as best possible, with all editing done "in-camera."

The Antiguan rushed back to Melville-Hall Airport Sunday evening to be with their families when Hurricane Frederic hit Antigua (as it was expected to the next morning). Unfortunately, due to a long delay caused by a new mudslide en route to the airport, and because the Land Rover suffered a flat tire, they missed the last commercial flight out of the airport that evening. They spent another night sleeping on the ground at the airport, and left early the next morning for Antigua by plane.

U.S. Media

The news team from NBC-TV was the first external team to arrive in Dominica after Hurricane David. They provided some first-hand video/audio coverage to the U.S. NBC Nightly News audience on David's impact on Dominica as early as one day after David struck the island, and one day

before ABC-TV did. CBS-TV did not provide any first-hand coverage of Dominica.

NBC's activities illustrated (1) the need for persistence on the part of a news team in covering a disaster; (2) the vast amounts of travel and expense involved in providing early first-hand coverage of a disaster; and (3) how essentially limited an advantage monetary resources and sophisticated technology provide the mass media in the context of a disaster.

Al Johnson, NBC correspondent based in New York City, was assigned to cover the story of Hurricane David on Tuesday afternoon, August 28. The same evening he flew on a commercial flight to Miami, picked up a TV crew (a field producer and a two-person camera team) there, and chartered a Lear jet. This team left for San Juan, Puerto Rico, at 3:00 a.m. on Wednesday, August 29. At 6:00 a.m. the same morning, Johnson was tracking David's path at the National Weather Service Office at San Juan Airport. At noon he was informed that David had hit Dominica. He decided to leave for that island immediately, even though airport authorities gave the Lear jet "only a 50-50 chance" of getting into Dominica.

Travelling at nearly the speed of sound and as high as 60,000 feet (to pass above the hurricane), the Lear jet arrived over Dominica within an hour and attempted to land. The hurricane's turbulence was so great that no communication contact was possible with the ground. The 150mph winds made the Lear unable to land. Instead, the plane flew to the nearby island of Antigua, arriving at 3:00 a.m. Johnson taped a news report on Antigua, where David's impact was minimal, and returned to San Juan. He rushed into the city and sent his unedited

report via communication satellite (using station WAPA-TV's facilities) to NBC in New York, where it was received at 6:50 p.m., edited down to 50 seconds within five minutes, and used as part of a 1:20 minute report about seven minutes into that evening's 7:00 p.m. broadcast.

By the next morning, Thursday, a second NBC camera crew had joined Johnson in San Juan. Johnson took one camera crew to South Puerto Rico to cover David's impact there, while the NBC field producer took the other crew that afternoon on the Lear jet for a second attempt to land on Dominica. This time they were successful, landing at Melville Hall Airport at 4:30 p.m., even though the runway was littered with debris and the airport was officially closed. Theirs was the first and only plane to land in Dominica on Thursday. But Hurricane David had so damaged roads that their hour-long news-gathering in Dominica was limited to areas near the airport.

The team rushed back to San Juan's WAPA-TV station by 6:45 p.m., just in time to send their unedited report into NBC's New York headquarters and to make that evening's network news broadcast. Time was so short that Johnson's commentary had to be read directly (live) into the satellite hook-up. Of the one-minute-long coverage devoted to Hurricane David that evening (four minutes into the broadcast), Dominica footage received 25 seconds and Dominica-related commentary received 40 seconds.

The next morning (Friday, August 31) Johnson, the NBC field producer, and the two camera teams flew on their chartered Lear to the Dominican Republic. Santo Domingo airport refused them landing permission as the airport was officially closed. They flew on to Haiti, hoping to cover Hurricane David's impact there. Port-au-Prince Airport also refused them permission to land, warning them that, "If you attempt to

come down below 10,000 feet, you will be shot!"

Johnson and his news teams flew back to Dominica, landing at Melville Hall Airport in the early afternoon. They chartered Galloway's Cessna to take them to Roseau, but at the last minute were informed by local authorities that since some medical personnel had to be flown in, the NBC team would have to wait for the next Galloway flight. Johnson determined they could not wait that long. Instead, the news teams interviewed some disaster victims living in villages near the airport, talked to local authorities, shot some footage of the crop and property damage, and covered the distribution of some relief supplies. Finally, the Lear jet made six passes over Roseau while the two cameras shot footage of the city below through the plane's windows. Once more Roseau could not be reached; Johnson had come so near, and was yet so far from his goal.

The plane returned to San Juan, and Johnson was able to send his news reports back to New York via satellite, as before, just in time for that evening's NBC broadcast. Dominica received 55 seconds of coverage (within a 1:45 minute report on Hurricane David).

On Saturday, September 1, Johnson and his TV crew returned to Santo Domingo, but were denied landing permission once more. Haiti, though, allowed them to land; evidently, hurricane damage in Haiti was not significant and Haiti's President Duvalier had little reason to fear any political repercussions from allowing media coverage of the near-disaster. On arrival, Johnson requested use of the islands' only helicopter to fly his team to the stricken areas. He waited half a day before being informed that his request had been denied. Johnson and his team flew back to Miami via Nassau, where they dropped off a camera-crew to await

Hurricane David. Johnson eventually returned to New York on September 5.

Johnson estimates that in the nine days that he spent covering Hurricane David, he travelled farther (12,000 miles), spent more money (thousands of dollars, with no need for approval for expenses from NBC in New York), and learned more about covering natural disasters than he ever had before.

Due to difficulties involved in reaching the disaster site, early coverage of David by ABC-TV and CBS-TV excluded Dominica, even though they knew Dominica had been most severely hit at that time. Their news-gathering activities focused instead on Puerto Rico and Martinique.

An ABC team did return to Dominica on Friday, August 31, but as with the NBC team, were unable to travel into Roseau. ABC's 40-second report on Dominica that evening was composed entirely of aerial shots of Roseau. As Hurricane David approached Florida, ABC and CBS turned their attention to that area. Only when Santo Domingo airport opened on Sunday, September 2, did CBS send one news team there, providing its September 3 broadcast with a 1:40 minute-long report on David's impact in the Dominican Republic.

The UPI news team illustrates the importance of being "resourceful" in obtaining, processing, and sending the news within a disaster context. Dianne Klein, UPI reporter based in San Juan, and Roso Sabalones, a UPI stringer photographer, left San Juan on Tuesday, August 28, for Guadeloupe, in anticipation of covering the drama of Hurricane David in the Antilles. They spent Tuesday through Friday morning in Guadeloupe before being able to fly into Melville-Hall Airport by commercial airline. Klein wrote her first story on Hurricane David in Dominica that

evening, and from about midnight until 3:00 a.m. Saturday morning she used the Venezuelan radio link to Caracas to file her report.

On Saturday mid-morning, she took the opportunity to fly to Roseau aboard Galloway's Cessna. There was only one seat available and Sabalones was left behind. Her news-gathering activities in Roseau culminated that day when she sent her second report via the radio transmitter aboard HMS Fife on Saturday night. Sabalones managed to fly into Roseau with Galloway later the same day, but Klein and Sabalones did not meet each other again in Dominica; their news-gathering operations in Roseau took place independently of one another.

Klein returned to Melville-Hall Airport by mini-bus on Sunday afternoon and got a ride out of Dominica that evening aboard the last plane (a Venezuelan transport) to leave before Hurricane Frederic was to hit Dominica. Sabalones spent Saturday taking photographs around Roseau and returned to the airport on Saturday evening aboard Galloway's plane. He spent Saturday night at the airport. On Sunday morning he left aboard the first commercial flight out of Dominica to the island of Antigua. It was only in Antigua that he was able to use his portable kit to process his still film and send the photos, via telephone, to UPI headquarters in the U.S.

The Miami Herald news team showed unusual resourcefulness, dedication, and a sense of professionalism in their news-gathering activities. Richard Morin, staff writer, and Tim Chapman, staff photographer, flew from Miami to San Juan on Thursday, August 30, in order to cover Hurricane David's impact in Ponce, Puerto Rico. A quick visit to Ponce and a brief report of David's impact there was adequate coverage for that minimally-affected area. The following options were then open to Morin

and Chapman: (1) return to Miami; (2) cover David's impact in the Dominican Republic; or (3) fly to Dominica. David was too big a story to leave to return to Miami, and the Dominican Republic was closed to all air traffic, so the decision was made to go to Dominica.

The Miami Herald team, along with an AP photographer and a Gamma photographer, co-chartered a plane for \$1,300 out of San Juan and left for Dominica on Friday morning. They circled over the devastated island a number of times and then landed at Melville-Hall Airport. Morin and Chapman attempted to reach Roseau by road, but, as with the other media personnel, trees and landslides blocked their path. Consequently, news was obtained by talking to authorities at the airport and from sources in nearby villages. The reporters flew into Martinique that evening, and Morin got off, travelling into the city of Fort-de-France to phone his story to Miami while the others flew back to San Juan.

DISTINCTIVE ASPECTS OF NEWSGATHERING OPERATIONS

A natural hazard of significant proportions generally affects populated areas in such a manner as to make subsequent newsgathering operations by mass media personnel very different from such operations under normal circumstances.

1. Unconventional communication channels must be used in a disaster.

In Dominica, the island-nation's entire conventional internal and external communication system was destroyed when Hurricane David hit on Wednesday, August 29. Due to the complete breakdown in electrical power generation and supply and the absence of emergency power generators, the nation's only radio station could not broadcast, the television tower (relaying Barbados TV) was not operational, and telegrams could not be

sent out of the country. Phone lines were broken across the island, making local and international calls impossible.

It took three days after David's strike before the HMS Fife's communication engineers were able to reactivate Roseau's Cable and Wireless Office, and that only to the extent of making operational four external telephone lines.

Road transportation was disrupted. Automobiles were unable to travel between Roseau and Melville-Hall Airport for four days due to landslides, debris, and fallen trees. This made internal land-based communication impossible.

The closed airport and rough seas made air or sea transportation into or out of the island impossible. This lack of conventional communication channels required that media personnel utilize alternate, unconventional links to communicate their messages.

- UPI's Klein used Venezuela's Melville Hall radio link with Caracas and HMS Fife's radio link with Barbados to send her reports out of Dominica.

- ABS-TV's Liburd used commercial airline personnel through which to send his videotaped reports back to Antigua.

- ABS-TV's Gordon used fellow-Antiguan Humphrey's ham radio link with Mrs. Mathews in Antigua to file a report from Melville-Hall Airport to ABS-Radio.

CANA's Peter Richards, and Radio Antilles' Ellsworth Carter and Brian Meade used Operator Fred's ham radio link with the Caribbean ham radio network to file reports to their respective media institutions.

NBC-TV and ABC-TV used chartered planes to transport themselves and their reports in and out of Dominica.

- The Miami Herald's team used an available telephone link on the neighboring island of Martinique to contact the U.S.

- The Radio Antilles reporter used Larry Galloway's plane link between the airport, Roseau, and White's ham radio.

2. Personal risks must be taken in a disaster.

On the afternoon of Wednesday, August 29, Fred White put himself in great personal danger in order to save his radio from the hurricane: when his roof was blown away, he took shelter with his radio beneath a table. Soon, this table blew away. He moved under his bed. When that too started shifting ominously, he crouched beneath an outside wall of his house which had begun to fall in. There, when the storm started subsiding, he re-attached his radio to his 12 volt car batteries and continued transmitting messages to the outside world. (Unfortunately, due to the turbulence in the air caused by the storm, these early post-impact broadcasts were not picked up by external ham operators; it was only after 6:00 p.m. that Fred reestablished contact with his ham network).

Al Johnson and his NBC-TV crew attempted to land in Dominica on Wednesday afternoon while hurricane-force winds of 150 mph were still battering the island. Fortunately, the Lear jet's pilot soon realized the futility of this endeavor and headed away from the hurricane.

UPI's Dianne Klein and Roso Sabalones, and other reporters took their lives in their hands when they travelled from Melville-Hall Airport to Roseau on Larry Galloway's Cessna. The only "landing strip" outside of Roseau was a narrow, curving, damaged road, with the ocean on one side and steep hills on the other. The plane missed trees and other obstructions by mere inches on each landing and take-off.

On what turned out to be the last take-off from this makeshift runway, Galloway damaged his plane's wingtip on a palm tree stump. Undaunted by the sight of sheet metal hanging from the wing, or from the hazards of piloting a damaged craft full of passengers (including a news reporter), Galloway flew on to the nearby island of Martinique for repairs.

The drive to Roseau on Saturday, September 1, with the Antiguan team, was full of risks. Although the road had been officially declared open the night before, the Land Rover had to circumnavigate several treacherous landslides, numerous fallen trees, and many downed power lines. At one point, while the team waited for the road to be cleared of a landslide, another slide started, taking away part of the hill just feet away from the Land Rover and other parked vehicles.

The Radio Antilles team's journey by land from the airport to Roseau via the circuitous coastal route on Saturday, September 1, was similarly hazardous: only part of the journey was possible in their chartered vehicle, with the rest of the way spent climbing over mudslides, hiking across hills, and requesting rides in other overloaded vehicles making their way to Roseau.

Most disaster reporters are willing to take great risks because, "Reporters consider disaster coverage a choice assignment....It guarantees them a great deal of air time ['exposure']" (Stern, 1973, p. 1).

3. Media personnel need to be very resourceful in a disaster.

Though resourcefulness is required from reporters under conventional circumstances, it is especially necessary when covering a disaster. The more "responsible" mass media cannot rely on the early trickles of information that reach them from nonprofessionals at the disaster site. These media institutions feel the need to send their own teams of reporters

to get the story. Reaching the disaster site is not easy; it requires patience, persistence, and resourcefulness.

The reporter's resourcefulness plays an important part in getting the report out to his/her media institution as well. For example, UPI's Klein managed to befriend the Venezuelan television team and use their radio link to Caracas for over two hours on Friday night.

4. Few reliable information sources are available in a disaster.

When reporters arrived at Melville-Hall Airport on Friday, August 31, there was no authoritative source from which reliable and up-to-date information could be obtained.

The Miami Herald team interviewed John Harrison, but because he had left Roseau for his relief coordinating assignment at Melville-Hall Airport soon after the disaster had struck the country, he had only limited knowledge of David's impact. Also, Harrison was not in constant touch with all the relief activities being implemented by the government. Consequently, the Saturday morning edition of the Miami Herald had some inaccuracies and presented a somewhat incomplete picture of the event.

It was only after the Venezuelan radio link was operationalized that information at the airport became more reliable and comprehensive. One of the consequences of a breakdown in conventional communication channels is that until alternative channels can be opened, an information void prevails. People simply do not know much about what is happening, especially in distant areas.

Even at Roseau's Relief Operations Center, where a room had been set aside for use by reporters and for holding press conferences, no press conferences were held, due, in part, to a lack of "institutionalization" in Dominican culture. The officially designated Information Services

Coordinator (Ellsworth Carter) was caught up in the chaos and disorganization, and was rarely available. Information sources had to be tracked down individually and repeatedly by news personnel. Fortunately, Dominican officials (e.g., Interim Prime Minister Seraphine, Civil Service Chief Savarin, and Police Chief Philip_) were generally accessible and cooperative. (See section on "Mass Media Relations With Authorities").

5. Disaster victims willingly share available information.

Although available information regarding the extent of damage, the number of deaths, and status of relief operations may be limited, this information is freely shared by victims with reporters. Such was the case in Dominica; reporters did not have to probe local residents with questions in order to get them to share their particular experiences^{*} or to divulge relevant disaster information. This free sharing of information makes the task of the reporter all the more difficult; valid and reliable information must be distinguished from the not-so-valid and unreliable.

6. Media personnel converge in large numbers at the disaster site.

Due to the breakdown in conventional communication channels, the unreliability of information reaching external media institutions, and the high newsworthiness of natural disasters, droves of reporters typically descend upon the impacted area.

Dominica was no exception. On Friday, August 31, at least nine teams of reporters arrived at Melville-Hall Airport; on Saturday there were even more. Little information was available at the airport, road

* Disaster victims who have suffered great personal loss are an exception and should be allowed their privacy.

transportation to Roseau was impossible, and essential services were non-existent. In fact, by Saturday, Interim Prime Minister Seraphine ordered that no passengers arriving by plane should be allowed to disembark; we believe media personnel were excluded from this order.*

7. Media personnel must recruit local guides at the disaster area.

Those media personnel familiar with local conditions at a disaster site (including the geography, culture, population characteristics, and transportation systems) are better able to gather the needed information for their reports. Cumberbatch, reporter for Barbados' The Nation, had worked in Dominica in the past. Because of this he was able to write an insightful report on David's impact on Dominica although he could only fly over the island.

The Radio Antilles team to Dominica included Brian Meade and Raymond Lawrence because they were Dominicans. This strategy paid off. Because Meade personally knew key Dominican officials, Radio Antilles was given the status and attention it received, and the station's news team was given free use of a vehicle; an international telephone line, and accommodations.

On the other hand, most foreign reporters who converged on the disaster site were unfamiliar with Dominica. This problem was compounded by the fact that the island's support systems had been destroyed, travel was difficult, and locating information sources was not easy.

A few foreign teams recruited local help to alleviate some of these problems. The ABS-TV team sought the assistance of two Dominicans, Hyma

* We were only allowed to deplane at Melville-Hall Airport when we explained our purpose for being there, showed that we had our own food, and promised to leave as soon as possible.

Augol and Cooksie James, who spent all of Sunday directing the Antiguan around Roseau, suggesting persons to be interviewed, using their contacts, and serving as general sources of information for the Antiguan news reports.

When the NBC-TV news team first arrived in Dominica on Thursday, authorities offered the use of a local guide to facilitate news-gathering activities. The NBC team accepted and was able to accomplish a great deal during the hour they were on the island.

One alternative to recruiting local help is for the foreign reporter to better familiarize himself with local conditions prior to arriving in the alien country. The Miami Herald team attempted such a strategy. In preparation for a future visit to the Eastern Caribbean, Chapman tape-recorded an aerial description of the geographic and other features of the islands he passed over en route to Dominica. Chapman is building a library of such tapes, accessible to all staff members of The Miami Herald.

8. Confirmation of key information is limited.

After a disaster media personnel have great difficulty confirming the validity and accuracy of key information, such as death estimates, or the number of homeless because officials are preoccupied with more pressing relief activities, and transportation within the disaster area to obtain first-hand data is difficult. Because of this, we met no news reporter who had actually seen even one body (out of 56 deaths). Most deaths took place in Southern Dominica's countryside, where access by land was extremely difficult; newsgatherers were content to rely on death estimates provided by officials in Roseau's Relief Operations Center. According to Radio Antilles' Meade, "Only if a validation check was considered absolutely necessary would a Radio Antilles team member

double check "official" information -- such as, by going to a Minister in the local government for confirmation."

MASS MEDIA RELATIONS WITH AUTHORITIES

In a disaster area, local government and civil authorities are often the only reliable sources of disaster-related information. Their cooperation with media personnel becomes critically important in gathering news. In Dominica the media's representatives and the local relief authorities cooperated effectively. Mass media personnel were given access to the airport facilities and public buildings. a small room was set aside for newsmen at Roseau's Operations Center, and authorities were allowed to talk to reporters. There were two main reasons for this spirit of cooperation.

First, Dominicans are culturally a cooperative and friendly people. Helping others is a national trait. In spite of having just experienced an event as traumatic as Hurricane David, the local population seemed to have quickly returned to their usual easy-going lifestyle. Rules were often overlooked, regulations ignored, and even official dictates from Interim Prime Minister Seraphine modified to suit a particular occasion. This helped minimize potential bottlenecks and problems in media/authority relations. Local authorities tried to be as accommodating as possible for foreign reporters. Thus, when the NBC field producer landed at Melville-Hall Airport on Thursday afternoon, the local authorities there furnished him with a vehicle and a guide to help his team gather news more efficiently.

Second, local government officials realized how important and potentially powerful the mass media were to Dominica's relief effort. The

media could attract public attention, create a climate for favorable public opinion, and possibly help increase the amount of aid sent to the victims of the hurricane. Thus, when the Antiguan television team requested an interview with Interim Prime Minister Seraphine at Roseau's Operations Center, he found time to speak with them within 15 minutes.

On the other hand, the relationship between the mass media personnel and local authorities was not one of perfect harmony. John Harrison, sent by Seraphine to Melville-Hall Airport on Friday to serve as relief coordinator, was one of the few responsible and somewhat "knowledgeable" information sources available at the airport. Although he was a natural person for the reporters to interview, he seemed unwilling to provide them with much information. According to Morin of The Miami Herald, "Harrison had to be plied with questions before he said anything worthwhile."

When the Miami Herald's Chapman attempted to photograph what he thought was an elderly female disaster victim being transported out of Melville-Hall Airport, Harrison tried his best to prevent such a photograph from being taken. This led to a heated exchange. Before the situation got out of hand, Morin and Chapman left the airport. As Harrison explained to us later, the woman was a patient and not a disaster victim.

Another incident, which had serious implications on subsequent news-gathering activities, involved ABS-TV Liburd's attempt to ride aboard the HMS Fife helicopter to Roseau on Friday. A Venezuelan medic, who also wanted to travel to Roseau, had to insist on being given priority on that flight, and on getting to Roseau he complained to the authorities about Liburd's belligerence. Under Commander Wright's suggestion,

Seraphine laid down a new set of priorities regarding travel: henceforth, medical and relief needs were to take precedence over the media's needs.

The NBC team found how uncooperative authorities could be when they attempted to land their Lear jet in Port-au-Prince, Haiti, on Friday. Even though the plane's flight manual did state that any unauthorized aircraft that entered Haitian air space below 10,000 feet risked being shot down, Port-au-Prince Airport authorities would not make an exception for a media team desirous of covering the Haitian disaster. When the NBC team managed to land at Port-au-Prince Airport the next day, local authorities refused their request for a helicopter (after keeping them waiting for half a day).

Perhaps one reason for the antagonistic relations between the media and local authorities is the potential for political instability in the wake of a disaster.* This, as was borne out by later events in Dominica, when Seraphine's party was soundly defeated in the next elections, due in large part to their political mismanagement of the relief effort.

COOPERATION AMONG THE MASS MEDIA

Just as disasters are known to bring disaster victims closer together, the Dominican experience provided ample evidence that media personnel also "come together" in collaborative groups when covering

* For example, the 1972-74 Sahel (West Africa) drought and the 1977 Andhra Pradesh (India) cyclone both had important political repercussions. See Everett M. Rogers and Rahul Sood, "Mass Media Communication and Disasters: A Content Analysis of Media Coverage of the Andhra Pradesh Cyclone and the Sahel Drought," in Disasters and the Mass Media, National Academy of Sciences, Washington, D.C., 1980, pp. 139-157.

disasters. Mutual aid seems to be a characteristic of disaster situations (Office of the UN Disaster Relief Coordinator, 1979).

Disaster victims come together because this reduces anxiety and tension, increases their sense of security, and helps diminish the information void. Media personnel come together for other reasons: (1) financial, (2) friendship, and (3) interdependence (a mutually advantageous working arrangement). In Dominica we found several cases of cooperation between different media institutions. Where reporters did not participate in cooperative endeavors, they showed unusual individual initiative. At any rate, we noticed no cases of inter-media conflict.

The Financial Basis for Inter-media Cooperation

Travel costs for reporters covering disasters can be very high. Unconventional transportation often has to be used, there is substantial risk involved, and speed of travel is all-important. Cost-sharing was the most frequent reason media personnel cooperated in their news-gathering efforts.

For example, The Miami Herald team arranged with an AP photographer and a Gamma photographer to charter a plane out of San Juan. The \$1,300 fee was split three ways. When interviewed five days later, on Wednesday, September 5, Morin (of The Miami Herald) could not even remember the names of either of the two photographers. The contract was purely monetary, and a friendly relationship played no part in the arrangement.

Friendship as a Basis for Inter-media Cooperation

Only one example was observed of friendship leading to cooperation between different media representatives. News reporters covering disas-

ters are typically in a hurry, attempting to obtain as much information as possible in the limited time available. Friendships are not often allowed to interfere with the task at hand.

But friends in distress must be helped. There were ten occupants in the six seats of the Land Rover taking Liburd and his Antiguan television team from Roseau to the airport on Sunday, September 2. The Antiguan were in a hurry to reach the airport, as Hurricane Frederic was due to strike both Antigua and Dominica that night. Just outside Roseau three reporters from Antigua's The Lantern flagged down the Land Rover. The small plane on which they were to travel from Roseau to Melville-Hall Airport had suffered a flat tire; the reporters were stranded. They, too, wanted to return to Antigua in a hurry to be with their families and protect their homes from the storm. The Antiguan television team members were friends of these newspaper reporters. Liburd immediately invited them on board the already overloaded vehicle. There was no debate; friends in need must be helped.

Of course there was a price to pay--the Land Rover had a flat tire en route. As a result of that and other delays the Antiguan missed their flight. Also, the Antiguan compatriots had to share the cost of chartering the Land Rover; even friends can be mercenary.

Interdependence as a Basis for Inter-media Cooperation

When they realize that cooperating with each other in the news-gathering process will be advantageous to all parties involved, media people are likely to assist one another. UPI's Klein and Sabalones and the Venezuelan television team (part of the Venezuelan relief effort) arrived at Melville-Hall Airport on Friday, August 31. Klein spoke

English, the language spoken in Dominica, and Spanish. The Venezuelans spoke only Spanish. Klein could assist the Venezuelans by acting as an interpreter, both in news-gathering and in relief operations. The Venezuelans had "clout"; they were spearheading the relief work (medical, communication, and supplies) at the airport and had a two-way radio unit in their charge. The UPI team wanted to use this communication link and needed the added credibility and legitimacy they would get by working as partners with the Venezuelans.

Klein and the Venezuelan television team coordinated their activities for the three days they were in Dominica. For the duration of the partnership, Klein acted as a go-between for the Venezuelans and Dominicans. In return, on Friday night she transmitted her lengthy report via the Venezuelan radio. On Saturday she toured Roseau, gathering information in the company of the widely-recognized Venezuelans, and on Sunday returned to the airport with the Venezuelans in a specially arranged vehicle. On Sunday evening, Klein flew out of Dominica on board a Venezuelan military transport.

Even though we observed several examples of inter-media cooperation, not once did we see or learn of reporters from different mass media institutions sharing their notes or disaster-related information. At most they would interview an information source in one another's presence. News-gathering and "getting the story" at the disaster site remained an individual endeavor.

Similarly, when one media institution received breaking information about the disaster, it would not volunteer the sharing of this information with its "competition". For example, ABS-TV's early news report sent from Melville-Hall Airport via hams Humphreys and Mathews on Friday,

was not shared by ABS-Radio with its competition, Radio ZDK or Caribbean Radio Lighthouse, in the same market.

RESTRAINTS ON MASS MEDIA OPERATIONS

There are several distinctive aspects of a disaster that impose restraints on the mass media as they seek to gather, process, and file news. A disaster interferes with the usual news sources that the media use. For instance, government officials may be occupied with disaster-related activities and hence be unavailable to the media. A disaster often destroys telephone and telegraph channels that mass communicators use to file their stories. Usual means of transportation to the disaster-impacted area, and within this area, are usually disturbed or destroyed by a disaster.

More generally, a disaster creates pressing needs for various types of information such as where and when a disaster is expected to occur, the impact of the disaster, and how and where to obtain relief assistance. But at the same time a disaster greatly disturbs the flow of information that might fill these needs. The resulting uncertainty is the central problem for mass media operations.

Travel to Dominica

In Dominica one of the most important constraints on media operations was the difficulty in obtaining transportation to the island. Few foreign media personnel were located in Dominica at the time of the disaster. Only Radio Antilles had a local correspondent, Ellsworth Carter, and Radio Dominica staff member Peter Richards doubled as a local correspondent for CANA and Reuters. Other media institutions interested

in covering the event first-hand had to send news teams to Dominica following Hurricane David. All encountered at least some difficulty or delay in arriving.

We believe one of the earliest first-hand newspaper reports on post-disaster conditions in Dominica was obtained by a two-person team from The Miami Herald, Morin and Chapman, who arrived at Melville-Hall Airport early Friday afternoon. Morin phoned his report to Miami Friday night from Fort-de-France, Martinique, and it made the lead story in Saturday's Miami Herald. Since this team could travel on their own chartered plane, movement in and out of the disaster and neighboring areas was easier.

On the other hand, although the NBC crew used a high-performance Lear jet to fly over Hurricane David on Wednesday afternoon, even such a plane could not penetrate the storm and land in Dominica. Nonetheless, they did try again and were the first (and only) news team to land in Dominica on Thursday. This was quite an accomplishment, since the airport was closed and the runway strewn with debris.

Other news teams arrived by private, chartered plane on Friday, August 31. Many mass communicators arrived on commercial flights that Friday, including the UPI team, representatives from Radio Antilles, the ABS-TV team, and a BBC reporter Michael Charleton. Journalists from Barbados' The Nation and Antigua's The Lantern risked turbulent waters and seasickness to travel by boat directly to the heart of the disaster. Even so, they were only able to reach Dominica two days after David's onset.

Travel Within the Affected Area

From August 30 to September 3, travel and communication between

Melville-Hall Airport and Roseau was very difficult. Until Saturday, September 1, only a few shuttle flights and the emergency relief missions of the Fife helicopter reached the city. On Sunday, September 2, the road to Roseau was cleared of mudslides and fallen trees and land travel by auto was possible. The heavy rains of Hurricane Frederic on Monday, September 3, caused further mudslides, flooded the airport, and closed both the road and the airport again.

Because of this situation, newspeople had extreme difficulty in travelling from Melville-Hall Airport (the usual point of entry to Dominica) to Roseau and Grand Bay, areas worst hit by Hurricane David. Roseau was also the location of the island's main hospital, the Relief Operations Center, and the HMS Fife.

Many of the early reports from Dominica originated at or around the airport, rather than Roseau. A limited amount of aerial photography was attempted, but the quality of this filmed material was very poor. Only when the road opened on Sunday were all newspeople able to gain first-hand access to information from Roseau.

Even after reporters managed to get to Roseau, most of them did not travel elsewhere in hardest-hit Southern Dominica. Of all the media personnel observed and interviewed, only Radio Antilles' Meade ventured out of Roseau: he took a boat trip south to the coastal towns of Scotts Head and Soufriere on Tuesday, September 4, and on Thursday September 6 drove across the hinterland to Grand Bay on Dominica's southeast coast.

This constraint on movement within Dominica limited optimal news-gathering: little first-hand observation of activities, or verification and confirmation of information from outside Roseau or the Melville-Hall Airport area was conducted.

Filing News Stories

Three examples illustrate the problems media teams faced and the various methods to which they resorted to file their reports on the Dominica situation.

The NBC news team constantly had to curtail its news-gathering activities in order to meet filing deadlines. On Thursday and Friday, members of the team managed to return to San Juan's WAPA-TV station by airplane and send their news reports via satellite to NBC in New York with minutes to spare before the evening news. Al Johnson had to read his commentary directly into the satellite hookup, an expensive method if the commentator makes mistakes. NBC in New York had only minutes in which to preview the audio and video news components, determine how to edit them, edit them accurately, and position the edited reports for incorporation in the news program.

The Herald news team of Morin and Chapman encountered severe difficulties in filing their story. They left Dominica Friday evening for Martinique, hoping to phone Miami from Fort-de-France Airport. Unfortunately, phone lines at the airport were not in operation as they had been damaged by Hurricane David. Morin was informed that some lines were available from the city of Fort-de-France. He told his colleagues (Chapman, the AP and GAMMA photographers) to leave for their next destination (San Juan, Puerto Rico), while he went into town. Morin checked into a hotel in the city only to learn that their phone lines were down, too. He offered a \$20 "reward" to the hotel's phone operator if he could get a line soon. Morin returned to his room somewhat dejectedly. Twenty minutes later there was a knock on his door and a bellboy politely

informed him that his call had been put through and was awaiting him in the hotel lobby.

Morin rushed down with his report. The connection to Miami was very poor. Morin had to yell his entire report word by word to The Miami Herald office, and that in the presence of several guests who were waiting impatiently to make their calls. The phone bill came to \$320. According to Morin it was worth every dollar: the report made the lead story on the front page of The Miami Herald the next morning.

UPI's Klein filed her first story late Friday night via the Venezuelan radio hookup with Caracas. It took her nearly three hours because the Venezuelan at the receiving end of the radio link could understand only Spanish. Klein had to spell the report out word by word, sometimes letter by letter, often using the Spanish translation for greater comprehension. Her report was given to UPI's Caracas office which relayed it to UPI in New York.

In general, reporters in Dominica on Friday and Saturday, August 31 and September 1, were able to send their news stories out via one of the following channels:

- (1) The two-way Venezuelan radio transmitter at Melville-Hall Airport, for contact with Caracas, Venezuela.
- (2) The radio transmitter aboard the HMS Fife anchored at Roseau.
- (3) Through Operator Fred's amateur ham radio unit in Roseau, although his facilities were more often used for higher-priority messages.
- (4) Planes from the Melville-Hall Airport. For instance, the Antiguan television team sent out their news videotape on Saturday evening with a LIAT commercial plane. On Thursday and Friday evening, the NBC crew flew out of Dominica and sent in its report to NBC in New York from San Juan, Puerto Rico.
- (5) The Cable and Wireless Office's international phone lines out of Roseau. Four of the office's 13 external lines were recommissioned on Saturday, September 1.

Financial Restraints on the Media

Differences in the financial situations of the various media institutions covering the disaster determined certain differences in their news-gathering operations.

The U.S. media teams, with more money to spend, could afford to charter their own air transportation. The Caribbean media, on the other hand, had to rely on commercial airlines for their travel to and from Dominica. With the possible exception of NBC, these differing levels of financial resources did not provide any real advantage to the media teams. Whereas NBC managed to reach Dominica on Thursday and filed its limited report the same evening, the other teams only entered Dominica on Friday and Saturday.

The U.S. media teams had no budgetary restrictions on their news-gathering activities. For example, it is NBC's stated policy to give complete financial freedom to its correspondents once they have been assigned to a story. Similarly, Morin did not have to doublecheck with The Miami Herald before spending \$320 in filing his story by phone from Martinique.

The Caribbean media news teams were also given autonomy in deciding what needed to be spent except that their institutions could afford much less than their U.S. counterparts. For example, the Antiguan TV team knew they could not afford to charter a private plane to fly them to Roseau. In fact, this team was on a particularly limited budget because they had travelled to Dominica with only their personal savings in their pockets.

In the long run though, such differences in available financial

resources had little impact on either the manner or the quality of news coverage given by the various media teams to Hurricane David: hardest-hit Southern Dominica (Roseau, Grand Bay and other points inland) was equally inaccessible, and reliable, complete information equally scarce.

Technological Restraints on the Media

Technological constraints limited the ability of reporters to file news stories from Dominica; there were very few external communication channels for several days because of the lack of electricity and telephone and telegraph services. Although UPI photographer Sabalones carried an impressive system for portable still-film processing and transmission via telephone hookup, the lack of electricity and phone service prevented his use of this equipment. He had to fly out of Dominica on Sunday morning to file his photographs.

The Antiguan television team was hampered somewhat by the lack of television editing equipment at their Antigua station. This meant that they had to "edit in their camera," that is, record onto videotape in the exact order and to the precise length that would eventually be shown by their station to the viewers. Hence, a great deal of careful planning of their videotaping activities was required, especially with regard to sequence and time allocated to each event.

On the other hand, the availability of sophisticated technology such as the satellite television hook-ups and computerized video editing machines, did enable NBC to move their deadlines forward.

CONTENT OF DISASTER COVERAGE BY THE MASS MEDIA

Information Availability

Because there were no local sources of reliable information, only one external channel of communication on the island, and no means for obtaining first-hand information, initial mass media reports on Hurricane David's impact on Dominica presented little information and emphasized the uncertainty and unreliability of the information that was provided. The media first gave meaning to the disaster by providing information on the proportion of homes without roofs, the extent of damage to banana and other crops, the early death and casualty counts, and the broken communication channels in the island.*

Gradually, as the picture became clearer, as internal and external information channels opened, as access to the disaster site became possible, and as information uncertainty diminished, media reports increased in length and in the number and reliability of pieces of information presented.

One illustration of the daily improvement in the availability of local information was the change in estimated number of deaths (Table 2).

Underplaying Certain Information Items

The rampant looting behavior during the hurricane's strike on Dominica in Roseau, and later the looting of stored relief supplies in

* One of the critical functions of the mass media is to synthesize fragmented pieces of information on a disaster and make coherent sense of them. This helps both the media institution's audiences and government and relief authorities involved in the disaster.

TABLE 2
 CHANGES IN DEATH ESTIMATES FROM HURRICANE DAVID IN DOMINICA

	ABC-TV	CBS-TV	NBC-TV	<u>The Miami Herald</u>	AP Wire Service	Radio Antilles
Aug. 30	2	5+	4+	not available	2-4	not available
Aug. 31	-	-	16+	16+	5-16	not available
Sept. 1	-	-	-	18	not available	-
Sept. 2	-	-	-	-	not available	37
Sept. 3	-	22+	-	-	not available	not available

both Roseau and Melville-Hall Airport, was common knowledge among local officials and residents. It was even observed first-hand by several reporters. Nonetheless, this aspect of the disaster received minimal attention in most news reports.

Carter ignored this issue entirely: he believed such behavior to be normal and expected during a disaster's chaos and confusion, and considered disaster impact information to be more salient in the period immediately following the hazard's onset. Richards presented a few eyewitness reports of the looting activities, balanced with official statements rebutting and disclaiming the occurrence of such activities. In general, he had decided to underplay this issue because he realized that reports describing the lawless and unruly situation could serve to reduce the contributions made to the relief effort. Meade did record numerous "fascinating" interviews with some of the looters in Roseau, and even

sent out an "expose" on some police involvement in the looting and police corruption in the distribution of the relief supplies. Only some of these reports were approved for broadcast at Radio Antilles. Initially, other news items were judged as being more newsworthy, and later because program manager Julian Rogers felt that such behavior "can be expected" in a disaster. Walrond's eyewitness account of the "disgusting and horrible" looting behavior at the airport (where even the many military personnel guarding the supplies were overpowered by a mob of frenzied Dominicans) received a brief, toned-down mention in one Radio Antilles news report.

The Media Institution's Audience

Media institutions are affected by their perceptions of the audience's expectations and information needs. The following examples illustrate this point.

U.S. network television. Since the U.S. television networks recognize that the American audience is generally interested in "seeing" the power of a hurricane, each network crew tried to "scoop"* the other with dramatic and on-site visuals of post-impact Dominica. CBS was entirely unsuccessful in covering Dominica first-hand (it covered Martinique and the Dominican Republic instead). ABC arrived Friday, providing first-hand coverage of Dominica (using only visuals of Roseau from the air). It also covered Martinique, and Puerto Rico. NBC scooped even ABC by a day, arriving in Dominica on Thursday and providing the first coverage on

*

Such a competitive situation seems to exist among the three U.S. networks even though the National Association of Broadcasters says in its own manual for disaster operations that a disaster is not to be treated as a scoop.

Thursday evening, August 30. On Wednesday, NBC covered Antigua, and on Thursday and Friday Dominica and Puerto Rico shared coverage time. (For U.S. network coverage of Dominica see Table 3.)

By Saturday all three networks had shifted their attention to Hurricane David's impending impact on Florida.

The Miami Herald. Morin and Chapman were sent to cover Hurricane David in the Caribbean because such events are important to the newspaper's Florida and Caribbean readers. Even given this innate news value, the paper carried only one long, comprehensive report on Dominica before moving on to a report on David's impact elsewhere. Its lead story on Saturday, September 1, was devoted to Dominica and measured 74 column inches (on pages one and 16). The report included a map and a photograph of Roseau from the air. On the previous day The Miami Herald had devoted only eleven column inches to Dominica; on Sunday, as Hurricane David approached Florida, The Miami Herald's attention shifted from Dominica to the U.S. mainland and the preparedness measures Floridians should take. Dominica only got one column-inch in that edition.

Radio Antilles. The type of news coverage on the Dominican disaster provided by Montserrat-based Radio Antilles was entirely different from that of the U.S. media. In the absence of any available local mass media channels in post-impact Dominica, Radio Antilles took over the task of catering to the Dominicans' pressing information needs. In the warning phase of the disaster, Radio Antilles stepped up the length and frequency of weather reports and forecasts. On Tuesday, August 28, Radio Antilles asked all its Eastern Caribbean correspondents to file local disaster preparedness reports. Carter's report specifically stated the low level of preparedness evident on Dominica; this report was broadcast

TABLE 3
U.S. MASS MEDIA COVERAGE OF HURRICANE DAVID

<u>August 27</u>	<u>ABC</u>	<u>CBS</u>	<u>NBC</u>	<u>The Miami Herald</u>
Total length*	0:10	-	-	not available
Length of Dominica coverage	-	-	-	
Film/photo length on Dominica	-	-	-	
Dominica content	-	-	-	
<u>August 28</u>				
Total length	0:20	-	0:25	20
Length of Dominica coverage	0:05	-	0:05	0
Film/photo length on Dominica	-	-	-	0
Dominica content	Heading towards Windward Islands	-	Heading towards islands in the Lesser Antilles	Hurricane David whipped itself into major status and prompted a hurricane watch for Barbados. "This is an extremely dangerous hurricane and the most intense since 1960" (NWS).

* All lengths in minutes and seconds for television newscasts, and in column inches for newspapers.

Table 3 (continued)

	<u>ABC</u>	<u>CBS</u>	<u>NBC</u>	<u>The Miami Herald</u>
<u>August 29</u>				
Total length	0:30	0:20	1:20	54
Length of Dominica coverage	0:20	0:10	0:20	1
Film/photo length on Dominica	-	-	-	0
Dominica content	Slammed head on into Dominica. Little communication, extensive damage claimed.	Dominica isolated. Telephone lines wiped out. No immediate reports of injuries or serious damage.	Struck Dominica, uprooting trees and blowing roofs off houses.	Hurricane warnings were in effect today for... Dominica. Red-and-black hurricane warning flags had long since been hoisted on islands west, southwest and northwest of Barbados - Dominica...
<u>August 30</u>				
Total length	3:25	2:10**	1:00**	165
Length of Dominica coverage	0:20	0:15	0:55	18
Film/photo length on Dominica	-	-	0:35	20 (map)
Dominica content	Slammed into Dominica with 150 mph winds. Dominica suffered worst damage. Communications still bad, but first reports say at least 50,000 homeless, two killed.	Hit Island of Dominica. Heavy damage reported. 5+ lives lost. 60,000 (out of total 80,000) homeless.	Dominica devastated. 4+ killed. 400+ homeless. All water & power out. 12,000 acres of bananas (main crop) destroyed. Most of citrus & cocoa crop also destroyed.	Headlines: Hurricane Rakes 2 Carib Islands, Edges to North; David's 140 mph Tempest Smash- es Through Martinique & Dominica. Reports (from ham operators) just coming in. Island flattened. Conventional comm. systems damaged or wiped out. No official reports. Radio Antilles took over for Radio Dominica. Evacuation to shelters ordered. U.K. destroyer en route.

Table 3 (continued)

	<u>ABC</u>	<u>CBS</u>	<u>NBC</u>	<u>The Miami Herald</u>
<u>August 31</u>				
Total length	3:00	1:50	1:45	151.5***
Length of Dominica coverage	0:50	0:05	1:00	11.0
Film/photo length on Dominica	0:40	-	0:55	-
Dominica content	Incredible property damage on Dominica. Effects still being measured. 16 dead. Banana crop wiped out. Widespread looting. 60,000 homeless. Many search for food, valuables. Ham Operator: "Dominica simply does not exist anymore." U.S. officials planning joint relief efforts.	David has already caused 19 known deaths & 1000 injuries. Millions of dollars of damage.	At least 16 dead. 200 injured. Rescue workers cannot get to Roseau as roads blocked. Emergency supplies reach some. Interview with victim: "Everything is gone."	At least 16 dead. 60,000 of island's 85,000 homeless. Banana crop, mainstay of economy, probably wiped out. Other damage estimates provided. David's present size & course detailed. US-AID official at Roseau: estimating relief needs. Relief requirements detailed. Seraphine's SOS message described. Relief activities started, described.
<u>September 1</u>				
Total length	-	2:50**	3:35**	332.0
Length of Dominica coverage	-	-	-	46.0
Film/photo length on Dominica	-	-	-	28.0

Table 3 (continued)

<u>September 1 (continued)</u>	<u>ABC</u>	<u>CBS</u>	<u>NBC</u>	<u>The Miami Herald</u>
Dominica content	-	-	-	Victims describe David's power. First-hand accounts of impact presented. Extent of damage: fragile agricultural economy wiped out, 80% homes destroyed; no food, safe water, power, telephones. "There was time to prepare for David's fury, but nothing to do...We have nothing, we could buy nothing." Some authorities quoted. Early relief efforts described: repairing buildings, treating injured by HMS Fife staff. International offers of assistance received. (Some factual errors noted).
<u>September 2</u>				
Total length	5:25**	5:30**	3:35**	595.0**
Length of Dominica coverage	-	0:05	0:10	1.0
Film/photo length on Dominica	-	-	-	-
Dominica content	-	150,000 left homeless in Caribbean (including Dominican Republic). Dominica death toll at least 22.	Worst damage wrought by David in the Dominican Republic. Dominica public, Dominica & Puerto Rico.	Sporadic, piecemeal references to David's impact on Dominica scattered throughout coverage of David.

** Coverage given in first five minutes of newscast.

*** Lead story

during the station's 6:00 p.m. news on Tuesday.

In the immediate post-impact phase, Radio Antilles effectively became a "Radio Dominica": an average of half of every hour of programming over Radio Antilles' English-language channel was devoted to Dominica-related news and information between September 1 and 12. This included continuous updates on: (1) relief activities--what medical assistance was being provided to the hurricane victims, what relief supplies had arrived, and where supplies were being distributed; (2) impact reports--casualty and damage estimates; (3) disaster preparedness information--to better equip Dominicans for Hurricane Frederic, which struck Dominica aglancing blow less than five days after David's onset; (4) rehabilitation information--practical coping mechanisms, reassurances that the authorities were organizing aid, and official statements from Seraphine and other credible sources; and (5) innumerable personal messages to and from local residents.

There were no commercial messages broadcast by Radio Antilles during its coverage of David in Dominica. On Monday, September 3, Radio Antilles stated that they would be "reading all personal messages to and from Dominica at a quarter to each hour, so that listeners can save their batteries, which must be getting low...." Such concern exemplified Radio Antilles' decision to put Dominica's welfare above the station's own commercial gain. The information was presented in a dignified, compassionate, and compelling manner, with an informal and sincere style. Simple language was used and information was made as practical and relevant as possible. Critical information items were repeated so as to minimize misinterpretation and maximize emphasis and reinforcement.

Length and Period of Coverage

Mass media coverage in the U.S. was characterized by generally brief reports, during a period of between two and five days. Typically, only one of these reports would attempt a more comprehensive study of the disaster. One of the main reasons for this manner of coverage by the U.S. media was that Hurricane David was affecting a number of nations along its path of destruction. With few news teams assigned by each media institution to these several impact areas and the constant change in the immediate focus area, the teams had to move on to the next major impact area before coverage could be established or analysis attempted on one area.

The more localized Caribbean media institutions, on the other hand, tended to concentrate their news coverage on a few, proximate impact areas. Thus, Antilles' on-going coverage concentrated on Hurricane David's impact in Dominica, while providing only highlights of David's impact elsewhere.

Financial Resources

A media institution's ability or inability to spend vast sums of money reporting a widespread disaster can influence the content and scope of its reports. Thus, whereas the relatively wealthy U.S. television network teams could fly among the Caribbean island-nations aboard chartered planes, Antigua's ABS-TV team travelled to Dominica on their hastily collected personal savings via commercial airline. Consequently, the U.S. networks provided capsulated reports on a succession of affected areas, whereas the Antiguan team covered only Dominica for three successive days.

First-Hand Reports

Reports of a disaster written or produced by a media institution's staff are more likely to get media time and space than are second-hand reports on the same event. Thus, since CBS was unable to obtain a first-hand report from Dominica, it devoted a total of only 35 seconds over three days to David's impact on that island. NBC, however, covered Dominica from land and from the air on two occasions, providing a total of two and one-half minutes of coverage over four days (of which one and one-half minutes was devoted to live footage).

Inaccuracies

The lack of reliable information sources after a disaster is one potential source of inaccuracy. Such was the case in Dominica: a relatively disorganized public information dissemination system combined with generally overworked local officials created a situation in which reporters were unable to effectively distinguish accurate from inaccurate information. Even otherwise responsible and reliable information sources can become reticent when overworked and under pressure.

Because there is no one official spokesperson for providing some types of information, who a reporter questions can determine what information is included in the subsequent report. For example, Morin reported in the Miami Herald on August 31 that an official of the U.S. Embassy in Barbados had stated that USAID's officer in Barbados had reached Roseau on Thursday. ABC, however, provided an unsubstantiated statement in their August 31 report from Dominica that U.S. diplomatic and relief officials had had to fly on to Martinique and were unable to land in Roseau until that day (Friday). Clearly, one of these reports was inaccurate.

As news reports on a disaster are relayed via imperfect communication channels from on-the-scene news-gatherers to their parent media institution, distortions can occur, creating errors in the final reports. For example, since Morin had to use a poor telephone connection between Fort-de-france, Martinique, and Miami, Florida, to send his report to the Miami Herald, his story erroneously called the HMS Fife the "HMS Water-spice."

One should nonetheless, recognize that "(H)owever interesting, studies of accuracy nevertheless ignore an important aspect of media performance. They deal with the correctness of what is reported, not with the adequacy of completeness of those reports. In fact, accuracy could be highest in the skimpiest possible report, for possibilities for error are rewest in a short report" (Scanlon, 1980, p. 255). Thus, studies of accuracy should be related to both the availability of information and the amount of information presented.

Aerial Coverage

Every news team that arrived in post-impact Dominica wanted to travel into Roseau because it was the capital, the location of the Relief Operation Center, and had suffered the worst visible damage. Due to a breakdown in internal transportation systems, this was not always possible. Thus, certain newsteams used only aerial shots of Roseau as an alternative. NBC and ABC filmed Roseau from the air. Both news teams used Lear jets, which are incapable of flying at low speeds and are unsafe to fly at low altitudes. Thus, even though NBC's Al Johnson did the best he could by making six passes over Roseau and by having one video camera take shots out of the plane's window in long shot, while the other camera

did medium shots and close ups, the results were very poor. Houses in Roseau were blurred and no people were distinguishable. ABC's visuals were no better.

But, since disaster coverage necessitates the use of dramatic visuals, and the news teams had gone to such trouble and expense to obtain the aerial photographs, they were used. ABC used only aerial pictures of Roseau in its single report on Dominica, whereas NBC used the footage in one of its two reports on Dominica, combining it with land-based coverage of relief and reconstruction activities.

The more modest efforts of The Miami Herald, GAMMA, and AP teams provided better results. Travelling together aboard their small, twin-engine Piper Navajo charter, which was capable of flying lower and more slowly than the Lear jet, they obtained very clear and sharp still photographs of Roseau. These were published in the September 1 edition of The Miami Herald.

THE MASS MEDIA'S NEWS VALUE AND NEWSWORTHINESS CRITERIA

After analyzing the mass media coverage of Hurricane David and observing first-hand the news-gathering process, we conclude that the criterion of news value for the various mass media covering a disaster is a function of:

- (1) What issue or event the media institution considers "significant." This depends partly on proximity and propinquity to the event, the costs of coverage, and competition from other stories.
- (2) What "relevant" information is available. This depends on what communication channels are open, whether the information sources are considered reliable, and what information reaches the news-gatherer.
- (3) What the news-gatherer thinks that his or her audience is

interested in knowing about. This depends on the media institution's influences on the reporter, the feedback on reports the reporter has received from audiences and peers in the past, and the reporter's own image of the medium's audience.

- (4) The news-gatherer's personal traits. These include the reporter's background (educational, socioeconomic, and professional), the reporter's sense of professionalism (including code of ethics), and the reporter's personality (including drive and resourcefulness).

Based on these criteria we found the various mass media studied to be similar in some respects, but different in most.

Numerical estimates are usually included in news reports.

All the media reports analyzed made some mention of the storm's impact on Dominica in terms of "numbers": i.e., casualties, damages, and people affected. The difference lay in the relative importance given to such estimates.

Whereas The Miami Herald, AP, and the U.S. television networks made relatively frequent and prominent mention of these numbers, Radio Antilles and Antigua's ABS-TV did not. The media institution's understanding of audience expectations plays a major part in this decision: it is believed that the American audience likes to receive succinct and quantified information on a remote event. The Caribbean audience, on the other hand, is considered to be less numerically-oriented, and expected to be more concerned with the human aspects of such a proximate disaster.

The main theme or "thrust" of reports varied across media.

The U.S. television news broadcasts were succinct, providing only impact estimates and those major information items needed to update the status of the situation. The Miami Herald did a more comprehensive job

of reporting; in addition to impact estimates and updated status items, their reports contained interviews, official statements, personal observations, and analysis. Radio Antilles devoted approximately half its daily programming time to Dominica's information needs. All sorts of messages, including relief needs, official statements, and personal messages from victims, were broadcast. Amid this "open gate" programming approach, a somewhat humanitarian orientation in style and content could be perceived.

The ABS-TV team at first presented effective status reports, but later tended to dwell on how bravely Dominica was coping with her disaster by demonstrating what a hero Operator Fred was, or presenting on-going self-help and external relief and reconstruction activities.

The U.S. television networks had to choose among numerous competing stories, and had to cater to a heterogeneous audience located far from Dominica. These elements and the medium's constraints on time and space imposed limitations on what type of coverage the networks could give.

The Miami Herald had fewer space and time constraints. The fact that it sent reporters to Dominica and the type of coverage it gave are probably due to the Herald's substantial audience in the Caribbean (the newspaper published a special clipper edition for Latin America and the Caribbean), and partly because hurricane stories are especially relevant in Florida.

Radio Antilles provided the excellent coverage that it did because: it is good public relations to do so (the station enjoys a large listenership in Dominica); it is supported, in part, by Germany's Deutsche Welle (West Germany's equivalent to the "Voice of America") and can afford to

lose some advertising revenue; station policy calls for humanitarian coverage to be given to areas within the station's primary coverage range that have been affected by severe natural hazards (similar coverage was provided to the recent St. Vincent volcano disaster; and key Radio Antilles personnel had encouraged Seraphine to give the station the mandate it needed to become the official source of post-impact disaster information, so that the station was obliged to perform responsibly.

Proximity and propinquity determine what stories are covered.

The Miami Herald covered Dominica partly because of its readership in the Caribbean and partly because Florida is hurricane-prone. The Antigua and Barbados news teams covered Dominica because Antigua and Barbados are neighboring islands and because they share a common colonial past. The fact that Martinique and Guadeloupe do not share this same feeling of propinquity had some bearing on why those neighboring islands did not send news teams into Dominica.

The Miami Herald team originally left Miami to cover Hurricane David's impact on Puerto Rico, a self-governing commonwealth in union with the U.S. Puerto Rico is Spanish-speaking, as is much of Florida, and has a wide readership for The Miami Herald's clipper edition. On Thursday, August 30, it was discovered that Hurricane David's impact on Puerto Rico was minimal. The choice for the team then was whether to go to the Dominican Republic or to Dominica. They chose to go to the Dominican Republic as it too was Spanish-speaking, had heavy readership of The Miami Herald, and the people had kinship ties with many Florida residents. In addition, the disaster was thought to have been more severe there than it was in Dominica. But because Santo Domingo's airport was closed, Morin

and Chapman decided to cover the story in Dominica, their second choice.

Similarly, as Hurricane David approached the U.S. mainland, the proximity criterion dictated that stories on Dominica be replaced, in turn, by stories on Puerto Rico, the Dominican Republic, the Bahamas, and Florida and the U.S. mainland.

The same story can be interpreted differently and have different news value criteria applied to it by different reporters.

The news value criteria for NBC's reporter Al Johnson in his coverage of Dominica was one which used impact estimates ("David devastated...killed several people....All water and electricity knocked out...") and showed the anguish and destruction, so as to construct the picture of Dominica for his viewers. He touched only briefly on the beginnings of relief efforts in his second (and last) report by stating that "Emergency supplies are reaching some parts of the island."

The Antiguan team presented a more balanced coverage of the event. In their first videotaped report (Saturday, September 1), ABS-TV showed the extent of damage and destruction in the village of Marigot near Melville-Hall Airport while describing the beginnings of the relief effort underway by external agencies and by local residents. In their second videotaped news report (Sunday, September 2), Liburd and his crew shot the following footage (with related commentary, where relevant):

- Panoramic long shot of Roseau from nearby hilltop: shots of devastated homes, cathedral, etc. Commentary: "The spirit of the Dominicans still lives...repairing homes...going to church."
- Roseau River: local residents washing clothes, dishes, themselves.
- Roofless homes on a Roseau street. Commentary: "Everything down."
- Exterior of police headquarters, Roseau: more roofless, battered homes, buildings and trees. Helicopter flies through the sky. Commentary: "The HMS Fife is doing a fantastic job at rehabilitation..."

- Random shots of Roseau streets: more devastated buildings.
- Windsor Park (a cricket field) now a relief supplies drop area. Commentary: "Relief is needed...relief supplies are arriving...the Fife, the Venezuelans, the Americans are here...." Supplies arrived listed.
- Interview with PM Seraphine. Following points made: extent of damage; what aid is needed; which countries have provided prompt assistance. The biggest problem has been a lack of internal and external communication.
- Interview with Operator Fred at the Relief Operations Center. Commentary: "Fred was the only link with the outside world...a true hero."
- Interview with a disaster victim with a fractured leg: how he survived the hurricane, and the fact that he is now staying at a refugee center.
- A refugee center. Commentary: "The indomitable will of the Dominicans..."
- Princess Margaret Hospital. Commentary: "Patients are being taken care of..."
- A montage of shots of damaged houses and roads, and relief and rehabilitation work underway. (Set to music).

This list of shots shows that although Liburd and his crew did not ignore the negative aspects of the disaster, they made conscious choices not to overplay this aspect. They intentionally did not dwell on how the Dominicans had suffered because of the disaster; show long lines of victims waiting for medical attention at the hospital; or show extreme close-ups of the devastated homes, preferring instead to show panoramic shots of the city and only an occasional medium shot. They omitted an interview with an elderly lady in Roseau, a survivor of the last big hurricane to hit Dominica (in the late 1920s), because she broke down in tears when reminded of the family member she had lost in that disaster. Liburd considered such coverage unethical and an invasion of the woman's right to privacy.

METHODS FOR QUICK-RESPONSE FIELD RESEARCH ON DISASTERS

Most behavioral research is a relatively slow, deliberate process: A research problem must be conceptualized, a proposal drafted, funds secured, and data gathered. Such a ponderous process is inappropriate for studying communication phenomena in disasters. In these cases, different research strategies must be utilized. Our investigation of Hurricane David in Dominica is unique in several respects. In addition to answering the six research questions that guided this study, we have learned certain lessons about methods suited to study the media in a quick-onset disaster. These understandings are recounted as follows, in the hope that they will be useful to other scholars who may benefit from our successes and our mistakes.

The Timing of Our Decision to Leave for Dominica

Our travel to Dominica was facilitated by appropriate timing, good luck, and the availability of plane reservations. Generally, we recommend that a quick-response research team should either reach a disaster area before the disaster occurs (an understandably difficult task), or leave as soon as it is known that a certain area has been hit by a natural hazard and is a "disaster area."

Gaining Access to Disaster Activities

We feel fortunate in gaining access to the persons and disaster areas and activities that we needed to observe on Dominica--Melville-Hall Airport, the police station and hospital in Roseau, mass media personnel, Dominican government officials, and external relief officials. We think this degree of accessibility was for the following reasons:

- (1) Because of our identification as university scholars, we presumably had little vested interest in the situation we were investigating. This enabled us to circumvent Seraphine's counterconvergence instructions: that no passengers could disembark at Melville-Hall Airport.
- (2) Since we were identified as foreigners in newly-independent Dominica, we were treated with hospitality and respect.
- (3) Immediately after Hurricane David struck, normal activities were disrupted and usual regulations were not being enforced. Because we arrived during this time of disorganization, our activities were unhampered.
- (4) Because all information was in such short supply during our work in Dominica, we soon were in a position to give as well as receive information about the disaster.
- (5) We were known to be colleagues of Dominican Dr. Jeff Charles, a communication researcher in the U.S. and past manager of Radio Dominica.

Operating as a Two-Person Team

An obvious disadvantage of two investigators, instead of one, is that travel and living costs are doubled. Also, a two-person research team may be more intrusive in the process that we sought to study. However, there were several advantages to our approach:

- (1) Our skills were complementary. For example, Sood knew more about television production, which was useful in our work with the Antigua TV news team, while Rogers knew more about David's impact on the island's economy. Sood had a limited grasp of French, which assisted our travel in Martinique and Guadeloupe, while Rogers' knowledge of Spanish helped communicate with the Venezuelan television news and relief team in Dominica.
- (2) Our data-gathering interviews were facilitated because they became more of a small group conversation and, hence, less threatening to our respondents. One of us could take notes while the other asked questions. Often we reminded each other of questions that should be asked. For the unstructured data-gathering method we used, a two-person approach was essential.
- (3) Together we were able to interpret the disaster, its media coverage, and the other events that we observed in a way that would have been much more difficult for a single researcher.

Participating in the Disaster We Were Investigating

Whether we wanted to or not, we found ourselves in the role of participants in the Dominica disaster. For instance, we found ourselves in danger from Hurricane Frederic on Sunday night, September 2, after we missed the last flights out of Dominica. We also found ourselves exchanging disaster-related information with victims. Dominicans gave us messages to relay to their relatives in the U.S. and elsewhere. In one instance, we were in one of the first vehicles over the road from Melville-Hall Airport to Roseau and we were repeatedly asked by other motorists and passers-by whether the road was passable to automobiles without four-wheel drive.

Ethics of Studying a Disaster Area

We were not allowed to deplane at Melville-Hall Airport on Saturday morning, September 1 until we showed that we were bringing our own food and that we would not stay in the housing-short section of Dominica. Nevertheless, we felt an obligation to leave Dominica as soon as possible.

We tried to explain our purpose to all of our respondents in terms they would understand. We were not always successful. A few respondents remained puzzled.

We tried not to interfere with relief operations in the process of our data-gathering activities. Usually, we were able to interview relief agency officials when they were temporarily unoccupied, as for instance, between supply flights at Melville-Hall Airport.

Gathering Additional Data

It is strongly recommended that the quick-response researcher return to the disaster area as soon as conditions have returned to relative

normality. This strategy is valuable because:

- (1) Gaps in previously gathered data can be filled;
- (2) Inconsistencies in the data can be rectified;
- (3) Additional data such as interviews with previously unavailable persons;
- (4) A new perspective can be obtained--participants in the event are able to analyze their past activities better when they have had time to reflect on them.

When Sood returned to the Caribbean in 1980, he was able to interview the following individuals for the first time: Ferdinand Parillon, Home Affairs Minister of Dominica; Gordon Henderson, Manager, Dominica Broadcasting Corporation; George Buckmire, Chief Technician, DBS-Radio; Ellsworth Carter, correspondent in Dominica for Radio Antilles and UPI; Peter Richards, correspondent in Dominica for CANA and Reuters; Julian Rogers, Program Manager, Radio Antilles; Brian Meade, Sales Manager, Radio Antilles; Linda Walrond, News Producer, Radio Antilles; Mickey Mathews, Manager, Antigua Broadcasting Corporation; Norman Smith, Manager, Cable and Wireless Office, Roseau; and Len Bucklin, Forecaster, National Weather Service, San Juan, Puerto Rico.

Sood re-interviewed the following individuals: Oliver Seraphine, Interim Prime Minister of Dominica; John Harrison, Social Development Adviser, British Development Division; Fred White, ham radio operator from Roseau; and Frank Liburd, Peter Gordon and Nat Moses, of ABS-TV.

RECOMMENDATIONS

For the Mass Media Covering a Disaster

- (1) Mass media personnel travelling to the disaster site should carry not only enough supplies (food, water, purification tablets, etc.) for their personal consumption, but also as much more as possible. This surplus could be distributed to

the disaster victims as an act of good faith and to help alleviate their hardship.

- (2) Persons gathering news at the disaster site should recognize that even though "resourcefulness" and "drive" are important traits, work must be carried out within the priorities and ground rules laid down by local authorities.
- (3) When a media institution attempts to cover a disaster which has the potential of affecting a widespread area, additional news teams should be assigned to the story. One team typically cannot cover effectively more than one or two parts of the affected area.
- (4) When a news team travels to an unfamiliar area to report a disaster, the reporters on the team should orient themselves before arriving and make notes of places they are passing en route to the disaster site, so that the information is available to other members of the media institution in the future.
- (5) News Teams covering a disaster should always place the disaster victims' needs ahead of their own, and through their attitudes and behavior show respect for the victims and their culture.
- (6) Reports on a disaster should go beyond the objective presentation of factual information and show compassion for the victims. A balance must be struck between showing bereaved disaster victims, which may be of high interest to the audience, and maintaining victim's right to privacy. Media personnel should respect the rights of disaster victims who do not wish to be interviewed or photographed.
- (7) The local media should give a higher priority to the presentation of disaster preparedness information during normal conditions. Such information should be presented with a sufficient sense of urgency that the local population is motivated to act.
- (8) Mass communicators should recognize that first-hand disaster coverage often involves taking great personal risk and working under unpleasant conditions. In addition, reporters need to be resourceful and willing to work long hours.
- (9) Local authorities are generally the most reliable information sources in a disaster. But obtaining information from such sources must be undertaken with tact and patience; reporters should not expect immediate cooperation or the complete attention of the local authorities who are preoccupied and engaged in more urgent activities.
- (10) Mass media personnel should recognize that their audience does not always fully comprehend weather service terminology, such as "hazard watch" and "hazard warning." Special efforts should

be taken to clarify the meaning of such terms and to explain their implications to the audience.

- (11) Estimates regarding the seriousness of a disaster (number of deaths and injuries, extent of damage) should be qualified by explaining the degree of reliability of the source of information. Such information is rarely completely accurate and reliable. Deliberate attempts to verify and confirm such information must be made.
- (12) Media personnel should recruit local guides at the disaster site. This is especially true for those reporters not familiar with the geography, culture, population characteristics, and transportation systems of the area. Without such assistance reporters waste precious time, make mistakes, and cause confusion.
- (13) It should be recognized that two of the important functions of mass communication in disasters are interpreting the disaster and placing it in a broader context.
- (14) Mass media personnel should recognize that often they are one of the main sources of "complete" or synthesized information about a disaster for local government and relief officials, and that this information may be used as a basis for decisions about relief activities and the like.

For Researchers Involved in Quick-Response Studies

- (1) A complete travelling kit should include: water purification tablets, canned food, flashlight with extra batteries, candles, thermos flask, outdoor clothes and waterproof shoes, toilet paper, camera and film, cassette tape recorder with extra batteries and cassettes, a transistor radio, letters of introduction, a list of personal contacts, an area map, and cash in the appropriate currency. In preparation for such a study, researchers should obtain cholera and other appropriate vaccinations. In addition, a small health kit should be taken along.
- (2) Plan for the quick-response study as much as possible: develop a list of personal contacts in all potential disaster areas; explore the best and fastest means of reaching potential disaster sites; and prepare a complete list of research questions in advance.
- (3) The disaster researcher should reach the disaster site as soon as possible and return to the disaster area later, under more normal circumstances. This complementary strategy helps make the data obtained more comprehensive and reliable.

For Areas Prone to Natural Hazards

- (1) The communication systems of the area should not be concentrated but instead should be spread over a wide area. This strategy would reduce the likelihood of a total loss of external and internal communication capability after a natural disaster.
- (2) The area should possess backup emergency power generators and other emergency equipment so that electronic communication channels can function throughout the crisis.
- (3) Local authorities who may be involved in the relief efforts should be made aware of the critical role played by the mass media in informing the public of the disaster, reducing the uncertainty, and eliciting a favorable response towards the relief effort from the media's audiences.
- (4) Amateur radio operators should be recognized as a vital external communication link. Under normal circumstances their presence should be recognized and their activities encouraged.
- (5) Formal links between available weather information sources (meteorological offices, amateur ham operators, news/wire services) and local media outlets should be established and maintained.

BIBLIOGRAPHYThe Miami Herald

1979 "Ten Days of Wrath." September 9.

Office of the United Nations Disaster Relief Coordinator

1979 Disaster Prevention and Mitigation: A Compendium of Current Knowledge, Vol. 10, Public Information Aspects. Geneva, Switzerland: United Nations.

Scanlon, Joseph T.

1979 "Some Strategies for Improving the Role of the Mass Media in Disaster Reporting," Paper presented to the Committee on Disasters and the Mass Media, National Research Council, Washington, D.C.

1980 "The Media and the 1978 Terrace Floods: An Initial Test and Hypothesis", Disasters and the Mass Media. Washington, D.C.: The National Research Council Committee on Disasters and The Mass Media, pp. 254-263.

Stern, Andrew

1979 "Some Reflections on Television and Disaster Coverage". Paper presented at the Workshop on Disaster and the Mass Media, February, 1979, National Research Council, Washington, D.C.

APPENDIX ACHRONOLOGY OF RELIEF AT MELVILLE-HALL AIRPORTWednesday, August 29

Hurricane David hits Dominica. Airport closed.

Thursday, August 30

Airport closed, minor damage to control tower. No power.
Helicopter from HMS Fife lands to check status of airport.

4:30 p.m.: NBC-TV crew aboard Lear jet lands even though runway littered with debris, trees, rocks. Other private chartered planes unsuccessful. Team leaves an hour later for San Juan.

Friday, August 31

Airport opens. Arrivals include:

From St. Lucia:	Larry Galloway's Cessna to help relief effort.
From Caracas:	Venezuelan transports bring power generator, supplies, and two-way radio.
From Antigua:	LIAT (commercial carrier) chartered plane with Melville-Hall air traffic controller and airport technicians to fix damaged equipment. Also, ham Humphreys and ABS-TV team.
From HMS Fife:	Helicopter attends to wounded, transports medical supplies out to capital city of Roseau.
From Tortuga:	Chartered plane brings relief supplies and ham radio father-son operator team (the Denisons).
From Barbados:	Air Martinique (commercial carrier) brings in medical supplies and food.
From Martinique:	Private chartered plane brings in Bill Wheeler of the U.S. Embassy in Barbados, and two USAID officials.
From San Juan:	NBC news team returns on Lear jet. <u>Miami-Herald's</u> Tim Chapman and Richard Morin, an

AP photographer and a GAMMA photographer arrive on a chartered plane.

From Guadeloupe: UPI's Klein and Sabalones arrive.

Saturday, September 1

Several commercial carriers, including Air Guadeloupe, Air Martinique, LIAT, and Island Air arrive with passengers and relief supplies.

Galloway's Cessna makes a total of five flights between airport and Roseau, flies to and from Antigua and Guadeloupe.

- 11:00 a.m.: ABC-TV crew arrives on chartered plane.
- 11:45 a.m.: Venezuelan transport (Hercules C-130) arrives carrying helicopter.
- 12 noon : First U.S. relief transport (Hercules C-130) brings medical supplies and water purification tablets.
- 12:15 p.m.: Guyana Airways DC-3 makes non-scheduled arrival with 70 passengers and Red Cross team.
- 12:30 p.m.: UPI's Klein and Venezuelan TV crew leave in Galloway's Cessna for Roseau.
- 12:45 p.m.: Venezuelan helicopter being reassembled on tarmac.
- 1:00 p.m.: Guyana Airways plane leaves.
- 2:30 p.m.: Second U.S. relief transport arrives with helicopter, supplies.
UPI Sabalones leaves in Galloway's Cessna for Roseau
Eight small planes, one LIAT DC-3, three relief transports at airport.
- 3:00 p.m.: First U.S. transport leaves.
Over 1,000 Dominicans watch activities.
- 3:30 p.m.: LIAT-DC-3 develops engine trouble on tarmac.
Third U.S. relief transport arrives.
- 4:00 p.m.: Second U.S. transport leaves.
Fourth U.S. transport arrives.
HMS Fife helicopter arrives shuttling medical personnel.
- 4:30 p.m.: Third Venezuelan transport arrives.
- 4:45 p.m.: LIAT DC-3 fixed, leaves for St. Lucia and Barbados.
Third and fourth U.S. transports await unloading of supplies.

- 5:30 p.m.: Fifth U.S. transport arrives bringing U.S. Marine personnel and collapsible water tanks. ABC news team leaves by chartered plane for Barbados. Third U.S. transport unloads and leaves.
- 6:15 p.m.: UPI's Sabalones arrives from Roseau. Fourth U.S. transport leaves.

Sunday, September 2

Several commercial carriers arrive with Dominican passengers, other travellers, and some supplies.

Galloway's Cessna makes one trip to Antigua with Sabalones, followed by three flights between Melville-Hall Airport and Roseau.

Relief transports arrive from Barbados with U.S. supplies and from Caracas with Venezuelan supplies.

- 4:00 p.m.: U.S. transports return to Barbados.
- 4:45 p.m.: Venezuelan transport arrives with medical supplies, motorcycles.
- 5:00 p.m.: Venezuelan transport leaves for Caracas with Venezuelan TV crew, Klein.
- Airport closed due to expected onset of Hurricane Frederic.

Monday, September 3

- 9:15 a.m.: Two Venezuelan transports arrive.
- 9:30 a.m.: One U.S. transport arrives from Barbados with few supplies, many personnel, including staff photographers.
- 10:00 a.m.: French transport arrives with paratroopers, heavy transport equipment from Martinique.
- 10:30 a.m.: U.S. transport leaves.
- 11:30 a.m.: Rogers and Sood leave on commercial flight to Guadeloupe.

Tuesday, September 4

Morning: Hurricane Frederic hits Melville-Hall Airport. Nearby river flooded. Airport covered with water.

APPENDIX BRELIEF CHRONOLOGY: RELIEF AND RECONSTRUCTION ACTIVITIES

Wednesday, August 29

11:30 a.m. to 5 p.m.:

Gale force winds and rain from Hurricane David hit Dominica. Local residents stay indoors.

Ten percent of all housing, 70-85% of coconut crop, 100% of banana crop, 40% of citrus crop, 70-80% of cocoa and mango crops, 10-70% of root crops, and 80% of all fishing boats destroyed.

At final count, 56 dead, 1800-2000 injured (mainly from flying galvanized tin roofs), and 60,000 homeless.

Ninety-five percent of electrical distribution system, hydroelectric plant, and all roads damaged.

Late Evening

Fred White sends out first post-impact communication via ham radio; received by certain Eastern Caribbean hams.

George Buckmire leaves a damaged DBS-radio station and walks home.

Ellsworth Carter walks from residence to police headquarters in Roseau, meets PM Seraphine, and on to Fred White's residence in Kingsdale suburb.

Thursday, August 30

Morning:

Commander John Wright of HMS Fife lands by helicopter near the residence of Dominica's President Jenner Armour. PM Seraphine summoned: Commander Wright offers the services of Fife crew, Seraphine accepts.

Commander John Wright and PM Seraphine commence the organization of the relief effort. Fred White's ham radio transferred to police headquarters. PM Seraphine sends an SOS via the radio, requesting assistance from Caribbean governments and hospitals. Fife helicopter surveys entire island to assess scope of hurricane's impact and extent of medical needs.

Dominicans emerge from damaged homes. First concern: personal safety, locating relatives and possessions.

Noon:

Public Works Department engineer, Britisher Richard Greenford, attempts to start road clearing operations: no laborers show up for work.

Afternoon:

Attempts made to reduce looting.

Local residents start fixing homes, clearing roads.

Hurricane victims treated at hospital.

Friday, August 31Morning:

Roseau police station converted into Relief Operations Center. Activities include: storing and distributing relief supplies, external communications, coordinating activities between local authorities and donor governments and agencies.

HMS Fife docks at Roseau: relief crew put to work clearing port area and main road links, and restoring Roseau's Princess Margaret Hospital. Helicopter used to provide medical assistance to various part of island.

Some food salvaged from plantations.

Afternoon:

Venezuelans install emergency power generator and radio at airport.

Galloway makes five flights between airport and Roseau.

USAID officials arrive from Barbados.

Relief priorities established: (1) medical assistance; (2) power to essential areas; (3) roofs for essential buildings; (4) water supply; (5) clearing main roads; (6) storing and distributing relief supplies; (7) catering to mass media needs; (8) reestablishing external communication links.

Distribution of available supplies begins.

John Harrison (British Development Division), Brian Lawson (Fife's Chief Bosun Mate) and Sylvester Joseph (Permanent Secretary to PM) serve as relief coordinators at the airport.

Saturday, September 1Morning:

Relief personnel arrive at airport, including White, Venezuelan medics, Barbados medics, Sargent.

Relief supplies arrive from the U.S. (transports departed from Norfolk, Virginia, travelling via Puerto Rico), Venezuela, etc. (See Appendix A).

Afternoon:

Brian Alleigne (Dominica's Minister of Legal Affairs) takes over relief management at airport.

White, Sargent, and the Denisons (ham operators) leave airport by road for Roseau.

Galloway makes five shuttle flights.

Fife helicopter continues medical relief.

Fife engineers complete the restoration of 4 of 13 external telephone lines at the Cable and Wireless Office, Roseau.

Evening:

Law and order and relief supplies storage problems at Relief Operations Center. Guyanese military guard relief supplies at airport.

White group reaches Roseau.

Operator Fred relieved of duties for night by the Denisons.

Fife sets up radio at Relief Operations Center.

Sunday, September 2

Morning

Local residents make marginal preparations for Hurricane Frederic.

Roseau-airport road link declared open.

Venezuelans given charge of North Dominica (medical and supplies). Venezuelan helicopter malfunctions, returns to Caracas unused.

U.S. helicopter transports most essential supplies to Roseau.

Relief coordination committee makes list of relief needs (medium- and long-term).

Galloway and Fife helicopter continue flights.

Dominican government gradually takes over relief management duties. Organization improves.

More supplies arrive at airport and at Roseau by ship.

Afternoon:

First overland relief convoy travels from airport to Roseau.

Some pilfering of relief supplies attempted at airport and Roseau.

Evening:

In anticipation of Hurricane Frederic's strike: a ship carries foreign residents to Martinique; HMS Fife leaves for Barbados; all relief air transports and most foreign relief personnel leave island.

Monday, September 2Morning:

Relief supplies and personnel including food, portable satellite communication station, trucks, tractors, and paratroopers, arrive at airport from U.S., Martinique, etc.

Medical relief needs include: anesthetics, improved distribution of supplies, physicians, nurses.

Venezuelans organize distribution of supplies around North Dominica.

Afternoon:

Four helicopters and one ship in operation.

Evening:

Hurricane Frederic drops rain, floods airport area. Airport closed. Roseau-airport road link closed. Relief operation affected.

Tuesday, September 4

U.S. relief effort to Dominica and the Dominican Republic run simultaneously.

Supplies arrive at Roseau by boat from neighboring islands.

Wednesday, September 5

Reconstruction of buildings, water and power systems, and plantations begins.

Airport reopens.

Relief operations resume.

A mob of local residents attacks Melville-Hall Airport supply storage area. Military personnel guarding supplies are helpless to stop the frenzied mob. All supplies looted.

APPENDIX CCHRONOLOGY: FORMING COMMUNICATION LINKS AFTER HURRICANE DAVID

Wednesday, August 29

Up to 8:30 a.m.:

All normal channels of communication in operation, including DBS-Radio's FM service, telephone service, road transportation, air service, and interpersonal channels.

8:30 a.m.:

Blown transmitter knocks out DBS-Radio.

11:30 a.m.:

All power lost on island.

Telephone and telegraph service lost. DBS-TV lost.

11:30 a.m. to 5:00 p.m. (onset of Hurricane David):

Road, air and sea transportation disrupted. Walking hazardous.

Interpersonal communication minimized: hazardous to leave shelter of homes.

Reception of radio broadcasts from outside Dominica difficult on battery-operated radios: wind and rain create static and disturbances.

5:00 p.m. to Thursday, August 30 morning:

Most Dominicans remain indoors: little interpersonal communication over medium or long distances possible. Hazardous to venture out in dark; streets littered with galvanized roofs and other debris.

Operator Fred White intermittently broadcasts messages to outside world via his battery-operated ham radio unit. Various ham operators in White's Caribbean network contacted. First statement that Dominica has been declared an emergency "disaster" area broadcast by Fred White.

Thursday, August 30

Commander John Wright has HMS Fife radio link up with the British Consulate in Barbados. Barbados has telephone and telegraph links with the British Foreign Service Office in London, U.K. BBC News presents a report based on this information.

Operator Fred White hooks up his ham radio to island's only operational emergency power generator at Roseau's Police Headquarters, and links up with ham operators in Antigua (Hyacinth Mathews), St. Vincent, Barbados, and the U.S. (George Naftziger in Florida). Radio Barbados carries PM Seraphine's appeal for aid, received via Fred.

St. Vincent ham relays Seraphine's message (received via Fred White) to Radio Antilles correspondent Mike Findlay in St. Vincent, who calls in the message to Radio Antilles, Montserrat.

Ellsworth Carter sends disaster status reports via Fred White and Montserrat hams Hans Birkhauser and Meade to Radio Antilles.

Peter Richards sends disaster status reports via Fred White and Barbados hams to CANA, Barbados.

George Naftzinger sends Operator Fred's broadcast of Seraphine's message to U.S. State Department, Washington, D.C., via radio contact.

Dominicans are able to walk from one part of island to the other, even though roads are severely damaged and blocked in places. A few intrepid youths walk from Marigot Village, near the airport, to Roesau and back.

USAID official from U.S. Embassy, Barbados, attempts air travel to Roseau but can only land on neighboring island of Martinique. Telephone link made between USAID official and U.S. State Department, Washington, D.C.

Informal communication linkage networks are created. One such example is: Operator Fred broadcasts message, received by ham radio operator Mrs. Mickey Mathews, Antigua, who telephones Mrs. Ramona LeBlanc in St. Croix, who telephones Mrs. Funicane in Washington, D.C. (unofficial U.S. relief coordinator for Dominica), who telephones Dr. Jeff Charles at Stanford University (West Coast relief coordinator for Dominica), who informs network of personal friends via telephone all over the U.S.

NBC-TV lands Lear jet at Melville-Hall Airport. Al Johnson files disaster status report (airport area and aerial scenes of Roseau) via satellite communication link between San Juan, Puerto Rico television station and NBC headquarters, New York.

Friday, August 31

Venezuelan emergency power generator restores power to Melville-Hall Airport. Air link between outside world and Dominica "officially" restored.

Venezuelan radio unit set up at Melville-Hall Airport. Communication link between airport and Relief Operations Center (Roseau police station) established.

Venezuelan radio unit at airport links with Caracas, Venezuela. UPI sends report out via this link.

HMS Fife helicopter links remote parts of island, making airdrops of medical supplies, transporting the injured, providing medical relief.

HMS Fife linked to Fife helicopter by radio.

Caribbean Council of Churches (CCC), Jamaica, sends telex message regarding extent of dollar aid released for Dominica assistance to CCC Regional Office, Barbados. Barbados office contacts CANA (Caribbean News Agency). CANA informs its member media institutions of CCC aid contribution.

CANA provides BBC (and, possibly, the U.S. news services) with update on Dominica situation. Conventional communication links used.

Mike Findlay, local correspondent for Radio Antilles in St. Vincent, summarizes news reports sent out by Fred White, Peter Richards, and Ellsworth Carter and relays summary report to BBC in U.K. BBC uses such reports as background information for their news broadcasts.

Larry Galloway links Roseau and airport via plane.

Airline pilots take personal messages out of Dominica, make long-distance phone calls to various individuals.

Radio Barbados' relay/rebroadcast of Operator Fred's transmission of Seraphine's call for assistance is received by WBLS, New York, and rebroadcast to New York listeners.

Antiguan Stanley Humphreys sets up a ham radio unit at Melville-Hall Airport, and establishes a communication link between the airport and the Caribbean ham network. ABS-TV's Peter Gordon sends a disaster status report out to ABS-Radio via Antiguan ham Hyacinth Mathews.

HMS Fife radio placed on DBS-radio's frequency: local communication link between Dominican officials in Roseau and Dominican residents living around Roseau established.

Saturday, September 1

Tortola's Bob Denison, President of the American Radio Relay League, sets up his ham radio unit at Roseau's Police Headquarters (now the Relief Operations Center, linking the Center with HMS Fife and the U.S. and British Embassies in Barbados. Mainly responsible for U.S. Embassy relief communication traffic.

Four international external telephone lines at the Cable and Wireless Office, Roseau, are restored by Fife engineers. Roseau residents allowed to make one collect international telephone call of 3 minutes duration. The Radio Antilles team given 24-hour, free use of one of these lines forming an open communication link between Radio Antilles and Roseau.

By nightfall, road from Roseau to Melville-Hall Airport is reopened.

Operator Fred and Venezuelan radio develop informal agreement regarding transmission behavior: Venezuelan radio has use of air waves for five minutes beginning at five minutes to each hour, while Operator Fred's radio stops broadcasting.

Sunday, September 2

First relief shipment from airport to Roseau by land crosses island on newly re-opened road.

Helicopter continues to be used for medical supplies transportation and movement of medical personnel and officials to and from different parts of island.

Media personnel use commercial airline pilots and personnel to carry messages (written reports, videotaped coverage, still film, etc.) from Dominica.

UPI's Sabalones uses Antigua long-distance phone connection to transmit Dominica photos to UPI New York.

Several new ham radio links are established between points in Dominica and the outside world:

- (1) A St. Thomas ham sets up his radio unit at the local Red Cross Office in Roseau; mainly responsible for Red Cross relief communication traffic.
- (2) A Barbados ham sets up radio unit at the local Barclays Bank Manager's residence in the Goodwill suburb of Roseau. Mainly responsible for health and welfare communication traffic.
- (3) An Antiguan ham travels with his portable ham unit through the villages in the interior of Southern Dominica; provides a communication link between these remote areas and Roseau.

Monday, September 3

U.S. Marine Corps links Dominica (at Melville-Hall Airport) with U.S. mainland via satellite communication linkup.

DBS-Radio (Radio Dominica) resumes limited programming operations: Another communication link between local officials and Dominican residents around Roseau is established.