Tail Strike Follows Bounced Landing

The A320's nose was raised too high after the hard touchdown.

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

Tail Wind, Excess Thrust Were Factors

Airbus A320-211. Substantial damage. Four minor injuries.

As the A320 neared Denver International Airport with 147 passengers and seven crewmembers the afternoon of May 4, 2009, the automatic terminal information service (ATIS) reported winds from 240 degrees at 4 kt and 10 mi (16 km) visibility. The flight crew planned for a visual approach to Runway 16L, using the instrument landing system (ILS) as a backup, and an approach speed of 139 kt.

The first officer, 48, was the pilot flying. He had 5,901 flight hours, including 200 hours as second-in-command of A320s, and held type ratings for the Boeing 707 and Douglas DC-9. The captain, 49, had 14,619 flight hours, including 2,677 hours as an A320 pilot-in-command.

The airplane was 1,000 ft above the runway touchdown zone elevation (5,347 ft) when the first officer announced that the approach was stable. Shortly thereafter, the airport traffic controller cleared the crew to land on Runway 16L and advised that the wind was from 260 degrees at 5 kt.

About 750 ft above touchdown, the crew disengaged the autopilot and engaged the flight directors and autothrottles. "During the final approach, the crew noted an increasing tail wind," said the report by the U.S. National Transportation Safety Board (NTSB). Recorded flight data indicated that the tail wind component had increased to 11 kt.

The descent rate was about 800 fpm when the airplane was 50 ft above touchdown. "The first officer stated that he attempted to arrest the sink rate with larger-than-normal aft stick deflection," the report said. "During the flare, passing 20 ft above the runway, the automated 'retard' callout [was generated three times]. This automated callout is designed to remind the pilot to move the thrust levers to the idle detent." This action causes the ground spoilers to deploy on touchdown.

Despite the automated callouts, the thrust levers were not retarded. During the flare, the airplane's pitch attitude was increased to 8 degrees nose-up, and airspeed decreased to 132 kt, or 7 kt below the target. The autothrottle system commanded an increase in engine power to recover airspeed, and N_1 (fan speed) increased from 54 percent to 64 percent in three seconds.

"The airplane touched down on both main landing gear with a vertical load of about 1.56 g [i.e., 1.56 times standard gravitational acceleration]," the report said. "The airplane then bounced as a result of the excess thrust and the position of the thrust levers forward of idle, which prevented deployment of the spoilers."

During the bounce, the first officer retarded the thrust levers to idle and moved his control stick fully aft, increasing the airplane's pitch attitude to about 12.5 degrees nose-up, which is greater than the maximum pitch angle

'The captain attempted to add nose-down pitch to prevent the tail strike but was too late.'

of 11.7 degrees specified in the flight crew operating manual.

"The captain attempted to add nose-down pitch to prevent the tail strike but was too late," the report said. "The airplane experienced heavy abrasions, dents and perforations of the skin; the aft galley drain mast and two airplane antennas were broken; the auxiliary power unit air intake sustained damage, and the rear pressure bulkhead was buckled and cracked." Four flight attendants reported minor injuries; the report did not specify the nature of the injuries.

Shortly after the A320 accident, the crew of an Embraer 145 conducted a go-around from an approach to Runway 16R because the indicated tail wind component exceeded 10 kt. Air traffic control subsequently changed the active runways. An official weather observation 35 minutes after the accident indicated that surface winds were from 330 degrees at 13 kt, gusting to 17 kt.

The report noted that Airbus had developed an A320/A321 flight warning computer modification — a "pitch pitch" callout designed to increase pilot awareness of an impending tail strike — but none of the A320s in the accident airplane operator's fleet had received the modification.

Puzzling Power Loss

Cessna Citation 500. Destroyed. Five fatalities.

A precautionary but unnecessary engine shutdown, a flameout of the other engine due to a mechanical failure of the thrust lever, and a rushed and unsuccessful attempt to restore power from both engines might have led to the Citation's crash near England's Biggin Hill Airport the afternoon of March 30, 2008. However, the absence of flight recorders aboard the 33-year-old aircraft precluded a conclusive reconstruction of the events leading to the accident, according to the report by the U.K. Air Accidents Investigation Branch (AAIB).

Visual meteorological conditions (VMC) prevailed when the Citation, of Bermudan registry, departed from Biggin Hill with three passengers and two pilots for a private flight to Pau, France. "It was not possible to ascertain the exact role of each pilot during the flight," said the report, which identified the left-seat pilot as "Pilot A" and the right-seat pilot as "Pilot B." Both held single-pilot certification in the Citation 500.

Pilot A, 57, was employed by the aircraft owners. He had 8,278 flight hours, including 18 hours in the Citation. "He had recently completed a type conversion onto the aircraft, and it is believed that he had wished to fly with another pilot who had more hours on type, acting as mentor, until he gained more experience," the report said.

Pilot B, 63, had 4,533 flight hours. The report said that his time in type is unknown but that he had "in excess of 70 hours" in Citation 500s.

The airport traffic controller, who cleared the pilots for takeoff from Runway 21 at 1332 local time, said that the takeoff appeared normal. The pilots made a right turn to the northeast, in accordance with their instrument flight rules clearance.

At 1334, Pilot B radioed, "We're making an immediate turn to return to the airport." When asked the nature of the problem, the pilot said, "We don't know, sir. We're getting engine vibration."

The vibration detected by the pilots was not caused by an engine but by the failure of the inlet fan for the air cycle machine, which conditions engine bleed air before it enters the cabin.

Nevertheless, in the likely scenario developed by investigators, the pilots decided to check each engine separately to troubleshoot the vibration. They began by reducing power from the right engine. Because of the consequent reduction of bleed air flow to the air cycle machine, the vibration caused by the broken inlet fan also decreased, causing the pilots to perceive that the right engine was producing the vibration. Accordingly, they shut down the right engine.

Meanwhile, the pilots had begun a left turn at 1,800 ft to return to Biggin Hill and had retarded the left thrust lever to reduce power to begin a descent. The thrust lever inadvertently

was moved into the fuel-cutoff position because of the failure of a mechanism designed to prevent this from occurring. Normally, when a thrust lever is moved to the idle position, a smaller lever riveted to the thrust lever is trapped by a gate that prevents further movement of the thrust lever to the fuel-cutoff position. To intentionally move the thrust lever to the fuel-cutoff position, a knob on the thrust lever must be raised to lift the smaller lever out of the gate.

However, investigators found that a rivet securing the smaller lever to the thrust lever had become detached, allowing the thrust lever to be moved aft of the idle position without resistance, shutting down the engine.

The pilots attempted to restart both engines. Examination of the engines revealed that both were producing power on impact but had not accelerated sufficiently to provide enough thrust to recover from the descent. "Interpretation of available data suggests that one engine had not completed its start sequence before an attempt was made to start the other," the report said. "A sense of urgency [might] have led to a deliberate attempt to start the second engine before the first engine had reached idle speed."

The report noted that a successful restart and acceleration of just one engine "could have produced sufficient thrust in the time available to prevent ground impact."

Lacking sufficient power, the Citation continued to descend. Its left wing struck a house 2 nm (4 km) north-northeast of the airport. "The aircraft then impacted the ground between this and another house and caught fire," the report said. "There were no injuries to anyone on the ground, but all those on board the aircraft were fatally injured."

The report said that the "lack of recorded data meant that the investigation was short of critical information which would have provided further insight and a clearer understanding of the factors leading to the loss of the aircraft." Among recommendations generated by the investigation was that the International Civil Aviation Organization expand the requirement for flight recorders to include jets weighing 5,700 kg/12,500 lb or less.

Crew Departs on Wrong Runway

Boeing 737-600. No damage. No injuries.

"Deviations from the crew resource management (CRM) concept" manifested in faulty communications caused the 737 flight crew to take off from Runway 32 at Sweden's Luleå–Kallax Airport after they had read back a clearance to depart from Runway 14, according to the Swedish Accident Investigation Board (SHK).

The incident occurred in darkness and low visibility the morning of Feb. 27, 2007. The SHK report, issued in March, said that the commander programmed the 737's flight management system for a departure from Runway 32 while the aircraft was still at the gate. After the 88 passengers boarded, the commander requested and received clearance to taxi to the deicing ramp.

Surface winds were light, and the controller gave the crew the option to depart from Runway 14 rather than Runway 32. The controller also issued a slot time that required the crew to be airborne within 10 minutes. Although this initially "had a stressful effect on the course of events," the slot time later was extended indefinitely to accommodate the 737's departure, the report said.

Visibility deteriorated rapidly and was about 800 m (1/2 mi) when the 737 was taxied from the deicing ramp. The copilot, who was handling radio communications, requested and received clearance to taxi to Runway 14. The commander, however, taxied the aircraft to Runway 32. "When the aircraft was approaching Runway 32, the [copilot] notified that they were ready for takeoff at full length Runway 14," the report said. The airport does not have ground radar, and the controller, who could not see the aircraft, cleared the crew for takeoff from Runway 14. The copilot acknowledged the clearance, and the commander performed a rolling takeoff from Runway 32.

The airport does not have ground radar, and the controller, who could not see the aircraft, cleared the crew for takeoff.

The crew was not aware of the error until the controller filed a report on the incident the next day. The cockpit voice recording by then had been overwritten, which hindered investigators' efforts to determine what caused the incident. The report said that the commander likely was focused on departing from Runway 32 and on maneuvering the aircraft on slippery taxiways and in low visibility. The copilot likely believed that the commander had accepted the controller's offer to depart from Runway 14 and became so busy in communicating with the controller and with copying route clearances that he did not notice that the aircraft was being taxied toward Runway 32 and "did not note the '180-degree error' on the compasses" when the commander began the rolling takeoff on Runway 32, the report said.

Although the cause of the incident could not be determined conclusively, "it has been established [that the crew deviated from] the part of CRM relating to communication and cooperation," the report said.

Drifting Fog Blankets a Flare

Airbus A340-313. Minor damage. No injuries.

The A340 was en route from London to Nairobi, Kenya, with 108 passengers and 14 crewmembers the morning of April 27, 2008. Before beginning the descent from cruise altitude, the flight crew obtained an ATIS report indicating that surface winds were from 040 degrees at 3 kt, visibility was 7 km (4 mi), the ceiling was broken at 1,600 ft, and both temperature and dew point were 15° C (59° F).

However, the aircraft operator's charts for Nairobi noted that "the weather can include morning fog … the ATIS has been reported as unreliable, and so crews should note that conditions may not be as they expect."

Before handing off the flight to the airport traffic controller, the approach controller told the A340 pilots that the crew of a preceding aircraft had reported that landing visibility was 3,000 m (nearly 2 mi) and the cloud base was at 300 ft.

Before clearing the crew to land on Runway 06, the airport traffic controller said, "The visibility reported as 3,000 meters. Land at your own discretion. Wind 050 at 5 kt."

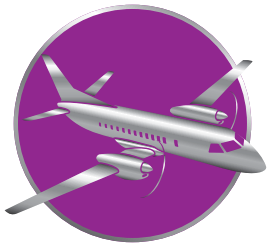
The first officer, the pilot flying, conducted the approach with the autopilots and autothrottles engaged. "At the decision height of 200 ft, both pilots [said that they] had more than the minimum visual reference required and could see 'all the approach lights and a good section of runway lights,'" the AAIB report said.

The first officer disengaged the autopilots and began to flare the A340 between 75 ft and 50 ft radio altitude. "The aircraft floated for a few seconds before it entered an area of fog," the report said. Both pilots lost sight of the runway. The first officer applied left rudder, apparently inadvertently, and the aircraft drifted left. "The commander became aware of the left runway edge lights moving rapidly closer to him [and] called, 'Go around,'" the report said.

The first officer immediately moved the thrust levers fully forward, but the A340 touched down on the main landing gear and veered off the left side of the runway. "The left main landing gear ran off the paved runway for a distance of 180 m [591 ft]" before the aircraft became airborne, the report said.

The crew diverted the flight to Mombasa, where VMC prevailed, and landed the aircraft without further incident. Examination revealed scratches and abrasions on the lower left fuselage, and minor damage to the left aft wheel on the left main landing gear.

TURBOPROPS



Misrigging Causes Wheel to Jam

Swearingen Metro II. Substantial damage. No injuries.

The Metro was inbound to Winnipeg, Manitoba, Canada, with eight passengers and two pilots the afternoon of March 3, 2009. Surface winds were from the south at 20 kt, gusting to 30 kt, and visibility was 15 mi (24 km) with drifting snow.

When the flight crew attempted to extend the landing gear on final approach, the right main landing gear did not extend fully. "The

crew carried out a missed approach, declared an emergency and entered a holding pattern to attempt gear extension," said the report by the Transportation Safety Board of Canada (TSB).

The crew performed emergency gear-extension procedures, but the gear-position indicators showed that the right main gear remained in transit. A visual check from the cabin indicated that the inboard right tire apparently was hung up in the wheel well and that the gear doors were partially open.

After consulting with company maintenance personnel, the crew performed a touch-and-go landing on the left main landing gear in an attempt to jar the right main gear free. However, the attempt was unsuccessful.

With minimum fuel remaining, "the crew elected to conduct a gear-up landing into the wind on Runway 18 with aircraft rescue and fire fighting personnel standing by," the report said. "Over the threshold of Runway 18, prior to touchdown, the crew shut down both engines and feathered both propellers. The aircraft came to a gradual stop on its belly on the centerline."

No one was injured during the landing or the evacuation. Examination of the Metro revealed damage to the propellers, flaps and aft fuselage.

Investigators determined that the interference between the inboard right tire and inboard gear door was caused by a combination of factors, including misrigging of the gear door and a retreaded tire that "grew" about 1/2 in (1 cm) beyond new-tire limits after it was installed 16 days before the accident.

Spatial Disorientation on Night Takeoff

Beech King Air 200C. Destroyed. One fatality, four serious injuries, one minor injury.

Spatial disorientation amplified by the pilot's consumption of alcohol and the absence of a second pilot aboard the King Air were among the factors that likely were involved in the aircraft's descent into the sea during a departure from North Caicos Airport in the Turks and Caicos Islands the night of Feb. 6, 2007, according to a report issued by AAIB in April.

The pilot, who had logged 394 of his 8,500 flight hours in type, flew part time for the company that owned the aircraft. The intended destination of the accident flight was Grand Turk. "Weather conditions at the time were good, but it was after nightfall," the report said. "The moon had not risen, and there was little cultural lighting in the area."

The King Air entered an 'excessive' right bank over water and descended in a right turn.

The King Air turned right, toward the intended initial course, soon after taking off from the coastal airport but then entered an "excessive" right bank over water and descended in a right turn. The pilot apparently had nearly leveled the wings and had begun to pull out of the dive when the aircraft struck a shallow lagoon "with only a moderate rate of descent but at relatively high forward speed," the report said.

The pilot was killed. "A postmortem toxicological examination showed that the pilot had a level of blood alcohol [0.03 percent] which, although below the prescribed limit, was significant in terms of piloting an aircraft and would have made him more prone to disorientation," the report said.

Noting that local regulations required two pilots for a night public transport flight under instrument flight rules, the report said, "The presence of a second pilot would have provided a significant measure of protection against the effects of the flying pilot becoming disoriented."

Towplane Hits Chute on Low Pass

De Havilland Twin Otter. No damage. One serious injury.

The pilot said that after 20 skydivers jumped from the airplane, he descended and flew a 45-degree entry to the downwind sector of the landing pattern at Orange County (Virginia, U.S.) Airport the evening of June 13, 2009. He said that the "windshield began fogging up" and he decided to make a 360-degree right turn while he wiped the windshield with a rag. The pilot said that the Twin Otter was at 2,000 ft when it struck a descending skydiver's parachute.

However, the skydivers said that the pilot was conducting a low pass about 30 ft above

ground level when the airplane's propeller struck the parachute. The skydiver fell 20 ft and was seriously injured when he struck the ground, the NTSB report said. The Twin Otter was landed without further incident.

The report said that the probable causes of the accident were "the pilot's improper decision to perform a low-level maneuver over a populated skydive landing area and his inadequate visual lookout."

PISTON AIRPLANES

Engine Fire Erupts on Rotation

Cessna 421B. Destroyed. One fatality.

Employees of a fixed-base operator at Fort Lauderdale (Florida, U.S.) Executive Airport saw the 80-year-old pilot "rather haphazardly" pouring oil into the 421's right engine before starting both engines and running them at mid-range power for about 20 minutes the morning of April 17, 2009.

The pilot then taxied the airplane to Runway 08 for departure. Witnesses saw flames and smoke emerge from the right engine shortly after rotation. The pilot radioed the airport traffic controller, "I'm having some trouble here. I'm going to have to come around and land." He did not secure the right engine or feather the propeller, as required by the 421's "In-Flight Wing or Engine Fire" checklist. The airplane banked right at low altitude and descended into a residential area, striking a house. No one on the ground was hurt.

The NTSB report said that the probable causes of the accident were "the pilot's failure to maintain aircraft control and secure the right engine during an emergency return to the airport." The cause of the engine fire could not be determined conclusively because of the severe impact and fire damage. The report noted that an exhaust leak was found at the no. 4 cylinder and that the fuel line leading to that cylinder was broken. However, investigators were unable to determine whether the fuel line broke before or during the crash.

Stall Over an Outdoor Gathering

Beech A55 Baron. Destroyed. Five fatalities.

Witnesses saw the Baron make two or three low passes over an outdoor gathering near Minden, Nevada, U.S., the afternoon of May 9, 2009. "On the final pass, the airplane was slightly above the tops of the local houses, between 100 and 300 ft above ground level," the NTSB report said. "Recovered GPS [global positioning system] data indicated that the airplane was traveling … at 120 kt groundspeed."

The Baron then entered a steep climbing left turn with nearly 90 degrees of bank. Witnesses said that the airplane appeared to decelerate at the top of the climbing turn and then descend in a steep nose-down attitude into an open field. "The witnesses noted that the engines could be heard 'running perfectly' throughout the maneuver," the report said.

Ditching Follows Fuel Exhaustion

Cessna 310R. Substantial damage. One serious injury, three minor injuries, two uninjured.

The pilot had conducted a charter flight with five passengers from Marco Island, Florida, U.S., to Key West, Florida, the morning of June 26, 2008. He told investigators that he did not refuel the airplane or visually check the fuel tanks before departing from Key West that afternoon for the return flight to Marco Island. "Rather, he relied on gauge readings and his fuel calculations," the NTSB report said. "He thought he had an adequate fuel supply for the flight."

The pilot entered the fuel quantity shown on the 310's gauges — 280 lb (127 kg) — on the weight-and-balance form he prepared before departure. However, investigators determined from refueling records that the airplane actually had only 119 lb (54 kg) of fuel in its tanks when it departed from Key West. "Historical fuel records associated with the accident airplane revealed the average fuel burn was approximately 35.09 gallons [211 lb (96 kg)] per hour," the report said.

After takeoff, the pilot initially climbed to 3,000 ft but shortly thereafter descended to

2,500 ft and maintained that altitude until nearing Marco Island. The report did not specify the power setting used for cruise but noted that the fuel-air mixture controls remained in the "full rich" position.

The 310 was about 15 nm (28 km) from the destination and at 1,500 ft when the right engine lost power due to fuel exhaustion. The pilot was attempting to restart the right engine when the left engine also lost power. He announced on the Marco Island common traffic advisory frequency that he was ditching the airplane and required assistance. His call was relayed to a police aviation unit, which dispatched a rescue helicopter.

The pilot, who had logged 200 of his 18,000 hours in type, feathered the right propeller but was unable to feather the left propeller. He extended full flaps but left the landing gear retracted. "He slowed to 93 kt, and just before ditching he placed his arm in front of the 10-year-old passenger seated in the copilot's seat," the report said. "The airplane first contacted the water with the curved portion of the bottom of the fuselage and lunged forward, then rebounded." The ditching occurred about 34 minutes after the departure from Key West.

All of the occupants exited through the cabin door and stayed on the right wing momentarily until the 310 began to sink. One passenger had not been able to find a life vest and clung to two other passengers until the police helicopter and a boat alerted by the helicopter crew arrived about 24 minutes after the ditching.

The pilot told investigators that just before ditching the 310, he noticed that the left and right fuel gauges indicated 70 and 100 lb (32 and 45 kg), respectively.

HELICOPTERS

Fogged Windshield Blocks Pilot's Vision

Eurocopter EC 120B. Substantial damage.
One fatality, one serious injury.

The pilot did not receive a preflight weather briefing and encountered heavy rain and low ceilings en route from Lac des Neiges, Quebec, Canada, to Québec the morning of June 19, 2008. He turned back toward a potential landing site on the heavily wooded shoreline of Lac á l'Épaule, 28 nm (52 km) from the destination.

"While overflying the lake at low altitude to verify the chosen landing spot, the pilot turned on the demist hot air to clear the front windshield of condensation," the TSB report said. "The windshield immediately misted up; the helicopter lost altitude and struck the surface of the water. The pilot and passenger sustained minor injuries and evacuated the aircraft successfully."

The helicopter sank about 500 ft (152 m) from shore. Occupants of a small boat assisted the pilot and passenger to shore. Both were transported to a hospital, where the passenger subsequently died of cardiac arrhythmia from exposure to the cold water and to intense stress, the report said.

Tail Rotor Effectiveness Lost

Robinson R44. Destroyed. Two serious injuries, two minor injuries.

The passengers were filming and photographing a residential development site about 10 km (5 nm) east of Cairns (Queensland, Australia) airport the morning of June 18, 2008, when the helicopter, which was being maneuvered sideways to the left about 200 ft above the ground and facing rising terrain, suddenly yawed right, began to rotate rapidly, descended into trees and struck the ground. The pilot and front-seat passenger were seriously injured.

The chief pilot of the aerial-photography company told investigators that company pilots had been instructed to conduct filming operations no lower than 500 ft and to maintain 20 to 30 kt airspeed to ensure directional control.

"This accident highlighted the risk of loss of tail rotor effectiveness associated with the conduct of aerial filming/photography and other similar flights involving high power, low forward airspeed and the action of adverse airflow on a helicopter," said the report by the Australian Transport Safety Bureau.

Preliminary Reports, April 2010

Date	Location	Aircraft Type	Aircraft Damage	Injuries
April 1	Huatulco, Mexico	Learjet 25D-XR	destroyed	6 none
The Learjet was destroyed by fire after a gear-up landing.				
April 1	Wlotzkasbaken, Namibia	Cessna 210	destroyed	1 fatal
The 210 broke up in flight during a charter flight from Twyfelfontein to Swakopmund.				
April 2	Cairo, Egypt	Airbus A330-200	substantial	207 none
The flight crew followed a taxi route that did not provide adequate clearance for large aircraft. The A330's wings were damaged when they struck light poles.				
April 2	Princeton, Kentucky, U.S.	Mitsubishi MU-2B	substantial	1 minor
The MU-2 veered off the runway and struck a fence and a ditch after a tire burst on landing.				
April 3	Runnells, Iowa, U.S.	Embraer 170	none	1 serious, 29 none
The Embraer encountered turbulence shortly after the captain asked the flight attendants to be seated. One flight attendant, who had not yet fastened her seat belt, was thrown from her seat and sustained a hip fracture and head contusion.				
April 6	Center, North Dakota, U.S.	Beech B55 Baron	substantial	1 serious, 1 none
The Baron struck several mallards during a training flight at 4,200 ft. One of the ducks penetrated the windshield, injuring the flight instructor.				
April 7	Mexico City, Mexico	Boeing 737-300	none	1 fatal, 1 serious
One mechanic was killed, another was seriously injured when a hydraulic jack supporting the nose landing gear failed.				
April 7	Ponce, Puerto Rico	Cessna 404	substantial	3 none
The pilot feathered the propeller after the engine failed on takeoff, but the 404 continued to descend. The pilot landed the airplane straight ahead in a grassy area.				
April 9	Los Angeles, California, U.S.	Boeing 737-300	substantial	109 none
A ground worker did not turn off the motor or engage the emergency brake after parking a baggage tug that had inoperative "deadman switches." The tug rolled into a hydrant fuel cart and then into the left engine and fuselage of the 737, which was being pushed back from the gate.				
April 10	Smolensk, Russia	Tupolev 154M	destroyed	96 fatal
The Tu-154 crashed about 1,000 m (3,281 ft) short of the runway during a nonprecision instrument approach in heavy fog.				
April 12	Anjozorobe, Madagascar	Aerospatiale SA318C	destroyed	3 fatal
The Alouette helicopter crashed during a charter flight from Ivato to Antalaha.				
April 13	Manokwari, Indonesia	Boeing 737-300	destroyed	10 serious, 34 minor, 66 none
The 737 overran the wet runway on landing, struck trees while traveling down a steep slope and stopped in a river bed.				
April 13	Monterrey, Mexico	Airbus A300 B4-200F	destroyed	6 fatal
The cargo airplane reportedly stalled on approach in instrument meteorological conditions and crashed on a road. Among those killed was a motor vehicle driver.				
April 21	near Angeles City, Philippines	Antonov 12BP	destroyed	3 fatal, 3 serious
The flight crew landed the An-12 in rice paddies after an electrical fire erupted during a cargo flight from Cebu to Angeles City.				
April 21	Newfane, Vermont, U.S.	MD Helicopters MD500E	substantial	1 serious, 1 minor
The crew was installing equipment on a power line structure when the pulling rope snapped and wrapped around the main rotor mast. The helicopter descended out of control.				
April 24	Riyadh, Saudi Arabia	Boeing 737-300	minor	9 none
The flight crew returned to the airport and landed the 737 without further incident after a partial loss of power from both engines occurred during takeoff.				
April 27	Arlit, Niger	Beech King Air 200	destroyed	10 none
The landing gear collapsed when the King Air touched down short of the runway during a night nonprecision instrument approach with visibility reduced by blowing sand.				
April 27	Hazard, Kentucky, U.S.	Beech 58 Baron	destroyed	2 fatal
The Baron crashed under unknown circumstances during a private flight from Frederick, Maryland, to Olive Branch, Mississippi.				

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