

Taxiway Takeoff

Pilots were distracted by a ‘sudden surge in cockpit workload’ during line-up.

BY MARK LACAGNINA



JETS

Controller Called for Abort

Airbus A340-300. No damage. No injuries.

The flight crew had been instructed by air traffic control (ATC) to expedite their departure and were completing a variety of tasks when they inadvertently turned onto a parallel taxiway and began a rolling takeoff. The A340 was accelerating through 75 kt when the air movements controller told the crew to stop. The pilots rejected the takeoff and, after waiting for the brakes to cool, departed without further incident.

The serious incident occurred at Hong Kong International Airport the night of Nov. 27, 2010. The final report by the Accident Investigation Division of the Hong Kong Civil Aviation Department said that a causal factor was “a combination of a sudden surge in cockpit workload and the difficulties experienced by both the captain and the first officer in stowing the EFB [electronic flight bag] computers at a critical point of taxiing shortly before takeoff, [which] distracted their attention from the external environment [and] resulted in a momentary degradation of situation awareness.”

The report also faulted company standard operating procedures (SOPs) that delegated

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.

responsibility for taxiing solely to pilots-in-command and “did not provide a sufficiently robust process for the verification of the departure runway before commencement of the takeoff roll.”

The passenger terminal is on the east side of the Hong Kong airport and between parallel east-west runways, both 3,800 m (12,467 ft) long and 60 m (197 ft) wide. The south runway was closed for scheduled maintenance, and the A340 flight crew was told to taxi to Runway 07L for their departure to Helsinki, Finland. Visual meteorological conditions (VMC) prevailed, with 10 km (6 mi) visibility. The report did not specify the number of people aboard the A340.

The aircraft was about 1,400 m (4,593 ft) from the end of the outer parallel taxiway, Taxiway B, when the air movements controller confirmed that the crew was ready for departure and asked them to expedite their taxi and to line up on Runway 07. Another aircraft was on an 18-nm (33-km) final approach to Runway 07L, and the controller planned for the A340 to depart before the other aircraft landed. The A340 was nearing the end of Taxiway B when the controller cleared the crew for takeoff.

When the aircraft reached the end of Taxiway B, the captain made a right turn onto Taxiway A1, which crosses the inner taxiway, Taxiway A, and leads to Runway 07L. Instead of taxiing the aircraft onto Runway 07L, however, the captain turned onto Taxiway A and

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transferred control to the first officer, who began a rolling takeoff, per company procedure.

"This abnormal maneuver was detected by the ground movements controller on the advanced surface movement guidance and control system," the report said. The ground controller alerted the air movements controller, who radioed the crew to "stop rolling."

The crew brought the aircraft to a stop 1,400 m from the west end of the taxiway at 0124 local time, or about 14 seconds after initiating the rejected takeoff. After waiting about 50 minutes for the wheel brakes to cool, the crew departed from Runway 07L.

Investigators found that neither the captain, the first officer nor the relief pilot stationed in an observer's seat realized until the controller's call that the takeoff had been initiated on the taxiway. While turning the aircraft onto the taxiway, the captain had made a public-address announcement for the flight attendants to be seated, activated the weather radar system and transferred control to the first officer. Both pilots completed the "Line-Up Checklist," and both had difficulty stowing their EFBs. During the turn, the first officer disengaged the air-conditioning packs and checked the fuel load just before setting thrust for the company-preferred rolling takeoff. The relief pilot was looking down during the turn, trying to make sure that his EFB was stowed and that there were no loose items on his tabletop.

"Both [operating] pilots stated that they saw the red stop bar lights perpendicular to the centerline but dismissed them as part of the lighting system leading to the displaced runway threshold," the report said. "No queries were ever raised among the three pilots concerning the correct positioning of the aircraft."

Taxiway A1 was a known hot spot. Prior to the incident, three other flight crews had initiated takeoffs on Taxiway A, rather than on Runway 07L. These incidents also had occurred after midnight, with good visibility and light traffic, and after the crews were cleared for takeoff before reaching Taxiway A1. The previous incidents had led to several

changes in the lighting, marking and signage at the hot spot.

The report noted that information in the Hong Kong *Aeronautical Information Publication* about the hot spot had not been incorporated in the A340 operator's airport briefing. Among the recommendations generated by the investigation were that the operator ensure that safety-significant information is incorporated in airport briefings in a timely manner and that Hong Kong ATC managers ensure that clearance for takeoff on Runway 07L is not issued at night until ensuring that the aircraft has passed Taxiway A or has entered the runway.

Approach to a Closed Runway

Boeing 777-300. No damage. No injuries.

In route from Narita, Japan, with 117 passengers and seven crewmembers, for a 50-minute flight to Kansai International Airport the night of Aug. 30, 2010, the flight crew had briefed for the instrument landing system (ILS) approach to Runway 24L. Nearing Kansai, however, the crew accepted an offer by ATC to expect a visual approach to the runway.

The report by the Japan Transport Safety Board said that although VMC prevailed, "a visual approach to the airport is very difficult at night due to a lack of light in the vicinity." The longer, parallel runway, 24R, was closed for maintenance, but its approach lights and precision approach path indicator (PAPI) lights were on.

Soon after the approach controller issued a heading of 100 degrees, a vector to establish the 777 on a right downwind leg for Runway 24L, the crew reported that the runway was in sight. The approach controller cleared the crew for a visual approach and instructed them to establish radio communication with the airport traffic controller.

When the crew reported that the aircraft was established on downwind, they were cleared to land on Runway 24L. The first officer, the pilot flying, disengaged the autopilot, turned onto a right base leg and told the captain to perform the landing checklist. He then saw runway and

PAPI lights, and turned onto final approach to what he thought was Runway 24L.

Both pilots noticed that their navigation displays showed abnormal indications for the ILS approach to Runway 24L and realized that they were on final approach to Runway 24R. Almost simultaneously, at 2155 local time, the airport traffic controller advised the crew that they were approaching the closed runway and asked if they could make a left turn to align the aircraft to land on 24L.

At the time, the 777 was about 3 nm (6 km) from Runway 24R, and the crew decided that side-stepping to Runway 24L would be difficult. They conducted a go-around and subsequently landed the aircraft on Runway 24L without further incident. During the go-around, the lights for Runway 24R were turned off.

'Electrical Anomaly' Ignites Fire

Bombardier CRJ200. Substantial damage. No injuries.

Shortly after external electrical power was applied to the CRJ in preparation for its departure from Tallahassee (Florida, U.S.) Regional Airport the morning of Feb. 28, 2009, the captain and a flight attendant, the only people aboard the airplane, heard a hissing sound and detected smoke and signs of a fire. They evacuated through the cabin door.

"Evidence suggests that the fire initiated as a result of an electrical anomaly in the top portion of the JB-1 junction box, near bus bar and contactor components," said the report by the U.S. National Transportation Safety Board (NTSB). The junction box, located in the upper fuselage between the cockpit and cabin door, contains components associated with the distribution of electrical current from the auxiliary power unit and external power sources.

"The fire ignited combustible materials, including insulation blankets, and spread upwards toward a flexible oxygen line mounted above the JB-1 junction box," the report said. "The flexible oxygen line ignited when exposed to the fire, and the fire burned through the aircraft's fuselage" before it was extinguished by fire fighters.

Transport Canada subsequently issued an airworthiness directive requiring compliance with a Bombardier service bulletin that informed CRJ operators about the accident and recommended replacement and rerouting of the oxygen line.

Gust Spoils Landing

Dassault Falcon 10. Substantial damage. No injuries.

The flight crew had to circumnavigate several thunderstorms during the flight to Sellersburg, Indiana, U.S., the night of March 23, 2011. The airport's automated weather observation system was reporting VMC, with surface winds from 310 degrees at 19 kt, gusting to 27 kt. Nearing the airport, the crew canceled their instrument flight plan and conducted a visual approach to Runway 36, which was 5,500 ft (1,676 m) long and 100 ft (30 m) wide.

"The captain [the pilot flying] reported that the landing reference speed (V_{REF}) was 110 kt, which included a 5-kt gust factor," the NTSB report said. "As the airplane touched down on its main landing gear, it encountered a wind gust that raised the left wing. The captain corrected with a left roll input as he simultaneously reduced the airplane's pitch in an attempt to place the nosewheel onto the runway, but the airplane became airborne and drifted off the runway."

"The airplane touched down for the second time in the grassy area alongside the runway, where the subsequent landing roll was completed without further incident."

The pilots and their passenger were not injured, but the Falcon's right main landing gear, right wing spars and forward pressure bulkhead were substantially damaged. Additionally, "both engines appeared to have ingested foreign object debris past their first compressor stages," the report said.

Turbulence Triggers Control Loss

Cessna Citation 680. Substantial damage. No injuries.

The flight crew did not obtain forecasts or recent pilot reports of moderate or greater turbulence along the route before departing

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source of the fire was traced to arcing between an electric power supply and connector for the fluorescent lights in an upper cabin panel. The arcing had ignited a strip of fabric. Components damaged by the fire included two interior panels and a portion of the fuselage skin. Repairs included replacement of cabin insulation material and installation of newer fluorescent lighting power supplies.

The report noted that, based on several similar occurrences, the manufacturer had issued recommendations in 2002 that the fluorescent light power connectors “be thoroughly cleaned and not be handled with bare hands in order to avoid contaminating them, and the electrical plug that fits the connector be tight and free of dirt.” The manufacturer also had advised that loose or contaminated connectors can increase electrical resistance “that could produce sufficient heat to damage the connector and power supply.”

Icing Factors in Approach Stall

Beech C-99. Substantial damage. No injuries.

The pilot was conducting a cargo flight the morning of Jan. 6, 2010, to Kearney, Nebraska, U.S., which had 1/2 mi (800 m) visibility in freezing fog, a 200-ft overcast and surface winds from 130 degrees at 4 kt. He said that the C-99 accumulated light to moderate icing during the ILS approach, and he cycled the wing deicing boots once before reaching the final approach fix.

Indicated airspeed was 120 kt, and the C-99 was configured with the landing gear and 30 percent flaps extended, when the pilot gained visual contact with Runway 36 about 250 ft above ground level. He made a slight left turn and a right turn to align the airplane with the runway centerline.

“When the airplane was wings-level and about 25 ft above the runway, the left wing stalled, and the airplane landed hard on the left main landing gear, bending the rear spar of the left wing,” said the NTSB report.

Examination of the airplane revealed 3/8 to 1/2 in (1 to 1 1/4 cm) of ice on portions of

the wings and deicing boots. NTSB concluded that the probable cause of the accident was “the failure of the pilot to maintain adequate airspeed during the approach, resulting in a stall” and that a contributing factor was “the accumulation of structural icing during the flight.”

Seized Gearbox Forces Deadstick Landing

Pilatus PC-12/45. Substantial damage. No injuries.

The PC-12 was climbing through 18,000 ft during an EMS flight with four people aboard from Derby to Kununurra, Western Australia, the night of Jan. 29, 2010, when the pilot felt the airframe shudder significantly and heard a loud humming and whining noise. “Seconds later the engine ‘CHIP’ caution light illuminated, indicating the detection of metal chips in the engine oil,” the Australian Transport Safety Bureau report said.

The pilot declared an urgency and turned back toward Derby, which was about 56 km (30 nm) away. Shortly thereafter, engine oil pressure and torque decreased, and the inter-turbine temperature increased.

The aircraft was about 11 km (6 nm) from Derby when the low oil quantity caution light illuminated. The pilot shut down the engine, and the propeller feathered and stopped rotating immediately. The pilot declared an emergency and glided the PC-12 to a landing at the airport.

Examination of the engine revealed that the propeller reduction gearbox had seized. “The investigation found that four of the six first-stage reduction gearbox bolts had failed due to fatigue cracking,” the report said, noting that another bolt had fractured due to overstress. “Debris from the failed bolts was released into the first-stage sun and planet gears, causing significant damage.”

Pratt & Whitney found that a number of reduction gearbox bolts for PT6A-67 series engines had not been “cold-rolled” during manufacture by the supplier to increase their hardness and strength. The company subsequently issued two service bulletins recommending replacement of the bolts.

Components

damaged by the fire
included two interior
panels and a portion
of the fuselage skin.

Overrun on a Short, Icy Runway

Cessna 208B Caravan. Substantial damage. No injuries.

The Caravan was on a scheduled flight to Kipnuk, Alaska, U.S., the afternoon of Jan. 6, 2011. Surface winds at the airport were from the northeast at 10 kt, and the captain said that he landed long on Runway 33 to avoid a bump on the 2,120-ft (646-m) runway.

"As the airplane touched down on the runway, he applied brakes and moved the propeller into beta," the NTSB report said. "During the landing roll, he realized the airplane was still traveling too fast on the snow- and ice-covered runway to stop, and he did not have enough area to abort the landing."

With maximum wheel braking applied, the Caravan overran the runway and struck a ditch. Damage was substantial, but the four passengers, the first officer and the captain escaped injury.

'Unsuitable Weather' for a Check Ride

Fairchild Merlin. Destroyed. Three fatalities.

The English summary of an accident report issued by the Norwegian Accident Investigation Board in December 2011 said that weather conditions were "not suited" for a check ride administered in June 2008 to a newly hired airline first officer. A "low ceiling, rain showers, winds up to 40 kt and turbulence" prevailed in the area of Bergen Airport Flesland, the report said.

On the first day of the check ride, June 19, "turbulence caused the stick pusher to activate during the demonstration of slow flight," the report said. "The commander decided to pull the circuit breaker for the stall avoidance and stability augmentation system (SAS), presumably to avoid nuisance activations of the stick pusher."

The candidate found the next task, a stall demonstration, "frightening" and "experienced great difficulties, having to use all her available physical strength to remain in normal flight with the engines on full power and [the aircraft] in IMC," the report said.

The examiner required the same tasks to be performed the next day, which had even

stronger winds than the day before. "However, when it came to demonstrating stalls, the examiner asked for slow flight up to the first indication of stall and not an actual stall," the report said. "He asked for call-outs and a minimum loss of altitude [in the] recovery."

The SAS circuit breaker, apparently intentionally, was not reset before the flight began. "The commander undertook the tasks of adding power and retracting gear and flaps on the candidate's request," the report said. "During this exercise [in IMC], the crew lost control of attitude and airspeed." Radar data showed that the Merlin climbed about 400 ft before descending at up to 10,000 fpm into the North Sea. The candidate, commander and examiner were killed.

"This accident highlights the need for a change in the current training on initial stall-recovery techniques, especially the focus on minimum loss of altitude at the expense of breaking the stall by lowering the nose and, thus, reducing the angle-of-attack," the report said.

PISTON AIRPLANES

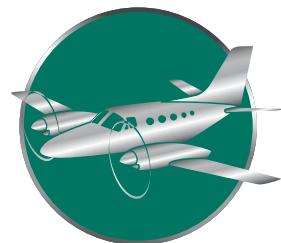
Airspeed Anomaly Cited in Overrun

Cessna 402C. Substantial damage. No injuries.

The commuter airplane was descending to join the landing pattern at Watertown, New York, U.S., the afternoon of Feb. 1, 2010, when the pilot noticed the indicated airspeed decrease from 145 kt to 85 kt. He applied full power and lowered the airplane's nose, but the indicated airspeed did not change.

Weather conditions were deteriorating, with low clouds and snow squalls near the airport. The pilot "considered climbing to a higher altitude in order to troubleshoot the airspeed anomaly; however, due to the weather conditions, he decided to land as soon as possible," the NTSB report said.

The pilot perceived that the 402's ground-speed was higher than the 85-kt indicated airspeed, but he did not cross-reference the airspeed indicator on the right side of the instrument panel. He extended the landing gear and 20 degrees of flap on final approach to the



5,000-ft (1,524-m) runway, which was covered with 1/2 in (13 mm) of snow.

"The airplane touched down about 1,000 ft [305 m] beyond the threshold of the runway and bounced slightly," the report said. "The nose landing gear made runway contact about mid-field. ... The pilot applied the brakes but observed the braking action to be nil."

The landing gear collapsed and all the propeller blades were bent when the 402 overran the runway onto snow-covered terrain. The six passengers and the pilot were not injured.

"Post-accident testing revealed that the pitot tubes were warm to the touch when the pitot heat switch was turned on," the report said. "Unregulated air pressure was applied to the [pitot system]. The corresponding airspeed indicators displayed needle movement, with no leaks detected. Since no further examination of the pitot-static system was conducted, the cause of the airspeed anomaly could not be determined."

HELICOPTERS

Wire Strike in a River Valley

Bell 206B. Substantial damage. Four fatalities.

The JetRanger was two hours into a public-use deer-surveying mission and was being flown along a river valley near Auberry, California, U.S., when the main rotor struck a power-transmission cable, or skyline, the afternoon of Jan. 5, 2010. The helicopter descended to the ground, killing the pilot and the three passengers, who were employees of the state's wildlife department.

The NTSB report said that the helicopter was being flown southbound, and the position of the sun would have hindered the pilot's ability to see the skyline and four other cables strung between towers about 1,300 ft (396 m) above the valley. The cables were depicted on a sectional aeronautical chart and on a survey map found in the wreckage.

However, another set of power lines about 200 ft (61 m) below the cables was not depicted on the maps. "As such, it is possible

that the pilot misidentified these as the lines depicted on the maps," the report said. "Neither of the sets of power lines [was] equipped with spherical visibility markers or similar identification devices."

Department employees who had flown with the pilot on previous deer-surveying missions told investigators that during his preflight briefing, he had asked the passengers to watch for obstructions. However, the report said, "At the time of the accident, the state agency did not have any formal safety or operational training systems in place for passengers who fly on surveying missions."

Collective Mistaken for Brake

Sikorsky S-92A. Substantial damage. No injuries.

A marshaller was guiding the commander in ground-taxiing the helicopter to a stand at Scatsta Airport in the Shetland Islands the morning of March 30, 2011. "When the helicopter reached the parking position, [the marshaller] signaled the pilot to stop," said the report by the U.K. Air Accidents Investigation Branch. "In accordance with [SOPs], the copilot in the left seat stated 'disc, brakes, lights.' The commander leveled the [rotor] disc, exerted toe pressure on the foot brakes and then intended to raise the parking brake handle."

Instead, the commander inadvertently raised the collective control lever, the hand grip of which is located just to the right of the parking brake handle between the crew seats. "The helicopter lifted approximately 6 ft [2 m] into the air, with a slight roll to the left, and the commander instinctively released the collective lever," the report said. "The helicopter immediately descended and landed heavily."

Examination of the S-92 revealed fuselage deformations in two places and a cracked main landing gear wheel rim.

"As a result of this occurrence, the operator promptly issued a flying staff instruction to ensure that the pilot flying or the pilot monitoring has control of the flying controls during critical phases of flight or when on the ground, rotors running," the report said. ➤



Preliminary Reports, January 2012

Date	Location	Aircraft Type	Loss Type	Injuries
Jan. 5	Steen River, Alberta, Canada	Eurocopter AS 350	major	1 minor/none
	The helicopter was being landed at a logging staging area when the external long line struck the tail boom, tail rotor and horizontal stabilizer.			
Jan. 7	Sampit, Indonesia	Xian MA60	minor	68 minor/none
	The flight crew was attempting to turn around after landing when the left main landing gear ran off the side of the runway and sank into soft ground.			
Jan. 8	Barrancabermeja, Colombia	Bell 412	total	4 minor/none
	Day visual meteorological conditions (VMC) prevailed when the helicopter crashed on a rooftop in a petroleum refinery.			
Jan. 9	Guayaramerín, Bolivia	Xian MA60	major	21 minor/none
	The fight crew landed the twin-turboprop on its belly after attempting unsuccessfully to extend the landing gear.			
Jan. 10	Salisbury, Wiltshire, England	Eurocopter Gazelle	total	3 minor/none
	The pilot apparently lost control of the helicopter while making a 180-degree turn at low altitude.			
Jan. 15	Timmins, Ontario, Canada	Pilatus PC-12	major	3 none
	The engine malfunctioned during cruise, but the pilot decided to continue the flight to Timmins, using a higher-than-normal approach speed. The PC-12 overran the runway into snow-covered terrain. Preliminary examination of the engine revealed a leaking oil line attachment.			
Jan. 15	Raipur, India	Hindustan Aeronautics Dhruv	total	1 serious, 4 minor/none
	Witnesses said that the helicopter, which was on a test flight, descended from a height of 100 ft to a hard landing.			
Jan. 15	Fairbanks, Alaska, U.S.	PZL Swidnik SW-4	major	3 none
	The helicopter struck the runway under unknown circumstances while maneuvering during cold-weather testing at the airport.			
Jan. 16	Nad Ali, Afghanistan	Bell 214	total	3 fatal
	The helicopter, operated by the U.S. Department of Defense, crashed under unknown circumstances in a remote area.			
Jan. 17	Chilliwack, British Columbia, Canada	Eurocopter AS 350	total	1 fatal
	The helicopter, operated by the Royal Canadian Mounted Police, emitted smoke while hovering during a training flight and then descended into a wooded area.			
Jan. 18	Auyantepui, Venezuela	Bell 206	total	5 fatal
	Bad weather was reported in the area when the 206 struck the tabletop mountain.			
Jan. 19	Puerto Montt, Chile	Piper Cheyenne	major	8 none
	After the right engine malfunctioned during a night approach, the pilot landed the airplane with the landing gear retracted on open ground near the airport.			
Jan. 22	Rio de Janeiro, Brazil	Eurocopter AS 350	major	1 minor/none
	The engine lost power during cruise flight, and the pilot landed the helicopter in a rugged area near a beach.			
Jan. 22	Dallas, Texas, U.S.	Bell 206	major	4 none
	The tail boom was damaged when the pilot landed the helicopter on a golf course after the engine lost power.			
Jan. 24	Orange, Texas, U.S.	Cessna Citation V	major	8 none
	The nose landing gear collapsed when the Citation veered off the runway while landing in strong winds and heavy rain.			
Jan. 28	Shishmaref, Alaska, U.S.	Reims-Cessna 406 Caravan II	major	7 minor/none
	A main landing gear collapsed as the twin-turboprop was rolling out on landing.			
Jan. 30	Baltimore, Maryland, U.S.	Gulfstream G150	major	2 minor/none
	The nose landing gear collapsed when the airplane veered off the runway onto soft ground during a night landing.			
Jan. 30	McBride, British Columbia, Canada	Bell 212	major	1 minor
	After dropping off skiers, the pilot landed at a staging area at the bottom of the hill. He was shutting down the engine when the helicopter was struck by an avalanche.			
	This information is subject to change as the investigations of the accidents and incidents are completed.			
	Source: Ascend			