



National Transportation Safety Board Aviation Accident Final Report

Location:	FRESNO, CA	Accident Number:	LAX87FA128
Date & Time:	02/27/1987, 2000 PST	Registration:	N356PS
Aircraft:	BRITISH AEROSPACE BA146-200A	Aircraft Damage:	Substantial
Defining Event:		Injuries:	87 None

Flight Conducted Under: Part 121: Air Carrier - Scheduled

Analysis

THE FLIGHT WAS UNEVENTFUL DURING TAKEOFF AND CLIMB TO AN ASSIGNED CRUISE ALTITUDE OF FL260. APPROXIMATELY 40 MINUTES AFTER TAKEOFF THE NUMBER 3 ENGINE EXPERIENCED AN UNCONTAINED FAILURE OF THE TURBINE BLADES ON THE NUMBER 4 POWER TURBINE WHEEL. ALTHOUGH DEBRIS FROM THE ENGINE PENETRATED THE PRESSURE VESSEL, THE PILOT MADE AN UNSCHEDULED LANDING AT AN AIRPORT WITHOUT FURTHER INCIDENT. EXAMINATION OF THE ENGINE REVEALED THAT FERROUS CHIPS WERE CONTAMINATING, AND OIL WAS BYPASSING THE ENGINE OIL FILTER FOR AT LEAST 40 DAYS. HOWEVER, NO CORRECTIVE ACTION WAS TAKEN BY COMPANY MAINTENANCE PERSONNEL. THE OIL AND FILTER WERE CHANGED THREE TIMES IN THE THREE MONTHS PREVIOUS TO THE ACCIDENT. THE EXAM REVEALED THAT THE CONTAMINATED OIL CONTRIBUTED TO THE FAILURE OF THE NUMBER FOUR TURBINE BEARING SUBSEQUENTLY LEADING TO OVERHEATING AND DAMAGE TO THE OVERSPEED SENSORS. THE TURBINE OVERSPED AND THE TURBINE BLADES DEPARTED THE TURBINE DISC.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FAILURE OF COMPANY MAINTENANCE PERSONNEL TO ADEQUATELY EXAMINE THE ENGINE LUBRICATION SYSTEM WHEN CONTAMINATION WAS DETECTED.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: CRUISE - NORMAL

Findings

1. TURBOSHAFT ENGINE,FREE(POWER) TURBINE
2. LUBRICATING SYSTEM,OIL MAGNETIC PLUG - CONTAMINATION
3. (C) LUBRICATING SYSTEM - CONTAMINATION
4. (C) FLUID,OIL - CONTAMINATION
5. (C) MAINTENANCE - INADEQUATE - COMPANY MAINTENANCE PERSONNEL
6. (C) TURBINE ASSEMBLY,SHAFT BEARING - FAILURE,TOTAL
7. TURBINE ASSEMBLY,TURBINE BLADE - FAILURE,TOTAL

Occurrence #2: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: CRUISE - NORMAL

Findings

8. FUSELAGE,FAIRING - PENETRATED
9. FUSELAGE,SKIN - PENETRATED

Factual Information

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	42, 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:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last Medical Exam:	11/04/1986
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	19592 hours (Total, all aircraft), 1579 hours (Total, this make and model), 18000 hours (Pilot In Command, all aircraft), 128 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	BRITISH AEROSPACE	Registration:	N356PS
Model/Series:	BA146-200A BA146-200A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	E2039
Landing Gear Type:	Retractable - Tricycle	Seats:	109
Date/Type of Last Inspection:	02/21/1987, Continuous Airworthiness	Certified Max Gross Wt.:	95000 lbs
Time Since Last Inspection:		Engines:	4 Turbo Fan
Airframe Total Time:	4662 Hours	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	ALF502R-5
Registered Owner:	CONNECTICUT NAT'L BANK	Rated Power:	6970 lbs
Operator:	PACIFIC SOUTHWEST AIRLINES	Air Carrier Operating Certificate:	Flag carrier (121)
Operator Does Business As:		Operator Designator Code:	PSAA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Bright
Observation Facility, Elevation:	FAT, 333 ft msl	Observation Time:	1950 PST
Distance from Accident Site:	50 Nautical Miles	Direction from Accident Site:	270°
Lowest Cloud Condition:	Clear / 0 ft agl	Temperature/Dew Point:	11° C / 1° C
Lowest Ceiling:	None / 0 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	5 knots, 10°	Visibility (RVR):	0 ft
Altimeter Setting:	30 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	LOS ANGELES, CA (LAX)	Type of Flight Plan Filed:	IFR
Destination:	RENO, NV (RNO)	Type of Clearance:	IFR
Departure Time:	1902 PDT	Type of Airspace:	Class E

Airport Information

Airport:	FRESNO AIR TERMINAL (FAT)	Runway Surface Type:	Concrete
Airport Elevation:	332 ft	Runway Surface Condition:	Dry
Runway Used:	11L	IFR Approach:	None
Runway Length/Width:	9218 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	4 None	Aircraft Damage:	Substantial
Passenger Injuries:	83 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	87 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	J. A WALL	Adopted Date:	11/15/1989
Additional Participating Persons:	JOHN MOYER; FRESNO, CA DAVID W KNOBLOCK; STRATFORD, CT RICK SHELLNUT; SAN DIEGO, CA DREK TAYLOR; SAN DIEGO, CA		
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/ .		

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