

# Runway Work Area Grazed on Takeoff

**Flight crew disregarded reduced available runway distance.**

BY MARK LACAGNINA

The following information provides an awareness of problems that might be avoided in the future. The information is based on final reports by official investigative authorities on aircraft accidents and incidents.

## JETS

### 'Impaired Performance' Cited

Boeing 737-800. Minor damage. No injuries.

The flight crew's "failure to take into account the length of the runway available for takeoff" caused a serious incident in which the 737 struck temporary lights and safety-barrier markings adjacent to a construction work area on a runway at Paris Charles de Gaulle Airport on Aug. 16, 2008, said a report issued in August by the French Bureau d'Enquêtes et d'Analyses (BEA).

The report said that factors contributing to the incident were inadequate procedures established by the operator for the use of the on-board performance tool to calculate takeoff performance parameters and the "impaired level of crew performance, specifically related to the pilots' fatigue."

The 737 was three hours late when it arrived in Paris at 2125 coordinated universal time (2325 local time). While taxiing to the gate, the captain requested that police board the airplane because of a conflict that had arisen between a flight attendant and a passenger who had smoked in a lavatory.

"During the stopover, the copilot programmed the FMS [flight management system]," the report said. "The captain handled the police

presence and asked the ground-handling-company agent to complete the weight-and-balance sheet."

Both the flight crew and the operator, an Egyptian charter airline, told BEA investigators that the copilot used the on-board performance tool, an electronic flight bag software program provided by Boeing, to calculate takeoff performance data, including airplane configuration, thrust setting and V-speeds. The captain then used the program to cross-check the copilot's calculations.

The pilots planned to take off on Runway 27L from the intersection of Taxiway Y11, which was the closest to their gate. The available takeoff distance on Runway 27L was reduced by about one-third by a construction area at the departure end of the runway. Taxiway Y11 was 600 m (1,969 ft) from the approach end, leaving 2,360 m (7,743 ft) of runway available for takeoff.

Investigators found that the flight crew did not include the restrictions to the available runway takeoff distance in their performance calculations, which also resulted in their use of a reduced thrust setting for takeoff.

"The pilots indicated ... that they had experienced difficulties in understanding the restrictions in force, whether listening to the ATIS [automatic terminal information service] or reading the Jeppesen charts and the NOTAM [notice to airmen]" information about the restrictions, the report said.

The pilots may have lacked the mental alertness required for the takeoff performance



**The 737 barely cleared a temporary blast fence adjacent to the construction area.**

calculations, the report said. “Time pressure, increased by the incident with a passenger that the captain had to handle during the turnaround, as well as the physiological strain caused by the flight schedule, had affected the pilots’ capacity to handle a delicate phase of the flight together.”

The report noted that the airline had not established specific procedures for using the on-board performance tool, relying on pilots to employ the procedures learned while training for their type ratings. “The operator did not make available to crews any operational backup for the use of this new tool, to lighten their workload,” the report said.

The airplane left the gate at 2245, and while taxiing, the crew was asked by the ground traffic controller whether they preferred to begin the takeoff from the intersection of Taxiway Y11 or from Taxiway Y12, which was closer to the approach threshold and from which 2,640 m (8,661 ft) of runway were available. The crew replied that they preferred to use Y11. The controller approved the request and told the crew that 2,360 m of runway were available for takeoff from that intersection.

The crew was cleared for takeoff as they approached the Y11 intersection. As the airplane reached rotation speed at 2257, both pilots heard a loud noise when the nose landing gear struck an object. The report said that after striking the lights and markers on rotation, the 737 barely cleared a temporary blast fence adjacent to the construction area.

None of the 192 people aboard was hurt, and damage to the airplane was minor. “The crew realized that they had struck objects on the ground,” the report said. “They carried out a systems and parameters review, then decided to continue the flight to the destination.” The flight continued to Egypt without further incident.

After landing, the airplane was found to have slight damage to an engine fairing and to the horizontal stabilizer, a detached support for a main landing gear electrical harness and a deep cut in a nose landing gear tire.

The crew did not report the incident to controllers at the Paris airport. There apparently

were no other departures on Runway 27L before debris was reported about two hours later by a flight crew that was cleared to cross the runway.

### Long Landing Leads to Overrun

Gulfstream IV. Minor damage. No injuries.

As the G-IV neared Teterboro (New Jersey, U.S.) Airport the afternoon of Oct. 1, 2010, the flight crew received the ATIS information, which included 2 mi (3,200 m) visibility in rain and mist, an 800-ft broken ceiling and winds from 360 degrees at 6 kt, gusting to 16 kt. Because of the wind conditions, the captain decided to add 10 kt to the landing reference speed ( $V_{REF}$ ), which resulted in a target approach speed of 146 kt, according to the report by the U.S. National Transportation Safety Board (NTSB).

The crew conducted the localizer approach to Runway 06, which was 6,013 ft (1,833 m) long and had a grooved asphalt surface. Airspeed was on target as the airplane descended through 1,000 ft, and the captain disengaged the autopilot.

“As the airplane descended through 700 ft, the copilot obtained a wind check from the tower controller, which indicated the wind was from 010 degrees at 15 kt, gusting to 25 kt,” the report said.

Airspeed decreased to 136 kt in turbulence as the approach continued. The captain disengaged the autothrottle and increased thrust to regain the target approach speed.

“The copilot made airspeed callouts throughout the approach, which included ‘ $V_{REF}$  plus 15’ as the airplane descended through 200 ft and ‘ $V_{REF}$  plus 15’ again as the airplane was 40 ft above the runway,” the report said.

Neither pilot called for a go-around. “The airplane descended into ground effect at 150 to 160 kt, floated and bounced before finally touching down with approximately 2,250 ft [686 m] of runway remaining,” the report said.

The captain applied wheel braking and activated the thrust reversers; the ground spoilers and anti-skid system engaged automatically. However, the G-IV overran the runway at 40–50

kt and came to a stop 100 ft (30 m) within the engineered material arresting system.

The seven passengers, the flight attendant and the pilots escaped injury. An inspector for the U.S. Federal Aviation Administration observed damage to the airplane's landing light and foreign object damage to both engines.

### Loose Coupling Causes Fire

Boeing 747-400. Substantial damage. 21 minor injuries.

The 747 was being taxied for takeoff from Mumbai (India) Airport the morning of Sept. 4, 2009, when a pilot in another company aircraft saw fuel gushing from the 747's left wing and radioed the company dispatcher. The dispatcher tried unsuccessfully to contact the 747 flight crew on the company radio frequency.

The fuel leak also was observed by an engineer, who removed his jacket and waved it to attract the crew's attention. The 747's cabin crewmember-in-charge saw him but, not understanding why he was signaling, ignored him, said the report by the Indian Directorate General of Civil Aviation.

Another witness, the operator of an airport ground vehicle, radioed the airport control tower. A controller informed the flight crew about the fuel leak and then told them to shut down the engines because a fire had erupted.

"The crew carried out the emergency shutdown [procedure] for all the engines and discharged the fire bottle for the no. 2 and no. 1 engines," the report said. The external fire was extinguished rapidly by airport fire services personnel.

"The cabin crewmember-in-charge ordered an evacuation from the right-hand side," the report said. "All [213] passengers and [16] crew evacuated the aircraft safely through slide chutes." Twenty-one passengers sustained minor injuries during the evacuation.

The fire damaged the 747's no. 1 engine and pylon, as well as the bottom of the left wing and its leading and trailing edges.

Investigators traced the leak to a fuel line coupling assembly that had not been tightened properly either during replacement of the fuel line during a D check in June 2005 or during the

removal and reinstallation of the coupling during a C check in September 2008.

Rotation of the coupling and detachment of its safety wiring during subsequent flights eventually led to a fracture from which fuel leaked onto the hot no. 1 engine while the aircraft was being taxied at Mumbai, the report said.

### Wing Contamination Triggers Stall

Bombardier Challenger 604. Destroyed. One fatality, two serious injuries.

Contamination of the wing leading edge by snow caused an asymmetric loss of lift on takeoff, resulting in a crash at Almaty (Kazakhstan) Airport the night of Dec. 26, 2007, said an English translation of the final report released in June by the Interstate Aviation Committee.

The aircraft was on a charter flight from Hannover, Germany, to Macao, China, and was landed at Almaty at 0046 local time to refuel. The report said that the Challenger was within weight-and-balance limits after being refueled.

Weather conditions at the airport included 2,800 m (1 3/4 mi) visibility in light snow and mist, an outside air temperature (OAT) of minus 13 degrees C (9 degrees F) and a dew point of minus 14 degrees C (7 degrees F).

At 0217, the flight crew told the airport ground controller that they would be ready to start the engines after the application of deicing and anti-icing fluids on the aircraft was completed. The report said that the application of the fluids was performed properly and was completed at 0243.

After starting both engines, the crew completed an abbreviated "After Engine Start" checklist that did not include items on the airplane flight manual (AFM) checklist, such as checks of the wing and engine cowl anti-icing systems, which use engine bleed air for heating.

At 0247, the crew requested and received clearance to taxi. When they reported that they were ready for takeoff at 0252, the airport traffic controller told them to wait at the holding point because another aircraft was on a 14-km (8-nm) final approach. The crew subsequently was cleared to line up and wait on the runway, and then was cleared for takeoff at 0301.

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The right wing stalled just after liftoff, and the Challenger rolled right more than 60 degrees. The right wing tip touched the runway, and the aircraft struck the ground and a reinforced airport fence. The copilot was killed, and the passenger, flight attendant and pilot-in-command (PIC) sustained serious injuries. The aircraft was destroyed by the impact and fire.

Investigators determined that the wing anti-icing system was not activated before takeoff. The cockpit voice recording indicated that while conducting the “Line Up” checklist, the PIC told the copilot, the pilot flying, that he would activate the wing anti-icing system during the climb.

The PIC told investigators that he did not perceive a risk of icing, in part because the anti-icing fluid would provide protection for 30 minutes after its application. “Therefore, the PIC decided to use the engine thrust wholly for the takeoff roll and engage the wing anti-ice right after the takeoff,” the report said, noting that the AFM requires activation of the wing anti-icing system before takeoff when the OAT is at or below 5 degrees C (41 degrees F) and visible moisture is present.

The report discussed two other accidents involving Challengers and two accidents involving Bombardier CRJs that entered uncommanded rolls on takeoff. “All the investigations revealed that the contamination of the wing leading edge (with snow, frost, etc.) was one of the main factors contributing to the accident,” the report said.

In 2008, Transport Canada issued several airworthiness directives requiring, in part, application of anti-icing fluid and activation of the wing anti-icing system before takeoff under certain conditions, as well as specific training for pilots on takeoff procedures and winter operations.

### Erroneous Overspeed Warnings

Boeing 767-300. No damage. No injuries.

The 767 was en route with 206 passengers and 10 crewmembers from Chicago to Warsaw, Poland, the night of June 29, 2009. While cruising in instrument meteorological conditions (IMC) and light to moderate turbulence at Flight Level 330 (approximately 33,000 ft) over Ontario, Canada, the airspeed indicated

on the captain’s primary flight display (PFD) suddenly increased from 276 kt to 320 kt, the maximum operating speed.

At the same time, the altitude indicated on the captain’s PFD increased by 450 ft, said the report by the Transportation Safety Board of Canada (TSB). The autopilot responded by pitching the aircraft nose-down about two degrees. An overspeed warning was generated, and the captain manually reduced thrust to flight idle, causing the autothrottle to disengage.

The autopilot then pitched the aircraft nose-up about 8 degrees. The captain disengaged the autopilot and, with the thrust still at flight idle, increased the pitch attitude to 12 degrees. Indicated airspeed initially decreased to 297 kt but then rapidly increased to 324 kt, triggering a second overspeed warning.

The 767 climbed to 35,400 ft and then began to descend. “The aircraft was descending through 34,500 ft with the captain’s airspeed indicator decreasing through 321 kt and the overspeed warning on when the stick shaker [stall warning] activated,” the report said.

The overspeed warning continued for about 45 seconds, while the stick shaker remained active for nearly two minutes. “When the aircraft had descended through approximately 30,000 ft with the captain’s airspeed indicating 278 kt, the captain increased thrust, and, within nine seconds, the stick shaker stopped,” the report said.

The airspeed indicated on the captain’s PFD decreased rapidly to 230 kt, and there were no more airspeed-indication fluctuations. The crew diverted the flight to Toronto, dumped fuel and landed the 767 without further incident.

“Throughout this event, the first officer’s airspeed indicator displayed information that was not indicative of an overspeed event,” the report said, noting that the crew believed the erroneous airspeed and altitude indications on the captain’s PFD were correct.

An inspection of the 767 revealed no structural damage and no faults in the air data system. The aircraft subsequently was returned to service.

About a month later, however, another flight crew in the incident aircraft received an

overspeed warning and observed discrepancies between the airspeed and altitude indications on the captain's PFD and those on both the first officer's PFD and the standby instruments. When the captain changed his air data computer (ADC) setting from normal to alternate while conducting the "Airspeed Unreliable" checklist, the overspeed warning stopped and the indications on his PFD returned to normal.

Tests performed by the airline after the second incident revealed that the erroneous airspeed and altitude indications had been caused by a fault in the ADC phase-locked-loop circuitry.



## TURBOPROPS

### Deceptive 'Hole' in the Weather

Beech King Air B100. Destroyed. Four fatalities.

Before departure, the pilot received three weather briefings from flight service station specialists who said that severe weather conditions associated with a squall line could be expected along the planned route of flight from Uvalde, Texas, U.S., to Leesburg, Florida, the morning of Oct. 26, 2009.

"The pilot expressed concern about these conditions and altered his route of flight further south so he could maneuver around and through 'holes' in the weather," or clear areas depicted by the King Air's weather radar system, the NTSB report said.

Recorded air traffic control (ATC) radar data showed that the pilot initially flew a southerly course west of the area of severe weather but, about 30 minutes into the flight, requested a heading of 150 degrees, toward a hole in the weather in the direction of Corpus Christi, Texas, a navigation waypoint on his original flight plan.

The controller said that he also saw a clear area to the southeast and told the pilot to fly a 120-degree heading and proceed direct to Corpus Christi when able.

While on that heading, "the airplane flew into a line of very heavy to intense thunderstorms during cruise flight at 25,000 ft before the airplane began to lose altitude and reverse course," the report said. "The controller queried the pilot about his altitude loss, and the

pilot mentioned that they had 'gotten into some pretty good turbulence.' This was the last communication from the pilot before the airplane disappeared from radar."

The pilot had lost control of the King Air, which broke up during a rapid descent and struck terrain near Benavides, Texas.

The controller told investigators that when the pilot requested the heading change, his radar display "showed a large hole in the line of weather that he believed the airplane could pass through safely," the report said, noting that recorded weather data and a statement by another controller working the sector at the time contradicted this observation.

NTSB concluded that the probable causes of the accident were "the pilot's failure to avoid severe weather and the air traffic controller's failure to provide adverse-weather-avoidance assistance."

### Overheated Brakes Cause Fire

Bombardier Q400. Substantial damage. No injuries.

After arriving on stand at Amsterdam (Netherlands) Schiphol Airport on Oct. 10, 2010, the aircraft's left main wheel caught fire. The 54 passengers, who were about to disembark through the rear exit, were directed by cabin crewmembers to the front exit, where they vacated without harm directly into the terminal.

"The fire went out after approximately two minutes, although the wheel continued to emit smoke until cooled by the AFRS [aerodrome fire and rescue service]," said the report by the U.K. Air Accidents Investigation Branch (AAIB).

An investigation by the operator of the Q400 determined that the brake assembly was not fully released during the 14-minute taxi from the runway to the stand. "The heat generated by the brake caused the grease in the wheel hub to melt, leak out and ignite when it came into contact with the hot brake units," the report said.

### Bird Strike Causes Flameout

Beech King Air B100. Substantial damage. No injuries.

Shortly after rotating the King Air for take-off from Montmagny (Quebec, Canada) Airport the evening of Sept. 22, 2010, the

flight crew saw a large flock of gulls, estimated between 100 and 200, on the departure end of the runway. As the aircraft approached, the gulls took flight, creating what the crew described as a “whiteout,” the TSB report said.

Several gulls were ingested by the left engine, which lost power about 40 ft above the runway, causing the aircraft to yaw and roll left. The copilot helped the pilot level the wings, but the King Air descended and touched down on the runway.

The pilot rejected the takeoff, and the aircraft came to a stop in a ditch about 500 ft (152 m) from the end of the 3,010-ft (917-m) runway. There was no fire, and the four passengers and the pilots evacuated without injury.

Because of its proximity to migration paths over the St. Lawrence River and to a farm that attracts birds, the airport uses shotguns to “selectively kill” congregating birds and flare guns and a propane cannon to try to scare them away, the report said. The cannon was out of service when the accident occurred.

No large congregations of birds had been seen either by the King Air crew while taxiing or by the pilot of a Cessna 206 that departed five minutes earlier. Investigators were unable to determine when the gulls landed on the end of the runway. The report also noted that the crew’s vision might have been impaired while taking off to the west, into the setting sun.

## PISTON AIRPLANES

### Lost in the Clouds

Gippsland GA-8 Airvan. Destroyed. One minor injury.

**M**arginal visual meteorological conditions (VMC) prevailed when the Airvan departed from Flinders Island, Tasmania, Australia, for a visual flight rules charter flight with six passengers to Bridport the evening of Oct. 15, 2010. While climbing to the intended cruise altitude, 1,500 ft above ground level, the single-engine utility aircraft entered IMC.

“The pilot did not hold a command instrument rating, and the aircraft was not equipped

for flight in IMC,” said the report by the Australian Transport Safety Bureau (ATSB). “He attempted to turn the aircraft to return to [the departure airport] but became lost, steering instead toward high ground in the Strzelecki National Park in the southeast of Flinders Island.”

The Airvan was very close to the ground when it exited the clouds. “The pilot turned left [to avoid rising terrain], entering a small valley in which he could neither turn the aircraft nor outclimb the terrain,” the report said. “He elected to slow the aircraft to its stalling speed for a forced landing.”

One passenger sustained minor injuries when the aircraft struck treetops and then the ground. “During the night, all the occupants of the aircraft were rescued by helicopter and taken to the hospital [on] Flinders Island,” the report said.

### Disoriented in Fog

Piper Aerostar 601P. Destroyed. Two fatalities.

**V**isibility was 1/2 mi (800 m) in fog and vertical visibility was 100 ft when the Aerostar departed from Aurora, Illinois, U.S., the evening of Jan. 23, 2010. After taking off from Runway 09, the pilot was told to turn left to a heading of 270 degrees.

“The airplane’s turning ground track and the challenging visibility conditions were conducive to the onset of pilot spatial disorientation,” the NTSB report said.

Although the pilot told ATC that he was at 1,300 ft, climbing to 3,000 ft, a witness saw the Aerostar fly overhead at treetop height. The airplane then struck trees and the ground about 2.3 nm (4.3 km) north-northeast of the airport. Portions of the right wing struck a garage on a house, and small pieces of the wreckage penetrated the kitchen windows. None of the four people in the house was injured.

The pilot had 25 hours of multiengine flight time and 73 hours of instrument time when he purchased the Aerostar three months before the accident. The flight instructor who had trained the pilot for his commercial license and instrument rating told investigators that he had tried



to “talk the pilot out of buying the Aerostar because he thought it was too much airplane for him to handle,” the report said.

The pilot received 52 hours of training in the Aerostar from another instructor. The training was completed within seven days. “The instructor stated that he told the pilot that the airplane was ‘unforgiving’ and that it did not have a lot of lateral stability,” the report said.

### Wake Causes Control Loss

Piper Chieftain. Destroyed. Two fatalities.

While completing the final segment of a cargo flight, the flight crew was sequenced third for landing at Vancouver (British Columbia, Canada) Airport in VMC the night of July 9, 2009. The Chieftain was on a left base leg for Runway 26R when the airport traffic controller pointed out an Airbus A321 on final approach.

The TSB report said that after the crew reported the traffic in sight, the controller told them to follow the A321 “but not too far behind, as another Airbus flight was 8 nm [15 km] from the preceding Airbus.” The controller also cautioned the crew about wake turbulence.

The Chieftain was turned onto the final approach course 1.5 nm (2.8 km) behind and 700 ft below the A321’s flight path. Shortly thereafter, ATC lost radar contact with the aircraft.

The wreckage was found in an industrial area 3 nm (6 km) from the runway. “There was a post-impact explosion and fire,” the report said. “The two crewmembers on board were fatally injured. There was property damage but no injuries on the ground.”

The report said that the accident was caused, in part, by the Chieftain’s encounter with wake turbulence, resulting in an upset and loss of control.

Based on the findings of this and other wake-turbulence accident investigations, TSB concluded that “the current wake turbulence separation standards may be inadequate” and that “visual separation may not be an adequate defense to ensure that appropriate spacing for wake turbulence can be established or maintained, particularly in darkness.”

## HELICOPTERS

### Downwind Approach Goes Awry

Eurocopter AS 355-F2. Destroyed. Four minor injuries.

Surface winds were from the southwest at 25 kt, gusting to 35 kt, as the pilot conducted a low-speed circling approach to a landing site on a 2,054-ft hilltop in the Mourne Mountains of Northern Ireland the morning of Oct. 28, 2010.

During final approach on an easterly heading, the pilot sensed a sudden loss of airspeed and lift before the helicopter began to sink rapidly. He increased power by raising the collective control lever, but the helicopter descended to the ground and struck a stone wall before coming to a stop short of the landing site. The helicopter was destroyed, and the pilot, observer and two passengers sustained minor injuries.

“The investigation determined that an error of judgment or perception led the pilot to attempt a downwind approach,” the AAIB report said.

### Rotor Vibration Precedes Power Loss

Robinson R44. Substantial damage. No injuries.

A pilot who had just flown the R44 told the accident pilot that he had encountered slight main-rotor vibration, but no maintenance report was filed. The accident pilot then flew two sightseeing flights from Cairns, Queensland, Australia, the morning of Jan. 3, 2011.

Although pronounced vibrations were experienced during the second flight, the pilot elected to conduct another flight with three passengers, the ATSB report said. He told investigators that during an upwind turn, the R44 began to “shake quite badly,” and that the rotor vibration increased as he turned back toward Cairns.

While descending through 400 ft, the engine failed without warning, and the pilot ditched the helicopter at the mouth of a river. The right float inflated only partially, and the helicopter rolled over in the water. All four occupants were able to exit the helicopter and were rescued by fishermen.

The report said that further damage incurred during salvage operations four days later “precluded any in-depth investigation of the main rotor assembly.”



Preliminary Reports, August 2011				
Date	Location	Aircraft Type	Loss Type	Injuries
Aug. 2	Santa Catarina, Brazil	Cessna 208 Caravan	total	8 fatal
The Caravan, operated by the Brazilian air force, was in a steep dive when it struck the ground in an area of strong winds and rain.				
Aug. 2	Ankara, Turkey	ATR 72	minor	4 minor/none
The aircraft was being prepared for departure when strong winds blew a ground power unit into the forward fuselage, destroying the radome.				
Aug. 3	Kasba Lake, Northwest Territories, Canada	Convair 580	total	30 minor/none
The Convair's nose landing gear collapsed while landing on a gravel runway.				
Aug. 3	Bitung, North Sulawesi, Indonesia	Bell 412	total	10 fatal
The helicopter was en route to a gold mine when it struck high terrain in an area of strong winds and low clouds.				
Aug. 5	Hackett River, Nunavut, Canada	Bell 407	total	5 minor/none
An uncontained engine failure occurred shortly after the pilot landed the helicopter in response to a chip-warning light. The 407 was destroyed by fire.				
Aug. 5	Calledizzo di Peio, Italy	Eurocopter AS 350	total	1 fatal, 4 minor/none
The helicopter was in a hover while disembarking avalanche-prevention workers when the tail rotor struck a rock. The AS 350 then crashed, killing the pilot.				
Aug. 8	Mumeng, Papua New Guinea	Eurocopter BO 105	total	3 fatal
The pilot was unable to land at a gold mine because of low clouds. The helicopter crashed in mountainous terrain while returning to Lae.				
Aug. 8	Blagoveshchensk, Russia	Antonov 24	total	36 minor/none
Thunderstorm conditions prevailed when the An-24 struck trees during an instrument landing system (ILS) approach and crashed off the right side of the runway.				
Aug. 9	Omsukchan, Russia	Antonov 12	total	11 fatal
The An-12 crashed in a remote area about eight minutes after the flight crew reported a fuel leak and an engine fire.				
Aug. 16	Afghanistan	Lockheed C-130	total	NA
The C-130 was landed without further incident after an RQ-7 unmanned aerial vehicle struck the left wing.				
Aug. 17	Beijing, China	Agusta Westland 139	total	4 fatal, 1 minor/none
The police helicopter was returning from a search-and-rescue exercise and was seen circling low over the calm surface of a reservoir when it struck the water.				
Aug. 17	Boca de Uchire, Venezuela	Bell 412	total	9 fatal, 1 serious
One passenger was rescued after the helicopter crashed in the Caribbean Sea.				
Aug. 18	Loma de Redo, Mexico	Eurocopter AS 355	total	2 fatal, 1 minor/none
The helicopter crashed while rescuing people in cars thrown into a river when a bridge collapsed.				
Aug. 19	near Macae, Brazil	Agusta Westland 139	total	4 fatal
The helicopter crashed in the ocean after the flight crew reported the loss of both hydraulic systems on departure from an oil platform.				
Aug. 20	Resolute Bay, Nunavut, Canada	Boeing 737	total	12 fatal, 3 serious
The ceiling and visibility were low when the 737 struck a hill about 1 nm (2 km) off the side of the runway following an ILS approach.				
Aug. 24	Lawas, Sarawak, Malaysia	de Havilland Twin Otter	major	18 minor/none
The nose landing gear collapsed when the Twin Otter veered off the runway while landing in strong winds.				
Aug. 26	Mosby, Missouri, U.S.	Eurocopter AS 350	total	4 fatal
The pilot, nurse, paramedic and patient were killed when the air ambulance crashed on approach.				
Aug. 28	South Malekula, Vanuatu	Hughes 500	total	1 fatal, 2 serious
The pilot was killed when the helicopter crashed in mountainous terrain.				
Aug. 29	Kochi, India	Airbus A320	major	1 serious, 141 minor/none
One passenger was seriously injured during an evacuation after the A320 veered off the runway while landing in heavy rain and strong, gusting winds.				

NA = not available

This information is subject to change as the investigations of the accidents and incidents are completed.

Source: Ascend