

GAO

Report to the Chairman, Subcommittee
on Readiness, Committee on Armed
Services, House of Representatives

June 1993

DISASTER ASSISTANCE

DOD's Support for Hurricanes Andrew and Iniki and Typhoon Omar



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National Security and
International Affairs Division

B-253026

June 18, 1993

The Honorable Earl Hutto
Chairman, Subcommittee on Readiness
Committee on Armed Services
House of Representatives

Dear Mr. Chairman:

This report responds to your request that we determine the effect providing humanitarian services in Hurricanes Andrew and Iniki and Typhoon Omar had on the active military and National Guard forces involved. More specifically, you asked that we

- identify the roles and missions of the active military and National Guard forces that provided the assistance;
- determine whether there were problems affecting their delivery of assistance;
- determine whether their participation affected the units' readiness and training;
- determine whether the military needs to reorient its roles, training, equipment, and doctrine for this type of operation; and
- identify the costs and sources of funding associated with the military's participation in disaster assistance operations.

We testified before the Senate Appropriations Committee, Subcommittee on Veterans Administration, Housing and Urban Development, and Independent Agencies; the House Committee on Public Works and Transportation, Subcommittee on Investigations and Oversight; the Senate Committee on Governmental Affairs; and the Senate Committee on Armed Services, Subcommittee on Nuclear Deterrence, on Arms Control, and Defense Intelligence, January 27, March 2, May 18, and May 25, 1993, respectively, concerning the nation's disaster response strategy.¹ This report focuses on the Department of Defense's (DOD) role as part of that strategy.²

¹Disaster Management: Recent Disasters Demonstrate the Need to Improve the Nation's Response Strategy (GAO/T-RCED-93-4, Jan. 27, 1993; GAO/T-RCED-93-13, Mar. 2, 1993; GAO/T-RCED-93-20, May 18, 1993; and GAO/T-RCED-93-46, May 25, 1993).

²For the purpose of this report, we define a catastrophic disaster as one that overwhelms the capabilities of local, state, and volunteer agencies to adequately provide victims with such life-sustaining mass care services as food, shelter, and medical assistance within the first 12 to 24 hours.

The results of our review are summarized below and discussed in more detail in appendixes I through V. The scope and methodology of our review are discussed in appendix VI.

Background

Within a 3-week period, Florida, Louisiana, Hawaii, and Guam were ravaged by storms that inflicted billions of dollars of damages and disrupted the lives of hundreds of thousands of individuals. Under the Federal Response Plan, the Federal Emergency Management Agency (FEMA) tasked DOD to provide humanitarian assistance in response to these disasters.

The Federal Response Plan, developed by FEMA, describes the types of assistance available and the agencies responsible for providing it. The plan assigns responsibility to 26 federal agencies and the American Red Cross for providing emergency/disaster relief assistance to the affected states and local governments in 12 emergency support functions (ESF). DOD is the lead agency for 2 of the 12 ESFs: Public Works and Engineering (ESF 3) and Urban Search and Rescue (ESF 9). DOD also has secondary (back-up support) responsibility for the other 10 ESFs.

The Secretary of the Army is the executive agent for carrying out DOD's responsibilities under the Federal Response Plan. He, in turn, has made the Director of Military Support (DOMS) responsible for directing and monitoring DOD's disaster assistance efforts, which are carried out by other U.S. commands. U.S. Army Forces Command is responsible for disaster relief in the United States, while the Pacific Command is responsible for Alaska, Hawaii, and the Pacific territories; and the Atlantic Command for Puerto Rico and the Virgin Islands.

As of September 14, 1992, DOD reported about 22,800 active-duty personnel in south Florida and Louisiana, 1,800 in Hawaii, and about 700 in Guam.³ National Guard forces were activated by each governor and played major roles in all four disaster areas. As of the same date, there were about 5,700 in Florida, 300 in Louisiana, 400 in Hawaii, and 27 in Guam. In addition, about 800 Army reservists volunteered for duty and assisted in South Florida.

Results in Brief

The active duty military performed such humanitarian services as (1) establishing and operating tent cities, (2) providing medical services,

³Does not include Navy personnel on ships deployed to the area.

(3) providing and distributing food and water, and (4) removing debris and doing other contracting and construction services. Although they were deployed to all four disaster locations, they were concentrated in south Florida because of the extent of devastation.

In Florida, the National Guard's role was mainly law enforcement. At the other disaster areas, law enforcement was not a major requirement, and the Guard's role was primarily humanitarian assistance.

We found that the problems federal agencies had in providing assistance during these disasters pointed to the need for changes in the Federal Response Plan, primarily the need for better coordination among all the providers as well as the need for improved damage assessments and needs determinations in catastrophic situations.

According to DOD officials responsible for commanding the forces and our review of unit readiness reports, the overall readiness of the forces was not adversely affected by their participation in these disaster relief efforts. DOD officials told us that what the combat support and combat service-support units did during the disaster relief operations was very similar to what they would do in wartime. They also told us, however, that if the deployments were long term and if the forces had to miss a scheduled training exercise such as a National Training Center rotation, readiness could be degraded.

There is concern in DOD that as the size of the military is reduced, the availability of the forces to perform disaster assistance will also be reduced. Because of this, DOD's role in disaster assistance operations needs to remain one of a provider of needed assistance rather than the manager of the federal response, as some have suggested. The issue of availability of active military forces also points out the need to make the reserves more readily available for disaster relief operations. However, for this to happen, legislative changes will be required because under the current federal law, reserve component forces can be activated by the federal government to perform disaster assistance efforts only in very limited circumstances.

A related issue concerns reimbursement to the military for costs incurred in responding to a catastrophic disaster. Unless the president declares a disaster and a tasking is received from FEMA, federal agencies generally will not be reimbursed for costs incurred in preparing for or providing disaster assistance. As a result, agencies are reluctant to take any actions

that involve expenditure of large amounts of funds until they are tasked to do so by FEMA. DOD did perform some pre-declaration disaster assistance efforts. However, according to DOD officials, their response to the emergencies could have been faster if they had had explicit authorization to take more extensive pre-declaration actions such as assembling units, personnel, equipment, and supplies and preparing for movement to the affected area.

DOD and the Corps of Engineers estimate the total costs of the disaster assistance they provided in the four disaster locations to be about \$559 million. However, that estimate does not represent the actual total cost, only the incremental costs incurred for such things as temporary lodging, debris removal, airlift, and subsistence items. DOD and the Corps expect to be reimbursed by FEMA for most of the costs they incurred.

Roles and Missions of Active Duty Military and National Guard Forces

The active-duty military forces deployed to the disaster areas primarily performed humanitarian assistance efforts to include providing and distributing food, ice, water, and construction materials; providing temporary housing and medical services; assisting in repair of facilities; and removing debris.

The degree of DOD involvement varied by disaster. For example, in Florida, it provided about 22,800 military personnel and performed a full range of humanitarian services. In Louisiana, Hawaii, and Guam, DOD's involvement was significantly less because state and local officials were able to provide the humanitarian assistance that was needed. However, DOD did provide many of the same type services to these locations, but on a much smaller scale, that south Florida received.

The primary role of the National Guard in south Florida was law enforcement. However, until the active-duty forces were deployed about 4 days after the storm hit, the Guard was heavily involved in humanitarian assistance. As the active-duty forces started to arrive, the Guard turned the humanitarian assistance activities it had been performing over to them and concentrated on law enforcement. In the other three disaster locations, law enforcement was not a major requirement, and the Guard functioned primarily in a humanitarian assistance role.

Problems in Implementing the Federal Response Plan

Hurricane Andrew was FEMA's first opportunity to test its Federal Response Plan—the guide for federal disaster relief efforts—and the test raised questions about the plan's workability. For example:

- the federal providers of assistance had problems coordinating with each other and
- the sequential process for performing damage assessments and needs determinations is not a responsive mechanism in catastrophic disasters.

Coordination problems among the federal agencies resulted in delays in providing disaster assistance in south Florida and Hawaii. For example:

- FEMA activated an emergency support team about 5 hours after Hurricane Andrew hit south Florida.⁴ According to DOD's representative to the team, FEMA gave the team little direction about its responsibilities or how the Federal Response Plan was intended to work. The official said that most of his time during the first 2 days was spent explaining to the other team members that they could not directly task DOD with mission assignments. Instead, all tasks had to be coordinated through the ESF member and approved by the Federal Coordinating Officer.
- Shortly after Hurricane Andrew hit south Florida, 100,000 Meals-Ready-To-Eat arrived at the Opa Locka airport. The American Red Cross, which is the lead agency responsible for providing mass care, was not aware of the delivery and, as a result, was not prepared to accept or distribute the food.
- On several occasions, aircraft contracted for by FEMA to deliver cargo arrived at Hickam Air Force Base, Oahu, or Lihue airport on Kauai. However officials at the disaster location were not expecting the aircraft. Consequently, there were delays in the unloading and distributing of the supplies.

Another problem was the lack of timely damage assessments to determine the type and amount of assistance needed. In part, the problem was due to the process outlined in the Federal Response Plan. Under the plan, local and state entities have primary responsibility for doing the damage assessments. To the extent that they cannot, they can request federal assistance in performing the assessment. This sequential process is not suitable for a catastrophic situation such as Hurricane Andrew.

⁴The emergency support team is comprised of representatives from federal agencies involved in providing disaster relief. Its mission is to coordinate information at the headquarters level among the agencies. The team representatives also maintain contact with their field-level ESF counterparts to coordinate policy matters and to assist them in carrying out assigned tasks.

After-action reports prepared by the Army and others pointed to the following problems:

- Early damage assessment is critical to tailoring the appropriate response package. In the case of Hurricane Andrew, the rapid deployment of a damage assessment team would have provided more timely information to decisionmakers and helped them identify requirements and the scope of relief efforts needed.
- After a major disaster, such as Hurricane Andrew, a state's emergency services infrastructure will probably be unable to make a timely and complete damage assessment. In the case of Hurricane Andrew, it was several days before the local authorities realized how bad the situation was and how much assistance was needed. If there had been a comprehensive aerial survey, the magnitude of the disaster would have been known earlier.

The coordination problems and lack of timely damage assessment reports delayed the federal response to storm victims.

To address these problems, we recommended, in our previously mentioned testimonies, that FEMA take action to (1) create an early deploying damage assessment team to enhance the timeliness and quality of damage assessments and identification of needs, (2) enhance the state and local governments' capacity to respond to catastrophic disasters, and (3) improve the coordination among federal, state, and local providers of disaster assistance.

Impact on the Readiness of the Forces Providing Disaster Assistance

Military officials were of the general opinion that the short-term deployment for disaster assistance did not adversely affect readiness. In fact, several officials commented that the experience was beneficial and comparable to the training they undergo for their wartime missions. They also said, however, that if the deployments had been extended periods and if the units had missed a scheduled training rotation to the National Training Center, for example, readiness could have been degraded.

Our review of readiness reports for Army and National Guard units that provided disaster assistance in south Florida and Louisiana generally supported those comments. For example, the reports before and after deployment for 11 of the 16 active Army units that deployed to south Florida showed that their readiness improved or stayed the same. For

the other five units, the degree of degraded readiness was minor and not clearly due to their deployment.

The readiness reports of 34 National Guard units that assisted in Florida and Louisiana showed that readiness improved or remained the same for 30 units. As with the active Army units, the degree of reduced readiness for the other four units was minor and could not necessarily be attributed to their participation in the disaster relief.

Legislative Changes Needed to Enhance DOD's Response in Catastrophic Disasters

The roles, training, and doctrine military forces employ during disasters are similar to what they employ in performing their national security missions. DOD officials told us that they have the resources, equipment, personnel, and capability to respond rapidly to disasters. Furthermore, they are willing to provide any assistance they are called upon to provide. However, in catastrophic disasters they do not believe that DOD should have overall management responsibility for directing relief efforts. DOD officials strongly believe that assuming overall management responsibility could create the impression that the military is attempting to make or direct domestic policy and this runs contrary to principles that have guided the military's role in the United States. Military officials, throughout our review, repeatedly emphasized their willingness to work for and support a civilian-led disaster response.

As the size of the active forces is reduced, the need to be able to activate the reserves to assist in relief operations could increase. The use of the reserves could become especially important because a large percentage of DOD's combat support and combat service-support capabilities is in the reserves—particularly the Army Reserves—and it is this type of capability that is needed in disasters.

Representatives in the offices of the Army Judge Advocate General, Chief of the Army Reserves, and Director of Military Support told us that for the reserves to take on a larger role in disaster assistance, legislative changes would be required. Section 673b (b) of title 10 of the United States Code states that no unit or member of a reserve component may be ordered to active duty to provide assistance to either the federal government or a state during serious natural or man-made disasters. The legislative intent for the provision of title 10 was to prevent reserve personnel from being activated frequently, which could cause problems with their employers.

We agree that frequent activation of reserve units could cause problems with employers. However, we would expect that reserve units would be activated for disaster assistance only when there is a catastrophe. Furthermore, changes to the call-up authority may need to consider limitations on the number of units/personnel that can be activated, the specific skills that may be needed, and the length of time the units can be activated for.

Another change that may be required concerns what the military can do in advance of an impending catastrophic disaster. Absent a presidential declaration, the Stafford Act, which sets forth the federal government's role in disaster assistance, does not explicitly authorize pre-event planning. As a result, federal agencies are reluctant to take actions in advance of both a presidential declaration and a mission assignment from FEMA because they run the risk of not being reimbursed.

DOD did some pre-declaration planning, such as identifying the location and quantities of items that would be needed in a catastrophic situation, before Hurricane Andrew hit Florida. However, because of concerns about reimbursement in the absence of a presidential declaration, DOD was reluctant to take any action that would involve the expenditure of large amounts of resources.

DOD officials told us that when there is advance warning of a major disaster, such as in Hurricane Andrew, response time could be reduced if DOD had explicit authority to take such actions as assembling units, personnel, supplies, and equipment for use in the expected disaster.

DOD and Corps of Engineers Costs in Providing Disaster Assistance

FEMA reimburses DOD and the Corps of Engineers for the costs they incur in providing disaster assistance. For the four disasters in our review, DOD and the Corps estimate that they will be reimbursed about \$559 million (\$118 million for DOD, \$441 million for the Corps). DOD is only reimbursed for the incremental costs incurred. Consequently, DOD military and civilian personnel costs are not included under the rationale that these are fixed costs that would have been incurred regardless of whether or not the personnel were involved in providing disaster assistance.

The Corps of Engineers, on the other hand, bills FEMA for the total costs of the assistance provided under the Federal Response Plan. According to a Corps official, the Corps' funds are appropriated by Congress for specific projects, and if the Corps was not reimbursed for its total costs, it would

be using funds for a purpose other than the one for which they were appropriated.

Matters for Consideration by the Congress

Because coordination, damage assessment, and needs identification problems involve more than just DOD and because our previous testimonies had recommendations for addressing these problems, we are not making specific recommendations to DOD. However, in order to improve DOD's ability to respond to catastrophic events, and as suggested in our prior testimonies, the Congress may wish to consider

- amending title 10 of the United States Code to allow reserve component units to be activated to provide disaster assistance and
- providing explicit authority in the Stafford Act for DOD to incur reimbursable pre-declaration costs for functions that would enhance its response capabilities when there is advance warning of an impending catastrophic disaster.

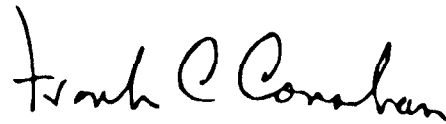
Agency Comments

We requested official agency comments on a draft of this report. However, DOD officials were unable to provide official comments within the time frame provided. We met with Army officials responsible for the matters discussed in this report. The officials generally agreed with the report and provided suggestions for clarifying the data presented. We have incorporated their suggested changes where appropriate.

We are sending copies of this report to the Chairmen of the Senate Committee on Governmental Affairs; the House Committee on Government Operations; the Senate and House Committees on Appropriations; the Senate Committee on Armed Services; the Senate Appropriations Subcommittee on VA, HUD, and Independent Agencies; and the House Subcommittee on Investigations and Oversight, Committee on Public Works and Transportation; the Secretaries of Defense and the Army; and the Director, Office of Management and Budget.

This report was prepared under the direction of Henry L. Hinton, Jr. If you or your staff have any questions concerning this report, please contact him at (202) 512-4126. Major contributors to this report are listed in appendix VII.

Sincerely yours,



Frank C. Conahan
Assistant Comptroller General

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Abbreviations

DOD	Department of Defense
DOMS	Director of Military Support
ESF	emergency support function
EST	emergency support team
FEMA	Federal Emergency Management Agency

Roles and Missions of DOD and the National Guard in Providing Disaster Assistance in the Aftermath of Hurricanes Andrew and Iniki and Typhoon Omar

During fiscal year 1992, there were 54 presidentially declared emergencies/disasters. Of these, DOD provided personnel support to eight. As discussed, only Hurricanes Andrew and Iniki and Typhoon Omar required significant numbers of DOD personnel.

Within a 3-week period, south Florida, southern Louisiana, and the islands of Kauai and Guam suffered significant damages as a result of hurricanes and a typhoon. In the early morning hours of August 24, 1992, Hurricane Andrew swept across south Florida and 2 days later hit Louisiana. The National Hurricane Center reported sustained winds of 150 miles per hour and wind gusts of 175 miles per hour. The hurricane caused an estimated \$25 billion of property damage and displaced several hundred thousand residents in south Florida. The extent of the damage was not nearly as severe in Louisiana because the hurricane hit less densely populated areas.

On August 28, 1992, Typhoon Omar hit Guam with sustained winds of 120 miles per hour and wind gusts of 150 miles per hour. The typhoon caused damage estimated at \$237 million, knocked out about 70 percent of the electrical power on the island, and displaced about 3,000 residents. On September 11, 1992, Hurricane Iniki struck the island of Kauai, Hawaii, damaging or destroying over 14,000 homes and causing property damage estimated between \$350 million to \$500 million. The island lost all of its electrical power and a major portion of its communications system.

As shown in table I.1, DOD and the National Guard provided personnel to all four disaster locations, with a major concentration in south Florida due to the extent of the damage and the number of victims.

**Appendix I
Roles and Missions of DOD and the National
Guard in Providing Disaster Assistance in
the Aftermath of Hurricanes Andrew and
Iniki and Typhoon Omar**

**Table I.1: Distribution of DOD and
National Guard Personnel Deployed to
Disaster Locations**

DOD component	Personnel			
	Hurricane Andrew- Florida	Hurricane Andrew- Louisiana	Hurricane Iniki	Typhoon Omar
Army				
Active duty	17,102	0	716	36
Corps of Engineers	789	83	48	55
Reservists	794	0	0	0
Navy	3,833	0	900	253
Air Force	1,030	0	44	247
Marine Corps	823	0	186	175
National Guard	5,703	326	426	27
Total	30,074	409	2,320	793

Note: The personnel numbers shown above are as of September 14, 1992. The numbers could vary from day-to-day as personnel deployed to or from the disaster locations.

In the aftermath of Hurricane Andrew in south Florida, the National Guard provided both humanitarian and law enforcement assistance. When DOD began deploying more personnel to south Florida—about 4 days after the storm hit—humanitarian assistance became their primary role, and the National Guard forces concentrated on law enforcement.

However DOD's role in south Florida was expanded to encompass the disaster assistance responsibilities of many of the other federal agencies. On August 27, 1992, the President directed greater DOD involvement because the situation called for a rapid response and only DOD had the resources (personnel and materiel) and transportation capability to do that. For example, DOD provided much of the food, water, sheltering, transportation, and medical care, even though the Federal Response Plan assigns those responsibilities to other agencies.

In contrast to the situation in south Florida, the states and local governments were the major providers of assistance in Louisiana, Hawaii, and Guam. While the federal government did provide some materiel at the three locations, the response was at the specific requests of the state and local entities.

DOD considered its disaster assistance at all the locations major successes. However, these accomplishments were not achieved without first overcoming obstacles that made delivery of assistance difficult:

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- coordination problems with other federal entities about how the Federal Response Plan was supposed to work and which agency was supposed to provide what services;
- the lack of timely and comprehensive damage assessments by local, state, and FEMA officials for determining the types and amount of humanitarian assistance needed; and
- the lack of explicit authority to take preparatory actions in advance of a presidential disaster declaration.

DOD's involvement in disaster assistance operations is expensive and raises questions about DOD's ability to perform national security missions and at the same time provide such assistance.

Implementation Issues Affecting the Delivery of Disaster Assistance

Hurricane Andrew was FEMA's first opportunity to test the Federal Response Plan—the guide for federal disaster relief efforts. The test raised questions about the plan's workability in catastrophic situations. For example:

- there were coordination problems among the federal assistance providers and
- the sequential process for performing damage assessments and needs determinations is not a responsive mechanism in catastrophic disasters.

As a result of these problems, the federal response was slowed, and the needs of storm victims were not met in a timely manner.

Coordination Problems Among Providers of Disaster Assistance

FEMA activated an Emergency Support Team (EST) about 5 hours after Hurricane Andrew hit south Florida. The team is comprised of representatives from the federal agencies involved in providing disaster assistance. The team's mission was to coordinate information among the agencies to facilitate the delivery of services. In carrying out their responsibilities, the team members maintained contact with the Emergency Support Function (ESF) representatives at the disaster locations to provide necessary assistance to the ESF members.

According to DOD's representative on the team, FEMA provided little direction concerning what the team members' responsibilities were or how the Federal Response Plan was intended to work. To illustrate, the official said that he spent most of the first 2 days explaining to the other team members that they could not directly task DOD with mission assignments because all taskings had to be coordinated through their ESF counterparts and approved by the Federal Coordinating Officer.

He also stated that the team members had not been adequately trained in their responsibilities and that some agencies—the Department of Agriculture, for one—demonstrated a lack of interest in the EST process as evidenced by the fact that they did not send a representative to the EST center for several days. In other cases, representatives told the official that they did not know why they were there or what they were supposed to do.

There were also coordination problems among the agencies at the disaster locations. For example:

- The Federal Response Plan gives the Red Cross primary responsibility for sheltering disaster victims. However, the requirements for emergency shelter in Hurricane Andrew quickly exceeded the Red Cross' ability to provide it. As a result, FEMA tasked DOD to establish "tent cities." According to a FEMA official, the Red Cross did not like the way the cities were organized and told DOD that since DOD had constructed them, DOD could also operate them.
- Shortly after Hurricane Andrew hit south Florida, 100,000 Meals-Ready-To-Eat arrived at the Opa Locka airport. The American Red Cross, which had responsibility for providing mass care, had not been told of this delivery and, as a result, was not prepared to accept or distribute the food. According to a DOD official, similar situations occurred where requirements were identified at the headquarters level but not communicated to officials at the disaster locations. As a result, the people in the field were not aware that supplies were arriving or who they were intended for.
- On several occasions, aircraft contracted for by FEMA to deliver cargo arrived at Hickam Air Force Base, Oahu, or Lihue airport on Kauai. However officials were not expecting them. Consequently, the unloading and the distribution of supplies were delayed.

Under the Federal Response Plan, the Corps of Engineers is the lead agency for Public Works and Engineering (ESF 3) and, as such, generally responded to direct taskings from FEMA.¹ However, Hurricane Andrew was different in that DOD established Joint Task Force-Andrew to coordinate the operations of all DOD personnel in the disaster location. According to the Army Corps of Engineers after-action report, the lines of authority between it and the Joint Task Force were unclear in terms of whether the Corps should respond to taskings by FEMA or the Joint Task Force.

In prior testimonies, we made recommendations that are directed at improving the coordination among the providers of disaster assistance. These recommendations would enhance training at the state, local, and federal levels and better prepare all providers to respond in catastrophic disasters.

¹The working relationship between FEMA and the Corps is based on a memorandum of understanding that permits FEMA to directly task the Corps to provide disaster relief services, even though the Federal Response Plan may not be in effect.

Effects of Not Having Comprehensive and Timely Damage Assessments to Determine Needs

Under the Federal Response Plan, local and state entities have the primary responsibility for assessing damage. To the extent these entities do not have that capability, they can request FEMA's assistance.

The importance of making comprehensive damage assessments is to determine what types and amounts of disaster assistance are needed. In the case of Hurricane Andrew in Florida, the damage assessments were neither comprehensive nor timely.

A presidential declaration of disaster for the south Florida area was issued at 1:00 p.m. on August 24, 1992, about 8 hours after Hurricane Andrew hit. Throughout the day, scattered reports of damage came into the state emergency operations center. However, these reports were general in nature and not useful for determining what, how much, and where assistance was needed.

FEMA's response to the local and state entities' lack of information was to adopt a wait-and-see attitude. In other words, they followed the sequential process outlined in the Federal Response Plan. Consequently, the needs of the storm victims were not being met and continued to amass.

According to DOD officials, the capability to perform a damage assessment and to translate that information into a needs determination did not exist at the local and state level, especially in a catastrophic situation such as Hurricane Andrew. As a result, it was several days before there was a comprehensive assessment of the damage and a determination of how much and what type of assistance was required.

The Adjutant General of the Florida National Guard, in commenting on the situation he found when he arrived in south Florida on the afternoon of August 25, said that it was apparent that nobody knew what, how much, or where the assistance was needed. He further commented that the state and local officials who initially flew over the damage area did not have the expertise to make a needs assessment. To illustrate his point, he said that shortly after arriving in Miami, a large quantity of Meals-Ready-To-Eat were off-loaded at the airport. However, no one knew who requested the meals or where they should be distributed. He said that his decision to use National Guard assets to load up the meals and start moving them south was made more on the basis that "something needed to be done" rather than on specific knowledge that they were needed at a particular location.

The after-action and lessons-learned reports prepared by the Army, Corps of Engineers, and National Guard all pointed out the importance of having timely damage assessments and of being able to translate the assessment information into an identification of needs. For example:

- The Army's after-action report commented that the early assessment of damage caused by a natural disaster is critical to tailoring the appropriate response. In the case of Hurricane Andrew, the rapid deployment of a team to assess the situation would have provided more timely and accurate information to decisionmakers.
- The Corps of Engineers' after-action report commented that after a major disaster, such as Hurricane Andrew, a state's emergency services infrastructure will probably be unable to make a timely and complete damage assessment. The report went on to say that in the case of Hurricane Andrew, the local authorities did not realize how bad the situation was for several days. As a result, no one knew what or how much assistance was needed. If a comprehensive aerial survey had been done, the magnitude of the disaster would have been known earlier, and actions could have been initiated to provide assistance.
- The National Guard's lessons-learned report stated that timely damage assessments drive the initial response by all state and federal agencies. An immediate post-storm deployment of a damage assessment team would have provided a comprehensive assessment of immediate needs and resulted in a more efficient response by all the agencies concerned.

The Army, Corps of Engineers, and National Guard made recommendations for improving damage assessment and needs determinations. Their recommendations were consistent in that they all identified a need for early deployment² of damage survey teams, comprised of experts in various disciplines, to assess the magnitude of the damage and to identify what and how much assistance is needed.

Some of the recommendations were more specific than others regarding the composition of the survey teams. The Army, for example, recommended that the team include engineers; military police; and civil affairs, signal, medical, aviation, and logistics personnel. Furthermore, the team's assessment and needs determination should be shared with state, local, and federal agencies.

²The Corps of Engineers recommended that the survey teams be deployed within 10 to 12 daylight hours after the disaster.

The lack of timely damage assessments and needs determinations was not a problem in Louisiana, Kauai, or Guam because there was less damage, fewer people were affected, and the local, state, and island officials were able to determine what was needed. In fact, at all three of these locations, state and island officials determined what type and how much disaster assistance was needed from the federal government.

Needs of Hurricane Victims Were Not Met in a Timely Manner

As discussed previously, it was several days after Hurricane Andrew hit south Florida before state and local authorities realized the extent of the damage or were able to determine what assistance was needed. In the interim, the basic needs of many victims were not met. Table II.1 illustrates the degree of devastation that occurred and the types of unmet needs.

Table II.1: Types of Unmet Needs Experienced by Hurricane Victims During the Period August 24 to August 27, 1992

Date	Description of unmet needs
August 24	Over 2.5 million people are without electrical power. There are shortages of potable water in Dade, Monroe, and Broward counties. Airports and hospitals are closed.
August 25	The Corp of Engineers reports 50,000 homeless people in Homestead. Electrical power remains out for up to 2 million citizens. All grocery stores in south Dade County are closed. Lines for potable water extend up to 300 people in Broward and Dade counties.
August 26	There are long lines of people waiting for potable water, food, gasoline, and telephones. The water system is shut down due to contamination. There are 35,000 people being housed in inadequate shelter. One million people are without electrical power. Four hospitals remain closed, and relief efforts are hampered due to debris blockage.
August 27	There are 200,000 people homeless and 600,000 residents without electrical power. Disease is a concern due to water contamination. Railroads continue to be inoperative due to downed power lines and debris. Shortage of food is becoming a problem due to spoilage resulting from a lack of refrigeration and ice.

Despite the fact that the needs of many storm victims were not being met, the number of requests for DOD disaster assistance was very limited during the first few days after the storm. Generally, the requests for assistance that were received were for support and assistance to other federal and state entities and consisted primarily of Meals-Ready-to-Eat for the National Guard, light sets for the federal prison, and assistance to residents of Homestead Air Force Base.

**Appendix II
Implementation Issues Affecting the
Delivery of Disaster Assistance**

Once the President directed greater involvement by DOD on August 27, 1992, the quantity of services and personnel flowing into south Florida increased dramatically as shown below.

Table II.2: Disaster Assistance Personnel and Equipment Provided by DOD for Hurricane Andrew (Aug. 27 to Sept. 1, 1992)

Date	Personnel and services provided
8/27/92	First element of XVIII Airborne Corps departs Ft. Bragg.
8/28/92	Barge containing shelter material arrives from Guantanamo Bay.
8/28/92	Four mobile kitchen units arrive and start feeding hurricane victims.
8/28/92	169,000 Meals-Ready-To-Eat, five 5,000-gallon tanker trucks, 10 semi-trailers of bottled water, a 100-member medical attachment, 5 search and rescue specialists, and 2 damage assessment specialists arrive in Miami.
8/28/92	16 additional mobile kitchen units arrive.
8/28/92	Corps of Engineers contracts for 6 million gallons of potable water.
8/29/92	Elements from the 82nd Airborne Division begin deploying from Ft. Bragg.
8/29/92	Twenty-bed hospital arrives.
8/30/92	Air Force completes 83 sorties delivering 1,289 personnel and 356 tons of supplies.
8/31/92	Elements of the 82nd Airborne Division begin arriving.
8/31/92	82nd Airborne Division becomes operational.
8/31/92	Elements of the 10th Mountain Division begin arriving.
9/1/92	U.S. Army Forces Command alerts additional engineering and corps support command units for deployment.

In total, the level of assistance provided by DOD and the Corps of Engineers from August 27 to October 21, 1992, consisted of a variety of humanitarian assistance services, to include (1) providing over 1 million Meals-Ready-To-Eat and serving an additional 900,000 meals, (2) providing medical care for 67,190 civilian patients, (3) establishing and operating four tent cities, (4) providing mass care for an average of 2,400 disaster victims a day, (5) moving over 100,000 tons of cargo by ground and air, (6) removing 6.2 million cubic yards of debris, and (7) repairing 98 damaged schools.

At the other three disaster locations, DOD provided many of the same humanitarian services discussed above, albeit to a lesser degree. In Louisiana, DOD provided 100,000 Meals-Ready-To-Eat, generators, and airlift for the damage assessment teams. In Hawaii, FEMA anticipated that

Kauai would need certain life-sustaining items and tasked DOD to provide such commodities as 150,000 gallons of bottled water with a sustaining requirement of 50,000 gallons a day, 100 generators, and 50,000 pounds of ice a day. For Typhoon Omar in Guam, DOD's involvement consisted of providing temporary housing, generators, and construction material and equipment. Additionally, military personnel assisted in repairing facilities, clearing debris, feeding victims, and restoring utilities.

Another major difference between the situation in south Florida and the three other disaster locations was that, for the most part, state and local officials in Louisiana, Hawaii, and Guam determined the type and amount of assistance to be provided by the federal government. In south Florida, however, the situation had deteriorated to the point where the federal government essentially assumed the role for determining what was needed.

In our prior testimonies, we made recommendations to FEMA to establish an early deploying damage assessment team to assess the extent of damage, identify the needed assistance, and work with state and local officials to advise them of what is needed as well as the potential costs to the federal government of providing the needed services.

Impact on Force Readiness/Deployment as a Result of DOD's Involvement in Disaster Assistance

DOD officials told us, and our analysis of readiness reports confirmed, that because of the relatively short-term duration of the deployment of active duty forces to the disaster locations, there was no adverse impact on the readiness of the military forces. The officials were of the opinion that the deployed forces, especially the combat support and combat service-support forces¹ performed functions that were very compatible with the functions they would be expected to perform in war. With regard to the combat forces that were deployed, the officials said that the deployment gave the units the opportunity to hone their leadership and command and control skills. They said, however, that if a unit had to miss a major training exercise, such as a National Training Center rotation, there could be some adverse impact on readiness.

As shown in table III.1, the readiness reports submitted by 50 active Army and National Guard units (16 Army and 34 National Guard) for the periods immediately before and after their deployment to Florida and Louisiana showed that their readiness increased or stayed the same in 41 instances. In the other nine instances (five Army and four National Guard), the decreased readiness condition was relatively insignificant and could not be directly attributed to their disaster assistance duties.

Table III.1: Readiness Condition Reported by 50 Active Army and National Guard Units Before and After Their Deployments to Florida and Louisiana

Units	Number	Readiness condition of units after deployment compared to before		
		Increased	Decreased	Same
Active Army	16	2	5	9
National Guard	34	3	4	27
Total	50	5	9	36

Although we did not analyze the readiness reports for the units that participated in Hurricane Iniki and Typhoon Omar, DOD officials in Hawaii and Guam told us that the short-term duration of the deployments should not have any adverse effect on the readiness condition of the units.

¹Combat support functions include engineer, military police, signal, military intelligence, artillery, air defense artillery, and chemical personnel. Combat service-support functions include administration and logistics support such as supply, transportation, maintenance, field services, and chaplains.

Changes Needed to the Role of Forces Providing Disaster Assistance

The roles, training, and doctrine the forces employ during disaster assistance are similar in many respects to what they employ in performing their national security missions. However, as the size of the active forces is reduced, the availability of the active forces to perform disaster assistance may also be reduced. As a result, the role of the reserve forces in disaster assistance operations needs to be increased. Additionally, there is a need for explicit authority for DOD to perform pre-declaration preparation, which should improve disaster response time.

Another issue concerning DOD's role in disaster assistance is whether DOD should be in charge of this mission in catastrophic situations, since it has the resources and capability to respond rapidly. DOD officials believe, and we agree, that responsibility for determining when, what, and where disaster assistance should be provided is not a role for DOD. Those decisions should be made by a civilian authority outside the DOD chain of command.

Need to Increase the Role of the Reserves in Disaster Assistance Operations

The availability of DOD forces to concurrently perform disaster assistance and national security missions is largely dependent upon what else is going on in the world.

DOD officials told us that the current use of military forces in Operation Restore Hope, the redeployment of forces to the Persian Gulf, and the provision of airlift support to Bosnia reduce DOD's ability to provide disaster assistance at a level similar to what it provided for Hurricane Andrew. For example, if a catastrophic disaster such as Hurricane Andrew had occurred during Operation Desert Storm, airlift support for disaster assistance as well as units would not have been available. Additionally, it is questionable whether DOD would have been able to provide the same types and quantities of supply and equipment support.

DOD officials said that because DOD forces may not always be available to provide disaster assistance, there should be sufficient backup alternatives available elsewhere in the federal government. They also pointed out that as the active forces are downsized, the availability of active forces for disaster relief will also be affected. In this regard, the reserves could take on a larger role in disaster relief because much of DOD's combat support and combat service-support capabilities is in the reserve components—particularly the Army Reserves—and it is this type of capability that is needed during disasters.

DOD and Army Reserve officials told us, however, that in order for the reserves to play a larger role in disaster assistance operations, legislative changes would be required. The law, section 673b (b) of title 10 of the U.S. Code, presently precludes the activation of reserve component units to provide disaster relief assistance. It states that no unit or member of a reserve component may be ordered to active duty to provide assistance to either the federal government or a state in time of a serious natural or man-made disaster, accident, or catastrophe.

The legislative intent for this provision was to prevent problems that could occur with reservists' employers if the reserves were activated frequently. We agree that frequent activation of the reserves could cause problems with employers. However, we would anticipate that the reserves would be activated only in catastrophic disasters. Furthermore, any changes to the call-up authority may need to consider limitations on the number of units/personnel that can be activated, the specific skills that may be needed, and the length of time the units can be activated.

The inability to activate the reserves for disaster relief is illustrated by the following example. U.S. Army Forces Command wanted to activate the 841st Engineer Battalion—an Army Reserve unit located in Miami—to assist in debris clearance in the early aftermath of the storm. However, because of the legal requirements, the unit could not be ordered to active duty to provide disaster assistance.¹

DOD and Army Reserve officials told us that they support adding a provision to the United States Code that would allow the reserves to be called up to perform disaster relief. The officials stated that the change would improve DOD's ability to use reserve personnel and would reduce the pressure on the active forces at a time when they are being reduced.

Lack of Explicit Pre-Declaration Authority Can Affect Timeliness of the Response

What DOD can and cannot do prior to a presidential declaration of disaster can affect the timeliness of its response efforts. While DOD did perform certain planning functions before Hurricane Andrew hit Florida, because of concerns about reimbursement, DOD was reluctant to take any action that would involve the expenditure of large amounts of resources in the absence of a presidential declaration. For example:

¹Army Reserve officials said that individual reservists from the 841st and other Army Reserve units, a total of about 800, volunteered for active duty to assist in the disaster relief operations.

Appendix IV
Changes Needed to the Role of Forces
Providing Disaster Assistance

- In preparation for the hurricane season, the DOMS, in June 1992, issued to the major commands a planning order that identified the chain of command to be followed and directed the commanders-in-chief to develop a concept of operation for hurricane relief efforts, to include plans for providing personnel and equipment as well as procedures for determining the cost of support provided.
- During the week of August 19, 1992, the DOMS began monitoring the progress of Hurricane Andrew.
- On August 23, 1992, the DOMS established a Crisis Response Team and notified U.S. Army Forces Command, Transportation Command, Army Materiel Command, and Defense Logistics Agency to locate water, food, and shelter material and to determine transportation capabilities.

According to DOD officials, any pre-declaration preparations are risky from a cost reimbursement standpoint because the Stafford Act does not explicitly authorize such actions. Consequently, in the absence of a presidential disaster declaration and a mission tasking from FEMA, DOD is reluctant to make such preparations because it may not be reimbursed for costs incurred.

DOD officials told us that in cases where there is advance warning of a major disaster, such as in Hurricane Andrew, DOD response time could be reduced if it had explicit authority to assemble units, personnel, supplies, and equipment for movement toward the expected disaster area.² Taking such actions in advance of a tasking by FEMA could reduce the disaster response time.

The officials pointed out that although the reimbursement issue is never the determining factor in what DOD will do, it is a factor that must be considered. They said that they would like to have explicit authority that would (1) allow them to increase the pre-declaration efforts they can take to improve responsiveness in cases where there is a high probability that DOD will be involved and (2) ensure that they would be reimbursed for their efforts.

²DOD moved some equipment and supplies to federal property on Kauai in advance of receiving a specific request from local officials.

DOD Should Not Be the Manager of Disaster Assistance in Catastrophic Situations

DOD officials told us that they have the resources, equipment, personnel, and capability to respond rapidly in the event of a catastrophic disaster and are willing to provide any assistance they are asked to provide. However, they believe that overall management responsibility for directing relief efforts in catastrophic disasters should remain in the hands of a civilian authority outside DOD's chain of command. DOD officials are resistant to creating an impression that the military is involved in making or directing domestic policy matters. They also said that DOD's first and foremost responsibility is to deal with military matters affecting national security. Giving DOD a full-time mission of managing disaster preparedness and relief could detract from its primary responsibility.

We agree with DOD's position on management of disaster assistance efforts. Additionally, as discussed previously, there could be instances where DOD resources may not be available for disaster assistance due to some other crisis in the world that may require DOD's full attention.

Estimated Costs Incurred by DOD in Providing Disaster Relief Assistance

The Stafford Act provides that state and local governments will share the cost of disaster relief assistance provided by the federal government. In general, state and local governments pay 25 percent of the costs, and the federal government pays 75 percent.

Because of the severity and magnitude of Hurricanes Andrew and Iniki and Typhoon Omar, the President waived the state reimbursement requirement and authorized the federal government to pick up 100 percent of the eligible public assistance costs. Costs eligible for reimbursement included (1) debris removal to eliminate immediate threats to public health and safety, (2) emergency work to save lives and protect public health and safety, and (3) repair or reconstruction of uninsured public and private nonprofit facilities.

The costs incurred by federal agencies are to be reimbursed by FEMA. As shown below, DOD and the Corps of Engineers estimate that they will be reimbursed about \$559 million for the disaster relief efforts performed at the four disaster locations.

**Appendix V
Estimated Costs Incurred by DOD in
Providing Disaster Relief Assistance**

Table V.1: Estimated Cost of Disaster Assistance by DOD

Dollars in thousands

Nature of costs	Hurricane Andrew		Hurricane Iniki Hawaii	Typhoon Omar Guam	Total
	Florida	Louisiana			
Temporary duty-military	\$6,132	\$51	\$290	\$554	\$7,027
Temporary duty-civilians	802	39	12	10	863
Pay and allowances-reserves	349	2	3	0	354
Pay and allowances-temporary employees	40	0	13	0	53
Other pay and allowances	1,913	9	127	4	2,053
Air Mobility Command airlift	19,483	0	3,793	3,793	27,069
Other airlift	7,280	0	417	0	7,697
Other transportation	6,447	43	566	209	7,265
Subsistence/water	13,405	477	3,824	203	17,909
Petroleum, oils, and lubricants	1,610	3	297	11	1,921
Repair parts	3,812	0	1,008	0	4,820
Medical supplies	341	0	91	0	432
Health and comfort items	14,793	0	0	0	14,793
Construction items	553	0	0	0	553
Other consumables	4,740	27	500	133	5,400
Equipment and supplies	1,407	1	234	0	1,642
Engineering and construction services	11,905	0	0	0	11,905
Other costs	4,882	17	138	838	5,875
Total	\$99,894	\$669	\$11,313	\$5,755	\$117,631

Source: Cost records provided by DOD.

**Appendix V
Estimated Costs Incurred by DOD in
Providing Disaster Relief Assistance**

Table V.2: Estimated Cost of Disaster Assistance by Corps of Engineers

Dollars in thousands

Nature of costs	Andrew		Hurricane Iniki Hawaii	Typhoon Omar Guam	Total
	Florida	Louisiana			
Temporary roofing	\$23,707	0	\$2,852	a	\$26,559
Debris removal	283,188	0	62	a	283,250
Emergency generators and pumps	7,150	\$70	503	a	7,723
Public affairs	38	0	0	a	38
Power treatment plant	0	4	0	a	4
Technical assistance	840	0	0	a	840
Portable toilets	2,682	0	487	a	3,169
Ice and water provisions	3,475	4	221	a	3,700
Damage survey reports	3,266	510	399	a	4,175
School survey and repair	57,088	0	7,079	a	64,167
Garbage removal and disposal	7,574	0	0	a	7,574
Portable showers	1,356	0	0	a	1,356
Hurricane evacuation studies	48	0	0	a	48
Temporary housing support	21,878	5,500	0	a	27,378
Contracts	0	0	1,028	a	1,028
Hospital and armory repairs	0	0	1,133	a	1,133
Lodging victims/employees	0	0	8,183	a	8,183
Refrigerated vans	0	0	245	a	245
Temporary housing repairs	0	0	0	a	0
Inspections and miscellaneous repairs	0	0	157	a	157
Other	0	28	382	a	410
Total	\$412,290	\$6,116	\$22,731	\$126	\$441,263

^aA breakdown by cost category was not available at the time of our review.

Source: Cost records provided by Corps of Engineers.

Except for the Corps of Engineers, the costs shown in table V.2 represent the incremental costs incurred. Military and civilian personnel costs are not included in the totals for reimbursement purposes under the rationale that these are fixed costs that would have been incurred regardless of whether or not the personnel were involved in providing disaster relief.

The Corps of Engineers, on the other hand, bills FEMA for the total costs of the disaster relief assistance provided because according to a Corps official, its funds are appropriated by Congress for specific Corps projects.

Appendix V
Estimated Costs Incurred by DOD in
Providing Disaster Relief Assistance

If the Corps was not reimbursed for its total costs, it would be using funds for a purpose they were not appropriated for.

Scope and Methodology

To address the concerns raised in the Chairman's request, we obtained data from participating units concerning their involvement in Hurricanes Andrew and Iniki and Typhoon Omar. More specifically, we held discussions with officials responsible for commanding the forces and reviewed and analyzed after-action reports and daily situation reports to identify the units involved, the types of assistance provided, and the problems encountered in providing the assistance.

We also held discussions with local, state, National Guard, and Department of the Army officials to determine the extent of coordination among the entities and to identify the types of problems associated with coordinating disaster assistance efforts in catastrophic events.

To determine whether unit readiness was affected by providing disaster assistance, we reviewed the before and after deployment readiness reports of participating units. We also interviewed officials responsible for the readiness of these forces to obtain their views about the impact the disasters had on readiness.

To determine whether the roles and missions of the forces should be reoriented to give greater consideration to disaster assistance, we held discussions with Department of the Army officials and commanders of the forces that participated in the relief operations. We also reviewed legislative material and statutes to determine why the role of the reserves are limited in disasters.

To identify the costs incurred by the military forces and Corps of Engineers, we obtained and reviewed cost reports prepared by the commands providing the disaster assistance. We did not assess the propriety of the costs incurred, but we did discuss the procedures and processes for determining which costs are submitted to FEMA for reimbursement.

Our review was performed at the following locations:

- Department of the Army, Washington, D.C.;
- Office of the Director of Military Support, Washington, D.C.;
- U.S. Forces Command, Fort McPherson, Georgia;
- Commander, Joint Task Force-Andrew, Fort Gillem, Georgia;
- Corps of Engineers, Washington, D.C., Atlanta, Georgia, and Honolulu, Hawaii;
- Office of the State Adjutant General, Florida and Hawaii National Guard;

- **Federal Emergency Management Agency, Washington, D.C.;**
- **Office of the Joint Task Force-Hawaii, Honolulu, Hawaii;**
- **Office of the Joint Task Force-Marianas, Guam;**
- **Office of the Commander-in-Chief, Pacific, Honolulu, Hawaii; and**
- **Office of the U.S. Army, Pacific, Honolulu, Hawaii.**

Our review was performed between September 1992 and March 1993 in accordance with generally accepted government auditing standards.

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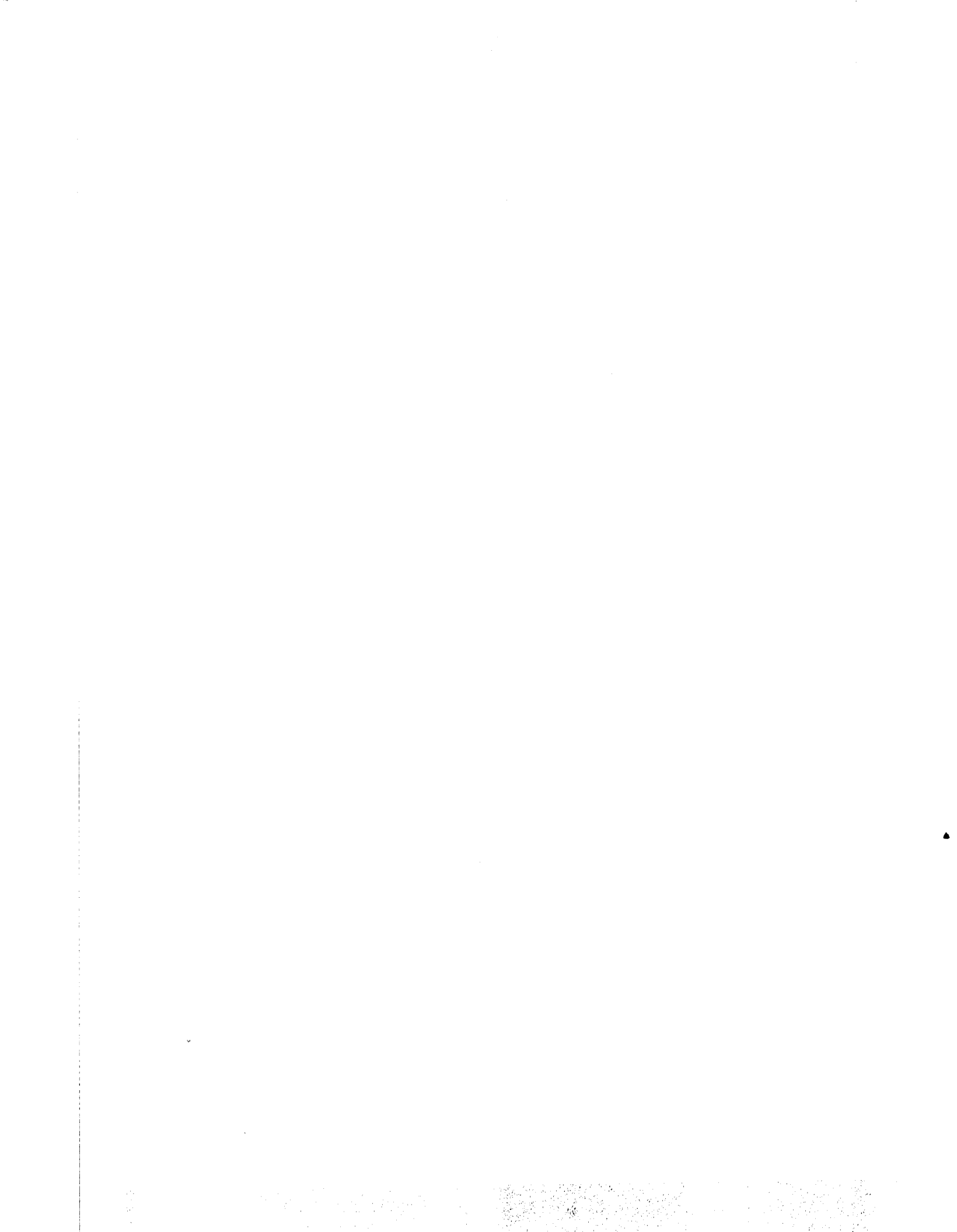
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