

'High and Fast'

Air ambulance overran short, slick runway.

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

Touchdown Occurred at Midfield

Cessna Citation 550. Substantial damage. One serious injury, three minor injuries.

The Citation was on a positioning flight from Winchester, Virginia, U.S., to Butler, Pennsylvania, to pick up a patient for an air ambulance flight the morning of Jan. 24, 2007. The copilot was flying the airplane from the left seat, according to the report by the U.S. National Transportation Safety Board (NTSB). She held a Citation type rating and had 1,951 flight hours, including 110 hours in type. The pilot-in-command (PIC) had 22,700 flight hours, including 1,200 hours in type.

Weather conditions at the airport included surface winds from 220 degrees at 3 kt, 2 1/2 mi (4,000 m) visibility, a few clouds at 100 ft, a broken ceiling at 1,100 ft and an overcast ceiling at 1,700 ft. Notices to airmen (NOTAMs) were in effect for fair braking action with thin snow and ice on the runway. "The PIC reported that he thought the runway might be covered with an inch or two of snow, which did not concern him," the report said. "The copilot reported encountering light snow during the [instrument landing system (ILS)] approach."

The PIC said that the Citation descended below the clouds about 2 mi (3 km) from the runway. "Both pilots stated that the airplane continued to descend toward the runway while on the glideslope and localizer," the report said. "Neither pilot could recall the airplane's touchdown point on the runway or the speed at touchdown."

The approach was observed by the airport manager and a Citation 560XL pilot. They said that the airplane was "high and fast" as it crossed the threshold and touched down about halfway down the 4,801-ft (1,463-m) runway. The pilots had calculated a reference landing speed (V_{REF}) of 106 kt. "Data downloaded from the airplane's enhanced ground-proximity warning system (EGPWS) revealed that the airplane's ground-speed at touchdown was about 140 kt," the report said. "Review of the cockpit voice recorder [data] suggested that the PIC failed to activate the airplane's speed brake upon touchdown."

The PIC told investigators that he considered rejecting the landing but believed that there was insufficient runway remaining for a go-around. The Citation overran the runway, struck a wooden localizer antenna platform and the airport perimeter fence, and crossed a road before coming to a stop about 400 ft (122 m) from the runway. The PIC was seriously injured; the copilot and the two passengers received minor injuries.

"According to the airplane flight manual, the conditions applicable to the accident flight prescribed a V_{REF} of 110 kt, with a required landing distance on an uncontaminated runway of approximately 2,740 ft [835 m]," the report said.



“The prescribed landing distance on a runway contaminated with 1 in [2.5 cm] of snow was approximately 5,800 ft [1,768 m]. At V_{REF} plus 10 kt, the required landing distance increased to about 7,750 ft [2,362 m].”

Faulty Relay Precipitates Evacuation

Boeing 737-300. No damage. No injuries.

The aircraft was departing from Auckland, New Zealand, for a flight to Christchurch the morning of Sept. 12, 2006. When the first officer, the pilot flying, called for landing gear retraction, the captain was unable to fully move the gear lever to the “UP” position. “The captain advised air traffic control (ATC) that they had a technical problem and requested [and received] clearance to maintain runway heading,” said the report by the New Zealand Transport Accident Investigation Commission.

After a brief discussion with the first officer, the captain returned the gear lever to the “DOWN” position and noticed that none of the three gear-position indicators illuminated. The captain requested and received clearance from ATC to level the 737 at 4,000 ft, below the cloud base. He attempted unsuccessfully to use the call button and the passenger-address system to summon the purser, and eventually attracted the purser’s attention by opening the cockpit door. He briefed the purser on the situation and said that they would return to Auckland for a precautionary landing.

Electrical malfunctions continued to occur. None of the annunciator lights illuminated when they were tested, several fail lights illuminated on the overhead panel, and background color faded from the electronic flight instruments. “The captain and first officer discussed the apparently escalating electrical malfunctions and agreed that they should land as soon as possible rather than spend time trying to identify quick reference handbook (QRH) checklists that might address the situation,” the report said.

The captain used the viewing panels to visually check the landing gear, which appeared to be down and locked. During the return to the airport, engine and fuel flow indications were lost,

and the pilots were unable to arm the autobrakes. They were able to extend the flaps, however. After touchdown, the first officer was unable to select reverse thrust and used the wheel brakes to slow the 737 and bring it to a stop on a high-speed exit.

The pilots were taxiing the aircraft to the terminal when the purser told them that a “whitish grey smoke” was filling the cabin. “While there was no sign of fire, meaning no flame or heat, it would have been prudent for the captain to call for an immediate evacuation on the first report of smoke,” the report said. Although the pilots detected light smoke and an unusual odor on the flight deck, they continued taxiing.

The purser soon returned to the flight deck and reported that the smoke in the cabin was getting thicker. “After a short discussion, the captain told the crew to prepare for evacuation,” the report said. The evacuation was described as orderly and unrushed, and none of the 96 passengers and five crewmembers was injured.

Examination of the 737 showed that an electrical relay had failed, causing a loss of battery bus power. Investigators determined that the terminal post likely had been misaligned when the relay was manufactured in 1998, causing a larger-than-normal gap between the contacts. “Over time, the contacts overheated, causing arcing and fatigue,” the report said. A solder junction at the base of the terminal post fractured, further increasing the gap between the contacts. “Eventually, there was sufficient vibration during the takeoff roll to cause the contacts to release and stop current flow to the battery bus,” the report said.

The report noted that the corrective action for the relay failure was to select an alternate source of power for the battery bus. “A better first-hand knowledge of the contents of the QRH should have directed the pilots to the battery bus failure checklist, which would have resolved the emergency at an early stage of the flight.”

Prolonged Flare Leads to Tail Strike

Boeing 757-200. Substantial damage. No injuries.

Visual meteorological conditions (VMC) prevailed at the destination — San Juan, Puerto Rico — on Sept. 5, 2006, and the

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crew decided to conduct an autoland approach to recertify the 757 for CAT III procedures.

The NTSB report said, however, that the airline did not authorize autoland procedures if there was any restriction on the use of the localizer or glideslope. The ILS approach to Runway 08 at San Juan has such a restriction. The chart states: “ILS unusable 0.8 nm from threshold inbound.”

“The crew reported, and the flight data recorder (FDR) confirmed, that the airplane began to drift off the centerline of the approach at about three-quarters of a mile from the runway threshold,” the report said. “The drift was consistent with the direction of the wind and the ILS chart notation.”

The first officer, the pilot flying, disengaged the autopilot and hand-flew the 757 toward the runway centerline. The report said that this maneuver prolonged the flare and that, during this time, the first officer inadvertently applied full nose-up trim. The tail struck the runway when the airplane touched down with a higher-than-normal pitch attitude about 4,000 ft (1,219 m) from the runway threshold. None of the 116 people aboard the 757 was hurt.

Toilet Chemicals Sicken Crewmembers

BAe 146-300. No damage. No injuries.

The flight crew noticed an unusual odor and experienced debilitating physical symptoms soon after departing from Belfast, Northern Ireland, for a positioning flight to Southampton, England, on Sept. 6, 2007. “The commander later described how he felt as similar to being inebriated and that he found it difficult to concentrate,” the U.K. Air Accidents Investigation Branch (AAIB) report said. “The copilot initially felt she had reduced capacity to fly the aircraft, but this feeling quickly passed. One cabin crewmember felt lightheaded, sick and distressed. The other cabin crewmember felt tired and slightly sick.”

The commander told the crew to don their oxygen masks and declared an emergency. While returning to Belfast, the pilots conducted the “Smoke and Fumes” checklist. The approach

and landing were conducted without further incident.

Examination of the aircraft, which recently had undergone major maintenance, showed that the fumes likely originated from deodorizing chemicals that had been placed in the forward toilet. “The fumes may have been a result of formaldehyde, released as a degradation product of the [chemicals],” the report said. “In low concentrations, formaldehyde does not pose a toxic risk, but it can cause a feeling of lightheadedness and irritation to nose, throat, mouth and eyes.”

Noting that the aircraft’s yaw damper and thrust-balancing system were inoperative during the flight, the report said that the physical symptoms caused by the formaldehyde fumes might have been aggravated by motion sickness and anxiety.

Tug Driver Fails to Yield Right of Way

Bombardier CRJ200. Substantial damage. One serious injury.

The regional jet had landed at Chicago O’Hare International Airport the night of Dec. 16, 2007, and was passing the intersection of an airport service road while taxiing to the gate when the captain perceived that the airplane had hit something. “The captain brought the airplane to a stop, but at the time the flight crew could not see what they hit,” the NTSB report said.

The crew continued to taxi and, after turning onto another taxiway, saw an overturned tug on the taxiway they had vacated. “The tug driver was hospitalized for injuries [and] had no recollection of the events surrounding the accident,” the report said.

The occupants of a van that was following the tug on the service road said that the tug did not stop at the intersection. The van driver said that the tug driver “may have realized that the airplane was coming at the last minute and tried to slam on the brakes, [but] the tug continued to slide forward [on the wet pavement].”

The report said that the airport requires ground vehicle operators to stop before crossing a taxiway and to yield the right of way to an aircraft in motion.

“The flight crew could not see what they hit.”

None of the 32 people aboard the CRJ was hurt. “A post-flight inspection by the first officer revealed impact damage to the leading edge of the right wing, within 4 ft [1.2 m] of the wing tip,” the report said. “The damage extended aft to the forward wing spar.”

Excess Thrust Leads to Overrun

Bombardier Challenger 604. Substantial damage. No injuries.

The commander was receiving instruction on the supervision of newly rated captains and was flying the Challenger from the right seat during the charter flight from Geneva to London Luton Airport on Feb. 5, 2006. During the stabilized approach to Runway 26 at Luton, the commander disengaged the autopilot about 300 ft above ground level (AGL) and the auto-throttles at about 60 ft AGL. Engine fan speed (N_1) then increased to 64 percent and was not reduced, the AAIB report said.

The aircraft touched down in a shallow pitch attitude about 800 m (2,625 ft) from the end of the 2,160-m (7,087-ft) runway. “Both pilots stated afterwards that when the aircraft touched down, they considered that there was sufficient runway remaining to stop,” the report said.

Groundspeed was about 35 kt when the Challenger ran off the end of the runway. “The nose and right main landing gear, running through soft earth approximately up to the depth of the axles, struck the vertical faces of [buried] concrete lighting bases upon which two Runway 08 approach lights were mounted,” the report said. “The flight attendant and passenger, both seated in forward-facing passenger seats, were unaware of the incident until the aircraft was almost at a standstill, when the flight attendant noticed that the emergency exit lights had illuminated. With the aircraft at rest, both saw that there was grass, not runway, outside the aircraft.”

Examination of the Challenger revealed no technical defects. The commander’s lack of recent experience in flying the aircraft from the right seat might have been a factor in the incident, the report said. “It is concluded either that the commander selected a thrust lever angle

which caused the engines to run at 64 percent N_1 or that he disconnected the autothrottle when the thrust levers were positioned to give approximately 64 percent N_1 and did not then retard them to the idle setting prior to the flare.”

Both pilots told investigators they believed that smooth landings were important with passengers aboard. Noting that the commander had placed both hands on the control yoke during the flare and landing at Luton, the report said, “It is possible that by doing this, he was able to make smoother, more accurate control inputs. Conversely, sensory feedback from the position of a hand on the thrust levers would provide a pilot with information about thrust lever position and movement.”

After the accident, the operator published a flight crew bulletin stating: “A safe landing may well be gentle. However, a soft landing is not necessarily a safe one.”

Open Door Provides Fatal Distraction

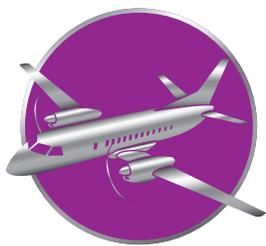
Cessna CitationJet. Destroyed. Two fatalities.

The copilot loaded the left front baggage compartment while the airplane was being refueled at Van Nuys (California, U.S.) Airport for a positioning flight to Long Beach the morning of Jan. 12, 2007. The fueler told the copilot that the airplane would have to be moved away from the fuel pumps before engine start. “He observed the [copilot] then shut the baggage door but not lock or latch it,” the NTSB report said.

Witnesses said that the baggage door was “standing straight up” when the CitationJet was at about 200 ft AGL on takeoff. The airplane then stalled and crashed on a street. NTSB said that the probable cause of the accident was “the pilot’s failure to maintain an adequate airspeed during the initial climb” and that a contributing factor was the copilot’s “inadequate preflight.”

“Several instances of a baggage door opening in flight have been recorded in Cessna Citation airplanes,” the report said. “In some cases the door separated, and in others it remained attached. The crews of these other airplanes returned to the airport and landed successfully.”

“The commander’s lack of recent experience in flying the aircraft from the right seat might have been a factor.”



TURBOPROPS

Misset Switches Cause Electrical Failure

Beech King Air 100. No damage. No injuries.

While taxiing onto the runway at Montreal's Trudeau International Airport for a flight with four passengers to Saint-Hubert Airport, about 15 nm (28 km) east, the morning of Oct. 18, 2006, the pilots completed the last items on the line-up checklist. The copilot turned on the landing lights, and the PIC selected — what he thought were — the auto-ignition switches to the “ON” position.

“In fact, he mistakenly switched the ignition and engine start switches to the ignition and engine start position,” said the report by the Transportation Safety Board of Canada. The two sets of switches are close together on the lower left subpanel and are difficult to see from the left-seat position and out of view from the right-seat position. Selection of ignition and engine start causes the starter/generators to function in the starter mode, leaving the electrical system to be powered only by the battery. Later King Air models were modified to show a warning of this, but the modification was not available for earlier models, including the incident airplane.

When the copilot moved the landing gear lever to the “UP” position after takeoff, the gear motor operated without sufficient torque to fully retract the gear. The PIC recycled the gear, but the gear-in-transit light remained illuminated, and the gear motor continued to operate and draw battery power.

Weather conditions included 3 mi (4,800 m) visibility, a broken ceiling at 1,000 ft and a 2,800-ft overcast. The departure procedure required an initial climb to 3,000 ft. The pilots decided to descend to 2,200 ft, which they believed was the minimum sector altitude (MSA). The MSA actually was 2,600 ft, but the pilots gained ground contact at 2,200 ft and flew an estimated heading toward Saint-Hubert Airport, which was not in sight.

While conducting the emergency gear-extension procedure, the pilots pulled the landing-gear circuit breaker, which reduced the load on the battery, with enough power remaining for

use of the global positioning system receiver and to receive radio transmissions from ATC; the pilots responded to ATC transmissions by selecting the transponder ident mode.

The King Air was landed without further incident at Saint-Hubert about 27 minutes after its departure from Trudeau.

Descent Below MDA Ends Against Pole

Cessna 208B. Substantial damage. One serious injury.

The nighttime instrument meteorological conditions on Feb. 8, 2007, were below minimums for the nonprecision approaches to Alliance (Nebraska, U.S.) Regional Airport, the usual destination for the cargo flight, so the flight was dispatched to Western Nebraska Regional Airport near Scottsbluff, which had an ILS, the NTSB report said.

Nevertheless, the pilot requested and received clearance from ATC to conduct the VOR (VHF omnidirectional radio) approach to Alliance, which had 1 1/4 mi (2,000 m) visibility and a 200-ft overcast. Cockpit instrument settings and recorded radar data indicated that the pilot conducted the NDB (nondirectional beacon) rather than the VOR approach. Although the NDB was transmitting radio signals, a NOTAM stated that it was out of service and, therefore, should not be used.

During the NDB approach, the pilot descended below the minimum descent altitude (MDA) of 700 ft. The Caravan struck a building and a power line pole, and came to rest on a street.

One Engine Still Turning on Touchdown

Lockheed L188C Electra. No damage. No injuries.

Soon after lifting off from London Stansted Airport for a cargo flight to Edinburgh, Scotland, the night of March 19, 2007, the flight crew “became aware of the aircraft yawing, pitching and rolling erratically, combined with a loud fluctuating noise emanating from the propellers,” the AAIB report said.

Propeller rpm, horsepower and other engine indications were fluctuating rapidly, and the temperature of the no. 2 and no. 4 engines increased above the limit. The commander

reduced power on both engines until their temperatures were within limits. No. 2 engine propeller rpm then began to fall below the normal operating range, and the crew shut down the engine.

“Neither the pilots nor the engineer had experienced a similar situation before, and they tried to identify the nature of the problem,” the report said.

The Electra was climbing through 3,000 ft when the commander declared an urgency and requested vectors to return to Stansted for the ILS approach. The speed of the remaining three propellers continued to fluctuate. “The aircraft also continued to yaw, pitch and roll, so much that the commander stated he had difficulty in reading the checklist,” the report said. “The commander tried to adjust the power levers to see if it would have an effect, but the propeller rpm continued to fluctuate.”

No. 3 engine propeller speed then stabilized at 14,300 rpm, about 480 rpm above normal. “The crew decided to leave the engine running with the intention of shutting it down on final approach,” the report said.

The crew gained visual contact while turning onto final approach at 2,300 ft. “The pilots completed the landing checks and selected 100 percent flap with the aircraft decelerating through about 170 kt towards their planned two-engine approach speed of 150 kt,” the report said. “As the aircraft descended through about 1,000 ft, however, both engines no. 1 and no. 3 appeared to flame out. The commander increased power on engine no. 4 to its maximum limit with the propeller rpm still fluctuating.”

The Electra descended below the proper glide path, and airspeed decayed rapidly below 130 kt. “The aircraft touched down just short of the marked touchdown point and, after slowing on the runway, vacated via a high-speed turn-off onto a taxiway, where it was brought to a halt,” the report said. The crew pulled the fire handles to shut down the no. 1 and no. 3 engine, and shut down the no. 4 engine normally.

Investigators found that the power and propeller rpm fluctuations had been caused by the

overheating and failure of resistor connectors on the power supply circuit board in the propeller synchrophaser system. The power reductions, which the crew perceived as flameouts, actually were commanded by the governing system when propeller rpm reached the limit. “There was little to guide the crew in identifying the synchrophasing unit as being the cause,” the report said.

PISTON AIRPLANES

Short-Field Takeoff Falls Short

Piper PA-60-601P. Destroyed. Six fatalities.

The Aerostar was near its maximum gross weight when the pilot attempted to take off from the 3,930-ft (1,198-m) runway at Lakeway (Texas, U.S.) Airpark on Aug. 3, 2004. Published performance data indicated that with the existing conditions, which included a high density altitude, the airplane would require 3,800 ft (1,158 m) to clear a 50-ft obstacle using short-field takeoff procedures including application of full power before brake release, said the NTSB report released in March 2008.

Several witnesses said that the engines sounded abnormally quiet during the takeoff roll and the airplane lifted off near the end of the runway. It clipped the tops of 30-ft (9-m) trees about 20 ft (6 m) from the departure threshold, entered a steep left bank, stalled, rolled inverted and exploded when it struck terrain.

The report said that the last annual inspection of the airplane had been initiated about 15 months before the accident. The maintenance technician had told the pilot, who owned a share of the Aerostar and managed the airplane, that the engine turbochargers were in “poor condition” and required replacement. “Before the mechanic could perform any maintenance to the airplane, the pilot contacted him and said that he needed the airplane and subsequently took possession of it before the annual inspection was completed,” the report said.

The report also said that after a runway-overrun accident in April 2004, the U.S. Federal Aviation Administration (FAA) had told



the pilot that a re-examination of his airman competency would be required, and the pilot's insurance company had placed a limitation on his policy requiring that he complete a certified Aerostar flight-training program or have a qualified pilot accompany him on flights in the airplane. The FAA re-examination had not been conducted before the August accident, and "there was no evidence that the pilot adhered to either of the insurance policy requirements," the report said.

Engines Starved for Oil

Beech C-45H. Destroyed. One serious injury, one minor injury.

The airplane, a military version of the Beech 18, was on an instructional flight from Hudson, Colorado, U.S., to Boulder the morning of July 19, 2007, when the left engine began to run rough and vibrate. The pilots shut down the engine and feathered the propeller. "Then the right engine began losing power," the NTSB report said. "Full power was applied, but the airplane continued to descend."

The airplane clipped the top of trees and was flown between two houses before it touched down in an open field, crossed a road, struck a power line pole and began to burn. The instructor pilot, who received serious injuries, and the trainee evacuated through the main cabin door.

Examination of the engines showed that they had failed catastrophically due to oil starvation. The C-45's engine rocker boxes must be drained before flight to prevent hydraulic lock. Investigators determined that the instructor pilot failed to close the valves after draining the rocker boxes before the accident flight. "There were two trails of oil leading from the parking spot down the taxiway and onto the runway," the report said.

HELICOPTERS

Gearbox Failure Downs EMS Flight

Bell 407. Destroyed. No injuries.

The emergency medical services (EMS) helicopter was en route at 6,500 ft in daytime VMC to the scene of an automobile accident

in Warialda, New South Wales, Australia, on Feb. 2, 2007. About 28 km (15 nm) from the destination, the engine chip-detector warning light illuminated. "[The pilot] reported that approximately five seconds later, he heard a loud noise and the helicopter developed a severe high-frequency vibration with a complete loss of engine power," the Australian Transport Safety Bureau report said.

The pilot had to maneuver to avoid power lines during the emergency landing, and the 407 touched down hard and rolled onto its side. The pilot, crewman, physician and paramedic were not hurt.

"The investigation determined that the engine sustained an in-flight catastrophic failure of the engine gearbox," the report said. "The gearbox failure was due to the fracture and separation of a section of the helical torque-meter gear, which resulted in the complete loss of engine power." The engine had accumulated more than 3,200 service hours; nondestructive testing of the helical torque-meter gear was required during gearbox overhaul after 3,500 hours.

Improper Service Blocked Fuel Filters

Bell 206B. Substantial damage. One serious injury, one minor injury.

The engine lost power while the pilot was hovering the helicopter at 60 ft and a crewmember was operating a 30-ft (9-m) spray boom to clean power line insulators at Prudhoe Bay, Alaska, U.S., on Oct. 20, 2007. The pilot was seriously injured and the crewmember sustained minor injuries when the 206 descended rapidly to the ground.

Investigators found that the fuel inlet screens had been blocked by a fibrous material introduced during refueling. The mission required the helicopter to land every 7–8 minutes to be partially refueled and to refill the spray tank. "The contract fueller had routinely been shoving the fuel nozzle through a hole in the plastic packaging of a bundle of absorbent pads, into the edges of the pads, to keep fuel from dripping on the tundra," the NTSB report said. ➤



Preliminary Reports				
Date	Location	Aircraft Type	Aircraft Damage	Injuries
June 1, 2008	Torino, Italy	Sikorsky S-64F	substantial	2 minor
The helicopter was scooping water from Lake Aviguana during an aerial fire-fighting demonstration when it inadvertently descended into the lake.				
June 1, 2008	Greensburg, Indiana, U.S.	Cessna 208B	substantial	1 none
All 14 parachutists jumped safely after the Caravan lost power while climbing through 7,000 ft. The airplane flipped over during the forced landing.				
June 7, 2008	Yeco, Chile	Cessna 208B	destroyed	1 fatal, 9 minor
The Caravan struck mountainous terrain in instrument meteorological conditions about 18 nm (33 km) from the destination during a charter flight from Puerto Montt to La Junta. The pilot was killed; the passengers were rescued four days later.				
June 8, 2008	Huntsville, Texas, U.S.	Bell 407	destroyed	4 fatal
The helicopter crashed in a forest soon after taking off from a hospital in Huntsville for an emergency medical services (EMS) flight to Houston in nighttime visual meteorological conditions.				
June 9, 2008	North Bimini, Bahamas	Aero Commander 500S	destroyed	1 none
Both engines failed during a positioning flight from Nassau to Fort Lauderdale, Florida, U.S. The pilot ditched the airplane in the ocean and exited into a life raft before the Commander sank in 40 ft (12 m) of water.				
June 10, 2008	Khartoum, Sudan	Airbus A310	destroyed	28 fatal, 186 NA
Thunderstorms were in the area when the Airbus overran the runway on landing and burst into flames.				
June 15, 2008	Chifeng, China	Harbin Yunshuji Y-12II	destroyed	3 fatal, 1 NA
The piston twin reportedly was on an aluminum-prospecting flight when it struck a hill.				
June 15, 2008	Swakopmund, Namibia	Cessna 210L	destroyed	6 NA
The airplane was returning from a charter flight when the engine lost power due to fuel starvation. The Cessna flipped over during the forced landing on rough terrain about 3 km (2 nm) from the airport. There were no reported fatalities.				
June 18, 2008	Durban, South Africa	Boeing 737-200	minor	93 NA
There were rain showers at the airport when the 737 landed long and skidded off the side of the runway. No fatalities were reported.				
June 18, 2008	Hyannis, Massachusetts, U.S.	de Havilland DHC-6	destroyed	1 fatal
The Twin Otter was about 200 ft above ground level during departure for a cargo flight when it rolled inverted and struck the ground.				
June 20, 2008	Bergen, Norway	Fairchild Merlin IIIB	destroyed	3 fatal
The Merlin was on a training flight in adverse weather when it crashed at sea.				
June 21, 2008	Krems, Austria	Antonov An-2R	destroyed	13 none
The airplane was taking off for a parachuting flight when it struck a tree and crashed in an open field.				
June 26, 2008	Jakarta, Indonesia	CASA 212	destroyed	18 fatal
The aircraft crashed in a forest during a flight from Jakarta to Bogor in adverse weather.				
June 27, 2008	Bolshoe Gryzlovo, Russia	Antonov An-2R	destroyed	5 fatal
The aircraft crashed in a wooded area while departing for an aerial-photography flight.				
June 27, 2008	Malakal, Sudan	Antonov An-12BK	destroyed	7 fatal, 1 NA
The aircraft crashed in adverse weather during a flight from Khartoum to Juba.				
June 28, 2008	Dmitrievskaya, Russia	Antonov An-2	destroyed	1 fatal
The aircraft crashed during a test flight following engine maintenance.				
June 29, 2008	Flagstaff, Arizona, U.S.	two Bell 407s	destroyed	6 fatal, 1 serious
The EMS helicopters collided during approach to Flagstaff Medical Center.				
June 30, 2008	Khartoum, Sudan	Ilyushin IL-76TD	destroyed	4 fatal
Witnesses reportedly said an engine was on fire when the cargo aircraft entered a steep left bank on takeoff and struck terrain.				

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.