

Landing on the Hudson

Ditching the A320 on the river was the only viable option after a bird strike.

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

Both Engines Lost Power

Airbus A320-214. Substantial damage. Five serious injuries, 95 minor injuries.

As the airplane climbed out from New York's La Guardia Airport the afternoon of Jan. 15, 2009, the captain briefly paused from flight deck tasks to comment, "What a view of the Hudson today." After a bird strike moments later, he realized that the airplane likely would end up in the river.

The A320 had encountered a flock of Canada geese 2,818 ft above ground level (AGL), and each engine had ingested at least two of the big birds, said the report by the U.S. National Transportation Safety Board (NTSB). Both engines had been operating with fan speeds of 82 percent. After the bird strike, left-engine fan speed decreased to 35 percent and right-engine fan speed decreased to 15 percent. The flight crew immediately activated the engine ignition systems and the auxiliary power unit.

The captain took control of the airplane and also handled radio communications while

the first officer began conducting the quick reference handbook checklist for a dual engine failure. The departure controller asked the captain if he wanted to return to La Guardia or try to reach New Jersey's Teterboro Airport. The captain later told investigators that he decided the airplane was "too far away, too low and too slow" to reach either airport, and that the only viable option, the river, was "long enough, smooth enough and wide enough." Thus, he told the controller, "We're going to be in the Hudson." He made a public address announcement, instructing the passengers and cabin crew to "brace for impact."

The first officer initially attempted to relight the left engine, which was producing slightly more power than the right engine. The report noted that the checklist was designed for a dual engine failure that occurs above 20,000 ft. Thus, the A320 crew had time only to conduct a portion of the checklist and did not reach the final items, which pertain to a ditching. Also, the pilots did not know that because of core damage, neither engine could be relighted. Each engine core had ingested a goose weighing 8 lb (4 kg), which is more than three times the weight that current certification standards require an engine to withstand during bird-ingestion tests.

About three minutes after the bird strike, the first officer told the captain, "Two hundred fifty feet in the air. Hundred and seventy knots. ...

Try the other one?” The captain agreed that he should attempt to relight the right engine. The first officer then advised that airspeed was 150 kt and that he had extended the flaps to position two. “You want more?”

“No, let’s stay at two,” the captain said. He told investigators that he chose the flaps 2 setting because he wanted to have enough energy to flare the airplane and reduce the descent rate sufficiently before touchdown; flaps 3 would have increased drag but would not have lowered the stall speed significantly.

As the airplane neared the river, the captain asked, “You got any ideas?”

“Actually [I do] not,” the first officer said.

The report noted that the A320 was certified for ditching under standards that assumed in part that engine power is available and that the descent rate is 3.5 fps. Performance calculations indicated that the actual descent rate was 12.5 fps. Recorded flight data showed that calibrated airspeed was 125 kt — nearly 20 kt below the airspeed specified in the ditching portion of the dual engine failure checklist — when the airplane contacted the calm water with a pitch angle of 9.5 degrees and a right roll angle of 0.4 degrees. Damage to the lower fuselage skin allowed near-freezing water to enter the airplane.

The 150 passengers and five crewmembers evacuated the airplane through the forward and overwing exits (*ASW*, 7/10, p. 24). NTSB attributed the survival of all aboard to the performance and professionalism of the flight crew and cabin crew, the ready availability and rapid response of rescuers, and “the fortuitous use” for the domestic flight of an airplane equipped with slide/rafts for extended overwater flight.

Post-accident tests conducted in a flight simulator showed that even if the airplane had been turned toward La Guardia or Teterboro immediately after the bird strike, it would not have reached either airport.

Based on the investigation, NTSB issued 33 recommendations, including requirements for aircraft manufacturers to develop checklists for dual engine failures at low altitude and for

aircraft operators to provide pilot training on the procedures.

Control Input Causes Hard Landing

Boeing 717-200. Substantial damage. No injuries.

Visual meteorological conditions (VMC) with intermittent rain showers prevailed at Australia’s Darwin Airport the night of Feb. 7, 2008, and the 717 flight crew was cleared to conduct a visual approach to Runway 29. Per company procedure, the crew used the instrument landing system (ILS) for guidance during the approach, said the report by the Australian Transport Safety Bureau (ATSB).

The crew spotted the runway when the aircraft was at 3,100 ft and about 9 nm (17 km) from the threshold. The copilot, the pilot flying, used the autopilot’s vertical speed mode to initiate a descent to capture the ILS glideslope. The report said that the descent rate increased to over 1,000 fpm, reaching a maximum of 1,600 fpm, while airspeed varied between 209 kt and 211 kt.

The air traffic controller told the crew that the pilot of a preceding aircraft had reported a rain shower on the approach and that the runway was wet.

The 717 was at 1,893 ft and descending at 1,900 fpm when the copilot disengaged the autopilot while keeping the autothrottle engaged. The aircraft was in landing configuration but still slightly above the glideslope at 1,379 ft and descending at about 700 fpm when it crossed the ILS outer marker. The descent rate increased again and was 1,840 fpm when the aircraft intercepted the glideslope at 1,159 ft; airspeed was 153 kt.

“The aircraft was then flown slightly below the glideslope,” the report said. The copilot hand flew the 717 using the ILS, runway lighting and the precision approach path indicator (PAPI) as references. The pilot-in-command (PIC) activated the windshield wipers when a rain shower was encountered at 700 ft. “They could see the runway lighting and the PAPI, and continued the approach,” the report said.

Airspeed was on target at 136 kt and descent rate was about 700 fpm until the aircraft

Damage to the lower fuselage skin allowed near-freezing water to enter the airplane.

descended through a radio altitude of 213 ft 15 seconds before touchdown. The descent rate increased to 1,168 fpm, and the PIC called, “Sink rate.”

Company policy for stabilized approaches requires a go-around if descent rate exceeds 1,000 fpm below 400 ft in VMC. “The PIC reported that he allowed the approach to continue because the high rate of descent was considered to be momentary and the copilot had taken corrective action” by increasing the pitch attitude, the report said.

The autothrottle reduced thrust to idle below a radio altitude of 30 ft, and the copilot made an abrupt control input to increase the pitch attitude. “Had the flight crew overridden the autothrottle and increased thrust in response to the high rate of descent ... the severity of the hard landing may have been reduced,” the report said. Descent rate was 1,072 fpm when the aircraft touched down on the main landing gear with a vertical acceleration of 3.6 g.

The PIC assumed control and taxied the 717 to the terminal. The crew reported the hard landing to company engineers. “The damage to the aircraft included several creases to the fuselage skin above the wing area and to the underside of the fuselage behind the wing,” the report said. “Several longerons in the rear cargo area were also damaged.” None of the 88 passengers and six crewmembers was injured.

Aquaplaning Ground-Loop Overrun

Embraer 145. Minor damage. No injuries.

Inbound from Zurich, Switzerland, with 16 passengers and three crewmembers the afternoon of July 18, 2005, the aircraft was nearing the destination, Nuremberg, Germany, when the crew listened to the automatic terminal information service (ATIS) broadcast, which indicated in part that surface winds were from 290 degrees at 28 kt, gusting to 40 kt.

The crew was cleared to conduct the ILS approach to Nuremberg’s Runway 28, which is 2,700 m (8,859 ft) long and 45 m (148 ft) wide. “In view of the wind conditions, they increased the approach speed (V_{APP}) commensurately to

148 kt,” or 20 kt above the reference landing speed (V_{REF}), said the report issued in July 2010 by the German Federal Bureau of Aircraft Accident Investigation.

The aircraft encountered heavy rain and moderate turbulence during the approach. “It was apparently quite difficult for the crew to keep the aircraft on the three-degree glideslope,” the report said. “There was deviation from the glideslope both above and below.” However, conditions improved as the Embraer neared the runway. The approach controller told the crew that the surface wind was from 360 degrees at 14 kt.

The aerodrome controller told the crew that a thunderstorm had passed over the airport and had moved east. The controller said that the runway was wet but that there was no standing water on it. Investigators determined, however, that the runway actually was covered by 3 mm (about 1/8 in) of standing water, with braking action medium to poor, and estimated that the Embraer required a landing distance of 2,312 m (7,585 ft) under the existing conditions. The estimate also assumed that “the crew flew the aircraft in accordance with all the required parameters,” the report said.

However, the aircraft crossed 54 ft over the runway threshold at 150 kt and touched down 981 m (3,219 ft) from the threshold at 128 kt, in what was described by the report as a “soft landing.” The ground spoilers deployed automatically. The aircraft was not equipped with thrust reversers, and “the crew reported that braking action failed to bring the aircraft to a stop before the end of the runway,” the report said.

Groundspeed was about 52 kt when the PIC steered left, toward a taxiway near the end of the runway. “The aircraft ground-looped about 200 degrees to the left, leaving the runway tail-first and coming to rest with the main landing gear units on the grass,” the report said.

Investigators found patches of melted rubber on the main landing gear tires — a sign of reverted-rubber aquaplaning (hydroplaning), which occurs when the wheels lock and frictional heating forms a “steam cushion” between the tires and the runway, the report said.

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Surprised by Severe Turbulence

Airbus A330-300. Minor damage. Seven minor injuries.

The A330 was more than two hours into a scheduled flight with 206 passengers and 13 crewmembers from Hong Kong to Perth, Western Australia, the night of June 22, 2009, when it encountered severe turbulence. Six passengers and a cabin crewmember, the only people who were not seated with their seat belts fastened, sustained minor injuries, the ATSB report said, noting that the seat belt sign was not on.

The PIC consulted with medical personnel aboard the aircraft and at the airline's dispatch support company, and decided to continue the flight. The A330 was landed without further incident at Perth about five hours later. The injured people were treated at a local hospital and discharged the same day. Examination of the aircraft revealed minor internal damage.

The aircraft was at Flight Level (FL) 380 (approximately 38,000 ft) when the turbulence was encountered near Kota Kinabalu, Malaysia. "The cloud associated with the convective activity consisted of ice crystals, a form of water that has minimal detectability by aircraft weather radar," the report said. "Consequently, the convective activity itself was not detectable by [the A330's] radar. As the event occurred at night with no moon, there was little opportunity for the crew to see the weather ... and select the seat belt sign on prior to the onset of the turbulence."

Communications Breakdown

Bombardier CRJ200, CRJ700. Substantial damage. No injuries.

Because there was lightning in the vicinity of North Carolina's Charlotte-Douglas International Airport the afternoon of June 28, 2008, ground crewmembers were not using headsets for communication. A CRJ200 had been pushed back from a gate, and its flight crew was awaiting taxi clearance when another ground crew began to push a CRJ700, operated by the same airline, from another gate.

"A wing walker was stationed at the [CRJ700's] left wing, in plain sight of the tug driver," the NTSB report said. "The wing walker was aware of the CRJ200, and when the

pushback commenced he believed that the tug driver was only going to push the airplane about 10 ft [3 m], just enough to trigger the aircraft communication addressing and reporting system (ACARS) 'out' time."

When the tug driver pushed the CRJ700 beyond 10 ft, the wing walker signaled the driver to stop. The other ground crewmembers saw the wing walker signaling the driver to stop, and one of them ran toward the driver, trying to get his attention. "He stated that the tug driver was focused on the cockpit of the airplane and was directing the starting of the airplane's no. 2 engine," the report said.

The wing walker "continued to attempt to alert the tug driver; however, the tug driver did not observe the wing walker before the tail section of the CRJ700 struck the tail section of the CRJ200," the report said. "The empennages of both airplanes were substantially damaged." There were no injuries to the 48 people aboard the CRJ200 or to the 64 people aboard the CRJ700.

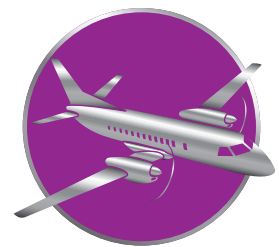
TURBOPROPS

Prop Control Linkage Disconnects

CASA 212. Substantial damage. Two minor injuries.

The flight crew was conducting a cargo flight on Nov. 1, 2008, from Bethel, Alaska, U.S., to Toksook Bay, where night VMC prevailed. When the first officer, the pilot flying, moved the power levers forward while turning from base to final at about 600 ft AGL, the right engine did not respond, and the airplane yawed right.

The captain took control and moved both power levers full forward to initiate a go-around. "The airplane's yaw to the right intensified, and it began to descend rapidly," the NTSB report said. "[The captain] said that he applied full left aileron and rudder to correct the yaw but was unable to maintain altitude. He observed that the left engine torque meter was indicating 100 percent torque and the right engine torque meter was indicating between zero and 10 percent torque."



The captain said that he was telling the first officer to feather the right propeller when “the stall warning horn sounded, the stall warning light illuminated, and I used both hands to pitch the aircraft forward to avoid a stall.” The 212 then struck the tundra.

Examination of the airplane revealed that the mechanical linkage connecting the right power lever to the right propeller pitch control shaft had disconnected, preventing the pilots from controlling thrust. Company maintenance personnel had disconnected and reconnected the linkage when the right Honeywell TPE331 engine was removed for repairs and a leased engine was installed about two months — and 237 flight hours — before the accident. “Since the bolt that connects the propeller pitch control linkage to the splined shaft was not found, it is unknown if the bolt failed or if maintenance personnel failed to properly tighten/torque the bolt at installation,” the report said.

CFIT Near a Mountain Gap

De Havilland Twin Otter. Destroyed. Fifteen fatalities.

The flight crew was scheduled to conduct two round-trip flights under visual flight rules (VFR) between Jayapura, Papua, Indonesia, and Oksibil the morning of Aug. 2, 2009. Returning to Jayapura on the first trip, the PIC radioed company ground crew to ask for a quick turnaround because of deteriorating weather conditions that might result in clouds blocking a gap in the mountains along the route, said the report by the Indonesian National Transport Safety Committee.

The Twin Otter landed at Jayapura at 0935 local time and departed with 12 passengers, a company engineer and the two pilots at 1015 for the second flight to Oksibil. Estimated flight time was 50 minutes, and the aircraft had sufficient fuel for 2 hours and 50 minutes of flight.

About 35 minutes after takeoff, the Twin Otter crew discussed weather conditions with the crew of an Indonesian air force Lockheed C130 that was en route from Oksibil to Jayapura. The C130 crew said that the cloud base at Oksibil was low and the cloud tops over the gap were at

12,500 ft. “There were no other reports of radio transmissions from the Twin Otter, and it did not arrive at Oksibil,” the report said.

A search was launched about the time at which the Twin Otter’s fuel supply would have been exhausted, and the wreckage was found two days later about 6 nm (11 km) from Oksibil. The report said that the aircraft was in a climbing left turn when it struck a mountain at 9,300 ft; the emergency locator transmitter was unserviceable and did not transmit a signal.

“The aircraft had been flown into cloud while tracking toward the gap,” the report said. “The accident was consistent with controlled flight into terrain [CFIT] while maneuvering in the vicinity of the gap. The location of the accident was to the northeast of the route normally flown through the gap to Oksibil.”

Momentary Incapacitation

Beech King Air B200T. No damage. No injuries.

The pilot and a crewman were conducting an infrared fire-mapping reconnaissance flight in southeastern New South Wales, Australia, the morning of Aug. 31, 2009. The pilot was flying the King Air with the global positioning system (GPS) coupled to the autopilot.

While descending from FL 200 to FL 150 to return to Bankstown, air traffic control (ATC) made several radio transmissions that the pilot did not acknowledge, the ATSB report said. The crewman, who was seated in the cabin and completing tasks associated with the reconnaissance, queried the pilot on the intercom but received no reply.

“The crewman turned toward the pilot and observed that the pilot was suffering what appeared to be a seizure,” the report said. “Shortly thereafter, the pilot slumped forward, unconscious. The crewman moved the pilot back from the aircraft’s flight controls and checked the autopilot and instruments to ensure that the aircraft was under control and pressurized.”

The crewman was not a pilot, but he had significant experience with airborne fire-mapping operations. He declared an emergency, telling ATC that the pilot was unconscious. “The aircraft continued to track on autopilot via

‘The pilot slumped forward, unconscious.’

preloaded GPS waypoints to overhead Bankstown at FL 150 while the crewman attended to the pilot and sought advice from the aircraft operator and ATC.”

The pilot slowly regained consciousness but initially was unresponsive and appeared unaware of his surroundings. After about five minutes, however, the pilot began to respond to ATC transmissions and fly the aircraft. He landed the King Air at Bankstown without further incident. He then was taken to a hospital for observation and tests, and was released that evening.

“It was later determined that the pilot had a previously undiscovered medical condition that was the likely cause of the in-flight seizure,” the report said. The pilot told investigators that he had experienced a brief but very intense headache on the way to work that morning.



PISTON AIRPLANES

Ceiling Falls on Air Tanker

Lockheed P2V-7 Neptune. Destroyed. Three fatalities.

Before departing from an air tanker base in Missoula, Montana, U.S., for a VFR positioning flight to another wildfire-fighting base in Alamogordo, New Mexico, the morning of April 25, 2009, the first officer received a weather briefing that included areas of instrument meteorological conditions (IMC) and mountain obscuration along the route.

The first officer, the pilot flying, selected an initial cruise altitude of 11,500 ft but subsequently conducted a series of descents to maintain VFR conditions below the clouds. About two hours into the flight, the airplane was being flown southeast over Utah’s Great Salt Lake at 6,000 ft — about 1,800 ft above the surface. The first officer conducted a further descent to 5,800 ft after crossing the shoreline.

He asked the captain if they were high enough to clear the upcoming terrain. “The captain did not respond, and the first officer did not challenge the captain about the issue,” the NTSB report said. About 10 minutes later, and shortly after inadvertently encountering IMC near Stockton, Utah, the P2V struck a ridge about

240 ft below the summit. Witnesses said that the ceiling in the area was about 200 ft and visibility was 1/4 mile (400 m) or less in rain and fog.

Belt Buckle Prompts Shutdown

Beech 58 Baron. Destroyed. No injuries.

Shortly after departing from a private airport in Thabazimbi, South Africa, the afternoon of Jan. 17, 2009, the pilot and the five passengers heard a loud banging noise coming from the right side of the aircraft. “The pilot observed the engine indication parameters, and they were normal,” said the report by the South African Civil Aviation Authority. However, as the aircraft continued to climb, the noise became louder. “The pilot then switched off the right-hand engine [and feathered the propeller] because he thought it was problematic,” the report said.

As the pilot turned back to the airport, he told the passengers to ensure that their restraints were fastened. “One of the passengers, seated on the copilot’s seat, realized that he had not been strapped in [and that] his seat belt and buckle were hanging out of the aircraft and were the source of the noise,” the report said.

The pilot attempted unsuccessfully to restart the right engine. “The aircraft started yawing to the right ... and became uncontrollable,” the report said. “The aircraft was turning toward the dead engine. The pilot looked for a safe landing area but ran out of time, as the aircraft was descending very quickly.” The Baron was destroyed when it struck terrain, but no one aboard was hurt.

‘Should Not Have Been Flying’

Cessna T310R. Destroyed. One fatality.

A witness saw the 310 fly low over her house near Latrobe, Pennsylvania, U.S., the morning of Aug. 31, 2008. She said that the airplane appeared to be descending very quickly “with the left wing up and the right wing down,” and the engines sounded as if they were running at full power. She heard a thud after the airplane descended below the trees and saw a plume of smoke.

The NTSB report said that the 78-year-old pilot had lost control of the airplane after becoming incapacitated by a cardiovascular event during a local flight that originated at the Latrobe airport. The pilot did not have a current medical certificate. A coroner's report said that the pilot had been hospitalized recently for congestive heart failure and that the pilot's cardiologist "did not know the decedent was a pilot and was actively flying an airplane." The cardiologist told the coroner that the pilot "should not have been flying with his medical condition."



HELICOPTERS

Sun Glare, Illusion Cause CFIT

Bell 206B. Destroyed. One fatality.

While departing from a helibase in Carmacks, Yukon, Canada, the morning of Aug. 9, 2008, the pilot lifted the JetRanger into a low hover, facing away from the Yukon River and the rising sun, conducted a 180-degree pedal turn and then departed over the river. "Shortly thereafter, there was a loud impact and splash, and pieces of the wreckage drifted down the river," said the report by the Transportation Safety Board of Canada. The pilot, who had 23,000 flight hours, drowned.

The report said that the pilot's vision likely was obscured by the bright sunlight and glare from the surface of the water, and that he likely experienced somatogravic illusion when the forward acceleration caused him to believe that the helicopter was climbing rather than descending.

Control Lost in Hover

Kawasaki-Hughes 369D. Substantial damage. Two serious injuries, one minor injury.

The helicopter was heavily loaded but not overweight when it departed from Haast, New Zealand, the morning of Aug. 11, 2008, to transport three track-maintenance workers to the Maori Saddle. Because of tall trees, the destination could be approached only from the

northeast, and the pilot unknowingly conducted the approach with a tail wind of 11 kt to 21 kt, said the report by the New Zealand Transport Accident Investigation Commission.

"Nearing the landing site, the pilot brought the helicopter to an out-of-ground-effect hover, where it started an uncommanded right yaw," the report said. "The pilot attempted to correct the yaw, but the helicopter struck a tree and fell to the ground." The pilot and one passenger sustained serious injuries.

"The investigation determined that the uncommanded yaw and loss of control resulted from the approach being attempted under conditions that were noted in the flight manual to be conducive to a loss of tail rotor effectiveness," the report said.

No Weather Brief for VFR Flight

Bell 430. Destroyed. Four fatalities.

The flight crew did not receive a weather briefing before departing from Hyderabad, India, the morning of Aug. 3, 2008, for a 225-nm (417-km) charter flight to Raipur, with an en route refueling stop in Jagdalpur. Low visibilities and ceilings, and isolated, embedded thunderstorms were forecast for the route.

The crew had filed a VFR flight plan with a requested cruising altitude of 3,000 ft direct to Jagdalpur, but shortly after departure, the PIC told ATC that they were descending to 2,500 ft because of weather, said the report by the Indian Directorate General of Civil Aviation.

About 27 minutes later, the helicopter was about 60 nm (111 km) northeast of Hyderabad when ATC lost radio communication with the crew. A search was launched three hours after the flight's estimated time of arrival at Jagdalpur. The helicopter's emergency locator transmitter failed to activate. On Nov. 13, the wreckage was found on a hill about 140 nm (259 km) northeast of Hyderabad. The aircraft had struck the hill at 2,700 ft, about 80 ft below the top. Local villagers said that there had been heavy rain in the area when the crash occurred. ●

Preliminary Reports, June 2010				
Date	Location	Aircraft Type	Aircraft Damage	Injuries
June 1	near Cayos Arcas, Mexico	Bell 412EP	substantial	11 none
The pilot landed the float-equipped helicopter near a platform in the Gulf of Mexico after experiencing a tail rotor problem.				
June 2	Midlothian, Texas, U.S.	Bell 222UT	destroyed	2 fatal
Witnesses said that the tail boom and main rotor separated during a maintenance test flight.				
June 2	Spokane, Washington, U.S.	Robinson R22 Beta	destroyed	1 fatal
The solo student pilot was turning base when a main rotor blade apparently struck and severed the tail boom.				
June 7	Leeds, England	Cessna CitationJet	substantial	2 none
The airplane overran the runway during a takeoff rejected because of an engine fire.				
June 7	Edenton, North Carolina, U.S.	Beech 60 Duke	substantial	1 fatal, 1 serious
The pilot said that the Duke struck trees after the flight instructor retarded the left throttle on takeoff during an instrument proficiency check.				
June 10	Nazca, Peru	Cessna 208B	NA	9 NA
The Caravan did not return from a sightseeing flight and is believed to have been hijacked.				
June 10	near Port O'Connor, Texas, U.S.	Bell 206L-3	substantial	2 minor, 1 none
The LongRanger was ditched in the Gulf of Mexico after the tail rotor failed en route to an offshore platform.				
June 13	Felipe Carrillo Puerto, Mexico	Cessna 208B	destroyed	9 fatal
Visual meteorological conditions (VMC) prevailed when the Caravan crashed on takeoff.				
June 15	Bankstown, New South Wales, Australia	Piper Mojave	destroyed	2 fatal
The aircraft stalled and crashed while returning to the airport after an engine problem occurred on takeoff for an air ambulance flight.				
June 16	Ottawa, Ontario, Canada	Embraer 145LR	substantial	36 NA
The nose landing gear collapsed when the aircraft overran the wet runway on landing. Several injuries were reported.				
June 17	Ruidoso, New Mexico, U.S.	Cessna T310R	destroyed	5 fatal, 2 serious
VMC prevailed when the 310 entered a steep descent and struck terrain on final approach.				
June 18	Buenos Aires, Argentina	MBB BO-105CBS	destroyed	2 fatal
The helicopter was on an aerial photography flight when it crashed in a residential area.				
June 18	Chiclayo, Peru	Dassault Falcon 20	substantial	8 none
The pilots landed the Falcon on open ground after both engines lost power on takeoff.				
June 19	Yangadou, Republic of Congo	CASA 212-100	destroyed	11 fatal
The aircraft was on a charter flight from Cameroon when it struck a ridge near the destination (ASW, 6/10, p. 11).				
June 19	Plymouth, Massachusetts, U.S.	Cessna 401	destroyed	3 serious
The 401 struck trees and crashed after both engines lost power on final approach.				
June 21	Kinshasa, Democratic Republic of the Congo	McDonnell Douglas MD-82	substantial	101 none
The flight crew shut down the left engine after it ingested debris from a tire that burst on takeoff. The nose landing gear would not extend during the return to Kinshasa, and the MD-82 veered off the runway on landing.				
June 23	Québec City, Quebec, Canada	Beech King Air A100	destroyed	7 fatal
The King Air struck terrain shortly after one of the pilots reported an engine failure on takeoff.				
June 23	Puerto Barrios, Guatemala	Colemill Panther	destroyed	2 fatal
The modified Piper Chieftain stalled and crashed on takeoff after a touch-and-go landing.				
June 23	Kotelniki, Russia	Kamov 60	substantial	2 serious
The helicopter landed hard and rolled over after birds struck the fenestron on approach.				
June 26	Broomfield, Colorado, U.S.	Lockheed P2V-5 Neptune	substantial	2 none
The air tanker had brake problems on landing, overran the runway and struck a ditch.				
June 27	Dublin, Ireland	Boeing 737-800	none	1 serious
While exiting the 737, a passenger sustained leg injuries when the airstairs partially collapsed.				
June 30	Wiesbaden, Germany	Beech King Air 200	substantial	2 minor
An unspecified technical problem occurred during approach, and the flight crew conducted an emergency landing short of the runway.				
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.				