



National Transportation Safety Board Aviation Accident Final Report

Location:	EAGLE LAKE, TX	Accident Number:	DCA91MA052
Date & Time:	09/11/1991, 1003 CDT	Registration:	N33701
Aircraft:	EMBRAER 120	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	14 Fatal

Flight Conducted Under: Part 135: Air Taxi & Commuter - Scheduled

Analysis

THE AIRPLANE BROKE UP IN FLIGHT WHILE DESCENDING FROM FL240. THE HORIZONTAL STABILIZER, OR TOP OF THE T-TYPE TAIL, HAD SEPARATED FROM THE FUSELAGE BEFORE GROUND IMPACT. EXAMINATION REVEALED THAT THE 47 SCREW FASTENERS THAT WOULD HAVE ATTACHED THE UPPER SURFACE OF THE LEADING EDGE ASSEMBLY FOR THE LEFT SIDE OF THE HORIZONTAL STABILIZER WERE MISSING. THEY HAD BEEN REMOVED THE NIGHT BEFORE DURING SCHEDULED MAINTENANCE. INVESTIGATION REVEALED THAT THERE WAS A LACK OF COMPLIANCE WITH THE FAA-APPROVED GENERAL MAINTENANCE MANUAL PROCEDURES BY THE MECHANICS, INSPECTORS, AND SUPERVISORS RESPONSIBLE FOR ASSURING THE AIRWORTHINESS OF THE AIRPLANE THE NIGHT BEFORE THE ACCIDENT. IN ADDITION, ROUTINE SURVEILLANCE OF THE CONTINENTAL EXPRESS MAINTENANCE DEPARTMENT BY THE FAA WAS INADEQUATE AND DID NOT DETECT DEFICIENCIES, SUCH AS THOSE THAT LED TO THIS ACCIDENT.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE FAILURE OF CONTINENTAL EXPRESS MAINTENANCE AND INSPECTION PERSONNEL TO ADHERE TO PROPER MAINTENANCE AND QUALITY ASSURANCE PROCEDURES FOR THE AIRPLANE'S HORIZONTAL STABILIZER DEICE BOOTS THAT LED TO THE SUDDEN IN-FLIGHT LOSS OF THE PARTIALLY SECURED LEFT HORIZONTAL STABILIZER LEADING EDGE AND THE IMMEDIATE SEVERE NOSE-DOWN PITCHOVER AND BREAKUP OF THE AIRPLANE. CONTRIBUTING TO THE CAUSE OF THE ACCIDENT WAS THE FAILURE OF CONTINENTAL EXPRESS MANAGEMENT TO ENSURE COMPLIANCE WITH THE APPROVED MAINTENANCE PROCEDURES, AND THE FAILURE OF THE FAA SURVEILLANCE TO DETECT AND VERIFY COMPLIANCE WITH APPROVED PROCEDURES. (NTSB REPORT AAR-92/04)

Findings

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

Findings

1. (C) HORIZONTAL STABILIZER SURFACE - NOT SECURED
2. (C) MAINTENANCE - IMPROPER - COMPANY MAINTENANCE PERSONNEL
3. (F) INADEQUATE SURVEILLANCE OF OPERATION - COMPANY/OPERATOR MGMT
4. (F) INADEQUATE SURVEILLANCE OF OPERATION - FAA(ORGANIZATION)
5. HORIZONTAL STABILIZER SURFACE - SEPARATION

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

SEE NATIONAL TRANSPORTATION SAFETY BOARD BLUE COVER REPORT AAR- 92/004.

Pilot Information

Certificate:	Airline Transport	Age:	29, Male
Airplane Rating(s):	Multi-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):		Toxicology Performed:	Yes
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	07/18/1991
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	4243 hours (Total, all aircraft), 2468 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	EMBRAER	Registration:	N33701
Model/Series:	120 120	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	120-L77
Landing Gear Type:	Retractable - Tricycle	Seats:	30
Date/Type of Last Inspection:	09/10/1991, Continuous Airworthiness	Certified Max Gross Wt.:	26000 lbs
Time Since Last Inspection:		Engines:	2 Turbo Prop
Airframe Total Time:	7229 Hours	Engine Manufacturer:	P&W
ELT:		Engine Model/Series:	
Registered Owner:		Rated Power:	
Operator:	CONTINENTAL EXPRESS	Operating Certificate(s) Held:	Commuter Air Carrier (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0950 CDT	Direction from Accident Site:	0°
Lowest Cloud Condition:	Unknown / 3000 ft agl	Visibility	6 Miles
Lowest Ceiling:	Broken / 3000 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	70°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	28° C / 23° C
Precipitation and Obscuration:			
Departure Point:	LAREDO, TX (LRD)	Type of Flight Plan Filed:	IFR
Destination:	HOUSTON, TX (IAH)	Type of Clearance:	IFR
Departure Time:	0909 CDT	Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	3 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	11 Fatal	Aircraft Fire:	In-Flight and On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	14 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	THOMAS CONROY	Report Date:	12/09/1993
Additional Participating Persons:			
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 pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).