



National Transportation Safety Board Aviation Accident Final Report

Location:	Dexter, ME	Accident Number:	NYC03FA002
Date & Time:	10/07/2002, 1017 EDT	Registration:	N57EJ
Aircraft:	Cessna 525A	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 Serious, 2 Minor
Flight Conducted Under:	Part 91: General Aviation - Business		

Analysis

The pilot/owner initiated a VFR approach and landing in a Cessna 525A, to a 3,009-foot long runway with a tailwind of about 7 knots. The touchdown was 642 feet past the approach end of the runway. Vref was calculated to be 108 kts; however, data from the EGPWS showed the ground speed was about 137 kts, 9 seconds before touchdown, and at touchdown, the speed was estimated to be about 130 kts. After touchdown, the pilot selected ground flaps, which moved the flaps from 35 degrees to 60 degrees, the spoilers auto-deployed, and the speed brakes were extended. The pilot said that after applying the brakes, he felt the brakes pedals pulsing, and did not think the airplane was slowing. He released the brakes for a few seconds and then reapplied them. Again, he felt the pulsing in the pedals, but the airplane was not slowing as he expected. He released the brakes, reset the flaps to takeoff, and applied power to abort the landing when he was about halfway down the runway. The airplane departed the end of the runway and traveled for about 300 feet. Skid marks revealed the initial touchdown was most like made with brakes applied, and no locked wheel crossover protection. Additional skid marks revealed the airplane became airborne after touchdown, and in the next 750 ft, touched down 3 more times, each subsequent touchdown occurring without the full weight of the airplane on the wheels. Tire marks on the last half of the runway were consistent with brakes applied and anti-skid operative. Using the approved flight manual standards, the airplane would have required 3,155 feet to stop. This was predicated on crossing the threshold at 50 feet, at Vref, and included a ground roll of 1,895 feet. However, the pilot touched down at 642 feet from the threshold, which left sufficient runway for stopping. Using the pilot's touchdown point of 642 feet, the airplane was capable of stopping on the runway with a Vref as high as 120 kts. The approach was unstabilized with 4 aural warnings, including 2 sink rate warnings on final approach, the last of which occurred with a descent rate of over 1,700 fpm down, 19 seconds prior to touchdown, and about 400 feet above the ground. The last airborne GPS position was about 2,000 ft from runway touchdown. This would have required a flight path angle of about 3.8 degrees to achieve the reported touchdown position.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

was the pilot's improper decision to land with excessive speed, and his delayed decision to perform an aborted landing, both of which resulted in a runway overrun. A factor was the tail wind.

Findings

Occurrence #1: OVERRUN

Phase of Operation: LANDING - ABORTED

Findings

1. (F) WEATHER CONDITION - TAILWIND
 2. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
 3. (C) AIRSPEED - EXCESSIVE - PILOT IN COMMAND
 4. DESCENT - EXCESSIVE - PILOT IN COMMAND
 5. (C) ABORTED LANDING - DELAYED - PILOT IN COMMAND
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Occurrence #2: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: LANDING - ABORTED

Findings

6. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On October 7, 2002, at 1017 eastern daylight time, a Cessna 525A, N57EJ, was substantially damaged during a runway overrun at the Dexter Regional Airport (1B0), Dexter, Maine. The certificated airline transport pilot and one passenger received serious injuries, and two passengers received minor injuries. Visual meteorological conditions (VMC) prevailed for the business flight that departed Robertson Airport (4B8), Plainville, Connecticut, about 0930. An instrument flight rules (IFR) flight plan was filed and activated, and the flight was conducted under 14 CFR Part 91.

According to the pilot, he departed Plainville and climbed to flight level 290. The flight progressed without incident, and when the airplane was approximately 80 miles south of Dexter, the pilot initiated a descent. While being vectored for the GPS runway 34 approach, and descending through 6,000 feet mean sea level (MSL), the airplane entered VMC. Once clear of the clouds, flight visibility was approximately 10 miles. The pilot cancelled his IFR clearance when the airplane was about 10 miles south of the airport, and proceeded under visual flight rules (VFR).

The pilot further stated:

"...touchdown accomplished within first 1/4 of runway...throttles in idle before touchdown, flaps in landing position. At touchdown, flaps to ground position (spoilers deployed), apply brakes, pedal pressure was firm, felt sensation of anti-skid pulsing. Aircraft did not decelerate noticeably. Released brakes to allow reset. Reapplied brakes, no difference. Commenced go-around. Throttles full forward, ground flaps to take-off position...This was the last I remember until regaining consciousness. I tried to shut engines down, couldn't get levers to idle cut-off..."

The pilot added that he left the cockpit and went to the tail cone baggage compartment where he disconnected the battery. He returned to the cockpit and brought the throttles to idle cut-off, after which the engines stopped.

In a follow-up interview, the pilot reported that about half way down the runway, he became concerned about stopping within the distance remaining, so he aborted the landing. With approximately 1,500 feet remaining, he removed his feet from the brake pedals, advanced the power levers to takeoff, and raised the flaps two notches to the takeoff position. The airplane, continued down the runway, but did not accelerate as expected. The pilot's memory regarding the aborted landing and subsequent impact was fragmented. He remembered the airplane departing the far end of the runway, and then impacting the ground, but he could not recall the airspeed when he overran the runway, or if he reapplied the brakes after aborting the landing.

The pilot added that the winds reported by approach control favored runway 16. He chose to land on runway 34 because the tailwind component was negligible, and to land on runway 16 would require a steeper approach due to a hill north of the runway. The pilot further stated that the enhanced ground proximity warning system (EGPWS) sounded "Sink Rate," while on final. He added it was not unusual for him to get the "Sink Rate" warning, and that the system had sounded in the past even when the airplane was descending on a visual glidepath at 500 fpm.

The accident occurred during the hours of daylight. The wreckage was located at 45 degrees, 00.50 minutes north latitude, 69 degrees, 14.45 minutes west longitude, and an elevation of approximately 530 feet msl.

PERSONNEL INFORMATION

The pilot held an airline transport pilot certificate with an airplane multi-engine land rating, and type ratings in the CE-500, CE-525, and CE-525S (single pilot authorization). He also held a private pilot certificate with an airplane single engine land rating. He was last issued a Federal Aviation Administration (FAA) first-class airman medical certificate on January 25, 2001. The pilot's total flight experience was 2,450 hours, which included 763 hours in the Cessna CE-525, and 126 hours in the Cessna CE-525A.

According to records from Flight Safety Inc, in Wichita, Kansas, the pilot had last attended Cessna 525 recurrent training from November 26 through November 28, 2001. This included ground school and three simulator periods. A check of available records revealed no adverse comments.

AIRCRAFT INFORMATION

The type certificate designation for the airplane was 525A. Cessna Aircraft Company referred to the airplane as the CJ-2. The airplane was approved for single pilot operations.

The trailing edge flaps were controlled by a variable position selector, with two detents, up, and 15 degrees for approach. In addition, the flap lever could be set to the landing position, which extends the flaps to 35 degrees. At the landing stop, if the flap lever was lifted, it could be moved further aft to extend the wing flaps to 60 degrees on the ground.

A weight and balance was prepared by Cessna Aircraft Company, and revealed that the center of gravity of the airplane at takeoff and landing were outside of the aft limit of the weight and balance envelope. The landing weight was estimated to be 10,852 pounds, and center of gravity was 0.8 inches aft of the aft limit.

The pilot submitted an alternate weight summary that showed a landing weight of 10,202. The weight summary differed from that calculated by the original investigative team. The revised weight summary was within the center of gravity envelope at landing.

The EGPWS maintained a continuous recording of specified parameters. When a cockpit aural warning was activated, the preceding 10 seconds of data, along with the next 20 seconds of data was stored, and was available for recall. The captured data was stored at one-second intervals, using elapsed timing. In addition, each time the landing gear squat switches transitioned from ground to air, or air to ground, the elapsed time, latitude and longitude, the airplane heading, and GPS altitude were recorded.

The airplane was equipped with Williams International FJ44-2C engines. The flight idle rpm was 65 percent N2, and the ground idle was 54 percent N2. There was a 8 second delay after initial touchdown before the engines would retard to ground idle.

Wind information was displayed on the primary flight display in the form of an arrow, which pointed in the direction the wind was blowing relative to the nose of the airplane, and the velocity was displayed in knots.

METEOROLOGICAL INFORMATION

There was no recorded weather at Dexter. The pilot was given Bangor winds of 220 degrees at 6 knots, (observation taken at 0955), when he made contact with Bangor approach control. The 0955 weather observations at Bangor, and other area airports indicated the winds were from the southeast to the southwest at 6 to 9 knots, including gusts to 15 knots.

AIRPORT INFORMATION

Dexter was an uncontrolled airport with a single runway 16/34. The published airport elevation was 533 feet. The asphalt surface runway was 3,009 feet long, 80 feet wide. There were no visual aids for a pilot to use in determining a glide path to the runway. The airport was constructed on top of a hill. No obstructions were listed for runway 16; however, several nearby obstructions were listed for the approach to runway 34. Lower terrain prevailed to the south for over 2 miles. Lower terrain prevailed to the north for about a mile. Further north, there was rising terrain about 150 feet above airport elevation within 2 miles of the departure end of the runway. A peak elevation of 840 feet was located 2 miles from the approach end of runway 16.

FLIGHT RECORDERS

The airplane was not equipped with, nor required to be equipped with a flight data recorder (FDR), or cockpit voice recorder (CVR).

RADAR AND OTHER REMOTELY RECORDED DATA

Radar data was obtained from Bangor Approach Control. The airplane was identified by its assigned transponder code of 4607. The airplane was last observed at 1015:52.03, about 6,000 feet from the approach end of runway 34, on a heading of 340 degrees, and a recorded altitude of 1,000 feet mean sea level (MSL), plus or minus 50 feet.

WRECKAGE AND IMPACT INFORMATION

Examination of the landing runway revealed five distinct sets of skid marks; initial touchdown, three additional touchdowns on the runway, and the final set of skid marks as the airplane departed the runway.

The first set of skid marks started at 642 feet from the approach end of the runway, and were consistent with a left main landing gear touchdown first. The right wheel touched the runway about 30 feet further down the runway. Both marks were similar, starting with a narrow skid from the center of the tire, which widened to full tire width. After skidding for over 10 feet on the full width of the tire, the skid marks stopped abruptly. Following the skid marks, a series of rubber marks, estimated to about 1 foot in length were observed. These marks were estimated to be separated by the length of one tire rotation. These marks were consistent with rubber stamping on the runway as the tires rolled after having been heated during the initial touchdown skid. The repeating marks were progressively lighter with each revolution of the tire.

The second set of skid marks started about 250 feet from the initial touchdown on the runway, 892 feet from the approach end of the runway. The left wheel skid started with a narrow strip of rubber, and then got lighter. The skid then transitioned from a narrow skid to a wider tire skid in about 2 feet, continued for about 6 feet, and stopped. The skid was visible again, with the same tire width as before. The right wheel showed a much lighter mark. The skid marks were consistent with the airplane touching down on the runway.

The third set of skid marks started about 500 feet from the initial touchdown on the runway, and 1,142 feet from the approach end of the runway. Both the right and left tire skid marks started as a narrow band and increased in width as they progressed. The skid marks were more pronounced on the left wheel than the right wheel. The left wheel skid was partially interrupted as the tire passed over a transverse runway repair. The variable width of the skid marks were consistent with an airplane that did not have a constant weight on its wheels. In addition, the skid marks were also consistent with the airplane touching down on the runway.

The fourth set of skid marks started about 750 feet from the initial touchdown, and 1,392 feet from the approach end of the runway. The left wheel skid mark started as a narrow band and increased in width, and then decreased in width, followed by rubber stamping. The mark was consistent with a tire touching down. The right tire mark was not clearly defined.

After the fourth set of skid marks, continuous tire marks were visible. The marks indicated some retardation of tire rotation, but not enough to cause a skid. These marks were consistent with brakes applied, and anti-skid functioning.

The fifth set of skid marks started about 50 feet prior to the departure end of the runway. Intermittent skid marks were visible from both tires as the skid marks angled to the right.

After departing the runway, the airplane entered a grass overrun. Initially, the grass was laid over and torn from the ground, then the marks transitioned to grass that was laid over, but not torn from the ground. In the overrun, a third tire mark, equal distance between the two main landing gear tire marks was also visible. The tire marks continued to a drop-off that was located at the end of the overrun and 179 feet past the departure end of the runway. The drop-off was elevated above a dirt road that ran perpendicular to the runway, and was approximately 10 feet lower in elevation. Running along the north side of the road was a pipeline. The pipeline was approximately 12 inches in diameter, and scratch marks were visible on the top of the casing, aligned with the direction of travel of the airplane, and in line with airplane and ground marks identified as tire marks from the airplane.

The airplane came to rest beyond the road, on a magnetic heading of 360 degrees, approximately 300 feet past the departure end of the runway. The airplane was intact, and all the structural and flight control surfaces were present. Damage to the airplane consisted of impact damage to the nose, left wing, bottom of the tail section, and right wing. The nose landing gear was crushed rearward, both main landing gear were extended, and the left main landing gear was bent rearward, partially separated from its mounts. Both main landing gear tires were in serviceable condition and inflated. The pre-impact condition of the nose wheel tire could not be confirmed. The left and right flaps were approximately 15 degrees.

The cockpit was intact, but deformed. The flap handle was up, along with the flap indicator. The thrust attenuators were stowed, and the control switch was in the AUTO position. The anti-skid control switch was ON. The power brake accumulator was discharged, and the brake fluid reservoir was full. The parking brake was off, the gear and brake emergency pneumatic accumulator was charged, and the emergency brake handle was stowed.

TESTS AND RESEARCH

Seats and Shoulder Harnesses

The two cockpit seats were forwarded to Pacific Scientific in Yorba Linda, California, for further examination under the supervision of an FAA inspector. On the right seat, the shoulder

harness would not extend more than 24 inches. The tamper seal on the inertia reel was found to be broken, and the anti-rebound spring positioned 180 degrees out of alignment. When properly repositioned, the shoulder harness extended for its full length of 47 inches. The shoulder harness reel was also found to lock when subjected to the "no lock" test where it is extended at 0.75 G acceleration force. No problems were noted on the left seat.

There was no record of any work on the seats entered in the airplane maintenance records to document when the inertia reel had been worked on.

Airplane Re-Examination - June 2003

The airplane was re-examined on June 13, 2003, by an air safety investigator from Cessna Aircraft Company. Five bit fault indicators had been installed on the forward baggage compartment side of the forward pressure bulkhead. Three were found tripped; including the left-hand transducer, the right-hand transducer, and the squat switch disagree fault indicators. The Cessna investigator further reported that the squat switch disagree could cause a loss of touchdown protection if there was a disagreement between the two main landing gear squat switches for a period of 12 seconds or longer. This information was not displayed on the annunciator panel.

Airplane Brakes - January 2004

On January 27, 2004, the brakes were examined for wear at Telford Aviation, Bangor, Maine, under the supervision of an FAA inspector. Brake wear was determined by measuring extension of the pins when the brake system had been pressurized. According to the Goodrich brake overhaul manual, when the extension on either pin on a wheel brake was 0.325 inches or less, the manual called for the brakes to be overhauled. The minimum extension on the left wheel brake was 0.8050 inches. The minimum extension on the right wheel brake was 0.8185 inches.

Crane Aerospace - February 2004

On February 17, 2004, anti-skid components manufactured by Crane Aerospace were examined at their facility in Burbank, California, under the supervision of an FAA inspector. No problems were noted with these units.

Cessna Aircraft Company - March 2004

On March 2, 2004, components from the braking system that were manufactured by the Cessna Aircraft Company were examined at their facility in Wichita, Kansas, under the supervision of an FAA inspector. No problems were noted with these units.

Crane Aerospace - March 2004

On March 18, 2004, the anti-skid computer was examined under the supervision of an FAA inspector, at the Crane Aerospace facility in Wichita, Kansas. No problems were noted with the unit.

Service Bulletins

Cessna had released five service bulletins for the 525A landing gear. Four of the service bulletins were found to have been either complied with, or not applicable by airplane serial number. Service Bulletin SB 525A-32-04, LANDING GEAR - BRAKE HIGH PRESSURE SWITCH IMPROVEMENT, had not been accomplished. The switch was included in the items

tested on March 2, 2004, at the Cessna Aircraft Company facility, in Wichita, Kansas. The switch was cycled through multiple repetitions and performed within specification. On March 10, 2004, the switch was disassembled under the supervision of an FAA inspector, at Cessna's facility, by a representative of Aerospace Control Products, the manufacturer of switch. The disassembly revealed that the O-ring was intact, and there was no evidence of hydraulic fluid leakage into the switch.

ADDITIONAL INFORMATION

The FAA approved Airplane Flight Manual (AFM), contained notes and cautions for the use of brakes.

These included:

"CAUTION"

"IF, DURING LANDING, A NO BRAKING CONDITION IS ENCOUNTERED, OPERATE THE EMERGENCY BRAKE SYSTEM. MAINTENANCE IS REQUIRED BEFORE NEXT FLIGHT"

"NOTE"

"To obtain maximum braking performance from the antiskid system, the pilot must apply continuous maximum effort (no modulation) to the brake pedals."

Emergency Brakes

The pneumatic emergency braking system was designed for use when there was a failure of the power brake system. The system was actuated by removal of the pilot's feet from the brake pedals, and then pulling the emergency brake handle as required. The emergency brake handle was located on the bottom of the pilot's instrument panel. The following caution and note were contained in the FAA approved flight manual:

"CAUTION"

"ANTISKID SYSTEM DOES NOT FUNCTION DURING EMERGENCY BRAKING. EXCESSIVE PRESSURE ON EMERGENCY BRAKE HANDLE CAN CAUSE BOTH WHEEL BRAKES TO LOCK, RESULTING IN BLOWOUT OF BOTH TIRES."

"LANDING DISTANCE WILL INCREASE BY A FACTOR OF 1.3"

"NOTE"

"Best performance can be obtained using a smooth, steady, continuous pull of handle to obtain the desired deceleration rate. Multiple pulls and releases of the handle will deplete the nitrogen charge."

Landing Distance Charts

The only landing distance information available to the pilot were the landing distance charts contained in the FAA approved airplane flight manual. These charts were predicated on the following:

Airplane height, 50 feet at threshold.

Airspeed at 50 feet, Vref.

Touchdown at Vref-5, about 6 seconds later.

Automatic deployment of thrust attenuators.

Brakes applied within one second of touchdown.

Braking applied with continuous pressure, and no modulation.

According to landing distance charts computed by Cessna, with a 50 foot height at the runway threshold, the touchdown point was computed to be 1,260 feet from the approach end of the runway. The ground roll was computed to be 1,895 feet, for a total distance of 3,155 feet. When the pilot's touchdown point, 642 feet past the threshold was added to the ground roll of 1,895 feet, the total distance required was 2,537 feet.

Two other landing distance charts were found to be within the runway available, when the ground roll computed by Cessna was added to the distance of the pilot's touchdown. On the chart that exceeded the available runway, the computations were made with a Vref of 120 knots, and a tail wind of 10.5 knots. The ground roll exceeded the available distance by 27 feet.

Crane Aerospace, the manufacturer of the anti-skid system, also computed an optimum deceleration chart. With a touchdown at 642 feet from the approach end of the runway, the airplane was capable of stopping with a ground roll of 1,851 feet, for a total runway distance of 2,493 feet, at a Vref of 108 knots. When the Vref was increased to 120 knots, the airplane was still capable of stopping at a total runway distance of 2,852 feet. When the Vref was increased to 125 knots, the airplane overran the runway by 2 feet, and when Vref was increased to 130 knots, the airplane overran the runway by 167 feet. Their chart was predicated on maximum braking performance, and no modulation of brake pressure.

These additional computations by Cessna and Crane Aerospace were not available to the pilot.

Runway Tire Marks

Photographs of the runway tire marks were reviewed by the Manager of Aircraft Tire Programs at Goodyear, the manufacturer of the tires on the airplane. He reported the initial touchdown marks were consistent with light braking applied at the point of touchdown. In the subsequent touchdown, he reported some of the marks indicated very light braking, while there was no evidence of braking in other pictures.

The tire skid marks were also reviewed by personnel from Crane Aerospace. They reported that they believed two safety features built into the anti-skid system were operative at initial touchdown. These included touchdown protection, which prevents landing with brakes applied, and locked wheel crossover protection which prevented brake application with a difference of 70 percent or greater between the two wheel, including one wheel stationary while the other was rotating. Their review included a line by line review of the software code that controlled these features, and no problems were noted.

The report also stated:

"...The nature of the multiple N57EJ tire marks indicate the possibility that Touchdown Protection and Locked Wheel Crossover [protection] were not available during the incident."

Enhanced Ground Proximity Warning System (EGPWS)

The EGPWS was forwarded to Honeywell where the data was extracted and returned to the Safety Board. According to the data:

At 287:14:04, when the airplane was 1 min, 04 seconds, and 2.76 nm from touchdown, the

landing gear achieved a down and locked indication.

At 287:14:20; when the airplane was 48 seconds, and 2.02 nm from touchdown, a mode 2 terrain alert aural warning message sounded about excessive closure to terrain, with the alert message TERRAIN. According to recorded data, the calibrated airspeed (CAS) was 168.7 knots; the terrain elevation was 400 feet; the GPS altitude was 1,640 feet, the radar altimeter read 1,215 feet, and the sink rate was 2,925 fpm down.

At 287:14:22, when the airplane was 46 seconds, and 1.88 nm from touchdown, a mode 2 terrain alert aural warning message sounded about excessive closure to terrain, with the alert message PULL UP. According to recorded data, the CAS was 166.8 knots; the terrain elevation was 400 feet; the radar altimeter read 1,114 feet, and the sink rate was 2,860 fpm down.

At 287:14:24, when the airplane was 44 seconds, and 1.82 nm from touchdown, a mode 2 terrain alert aural warning message sounded about excessive descent rate, with the alert message SINK RATE. According to recorded data, the CAS was 169.2 knots; the terrain elevation was 400 feet; the radar altimeter read 1,063 feet, and the sink rate was 2,475 fpm down.

At 287:14:33, when the airplane was 35 seconds, and 1.5 nm from touchdown, the wing flaps transitioned to the landing position. No data was available to indicate a previous flap setting. According to recorded data, the CAS was 153.6 knots, the ground speed was 166 knots, the terrain elevation was 500 feet, the radar altimeter read 768 feet, and the sink rate was 1,331 fpm down.

At 287:14:49, when the airplane was 19 seconds, and 4,225 feet from touchdown, a mode 2 terrain alert aural warning message sounded about excessive descent rate, with the alert message SINK RATE. According to recorded data, the CAS was 140.2 knots; the ground speed was 148 knots, the terrain elevation was 500 feet; the radar altimeter read 369 feet, and the sink rate was 1,740 fpm down.

At 287:14:59, when the airplane was 9 seconds, and 2,000 feet from touchdown, the CAS had decreased to 133.8 knots, the ground speed was 137.5 knots, the terrain elevation was 500 feet, the radar altimeter read 267 feet, and the sink rate was 688 fpm down.

At 287:15:08, the squat switches mounted on both main landing gear recorded a transition from air to ground.

The horizontal distance between the last two GPS positions was 2,000 feet. To cover 2,000 feet in 9 seconds, an average ground speed of 131.6 knots was computed. The altitude difference between the last two GPS positions was 133 feet. It would take a flight path angle of 3.8 degrees to descend 133 feet over a horizontal distance of 2,000 feet.

A check of all SINK RATE warnings on the EGPWS revealed there were 34 in the database. The lowest vertical velocity recorded with SINK RATE warning was 924 fpm down. Excluding the first flight, which had one event at 5,308 fpm down, the maximum vertical velocity recorded was 2,925 fpm down, which occurred on the accident flight.

Pilot Training

The pilot was trained by Flight Safety, Inc., which used a stabilized approach concept in flying approaches. The training program stated:

"...The approach profiles are based upon achieving a stabilized approach. Configuration

changes at low altitude are limited to those changes that can be easily accommodated without adversely affecting pilot workload. A stabilized approach must be established before descending below the following minimum approach heights."

[VFR Approaches] 500 feet above the airport elevation during VFR or visual approaches and during straight-in instrument approaches in VFR weather conditions...."

"If a stabilized approach cannot be achieved before descending below the above minimum stabilized approach heights, immediate action will be taken to execute a missed approach or go-around."

Wreckage Release

The aircraft wreckage was released to the insurance adjustor on October 16, 2002. Items that were received from AvSafe, and placed under control of the Safety Board for additional testing, were released back to AvSafe on April 12, 2004.

Pilot Information

Certificate:	Airline Transport; Private	Age:	57, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	01/25/2001
Occupational Pilot:		Last Flight Review or Equivalent:	11/29/2001
Flight Time:	2450 hours (Total, all aircraft), 872 hours (Total, this make and model), 2422 hours (Pilot In Command, all aircraft), 48 hours (Last 90 days, all aircraft), 26 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N57EJ
Model/Series:	525A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	525A-0057
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	09/18/2002, AAIP	Certified Max Gross Wt.:	12375 lbs
Time Since Last Inspection:	7 Hours	Engines:	2 Turbo Fan
Airframe Total Time:	113.1 Hours at time of accident	Engine Manufacturer:	Williams International
ELT:	Installed	Engine Model/Series:	FJ44-2C
Registered Owner:	Exec-Jet, Inc	Rated Power:	2400 lbs
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	BGR, 124 ft msl	Distance from Accident Site:	21 Nautical Miles
Observation Time:	0953 EDT	Direction from Accident Site:	142°
Lowest Cloud Condition:		Visibility	10 Miles
Lowest Ceiling:	Overcast / 2100 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	200°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	11° C / 9° C
Precipitation and Obscuration:			
Departure Point:	Plainville, CA (4B8)	Type of Flight Plan Filed:	IFR
Destination:	Dexter, ME (1B0)	Type of Clearance:	None
Departure Time:	0930 EDT	Type of Airspace:	Class G

Airport Information

Airport:	Dexter Regional Airport (1B0)	Runway Surface Type:	Asphalt
Airport Elevation:	533 ft	Runway Surface Condition:	Dry
Runway Used:	34	IFR Approach:	None
Runway Length/Width:	3009 ft / 80 ft	VFR Approach/Landing:	Straight-in

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	1 Serious, 2 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious, 2 Minor	Latitude, Longitude:	45.008333, -69.240833

Administrative Information

Investigator In Charge (IIC):	David S Muzio	Report Date:	06/30/2004
Additional Participating Persons:	Ray Cloutier; Federal Aviation Administration; Portland, ME Seth Buttner; Cessna Aircraft Company; Wichita, KS Jon L Green; Williams International; Walled Lake, MI James H Reid; Crane Aerospace; Burbank, CA William Stout; Aerospace Control Products; Davenport, IA		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).