



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Petersburg, VA	<b>Accident Number:</b>	IAD05LA022
<b>Date &amp; Time:</b>	12/02/2004, 1310 EST	<b>Registration:</b>	N2EQ
<b>Aircraft:</b>	Cessna 414	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	4 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Executive/Corporate		

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## Analysis

The purpose of the flight was to "check out" the airplane before delivering it to its new owner, and to provide the copilot with an indoctrination ride in the Cessna 414. During the approach, the pilot provided guidance and corrections to the copilot. The copilot flew the airplane to within 200 feet of the ground when the nose of the airplane yawed abruptly to the right. The pilot took control of the airplane, and pushed the engine and propeller controls to the full forward position. He placed the fuel pump switches to the "high" position, retracted the flaps, and attempted to retract the landing gear. With full left rudder and full left aileron applied, he could neither maintain directional control nor stop a roll to the right. The airplane struck the ground and continued into the parking area where it struck an airplane and a waste-oil tank. Examination of the airplane following the accident revealed that the landing gear was down and locked, and the propeller on the right engine was not feathered. The emergency procedure for an engine inoperative go-around required landing gear retraction and a feathered propeller on the inoperative engine. The pilot's handbook further stated, "Climb or continued level flight is improbable with the landing gear extended and the propeller windmilling." After the accident, both pilots stated that they didn't notice a power loss on the right engine until the copilot surrendered the flight controls. The right engine was removed and placed in a test cell. The engine started immediately on the first attempt and ran continuously without interruption.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The partial loss of engine power for undetermined reasons, and the pilot's failure to maintain adequate airspeed ( $V_{mc}$ ).

## Findings

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Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL  
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

### Findings

1. 1 ENGINE
2. (C) REASON FOR OCCURRENCE UNDETERMINED

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Occurrence #2: LOSS OF CONTROL - IN FLIGHT  
Phase of Operation: GO-AROUND (VFR)

### Findings

3. (C) REMEDIAL ACTION - IMPROPER - PILOT IN COMMAND
4. (C) AIRSPEED(VMC) - NOT MAINTAINED - PILOT IN COMMAND

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Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: DESCENT - UNCONTROLLED

### Findings

5. OBJECT - AIRCRAFT PARKED/STANDING

## Factual Information

On December 2, 2004, at 1310 eastern standard time, a Cessna 414, N2EQ, was substantially damaged during collision with terrain and parked aircraft at the Dinwiddie County Airport (PTB), Petersburg, Virginia. The certificated airline transport pilot, commercial rated copilot, and two passengers were not injured. Visual meteorological conditions prevailed for the local corporate flight that originated at Dinwiddie County Airport, at 1255. No flight plan was filed for the flight conducted under 14 CFR Part 91.

In a telephone interview, the pilot explained that the primary purpose of the flight was to "check out" the airplane before delivering it to its new owner. He further explained that the copilot was receiving an indoctrination ride in the Cessna 414, and that the pilot-rated passenger in the back was receiving an orientation flight. The second passenger was a company mechanic.

After takeoff, the airplane climbed to 6,500 feet over the airport, and circled while the cabin pressurization and the autopilot were checked. During the flight, and the subsequent approach, the copilot in the right seat was at the flight controls.

The pilot said he noticed that the propeller rpm was low on the right engine, and that he needed to add engine power to match propeller rpm with the left engine. Once the propeller rpm was matched, a "four-inch split" in the manifold pressures was noted between the two engines. During the flight, the nose of the airplane yawed to the right "a couple of times", but the pilot attributed that to wind.

The copilot intercepted the localizer course to land on runway 05, and flew the airplane to within 200 feet of the ground, when the nose of the airplane yawed abruptly to the right. The pilot took control of the airplane, and pushed the engine and propeller controls to the full forward position. He placed the fuel pump switches to the "high" position, retracted the flaps, and attempted to retract the landing gear. With full left rudder and full left aileron applied, he could neither maintain directional control nor stop a roll to the right.

The airplane flew to the right of the runway, and crossed over a taxiway and a ditch. At that point, the pilot reduced power and forced the airplane onto the ground. The airplane struck the ground and continued into the parking area where it struck a parked Cessna 172 and a waste-oil tank. The Cessna 172 ignited and was consumed by fire. Another parked airplane suffered fire damage.

During a telephone interview, the copilot said that the pilot invited him along to get some familiarization with the Cessna 414 while the airplane was looked at prior to its transfer of ownership. The mechanic and the flight instructor joined the discussion and then accompanied them on the flight.

The copilot said that the climb was uneventful, and after the airplane leveled around 6,000 feet, he took the flight controls and the radios while the pilot checked various systems, to include the autopilot. He added that the mechanic's headset did not work, and that the pilot removed his headset to converse with the mechanic.

During the approach, the pilot provided guidance and corrections to the copilot, until he announced that he was taking the controls. The copilot said he was aware that he was applying significant left rudder pressure during the approach, but didn't notice a power loss on the right

engine until he surrendered the flight controls.

The pilot stated that he took the controls due to the un-stabilized nature of the approach, and was unaware of the power loss until the copilot surrendered the controls.

During a telephone interview, a witness on the ground said he watched the airplane in the traffic pattern, and throughout the approach. The airplane appeared to be over the runway when it leveled off "about 10 feet" above the ground. At that time, the airplane turned about 30 degrees to the right, the engine noise increased, and then the airplane "shot" further to the right and collided with the Cessna 172. According to the witness, "It looked like he had an engine failure."

The airplane was examined at the scene on December 2 and 3, 2004, by Federal Aviation Administration (FAA) aviation safety inspectors. Control continuity was established from the cockpit to all of the flight control surfaces. Control continuity was also established for the engine controls.

The left main landing gear and the nose gear were separated from the airplane. The gear handle was in the "down" position, and the right main landing gear was down and locked. Fuel was drained from each tank.

The propeller blades on the left engine displayed significant aft bending on two blades, and one blade was bent forward. The blade tips were fractured and separated from each blade.

The propeller blades on the right engine showed some slight aft bending and tip damage. The propeller blades were not in the feathered position.

The right engine was removed, and shipped to the Teledyne Continental engine factory for examination. On March 22, 2005, the engine was removed from quarantine at the factory by an FAA aviation safety inspector. The engine was examined, and it exhibited minimal impact damage. Airframe-associated accessories were removed, a test propeller was attached, and the engine was placed in a test cell.

The engine started immediately on the first attempt. The engine was then shut down due to an oil leak around a pushrod housing that was damaged by impact. The housing was replaced, and the engine restarted immediately.

The engine was run continuously, and without interruption at gradually increased power settings. At each graduation, the engine ran for 5 minutes before the power was increased. Ultimately, the engine ran at full rated power, without interruption. Other than impact damage, there were no anomalies noted with the engine.

The pilot reported 3,000 total hours of flight experience, 130 hours of which were in the Cessna 414. The pilot held an airline transport pilot certificate, with a rating for airplane multi-engine land, and a commercial pilot certificate with ratings for airplane single engine land and instrument airplane.

The copilot reported approximately 5,600 hours of flight experience, 360 hours of which was in multi-engine airplanes, and no prior experience in the Cessna 414. He held a commercial pilot certificate with ratings for airplane single engine land, multi-engine land, and instrument airplane.

The weather reported at Dinwiddie County Airport, at 1300, included clear skies and wind from 200 degrees at 6 knots.

According to the Cessna 414 Pilot's Operating Handbook, the procedure for "Engine Inoperative Go-Around" includes:

1. If absolutely necessary and speed is above 91 KIAS, increase engine speed to 2,700 RPM and apply full throttle.
2. Landing Gear - UP.
3. Wing flaps - UP if extended
4. Cowl Flap -OPEN
5. Climb at 105 knots (98 knots with obstacles directly ahead.
6. Trim Tabs - Adjust 5 degrees bank toward operative engine

The Handbook further stated, "Climb or continued level flight is improbable with the landing extended and the propeller windmilling."

### Pilot Information

<b>Certificate:</b>	Airline Transport; Commercial	<b>Age:</b>	30, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	10/27/2004
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	07/05/2004
<b>Flight Time:</b>	3000 hours (Total, all aircraft), 130 hours (Total, this make and model)		

### Co-Pilot Information

<b>Certificate:</b>	Flight Instructor; Commercial	<b>Age:</b>	58, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane Single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	04/05/2004
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	5600 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N2EQ
Model/Series:	414	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	414-0373
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	11/15/2004, Annual	Certified Max Gross Wt.:	6350 lbs
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Continental
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	TSIO-520-BCJB
Registered Owner:	Devonshire Aviation LLC	Rated Power:	300 hp
Operator:	Devonshire Aviation LLC	Operating Certificate(s) Held:	None
Operator Does Business As:	Central Virginia Aviation	Operator Designator Code:	

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	PTB, 243 ft msl	Distance from Accident Site:	
Observation Time:	1200 EST	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	200°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.1 inches Hg	Temperature/Dew Point:	14° C / 2° C
Precipitation and Obscuration:			
Departure Point:	Petersburg, VA (PTB)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	
Departure Time:	1255 EST	Type of Airspace:	

## Airport Information

Airport:	PETERSBURG MUNI (PTB)	Runway Surface Type:	Concrete
Airport Elevation:	243 ft	Runway Surface Condition:	Dry
Runway Used:	05	IFR Approach:	Visual
Runway Length/Width:	5001 ft / 100 ft	VFR Approach/Landing:	Traffic Pattern

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	2 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	4 None	<b>Latitude, Longitude:</b>	37.183333, -77.500000

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Brian C Rayner	<b>Report Date:</b>	09/13/2005
<b>Additional Participating Persons:</b>	John Keymont; FAA; Richmond, VA Terry Horton; Teledyne Continental Motors; Mobile, AL		
<b>Publish Date:</b>			
<b>Investigation Docket:</b>	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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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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](#).