



# National Transportation Safety Board

## Aviation Accident Data Summary

<b>Location:</b>	Corona, CA	<b>Accident Number:</b>	LAX04FA001
<b>Date &amp; Time:</b>	10/01/2003, 1541 PDT	<b>Registration:</b>	N481CA
<b>Aircraft:</b>	Piper PA-32R-301T	<b>Injuries:</b>	2 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

### Analysis

Shortly after takeoff the pilot contacted air traffic controllers and declared an emergency due to an in-flight fire. An airborne witness in another aircraft reported seeing the accident airplane in level flight with black smoke emanating from it. The airborne witness then reported seeing the airplane bank to the left and enter a nose down spiral towards the ground. The airplane impacted flat level terrain in a steep nose down attitude and the post-impact fire consumed the majority of the airplane. The flight was airborne for about 4 minutes before it crashed. The on-scene and detailed post recovery examinations revealed evidence consistent with an in-flight fire in the lower aft engine compartment area in proximity to the turbocharger and the adjacent firewall. Evidence on the nose landing gear strut cylinder suggests that temperatures in this area exceeded the melting point of aluminum while the airplane was in flight. During the engine examination investigators noted that the tension ring of the turbocharger exhaust clamp that retains the exhaust duct to the turbine side of the turbocharger had fractured at the 11 o'clock position. The exhaust clamp bolt remained connected and properly safetied. With this clamp broken and the exhaust ducting loose, hot exhaust gasses would have been directed against the lower firewall. The examination of the turbocharger exhaust clamp showed a high temperature creep/stress rupture that initiated from a crack at one of the resistance welds that joins the sheet metal retainers to the tension ring. The turbocharger gases are approximately 1,200 to 1,500 degrees Fahrenheit, and the tension ring fracture surface showed intergranular brittle fracture across approximately 80-percent of the cross-sectional area initiating at the resistance weld. The heavily oxidized resistance weld region, when compared to the lighter oxidized sheet metal, suggested that the weld crack was pre-existing. A review of past historical Safety Board data revealed three other accidents, FTW98FA325, FTW99LA241, and CHIO2FA042, with similar fractures of exhaust clamps, and other referenced data showed that Inconel 718 could crack in an intergranular mode in a time-dependent creep/stress rupture mode in this temperature range. Cockpit/cabin material that showed exposure to fire was found in the wreckage debris field away from any areas affected by the ground fire.

### Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: failure of the turbocharger exhaust clamp due to a pre-existing weld crack, which allowed the release of high temperature exhaust gasses in the engine compartment, causing an in-flight fire.

### Findings

Occurrence #1: FIRE  
Phase of Operation: CLIMB - TO CRUISE

Findings

1. EXHAUST SYSTEM, TURBOCHARGER
  2. (C) EXHAUST SYSTEM, CLAMP - FATIGUE
  3. (C) EXHAUST SYSTEM, CLAMP - SEPARATION
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Occurrence #2: LOSS OF CONTROL - IN FLIGHT  
Phase of Operation: DESCENT - EMERGENCY

Findings

4. AIRCRAFT CONTROL - NOT POSSIBLE - PILOT IN COMMAND
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Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: DESCENT - UNCONTROLLED

Findings

5. TERRAIN CONDITION - OPEN FIELD

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	31
<b>Airplane Rating(s):</b>	Single-engine Land	<b>Instrument Rating(s):</b>	Airplane
<b>Other Aircraft Rating(s):</b>	None	<b>Instructor Rating(s):</b>	None
<b>Flight Time:</b>	330 hours (Total, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N481CA
<b>Model/Series:</b>	PA-32R-301T	<b>Engines:</b>	1 Reciprocating
<b>Operator:</b>	Paul R. Mumford Sr/Jr	<b>Engine Manufacturer:</b>	Textron Lycoming
<b>Operating Certificate(s) Held:</b>	None	<b>Engine Model/Series:</b>	TIO-540-AH1A
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

### Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual Conditions	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	CNO, 652 ft msl	<b>Weather Information Source:</b>	Weather Observation Facility
<b>Lowest Ceiling:</b>	Broken / 20000 ft agl	<b>Wind Speed/Gusts, Direction:</b>	12 knots / , 260°
<b>Temperature:</b>	29° C	<b>Visibility</b>	7 Miles
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Corona, CA (AJO)	<b>Destination:</b>	Oakland, CA (OAK)

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	1 Fatal	<b>Aircraft Fire:</b>	In-Flight and On-Ground
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Latitude, Longitude:</b>	33.946111, -117.578056		

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Tealeye C Cornejo	<b>Adopted Date:</b>	10/03/2006
<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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