



# Aviation Investigation Final Report

<b>Location:</b>	KODIAK, Alaska	<b>Incident Number:</b>	ANC93IA076
<b>Date &amp; Time:</b>	May 31, 1993, 13:15 Local	<b>Registration:</b>	N5847M
<b>Aircraft:</b>	CESSNA 310	<b>Aircraft Damage:</b>	Minor
<b>Defining Event:</b>		<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

THE AIRPLANE JUST COMPLETED AN ANNUAL INSPECTION AND WAS ON A MAINTENANCE TEST FLIGHT. UPON GEAR RETRACTION THE NOSE GEAR MADE A LOUD NOISE AND THEN WOULD NOT LOCK IN THE DOWN POSITION OF THE SUBSEQUENT EXTENSION. EXAMINATION OF THE SYSTEM SHOWED THE LANDING MECHANISM WAS IN RIG AND THE NOSE GEAR CENTERING MECHANISM WAS OPERATIONAL. METALLURGICAL EXAMINATION SHOWED THAT THE FRACTURES REVEALED FEATURES TYPICAL OF OVERSTRESS SEPARATIONS.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: THE FAILURE OF THE NOSE GEAR IDLER BELL CRANK DUE TO OVERSTRESS BY AN UNDETERMINED SOURCE.

## Findings

Occurrence #1: NOSE GEAR COLLAPSED  
Phase of Operation: LANDING - ROLL

### Findings

1. (C) LANDING GEAR, NOSE GEAR - FAILURE, PARTIAL

## Factual Information

On May 31, 1993, at 1315 Alaska daylight time, a retractable wheel equipped Cessna 310 airplane, N5847M, registered to and operated by the Pilot-in-Command, experienced a collapse of the nose gear upon landing at the Kodiak Airport, Kodiak, Alaska. The personal flight, operating under 14 CFR Part 91, departed Kodiak for a local maintenance test flight. Visual meteorological conditions prevailed and no flight plan was filed. The Airline Transport Pilot-in-Command and the mechanic/passenger were not injured and the airplane received only minor damage.

According to the Pilot-in-Command, the nose gear made a loud noise upon retraction and then would not lock down during the subsequent extension. Examination of the system showed a failure of the nose gear idler bell crank.

Metallurgical examination of the idler bell crank by use of the bench binocular microscope showed that the fractures revealed features typical of over stress separations.

According to the Pilot-in-Command/owner and the mechanic, after the mishap, they simply replaced the idler bell crank and performed a gear extension and retraction check while the airplane was on jacks. The gear performed perfectly and they were not able to duplicate the problem. The nose wheel centering mechanism was examined and no anomalies were noted. According to the mechanic, the landing gear was rigged properly.

### Pilot Information

<b>Certificate:</b>	Airline transport; Commercial	<b>Age:</b>	39, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical-w/ waivers/lim	<b>Last FAA Medical Exam:</b>	June 19, 1991
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	4300 hours (Total, all aircraft), 400 hours (Total, this make and model), 4250 hours (Pilot In Command, all aircraft), 5 hours (Last 90 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	CESSNA	<b>Registration:</b>	N5847M
<b>Model/Series:</b>	310 310	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal; Provisional (Special)	<b>Serial Number:</b>	310P0147
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	May 31, 1993 Annual	<b>Certified Max Gross Wt.:</b>	5200 lbs
<b>Time Since Last Inspection:</b>	0 Hrs	<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>	3000 Hrs	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	IO-520-C
<b>Registered Owner:</b>	BOB MAIN AND ASSOCIATES	<b>Rated Power:</b>	300 Horsepower
<b>Operator:</b>	MAIN, ROBERT	<b>Operating Certificate(s) Held:</b>	None
<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>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	20 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	4 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	80°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29 inches Hg	<b>Temperature/Dew Point:</b>	13°C / 10°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	(ADQ)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	(ADQ)	<b>Type of Clearance:</b>	VFR
<b>Departure Time:</b>	13:00 Local	<b>Type of Airspace:</b>	Class D

## Airport Information

<b>Airport:</b>	KODIAK ADQ	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	73 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	28	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	5400 ft / 150 ft	<b>VFR Approach/Landing:</b>	Full stop;Straight-in

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Minor
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	57.789299,-152.400634(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Kobelnyk, George
<b>Additional Participating Persons:</b>	RALPH PACK; ANCHORAGE , AK
<b>Original Publish Date:</b>	February 14, 1996
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=2318">https://data.nts.gov/Docket?ProjectID=2318</a>

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