
Birdstrike causing engine damage on a Boeing 737-300 at Portland, November 2, 1995

Micro-summary: Birdstrike on takeoff causes significant damage to an engine on this Boeing 737-3B7.


Event Date: 1995-11-02 at 1828 EST


Investigative Body: National Transportation Safety Board (NTSB), USA


Investigative Body's Web Site: <http://www.nts.gov/>


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1. Accident reports can be and sometimes are revised. Be sure to consult the investigative agency for the latest version before basing anything significant on content (e.g., thesis, research, etc).
 2. Readers are advised that each report is a glimpse of events at specific points in time. While broad themes permeate the causal events leading up to crashes, and we can learn from those, the specific regulatory and technological environments can and do change. ***Your company's flight operations manual is the final authority as to the safe operation of your aircraft!***
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		NTSB ID: NYC96IA022		Aircraft Registration Number: N373US	
		Occurrence Date: 11/02/1995		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place PORTLAND	State ME	Zip Code 04102	Local Time 1828	Time Zone EST	
Airport Proximity: On Airport		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer BOEING		Model/Series 737-3B7		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>On November 2, 1995, at 1828 eastern standard time, a Boeing 737-3B7, N373US, operated by USAir as flight 1669, struck a bird in the number 2 engine, during takeoff from the Portland International Jetport, Portland, Maine. The occupants were not injured, and the airplane received minor damage. Instrument meteorological conditions prevailed, and the scheduled, domestic, passenger/cargo flight was operated on an Instrument Flight Rules (IFR) flight plan under 14 CFR 121.</p> <p>The CAPTAIN'S REPORT OF NON-STANDARD OR IRREGULAR OPERATION stated:</p> <p>At takeoff rotation we experienced an apparent bird strike in the #2 engine followed by a loud bang & excessive engine vibration. #2 engine was shut down, an emergency was declared & emergency procedures were followed ending with an uneventful single engine landing.</p> <p>According to the Powerplant Group Chairman Report, conducted by a Safety Board Investigator from RE-40, Aviation Engineering Services:</p> <p>...The fuselage adjacent to the No. 2 engine did not have any apparent damage from engine debris. An inspection of the entire airplane did not show any indications of other bird impacts or damage...There were no penetrations through any of the engine casings...Feathers and other organic debris identified to be bird remains were found in the fan, compressor, and combustor. There was no indication of any preexisting engine damage...Feather pieces...[were identified] as a female Common Eider (Somateria mollissima). The weight of the female Common Eider can range from 42 to 103 ounces (2.7 to 6.4 pound) with the average weight being 61 ounces (3.8 pounds)...The airworthiness certification requirements for bird ingestion into a turbine engine...states, in part that the engine must demonstrate that the ingestion of a 4-pound bird may not cause the engine to catch fire, burst or release hazardous fragments through the engine case, generate loads greater than the engine mount attachment ultimate load limits, or lose the capability of being shut down...the fractured fan blades, and the gearbox mount pad adapter were returned to the NTSB Materials laboratory to determine the mod of fracture. Examination showed all the fractures were due to overstress, with no evidence of progressive cracking...</p>					
FACTUAL REPORT - AVIATION					

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: NYC96IA022				
		Occurrence Date: 11/02/1995				
		Occurrence Type: Incident				
Landing Facility/Approach Information						
Airport Name PORTLAND INT'L JETPORT		Airport ID: PWM	Airport Elevation 74 Ft. MSL	Runway Used 11	Runway Length 6800	Runway Width 150
Runway Surface Type: Asphalt						
Runway Surface Condition: Wet						
Type Instrument Approach: NONE						
VFR Approach/Landing: Precautionary Landing						
Aircraft Information						
Aircraft Manufacturer BOEING		Model/Series 737-3B7		Serial Number 22952		
Airworthiness Certificate(s): Transport						
Landing Gear Type: Retractable - Tricycle						
Homebuilt Aircraft? No		Number of Seats: 128		Certified Max Gross Wt. 135500 LBS	Number of Engines: 2	
Engine Type: Turbo Fan		Engine Manufacturer: CFM		Model/Series: CFM56-3B2	Rated Power: 22300 HP	
- Aircraft Inspection Information						
Type of Last Inspection Continuous Airworthiness		Date of Last Inspection	Time Since Last Inspection Hours		Airframe Total Time Hours	
- Emergency Locator Transmitter (ELT) Information						
ELT Installed? No		ELT Operated?		ELT Aided in Locating Accident Site?		
Owner/Operator Information						
Registered Aircraft Owner USAIR		Street Address 2345 CRYSTAL DRIVE				
		City ARLINGTON		State VA	Zip Code 22227	
Operator of Aircraft Same as Reg'd Aircraft Owner		Street Address Same as Reg'd Aircraft Owner				
		City		State	Zip Code	
Operator Does Business As:				Operator Designator Code: USAA		
- Type of U.S. Certificate(s) Held:						
Air Carrier Operating Certificate(s): Flag Carrier/Domestic						
Operating Certificate:			Operator Certificate:			
Regulation Flight Conducted Under: Part 121: Air Carrier						
Type of Flight Operation Conducted: Scheduled; Domestic; Passenger/Cargo						

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First Pilot Information																																																																																				
Name		City		State	Date of Birth	Age																																																																														
On File		On File		On File	On File	43																																																																														
Sex: M	Seat Occupied: Left	Principal Profession: Civilian Pilot			Certificate Number: On File																																																																															
Certificate(s): Airline Transport																																																																																				
Airplane Rating(s): Multi-engine Land; Single-engine Land; Single-engine Sea																																																																																				
Rotorcraft/Glider/LTA: None																																																																																				
Instrument Rating(s): Airplane																																																																																				
Instructor Rating(s): None																																																																																				
Type Rating/Endorsement for Accident/Incident Aircraft? Yes				Current Biennial Flight Review?																																																																																
Medical Cert.: Class 1		Medical Cert. Status: Valid Medical--no waivers/lim.			Date of Last Medical Exam: 05/1995																																																																															
<table border="1"> <tr> <th rowspan="2">- Flight Time Matrix</th> <th rowspan="2">All A/C</th> <th rowspan="2">This Make and Model</th> <th rowspan="2">Airplane Single Engine</th> <th rowspan="2">Airplane Multi-Engine</th> <th rowspan="2">Night</th> <th colspan="2">Instrument</th> <th rowspan="2">Rotorcraft</th> <th rowspan="2">Glider</th> <th rowspan="2">Lighter Than Air</th> </tr> <tr> <th>Actual</th> <th>Simulated</th> </tr> <tr> <td>Total Time</td> <td>13140</td> <td>271</td> <td></td> <td></td> <td></td> <td>800</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pilot In Command(PIC)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Instructor</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 90 Days</td> <td></td> <td>210</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 30 Days</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 24 Hours</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air	Actual	Simulated	Total Time	13140	271				800					Pilot In Command(PIC)											Instructor											Last 90 Days		210									Last 30 Days											Last 24 Hours										
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Seatbelt Used? Yes		Shoulder Harness Used? Yes		Toxicology Performed? No		Second Pilot? Yes																																																																														
Flight Plan/Itinerary																																																																																				
Type of Flight Plan Filed: IFR																																																																																				
Departure Point		State	Airport Identifier	Departure Time	Time Zone																																																																															
Same as Accident/Incident Location			PWM	1828	EST																																																																															
Destination		State	Airport Identifier																																																																																	
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Type of Clearance: IFR																																																																																				
Type of Airspace: Class C																																																																																				
Weather Information																																																																																				
Source of Briefing: Company																																																																																				
Method of Briefing:																																																																																				

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		Occurrence Date: 11/02/1995			
		Occurrence Type: Incident			
Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
PWM	1856	EST	74 Ft. MSL	0 NM	0 Deg. Mag.
Sky/Lowest Cloud Condition: Unknown				0 Ft. AGL	Condition of Light: Night/Dark
Lowest Ceiling: Broken			300 Ft. AGL	Visibility: 1.75 SM	Altimeter: 29.00 "Hg
Temperature: 10 °C	Dew Point: 10 °C	Wind Direction: 350		Density Altitude: Ft.	
Wind Speed: 9	Gusts:	Weather Conditions at Accident Site: Instrument Conditions			
Visibility (RVR): 0 Ft.	Visibility (RVV) 0 SM	Intensity of Precipitation: Light			
Restrictions to Visibility: Fog					
Type of Precipitation: Rain					
Accident Information					
Aircraft Damage: Minor		Aircraft Fire: None		Aircraft Explosion: None	
Classification: U.S. Registered/U.S. Soil					
- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot				1	1
Second Pilot				1	1
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants				4	4
Other Crew					
Passengers				56	56
- TOTAL ABOARD -				62	62
Other Ground	0	0	0		0
- GRAND TOTAL -	0	0	0	62	62
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 National Transportation Safety Board FACTUAL REPORT AVIATION	NTSB ID: NYC96IA022	
	Occurrence Date: 11/02/1995	
	Occurrence Type: Incident	
Administrative Information		
Investigator-In-Charge (IIC) ROBERT L. HANCOCK		
Additional Persons Participating in This Accident/Incident Investigation: RAYMOND CLOUTIER FAA FSDO PORTLAND, ME JAMES HOOKEY AS-40 (POWERPLANTS) WASHINGTON, DC JOE EPPERSON RE-30 MATERIALS LAB DIV WASHINGTON, DC GEORGE SNYDER USAIR PITTSBURGH, PA		
FACTUAL REPORT - AVIATION		