Bangs and Flames

Compressor stalls plague a DC-8 on initial climb.

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 by official investigative authorities on aircraft accidents and incidents.

JETS

Unexpected Ice Built Rapidly on Inlets

Douglas DC-8-60F. No damage. No injuries.

People on the ground heard loud bangs, saw flames coming from the aircraft that was passing a few miles above their heads and called the Gardaí, the Irish police. About the same time, the approach controller's radar display showed the DC-8 entering a rapid descent.

The 1960s-vintage freighter, of U.S. registry, was departing from Shannon Airport's Runway 24 the night of March 28, 2008, for a cargo flight to Qatar. The aircraft was near maximum takeoff weight for the seven-hour flight, said the final report by the Irish Air Accident Investigation Unit.

The DC-8 had reached 1,000 ft while climbing through a cloud layer when the commander, the pilot flying (PF), called for the flaps to be retracted and for climb power to be set. As the flap lever was being repositioned, compressor stalls began to occur in the no. 1 engine. The flight crew shut down the engine and radioed the airport traffic controller that they required a vector to return to Shannon Airport. No reason was given.

"The aircraft was transferred to the approach controller's frequency," the report said. "At the time, the aircraft was approximately 4 nm [7 km] south of the airport. The approach controller initially gave the aircraft a heading toward a left downwind leg for Runway 24 and instructed it to climb to 3,000 ft. Although there is higher ground on a left-hand downwind, the approach controller was not then aware that the aircraft had a problem climbing."

Meanwhile, compressor stalls had begun to occur in the no. 2 engine. The PF initiated a rapid descent to increase airspeed above 208 kt, the minimum control speed with two engines on the same wing inoperative.

A minimum safe altitude warning was generated by the air traffic control (ATC) radar system as the freighter descended from 2,400 ft to 1,100 ft in 30 seconds — an average descent rate of 2,600 fpm. "[The approach controller] was concerned that the aircraft might not make it to the airport and gave it a heading directly toward Runway 06 at the airport, which would place it in an obstacle-free area over the River Shannon estuary," the report said.

Apparently anticipating that they would have to shut down the no. 2 engine and that the other two engines might develop similar problems, the crew declared an emergency and conducted the checklist for failure of all four engines. "This entailed opening the fuel crossfeed valves [and] switching on all fuel booster pumps and engine anti-ice," the report said. After the engine anti-ice systems were selected, the no. 2 engine stabilized, and the crew restarted the no. 1 engine. All four engines then operated normally for the remainder of the flight.

Apprised of the situation, the approach controller advised the crew that they would have a 17-kt tail wind for a landing on Runway 06 and

offered vectors to establish the aircraft on a right downwind for Runway 24. The crew accepted the offer and conducted an uneventful instrument landing system (ILS) approach and an overweight landing on that runway. Postflight examinations revealed no damage to the airframe or engines.

Investigators determined that ice likely had accumulated rapidly on the inlet cowlings and guide vanes as the aircraft climbed through the cloud layer, disturbing airflow through the engines. The compressor stalls likely were the first sign of engine icing. "As there was no evidence of airframe icing, the crew were slow in recognizing the cause of the engine abnormality," the report said.

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Visual meteorological conditions (VMC) prevailed at the airport, with no precipitation. However, there was convective activity near the airport, with isolated heavy showers and hail. Surface temperature was 6° C (43° F), and dew point was 3° C (37° F). Although the freezing level was higher than 2,000 ft, the convective conditions enabled the formation of supercooled water droplets in clouds below 2,000 ft, the report said.

The use of the anti-ice system causes a significant loss of power from the DC-8's Pratt & Whitney JT3D-7 engines. "Consequently, engine anti-ice is only used operationally when needed," the report said, noting that after the incident, the operator implemented a policy "to strongly encourage the use of engine anti-ice for departures when icing conditions are in any way suspect and the temperature is below 10° C [50° F]." The new policy also stated that in situations involving takeoff performance limitations, engine anti-ice should be selected upon completing second-segment climb at 400 ft above ground level (AGL).

Control Input Faulted in Bounced Landing

Boeing 767-300. Minor damage. 17 minor injuries.

The 767 was inbound to Tokyo International Airport with 210 passengers and 12 crewmembers the morning of June 15, 2005. A first officer scheduled to begin training as a captain was hand flying the aircraft from the left seat. The captain was in the right seat, and another first officer was in the observer's seat.

The airport had a 700-ft ceiling, 7 km (4 mi) visibility in rain and surface winds from 30 degrees at 16 kt. The flight crew was cleared to conduct the ILS approach to Runway 34L, said a report issued in May by the Japan Transport Safety Board.

The crew established a target approach speed of 142 kt — 8 kt above VREF, the reference landing speed. They saw the approach lights while descending through 1,000 ft. The first officer called 500 ft above airport elevation, and the captain responded that the approach was stabilized. Recorded flight data showed that the airspeed was 142 kt and descent rate was 784 fpm.

At 315 ft, the captain called "minimum," and the first officer responded "landing." As the 767 continued to descend, it encountered mechanical turbulence caused by a nearby hangar. The report said that the bank and pitch angles began to vary significantly because of flight control inputs, and the main landing gear touched down hard on the runway. The aircraft bounced, and the control column was pushed forward, causing the nosegear to strike the runway.

The report said that the flight deck microphone recorded "a very loud breaking sound … and then noises that sounded as if the aircraft was running on the metal parts of the wheels." The left nosewheel tire had burst, and the right tire had deflated and separated as the wheel rims were destroyed.

The crew brought the aircraft to a stop on the runway, shut down the engines and requested a tow. However, a tow was not possible because of the damage to the nosegear, and the aircraft was evacuated on the runway.

Seventeen passengers complained of neck and back pain. "One of them was examined at the airport clinic [and] was diagnosed as having suffered a whiplash injury and requiring one week for recovery," the report said.

Examination of the aircraft revealed damage to the nosegear axle, wheels and tires; a main landing gear tire; wing skins; slats; flaps; and engine fan blades and compressor blades. The report characterized the damage as minor.

Over-Torqued Bolts Cause Fuel Leak

Boeing 737-700. Minor damage. No injuries.

Shortly after reaching cruise altitude during a scheduled passenger flight from Brisbane, Queensland, Australia, to Hamilton Island the afternoon of Aug. 13, 2007, the flight crew noticed a fuel imbalance and determined that fuel was leaking from the no. 2 engine.

The crew shut down the engine and "diverted to Rockhampton, where a single-engine approach and landing was completed without further incident," said the report by the Australian Transport Safety Bureau.

Examination of the engine revealed that fuel was leaking from a partial separation between the main fuel-return pipe and the oil/fuel heat exchanger. The components had been disconnected two days before the incident, during unscheduled maintenance involving replacement of the no. 2 engine's fuel pump. Investigators found that while reconnecting the components, a maintenance engineer had applied excessive torque to the four bolts that are inserted through the fuel pipe flange, gasket and rubber seal into threaded inserts in the heat exchanger body.

The torque value used by the engineer was applicable to key-lock inserts used in a modified heat exchanger that was to be installed in the 737's engines during their next overhauls; the applied torque was about 15 percent higher than the maximum torque value specified for the threaded inserts in the no. 2 engine's original heat exchanger.

The excessive torque on the bolts had stripped the threads in all four inserts and had pulled the inserts partially out of the heat exchanger body. The report said that the gasket between the fuel pipe and the heat exchanger had prevented fuel from leaking during the post-maintenance engine test run and during three subsequent flights. However, vibration of the fuel pipe during these flights and the incident flight eventually resulted in the complete release of the inserts and the bolts from the heat exchanger, causing the fuel leak.

The report noted that the engineer was not aware of the different torque values and that his supervisor had been involved in other tasks when the engineer reconnected the components.

Smoke Traced to Overheated Capacitor

Fokker F28-70. Minor damage. Two minor injuries.

After an uneventful flight from the Netherlands on Sept. 29, 2008, the flight crew taxied the aircraft to the stand at Manchester (England) Airport with the right engine and auxiliary power unit operating, and the left engine shut down. When the right engine was shut down at the stand, the crew detected a strong odor of an electrical component burning and saw smoke accumulating on the flight deck.

"The flight crew believed the smoke was coming from multiple sources including behind the copilot, various vents and behind the instrument panel," said the report by the U.K. Air Accidents Investigation Branch (AAIB). "The commander firmly instructed the CSS [cabin service supervisor] to get the passengers off as quickly as possible."

The CSS used the public-address system to tell the passengers to "get off the aircraft now." Seeing very little response, the CSS said more assertively, "Hurry. Evacuate the aircraft but leave your baggage behind." The 70 passengers evacuated quickly through a cabin door and the right overwing exit. "Two of the passengers were treated by the ambulance service for minor injuries sustained when moving off the aircraft wing," the report said.

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The source of the smoke was identified as an overheated capacitor in the power supply circuit for the emergency inverter cooling fan. The report said that the capacitor was "completely burned out [and] too badly damaged to allow any further analysis of why it had failed."

Noting that the Fokker 70 fleet had accumulated more than 1.2 million flight hours since the aircraft was introduced in 1994, the report said that maintenance records showed that only four inverters had been found to have overheated. The incidents were fairly recent, however. "Given the time since manufacture of the capacitors, the failure mode may potentially be a service-life-related issue," the report said. "This event is the first recorded incident where

smoke in the flight deck has been reported as a consequence of this capacitor overheating."

Thrust Control Lost on Approach

Eclipse 500. Minor damage. No injuries.

VMC prevailed with surface winds from 200 degrees at 18 kt, gusting to 26 kt, as the very light jet approached Runway 22L at Chicago Midway International Airport the afternoon of June 5, 2008. The airplane encountered wind shear at about 50 ft AGL, and the pilot increased thrust to arrest the resulting sink rate, said the report by the U.S. National Transportation Safety Board (NTSB). After touchdown, the pilot — who had 21,500 flight hours, including 300 hours in type — realized that although the throttle levers were at idle, the airplane was accelerating and both engines were producing maximum thrust.

The pilot initiated a go-around and told the copilot to declare an emergency. ATC cleared them to land on any runway. After finding that the quick reference handbook (QRH) provided no emergency procedures to address the situation, the pilots decided to shut down the right engine to reduce airspeed. However, airspeed decreased rapidly, and the stall-warning system activated. The pilot noticed that the left engine was producing idle power and was not responding to throttle lever movement. He was able to land the airplane on Runway 22R; the Eclipse came to a stop with both main landing gear tires deflated. The pilots and their two passengers were not injured.

Investigators found that the loss of thrust control had resulted from inadequate fault logic that had caused the full authority digital electronic control system to fail. The U.S. Federal Aviation Administration subsequently issued emergency airworthiness directives requiring corrective actions and the incorporation of emergency procedures for dual engine control failure in the QRH and the airplane flight manual.

Cleared to Land on a Closed Runway

Learjet 45. No damage. No injuries.

The airport traffic controller was aware that Runway 01/19 at Teterboro (New Jersey, U.S.) Airport was closed for maintenance the morning of June 25, 2008, but did not record that information on the automatic terminal information service. "He also failed to advise the local approach controller when the approach controller called him to advise that he had an airplane inbound to land on Runway 19," the NTSB report said. "The tower controller subsequently cleared the approaching airplane to land on the closed runway."

The airplane was a Learjet that had departed from White Plains, New York, at 0520 local time to pick up passengers in Teterboro. "According to the pilot-in-command, it was dark and the runway lights for Runway 19 were illuminated," the report said. "About 400–500 ft above touchdown, the flight crew noticed that there were men and equipment in the displaced threshold area for Runway 19 but not on the runway itself. … The flight crew briefly discussed the situation and verified with each other that they were in fact cleared to land on Runway 19."

The report said that the Learjet passed within 150 ft (46 m) of the workers while landing. "ATC did not advise the flight crew that they had landed on a closed runway, nor did the crew query the tower regarding the possibility that the runway had been closed," the report said.

"According to the pilot-in-command, there were no notices to airmen (NOTAMs) in effect [about] closing Runway 19 at Teterboro," the report said. "According to Teterboro Airport Operations, [a NOTAM] was in effect reflecting Runway 01/19 closed from 5:00 a.m. to 2:00 p.m."

NTSB determined that the probable cause of the incident was the airport traffic controller's "failure to follow published procedures and directives."

TURBOPROPS

Faulty Fuel Calculations

Beech King Air C90. Substantial damage. No injuries.

Before the first of several flights the morning of Sept. 15, 2007, the pilot observed that the fuel gauges indicated a total quantity of 2,611 lb (1,184 kg). He then conducted three

flights without refueling. Before departing on the fourth flight — from Blairsville, Georgia, U.S., to a location not specified in the NTSB report — the pilot observed that the gauges indicated that 500 lb (227 kg) of fuel remained in the King Air's tanks. The pilot considered this as sufficient for the positioning flight.

About an hour after takeoff, the airplane was in instrument meteorological conditions and about 12 nm (22 km) from the destination when both engines flamed out. ATC provided radar vectors to the nearest airport — a 2,700-ft (823-m) grass strip in Bloomingdale, Georgia. "[The pilot] spotted the airport through breaks in the cloud layer and landed on the wet grass," the report said. "The airplane overran the runway and impacted trees." The King Air's left wing and engine nacelle were substantially damaged. The pilot escaped injury.

The pilot told investigators that, for flight planning, he used a fuel flow of 400 lb (181 kg) per hour and a true airspeed of 230 kt. The report said, however, that the C90 pilot's operating manual indicated that for the conditions representative of all four flights, average fuel flow was 443 lb (201 kg) per hour and average true airspeed was 217 kt.

NTSB concluded that the probable causes of the accident were fuel exhaustion and "the pilot's improper preflight planning and preparation," and that a contributing factor was "the pilot's reliance on inaccurate fuel gauges."

Unlocked Door Separates on Takeoff

Let 410. Substantial damage. No injuries.

The pilot was late, and a maintenance engineer volunteered to perform the preflight walk-around inspection of the aircraft before a skydiving flight the morning of June 20, 2008. The engineer, and the pilot, did not notice that the door/emergency exit on the right side of the cockpit was not locked before the aircraft departed with five parachutists from Peterborough, England.

The door, which hinges at the rear, opened just after liftoff, separated from the aircraft and struck the right propeller, engine nacelle and fuselage. "The aircraft made an immediate return to the airfield and carried out an uneventful downwind landing," the AAIB report said.

The door usually remains closed but had been opened to facilitate routine maintenance. The preflight checklist calls for a visual check of the position of the door-locking handles. "However, these handles are not conspicuous, being painted the same color as the surrounding structure," the report said.

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A warning light illuminates if either the rear fuselage door or the cockpit door is unlocked. However, skydiving flights typically are conducted with the fuselage door locked open, and the warning light remains illuminated throughout these flights.

The report noted that a month before the accident, the European Aviation Safety Agency (EASA) had issued an airworthiness directive requiring, in part, the installation of a separate warning light for the cockpit door.

Mechanic Killed While Opening Door

Raytheon King Air B200. Substantial damage. One fatality.

The pilot departed from Taylor (Texas, U.S.) Municipal Airport the morning of April 10, 2008, to conduct a post-maintenance test flight following replacement of the vertical speed indicator. He returned to the airport after hearing a loud, high-pitched noise emanating from behind the instrument panel. He summoned the maintenance technician by radio and left the engines running after landing.

"The pilot reported turning the environmental [system] controls off, which stopped the in-flow of cabin pressure," the NTSB report said. However, he did not check the pressurization system gauges for an indication of zero pressure differential and, thus, did not notice that the cabin was still pressurized. When the maintenance technician opened the cabin door, which is hinged at the bottom, the door blew open and struck the technician's head, killing him.

Examination of the airplane revealed that a vacuum line had separated from the vacuum controller at a "T" fitting. "The 'T' fitting was

located in the area that the mechanic had worked in during installation of the vertical speed indicator," the report said. "The disconnected line disabled the entire vacuum system and subsequently disabled the airplane's pressurization system outflow valve."

The pressurization system safety valve also was disabled and remained closed. The safety valve, a backup to the primary outflow valve, opens to relieve cabin pressure when the pressurization "dump" switch is manually selected or a squat switch on the main landing gear is closed on touchdown.

The King Air's cabin door has a release button adjacent to the exterior door handle that must be pressed while rotating the handle to open the door. When the cabin is pressurized, a diaphragm inside the door presses against the release button. Although this resistance makes it more difficult to press the release button, it apparently does not prevent the door from being opened. "Testing confirmed that the airplane's door could be opened while the airplane was still pressurized, but that action would require more force to overcome the resistance [on the release button]," the report said.

PISTON AIRPLANES

Incorrect Switch Selection Silences Engines

Aero Commander 500S. Destroyed. Two fatalities.

The chief pilot of a U.S. on-demand cargo airline was performing a competency check of a newly hired pilot the morning of June 24, 2008. During such flights, the chief pilot — who had 10,500 flight hours, including 7,550 hours in type — was known to require pilots-in-training to select the fuel boost pump switches to the "ON" position before performing steep 360-degree turns and then to select the boost pump switches to "OFF" before configuring the airplane for landing, in preparation for maneuvers at low airspeed.

The accident check flight was performed below a 2,600-ft broken ceiling. Data recorded by the global positioning system receiver showed that after steep turns were performed, airspeed and altitude began to decrease. The NTSB report said that witnesses heard both engines "sputter and quit" and saw the Aero Commander pass low over a grove of trees, stall and strike terrain near Linwood, Kansas.

"The landing gear was down, and the flaps were in the approach setting," the report said. "Both propellers were in the low-pitch/high-rpm setting and bore little rotational signatures. Both engine fuel supply lines contained only residual fuel."

The report said that the pilot-in-training, who had seven flight hours in type, likely had inadvertently selected the fuel shutoff valve switches to the "CLOSED" position when he was instructed to turn off the boost pumps, causing both engines to lose power due to fuel starvation. The shutoff valve switches are unguarded and are adjacent to the boost pump switches on the overhead panel. "Contributing to the accident was the chief pilot's inadequate supervision of the pilot-in-training," the report said.

Neglected Gear Ruins Water Landing

De Havilland DHC-2. Substantial damage.
Two fatalities, three minor injuries.

The amphibious-float-equipped Beaver departed from a paved runway at one end of Lake Chelan, Washington, U.S., on May 17, 2008, for a 40-nm (74-km) charter flight to Stehekin, which is at the other end of the lake. The pilot neglected to retract the landing gear into the floats after takeoff and attributed the subsequent lower-than-normal cruise airspeed to the prevailing high-density-altitude conditions on the unusually warm afternoon, the NTSB report said.

The Beaver has two sets of lights indicating gear position: blue for retracted and green for extended. The accident airplane also had been modified with an auxiliary gear advisory system that illuminates an annunciator light when airspeed decreases below a target value and generates aural advisories either that the "gear is up

for water landing" or "gear is down for runway landing."

"During the flight, the air was bumpy and turbulent, and this resulted in the gear advisory system activating numerous times," the report said. "The pilot disabled the system by pulling its circuit breaker because the alerts were becoming a nuisance. He intended to reset the breaker during descent but did not do so."

A water landing was required at the destination, and the Beaver touched down on the lake with the landing gear extended. The airplane flipped over and came to rest inverted. The pilot and two passengers escaped with minor injuries; two passengers drowned.

The report said that fatigue possibly was a contributing factor in the accident. The pilot told investigators that he had been engaged in office duty and flight duty for 19 consecutive days.

HELICOPTERS

Simulated Engine Failure Turns Real

Eurocopter AS 332L2 Super Puma. Minor damage. No injuries.

During a proficiency check the night of Nov. 20, 2007, the training captain used the helicopter's training idle system (TIS) to simulate a failure of the left engine at 39 ft and 28 kt during takeoff from Aberdeen (Scotland) Airport. The pilot-in-training rejected the takeoff and was raising the collective control about 10 ft above the runway to cushion the landing when both pilots heard the sound of an engine accelerating, a bang and the low rotor speed warning. The training captain took control and raised the collective to its travel limit, but the helicopter continued to descend and touched down hard on the runway.

The AAIB report said that the right input drive gearbox freewheel unit had failed, causing the right engine to accelerate rapidly to 115 percent N_1 (low-pressure rotor speed), and the overspeed protection system had automatically shut down the right engine. Sensing a decrease in right engine speed, the TIS had commanded an increase in power from the left engine.

The freewheel unit disconnects the main rotor from the engine if the engine fails or is shut down. Failure of the freewheel unit in the accident helicopter was traced to excessive internal wear.

Investigators found no record that tests were conducted during development or certification of the TIS to simulate failure of the operating engine while the TIS is in use. Moreover, the report said that the flight manual supplement for the TIS "does not appear to accurately reflect the behavior of the helicopter or the technique to be employed following a failure of the operating engine and may provide a false sense of security."

Based on these findings, the AAIB recommended that Eurocopter and EASA revise the information in the flight manual supplement based on data gathered during flight tests of the system.

Control Lost in Downwind Takeoff

Robinson R44 II. Destroyed. Four fatalities.

The helicopter was departing from a logging road in forested, mountainous terrain near Easton, Washington, U.S., the afternoon of Aug. 2, 2007. Density altitude was 6,841 ft, and the R44 was 77 lb (35 kg) over maximum gross weight for hovering out of ground effect, the NTSB report said.

Winds were from the west at 8 kt, gusting to 16 kt when the R44 lifted off. "A witness observed the helicopter lift off vertically, oriented in a southerly direction, to an altitude of about 40 ft before turning 90 degrees to the left and proceeding down the hillside to the east," the report said. "The helicopter began to sway back and forth after traveling about 100 to 150 ft [30 to 46 m], then it impacted the ground in a nose-low, left-bank attitude."

Examination of the R44 revealed no sign of a pre-impact anomaly. NTSB determined that the probable cause of the accident was the pilot's loss of control during an attempted downwind takeoff in high density altitude conditions.

Preliminary Reports, May 2009

Date	Location	Aircraft Type	Aircraft Damage	Injuries
May 1	Cerro Chirripó, Costa Rica	Bell 206	destroyed	2 fatal
The helicopter was on an aerial photography flight when it crashed in the jungle.				
May 8	Riyadh, Saudi Arabia	McDonnell Douglas MD-90-30	substantial	8 none
The MD-90 veered off the runway while landing at Riyadh during a positioning flight from Jeddah. The right main landing gear collapsed.				
May 9	Minden, Nevada, U.S.	Beech A55 Baron	destroyed	5 fatal
After a low pass over an outdoor party, the Baron entered a steep climbing left turn, stalled and descended to the ground.				
May 10	Utila, Honduras	British Aerospace Jetstream 32	destroyed	1 fatal, 2 minor
Night instrument meteorological conditions prevailed when the Jetstream crashed near the Utila airport after its fuel was exhausted. Authorities reportedly found 1,500 kg (3,307 lb) of cocaine aboard the airplane.				
May 10	Port Sudan, Sudan	Piper Twin Comanche	destroyed	2 fatal
The airplane struck mountainous terrain about 26 nm (48 km) northwest of Port Sudan during a flight from Luxor, Egypt.				
May 11	Johannesburg, South Africa	Boeing 747-400	none	NA
During takeoff, the thrust reverser unlock lights for the no. 2 and no. 3 engines illuminated at 124 kt and 163 kt, respectively, and the slats retracted just before rotation. Climb rate was 200 fpm. The flight crew dumped fuel, returned to the airport and landed the 747 without further incident.				
May 14	Guatemala City, Guatemala	Piper Aztec C	destroyed	6 fatal
The Aztec crashed in a residential area shortly after departing for a flight to Belize.				
May 16	Kaktovic, Alaska, U.S.	Helio H-295 Super Courier	substantial	3 none
The single-piston-engine airplane crashed while landing at 6,200 ft on a glacier during a charter flight.				
May 18	Long Beach, California, U.S.	Cessna 310P, Cessna 172	destroyed	3 fatal
The pilot of the 310 and the pilot and passenger in the 172 were killed when the airplanes collided about 5 mi (8 km) offshore.				
May 19	Miami, Florida, U.S.	Boeing 777-200	none	1 fatal
Heavy rain was falling when a baggage loader fell from the baggage-handling device onto the ramp.				
May 20	Madiun, Indonesia	Lockheed C-130H	destroyed	100 fatal, 14 NA
The airplane was on approach when it struck four houses and crashed in a rice field. The fatalities included two people on the ground.				
May 22	Vitória da Conquista, Brazil	Robinson R44	destroyed	2 fatal
The helicopter was on a night flight from Montes Claros when it crashed on approach.				
May 22	Fallon, Nevada, U.S.	Cessna 320D	destroyed	4 fatal
Strong, gusting winds prevailed when the airplane crashed while maneuvering to land.				
May 23	Puchkirchen, Austria	Bell 206B	destroyed	4 minor
The JetRanger crashed in a field during an emergency landing. Part of a rotor blade was found 200 m (656 ft) from the accident site.				
May 23	Porto Seguro, Brazil	Raytheon B350 King Air	destroyed	14 fatal
The King Air crashed 200 m from the runway threshold during a night approach.				
May 25	Daytona Beach, Florida, U.S.	Rockwell Aero Commander 500S	destroyed	1 fatal, 1 serious
The pilot reported a problem during departure and attempted to return to the airport. The airplane stalled and crashed 200 ft (61 m) from the runway.				
May 26	Isiro, Democratic Republic of Congo	Antonov An-26	destroyed	3 fatal, 1 serious
The An-26 was on a cargo flight from Goma when it crashed on approach to Isiro.				
May 30	Lahore, Pakistan	ATR 42-500	substantial	47 NA
The airplane veered off Runway 36R while landing, struck a drainage ditch and came to a stop on the parallel runway. No fatalities were reported.				
May 31	Atlantic Ocean	Airbus A330-203	destroyed	228 fatal
The A330 crashed about four hours after departing from Rio de Janeiro, Brazil, the night of May 31 for a flight to Paris. Strong convective activity was reported in the area.				

NA = not available

This information, gathered from various government and media sources, is subject to change as the investigations of the accidents and incidents are completed.