



National Transportation Safety Board Aviation Accident Final Report

Location:	DETROIT, MI	Accident Number:	CHI91MA224
Date & Time:	07/22/1991, 2115 EDT	Registration:	N959SC
Aircraft:	LEARJET 23	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	3 Fatal

Flight Conducted Under: Part 91: General Aviation - Positioning

Analysis

A LINEMAN NOTED PARKING BRAKE (P/B) WAS SET BFR FLT. PLTS BGN TKOF ON 5147' RWY WITH 10 KT X-WND. A WITNESS SAID ACFT ROTATED FOR TKOF ABT 4500' DWN RWY & LIFTED OFF ABT 50' LTR. RPRTDLY, IT RMND LOW & SLOW (20-60 FT AGL) AFTER LIFT-OFF, THEN BANKED (ROCKED) LEFT & RIGHT IN NOSE HI ATTITUDE, SETTLED, HIT TREES & CRASHED ABT 200' BYD RWY. ONE PERSON SAID ACFT WENT OUT OF CTL BFR IMPACT; ANOTHER SAID IT WAS 'IN OR ON THE EDGE OF STALLED FLIGHT.' EXAM SHOWED ROTATIONAL DMG OCCURRED IN BOTH ENGS DRG IMPACT. THE BRAKING SYS HAD EVIDENCE THAT P/B CTL VLV WAS PARTIALLY ON; BRAKE TORQUE TUBE CONTAINED HEAT BLUEING. ON THIS EARLY MODEL (LEARJET 23/SN: 23-45A), P/B HAD TO BE RLSD BY DEPRESSING BRAKE PEDALS 1ST; PLT HANDBOOK DID NOT ADDRESS THIS. ON LTR MODELS (SN: 23-050 & UP), P/B NEEDED ONLY TO BE MOVED 'OFF.' INV SHOWED LEFT SEAT PLT HAD TRNG IN LATER MODELS (LEARJET 24/25); BUT ONLY A BIENNIAL FLT REVIEW WAS NOTED IN THE MODEL 23. COMPANY DISPATCHER SAID NO TRNG WOULD HAVE BEEN PERFORMED ON ACDNT FLT (WITH PSGR ABOARD). ACFT WAS ABT 430 LBS OVR MAX WT LMT.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: IMPROPER PREFLIGHT BY THE PILOT, HIS FAILURE TO ABORT THE TAKEOFF WHILE THERE WAS SUFFICIENT RUNWAY REMAINING, AND HIS FAILURE TO ASSURE THAT THE AIRCRAFT ATTAINED SUFFICIENT AIRSPEED FOR LIFT-OFF AND CLIMB. FACTORS RELATED TO THE ACCIDENT WERE: THE PILOT'S FAILURE TO ASSURE THE AIRCRAFT WAS WITHIN ITS MAXIMUM WEIGHT LIMITATION, HIS IMPROPER USE OF THE PARKING BRAKE, AND INSUFFICIENT INFORMATION IN THE PILOT OPERATING HANDBOOK CONCERNING THE AIRCRAFT PARKING BRAKE.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: TAKEOFF

Findings

1. (C) AIRCRAFT PREFLIGHT - INADEQUATE - PILOT IN COMMAND
2. (F) AIRCRAFT WEIGHT AND BALANCE - IMPROPER - PILOT IN COMMAND
3. (F) AIRCRAFT MANUALS, SYSTEM INFORMATION - INADEQUATE
4. (F) PARKING BRAKES - IMPROPER USE OF - PILOT IN COMMAND
5. (F) INFORMATION INSUFFICIENT - MANUFACTURER
6. (C) ABORTED TAKEOFF - NOT PERFORMED - PILOT IN COMMAND
7. (C) LIFT-OFF - PREMATURE - PILOT IN COMMAND
8. STALL/MUSH

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: TAKEOFF

Findings

9. (F) OBJECT - TREE(S)

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	43, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Unknown
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):		Toxicology Performed:	Yes
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last Medical Exam:	01/16/1991
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	9000 hours (Total, all aircraft), 2600 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	LEARJET	Registration:	N959SC
Model/Series:	23 23	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:		Serial Number:	23-045A
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	12500 lbs
Time Since Last Inspection:	0 Hours	Engines:	2 Turbo Jet
Airframe Total Time:		Engine Manufacturer:	GE
ELT:	Not installed	Engine Model/Series:	CJ-610-4
Registered Owner:		Rated Power:	2850 lbs
Operator:	JETSTREAM INTERNATIONAL, INC.	Air Carrier Operating Certificate:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	BUKA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Dusk
Observation Facility, Elevation:	DET, 626 ft msl	Observation Time:	2121 EDT
Distance from Accident Site:	1 Nautical Miles	Direction from Accident Site:	335°
Lowest Cloud Condition:	Unknown / 0 ft agl	Temperature/Dew Point:	-18° C / -18° C
Lowest Ceiling:	Overcast / 10000 ft agl	Visibility	7 Miles
Wind Speed/Gusts, Direction:	10 knots, 240°	Visibility (RVR):	0 ft
Altimeter Setting:		Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	(DET)	Type of Flight Plan Filed:	IFR
Destination:	CHICAGO, IL (MDW)	Type of Clearance:	IFR
Departure Time:	0000	Type of Airspace:	

Airport Information

Airport:	DETROIT CITY (DET)	Runway Surface Type:	Asphalt
Airport Elevation:	626 ft	Runway Surface Condition:	Dry
Runway Used:	33	IFR Approach:	None
Runway Length/Width:	5147 ft / 100 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	On-Ground
Total Injuries:	3 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	FRANK S GATTOLIN	Adopted Date:	09/11/1992
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/ .		

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