

When devastating floods triggered mudslides in Puerto Rico, rescuers responded with lessons learned in Mexico City

The U.S. Team in Puerto Rico

by Hatch and Judy Graham

On October 7, 1985, two and one-half weeks after the earthquake that ravaged Mexico City, the National Science Foundation held a meeting to review that disaster in hopes of developing procedures to improve the U.S. disaster response. A number of agencies were represented, including the Federal Emergency Management Agency (FEMA). Bob Pelusso of the Bureau of Mine Safety, who had been part of the U.S. team in Mexico, invited NASAR to the meeting. Representing NASAR were Greg McDonald, Bill Wade, and two veterans of Mexico City, Marian Hardy and Bill Pierce.

Among the topics of discussion at this meeting were the lack of a unified command in the Mexico City disaster and the advantages of the Incident Command System, and the various types of high- and low-tech methods used by the U.S. team in Mexico City to locate victims trapped under earthquake rubble. The Division of Mine Safety supplied a seismic location system that can detect breathing and heartbeats within a collapsed building. The Office of Surface Mining contributed a remote television probe on a 500 meter cable that could be inserted into cracks in the rubble. And volunteer SAR dog units had sent dogs trained to sniff out survivors as well as corpses. Low- and high-tech complemented each other; the dogs' alerts helped direct the sensitive equipment to likely areas, and the equipment could confirm and sometimes pinpoint the source of the dogs' alerts.

On his return home to Shenandoah National Park that day, Bill Pierce discovered just how timely the October 7 meeting had been. Waiting for him was a

message to call FEMA's Nell Stemper, who had also attended the meeting. Puerto Rico's Governor Rafael Hernandez Colon had requested federal assistance in the flood and mudslides that struck his island in the pre-dawn hours that same day.

The governor called it "the worst tragedy ever to hit our island." Following 30 hours of torrential rain, part of a hillside on the outskirts of Ponce gave way; 274 homes in Barrio Mameyes were buried or swept into a ravine below. Between 500 and 700 people were believed trapped under tons of mud, rocks, trees, and debris from their flimsy wood and tin homes.

Elsewhere on the island, a section of the San Juan-Ponce expressway collapsed, along with another bridge, plunging 16 to 18 vehicles into the Rio Coamo; 29 people were presumed washed downstream.

Hundreds of people were missing, buried under rubble or submerged underwater. On the day after the slide, people reported hearing sounds coming from the debris; they believed there were survivors trapped in the rubble. And now FEMA knew where to ask for help in finding them.

Using Marian Hardy's recently compiled National SAR Dog Directory, Assistant Chief Ranger Bill Pierce



The lack of a unified command in the Mexico City disaster and the various methods used to locate victims trapped under earthquake rubble were two lessons put to use in the Puerto Rico floods. Photo Courtesy AP/Wide World Photos.

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A woman clings to pole in an attempt to escape from the rising mud.

called Hardy to alert six dog teams who could be at Andrews AFB on two hours' notice. Bill also lined up an overhead team for the mission to Puerto Rico. At 2020 on October 8, Shenandoah Coordination Center dispatched six handlers with dogs to Andrews AFB — Marian Hardy, Brooke Holt, Phil Audibert and Jane Mayo of DOGS-East, and Martha Showalter and John Shropshire of The Blue and Gray SAR Dogs. Also responding, as overhead, were Greg Shea from DOGS-East and Appalachian Search and Rescue Conference, and Denny Ziemann and Skip Wissinger from Shenandoah National Park.

FEMA had little experience dispatching to disasters outside the contiguous 48 states, and wasn't prepared for the problems of airlifting teams to Puerto Rico. Puerto Rico is also outside the jurisdiction of the Rescue Coordination Center at Scott AFB. As a result, there was considerable delay in getting an Air Force plane to transport the U.S. team.

The flight finally took off at 0800 on October 9, flying first to Jacksonville, Mississippi, to pick up the high-tech component — a sonic team from the Army Corps of Engineers. The U.S. team then flew on to Puerto Rico, arriving in Ponce at 1800. Wissinger and Hardy surveyed and evaluated the search site that evening.

Returning to Ponce, Hardy requested through channels six to 10 more dog teams. Bill Pierce ascertained that the request was coming formally from General Mora, the commander of the National Guard who was working directly under the governor. Then,

under FEMA's authority, Pierce set about calling out reinforcements.

At 0100 on October 10, he met Shenandoah Park Chief Ranger Larry Hakel at park headquarters and, again using Hardy's SAR Dog Directory, commenced a callout of Eastern and Southern dog teams.

Pierce handled the dispatch of Eastern teams, including more dogs and handlers from The Blue and Gray and DOGS-East, as well as teams from Ramapo Rescue Dog Association, Rescue 40 and the Pennsylvania Department of Environmental Resources SAR Unit. The Southeastern callout was assigned to Ken Hulick, search and rescue coordinator for the Southeast Region of the National Park Service (NPS). Hulick was also given the job of Incident Commander of the overhead team to accompany the second contingent of dog teams.

Hulick passed on the Southeastern dispatch to Great Smoky Mountain National Park. The park mobilized volunteer teams from North Carolina SAR Dog Association and K-9 teams from the Knoxville and Gatlinburg Police Departments. NPS rangers from Great Smoky Mountain, Everglades and Biscayne National Parks were enlisted as overhead for the mission.

The East Coast teams flew by commercial airlines to Atlanta, Georgia, while personnel from the Great Smokies and the Southeast flew in a U.S. Forest Service plane to Atlanta. The military then flew them from Dobbins AFB to Homestead AFB where they picked up overhead from the Everglades and Biscayne.

Delta Airlines proved to be extremely helpful in lining up flights, getting the search dogs on board (many of the dogs flew in the cabin with their handlers) and generally making all arrangements as convenient as possible. Unfortunately, the experience with Delta Airlines was unique among the various carriers that were contacted. In fact, two Pennsylvania Department of Environmental Resources dogs with their handler never made it to the Atlanta pickup point because an airline refused at the last minute to allow the dogs in the cabin. (See *Response!* November/December 1985.)

This second contingent of dog teams and overhead arrived very early October 11. The dog handlers were: Michael Gluck of DOGS-East; Vickie Michael of The Blue and Gray SAR Dogs; Tim and Penny Sullivan and Bob Langendoen of Ramapo Rescue Dog Association; Pat Yessel and Bob Sarver of Rescue 40; Mac McClure, Brian Garvin and Brenda Davis of North Carolina SAR Dogs; Dean Lewis, Gary Waldrip and Robert Marine of the Gatlinburg Police Department; and Bob Lanston and Mike Cunningham of the Knoxville Police Department.

A French team of two dogs and listening devices from the Paris Fire Department arrived at the same time as the second contingent of U.S. dog teams.

At 0130 that morning, the overhead staff held an organizational briefing instituting the Incident Command System. Ken Hulick took over as Incident Commander for the U.S. team, with Skip Wissinger as Safety Officer, Greg Shea of DOGS-East as Operations Section Chief and dog liaison, Mike Hill as Planning Section Chief, and Jerry Hobbs as Logistics and Finance Section Chief.

At 0700 on October 10 — a full three days after the disaster — the first contingent of the U.S. team had begun searching the mudslide. Under the command of Colonel Navas, the National Guard was directing the rescue effort that involved crews from at least eight different Puerto Rican agencies. The command post for Barrio Mameyes was set up at a local school.

By the time this first contingent began working, the avalanche mud had dried to hard pack 40 to 60 feet deep — and as much as 150 feet deep at the bottom of the mountain — mixed with debris from the shattered homes. When the dogs alerted, it might easily take five hours for rescuers — with picks, chainsaws and bare hands — to reach the bodies beneath the rubble.

As in Mexico City, teams worked in 15-minute shifts with one dog and handler searching while a second handler

Continued on page 46

Continued from page 42

observed. A second dog would then search the same area to confirm alerts — or the lack thereof — while the first dog rested. Handlers flagged the dogs' alerts with red surveyor's tape, mapped the locations and notified Puerto Rican crews who began the long, slow work of extrication.

"Our product was surveyor's tape and maps," Ken Hulick commented. "The frustration was never knowing what would happen afterwards."

On October 12, the 21 dog teams were split into four strike teams, each with an NPS ranger as strike team leader; these were Rusty Loran, Mark Spier, Bob Grant and Jan Hill.

The police K-9 teams worked together as one strike team. Because of their aggressiveness, the K-9's had to be transported in crates and were worked on-lead, even on the rubble.

The six dogs and handlers of the first contingent remained together as one strike team. "By the second day we really felt like a cohesive group. We had an emotional need to stay together," commented Martha Showalter. "I think it was the fact of life and death and having to deal with it with each other that caused the bonding."

The other two dog strike teams were each made up of dogs and handlers from two or three of the volunteer units. Handlers reported that, although many of them had never worked together before, they were able to establish functional teams.

On the second day, Ken Hulick suggested to Col. Navas that the various groups get together to coordinate their activities. The next day he called the groups together to brief them on the progress being made. Seemingly as an afterthought, he asked if any of the group supervisors had anything to add. Each then gave a short briefing which led to questions and answers, and the briefing soon turned into a coordination meeting. Later Col. Navas thanked Hulick for his suggestion.

Based on experience gained in Mexico City, the sonic team worked mostly at night, since the sensitive equipment requires silence in order to detect possible survivors under the rubble. By working at night, it wasn't necessary to halt other rescue efforts while the sounding equipment was in use.

Handlers found that temperatures in the 90s took their toll on dogs as well as humans. The Puerto Ricans recovered a rowboat from the debris and filled it with cold water so the dogs could cool off after searching. Because of the heat, "and also because of the final number of dog teams (21) and the relatively small

search area, the strike teams were assigned morning and afternoon shifts, avoiding the worst heat of the day," Brooke Holt explained.

Rescue operations were hindered not only by the heat and humidity, but also by the extremely unstable terrain. "You were never sure when something that looked like good, solid rock was going to crumble underfoot," remarked one handler. "One day we were trying to figure out the terrain, and we realized there had been a mini-slide during the night and it had rearranged everything for us."

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Directing their dogs off-lead over this unstable footing with sharp pieces of corrugated metal and other debris from the destroyed shanties, handlers were thankful for the agility training they'd taken with their dogs. "It was important for the dogs to work slowly and carefully," said Pat Yessel. "Working with the obstacle courses at home proved to be very beneficial. We've taught our dogs that what we point at, they're supposed to step on. We'd say 'easy' to them and they did fine."

There were a number of logistical challenges. From the first day after the arrival of the second contingent of dog teams and overhead, the first and second contingents were quartered 45 minutes away from each other; this was resolved by moving everyone to the Holiday Inn.

One volunteer handler had to leave in the midst of the mission to return to work in the states. Given the complicated logistics of air transport to and from major disasters, the lesson learned here is that SAR personnel should expect to commit themselves to a lengthy stay — at least 10 days — or turn down the mission.

Language was a problem, too, particularly for the overhead team. Mike Hill's Incident Record cites "insufficient Spanish-speaking members" on the U.S. team. "Transportation . . . food and water, and actual operations were sometimes slowed or stopped while waiting for an interpreter . . . The French spoke only French, many of the Puerto Ricans spoke only Spanish and many of us spoke only English. Instructions

often had to go through two translations in order to be understood by all."

The National Guard and Puerto Rico Police helped the U.S. team set up a portable repeater on the island's highest point, which allowed radio communications from Mameyes to the searchers on Rio Coamo. A National Guard helicopter also provided air support for the river search, a big help with teams spread out along some 10 miles of river.

The City of Ponce put a bus and van at the disposal of the U.S. team, and the San Juan Historical Site furnished a pickup truck. But a planned river search with the dogs working from boats never happened because the boats arrived too late and, in any case, were too large to launch.

For five-and-one-half days the dog teams searched the Mameyes slide and the banks of the muddy Rio Coamo. After bodies were recovered from an area, dogs would recheck the spot to make sure no additional bodies were there.

During the Puerto Rico search, handlers flagged 167 spots where their dogs alerted. After the arrival of the dog teams, all of the bodies recovered were found as a result of the dogs' alerts. The dogs as well as the handlers felt the stress of finding only dead bodies. "We had three possible live indications," reports Martha Showalter. "We confirmed them with second and third dogs. Two spots were never dug because it was too dangerous. At the third spot, they even had sound contact with the victim. But several hours elapsed between the alerts and the time the victim was extricated — by then he was dead."

By the time the U.S. team left Puerto Rico, 45 bodies had been recovered from places where the dogs alerted. Excavation of the many spots flagged by the handlers continued to be a slow, difficult process.

At 1400 on October 15, the U.S. team terminated its search and was transported to San Juan where the dogs were presented with medals by the Puerto Rico Friends of Animals. The next day the team flew by Air Force C-130 to Homestead AFB, Florida, with 20 dogs and 30 people packed knee to knee with their gear stacked at the rear of the plane. "The C-130 became airborne literally feet before the end of the runway," Brooke Holt recalled.

At Homestead AFB — thanks to arrangements by Bill Pierce and stress specialist Dr. Jeff Mitchell — the team was met by two psychologists for a critical incident stress debriefing. These were Dr. Jerry Huesman of the University of Maryland and Dr. Eleanor Crocker of the University of Virginia.

Unfortunately, the debriefing was

held on the grass beside the airport because the dogs were not permitted in the base buildings. It was noisy, hot and humid, and by this time the team had had its fill of the steamy climate. It also necessitated that the team be split into two groups, much to the distress of the debriefing team. Nevertheless, members of the U.S. team were able to talk about the frustrations of the mission and the unexpected things that happened to them in Puerto Rico. Ken Hulick believes they appreciated the effort their government had taken to care for their welfare. Summing up the whole mission, he called it "positive but frustrating. The team was very depressed at finding no one alive."

After the debriefing, the team continued on to Dobbins AFB, Georgia, where the Southeastern teams caught Forest Service planes back to the points of departure a week earlier. The Eastern teams laid over a night before being flown to Andrews AFB or by commercial airlines to their various points of departure. For the first contingent, the mission had lasted 10 days.

Since the Puerto Rico mission, the U.S. international response continues to

move ahead. Bill Pierce reported that on February 25-26 the Office of Foreign Disaster Assistance (OFDA) conducted a workshop attended by people who had been involved in the Mexico City earthquake and the standby for the Colombia volcano eruption, as well as Puerto Rico. Termed an Operational Coordination Workshop, its purpose was to exchange ideas, share experiences and improve incident management operations procedures for the development of OFDA disaster plans.

From an organizational standpoint, the Puerto Rico mission was a step beyond Mexico City in that the U.S. team worked under an Incident Command System with full overhead. And, importantly, the U.S. government — now aware of the capabilities of SAR dogs and other victim locators — initiated the callout.

A coordinated U.S. disaster response including SAR dogs, sonic and video equipment, extrication specialists, overhead and others hasn't been perfected yet. But with each national and international mission, we're learning some important lessons that will improve our response to the next one. □