Engine Cowling Departs on Landing

Distracted maintenance technicians neglected to secure the latches.

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

Section Strikes Horizontal Stabilizer

Airbus A319-100. Substantial damage. No injuries.

Maintenance had been performed on the A319's right engine the evening before the airplane was scheduled for a flight from New York's La Guardia International Airport to Detroit Metropolitan Wayne County Airport with 68 passengers and five crewmembers the morning of Jan. 9, 2008. "The first officer reported the engine cowlings were flush and he did not see any 'hanging' latches when he looked underneath the engine cowlings during the preflight," said the report by the U.S. National Transportation Safety Board (NTSB).

The captain said that taxi and takeoff appeared normal. However, during initial climb, the lead flight attendant told the flight crew that a passenger had seen a right-engine cowling flapping after takeoff. "A pilot-passenger who was sitting behind this passenger reportedly did not see the cowling move, nor did the flight attendants when they looked out the window," the report said.

As the airplane climbed to cruise altitude, the engine-vibration monitors showed that the vibration measurement for the right engine was about twice as high as for the left engine, but no cautions or warnings were generated. "The captain reported that during cruise flight, the no. 2 [right] engine vibration decreased, and about 20 minutes after they leveled off, the airplane shuddered as if flying through wake turbulence," the report said.

The flight proceeded without incident until after the airplane touched down in Detroit, when the lead flight attendant told the flight crew that "part of the right engine came off." The crew shut down the right engine and taxied the airplane to the gate, and the first officer told the airport ground traffic controller that there might be debris on the runway.

Investigators found that half of the engine-fan cowling had separated when the airplane was on final approach about a mile from the runway; the other half had separated on touchdown. The report said that this part of the cowling was struck by an airplane that landed after the A319, but it provided no details about the incident.

Investigators also found that part of the cowling had struck and substantially damaged the A319's right horizontal stabilizer. "In addition, the fan cowling doors, no. 2 engine pylon,

the no. 2 engine reverser and the right wing no. 1 slat were damaged," the report said.

The work on the right engine — to replace the N_1, or low-pressure rotor (fan) speed, sensor — had been performed by two contract maintenance technicians. "They reported that they had shut the fan cowling but did not latch it, as they still needed to perform an engine run and check for leaks [after replacing the sensor]," the report said. "They performed the engine run and were in the cockpit when another mechanic asked for help on another airplane."

Neither maintenance technician returned to the A319 after assisting the other mechanic, and the airplane was returned to service with the engine-fan cowlings unlatched.

Tire Failure Traced to Frozen Brake

Bombardier Global Express. Substantial damage. No injuries.

After a flight of more than nine hours with two passengers from the United States on Jan. 29, 2008, the aircraft was being landed at London Luton Airport when the pilots heard a rumbling noise that they identified as a burst tire. They also observed indications of low pressure in the no. 2 and no. 3 hydraulic systems. "The commander brought the aircraft to a stop on the runway using normal brakes and, as fire vehicles approached, shut down both engines," said the report by the U.K. Air Accidents Investigation Branch (AAIB).

The Global Express had been parked in the open, in heavy rain, for four days.

Investigators determined that the inboard wheel on the left main landing gear was locked — not free to rotate — on touchdown, causing the tire to burst. Friction forces then caused the wheel to break free and rotate, and flailing segments of torn tire tread and tire carcass struck the spray guard.

"This destroyed the guard, inflicted significant damage to the wing local auxiliary spar structure and fractured hydraulic pipes, resulting in the nos. 2 and 3 hydraulic systems becoming inoperable," the report said. "It also fractured the flap-drive torque tube, damaged a major wiring loom and caused metallic debris to be forced between and into contact with the two cables driving the left aileron."

The left inboard wheel had become locked because its brake rotor and stator had frozen together. The Global Express had been parked in the open, in heavy rain, for four days at Van Nuys (California) Airport. "During this period, the wheels were chocked with the brakes off," the report said. "Significant rain ceased 11 hours before takeoff, and no rain fell during the last eight hours before departure." Surface temperature during the last eight hours was 12° C (54° F).

The operations reference manual, a training document, for the Global Express recommends that when ground surfaces are "contaminated or covered with water," the wheel brakes should be applied while taxiing to warm the brakes and the wheels so that the brakes do not freeze.

However, the ramp, taxiways and runways at Van Nuys were dry when the occupants boarded the aircraft. Recorded flight data indicated that there was minimal brake application — and little kinetic heating of the brakes — as the aircraft was taxied to the departure runway, and a rapid climb subsequently was made to Flight Level 410 (approximately 41,000 ft), where the outside air temperature was minus 25° C (minus 13° F).

Investigators found that rainwater on the upper wing surface of a Global Express can pass through a drain hole and flow along the lower wing surface until encountering a flush skin joint, where it tends to drip onto the inboard tire and migrate onto the brake stator and rotor. "The brake manufacturers have confirmed that the materials of the rotors and stators, both being carbon-type structures, are porous and slightly absorbent," the report said. "After extensive water soaking, they require a prolonged period of exposure to dry, warm conditions to ensure that full drying takes place. Alternatively, significant braking action must be deliberately applied during taxiing before departure to ensure brake drying."

The inboard left brake rotor and stator were still wet when the accident aircraft departed from Van Nuys, and they froze together during cruise flight. The tire that burst on landing was of cross-ply, or bias-ply, construction. The report said that when a radial-ply tire bursts, the "detached or flailing debris is likely to be significantly smaller and lighter."

After the accident, Bombardier published an advisory reminding pilots and maintenance personnel that carbon brakes can absorb moisture and freeze if they are not heated properly. "After exposure to moisture, a prolonged period of dry, warm conditions is required to ensure [that] full drying takes place," the advisory said. "Alternatively, brake applications must be deliberately applied during taxi, before departure, to ensure that the moisture is evaporated away."

AAIB recommended that regulatory authorities "raise awareness of the vulnerability of carbon brakes to freezing in flight following exposure to moisture on the ground." The bureau also recommended that Bombardier modify the Global Express to reduce the amount of water that flows onto the brakes when the aircraft is parked in rain.

Broken Wire Silences Warning Horn

British Aerospace Hawker 700A. Substantial damage. No injuries.

No checklist callouts were recorded by the cockpit voice recorder (CVR) as the Hawker — en route with 10 passengers on a business flight from Toluca, Mexico — neared Fort Lauderdale/Hollywood (Florida, U.S.) International Airport the night of Nov. 1, 2006. The flight crew advised air traffic control (ATC) that they had the airport in sight and were cleared to conduct a visual approach. The pilot told investigators that he was distracted during the approach while looking for the runway, the NTSB report said.

The landing gear was not extended when the Hawker touched down and slid about 2,600 ft (792 m) before coming to a stop on the runway with substantial structural damage and fire damage to the bottom of the fuselage. "Following touchdown, the CVR recorded that the pilot asked what happened to the landing gear and the copilot responded, 'We never put it down,'" the report said.

Examination of the landing gear extension system showed that it operated normally and that the primary and secondary annunciators correctly indicated the position of the gear. Investigators found, however, that a wire had separated from a relay, rendering the landing gear warning horn inoperative. "The CVR had captured no sounds that could be associated with the landing gear warning horn, and the pilot reported that he did not hear a warning," the report said.

There is no preflight test procedure for the landing gear warning horn. However, the horn is shared by the cabin altitude warning system. "The cabin altitude warning system is a preflight check item for flight crews," the report said. "Therefore, the anomaly that rendered the gear warning system inoperative would be detectable during a flight crew's preflight check because the cabin altitude warning would fail to function.

"However, a review of available maintenance and discrepancy records revealed no indication that any flight crews had previously detected and reported an inoperative cabin altitude warning system. … Therefore, it could not be determined when the wire fracture occurred."

The records indicated that both fuel gauges and an interstage turbine temperature gauge were inoperative. The report said that these gauges are required by the airplane's minimum equipment list to be functional for flight.

The report also said that neither pilot was properly certificated to fly the Hawker, which was registered in the United States. The pilot's U.S. commercial certificate and the copilot's U.S. private certificate were based on their Mexican certificates. Neither pilot had a U.S. instrument rating, and the captain was not type-rated in the Hawker.

"Although there is insufficient evidence to indicate that any of these flight crew discrepancies were directly related to the cause of the accident, the FAA [U.S. Federal Aviation Administration] determined that the discrepancies represented noncompliance with numerous Federal Aviation Regulations," the report said.

The pilot asked what happened to the landing gear. The copilot responded, 'We never put it down.'

Collision With a Misplaced Airbridge

Boeing 757-300. Substantial damage. No injuries.

The visual docking-guidance system was activated remotely by an airport apron controller as the 757 was being taxied to Stand 32 at Manchester (England) Airport the evening of Dec. 12, 2007. "Due to commitments elsewhere on the airport, a dispatcher allocated to attend

the arriving aircraft was unable to reach the stand before the aircraft," said the AAIB report.

The commander used references from the visual docking-guidance system to turn off the taxiway and align the 757 with the centerline of the stand, and he reduced groundspeed below 4 kt as the aircraft neared the indicated stopping position. "Deceleration was more pronounced than he expected, and the aircraft stopped approximately 3 ft [1 m] short of the indicated position," the report said, noting that the left engine cowling had struck an airbridge. "The pilots shut down the engine, and the [283] passengers and [10] crew disembarked without further incident."

The 757 was the first aircraft to be parked at Stand 32 after it was reopened following two days of maintenance on the airbridge. The airbridge had not been retracted so that the wheels on its outer section were within a designated circle painted on the apron. "In the absence of relevant procedures, the airport operator did not check physically that the airbridge … had been returned to its correct parking position," the report said. "The apron controller was unable to check visually, prior to its use, that the stand was clear and that [the airbridge was] properly positioned."

AAIB recommended that the airport prohibit remote activation of a visual docking-guidance system until personnel at the stand confirm that the stand is clear.

Starter Bursts During 'Crash Engagement'

Airbus A330-300. Substantial damage. No injuries.

The flight crew made two unsuccessful attempts to start the A330's right engine while preparing for a flight from Darwin, Australia, on Oct. 24, 2007. The first attempt was an automatic start that lasted 1 minute 10 seconds but resulted in no N_2, or high-pressure compressor, rotation. "The second attempt was a manual start lasting six minutes, at which time smoke and sparks were observed from under the engine cowlings," said the report by the Australian Transport Safety Bureau (ATSB). "Subsequent inspection of the engine revealed an uncontained failure of the starter turbine and secondary damage to the [adjacent] integrated drive generator."

The starter on the General Electric CF6-80E1 engine had accumulated 14,988 flight hours and 2,428 cycles. The manufacturer's examination of the starter revealed that the failure was precipitated by a previous "crash engagement" of the starter clutch. This is a complex phenomenon that can occur when an interruption in the flow of pressurized air driving the starter turbine causes the clutch to disengage and the starter shaft to decelerate. When airflow is restored, the starter turbine accelerates to "free-run speed," and re-engagement of the clutch causes internal components to "crash" against each other. The damage increases during subsequent engine starts and can spread to other starter components, such as the turbine bearings. The starter has cutter pins designed to cut off the turbine blades if the bearings fail and a containment ring that is supposed to prevent the blades from exiting from the starter.

The report said that there have been three starter turbine failures since the CF6-80E1 engine was introduced in 1993. The incident at Darwin was one of two failures that were not contained. "As a result of this incident, the engine manufacturer undertook corrective actions in the form of a starter containment improvement plan, which proposed design improvements to the starter," the report said.

TURBOPROPS

Frost Blamed for Loss of Control

Cessna 208B Caravan. Substantial damage. One serious injury, one minor injury.

Night visual meteorological conditions prevailed and surface temperature was minus 11° F (minus 24° C) when the pilot prepared the Caravan for a cargo flight from Bethel (Alaska, U.S.) Airport on Dec. 18, 2007. The pilot told investigators that he used a broom but no deicing fluid to clean frost off the wing and tail surfaces.

The pilot used 20 degrees of flap for the takeoff and maintained an airspeed of 110 kt for the initial climb at 500 fpm. When he retracted the flaps to 5 degrees, the Caravan began to roll

right in what the pilot described as similar to an encounter with a wake vortex. He applied left aileron and extended the flaps to 20 degrees, but the rolling tendency became more severe.

"He then noticed that the airplane was descending toward the ground, so he attempted to put the flaps completely down," the NTSB report said. "His next memory was being outside the airplane after it collided with the ground." The pilot received minor injuries; a passenger, a ground-support employee of the operator, was seriously injured.

Investigators determined that the pilot's description of the rolling tendency was consistent with airframe contamination by ice. "The airplane's information manual contains several pages of limitations and warnings about departing with even small amounts of frost, ice, snow or slush on the airplane, as it adversely affects the airplane's flight characteristics," the report said. "The manufacturer … notes that a heated hangar or approved deicing fluids should be used to remove ice, snow and frost accumulations."

Back to Work Too Soon

De Havilland Dash 8. Substantial damage. No injuries.

The commander, 48, had been hospitalized for 12 days for an illness that was not specified in the AAIB report. After being discharged, he advised his aviation medical examiner (AME) about the hospitalization. "The AME advised the commander that … he could return to work when he felt fit and no medical examination would be required," the report said.

According to the U.K. Civil Aviation Authority (CAA) Aeromedical Section, however, the illness suffered by the commander could result in fatigue that can last for six weeks after the main symptoms of the illness abate.

The commander reported for duty about two weeks after leaving the hospital. Nine days later, on May 28, 2008, he was scheduled to administer line training of a copilot during a scheduled flight with 37 passengers and two cabin crewmembers from Exeter, Devon, England, to Paris.

During final approach to Charles de Gaulle Airport, the Dash 8 was about 120 ft above ground level (AGL) when airspeed decreased below VREF, the target landing speed. The commander told the copilot, "Speed appears to be a bit low." The copilot moved the power levers from flight idle to a position that caused a 1 percent increase in torque, to 8 percent; an appropriate setting was 15 percent torque.

The commander thought that he needed to increase power but did not move the power levers.

As airspeed continued to decrease, the commander thought that he needed to increase power but did not move the power levers. "He also remembered a sense of 'why am I not reacting to this?' and being puzzled by this," the report said.

Airspeed was 11 kt below VREF when the Dash 8 touched down, striking its tail on the runway. The bottom of the rear fuselage was damaged, but the pilots were able to taxi the aircraft to the stand, where the passengers disembarked normally.

"The commander stated that after his return to work, he did not feel unwell but was getting progressively more tired," the report said. "[He] felt he should have been advised to have a longer recuperation period."

After the accident, the CAA Aeromedical Section issued expanded guidelines to AMEs for assessing the fitness of professional pilots to return to work after hospitalization for an illness.

Horizontal Stabilizer Strikes Parachutist

Beech 99. Substantial damage. One fatality.

Two of the 12 parachutists aboard the airplane jumped before the pilot reduced airspeed and illuminated the green jump light during a skydiving flight near Bowling Green, Missouri, U.S., on June 21, 2008. "The first parachutist stated that as soon as he jumped, he realized that the airplane was going faster than normal, and he tucked into a ball, barely missing the horizontal stabilizer," the NTSB report said.

"Parachutists that remained in the airplane recalled that the second parachutist exited the airplane and arched into an 'X' before being struck by the airplane's horizontal stabilizer. He never opened his parachute."

The pilot aborted the flight, performed a controllability check while returning to the departure airport and landed the airplane without further incident.

Leaking Windows Cause Short Circuit

Shorts 360. Minor damage. No injuries.

While departing from Inverness, Scotland, for a cargo flight the night of Aug. 19, 2008, the commander noticed a large amount of water spilling into the area around the flap control lever. The aircraft was climbing through 6,000 ft when the pilots detected the odor of an electrical fire. "They attempted to don their oxygen masks but had some difficulty in using them because they were different from the masks on which they had received their training," said the AAIB report.

Nevertheless, the crew was able to return to Inverness and land the aircraft without further incident. "The operator has confirmed that the cause of the electrical smell was water entering past the window seals and causing an electrical short circuit behind the flap lever," the report said. "The leaking window seals have since been repaired."

The incident aircraft had a different oxygen system and masks than the other two Shorts 360s in the operator's fleet. "The company has now introduced additional training to ensure that all their crews are fully conversant with the differences between the aircraft in their fleet," the report said.

PISTON AIRPLANES

Cylinder Separation Causes Fire

Piper Aztec. Substantial damage. No injuries.

About 25 minutes after departing from Northeast Philadelphia Airport for a positioning flight to Newburgh, New York, U.S., the evening of Sept. 6, 2007, the pilot felt a slight vibration and noticed decreased fuel flow to the right engine. He turned back toward the departure airport.

A few moments later, the pilot noticed smoke trailing from the right engine cowling and shut down the engine. "He then observed a flame emanating from the right side of the engine, so he pitched the nose of the airplane down, increasing the airspeed and extinguishing the fire almost immediately," the report said. He landed the Aztec without further incident.

Examination of the right engine revealed that a cylinder had separated from the case because of fatigue failure of the attachment studs. The report said that appropriate procedures for attaching the cylinder had not been followed when the engine was overhauled 1,055 flight hours before the incident. Relatively thick paint, rather than the thin layer of primer specified by the overhaul manual, was found between the cylinder flange and hold-down plate. "The presence of this paint could have led to an in-service loss of preload [of the cylinder-fastening nuts], even if sufficient torque was applied to the cylinder nuts at the time of installation," the report said.

Training Exercise Turns Deadly

Piper Seminole. Destroyed. Three fatalities.

The Netherlands-based aviation school required student pilots training for a multiengine rating to practice an in-flight engine shutdown and restart with a procedures trainer, and later in an aircraft under the supervision of a flight instructor. The school prescribed a minimum altitude of 3,500 ft for the actual in-flight training.

Nevertheless, during a training flight from Eelde on Aug. 14, 2002, the left engine on one of the school's Seminoles was shut down at 2,000 ft. Soon thereafter, "the still functioning right engine also stopped, probably as a result of an unintentional, incorrect [action] by the crew, most likely the closure of the right engine fuel valve," said the report published recently by the Dutch Safety Board.

"Because not enough attention was paid to the primary task of [flying] the aircraft, speed dropped below stalling speed," the report said. "This led to a loss of control of the aircraft at an altitude at which recovery was no longer possible. Witnesses stated that the aircraft lost altitude, rotating around its vertical axis before hitting the water." The three occupants were killed.

Noting in the report that the training benefits of shutting down an engine in flight likely do not outweigh the risks, the board recommended that schools providing pilot training in light twins require that engine shutdowns/restarts be practiced only with procedures trainers.

Fuel Selector in Wrong Position for Takeoff

Piper Aerostar 601P. Destroyed. One fatality.

Weather conditions at Chautauqua County Airport in Jamestown, New York, U.S., the morning of Jan. 8, 2007, included surface winds from 260 degrees at 6 kt, gusting to 26 kt, 1/2 mi (800 m) visibility in snow and a 600-ft overcast ceiling. Shortly after the Aerostar took off from Runway 25, witnesses heard a "throbbing or surging" sound and then saw the airplane descend "straight down" into marshy terrain, the NTSB report said.

Investigators found the right-engine fuel selector in the "X-FEED" position. The airplane flight manual (AFM) for the 601P says that crossfeed should be used only in level, coordinated flight. The report indicated that the pilot used a homemade checklist for takeoff that did not include the AFM requirement to ensure that the fuel selectors are in the "ON" position for takeoff.

The report said that the probable cause of the accident was "the pilot's incorrect selection of the right engine fuel selector position, which resulted in fuel starvation of the right engine, a loss of the right engine's power and a loss of control during initial climb."

HELICOPTERS

Disorientation Suspected in Control Loss

Aerospatiale AS 355F2. Destroyed. Four fatalities.

The Twin Squirrel was on a flight from Liverpool, England, to a private landing site in Peterborough the night of May 1, 2007, when an area of shallow fog and low clouds was encountered. The pilot descended to 20 ft AGL and reduced airspeed to 60 kt. The AAIB report said that he likely attempted to complete the flight below the clouds, using an illuminated haulage yard and quarry for guidance.

"Either imminent contact with the ground or impending contact with trees ahead forced the pilot to climb, where it is possible that he became disoriented and lost control," the report said. The pilot and three passengers, including the owner of the helicopter, were killed when the helicopter descended in a left turn into a wooded area.

"No evidence was found during the examination of the wreckage of any pre-impact defect or failure which could have caused or contributed to the accident," the report said.

Bystander Struck by Rotor Blade

Robinson R22 Beta. Minor damage. One fatality.

Several visitors were at the helipad at Maryfield Station, Australia, when the pilot took off for a cattle-mustering flight the afternoon of July 24, 2007. "There was no plan for positive control of the people in the vicinity of the departing helicopter," the ATSB report said.

"The pilot reported that during the initial climb after takeoff and when 'nearly at tree height,' the helicopter was struck by a gust of wind that resulted in height loss and activation of the helicopter's 'low rpm' warning horn," the report said.

As the pilot recovered from the upset, a woman who was walking with her back to the helicopter was struck by the tip of a main rotor blade and later died from her injuries. "Following the rotor strike, the pilot turned the helicopter to the right into wind and landed," the report said.

Maintenance Error Leads to Drive Shaft Failure

Bell 206B-3. Substantial damage. No injuries.

The pilot was applying collective control to land at Lakeland, Florida, U.S., on Sept. 5, 2007, when the JetRanger yawed right and landed hard. The fuselage was damaged near a cross-tube attach point, but none of the four occupants was injured.

The NTSB report said that the no. 5 tail rotor drive shaft bearing had failed because of improper maintenance. It noted that the tail rotor blades had been replaced after a "sudden stoppage" of the tail rotor in 1999.

"The tail rotor drive shaft [and bearings] were not replaced at that time, as required by the maintenance manual, and remained installed until 2004, when they were inspected … and approved for return to service by the same facility that had scrapped the tail rotor blades in 1999," the report said.

Preliminary Reports

Date	Location	Aircraft Type	Aircraft Damage	Injuries
Dec. 3, 2008	Planeta Rica, Colombia	Aero Commander 500	destroyed	2 fatal
The airplane crashed in a field after a technical problem occurred during an air ambulance flight from Medellín to Montería.				
Dec. 3, 2008	Río Grande, Puerto Rico	Rockwell Commander 690B	destroyed	3 fatal
The pilot was conducting a visual approach to San Juan in instrument meteorological conditions when the Commander struck a mountain.				
Dec. 6, 2008	Fort Lauderdale, Florida, U.S.	Piper Seminole, Cessna 172	destroyed	4 fatal
Both airplanes were on instructional flights when they collided at 2,000 ft in a designated flight-training area.				
Dec. 7, 2008	Tlaxcala, Mexico	Learjet 23	destroyed	2 fatal
The pilots were conducting a second landing attempt at the unlighted airport when the Learjet descended into a lake on final approach at 1815 local time.				
Dec. 9, 2008	Millington, Tennessee, U.S.	Mitsubishi MU-2B	substantial	1 minor
The pilot turned back to the airport after the right engine lost power on takeoff. The MU-2 touched down about 1,800 ft (549 m) from the departure end of the 8,000-ft (2,438-m) runway and veered off the side.				
Dec. 11, 2008	Gulf of Mexico	Bell 206L-4	destroyed	5 fatal
The JetRanger struck the water shortly after taking off in visual meteorological conditions (VMC) from Sabine Pass, Texas, U.S., for a charter flight to an offshore platform.				
Dec. 14, 2008	Rocksprings, Texas, U.S.	Beech King Air C90B	destroyed	1 fatal
The King Air crashed under unknown circumstances in VMC during a flight from Hondo, Texas, to Phoenix.				
Dec. 15, 2008	Turks and Caicos Islands	Britten-Norman Trislander	destroyed	12 fatal
The Trislander is believed to have crashed at sea near Providenciales Island shortly after the pilot declared an emergency about an hour after departing from Santiago, Dominican Republic, for a charter flight to New York with an en route stop at Mayaguana, Bahamas.				
Dec. 17, 2008	Santa Clarita, California, U.S.	Kaman 1200	substantial	1 fatal, 1 none
The pilot said that after the engine was started, the helicopter was overturned by a gust. Debris from the rotor blades struck and killed a ground crewmember who was moving away from the helicopter after disengaging a portable ground power unit.				
Dec. 18, 2008	Buenos Aires, Argentina	Piper Cheyenne	destroyed	2 fatal
The pilots reported a technical problem shortly after takeoff and were attempting to return to San Fernando Airport when the Cheyenne crashed in a parking lot.				
Dec. 19, 2008	Espiritu Santo, Vanuatu	Britten-Norman Islander	destroyed	1 fatal, 9 serious
The pilot was killed when the Islander struck a mountain shortly after departing from Olpoi for a scheduled flight to Luganville. Thick fog was reported in the area.				
Dec. 20, 2008	Denver	Boeing 737-500	substantial	5 serious, 27 minor, 83 none
Surface winds were from 290 degrees at 24 kt, gusting to 32 kt, when the 737 veered off the left side of Runway 34R and crashed in a ravine during takeoff from Denver International Airport.				
Dec. 21, 2008	Riversdale, South Africa	Bell 206B	destroyed	1 minor
The helicopter crashed while being maneuvered to drop water on a wildfire.				
Dec. 26, 2008	Wellington, New Zealand	ATR 72-500	minor	69 none
The airplane was climbing through 500 ft when a cockpit indication prompted the flight crew to shut down the right engine. The crew turned back to the airport and landed without further incident.				
Dec. 27, 2008	near Honiara, Solomon Islands	Hughes 369	destroyed	1 fatal, 1 serious
The pilot reportedly did not remove the tail-rotor-pedal lock before departing from a fishing vessel. After liftoff, the helicopter spun into the Solomon Sea and sank. The pilot was killed.				
Dec. 30, 2008	Cairo, Egypt	Airbus A300	minor	227 none
The right engine failed during departure. The flight crew turned back to the airport and landed the A300 without further incident.				

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