



# Aviation Investigation Final Report

<b>Location:</b>	PONTIAC, Michigan	<b>Accident Number:</b>	CHI82DA341
<b>Date &amp; Time:</b>	September 6, 1982, 17:39 Local	<b>Registration:</b>	N10TN
<b>Aircraft:</b>	AERO COMMANDER 681	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	3 None
<b>Flight Conducted Under:</b>	Part 91: General aviation		

## Analysis

DURING CRUISE FLIGHT THE PILOT OBSERVED THE HYDRAULIC SYSTEM PRESSURE FLUCTUATING. THE PILOT IMMEDIATELY WENT INTO A HOLD PATTERN AND ATTEMPTED TO ASCERTAIN THE PROBLEM. AFTER REPEATED ATTEMPTS THE PILOT WAS ABLE TO LOWER THE NOSE GEAR AND THE RIGHT MAIN GEAR. DURING FINAL APPROACH FOR THE EMERGENCY LANDING THE PILOT FEATHERED THE LEFT ENGINE AND ON TOUCHDOWN THE RIGHT ENGINE WAS FEATHERED. TOUCHDOWN WAS MADE ON THE RIGHT GEAR WITH FULL RIGHT AILERON. THE PILOT LOST AILERON LIFT AND THE AIRCRAFT SETTLED ONTO THE LEFT GEAR AND THE GEAR COLLAPSED. INVESTIGATION REVEALED THAT THE LEFT, MAIN GEAR HYDRAULIC SYSTEM PLUMBING HAD A FATIGUE HAIRLINE CRACK IN THE PRESSURE LINE LEADING FROM THE PUMP TO THE CYLINDER. THE FRACTURE WAS IN THE 90 DEGREE BEND OF THE LINE.

## Probable Cause and Findings

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

### Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: CRUISE - NORMAL

Findings

1. (C) HYDRAULIC SYSTEM,LINE - CRACKED
2. (C) HYDRAULIC SYSTEM,LINE - FATIGUE
3. (F) EMERGENCY PROCEDURE - PERFORMED - PILOT IN COMMAND

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Occurrence #2: GEAR COLLAPSED

Phase of Operation: LANDING - ROLL

#### Findings

4. (C) GEAR EXTENSION - NOT POSSIBLE - PILOT IN COMMAND
5. (F) LANDING GEAR,MAIN GEAR - UNLOCKED
6. (F) LANDING GEAR,MAIN GEAR - BUCKLED

## Factual Information

### Pilot Information

<b>Certificate:</b>	Airline transport; Flight instructor	<b>Age:</b>	39, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea; Multi-engine land	<b>Seat Occupied:</b>	Unknown
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	May 10, 1982
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	13510 hours (Total, all aircraft), 2130 hours (Total, this make and model), 4 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	AERO COMMANDER	<b>Registration:</b>	N10TN
<b>Model/Series:</b>	681 681	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>		<b>Serial Number:</b>	6037
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	11
<b>Date/Type of Last Inspection:</b>	Unknown	<b>Certified Max Gross Wt.:</b>	9400 lbs
<b>Time Since Last Inspection:</b>	76 Hrs	<b>Engines:</b>	2 Turbo prop
<b>Airframe Total Time:</b>	2232 Hrs	<b>Engine Manufacturer:</b>	AIRESEARCH
<b>ELT:</b>	Installed	<b>Engine Model/Series:</b>	TPE-331-43BL
<b>Registered Owner:</b>	TRANS INDUSTRIES	<b>Rated Power:</b>	575 Horsepower
<b>Operator:</b>	TRANS INDUSTRIES	<b>Operating Certificate(s) Held:</b>	
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	PTK	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	17:39 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Unknown	<b>Visibility</b>	7 miles
<b>Lowest Ceiling:</b>	Overcast / 1100 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	5 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	90°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30 inches Hg	<b>Temperature/Dew Point:</b>	
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	DETROIT , MI (DTW )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>		<b>Type of Clearance:</b>	
<b>Departure Time:</b>	13:50 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	OAKLAND-PONTIAC PTK	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	0 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	9	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	6200 ft / 150 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 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>	3 None	<b>Latitude, Longitude:</b>	

## Administrative Information

**Investigator In Charge (IIC):**

**Additional Participating Persons:**

**Original Publish Date:** September 6, 1983

**Last Revision Date:**

**Investigation Class:** [Class](#)

**Note:**

**Investigation Docket:** <https://data.ntsb.gov/Docket?ProjectID=72280>

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