Excessive Aft CG Causes Freighter Tail Strike

The MD-11F pitched nose-up when thrust was applied for takeoff for a two-engine ferry flight.

BY MARK LACAGNINA

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

JETS

Improper Training Cited as a Factor

Boeing MD-11F. Minor damage. No injuries.

The flight crew was conducting a ferry flight from Anchorage, Alaska, U.S., to the operator's maintenance base in Atlanta, Georgia, on Oct. 8, 2004, with the no. 2 engine inoperative and the fuselage center landing gear (CLG) retracted to reduce drag and improve initial climb performance. When they released the wheel brakes and applied thrust for takeoff, the airplane pitched nose-up and the tail struck the runway. The crew rejected the takeoff. An inspection of the airplane disclosed minor damage to the tail.

The operator, World Airways, told the U.S. National Transportation Safety Board (NTSB) that the crew had calculated the airplane's center of gravity (CG) with the CLG extended. "They noted that they were unaware at the time of the incident flight that the airplane's aft limit of CG moved significantly forward with the CLG retracted," NTSB said in its final report on the incident. "The operator said that while the appropriate weight-and-balance information was provided in an appendix to the approved Boeing airplane flight manual, the Boeing MD-11 Two-Engine Ferry Operations Manual the crew was using did not reference any change in the CG with the CLG retracted. The ferry manual also recommends, in the 'Pre-Takeoff' checklist, that the CLG be retracted."

As a result of the miscalculation, the airplane's CG was 3.2 percent of mean aerodynamic chord aft of the limit. The report said that the pitch-up was exacerbated by the absence of thrust from the no. 2 engine, which is mounted high on the tail of the airplane.

Boeing told investigators that the ferry manual for the MD-11 was derived from the manual for the Douglas DC-10, which has a shorter fuselage and does not have a more forward CG limit when the CLG is retracted. "Boeing personnel noted that although the MD-11's ferry manual recommends that the CLG be retracted for a two-engine ferry, it is not essential."

NTSB said that the probable causes of the incident were "the operator's failure to provide sufficient weight-and-balance information to the flight crew, which resulted in a [CG] aft of the limit and a tail strike during the takeoff roll." Factors included "the operator's improper training of the flight crew on two-engine ferry procedures, the flight crew's incorrect

calculation of the [CG], the company dispatcher's failure to comply with the proper weight-and-balance procedures, and the airplane manufacturer's unclear/conflicting information contained in their two-engine ferry manual."

After the incident, Boeing issued a flight operations bulletin that said that the two-engine ferry manuals for the DC-10 and MD-11 are out of date and provided information on how operators can obtain current information on two-engine ferry performance and procedures.

Pneumatic Leak Causes Fire Alarm

Airbus A330. No damage. No injuries.

Soon after rotating the airplane for takeoff from Dublin, Ireland, about 1000 local time on June 4, 2004, for a scheduled passenger flight to New York, the flight crew received a fire warning for the no. 2 engine. They declared an emergency, shut down the no. 2 engine and landed the airplane on Runway 28, the departure runway.

After the airplane was inspected by the airport fire officer, it was towed from a taxiway to a gate, where the passengers were disembarked normally. Engineers on site found a pneumatic duct leak in the no. 2 engine and overheat damage to the electrical harness.

"A full post-event inspection revealed that a V-band clamp at the 14th stage manifold lower engine port had detached, allowing hot air (greater than 600 degrees Celsius [1,112 degrees Fahrenheit]) to bleed into the engine core compartment," said the Irish Air Accident Investigation Unit in its final report on the incident. "There was a circumferential split along one of the V-band clamp segments. Localized heat distress was noted over an area of 12 square in [77 square cm], particularly to the electrical harness outer jackets."

They declared an emergency, shut down the no. 2 engine and landed the airplane on Runway 28, the departure runway.

The inspection also found that a lock wire had failed on an adjustment sleeve, causing a misalignment of the manifold. The misalignment resulted in prolonged cyclic tension loading of the clamp, one of three that attach the manifold to the engine ports. The clamp failed because of a fracture that was initiated and propagated by the tension loading, the report said.

Hawker Overruns Slush-Covered Runway

British Aerospace Hawker 700. Minor damage. No injuries.

Nighttime visual meteorological conditions prevailed for the flight from Columbus, Ohio, U.S., to Teterboro, New Jersey, on March 8, 2005. The pilots had not flown together previously, and the pilot-in-command (PIC) told investigators that the copilot's English language proficiency was inadequate.

The copilot obtained the Teterboro automatic terminal information system information, which included surface winds from 320 degrees at 21 kt gusting to 28 kt, 10 mi (six km) visibility in blowing snow and thin slush on all surfaces. The copilot relayed some of the information to the pilot. "However, the copilot did not relay information about the runway conditions to the pilot, nor did the pilot ask about the runway conditions," NTSB said in its final report on the incident.

The crew conducted a visual approach in moderate to severe turbulence to Runway 01, which was 7,000 ft (2,135 m) long. The controller told the crew that the winds were from 340 degrees at 20 kt and that the crews of a Bombardier Challenger and a Gulfstream III had reported good braking action on landing. The report noted that the Challenger and Gulfstream were equipped with thrust reversers. The Hawker did not have thrust reversers.

The Hawker PIC told investigators that he conducted the approach with 25 degrees of flap and at 139 kt — V_{REF} (landing reference speed) plus 20 kt — because of the winds.

The report said that the crew completed a takeoff and landing data card that indicated that 4,240 ft (1,293 m) of dry runway was required for landing at the airplane's gross weight, at 119 kt and with full flaps. The airplane flight manual indicated that landing distance on a 7,000-ft, contaminated runway was equivalent to a landing distance of 3,200 ft (976 m) on a dry runway.

The PIC said that he reduced airspeed to 134 kt over the runway threshold and touched

down slightly past the touchdown zone at 129 kt. After telling the copilot to select full flaps, he extended the spoilers. The PIC said that the airplane appeared to decelerate until it reached the midpoint of the runway.

The airplane overran the runway at about 30 kt and was stopped about 230 ft (70 m) past the departure end. The pilots and the two passengers then evacuated the airplane.

NTSB said that the probable cause of the incident was the PIC's "inadequate in-flight planning" and that contributing factors were "inadequate crew coordination, gusty winds and a slush-covered runway."

TURBOPROPS

Departure From Procedure Leads to CFIT

Raytheon Beech King Air 200. Destroyed. 10 fatalities.

The airplane, operated by Hendrick Motorsports, was being used to transport company employees from Concord, North Carolina, U.S., to an automobile race in Martinsville, Virginia, on Oct. 24, 2004. The captain, 51, had 10,733 flight hours, including 210 flight hours in type. The first officer, 31, had 2,090 flight hours, including 121 flight hours in type.

Weather conditions at Martinsville's Blue Ridge Airport included five mi (eight km) visibility, an overcast ceiling at 600 ft and calm winds.

As the King Air neared the airport about 1230 local time, the flight crew was instructed to hold, as published, at 4,000 ft over the final approach fix (FAF) for the localizer approach to Runway 30. The hold was issued because another airplane was on the approach. The King Air crew was turning outbound in the holding pattern when they were cleared to conduct the approach. The crew conducted a continuous turn to establish the airplane on the localizer course inbound.

In its final report on the accident, NTSB said, "An examination of the radar data showed that the airplane flew an approach that was displaced about five nm [nine km] compared with the published approach."

The airplane crossed the FAF at 3,900 ft. The published minimum altitude for crossing the FAF was 2,600 feet. The crew began a descent about two minutes after crossing the FAF and leveled off at 2,600 ft as the airplane crossed the missed approach point (MAP), which was near the runway threshold. The minimum descent altitude (MDA) was 1,340 ft.

The airplane was about one nm (two km) beyond the MAP when the crew began a descent. The descent was stopped at 1,400 ft about five nm from the MAP. "The airplane maintained level flight between 1,400 and 1,500 feet for the next 1 minute 13 seconds," the report said.

A minimum safe altitude warning (MSAW) was generated when the airplane was 2.5 nm (4.6 km) from the airport; the MSAW lasted about 15 seconds. The approach controller told investigators that he did not observe or hear the warning. "However, the MSAW alert was not a factor in this accident because, at the time of the alert, radar services had already been terminated and the airplane was not under the control of ATC [air traffic control]," the report said.

The airplane was about eight nm (15 km) beyond the MAP when the crew began a climb straight ahead and reported a missed approach. The report said that a performance study indicated that the airplane would have remained clear of terrain if the crew had initiated a climbing right turn, as specified by the published missed approach procedure.

The airplane, which was not equipped with a terrain awareness and warning system (TAWS), was near the extended runway centerline and about 10 nm (19 km) from the runway when it struck Bull Mountain at an elevation of about 2,400 ft.

NTSB said that the probable cause of the accident was "the flight crew's failure to properly execute the published instrument approach procedure, including the published missed approach procedure, which resulted in controlled flight into terrain [CFIT]." A contributing factor was "the flight crew's failure to

use all available navigational aids to confirm and monitor the airplane's position during the approach."

Convair Starved for Fuel

Convair 580. Destroyed. One fatality, one minor injury.

The airplane was being operated by Air Tahoma on a DHL Express cargo flight from Memphis, Tennessee, U.S., to Covington, Kentucky, on Aug. 13, 2004. The captain, 49, had 25,000 flight hours, including 1,337 flight hours in type. The first officer, 37, had 2,488 flight hours, including 145 flight hours in type; he was the pilot flying.

In its final report on the accident, NTSB said that the captain made an error in his preflight weight-and-balance calculations, which showed that the airplane was not within takeoff limits. Based on his experience and observation of normal nose gear strut extension, he decided to take off and recompute the weight and balance in flight. The investigation found that the airplane was within limits for takeoff.

At 0026 local time, about 48 minutes after takeoff, the captain told the first officer that he was going to "balance out the fuel." The report said that the airplane flight manual prohibits the transfer of fuel from one wing tank to the other. "To do so might build up excessive pressure in a tank, which could result in structural failure or cause fuel to overflow through the vents," the manual says. Crossfeed is permitted only to supply fuel from a wing tank to the engine on that wing and to the engine on the other wing; the shutoff valve must be closed and the boost pump must be turned off for the wing tank that is not being used. The captain did not close the shutoff valve for the right wing tank while crossfeeding fuel from the left wing tank to the right engine.

The first officer told the captain that he was applying "a lot of force" to keep the wings level.

"Postaccident fuel boost pump testing revealed that, in this configuration, all of the fuel from the left fuel tank not used by the engines could transfer into the right fuel tank in a relatively short period of time," the report said.

The captain completed the weight-and-balance calculations about 0034. He told investigators that he had been preoccupied and "stressed" while trying to identify the error in the preflight calculations.

The airplane, which had been modified with turboprop engines, was descending through 11,000 ft about 0039 when the first officer told the captain that the control wheel felt "funny" and that he was applying "a lot of force" to keep the wings level.

The airplane was at 4,000 ft at 0043 when the captain reported the runway in sight. The approach controller cleared the crew to conduct a visual approach to Runway 36R at the Cincinnati/Northern Kentucky International Airport, where visual meteorological conditions prevailed. The controller said, "Keep your speed up."

The first officer said, "What in the world is wrong with this plane? [It] is acting so funny."

The captain said, "We'll do a full control check on the ground." He then began conducting the "In Range" checklist; according to the company's operating procedures, the checklist should be conducted before descending below 12,000 ft.

At 0046, the first officer again commented on the airplane's unusual handling characteristics, saying, "Can you feel it? It's like swinging back and forth."

The captain said, "Yeah. We've got an imbalance on this … crossfeed I left open." The report said that he noticed the fuel imbalance while checking the fuel tank shutoff valve and crossfeed valve positions as required by the "In Range" checklist.

Soon thereafter, the fuel supply in the left wing tank was exhausted, and a loss of power occurred in both engines as the airplane was descending through 2,400 ft. The captain reported "engine problems" to the tower controller but declined an offer to have emergency equipment standing by.

The airplane struck terrain about one nm (two km) south of the airport at 0049. The first officer was killed, and the captain received minor injuries.

NTSB said that the probable cause of the accident was "fuel starvation resulting from the captain's decision not to follow approved fuel-crossfeed procedures." Contributing factors were

"the captain's inadequate preflight planning, his subsequent distraction during the flight and his late initiation of the 'In-Range' checklist; [and] the flight crew's failure to monitor the fuel gauges and to recognize that the airplane's changing handling characteristics were caused by a fuel imbalance."

After the accident, Air Tahoma revised its procedures to require that crossfeeding be conducted only if necessary for flight safety, and that the checklist be used and be placed in the throttle quadrant as a reminder to the crew that crossfeeding is in progress.

Strong Gust Blamed for Runway Excursion

Aerospatiale-Alenia ATR 72. No damage. No injuries.

The airplane was being operated by Mount Cook Airline on a scheduled flight from Christchurch, New Zealand, to Queenstown on Oct. 5, 2005, with 47 passengers and five crewmembers aboard. Reported weather conditions at Queenstown included surface winds from 170 degrees at 15 kt, gusting to 25 kt. The crew of a Boeing 737 had reported wind shear on final approach. Four minutes before landing on Runway 23, the ATR 72 flight crew was told by the tower controller that the winds were from 160 degrees at 25 kt and that wind velocity was increasing. The crew briefed for a possible go-around.

Soon after touchdown about 1440 local time, a strong gust struck the airplane and caused it to veer toward the side of the runway. "The gust probably exceeded the aeroplane's crosswind limit and prevented the captain [from] correcting the weathercock," said the New Zealand Transport Accident Investigation Commission (TAIC) in its final report on the incident. "A contributing factor was the reduced effectiveness of the nosewheel steering, because the first officer had not moved the control column far enough forward to ensure [that] there was sufficient weight on the nosewheels."

After touchdown, the captain had turned over the flight controls to the first officer, according to the airline's standard procedure, and had placed his left hand on the nosewheel steering tiller while keeping his right hand on the throttles. He was preparing to select ground idle when the gust struck the airplane.

"The captain said he noticed the control column was not quite as far forward as he would have expected it to be for the conditions," the report said.

After the airplane veered off the runway, a cabin crewmember shouted to the passengers, "Emergency. Grab your ankles." The crew steered the airplane back onto the runway after it rolled on grass parallel to the runway for about 630 m (2,067 ft). The crew then taxied the airplane to the terminal.

PISTON AIRPLANES

'Extreme' Weather Cited in Chieftain CFIT

Piper Chieftain. Destroyed. Three fatalities.

The airplane was scheduled for a charter flight with two passengers from Essendon, Australia, to Mount Hotham on July 8, 2005. While taxiing for takeoff from Essendon, however, the pilot — who had 4,770 flight hours, including 1,269 flight hours in type — changed his destination to Wangaratta. "At the time, the weather conditions in the area of Mount Hotham were extreme," said the Australian Transport Safety Bureau in its final report on the accident.

At 1647 local time, 18 minutes after takeoff, the pilot changed the destination to Mount Hotham and asked a Flightwatch operator to telephone the airport and relay an estimated time of arrival of 1719. "The airport manager, who was also an accredited meteorological observer, told the Flightwatch operator [that], in the existing weather conditions, the aircraft would be unable to land," the report said.

The Flightwatch operator relayed the information to the pilot, who responded, "Our customer is keen to have a look at it."

At 1714, the pilot obtained an instrument flight rules clearance to conduct a global navigation system (GPS) approach to Runway 29. At 1725, he radioed the airport manager that the airplane was on final approach and requested that he activate the runway lights. The airport

manager told the pilot that the runway lights were on but received no response.

Air traffic control radar data indicated that the pilot did not conduct the GPS approach as published. "The pilot … conducted a truncated procedure that did not follow any of the prescribed tracks," the report said.

On July 11, the crew of a search helicopter found the wreckage on a ridge about five km (three nm) southeast of the airport and left of the extended runway centerline. "The aircraft had flown into trees in a level attitude, slightly banked to the right," the report said. "Initial impact with the ridge was about 200 ft [61 m] below the elevation of the Mount Hotham aerodrome. The aircraft had broken into several large sections, and an intense fire had consumed most of the cabin."

Weather conditions at the airport at the time of the accident included an overcast ceiling at 100 ft to 200 ft and a visibility of 300 m (984 ft) in snow showers. The report said that the conditions were significantly worse than the published approach minimums.

Before the accident, the pilot had been observed to land at the airport in weather conditions below approach minimums. "An arrival method, of which he had frequently spoken, was to fly down a valley to the southeast of Mount Hotham aerodrome, locate the Great Alpine Road and follow it back to the aerodrome," the report said. "The aircraft appeared to be tracking adjacent to the Great Alpine Road on the last segment of the [accident] flight."

Deicing Boot Separates … Again

Britten-Norman Trislander. No damage. No injuries.

The airplane was rolling for takeoff from Alderney, England, with nine passengers aboard on April 24, 2005, when the crew heard a muffled bang. "All indications were normal, so the takeoff was continued," said the report by the U.K. Air Accidents Investigation Branch (AAIB). After landing in Guernsey, a deicing boot was observed to be missing from the propeller on the right engine.

The report said that on July 23, 2004, a deicing boot had separated from the left propeller on the same airplane during a departure from Guernsey. The boot penetrated a cabin window and injured a passenger. Investigators found that a required filler material had not been applied to the root end of the boot. The absence of the filler allowed moisture to contact and damage the adhesive. "This left a small disbonded area which grew under stress until the deicing boot finally separated," the report said.

After the 2004 accident, AAIB identified about 100 deicing boots installed without the filler after the propellers were overhauled by the same shop. The shop also had installed the boot on the airplane involved in the 2005 incident. Although the required filler had been used, the adhesive had not bonded adequately to the leading edge of the propeller blade.

"These poorly bonded areas provide a means for moisture to 'fast-track' to the center of the joint and, as a result, possibly accelerate the rate of degradation of the adhesive bond," the report said.

AAIB found that adhesive bond strength can be affected by several factors, including temperature, humidity, cure time of the paint finish on the blade and the techniques used to apply adhesive to the boot and to install the boot on the blade. Bond strength also is affected by "compatibility issues between the boots and adhesives," the report said.

The report concluded that "apparently quite minor deviations in the [bonding] process can cause a reduction in bond strength or allow the generally poor peel strength of adhesives to be exploited by mechanical or environmental damage, [which] can lead to boot separation."

HELICOPTERS

Whiteout Conditions Blamed for Rollover

Eurocopter AS350 BA Squirrel. Substantial damage. No injuries.

The helicopter, operated by The Helicopter Line, was on a charter flight Aug. 17, 2005, to transport seven passengers ("helihikers") to a snowfield above New Zealand's Franz Josef Glacier. The pilot, 46, had 1,644 flight hours, including 315 flight hours in type.

The landing area had been marked with flags mounted on cane poles, but the markers had been covered by snow, leaving a totally white environment, said the report by TAIC.

The pilot intended to conduct a slow, run-on landing. During the approach, however, the helicopter became enveloped in blowing snow and began to drift right. The landing skids contacted the soft surface snow, and the helicopter rolled onto its right side. "The pilot and passengers were able to vacate the helicopter and, other than some bruising, were not injured," the report said.

TAIC said that the accident was caused by "the pilot unknowingly entering whiteout conditions as he approached to land on the snow."

Fuel Contamination Causes Engine Failure

Robinson R44 Astro. Minor damage. No injuries.

The pilot and two passengers were on a private flight from Redditch, England, to Bedstone on Feb. 4, 2006. The helicopter was in level flight at 1,000 ft above ground level when the pilot felt "a couple kicks in yaw" that he believed were caused by turbulence from a ridge that he had just flown over.

The pilot began a right turn and lowered the collective control. He then observed and heard low rotor speed warnings and "became aware that the engine noise had stopped," said the report by AAIB. The main-rotor blades struck several trees as the pilot conducted a fast, run-on autorotative landing on a ridge. The helicopter then collided with a fence and a metal farm gate.

The report said that the engine failure was caused by water contamination of the helicopter's fuel system. Investigators found water in the gascolator and fuel bowl. About one liter (one quart) of water was drained from the main fuel tank and one-half liter (one-half quart) of water was drained from the auxiliary fuel tank.

"There was no evidence of water contamination of the fuel supply at the local airfield," the report said. "It is possible that the source of the water was condensation accumulating in the unusable portion of the fuel tanks over a period of time. It is also possible that the owner [the pilot] did not detect the presence of water during the fuel water-sediment checks." ●

Preliminary Reports

Date	Location	Aircraft Type	Aircraft Damage	Injuries
April 23, 2006	Kousseri, Cameroon	Antonov 74TK-200	destroyed	6 fatal
The airplane was being operated by the Libyan air force on a cargo flight from Sebha, Libya, to N'Djamena, Chad. The crew rejected the landing at N'Djamena. The airplane struck terrain near Kousseri.				
April 24, 2006	Lashkar Gah, Afghanistan	Antonov 32B	destroyed	7 fatal
The airplane, leased by the U.S. government, was being landed when a truck crossed the runway. The flight crew maneuvered the airplane off the runway, and it slid into a settlement of nomads. The fatalities included three people on the ground.				
April 25, 2006	Nogales, Arizona, U.S.	General Atomics Predator B	substantial	none
The certified pilot, who was operating the unmanned aerial vehicle (UAV) from a ground control station, said that his console "locked up" and he transferred control to a console that was manned by a camera operator. The pilot said that he failed to adhere to a procedure that requires equipment in the consoles to be matched before transfer of control. The "STOP/FEATHER" switch in the camera-operator's console was in the fuel-cutoff position, resulting in termination of fuel flow to the UAV's turboprop engine. The aircraft struck terrain about 26 nm (48 km) northwest of Nogales at 0341 local time. No one on the ground was hurt.				
April 27, 2006	La Ronge, Saskatchewan, Canada	Convair 580	destroyed	1 fatal, 2 serious
The airplane, which had been converted into an air tanker to fight forest fires, was being operated by the provincial government on a training flight. The crew conducted several touch-and-go landings. Witnesses observed that the propeller on the no. 1 engine was windmilling after the last touch-and-go. The airplane climbed slowly, turned onto the crosswind leg and then descended into a swampy area.				
April 27, 2006	Amisi, Congo	Convair 580F	destroyed	8 fatal
The airplane was being operated by LAC–SkyCongo on a cargo flight from Goma when it struck terrain on approach to the Amisi airport.				

Continued on next page

Preliminary Reports

Date	Location	Aircraft Type	Aircraft Damage	Injuries
April 27, 2006	Raleigh, North Carolina, U.S.	Beech C90A	minor	none
The King Air was at 17,000 ft on a corporate flight from Concord, North Carolina, to Chantilly, Virginia, when the pilot saw smoke and flames emerge from the lower left windshield frame. The flames stopped, but the smoke persisted when he deactivated the windshield heating system. The pilot declared an emergency and landed the airplane without further incident.				
April 30, 2006	Kaunakakai, Hawaii, U.S.	Partenavia P68	substantial	2 serious, 3 minor
The airplane, operated by Tora Flight Adventures, struck terrain while departing from a private airstrip about 2000 local time. A passenger said that the airplane had banked steeply after lifting off from the grass airstrip and that the engines were still running after the airplane struck the ground.				
May 3, 2006	Sochi, Russia	Airbus A320	destroyed	113 fatal
The airplane, operated by Armavia, was on a scheduled flight to Sochi from Yerevan. Weather conditions at the airport included 4,000 m (2.5 mi) visibility, a broken ceiling at 600 ft and an overcast ceiling at 2,700 ft. The crew rejected an approach to Runway 06 and were cleared to conduct an approach to Runway 02. The airplane was being maneuvered over the Black Sea when it struck the water about six km (three nm) southwest of the airport.				
May 3, 2006	Sullivan, Ohio, U.S.	Hughes 269B	substantial	none
The helicopter was in level flight about 600 ft above ground level when the pilot heard a loud bang. The helicopter began to yaw, and the pilot determined that tail-rotor control had been lost. During the forced landing in a field, the right landing skid collapsed. The preliminary report said that the tail-rotor drive shaft had failed.				
May 4, 2006	Lincoln, Nebraska, U.S.	BAE 125-800A	NA	6 minor
The crew was slowing the Hawker to conduct a stall during a maintenance test flight at 17,000 ft. They expected the stall to occur at about 106 kt, but the airplane stalled at about 126 kt and abruptly rolled and pitched nose-down. The pilot said that the airplane rolled five to seven times and descended vertically before control was regained below 7,000 ft. The preliminary report said that four passengers were aboard the airplane.				
May 5, 2006	Brussels, Belgium	4 airplanes	destroyed	none
An Airbus A320 operated by Armavia, an A320 operated by Armenian International Airways, an A320 operated by Volare and a Lockheed C-130 operated by the Belgian air force were destroyed by a fire in a maintenance hangar.				
May 5, 2006	Caracas, Venezuela	IAI Arava 201	destroyed	4 fatal, 1 NA
The airplane, operated by the Venezuelan national guard, was en route to Caracas from Puerto Ayachucho. The airplane was about 30 km (16 nm) from the airport when the crew radioed that they were descending from 6,700 ft to 5,000 ft. The wreckage was found on May 7 near the area where the radio transmission was made.				
May 5, 2006	Intracoastal, Louisiana, U.S.	Eurocopter EC120B	destroyed	1 minor
The pilot was conducting a takeoff near an offshore platform when the helicopter pitched up and began rolling left. The pilot selected the hydraulic switch on the collective control but did not regain control of the helicopter, which entered a nose-down spin and descended into the Gulf of Mexico.				
May 6, 2006	Mersin, Turkey	Antonov An-2	destroyed	5 NA
The airplane was en route from Izmir to Adana when it struck mountainous terrain.				
May 8, 2006	Marathon, Florida, U.S.	Cessna 421B	substantial	2 serious
Witnesses saw the airplane flying about 20 ft over the runway with the landing gear retracted. One witness heard a scraping sound before the corporate pilot radioed that he was conducting an emergency go-around; the airplane climbed to about 100 ft, then disappeared from the witness's view. The airplane was found nearly submerged in a canal. Several power lines and poles near the accident site had been damaged.				
May 10, 2006	Camp Hill, Alabama, U.S.	Piper 602P	destroyed	2 fatal
The Aerostar broke up in flight at 16,000 ft while being maneuvered to reverse course in a thunderstorm. A convective SIGMET was in effect for a line of thunderstorms 40 nm (74 km) wide and moving at 35 kt. Tops of the thunderstorms were reported at 44,000 ft.				
May 17, 2006	Portland, Oregon, U.S.	Boeing 757	NA	none
The airplane, operated by United Airlines, was departing from Portland when the left wing slat failed to retract and the emergency slide on the left wing deployed but did not inflate. The crew returned to Portland and landed without further incident.				
May 18, 2006	Fairbanks, Alaska, U.S.	Douglas DC-9	substantial	none
The crew conducted a go-around after the right wing struck the ground during an attempted landing on Runway 19R. Winds were from 250 degrees at six knots.				

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.

Sources: Aviation Safety Network, U.S. Federal Aviation Administration, U.S. National Transportation Safety Board