Empty Tank

Faulty fuel indication leads to in-flight engine shutdown.

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

Refueling Procedure Relied on Gauges

Boeing 747-300. No damage. No injuries.

The 747 was nearing the top of descent during a positioning flight from Jakarta, Indonesia, to Melbourne, Victoria, Australia, on Feb. 4, 2007, when the flight crew noticed that the no. 3 fuel tank boost pump low-pressure lights had illuminated and the fuel quantity indicator for the no. 3 tank was reading zero.

"After completing the appropriate 'non-normal' checklist items, the crew shut down the no. 3 engine," said the Australian Transport Safety Bureau (ATSB) report. "The crew assessed the proximity to alternative airports, and a decision was then taken to continue to Melbourne."

The aircraft was about 256 km (138 nm) northwest of Melbourne when the crew declared an urgency with air traffic control (ATC). They landed the 747 at Melbourne without further incident.

"The subsequent examination of the aircraft by maintenance personnel found no evidence of a fuel leak," the report said. "A magnastick check of the fuel remaining in the no. 3 main fuel tank showed it to be empty. The fuel remaining in the other main tanks was reported as being 7,162 kg [15,789 lb], which was greater than the minimum fuel required by the operator and by [regulation] to be aboard the aircraft at the end of the landing roll." (A magnastick is a direct-reading mechanical fuel-level indicator similar to a dipstick.)

Examination of the fuel quantity indicator for the no. 3 tank showed that it was malfunctioning. "The manner in which the malfunction occurred led the crew to believe there was a greater quantity of fuel remaining in that tank than was actually present," the report said. "The examination determined that the malfunction was due to either an electrical problem, water contamination or a combination of both."

The 747 had been on the ground in Jakarta for more than two days before the incident flight began. After landing there, the crew had conducted a fuel-discrepancy check, comparing fuel quantity indicating system readings with those of the "fuel used" gauges. The readings were within the prescribed limits.

The aircraft then was "pre-fueled" to a total quantity of 50,390 kg (111,090 lb). "The station engineer at Jakarta advised [investigators] that … the purpose of pre-fueling was to reduce the possibility of water contamination by displacing the air space in the fuel tanks and also to allow any free water that may be present in the fuel to settle prior to preparing the aircraft for the next flight," the report said. "Maintenance personnel could not recall if a water drain had been conducted at any time after this pre-fueling. During the subsequent 64 hours between the pre-fueling

and the final uplift of fuel for the flight to Melbourne, heavy and continuous rain was reported at Jakarta."

While preparing for departure from Jakarta, the crew noticed that the total fuel quantity reading was 52,820 kg (116,447 lb) — or 2,430 kg (5,357 lb) more than the reading after the pre-fueling was completed. "After the completion of the final up-lift, the total fuel quantity displayed by the cockpit fuel quantity indicator gauges was 65,100 kg [143,519 lb]," the report said. Required fuel for the flight was 62,200 kg (137,126 lb).

The flight engineer and a ground engineer discussed whether a magnastick check was required before departure. "After referring to operational documentation, it was concluded that a magnastick check was not required," the report said.

Twice during the climb to cruise altitude, the flight engineer noticed that the no. 3 tank fuel quantity reading momentarily decreased by about 3,000 kg (6,614 lb), accompanied by illumination of the fuel configuration warning light. "The crew discussed the indication problem and undertook numerous checks in order to confirm the serviceability status of the fuel quantity indicating system," the report said. "They determined that the fluctuating indications were probably due to an intermittent or unreliable no. 3 main tank fuel quantity indicator."

Revised refueling procedures had reduced the likelihood of discovering the malfunction before flight.

Investigators found that revised refueling procedures adopted by the operator before the incident had reduced the likelihood of discovering the malfunction before flight. "In part, the revision to the operator's refueling procedures assumed a serviceable fuel quantity indicating system for establishing the reference baseline fuel quantity on board prior to the refueling," the report said. "The revised procedures were also based on the assumption that, should the fuel quantity indicating system develop a fault, the system would not indicate a larger quantity than actually present."

Previously, on-board fuel quantity prior to refueling was determined by cross-checking fuel quantity indications with the arrival-fuel reading recorded on the aircraft's technical log plus any fuel used after arrival — by the auxiliary power unit or during engine maintenance work, for example. Also, magnastick checks of fuel quantity previously were required when the aircraft was on the ground more than 36 hours; the revised procedures increased the interval to 72 hours.

"As a result of this occurrence, the operator is implementing a series of safety actions, including amending its refueling procedures and conducting a risk assessment of its fuel management policies and procedures," the report said.

Go-Around Decision Made Too Late

Cessna Citation 560. Destroyed. Four fatalities.

The approach controller cleared the flight crew to conduct the localizer approach to Runway 24 at Carlsbad, California, U.S., the morning of Jan. 24, 2006, but the crew reported the 4,897-ft (1,493-m) runway in sight and canceled their instrument flight rules flight plan.

The airport traffic control tower had been closed overnight and was not yet in operation. The automated weather observation system reported the surface winds from 040 degrees at 6 kt. The captain told the first officer that he would "land to the east," on Runway 06, said the U.S. National Transportation Safety Board (NTSB) report. However, the captain continued the straight-in visual approach to Runway 24.

The Citation was high, and a descent rate of 3,000–4,000 fpm initially was maintained to establish the aircraft on a proper final approach glide path. Several enhanced ground-proximity warning system (EGPWS) "sink rate" alerts and a "pull up" warning were generated.

"During the approach sequence, the captain maintained an airspeed that was approximately 30 kt higher than the correct airspeed for the aircraft's weight, resulting in the aircraft touching down about 1,500 ft [457 m] further down the runway than normal and much faster than normal," the report said.

The first officer asked the captain if they were going to go around. "Yeah," the captain

replied. "Let's get out of here." The Citation lifted off the runway but struck a localizer antenna platform 304 ft (93 m) beyond the threshold and then crashed into a commercial storage building. All four occupants were killed; no one on the ground was hurt.

Engine Failure Traced to Broken Blade

Dassault Falcon 900B. Substantial damage. No injuries.

About 10 minutes after departing from Farnborough, England, for a commercial flight to Tel Aviv, Israel, on Jan. 20, 2007, the flight crew heard a loud bang and saw the no. 3 engine fire light illuminate. "The pilots carried out the engine fire procedures for the no. 3 engine and declared a mayday to the London Terminal Control Centre," said the U.K. Air Accidents Investigation Branch (AAIB) report.

"The crew were given immediate radar vectors for [London] Gatwick Airport, the nearest airport. The crew accepted Gatwick since it was fully equipped with rescue and fire fighting services, and had a runway of sufficient length." The Falcon was landed without further incident.

Examination of the no. 3 engine showed that the low-pressure turbine assembly had failed. "Debris from the turbine assembly ruptured the engine casing, penetrated the cowling and caused slight damage to the horizontal stabilizer," the report said. "Many of the fractured parts were lost overboard, but the available evidence indicated that the failure had probably resulted from the fracturing of a low-pressure turbine blade, leading to the loss of rotational restraint for the turbine stators and the spin-up and non-contained rupture of the stators."

Signs of a casting defect — intergranular cracking — were found on the fractured blade. The report said that a "substantial number" of turbine blade fractures in Honeywell TFE731 engines in 1999 and 2000 had prompted the manufacturer to "take measures," including recommending replacement of the suspect blades. "However, failures of blades that were not from the suspect batch subsequently occurred," the report said. The blade design and manufacturing process were being revised when the Falcon accident occurred.

As a result of the investigation, the AAIB recommended that the U.S. Federal Aviation Administration (FAA) review the manufacturer's plans to prevent TFE731 turbine assembly failures and require compliance with existing nonmandatory service bulletins.

Nosegear Collapses During Pushback

Boeing 737-300. Substantial damage. No injuries.

The pushback from the gate at Pittsburgh International Airport the morning of July 27, 2006, was described as "smooth and steady" until the tug driver began to slow the tug to a stop so that the tow bar could be disconnected. A ground crewmember heard a "snap" and an FAA inspector observing the pushback said that the airplane's nose moved up and down "like a horse throwing its head" before the nosegear collapsed.

The NTSB report said that the probable cause of the accident was the "tug driver's inadvertent movement of the tug's gearshift lever from forward to reverse." Examination of the 737's nosegear showed that the lower drag brace had buckled in compression and fractured due to overstress.

Examination of the tug showed that the gearshift lever was defective. "It would not lock in the neutral gate and could be moved easily through the gate between the forward and reverse gears," the report said. A new shift mechanism was installed on the tug before it was returned to service.

Examination of the tug showed that the gearshift lever was defective.

Hot Brakes Cause Fire on Takeoff

Raytheon Hawker 800XP. Substantial damage. No injuries.

The flight crew rejected the first of three takeoff attempts at John Wayne/Orange County Airport in Santa Ana, California, U.S., the afternoon of Oct. 29, 2007, when the pilot sensed that the engines were not spooling up normally as he advanced the throttles. "The airplane was taxied back for takeoff and three minutes later was cleared for takeoff again," the NTSB report said.

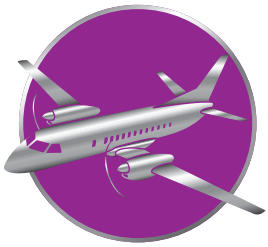
The crew rejected the second takeoff attempt when the automatic performance reserve system

warning light illuminated immediately after the system was armed at 20–30 kt. "The airplane taxied back once again and was cleared for takeoff nine minutes later," the report said.

At about 85 kt during the third takeoff attempt, the crew felt a vibration and heard a "pop" as the Hawker began to drift left. "The pilot called for an abort and was able to keep the airplane on the runway, eventually traveling into the overrun area at the end of the runway," the report said. "The tower notified the flight crew that there was smoke and fire coming from the left main gear. The pilot ordered an emergency evacuation, and all [eight] occupants exited the airplane without injury."

Examination of the main landing gear showed that the brakes had overheated, causing the fusible plugs in both wheels to melt. In addition, the tires on the left main gear had burst, and tire debris had struck and severed a hydraulic line. Fluid that leaked from the severed line ignited when it contacted the hot brakes.

The report noted that the Hawker flight manual requires a 25-minute waiting period to allow the brakes to cool after a takeoff rejected below 90 kt. "After two or more successive rejected takeoffs, a waiting period of 45 minutes is required," the report said.



TURBOPROPS

Deviation From SOPs Leads to Overrun

Hawker Siddeley 748. Minor damage. No injuries.

The flight crew had conducted a cargo flight from Coventry, England, to Jersey, Channel Islands, the morning of March 8, 2006, but were delayed by weather for the next leg, a 15-minute flight to Guernsey. While waiting, the commander briefed the copilot for the instrument landing system (ILS) approach to Runway 27 at Guernsey, which required a minimum runway visual range (RVR) of 550 m (1,800 ft). The briefing — and the subsequent approach — did not adhere to company standard operating procedures (SOPs), the AAIB report said.

Guernsey was reporting 1,500 m (5,000 ft) RVR, a 100-ft broken ceiling, winds from 230 degrees at 21 kt, moderate rain and fog when the crew departed from Jersey. While providing radar vectors for the ILS approach at Guernsey, ATC told the 748 crew that a de Havilland Dash 8 had just landed.

As briefed, the copilot called out "500 [ft] above" decision altitude and said that he was "looking out [for the runway]." The aircraft descended slightly below the glideslope, and the commander advised the copilot that he was correcting. About 20 seconds later, however, the EGPWS generated a "glideslope" alert. "There was no verbal challenge from the copilot," the report said.

The EGPWS then generated a "minimums" alert, and the commander asked the copilot if he could see anything. "The copilot replied that he could see the lights [and touchdown marks] just to the left," the report said. "He asked the commander if he was visual, and the commander confirmed that he was."

The commander told investigators he saw that the aircraft's left wing tip was over the right edge of the runway and maneuvered toward the centerline of the 1,463-m (4,800-ft) runway. The 748 touched down with 400 to 550 m (1,312 to 1,805 ft) of runway remaining. Investigators calculated that this was sufficient to bring the aircraft to a stop, using normal technique.

However, a partial flap setting had been selected because of the crosswind, and the copilot failed to disengage the fine pitch stops after touchdown, which would have enabled propeller-blade pitch to be reduced below 18 degrees to provide additional drag.

In addition, maximum wheel braking was not applied after touchdown. "The commander did not immediately appreciate how far down the runway he had landed and delayed maximum braking until he saw the end of the runway," the report said. Perceiving abnormal deceleration, possibly due to aquaplaning on the wet runway, the commander manually modulated brake pressure, which inadvertently reduced the effectiveness of the anti-skid braking system.

The 748 overran the runway and came to a stop in a grassy area 145 m (476 ft) beyond the end. Damage was limited to two main-gear tires that were cut when they struck light fixtures.

'Vmc Roll' Induced During Missed Approach

Embraer Bandeirante. Destroyed. One fatality.

En route on a cargo flight from Bangor, Maine, U.S., the night of Jan. 13, 2005, the pilot was not able to land at the scheduled destination, Manchester, New Hampshire, because of adverse weather conditions. While holding, the pilot radioed company personnel, who told him to return to the company's base in Bennington, Vermont, the NTSB report said.

The Bandeirante's right engine lost power during the flight, and the pilot told ATC that he was diverting to Keene, New Hampshire, which had 1 mi (1,600 m) visibility and a 100-ft ceiling. Keene was 45 nm (83 km) closer than Bennington, which had 10 mi (16 km) visibility and a 2,900-ft ceiling.

The pilot asked ATC for radar vectors "to keep it in tight" on the ILS approach to Runway 02 at Keene. The airport traffic control tower was not in operation, and no radio transmissions were received from the pilot after he reported that the airplane was established inbound on the localizer and acknowledged the approach controller's termination of radar services and instruction to change to the airport advisory frequency.

Several witnesses reported thick fog near the airport. One witness saw the Bandeirante flying low, in and out of clouds, with its wings rocking substantially as it neared the airport. The report said that the airplane's flaps were fully extended when the pilot brought the left engine to full power in an apparent attempt to go around. The flight manual specifies a 25-percent flap setting for a single-engine approach. "The high power setting, slow airspeed and full flaps combination resulted in a minimum control speed (Vmc) roll," the report said. "The airplane came to rest inverted on Runway 02, about 90 ft [27 m] from the approach end."

Broken Trim Tab Causes Severe Vibration

Beech King Air C90A. Substantial damage. No injuries.

The pilot said that the King Air suddenly began "shuddering with a severe high-frequency vibration" while flying at 12,000 ft, en route with six passengers from Tulsa, Oklahoma, U.S., to Manhattan, Kansas, the night of Sept. 22, 2007. He told NTSB investigators that the vibration "was in the entire airframe, not specifically the flight controls, so I had no clue where it was coming from."

The vibration continued when the pilot reduced power from the left engine but stopped when he reduced power from the right engine. The pilot said, however, that a few minutes after he shut down and secured the right engine, the vibration "returned just as bad as before."

The pilot diverted to Emporia, Kansas, and landed the King Air without further incident. He noted that the vibration had stopped when the landing gear was extended during the approach.

"During a post-flight inspection, the pilot observed that the right elevator trim tab push rod was broken," the report said. According to maintenance records, the bolts and bushings on the trim tab attachment mechanism had been replaced 101.5 flight hours before the incident occurred. The report said that the trim tab had not been reinstalled properly; excessive torque had been applied to a bolt and nut on a clevis (a U-shaped fitting on the push rod), resulting in a fatigue crack that propagated through the threaded portion of the push rod.

The vibration stopped when the pilot reduced power from the right engine.

Ice Chokes Engine on Skydiving Flight

Nomad N22B. Substantial damage. No injuries.

The pilot was attempting to climb to 10,000 ft, where 13 parachutists would jump from the aircraft near Cambridgeshire, England, on Aug. 12, 2007. "During the climb, the pilot saw a large cumulonimbus cloud ahead, the top of which was above the aircraft," the AAIB report said. "He believed the aircraft would be able to climb over it; but, at about 8,500 ft, the aircraft unexpectedly entered cloud."

The pilot initiated a descent and turned back toward Chatteris Airfield. "[He] selected the engine anti-ice on, but not in sufficient time to prevent the left engine [from] running down due to icing," the report said. "His attempts to restart the left engine were unsuccessful, and he therefore prepared for a single-engine landing."

The Nomad broke out of the clouds at 4,000 ft. The pilot said that he conducted the approach at 80 kt, the best single-engine rate of climb speed, rather than the normal 70 kt. "This, combined with the damp grass runway surface and reduced reverse thrust available, caused the aircraft to overrun the end of the runway," the report said. "The nosewheel subsequently entered a ditch, causing the nose leg to collapse. Neither the pilot nor the parachutists, who had remained on board throughout, were injured."

PISTON AIRPLANES

Twin Beech Stalls During Missed Approach

Beech H-18. Destroyed. One fatality.

The pilot was conducting a cargo flight from Wichita, Kansas, U.S., to Great Bend, Kansas, the morning of Feb. 9, 2007. The destination airport was reporting 2 mi (3,200 m) visibility and a 500-ft ceiling. Several pilots had reported icing conditions below 6,000 ft in the area, the NTSB report said.

ATC cleared the pilot to conduct the ILS approach to Runway 35 and approved a change to the airport's common traffic advisory frequency when the airplane reached the outer marker. Witnesses saw the airplane about 200 ft above the ground west of the runway and on a northwesterly heading before it entered a climbing left turn. "The published missed approach procedure instructed the pilot to initiate a climbing left turn to a fix and hold," the report said.

One witness then saw the airplane emerge from the clouds in a 20-degree nose-down attitude and on a southeasterly heading. Investigators determined that the pilot had lost control of the twin Beech during the missed approach. The airplane stalled and descended to the ground with the flaps and landing gear extended.

"Local authorities reported observing a 'layer of ice' on the leading edges of both wings when they arrived at the accident site," the report said. "Examination of the airframe and engines revealed no anomalies that would have precluded normal operations."

Battery Short Triggers Electrical Failure

Rockwell Aero Commander 500S. No damage. No injuries.

The electrical system failed when the Commander encountered severe turbulence for about 15 seconds while cruising in instrument meteorological conditions at 9,000 ft about 130 km (70 nm) southeast of Mackay, Queensland, Australia, during a positioning flight from Mackay to Thangool the night of Sept. 4, 2007.

"The pilot unintentionally lost control of the aircraft when he leaned forward on the control column yoke and used both hands to search in the dark for a torch [(flashlight) that had fallen] on the cockpit floor," the ATSB report said.

After recovering the flashlight and illuminating the instrument panel, the pilot, who was alone in the aircraft, saw that the Commander was in a 40-degree bank and descending through 8,000 ft at 2,000 fpm. "The pilot managed to regain control of the aircraft with one hand while holding the torch in the other," the report said. "He climbed the aircraft back to 9,000 ft and brought the aircraft onto the original heading to Thangool."

The pilot checked the circuit breakers and avionics equipment master switch. He also turned off the battery switch to reduce the risk of an electrical fire. "This action restored electrical power to the aircraft," the report said. "The pilot then checked the engine-driven alternators for correct charge rates and amperage, and these appeared to be operating correctly."

Examination of the electrical system revealed an internal short in one of the two 12-volt lead-acid batteries. The electrical system operated normally after the battery was replaced.

"It is most likely that the internal short … drew all the current from the aircraft's alternators, causing a complete loss of lighting and power to instruments and radios," the report said. "When the battery master switch was

turned off, the power drain from the alternators to the defective battery was isolated and essential electrical power was restored."

Unsecured Cowling Separates in Flight

Piper Chieftain. Destroyed. No injuries.

The Chieftain was cruising at 4,000 ft during a positioning flight from Melbourne, Florida, U.S., to Orlando, Florida, the afternoon of July 11, 2007, when the pilot heard a loud bang, felt a strong vibration and saw that the right side of the windshield and the right side window had broken, and the upper cowling on the right engine was missing.

The pilot shut down the right engine and feathered the propeller. "Although full power was applied to the left engine, the airplane would not maintain altitude," the NTSB report said. The pilot landed the airplane, undamaged, on a field of scrub brush; but, about five minutes later, the grass under the left engine ignited, and the resulting brush fire consumed the airplane.

Investigators found that the right engine cowling had not been secured properly during maintenance performed on the Chieftain the day before the accident. "The mechanic who had been working on the outboard side of the engine stated that he was not certain that he fastened the three primary outboard cowl fasteners before he left the airplane during the installation to retrieve a stepladder," the report said. The three fasteners were found unlatched. "When asked about the security of the cowling during his preflight inspection, the pilot said that he 'just missed it,'" the report said.

HELICOPTERS

Tail Rotor Separates During Air Tour

McDonnell Douglas 369FF. Destroyed. One fatality, three serious injuries, one minor injury.

While conducting an air tour flight 1,500 ft above ground level near the shoreline of Haena, Kauai, Hawaii, U.S., on March 11, 2007, the pilot heard two loud bangs before the helicopter pitched nose-down and yawed right. "The right yaw developed into a tight spin, and he realized that he had 'lost his tail rotor,'" the NTSB report said.

The pilot said that he adjusted collective control and throttle to "slow down the yaw a little" and attempted to land in an open field, but the helicopter struck trees on the edge of the clearing. The pilot sustained minor injuries; one passenger was killed; and three passengers were seriously injured.

Examination of the helicopter revealed that the tail rotor blades had separated. NTSB determined that the probable cause of the accident was "the fatigue failure of the tail rotor blade root fitting due to a manufacturing defect."

Fuel Leak Causes In-Flight Fire

Enstrom F-28. Destroyed. No injuries.

The pilot was conducting a private flight over a wooded area near Newtownmountkennedy, Ireland, on Aug. 2, 2007, when he noticed that the engine had begun to run roughly and the oil temperature was high but still "in the green." The cockpit then rapidly filled with white smoke. "There were loud noises from the engine compartment, and a total loss of power occurred," the Irish Air Accident Investigation Unit report said.

The pilot's vision was substantially affected by the smoke, but he was able to turn away from higher terrain and conduct an autorotative descent toward a large, up-sloping, green field. "However, unknown to the pilot, and most likely unseen by him as well, there were two sets of wires criss-crossing this green field," the report said.

The F-28 struck a wire, touched down heavily, bounced and came to rest on its left side. The pilot and passenger escaped injury and exited the helicopter before it was engulfed by flames.

Investigators determined that fuel had leaked from a hole that had been worn through the metal braiding on the hose between the engine's fuel control unit and fuel distributor. The wear had occurred during an extended period of contact with either the magneto or an oil pipe. The report said that a clamp intended to prevent contact between the fuel hose and these components was either absent, mispositioned or distorted.

Preliminary Reports

Date	Location	Aircraft Type	Aircraft Damage	Injuries
Aug. 3, 2008	Port Hardy, British Columbia, Canada	Grumman G-21 Goose	destroyed	5 fatal, 1 serious, 1 none
The amphibious airplane crashed in a forest about 10 minutes after departing from Port Hardy to fly to a logging camp on Chamiss Bay.				
Aug. 3, 2008	Pitt Meadows, British Columbia, Canada	Beech King Air A90	substantial	4 serious, 4 minor
The King Air was departing for a skydiving flight when one engine lost power. The other engine lost power during an attempted return to the airport, resulting in a forced landing on a farm field.				
Aug. 4, 2008	Aniak, Alaska, U.S.	Piper Navajo	substantial	1 serious, 2 minor, 4 none
The pilot landed the Navajo on a gravel bar in a river after the left engine lost power on initial climb for a commuter flight to Grayling.				
Aug. 5, 2008	Weaverville, California, U.S.	Sikorsky S-61N	destroyed	9 fatal, 4 serious
The helicopter crashed after losing power while departing at an elevation of 5,935 ft to transport personnel battling a wildfire.				
Aug. 9, 2008	Ndundu, Indonesia	Pilatus PC-6 Turbo Porter	substantial	1 fatal
The airplane crashed in mountainous terrain while transporting food from Wamena to Ndundu.				
Aug. 13, 2008	Mogadishu, Somalia	Fokker F.27	destroyed	3 fatal
The cargo airplane struck a telecommunications antenna and crashed during an approach in adverse weather to K-50 Airport, 50 km (27 nm) southwest of Mogadishu.				
Aug. 16, 2008	Tukums, Latvia	Piper Navajo	destroyed	1 fatal, 8 serious
The Navajo crashed during an emergency landing in adverse weather during a flight from Riga to Tukums.				
Aug. 17, 2008	Warwickshire, England	Cessna 402C, Rand KR-2	destroyed	5 fatal
The four occupants of the 402 and the pilot of the KR-2 were killed when the airplanes collided on final approach to Coventry Airport.				
Aug. 18, 2008	Beaverlodge, Alberta, Canada	Cessna 337	destroyed	1 fatal, 1 serious
The airplane crashed about 15 nm (28 km) west of Beaverlodge during a fire-patrol flight.				
Aug. 18, 2008	Santo Domingo, Dominican Republic	Cessna Citation I/SP	destroyed	1 fatal
The Citation crashed in the ocean soon after departing from Santo Domingo for a flight to San Juan, Puerto Rico.				
Aug. 20, 2008	Madrid, Spain	McDonnell Douglas MD-82	destroyed	154 fatal, 18 serious
The MD-82 crashed and burned during takeoff for a flight to the Canary Islands. The flaps reportedly were not set properly for takeoff.				
Aug. 22, 2008	Moab, Utah, U.S.	Beech King Air A100	destroyed	10 fatal
A technical problem occurred soon after takeoff, and the King Air crashed in the desert during an emergency landing.				
Aug. 24, 2008	Zacapa, Guatemala	Cessna 208 Caravan	destroyed	10 fatal, 4 serious
The Caravan crashed after the flight crew reported engine problems during a charter flight from Guatemala City to El Estro.				
Aug. 24, 2008	Bishkek, Kyrgyzstan	Boeing 737-200	destroyed	68 fatal, 22 NA
A thunderstorm was over the airport when the 737 crashed soon after takeoff for a flight to Tehran, Iran.				
Aug. 27, 2008	Jambi, Indonesia	Boeing 737-200	substantial	2 serious, 123 none
The 737 overran the 2,000-m (6,562-ft) runway on landing and injured two people who were working in a rice field.				
Aug. 28, 2008	Las Vegas, Nevada, U.S.	Piper Chieftain	destroyed	1 fatal
Soon after departing for a positioning flight to Palo Alto, California, the pilot reported an engine problem and said that he was returning to North Las Vegas Airport. The Chieftain struck power lines on final approach and crashed into a house. No one on the ground was hurt.				
Aug. 30, 2008	Toacaso, Ecuador	Boeing 737-200	destroyed	3 fatal
The airplane was on a nighttime ferry flight from Caracas, Venezuela, to Latacunga, Ecuador, when it struck the Iliniza Volcano at about 17,000 ft.				
Aug. 31, 2008	Cobá, Yucatán, Mexico	Cessna 208 Caravan	destroyed	2 NA
After radio contact with air traffic control was lost during a flight from Cancún to Campeche, one of the pilots used a mobile telephone to report mechanical problems. The pilots reportedly survived the subsequent crash and were rescued the next day.				

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.