

Tragedies in the sky, answers underwater

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On May 11, 1996, ValuJet Flight 592 falls out of the sky near Miami. The DC-9 bores nose first into the Everglades like a power drill.

On July 17, a Boeing 747 -- TWA Flight 800 -- disintegrates into the waters off Long Island, New York.

The world asked two wrenching questions: What caused the crashes? How can we provide families with closure on the loss of loved ones? In both tragedies, the United States called on divers for answers.

The differences between the two search and recovery operations were as vast as the miles and mentalities that separate Miami and New York.

In New York, disaster scenarios and Navy procedures often provided guidance and informed decisions. In Miami, no script could have prepared searchers for the challenges they faced: divers had to constantly improvise tools and techniques on the fly.

In New York, divers plumbed 120-foot depths of open ocean. In Miami, divers pored over a patch of swamp the area of two football fields.

In New York, searchers brought clues to the surface with a combination of human skill and state-of-the-art devices. In Miami, the Everglades thwarted the best of modern technology; only sheer diligence and stoop labor could prevail.

Near Miami...

Day One

Hours after the crash of ValuJet Flight 592, three Metro Dade police divers 'copter to the scene. They decide to brave the hazardous ooze of mud, jet fuel and hydraulic fluid in wetsuits. Objective: search for survivors hidden in the towering sawgrass. The divers locate no victims, just minuscule pieces of shredded metal, baggage and bodies. And a taut, shallow crater in the limestone bottom.

Day Two

The operation becomes a homicide investigation for the Metro Dade Police divers. Their task: recover evidence--human remains and aircraft wreckage--from the vile soup that OSHA has just declared an extreme biohazard.

Day Three

The five members of the Metro Dade Police Underwater Recovery Unit assume the role of team coordinators for the overall recovery. No script, no previous experience can prepare the team for the month-long search they face.

Offers of assistance pour in from police diving units around Florida. Although volunteers are actually waders, they are called "divers." The divers work in extreme conditions in sealed suits. Under heavy chest waders and leather gloves, divers wear waterproof plastic suits, two pairs of latex gloves, surgical masks, goggles and hats topped by disposable hoods. The HazMat specialists hope this gear will filter the bacteria that leach from the bits of flesh rotting in the 90-degree heat. Inside the biohazard "hot zone," searchers aren't allowed to touch their faces or drink water.

Divers complain their waders are leaking, but they are actually sweating three to five pounds of perspiration into their suits in each search sortie. They are encapsulated in these cookers for up to an hour and a half, from the time they enter the hot zone through the elaborate decontamination process. The divers roast while they ride the airboat out (and back), wait their turn to enter the water, and wade through the bowels of hell during 20- to 60-minute searches.

To the divers, these Everglades don't seem fragile. On windless days, they toil and slog through the muck, mosquitoes and towering sawgrass under the relentless Florida sun. Ever present is the smell of decomposing flesh and jet fuel, and the threat of lightning strikes and violent storms. Hydraulic fluids and friction eat away at the rubberized waders.

The 50 searchers work mostly in teams of eight to ten, wading with fishing nets to scoop up the debris and remains they dislodge with sharp-tipped poles. A diver finds a piece of evidence and carries it to an airboat, where it is photographed, tagged and put in a red bag marked "BIOHAZARD." To keep from churning up even more bacteria with airboat propwash, NTSB investigators searching for plane parts work only when divers hunting for human remains are out of the water. Both groups work in tight 20- to 40-minute shifts.

Day Ten

NTSB executives have advanced a theory: a large part of the aircraft--maybe the fuselage--is "whole" in the "hole." Metro Dade PD divers disagree; they had searched the crater on the day of the crash. But searchers have not turned up intact bodies or the "black boxes"--the cockpit voice recorder and flight data recorder. The technical skills of the Underwater Recovery Unit are about to face the ultimate test: a dive into the Belly of the Beast--the pit.

The air dive into the eight-foot deep crater is a monumental task--a nightmare of planning, preparation and execution. Under extreme time pressure, the team debates equipment, dive platforms, logistics, transportation, procedures, decontamination, medical support, backup, safety, evidence gathering and documentation.

The divers develop specifications for the environmentally sealed suits they'll need to survive the biohazard witches' brew. U.S. Divers will provide technical support and most of the gear, including special state-of-the-art dry suits, Interspiro full-face masks and Buddy Phone wireless voice-actuated communications systems.

Fish and Game officers have to rout an aggressive alligator from a nearby canal before the team can test their equipment and procedures.

The divers need a swamp-capable dive platform. So at Everglades Holiday Park, owner Mitch Bridges tears apart a 30-passenger airboat. He rewelds, rebuilds and custom-configures his craft to the team's specifications for this one dive. (Dade County will never receive a bill for a month of Mitch's support.)

Paul Toy, a diver from the Underwater Recovery Unit, will submerge into the crater alone with a tether for surface-supplied air. In identical gear, Marco Pascual will stand by beside the airboat, in the water. A third diver will stand by inside the airboat.

Each crater diver must enter and exit the hot zone as an environmentally sealed unit. Seals must remain intact from the moment they step out of the ready tent through decontamination. The support team provides the divers with scuba tanks for the transitions to and from surface supplied air. Frozen chill packs keep the temperatures inside the dry suits almost bearable.

A well-integrated team of mission-critical personnel packs Mitch's huge airboat. On board are a dive supervisor, three diver tenders, air tender, EMT, plus forensic specialists, including photographers, Homicide, Crime Scene, and Medical Examiner--and all their equipment. All broil in standard hot zone suits.

Paul Toy submerges alone into the 150- by 50-foot crater. Throughout the dive in the eight-foot-deep sink, the only thing crystal clear is voice communications with the Buddy Phone. Inside the pit, it's zero visibility, search by feel, and "dive by Braille."

On the bottom--under four feet of water and three feet of muck--Toy finds a crater within the crater. It's a cavity in the solid limestone. Dimensions: 18 inches deep by 50 feet wide. Paul realizes the depression was carved out by the violent impact of the doomed aircraft.

Feeling around with his feet and using gloved hands to manipulate a hooked gaff, Toy recovers two three-by-six-foot scraps. In 95 minutes in the pit, he does not find the black boxes. No mass grave. No substantial pieces of the jetliner. "With just about every shuffle, I would find a piece," Toy says. "But not enough to account for a DC-9."

So where is it? Planes slam into rock-hard mountains and leave behind more evidence than Flight 592 left in the swampy Everglades. In the end, what Toy finds is persuasive evidence that the DC-9 was pulverized on impact.

Over the next 20 days, the waders--led by the Underwater Recovery Unit--will meticulously comb the crash site, roughly the area of two football fields. It is manpower, not technology, that finds the black boxes.

Says one diver, it looked like someone "put the plane... through a meat grinder and spit it all out over the Everglades. Everything we were picking up was so small--except for the engines, some of the wheels--that manpower was the only way it was going to be done." Ultimately the divers collect mostly fragments in inch-by-inch searches of the Everglades. The final tally: some 700 body parts, personal effects and about 75 percent of the aircraft.

Day 29 -- Let's go home

It doesn't feel like victory. But the search was a triumph of the human spirit in an in-your-face view of tragedy that was up-close and 'way too personal. What kept the divers going? Finding the black boxes. Professionalism and devotion to duty. Religious faith. The Golden Rule: do unto others... Concern for "providing closure" for those who lost loved ones. People succeeding where technology failed.

Long Island Sound, New York

On July 23, the U.S.S. *Grasp*--a sophisticated Navy search and salvage ship--arrives in Long Island. Teams of Navy and public safety divers from Suffolk County and New York City have been locating debris fields for over a week. The Navy adds 20 divers to the *Grasp*'s standard complement of twenty to support 'round the clock underwater operations. In New York, the number of divers now totals 120.

The *Grasp* takes up station over a large piece of wreckage in a primary debris field a quarter mile square. Two vessels--the NOAA M/V *Rude* and Navy-contract ship *Pirouette* --have meticulously mapped this area with sidescan sonar. The *Grasp* quickly places three moorings and attaches a cable from each to the 255-foot long ship. The *Grasp* can now winch yard by yard over a broad area of the primary debris field.

On July 25, *Grasp* divers locate the flight data and cockpit voice recorders and bodies in the aft section of the Boeing 747.

Grasp teams are diving on both scuba and surface-supplied air (SSA). By winching on its three moorings, the *Grasp* drops SSA divers directly on targets. Meanwhile, a ROV with sonar and video capability ranges on its 600-foot umbilical for targets of opportunity. When the Mini Rover locates promising debris, scuba divers descend the tether to investigate and recover.

Visibility ranges from 10 to 30 feet. It's "diving in razor blades": jagged metal threatens to cut divers and foul umbilicals. In the 52-degree water, scuba divers use wetsuits; SSA divers, hot water suits.

According to Navy rules, it's no-decompression dives on scuba. SSA divers discharge their nitrogen obligations for 60-minute bottom times with a combination of in-water and chamber decompression.

Although challenging, the diving is mostly by the Navy book. The crew of the *Grasp* face their greatest challenge when they locate the 747's four engines and a massive piece of wing. The *Grasp* is ably equipped to conduct salvage operations in the six- to eight-foot seas off Long Island. But jagged metal saws through even the toughest cables that the *Grasp* can muster to hoist the engines and the 15-ton, 80-foot section of wing. Navy ingenuity ultimately prevails.

After five weeks on station, the *Grasp* stands down and heads to home port, Norfolk. Two aspects of the search and salvage impress *Grasp* commander Bill Orr: how his crew rose to the challenge of working 24-hours a day, 'round the clock. And the degree of cooperation, organization and goodwill among the parties involved in the massive operation: NTSB, FBI, Coast Guard, Navy, Red Cross, and local government and public safety organizations.

In the end--in Florida and New York--divers performed to the credo-standard of the Metro Dade Underwater Recovery Unit:

If the task need be done,
be it great or small,
do it right 'til it's done,
or do it not at all.

Sources:

- (1) Rob Curran interview with the members of the Metro Dade Underwater Recovery Unit
- (2) Rob Curran interview with commander of the *U.S.S. Grasp*, LtCmdr Bill Orr
- (3) the *Miami Herald*
- (4) Reuters News Service
- (5) U.S. Navy Public Affairs Library.