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## Rejected takeoff due to AMASS malfunction, Boeing 737-500, Denver, August 7, 2004

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**Micro-summary:** A computer malfunction caused the tower to instruct a Boeing 737-500 to abort its takeoff.

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**Event Date:** 2004-08-07 at 1712 MDT


**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: DEN04IA124		Aircraft Registration Number: N929UA	
		Occurrence Date: 08/07/2004		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Denver		State CO	Zip Code 80249	Local Time 1712	Time Zone MDT
Airport Proximity: On Airport		Distance From Landing Facility: 2		Direction From Airport: 70	
Aircraft Information Summary					
Aircraft Manufacturer Boeing		Model/Series 737-500		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 August 7, 2004, at 1712 mountain daylight time, a Boeing 737-500, N929UA, operated by United Airlines as flight 1223, sustained minor damage during an aborted takeoff at Denver International Airport, Denver, Colorado. Visual meteorological conditions prevailed at the time of the incident. The scheduled domestic passenger flight was being operated on an instrument flight rules flight plan under the provisions of Title 14 CFR Part 121. The airline transport captain, the airline transport first officer, 3 cabin crew and 108 passengers reported no injuries. The cross-country flight was originating at the time of the incident and was en route to Los Angeles, California.</p> <p>According to FAA, the crew of Flight 1223 was told to abort the takeoff because the Airport Movement Area Surveillance System (AMASS) radar system had detected a target at the departure end of runway 25. The crew successfully aborted the takeoff and were able to taxi to a deicing pad. The airplane waited for 90 minutes for a "brake cooling period," allowing a tire to be changed so that the airplane could taxi to the gate. In the captain's conversation with the tower supervisor, the supervisor stated that the tower initiated the abort call because of a target indicated on their radar. After the abort, hundreds of targets were displayed on the tower's radar and the supervisor believed there was a computer malfunction.</p> <p>According to the FAA's Denver International Airport Airway Facilities Office, postincident investigation revealed that a dual air conditioning unit failure had occurred within the Airport Surface Detection Equipment (ASDE) equipment room. Equipment room temperatures had elevated and caused the equipment failure. The temperature had not risen high enough to initiate an automatic switch to the back-up unit.</p> <p>The airplane sustained deflation of four main landing gear tires and damage to four main landing gear brake assemblies.</p>					
FACTUAL REPORT - AVIATION					

 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: DEN04IA124			
		Occurrence Date: 08/07/2004			
		Occurrence Type: Incident			
<b>Landing Facility/Approach Information</b>					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
Denver International Airport	DEN	5431 Ft. MSL	25	12000	150
Runway Surface Type: Concrete					
Runway Surface Condition: Dry					
Type Instrument Approach: NONE					
VFR Approach/Landing: None					
<b>Aircraft Information</b>					
Aircraft Manufacturer		Model/Series		Serial Number	
Boeing		737-500		26652	
Airworthiness Certificate(s): Transport					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 114	Certified Max Gross Wt.	122500 LBS	Number of Engines: 2	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Turbo Fan	General Electric	CFM56	20000 LBS		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
Continuous Airworthiness	06/2003	2639 Hours	34436 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? No	ELT Operated? No	ELT Aided in Locating Accident Site? No			
<b>Owner/Operator Information</b>					
Registered Aircraft Owner		Street Address			
UNITED AIR LINES INC		1200 Algonquin Road			
		City	State	Zip Code	
		Elk Grove Township	IL	60007	
Operator of Aircraft		Street Address			
Same as Reg'd Aircraft Owner		Same as Reg'd Aircraft Owner			
		City	State	Zip Code	
Operator Does Business As:			Operator Designator Code: UALA		
- 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 Only					
FACTUAL REPORT - AVIATION					

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: DEN04IA124
	Occurrence Date: 08/07/2004
	Occurrence Type: Incident

**First Pilot Information**

Name On File	City On File	State On File	Date of Birth On File	Age 46
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Sex: M	Seat Occupied: Left	Principal Profession: Civilian Pilot	Certificate Number: On File
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Certificate(s): Airline Transport; Commercial

Airplane Rating(s): Multi-engine Land; Single-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): Airplane Multi-engine; Airplane Single-engine

Type Rating/Endorsement for Accident/Incident Aircraft? Yes	Current Biennial Flight Review? 05/2003
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Medical Cert.: Class 1	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 05/2004
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- 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	8282	7746								
Pilot In Command(PIC)		3852								
Instructor										
Last 90 Days										
Last 30 Days										
Last 24 Hours	6	6		6						

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? No	Second Pilot? Yes
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**Flight Plan/Itinerary**

Type of Flight Plan Filed: IFR

Departure Point Same as Accident/Incident Location	State	Airport Identifier DEN	Departure Time 1712	Time Zone MDT
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Destination Los Angeles	State CA	Airport Identifier LAX	
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Type of Clearance: IFR

Type of Airspace: Class B

**Weather Information**

Source of Briefing: Company


Method of Briefing: Teletype

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<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
DEN	1653	MDT	5431 Ft. MSL	2 NM	250 Deg. Mag.
Sky/Lowest Cloud Condition: Few			7000 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Broken		15000 Ft. AGL		Visibility: 10 SM	Altimeter: 30.08 "Hg
Temperature: 28 °C	Dew Point: 7 °C	Wind Direction: 210		Density Altitude: 8058 Ft.	
Wind Speed: 13	Gusts:	Weather Conditions at Accident Site: Visual Conditions			
Visibility (RVR): Ft.	Visibility (RVV) SM	Intensity of Precipitation:			
Restrictions to Visibility: None					
Type of Precipitation: None					

<b>Accident Information</b>		
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				3	3
Other Crew					
Passengers				108	108
- TOTAL ABOARD -				113	113
Other Ground					
- GRAND TOTAL -				113	113

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Administrative Information

Investigator-In-Charge (IIC)

David C. Bowling

Additional Persons Participating in This Accident/Incident Investigation:

Gary Dupertuis  
Air Safety Inspector  
FAA Flight Standards District Office  
26804 East 68th Avenue, Suite 200  
Denver, CO 80249