Aviation Investigation Final Report

Location:	Minneapolis, Minnesota	**Accident Number:**	CHI01LA109
Date & Time:	March 28, 2001, 16:45 Local	**Registration:**	N8247Q
Aircraft:	Cessna 414	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Serious, 1 Minor, 2 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The airplane had been cleared for the VOR approach to the airport and was executing a circling maneuver to land when it impacted the ground short of the runway. The pilot said that, during the approach for landing, the aircraft, "...started behaving strangely in a [manner] I [wasn't] familiar with, a wobble, or flopping in [the] tail section, not like a stall." Passengers indicated that the aircraft appeared to be low and that the aircraft banked to the left and rolled 90 degrees which pointed the left wing directly at the ground. According to the voice transcripts, the pilot did not advise controllers that he had current weather information, and the controllers did not provide current weather to the pilot as required by an FAA order. Radar data shows that at 1643:03 the aircraft was at 1,200 feet MSL altitude at a ground speed of 89 knots. The pilot requested and was given the weather at the destination airport as, "about three quarters to a half mile visibility here and a ceiling six hundred broken." At 1644:47, the pilot said, "okay i got the runway now how bout ah the reverse direction is that all right." Radar data shows that at 1644:44 the aircraft was at 1,000 feet altitude at a ground speed of 82 knots. The approach procedure for the VOR or GPS-A approach to MIC lists a minimum descent altitude of 1,360 feet MSL and a minimum visibility of 1 mile for catagory A, B and C aircraft. During voice communications between the aircraft and the control tower, the pilot said, at 1643:04, "thirteen hundred feet ah we're just starting to see the ground." The airplane owner's manual lists the minimum multi-engine approach speed as 107 miles per hour (MPH) indicated airspeed (IAS). The owner's manual lists the following stall speeds with the landing gear down and flaps extended 45 degrees: 81 MPH IAS at 0 degrees of bank; 83 MPH IAS at 20 degrees of bank; 92 MPH IAS at 40 degrees of bank; 115 MPH IAS at 60 degrees of bank. A postaccident examination of the aircraft was conducted and no anomalies were found that could be associated with a preexisting condition.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot not maintaining the proper airspeed during the circling approach, the inadvertent stall and the subsequent loss of control. Factors were the pilot's decision to continue the approach in weather conditions below the approach/landing minimums, the continued flight below the minimum descent altitude, the pilot not following the approach airspeed listed in the owner's manual, the air traffic controllers not issuing weather information to the pilot, and the weather conditions.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: APPROACH - CIRCLING (IFR)

Findings
1. (F) WEATHER CONDITION - BELOW APPROACH/LANDING MINIMUMS
2. (F) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
3. (F) MINIMUM DESCENT ALTITUDE - CONTINUED BELOW - PILOT IN COMMAND
4. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
5. (F) PROCEDURES/DIRECTIVES - NOT FOLLOWED - PILOT IN COMMAND
6. (C) STALL - INADVERTENT - PILOT IN COMMAND
7. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
8. (F) IN-FLIGHT WEATHER ADVISORIES - NOT ISSUED - ATC PERSONNEL(DEP/APCH)

Factual Information

On March 28, 2001, at 1645 central standard time, a Cessna 414, N8247Q, piloted by an airline transport pilot, sustained substantial damage when it impacted the ground while attempting to land on runway 32R (3,263 feet by 75 feet, asphalt), at the Crystal Airport (MIC), Minneapolis, Minnesota. The 14 CFR Part 135 on-demand air taxi flight was operating in instrument meteorological conditions and was on an instrument flight rules flight plan. The pilot and one passenger were uninjured, one passenger received minor injuries and one passenger received serious injuries. The flight originated from the Sidney Municipal Airport, Sidney, Nebraska at 1350.

In a written statement, the pilot said that he, "... turned left base for [runway] 32R, added more flaps. Turned to final, dropped all flaps, and the 414 started behaving strangely in a manor I [wasn't] familiar with, a wobble, or flopping in [the] tail section, not like a stall. I leveled wings, dropped nose, brought power up, and that made flopping worse." The aircraft subsequently impacted the ground short of the approach end of runway 32R.

The Crystal police department interviewed the passengers of the aircraft. The first passenger stated to a police officer that he remembered flying over the airport from north to south and remembered seeing a highway. He told the officer that he thought that they were too low. He stated to the officer that the plane banked to the left and he felt all through the bank that the plane was too low.

The second passenger told the police officer that during the left turn prior to the accident, the airplane rolled 90 degrees, which pointed the left wing directly at the ground. The passenger told the officer that just before the impact, the plane pulled out of its turn and leveled out. He said that once the plane leveled, it crashed to the ground.

According to FAA transcripts of voice communications, the airplane was cleared for the VOR-A approach to MIC at 1636:34. At 1637:51, Minneapolis Approach Control instructed the airplane to contact the MIC air traffic control tower (ATCT). The following is a listing of communications between N8247Q and the MIC ATCT:

1638:20	N8247Q	tower eight two four seven quebec inbound ah about ready to turn inbound ah v o r a approach
1638:27	MIC	twin cessna eight two four seven quebec crystal tower circle to runway one four left cleared to land
1638:32	N8247Q	circle to one four left ah wilco
1638:41	MIC	i got the runway lights all the way up for you so
1640:52	MIC	four seven quebec ah appreciate a pilot report from ya land ah after you land we can get that from ya

1641:01 N8247Q roger
1642:52 N8247Q ah ya got the lights turned up
1642:54 MIC both runway lights are all the way up for ya
1643:04 N8247Q thirteen hundred feet ah we're just starting to see the ground
1643:07 MIC thirteen hundred thanks
1643:18 N8247Q what you reporting anyway
1643:46 MIC i missed that
1643:48 N8247Q i say what are you reporting for ceiling and visibility
1643:50 MIC about three quarters to a half mile visibility here and a ceiling six hundred broken
1644:01 N8247Q oh you come down
1644:04 MIC we're getting a snow shower moving in ah at the wrong time for you here
1644:33 MIC i see you're right there you're right above us
1644:40 MIC you want to circle to another runway wind is four knots (unintelligible) can still make it it's up to you sir cleared to land any runway
1644:47 N8247Q okay i got the runway now how bout ah the reverse direction is that all right
1644:52 MIC ya cleared to land runway three two right
1645:11 MIC wind is one two zero at five
1645:50 MIC sir can you help hear me are you okay on the radio

No further transmissions were received from the accident airplane.

The transcripts of the voice communications between the pilot and approach control and between the pilot and the MIC ATCT do not include transmission of weather information. The transcripts do not include transmissions from the pilot advising receipt of automated weather.

According to FAA Order 7110.65M, Chapter 4-7-10, "Approach Information":

a. Both en route and terminal approach control sectors shall provide current approach information to aircraft destined to airports for which they provide approach control services. This information shall be provided on initial contact or as soon as possible thereafter. Approach information contained in the ATIS broadcast may be omitted if the pilot states the appropriate ATIS code or items 3-5 below may be omitted for pilots destined to uncontrolled airports when they advise receipt of the automated weather; otherwise, issue approach information by including the following:
    1. Approach clearance or type approach to be expected if two or more approaches are published and the clearance limit does not indicate which will be used.
    2. Runway if different from that to which the instrument approach is made.
    3. Surface wind.
    4. Ceiling and visibility if the reported ceiling at the airport of intended landing is below 1,000 feet or below the highest circling minimum, whichever is greater,

or the visibility is less than 3 miles.
5. Altimeter setting for the airport of intended landing.

Radar data was obtained and indicates that at 1643:03 the aircraft was at 1,200 feet MSL altitude at a ground speed of 89 knots. At 1644:44 the aircraft was heading 179 degrees at 82 knots ground speed, at an altitude of 1,000 feet. At 1645:03 the aircraft was heading 179 degrees at 86 knots ground speed, at an altitude of 1,000 feet. At 1645:07 the aircraft was heading 149 degrees at 85 knots ground speed, at an altitude of 1,000 feet. At 1645:12 the aircraft was heading 116 degrees at 85 knots ground speed, at an altitude of 900 feet. The last radar return at 1645:17 indicated that the aircraft was heading 89 degrees at 81 knots ground speed, at an altitude of 900 feet.

The approach procedure for the VOR or GPS-A approach to MIC lists a minimum descent altitude of 1,360 feet MSL and a minimum visibility of 1 mile for category A, B and C aircraft.

The Cessna Model 414 Owner's Manual lists the minimum multi-engine approach speed as 107 miles per hour (MPH) indicated airspeed (IAS). The owner's manual lists the following stall speeds with the landing gear down and flaps extended 45 degrees: 81 MPH IAS at 0 degrees of bank; 83 MPH IAS at 20 degrees of bank; 92 MPH IAS at 40 degrees of bank; 115 MPH IAS at 60 degrees of bank.

A postaccident examination of the aircraft was conducted and no anomalies were found that could be associated with a preexisting condition.

The Federal Aviation Administration and Cessna Aircraft were parties to the investigation.

Pilot Information

Certificate:	Airline transport	**Age:**	66,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	July 5, 2000
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	November 22, 2000
Flight Time:	10000 hours (Total, all aircraft), 1800 hours (Total, this make and model), 9000 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N8247Q
Model/Series:	414	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	414-0252
Landing Gear Type:	Retractable - Tricycle	**Seats:**	7
Date/Type of Last Inspection:	February 26, 2001 Annual	**Certified Max Gross Wt.:**	6350 lbs
Time Since Last Inspection:	31 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	4442 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	TSIO-520J
Registered Owner:	Air Transport Service, Inc.	**Rated Power:**	310 Horsepower
Operator:	AIR TRANSPORT SERVICE INC	**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:		**Operator Designator Code:**	CRQA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	MIC,869 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	16:53 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:		**Visibility**	0.5 miles
Lowest Ceiling:	Broken / 600 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	100°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.85 inches Hg	**Temperature/Dew Point:**	1°C / 0°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	Sidney, NE (SNY)	**Type of Flight Plan Filed:**	IFR
Destination:	Minneapolis, MN (MIC)	**Type of Clearance:**	IFR
Departure Time:	13:50 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	CRYSTAL MIC	**Runway Surface Type:**	Asphalt
Airport Elevation:	869 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:	32R	**IFR Approach:**	Circling;VOR
Runway Length/Width:	3263 ft / 75 ft	**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious, 1 Minor, 1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 1 Minor, 2 None	**Latitude, Longitude:**	45.059116,-93.340614(est)

Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	Casey Heggerston; FAA-Minneapolis, Minnesota-FSDO; Minneapolis, MN Todd Sigler; Cessna Aircraft Company; Wichita, KS
Original Publish Date:	May 21, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=52024