

Ice Blocks Pilot's View During Approach

Business jet struck terrain before reaching the runway.

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 on aircraft accidents and incidents by official investigative authorities.

JETS

Improper Use of Windshield Heat Cited

Cessna 551 Citation II. Substantial damage. Two minor injuries, three uninjured.

The pilot conducted a global positioning system (GPS) approach to Runway 17 at Ainsworth (Nebraska, U.S.) Municipal Airport, where weather conditions included a 500-ft overcast and 1.75 mi (2,800 m) visibility with mist the morning of Jan. 1, 2005.

The applicable minimum descent altitude (MDA) for the Citation was 3,000 ft — 500 ft above airport elevation.

The pilot said that he encountered icing conditions during the approach and engaged all the anti-ice and deicing equipment. He said that “at some point, the icing conditions became more than the equipment could handle.” The airplane descended out of instrument meteorological conditions 300–400 ft above ground level (AGL).

“The pilot elected to land the airplane instead of executing the published missed approach procedure,” said the report by the U.S. National Transportation Safety Board (NTSB).

The pilot said that he had difficulty seeing the runway because ice had accumulated on the windshield.

The airplane was in a right turn when it struck terrain 439 ft (134 m) from the runway threshold. The pilot and two passengers were not injured; two other passengers received minor injuries.

Outside air temperature was minus 8 degrees C (18 degrees F). “After the accident, there was ice accumulation on all booted airframe surfaces, [and] the upper portions of the windscreens were contaminated with ice measuring about 3/8 inch [10 mm] thick,” the report said. “The remaining airframe portions, including the heated surfaces, were free of ice accumulation.”

NTSB said that the probable causes of the accident were “the pilot’s decision to continue below the [MDA] and his failure to fly the published missed-approach procedure.” A contributing factor was “the pilot’s improper use of windshield heat, which resulted in the windshield becoming obscured with ice during the instrument approach in icing conditions,” the report said.

Copilot Incapacitation Unexplained

BAe 146-300. No damage. One minor injury, 82 uninjured.

The airplane was departing from Belfast, Northern Ireland, on Feb. 2, 2006, when the copilot, the pilot flying, detected an



odor and subsequently experienced a dry throat, burning eyes, a tingling sensation in his fingers and a sensation of being hot. “After donning his oxygen mask, he slid his seat back and took no further part in the flight,” said the report by the U.K. Air Accidents Investigation Branch (AAIB). “No other personnel on the flight were affected, including the commander, who carried out an uneventful return and landing at Belfast.”

The report said that the copilot remained conscious, but the supplemental oxygen did not appear to relieve his ailments. He began to recover while first aid was administered after landing. The results of blood tests were inconclusive.

An examination of the airplane found an oil leak in the auxiliary power unit (APU) bay and small deposits of unspecified origin in the ducts leading from the air-conditioning packs to the cabin and flight deck. “It is possible, although not confirmed, that fumes generated by the APU or engines could have been the initiating factor, considering that deposits were found in the air-conditioning ducting,” the report said. “Although an oil leak was found in the APU bay, it is unlikely that this oil had found its way into the air supply system.”

Snowplow Driven Into Airplane

Cessna S-550 Citation. Substantial damage. No injuries.

The Citation, engaged in an air-ambulance flight, was landed at the Ted Stevens Anchorage (Alaska, U.S.) International Airport in visual meteorological conditions (VMC) the afternoon of Jan. 15, 2006. The flight crew was being marshalled to a parking area on the company’s ramp when the airplane’s left wing tip and aileron were struck by a snowplow that was being driven in reverse. The snowplow was being used to clear an adjacent ramp.

The captain, first officer, two medical crewmembers and the passenger/patient were not injured. NTSB said that the probable cause of the accident was the “failure of the driver of the snowplow vehicle to maintain adequate visual lookout.”

Smoke Warning Prompts Diversion

Bombardier CRJ200. No damage. No injuries.

The aircraft was departing from London Heathrow Airport with four crewmembers and 50 passengers for a flight to Düsseldorf, Germany, on April 22, 2006, when the flight crew received a warning about smoke in the cargo compartment. The crew returned to Heathrow, landed and stopped at the first available runway exit.

Aircraft rescue and fire fighting personnel found no sign of fire or smoke in the cargo compartment. The aircraft was towed to the ramp, and passengers were disembarked normally.

The AAIB report said that the false smoke warning probably was caused by the cargo compartment smoke detector reacting to dust, condensation or electromagnetic interference. “This aircraft had been fitted with a new design of smoke detector, which was intended to reduce its susceptibility to these factors,” the report said. Installation of the redesigned smoke detector was required by an airworthiness directive issued by Transport Canada in September 2001, following several false cargo smoke warnings in CRJ200s.

A similar incident had occurred in another aircraft in the operator’s fleet on March 16, 2005. “These recent incidents suggest that the new design [smoke detector] has not been effective,” the report said.

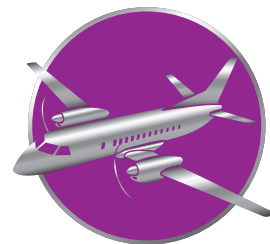
TURBOPROPS

Destabilized Approach Leads to Tail Strike

ATR 72-200. Substantial damage. No injuries.

The copilot was hand-flying the aircraft on an instrument landing system (ILS) approach to Runway 27 at the Guernsey (England) Airport on Sept. 17, 2005. VMC prevailed with surface winds from 020 degrees at 11 knots. The aircraft was about 500 ft AGL when the copilot told the commander that he intended to maneuver slightly below the ILS glideslope.

The copilot, who had 4,000 flight hours, including 500 flight hours in type, told investigators



The pilot lost all forward visibility while flaring the airplane to land.

that he perceived the runway to be short. “Even with the slight tailwind component, the landing distance available [1,453 m (4,767 ft)] was significantly greater than the landing distance required [949 m (3,114 ft)],” the AAIB report said.

The copilot reduced power, and the aircraft descended below the glideslope. He increased the nose-up pitch attitude to 6.5 degrees just before touchdown. “The aircraft landed hard on the runway and bounced; in the course of the initial touchdown, the lower rear fuselage struck the runway surface,” the report said. “The commander later recalled that there had been no flare and that, although he had been ‘guarding’ the controls, he had not had sufficient time to take control and prevent the heavy landing.”

The report said that the approach was stabilized until the copilot flew the aircraft below the glideslope. “This was not necessarily cause for a go-around but should, perhaps, have given the commander reason to pay particularly close attention to the copilot’s actions,” the report said.

Taxiway Sign Struck During Go-around

Beech Super King Air 200. Substantial damage. No injuries.

The airplane was on a business flight from Greensboro, North Carolina, U.S., to Martinsburg, West Virginia, on Oct. 26, 2004. Three people were aboard. Weather conditions at Martinsburg included 1/4 mi (400 m) visibility and 100 ft vertical visibility. The pilot entered a holding pattern near the airport to wait for the conditions to improve, the NTSB report said.

“After about 20 minutes, the weather seemed to improve, and because the pilot could occasionally see the ground, he decided to conduct an instrument approach,” the report said. The pilot was cleared to conduct the ILS approach to Runway 26.

The pilot said he obtained visual contact with the runway environment about 50 ft above decision height but lost all forward visibility while flaring the airplane to land. He was initiating a go-around when the airplane struck a taxiway sign. “The airplane continued to

accelerate and climb, but when the pilot selected the landing gear handle to the ‘UP’ position, only the nosewheel and right main landing gear indicators indicated gear-up, while the left main landing gear remained in a transient condition,” the report said.

The pilot diverted to Washington Dulles International Airport. The left main landing gear collapsed during the landing, and the aircraft skidded to a stop on the runway. The left engine firewall and forward pressure bulkhead were damaged.

NTSB said that the probable cause of the accident was “the pilot’s improper in-flight decision to continue the instrument approach and landing [at Martinsburg].”

Lesson Taken Too Low

Embraer EMB-120 Brasilia. No damage. No injuries.

A first officer with 200 flight hours, including five flight hours in type, was receiving line training by the company’s chief training captain during a scheduled flight with seven passengers from Manchester, England, to the Isle of Man on March 31, 2005. The crew was cleared to conduct the localizer/DME (distance measuring equipment) approach to Runway 08. The airport had 4,000 m (2.5 mi) visibility in smoke, scattered clouds at 600 ft AGL and a broken ceiling at 2,000 ft AGL.

During the approach, the commander, the pilot flying, noticed that the navigation radios were still tuned to the frequency for a VOR (VHF omnidirectional radio) 5.2 nm (9.6 km) west of the localizer. “Believing it would make a good training point, he did not identify the mistake to the first officer,” the AAIB report said. “As a result, the crew used the incorrect DME, descending the aircraft in the procedure to 475 ft over the sea, more than five nm (nine km) short of the runway, with terrain one nm (two km) ahead rising to approximately 600 ft.”

After the tower controller asked the crew if they had the ground ahead in sight, the commander initiated a climb to 1,600 ft. The localizer frequency was selected, and the crew continued the approach to an uneventful landing.



PISTON AIRPLANES

Pilot Had Complained of Fatigue

Piper Seneca II. Destroyed. One fatality.

Daytime VMC prevailed for the cargo flight from Grand Junction to Durango, both in Colorado, U.S., on June 9, 2005. Recorded air traffic control radar data showed that the airplane's rate of climb decreased from 500 fpm to about 140 fpm during the 24 minutes before the airplane struck mountainous terrain at about 12,800 ft near Telluride.

The NTSB report said that the 27-year-old commercial pilot, who had 2,726 flight hours, had flown the route 22 times. NTSB said that the pilot's "failure to maintain clearance from terrain" was the probable cause of the accident and that fatigue was a contributing factor.

"According to family members, friends and colleagues, the pilot was 'tired' and displayed symptoms of 'burnout,'" the report said. "One colleague reported that during an extended flight, the pilot had fallen asleep while acting as pilot-in-command. Several other passengers that had flown with the pilot reported that he had fallen asleep during their flights. Friends and family members ... were concerned about his 'lack of time to sleep.' They reported that the pilot had been awakened 'in the middle of the night to come back to work' on several occasions. On the morning of the accident, the pilot made several requests for someone to accompany him during his flight because he was tired."

Wind Shear Encountered on Takeoff

Aero Commander 500B. Substantial damage. One serious injury, two minor injuries, one uninjured.

VMC prevailed, but there were thunderstorms northeast of the Grand Canyon (Arizona, U.S.) National Park Airport when the tower controller cleared the pilot for takeoff on Runway 21 on May 28, 2003. The controller told the pilot that winds were from 300 degrees at 10 kt. The NTSB report noted that density altitude was 9,481 ft.

After takeoff, the pilot observed that the airplane had stopped climbing and was

heading toward trees. He maneuvered the airplane toward a clearing, but the left wing struck a tree and the airplane descended to the ground.

Performance information in the airplane flight manual indicated that under the existing conditions, the Aero Commander should have been able to climb at 1,100 fpm. "A full analysis of the weather conditions indicated that due to developing convection over the runway, the airplane likely encountered a wind shear (increasing tailwind) event that seriously degraded the takeoff and climb performance," the report said.

The airport did not have a low-level wind shear alert system but recorded wind information from four sensors. "During the aircraft's departure, the [runway] approach end sensor recorded winds at 068 degrees at one knot; the middle sensor recorded winds at 293 degrees at five knots; and the departure sensor recorded winds at 302 degrees at two knots," the report said. "At the next data sampling (10 seconds later), the departure end sensor recorded a wind increase of 10 knots, and the approach end recorded a wind shift from a headwind to a tailwind at 10 knots."

Instructor Suffers Seizure

Beech D95A Travel Air. Destroyed. Two fatalities.

After completing a touch-and-go landing during a multi-engine training flight at the Lancaster (California, U.S.) airport the evening of Jan. 30, 2003, the crew requested and received clearance to conduct a simulated single-engine full-stop landing.

The tower controller said that the airplane appeared to be low on the approach and that its wings were "rocking back and forth," the NTSB report said. The airplane then veered left during an apparent go-around. The bank angle increased substantially, and the airplane descended and struck a hangar.

NTSB said that the probable cause of the accident was loss of control due to incapacitation of the instructor. The report said that the instructor had undiagnosed cancer of the lungs and brain. A pain medication, tramadol, was found in the pilot's blood. "The medication is known to increase the risk for seizures,

particularly in patients with other potential seizure risks,” the report said. “The effects of brain swelling and the medication likely produced seizure activity in the instructor which could have significantly interfered with aircraft control and made it difficult or impossible for the student to have adequately controlled the aircraft.”

HELICOPTERS

Stabilizer Spar Fails, Hits Tail Rotor

Enstrom F-28A. Substantial damage. No injuries.

The helicopter was being flown at about 1,000 ft on a sightseeing flight in Fethard, Tipperary, Ireland, on June 28, 2005, when the pilot heard a loud bang. The helicopter yawed right, and the pilot found that it was not responding to anti-torque pedal inputs. He used the collective and the throttle for directional control, said the report by the Irish Air Accident Investigation Unit.

The pilot conducted an autorotative approach to a field. “The landing was heavy, and the left front shock absorber lost its charging connection with the force of impact,” the report said. “During the landing, the main rotor blades struck the tail boom.”

Examination of the wreckage indicated that the horizontal stabilizer spar had failed in fatigue and had struck the tail rotor. The report noted that the pilot and passenger, who were not injured in the accident, were wearing four-point harnesses.

Distraction Cited in Wire Strike

Aerospatiale AS350-B2. Substantial damage. One serious injury.

The pilot was returning to home base during a public-use patrol flight over the Rio Grande River on Jan. 12, 2006. He decided to search an area near Eagle Pass, Texas, U.S., where he had noticed two law-enforcement airboats operating on the river.

As the helicopter neared the area, the pilot recalled that he had seen two sets of unmarked power lines during his outbound patrol flight. He crossed one set of power lines and began orbiting the airboats. The pilot then saw the

other set of power lines and began a climb to clear them.

“However, the maneuver was initiated too late, and the tail rotor impacted the wires, resulting in the separation of the tail rotor gearbox, tail rotor assembly and vertical fin,” the NTSB report said. “The pilot managed to keep the helicopter in controlled flight and elected to execute an autorotation to a clearing.” The helicopter came to rest, upright, in three ft (one m) of water after the landing. The pilot received serious injuries and was helped out of the helicopter by the airboat crews.

Fuel Exhaustion Causes Flameout

Bell 206B. Substantial damage. No injuries.

Nighttime VMC prevailed for the private flight from Pawnee to Vinita, both in Oklahoma, U.S., on May 1, 2006. The pilot said that the helicopter was seven mi (11 km) from the destination airport when the fuel boost pump caution light illuminated. He said the fuel gauge indicated that 15 gallons (57 liters) of fuel remained, so he continued flying toward the airport. The helicopter was on final approach when the engine flamed out.

“The pilot entered an autorotation, but due to his low altitude, he realized the descent angle would have placed the helicopter onto a busy four-lane highway,” the NTSB report said. “He increased the collective, which increased altitude, and he was able to cross over the highway and a fence; however, this maneuver reduced inertia in the main rotor system. As a result, the pilot flared over a wet, grassy field [at] about 30 feet, leveled the helicopter and landed with some forward speed.”

The skids dug into the ground, and the helicopter stopped abruptly and flipped over. Investigators found no fuel in the fuel nozzle or external fuel filter, and found no sign of a fuel spill. NTSB said that the probable cause of the accident was “the pilot’s improper in-flight planning, which resulted in a total loss of engine power due to fuel exhaustion” and that a contributing factor was “the lack of suitable terrain for the forced landing.” ●



Preliminary Reports				
Date	Location	Aircraft Type	Aircraft Damage	Injuries
Aug. 1, 2006	Anaktuvuk Pass, Alaska, U.S.	de Havilland DHC-2 Beaver	substantial	6 none
The airplane struck the shore during takeoff from a lake for a charter flight. The pilot reportedly believed that the floats would not support the airplane during a water landing, so he landed the airplane on a runway at Bettles. The float-support structure failed, and the tail struck the runway.				
Aug. 2, 2006	Louisville, Kentucky, U.S.	MD Helicopters 500N	substantial	1 minor, 1 none
During an instructional flight, the student conducted a stabilized approach and brought the helicopter to a hover about 10 ft above an open field. The instructor said that the helicopter then "dropped straight down ... and rolled onto its right side." The student received minor injuries.				
Aug. 3, 2006	Bukavu, Congo	Antonov An-28	destroyed	17 fatal
En route on a passenger flight from Lugushwa, the airplane was descending to land at Bukavu when it struck a mountain. Low clouds reportedly were in the area.				
Aug. 3, 2006	Angola, Indiana, U.S.	Cessna Citation Ultra	minor	3 none
The airplane ran off the edge of the runway after birds were ingested by the left engine on takeoff.				
Aug. 3, 2006	Busby, Montana, U.S.	Bell 206L-1	substantial	4 none
The pilot said that, during a public-use wildfire-reconnaissance flight, he conducted a power-assurance check at 8,000 ft. He heard a loud grinding noise before a loss of power occurred. The helicopter touched down hard during the emergency landing in an open field, and the main rotor struck and severed the tail boom.				
Aug. 4, 2006	Pownal, Vermont, U.S.	Embraer 110 Bandeirante	destroyed	1 fatal
The pilot was conducting a positioning flight from Binghamton, New York, to Bennington, Vermont, which had 10 mi (16 km) visibility, scattered clouds 500 ft above ground level (AGL) and an overcast at 900 ft AGL. He conducted the VOR (VHF omnidirectional radio) approach to Runway 13 to minimums and a missed approach. During the second approach, the airplane did not descend from 3,400 ft, the initial approach altitude, upon reaching the initial approach fix about 6.3 nm from the runway but began to descend after reaching the airport. The airplane struck a mountain at 2,100 ft, 6.5 nm southeast of the airport.				
Aug. 4, 2006	near Jandakot, Australia	Pilatus PC-12/45	none	none
The airplane was 50 nm (93 km) southeast of Jandakot during a flight to Albany when the crew reported that they were using supplemental oxygen and returning to Jandakot because of smoke in the cabin.				
Aug. 4, 2006	Happy Camp, California, U.S.	Aviation International Rotors CH-54A	substantial	2 fatal
During a fire fighting operation, the helicopter was being maneuvered near a water-pickup site when a tail rotor blade separated. The tail rotor gearbox then separated, and the helicopter descended to the ground.				
Aug. 8, 2006	São Paulo, Brazil	Fokker 100	minor	79 none
Soon after taking off for a flight to Rio de Janeiro, the left front passenger door opened and separated from the airplane. The crew returned to São Paulo and landed without further incident.				
Aug. 8, 2006	Culebra, Puerto Rico	Beech 18	substantial	2 none
About 1.5 hours after departing from St. Johns, Antigua, for a flight to San Juan, the pilot noticed a strong fuel odor. Soon thereafter, a loss of power from both engines occurred. The pilot tried unsuccessfully to restart the engines, then feathered the propellers and ditched the airplane near the shore. Both occupants exited into a life raft before the airplane sank in 50 ft (15 m) of water.				
Aug. 10, 2006	Jackson, Mississippi, U.S.	Boeing 767	none	247 none
While taxiing for departure, the airplane ran off a taxiway into mud. The passengers disembarked on stairs and were taken by bus to the terminal.				
Aug. 10, 2006	Honolulu, Hawaii, U.S.	Bombardier CRJ200	NA	none
The flight crew rejected the takeoff because of a spoiler-configuration malfunction.				
Aug. 10, 2006	Philadelphia, U.S.	Bombardier CRJ200	NA	none
The flight crew shut down the left engine for unspecified reasons and made an uneventful landing.				
Aug. 10, 2006	Denver, U.S.	Beech Super King Air 200	NA	none
The airplane was being taxied onto the runway for departure when the pilot notified the control tower that the airplane was on fire. The pilot and three passengers evacuated the airplane on the runway.				

Continued on next page

Preliminary Reports				
Date	Location	Aircraft Type	Aircraft Damage	Injuries
Aug. 10, 2006	Salt Lake City, U.S.	Bell 206L-3	substantial	3 none
The pilot was hovering the helicopter prior to takeoff, waiting for company traffic to pass, when the helicopter drifted backward and the tail rotor struck a hangar.				
Aug. 11, 2006	Saipan, Northern Mariana Islands	Piper Cherokee 6	destroyed	5 serious, 2 minor
The airplane was departing from Saipan at 0215 local time for a charter flight to Tinian when the engine failed. The pilot conducted an emergency landing about 0.25 nm (0.46 km) from the runway. The airplane was destroyed by a post-impact fire.				
Aug. 12, 2006	Ozona, Texas, U.S.	Bell 206L-1	substantial	1 none
The pilot was landing on a mountain slope when the helicopter slid backward and the tail rotor blades struck a rock outcrop. The tail rotor gearbox and the aft portion of the tail boom separated from the helicopter.				
Aug. 12, 2006	Amarillo, Texas, U.S.	Learjet 31A	minor	2 none
The main landing gear tires burst on takeoff, and the airplane ran off the runway.				
Aug. 13, 2006	Piacenza, Italy	Lockheed L-100-30	destroyed	3 fatal
The airplane was at 24,000 ft on a cargo flight from Algiers, Algeria, to Frankfurt, Germany, when it descended steeply to the ground. Thunderstorms were reported in the area.				
Aug. 13, 2006	Yellow Pine, Idaho, U.S.	Eurocopter AS350-B3	destroyed	4 fatal
The helicopter was on a public use flight and was returning to base after replacing personnel at a mountaintop fire-watch station when it struck terrain.				
Aug. 13, 2006	Lahaina, Hawaii, U.S.	Hughes 369D	substantial	1 none
The tail rotor struck the ground while the helicopter was being landed during a fire fighting operation.				
Aug. 14, 2006	Los Angeles, U.S.	Boeing 747-400	substantial	307 none
The airplane was taxiing when its no. 4 engine was struck by a main-deck-loading vehicle.				
Aug. 14, 2006	Sault Ste. Marie, Michigan, U.S.	Piper Aztec	destroyed	4 fatal
The airplane was on an instructional flight and had been cleared to conduct a VOR approach to Chippewa County Airport, which had 1.25 mi (2,000 m) visibility and a 300-ft ceiling. The preliminary report said that approach minimums are one mi visibility and 1,260 ft, or 260 ft AGL. The airplane was circling to land when it struck terrain and exploded. The instructor, student pilot and two passengers were killed.				
Aug. 17, 2006	Grain Valley, Missouri, U.S.	Fairchild Metro III	substantial	1 minor, 1 none
The main landing gear struck a fence during approach and collapsed on the runway.				
Aug. 18, 2006	Brisbane, Australia	Boeing 737-400	none	none
During climb, the flight crew shut down the left engine because of a low oil pressure indication and returned to Brisbane.				
Aug. 18, 2006	Metaline Falls, Washington, U.S.	Kaman HH-43F	destroyed	1 fatal
The helicopter was engaged in a logging operation and was dropping logs from about 200 ft AGL when ground personnel heard a loud boom and saw the helicopter descend onto the log pile.				
Aug. 22, 2006	Donetsk, Ukraine	Tupolev Tu-154M	destroyed	170 fatal
The airplane was at Flight Level 360 during a flight from Anapa, Russia, to St. Petersburg when the pilot declared an emergency. Media reports said that the pilot reported an on-board fire and that the airplane was in heavy turbulence. The airplane descended and struck terrain.				
Aug. 23, 2006	La Junta, Colorado, U.S.	Adams A500	minor	3 none
The airplane overran the runway after the left main landing gear tire deflated on landing.				
Aug. 26, 2006	Daytona Beach, Florida, U.S.	Mitsubishi MU-2	destroyed	2 fatal
The airplane struck terrain under unknown circumstances after the pilot reported that he was unable to maintain altitude. The preliminary report said that the airplane was on a business flight from Bloomington, Indiana, to Grand Harbor, Bahamas.				
Aug. 27, 2006	Lexington, Kentucky, U.S.	Canadair CRJ100	destroyed	49 fatal, 1 serious
VMC prevailed when the flight crew was cleared for takeoff on Runway 22, which is 7,000 ft (2,135 m) long, but departed at 0607 local time from Runway 26, which is 3,500 ft (1,068 m) long. The airplane struck terrain in a heavily wooded area beyond the departure end 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.				