

Crew Continues Takeoff After Engine Surges at V_1

After shutting down the engine and dumping fuel, the Boeing 777 crew returned to the airport for a single-engine landing.

BY MARK LACAGNINA



The following information provides an awareness of problems in the hope that they can be avoided in the future. The information is based on final reports on aircraft accidents and incidents by official investigative authorities.

JETS

Compressor Liners Found Eroded

Boeing 777-300. Minor damage. No injuries.

The aircraft was departing from Melbourne (Australia) Airport at 0104 local time Aug. 25, 2004, when the left engine surged at V_1 , which informally is called takeoff decision speed. The flight crew continued the takeoff and then shut down the engine because of repeated surges, or compressor stalls. The Australian Transport Safety Bureau (ATSB) report said that the cockpit voice recorder recorded a loud bang 0.8 seconds before the automatic V_1 callout and 57 more bangs before the engine was shut down 70 seconds later.

“Due to forecast turbulence, the crew maintained an altitude of approximately 3,000 ft above ground level [AGL] to dump fuel and reduce the aircraft’s weight for landing,” the report said. “Air traffic services vectored the aircraft over Port Phillip Bay for the fuel dump, which took approximately one hour.” The flight

crew then returned to the airport and conducted a single-engine landing. None of the 300 occupants was injured.

Investigators found debris on the runway from a composite core panel that had broken and separated from the Rolls-Royce Trent 800 engine when it began to surge. The report said that a detailed examination of the engine found that erosion of the high-pressure compressor (HPC) casing liners had reduced compressor efficiency. Rolls-Royce told investigators that proper clearance between the HPC casing and rotor blades is critical for engine-airflow control at takeoff thrust settings.

The engine’s total service time was 15,614 hours, during which it had undergone 4,527 cycles. Twenty-one days before the incident, a borescope examination of the engine was performed in response to an engine-condition-monitoring alert about a change in turbine gas temperature. Minor damage that was within acceptable limits was found on a few of the HPC blades, and the engine was returned to service. “The borescope inspection only permitted limited examination of the HPC casing liner material in the immediate vicinity of the borescope inspection port,” the report said.

Eroded HPC casing liners were found in two other Trent 800 engines, which subsequently

were removed from service. Among actions taken by Rolls-Royce after the incident was a change in condition-monitoring procedures to include a detailed review of engine-parameter data if troubleshooting prompted by an alert finds no explanation for the alert.

Birds Strangle a Falcon

Dassault Falcon 20D. Substantial damage. One minor injury, one uninjured.

The airplane was 15 ft above the runway during takeoff from Lorain County (Ohio, U.S.) Regional Airport for an on-demand cargo flight at 1950 local time Sept. 1, 2005, when flocks of birds rose from both sides of the runway. Several birds were ingested by the engines, said the U.S. National Transportation Safety Board (NTSB) report. The right engine surged and lost power. About 10 seconds later, the copilot observed that the left-engine fan speed, N_1 , was decreasing below 50 percent.

The stall-warning horn sounded, and the pilot landed the airplane gear-up on the runway about 3,000 ft (915 m) beyond the point of rotation. The airplane overran the 5,000-ft (1,525-m) runway, struck a fence, crossed a road and came to a stop in a cornfield. The pilot was not injured; the copilot received minor injuries.

Turbulence Closely Follows Seatbelt Sign

Boeing 737-800. No damage. One serious injury, two minor injuries.

Light turbulence persisted during the climb after the airplane departed from Hamilton, Bermuda, on Oct. 22, 2005, for a flight to Boston. The flight crew decided to leave the seatbelt sign illuminated. The turbulence subsided when the airplane was about 230 nm (426 km) northwest of Hamilton at Flight Level 340 (approximately 34,000 ft).

“However, more turbulence was forecast for [an area] about 150 miles [278 km] ahead of the airplane,” the NTSB report said. “The captain announced to the passengers that the seatbelt sign would be turned off for 10 minutes to allow them an opportunity to move about the cabin but would be turned on again due to the upcoming turbulence.”

About three minutes after the crew turned the seatbelt sign back on, the airplane encountered moderate turbulence. Two passengers and a flight attendant fell while attempting to return to their seats. The two passengers received minor injuries; the flight attendant suffered a fractured pelvis. The other 147 occupants were not injured.

Control Lost on Wet Runway

Cessna CJ1. Substantial damage. Seven uninjured.

Visual meteorological conditions (VMC) prevailed for the business flight to Murfreesboro, Tennessee, U.S., on May 16, 2006, but a weather front was approaching the airport. The automatic terminal information service said that the winds were from 240 degrees at 3 kt and the runway was wet. The approach controller cleared the pilot to conduct a visual approach to Runway 18.

The pilot said that as he landed the airplane on the first third of the 3,900-ft (1,190-m) runway, heavy rain began to fall and wind direction and velocity changed. The pilot lost directional control of the airplane after the tires began to hydroplane at midfield. “The pilot stated that there was insufficient runway remaining for him to initiate a go-around,” the NTSB report said. “The airplane went off the runway sideways, collapsed the left main landing gear and came to a complete stop.”

No Training, No Protection

Douglas DC-9. Minor damage. One fatality.

Passengers were being boarded at Norfolk, Virginia, U.S., on Sept. 12, 2003, when an airline employee drove a tractor toward the airplane in preparation to push it back from the gate. The NTSB report said that the employee had been assigned to baggage-room duties that day and was not qualified or authorized to conduct push-back operations. She had not received training in push-back operations since 1992.

“Another airline employee on the ramp saw the tug driver maneuver the tug toward the towbar connected to the airplane’s nosegear, heard a loud noise and saw the towbar buckle and go

The stall-warning horn sounded, and the pilot landed the airplane gear-up on the runway.

into the air,” the report said. “The tug struck the radome of the airplane, and the airline employee who was driving the tug was fatally injured after being trapped between the tug and the airplane.”

NTSB said that the absence of a protective enclosure over the cab of the tug was a factor in the accident.

Clogged Fuel Vent Downs a Homebuilt

Velocity Jet 900. Destroyed. One minor injury.

The pilot was conducting his first flight in the homebuilt airplane at Millbrook, New York, U.S., on May 24, 2006. The NTSB report said that he had no prior experience and had received no training in turbine airplanes. After liftoff, the airplane climbed above the traffic pattern altitude at a rate of 4,000 to 5,000 fpm and accelerated above 200 kt on the downwind leg.

The pilot reduced power to flight idle. He told investigators that the airplane was low on base leg, but the engine did not respond when he advanced the throttle. “I got too slow, lost control and crashed 100 feet short of the runway,” he said.

An examination of the airplane found that the fuel tank vent was clogged with dirt and insect remains. NTSB said that the probable cause of the accident was “the pilot/owner’s inadequate preflight [inspection of the airplane].”

TURBOPROPS

Pitch Trim Runaway

Embraer EMB-110P2 Bandeirante. No damage. No injuries.

The company’s chief pilot was conducting a private flight on Sept. 1, 2005, to re-establish recent flight experience in the aircraft and to practice newly adopted flight crew procedures. Two other company pilots were aboard: one was serving as copilot/supervisory pilot; the other was observing.

On initial climb from Bankstown Airport in New South Wales, Australia, the aircraft pitched nose-down. The pilot used the manual pitch-trim system and the electric pitch-trim system but was unable to reduce the nose-down pitch forces. “The [pilot] indicated to the copilot that

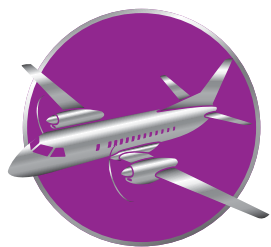
he was having control difficulties,” the ATSB report said. “The copilot assisted the [pilot] by applying back-pressure on the right control column.” However, the pilots were not able to maintain a climb.

The copilot observed that the elevator-trim indicator was in the full nose-down position. He attempted unsuccessfully to apply nose-up elevator trim. The pilot reduced power, and the nose-down pitch forces decreased but still required opposing control inputs by the pilots. “The pilots reported that the aircraft descended to about 150 ft AGL during the incident,” the report said.

The copilot declared an urgency condition, pan-pan, and advised the airport tower controller of the problem and the crew’s intention to return for a landing. He then released the control wheel and, “in desperation,” used both hands to apply back-pressure to the pitch-trim wheel. “The copilot reported that after using ‘excessive force,’ the trim wheel released from the nose-down position and was moved towards the neutral position,” the report said. “The pilots regained control of the aircraft and landed shortly after.”

Investigators found that when the elevator-trim switch on the left control wheel was moved left to the “DOWN” position or moved right to the “UP” position and released, it did not return to the center, neutral, position. “With electrical power on, selection of ‘UP’ or ‘DOWN’ produced a noise consistent with operation of the trim servo motor but did not result in movement of the trim tab,” the report said. Debris, a “sticky substance” and corrosion were found in the trim-switch mechanism, and the trim servo motor clutch did not slip, or disengage, properly at design torque limits because of inadequate lubrication.

The pilots did not pull the electric trim system circuit breaker during the incident, as called for by the emergency checklist. “Given that the electric trim was probably driving when the crew were having control difficulties, pulling the electric trim servo circuit breaker would have deactivated the electric trim servo motor and ... allowed the pilots to regain manual trim control,” the report said.



Similar to an accumulation of ice on the airframe, thickened deice/anti-ice fluid also degrades the aerodynamic performance of the aircraft.

Crew Uses Wrong Takeoff Speeds

Dornier 328-110. No damage. No injuries.

Before departing from Ronaldsway Airport on the Isle of Man, U.K., on Nov. 28, 2005, the aircraft was treated with a heated mixture of Type II+ deice/anti-ice fluid and water to remove an accumulation of frost. The flight crew selected a V_1/V_R (takeoff decision speed/rotation speed) of 109 kt based on the aircraft's takeoff weight, 12,300 kg (27,117 lb). However, when the commander pulled the control column aft at that speed, the aircraft did not rotate. The commander rejected the takeoff and stopped the aircraft on the runway. None of the 19 occupants was injured.

In its report, the U.K. Air Accidents Investigation Branch (AAIB) said that the V_1/V_R speed selected by the crew was for normal conditions and was incorrect for the situation. "Contamination must have been present on the tail surfaces because the aircraft would not rotate at the 'normal' rotation speed for its configuration and load, but it was not possible to determine whether the contaminant was ice or thickened [deice/anti-ice] fluid," the report said.

In addition to providing V_1/V_R speeds for normal takeoff conditions, the Dornier 328 airplane flight manual (AFM) includes V_1/V_R speeds that are about 20 kt higher to provide an additional margin above stall speeds during takeoff in icing conditions and/or after the aircraft has been treated with thickened deice/anti-ice fluids such as Type II or Type IV fluids. The report noted that, similar to an accumulation of ice on the airframe, thickened deice/anti-ice fluid also degrades the aerodynamic performance of the aircraft. The AFM specified a V_1/V_R speed of 128 kt for the incident conditions. The higher speed increases accelerate/stop distance by 330 m (1,083 ft) to 1,350 m (4,429 ft); the usable length of the runway was 1,613 m (5,292 ft).

Icing Triggers Stall on Approach

Cessna 425 Conquest I. Destroyed. One fatality.

Dark nighttime instrument meteorological conditions (IMC) prevailed at the destination, Gallatin Field in Bozeman, Montana, U.S., on Nov. 29, 2005. On arrival, after almost

four hours of flying, the pilot was instructed by air traffic control (ATC) to enter a holding pattern at 11,000 ft — about 6,500 ft AGL. The NTSB report said that the pilot had about 1,987 flight hours and had logged nine hours of flight time in actual IMC in the six months preceding the accident flight; however, he had not flown at night during that period.

Soon after entering the holding pattern, the pilot was cleared to conduct an instrument landing system (ILS) approach. Two minutes after he acknowledged the clearance, ATC lost radio contact with the pilot.

Search efforts were terminated that night because of the weather conditions and darkness. The next morning, the wreckage of the airplane was found about 2.8 nm (5.2 km) from the airport. "The airplane impacted terrain in a vertical descent and flat attitude," the report said. "Evidence of forward velocity and/or leading-edge deformation was not observed on the wings or fuselage. Mixed ice was noted along the leading edges of both wings."

NTSB said that the probable cause of the accident was "the pilot's failure to maintain airspeed during the approach, which resulted in an inadvertent stall."

GPU Strikes Rotating Propeller

De Havilland Canada Dash 8. Substantial damage. No injuries.

The aircraft was parked at a stand and was being prepared for departure from Aberdeen (Scotland) Airport on Oct. 7, 2005. A ground power unit (GPU) was used to provide electrical power for starting the aircraft's engines. Soon after the GPU cables were disconnected from the aircraft, the GPU began moving forward, toward the aircraft. Nobody was in the cab, and the GPU struck the rotating propeller on the right engine and came to rest against the fuselage. The flight crew shut down the engines, and all 54 occupants exited through the cabin door.

All four blades on the propeller and the propeller hub were damaged, and the fuselage was dented. The aircraft operator determined that the right engine required a complete overhaul. The GPU also was substantially damaged.

An examination of the GPU found that, because of worn engine-governor components, the engine idling speed was significantly higher than normal and sufficient to override the parking brake. The AAIB report concluded that the GPU's "FORWARD-NEUTRAL-REVERSE" selector had been moved to the "FORWARD" position, most likely because of "human intervention." However, the gate in the selector was found to be worn, and the report said that the selector might have moved to the "FORWARD" position when it was jolted as the GPU cab door was closed.



PISTON AIRPLANES

Missing Dipstick Causes Oil Loss

Piper Chieftain. Destroyed. Two fatalities.

The passenger arrived at Ankeny (Iowa, U.S.) Regional Airport at 0900 local time Nov. 8, 2005, but because the charter flight had not been confirmed by the customer, the operator had not assigned a pilot to the flight. The flight scheduler called several company pilots before finding one who could accept the assignment, the NTSB report said. The pilot arrived about 1005. A witness said that the pilot spent about two minutes in the office before he walked directly to the airplane, boarded and started the engines.

While servicing the airplane, a lineman had placed the oil-quantity dipstick on the right wing while adding oil to the right engine at 0930. He did not replace the dipstick in the oil-filler tube. The lineman also left the engine-cowling dipstick-access door open.

"The pilot taxied the airplane forward about 5 ft [2 m] and abruptly stopped and shut down both engines," the report said. The pilot exited the airplane, closed the dipstick-access door, reboarded the airplane, restarted the engines and resumed taxiing. About three minutes after departing from Runway 18, the pilot told ATC that he needed to return to the airport due to an oil leak. He reported on the Unicom frequency that he was shutting down the right engine.

The report said that the airplane was at 550 ft AGL when it overflew the airport on a

southerly heading. "The airplane continued to fly south past the airport, entered a left turn and turned back to the north," the report said. The airplane stalled and descended to the ground about 2.5 nm (4.6 km) north of the approach end of Runway 18.

NTSB said that the probable causes of the accident were "the pilot's failure to preflight the airplane, the pilot's improper in-flight decision not to land the airplane on the runway when he had the opportunity and the inadvertent stall when the pilot allowed the airspeed to get too low," and that a contributing factor was "the lineman's improper servicing of the airplane."

'Unchecked Descent' Below Minimums

Pilatus Britten-Norman Islander. Destroyed. Two fatalities.

The pilot, who had been on leave and had not flown for 32 days, conducted a brief solo flight at the Glasgow, Scotland, airport to regain currency on March 15, 2005. He then landed the aircraft to board a paramedic for an air ambulance flight to Campbeltown Airport in Argyll.

The pilot had been assigned the flight at 2136 local time; he had been awake since 0645. "The task was to collect a 10-year-old patient who was suffering from suspected appendicitis and fly him to Glasgow for hospital treatment," the AAIB report said.

The airplane departed from Glasgow at 2333. ATC services were not available at Campbeltown Airport. At 0008, the pilot established radio communication with an airport flight information service (AFIS) officer, who reported that visibility was 4,500 m (2.8 mi) in rain, broken clouds were at 400 ft and 900 ft AGL, and surface winds were from 240 degrees at 15 kt. The pilot said that he would conduct the VOR/DME (VHF omnidirectional radio/distance measuring equipment) approach to Runway 11 and "hopefully break visual" for a circling approach to Runway 25. Published minimums for the straight-in approach are 380 ft — 341 ft above runway elevation — and 1,300 m (0.8 mi).

The report said that the aircraft's descent rate was 1,050 fpm when it descended below 1,540 ft,

The pilot's body was found about nine months after the accident by the crew of a fishing vessel.

the minimum altitude for the outbound segment of the procedure turn. ATC radar contact then was lost. About 0018, the pilot reported that the aircraft was inbound on the procedure turn, which is conducted over water northwest of the airport. The AFIS officer said that visibility had decreased to between 1,500 m and 2,500 m (0.9 mi to 1.6 mi) and asked the pilot to report when he had the airport in sight. The pilot did not acknowledge the request or reply to further radio transmissions by the AFIS officer. "The aircraft was subsequently located on the seabed 7.7 nm [14.3 km] west-northwest of the airport," the report said. The paramedic's body was found in the wreckage. The pilot's body was found about nine months after the accident by the crew of a fishing vessel.

AAIB said that the following were causal factors of the accident:

- "The pilot allowed the aircraft to descend below the minimum altitude for the aircraft's position on the approach procedure, and this descent probably continued unchecked until the aircraft flew into the sea;
- "A combination of fatigue, workload and lack of recent flying practice probably contributed to the pilot's reduced performance; [and,]
- "The pilot may have been subject to an undetermined influence such as disorientation, distraction or a subtle incapacitation which affected his ability to safely control the aircraft's flight path."

Internal Debris Causes Engine Failure

Cessna 320E. Destroyed. Two serious injuries.

The airplane was between 100 and 200 ft AGL during departure from Missoula, Montana, U.S., for an aerial-mapping flight on June 21, 2005, when the right engine lost power. The NTSB report said that the airplane, which was about 83 lb (38 kg) over maximum gross weight, descended into a gully when the engine failure occurred and climbed slowly after the pilot feathered the propeller and secured the

engine. The pilot was conducting a left turn to avoid trees when the airplane struck a hill. The pilot and passenger exited the airplane before it was consumed by fire.

Investigators found pieces of paper lodged between the impeller and housing of the turbocharger, which had separated from the right engine on impact. "An examination of the pieces of paper extracted from the turbocharger revealed that they were from an air-filter instructional sheet," the report said. "It was also determined that the replacement air filter had been installed on the right engine approximately four months prior to the accident." The airplane had been operated about 54 hours after the air filter was installed.

The report said that when the manufacturer packages new air filters, the instruction sheet is folded and inserted inside the canister, and the canister is placed in a plastic bag. Maintenance personnel failed to remove the instruction sheet from the canister when the air filter was installed in the accident airplane, the report said.

Beaver Stalls While Crossing Ridge

De Havilland DHC-2. Destroyed. One fatality.

After completing a flight in the float-equipped aircraft to two wilderness camps, the pilot was returning to the company's base camp at Squaw Lake, Quebec, Canada, on the afternoon of Sept. 1, 2005, when deteriorating weather conditions forced him to conduct a precautionary landing on Elross Lake, which is 15 nm (28 km) northwest of the base camp, said the report by the Transportation Safety Board of Canada.

About 1630 local time, the pilot reported to a company dispatcher by VHF radio that there "seemed to be a break in the weather" and that he intended to continue the flight to the base camp. Another company pilot told the accident pilot that the weather at Squaw Lake was poor and that the flight should not be attempted. The report said that an airport near the base camp was reporting 2 mi (3,200 m) visibility, 600 ft vertical visibility and surface winds at 18 kt.

“Rescue efforts were initiated in the evening when the aircraft did not arrive at the base camp,” the report said. The wreckage of the aircraft was found on a mountain ridge 4 nm (7 km) from Elross Lake the next day. “The severity and type of the damage, and the angle at which the aircraft contacted the terrain indicate the aircraft was in an aerodynamic stall at the time of impact,” the report said. “In an attempt to cross the [ridge], the pilot perhaps lost visual reference to the ground and subsequently control of the aircraft, and/or he encountered moderate to severe turbulence and strong updrafts causing the aircraft to stall ... at an altitude from which recovery was not possible.”

HELICOPTERS

Air Ambulance Strikes Sea During Approach

Sikorsky S-76A. Extensive damage. No injuries.

Nighttime VMC prevailed for the air ambulance flight on Sept. 18, 2004. The helicopter, with five crewmembers aboard, departed from Gotland, Sweden, to pick up a patient with an acute heart condition on the island of Håradsskär.

“The weather was judged to be good, and the sortie was viewed by the crew as a routine mission,” said the report by the Swedish Accident Investigation Board. As the helicopter neared the island, the crew observed lights in the windows of the patient’s house. “Apart from this, the only external reference point in the area was the light from the lighthouse,” the report said. “The commander decided, after passing the island, to make a right turn and then approach it from the north and into the wind.”

The commander told the other crewmembers that he would conduct a relatively steep approach. “He felt that the initial glide towards the island was without problems even though he lacked visual contact with the ground and the strong light from the lighthouse at times masked the weaker light from the house windows,” the report said.

Soon after the copilot called out a radio altitude of 100 ft, the winch operator observed that the helicopter was rapidly approaching the water

and that the waves were going in the wrong direction. The winch operator shouted, “We’re moving backwards.” The report said that the helicopter struck the water before the commander could react. Water rapidly filled the helicopter, but all five crewmembers exited before it sank. They later were rescued by the crew of a military helicopter.

Investigators found that the pilots had not used the radio altitude warning system, the radar system or the global positioning system during the approach. “The investigation has revealed that the pilots underestimated the difficulty of landing under the circumstances then prevailing and that the procedures and the technical equipment available for them to be able to perform a safe landing were not employed,” the report said.

Spatial Disorientation Cited in Control Loss

Robinson R44. Substantial damage. No injuries.

Visibility was reduced by low fog and flat light conditions during the charter flight from Iliamna, Alaska, U.S., to a remote site on March 12, 2006. About 10 nm (19 km) from Iliamna, “the pilot was unable to discern any topographic features on the snow-covered terrain, and he elected to make a precautionary landing to wait for better visibility,” the NTSB report said. “After about 10 minutes, he decided to continue to his destination.”

As the helicopter moved forward after take-off, the pilot’s vision again was affected by blowing snow and the flat light conditions. The pilot attempted to establish a stable hover. He told investigators that he believed the aircraft was not moving when the right skid struck the ground. The helicopter rolled right, and the main rotor blades struck the ground. “As the main rotor blades struck the ground, the helicopter rolled onto its right side,” the report said. The pilot and passenger were not injured.

NTSB said that the probable causes of the accident were “the pilot’s continued flight into adverse weather conditions and his spatial disorientation and loss of control during a subsequent landing attempt.” ●



Preliminary Reports				
Date	Location	Aircraft Type	Aircraft Damage	Injuries
Nov. 6, 2006	Piacenza, Italy	Piper Cheyenne I	destroyed	2 fatal
Nighttime visual meteorological conditions (VMC) prevailed when the airplane crashed in a forest during a flight from Malta to Milan.				
Nov. 7, 2006	Corozol, Belize	Cessna 207A	NA	6 NA
The airplane was on a 30-nm (56-km) flight to Corozol from Orange Walk when engine problems occurred. The pilot ditched the airplane 4 nm (7 km) from shore. The six occupants were rescued by the crew of a marine vessel.				
Nov. 8, 2006	Takhli Air Base, Thailand	Learjet 35A	destroyed	7 fatal
The Thai air force airplane was 150 ft above ground level on takeoff when the captain reported an engine problem. The airplane stalled and struck an empty hangar during the emergency landing.				
Nov. 8, 2006	Alamogordo, New Mexico, U.S.	Cessna 337C	destroyed	1 fatal
Daytime VMC prevailed when the airplane veered right off the runway on landing, crossed a taxiway and struck a hangar.				
Nov. 9, 2006	Walikale, Democratic Republic of Congo	Let L-410UVP	destroyed	1 fatal, 4 minor
Engine problems occurred soon after the airplane took off from a road used periodically as a runway. The road had been reopened for traffic when the flight crew returned for an emergency landing. The airplane struck several vehicles, killing a passenger in one vehicle, before veering off the road, striking several houses and stopping in a field.				
Nov. 12, 2006	Rottneest Island, Australia	Partenavia P.68B Victor	destroyed	6 minor
The airplane crashed on a salt lake bed soon after takeoff.				
Nov. 13, 2006	South Bend, Indiana, U.S.	Cessna T303 Crusader	destroyed	5 fatal
The airplane climbed in instrument meteorological conditions to about 5,700 ft after takeoff, entered a spiraling left turn and struck a cornfield in an 80-degree nose-down attitude.				
Nov. 14, 2006	Big Bear Lake, California, U.S.	Cessna 421B	destroyed	3 fatal
A witness saw dark smoke emerge from the left engine after the airplane lifted off. The airplane yawed left, and the landing gear remained extended. The airplane crashed on the shore of a lake about 7 nm (13 km) from the airport.				
Nov. 15, 2006	Progreso, Mexico	CASA 212 Aviocar 400	substantial	7 none
Both engines flamed out about five hours after the Mexican naval airplane departed from Cancún for a maritime patrol mission. The flight crew ditched the airplane 1.9 nm (3.5 km) offshore. All seven occupants escaped before the airplane sank.				
Nov. 17, 2006	Ocumare del Tuy, Venezuela	Cessna 207	NA	3 fatal
The pilot encountered engine problems soon after takeoff for a cargo flight. During an attempted landing on a city street, the airplane struck a telephone pole and a bus. The pilot and two occupants of the bus were killed.				
Nov. 17, 2006	Puncak Jaya, Indonesia	De Havilland Canada DHC-6	destroyed	12 fatal
The Twin Otter was on a charter flight from Mulia to Ilaga when it struck a mountain at 10,500 ft.				
Nov. 18, 2006	Leticia, Colombia	Boeing 727-23F	destroyed	5 fatal
Nighttime VMC prevailed with patches of fog when the cargo airplane struck a 150-ft antenna about 2 nm (4 km) from the airport during a visual approach. The three flight crewmembers and two passengers were killed.				
Nov. 19, 2006	Kingstown, St. Vincent and the Grenadines	Rockwell 5005	NA	2 fatal
Radio contact was lost soon after the pilot reported over Bequia Island and four minutes from landing in Kingstown. The next day, debris from the airplane was found on the ocean.				
Nov. 22, 2006	Cunday, Colombia	Cessna 208 Caravan	destroyed	3 fatal
The Colombian air force airplane struck a mountain during an approach in low visibility to Tolemaida Air Force Base.				
Nov. 27, 2006	Tehran, Iran	Antonov 74T-200	destroyed	36 fatal, 2 serious
The Iranian air force airplane crashed on takeoff from Mehrabad Airport.				
Nov. 29, 2006	Mindelheim–Matties, Germany	Grob G.180 Spn	destroyed	1 fatal
The test pilot was killed when the prototype business jet struck terrain during a demonstration flight.				
NA = not available				
This information was gathered from various government and media sources, and is subject to change as the official investigations of the accidents and incidents are completed.				