



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	DENVER, CO	<b>Accident Number:</b>	DEN93LA098
<b>Date &amp; Time:</b>	08/02/1993, 0947 MDT	<b>Registration:</b>	N508UA
<b>Aircraft:</b>	BOEING 757-222	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	164 None

**Flight Conducted Under:** Part 121: Air Carrier - Scheduled

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## Analysis

THE FIRST OFFICER, WHO WAS FLYING THE AIRPLANE, WAS MAKING A VISUAL APPROACH TO RUNWAY 26R. ALTHOUGH THE APPROACH WAS STABLE FROM 500 FEET, THE LANDING FLARE WAS INITIATED LATE, AND THE AIRPLANE TOUCHED DOWN FIRMLY. IT BOUNCED SLIGHTLY AND ASSUMED A NOSE HIGH ATTITUDE. WHEN IT TOUCHED DOWN AGAIN, THE TAIL SCRAPED THE RUNWAY.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE FIRST OFFICER'S IMPROPER RECOVERY FROM A BOUNCED LANDING. FACTORS WERE: THE FIRST OFFICER'S DELAYED INITIATION OF THE FLARE, AND THE CAPTAIN'S IMPROPER SUPERVISION OF THE FLIGHT.

## Findings

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Occurrence #1: HARD LANDING  
Phase of Operation: LANDING - FLARE/TOUCHDOWN

### Findings

1. (F) FLARE - DELAYED - COPILOT/SECOND PILOT
2. (C) RECOVERY FROM BOUNCED LANDING - IMPROPER - COPILOT/SECOND PILOT
3. (F) SUPERVISION - INADEQUATE - PILOT IN COMMAND

## Factual Information

### Pilot Information

<b>Certificate:</b>	Airline Transport; Flight Instructor; Commercial; Flight Engineer	<b>Age:</b>	58, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land; Single-engine Sea	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical--w/ waivers/lim.	<b>Last Medical Exam:</b>	05/10/1993
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	8666 hours (Total, all aircraft), 888 hours (Total, this make and model)		

### Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	BOEING	<b>Registration:</b>	N508UA
<b>Model/Series:</b>	757-222 757-222	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Transport	<b>Serial Number:</b>	24744
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	202
<b>Date/Type of Last Inspection:</b>	01/14/1993, Continuous Airworthiness	<b>Certified Max Gross Wt.:</b>	230000 lbs
<b>Time Since Last Inspection:</b>	1768 Hours	<b>Engines:</b>	2 Turbo Fan
<b>Airframe Total Time:</b>	9483 Hours	<b>Engine Manufacturer:</b>	P&W
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	2037
<b>Registered Owner:</b>	UNITED AIRLINES	<b>Rated Power:</b>	38200 lbs
<b>Operator:</b>	UNITED AIRLINES	<b>Air Carrier Operating Certificate:</b>	Flag carrier (121)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	UALA

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Observation Time:	0000
Distance from Accident Site:	0 Nautical Miles	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Temperature/Dew Point:	21 °C / 10 °C
Lowest Ceiling:	None / 0 ft agl	Visibility	60 Miles
Wind Speed/Gusts, Direction:	14 knots, 350°	Visibility (RVR):	0 ft
Altimeter Setting:	30 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	PORTLAND, OR (PDX)	Type of Flight Plan Filed:	IFR
Destination:		Type of Clearance:	IFR
Departure Time:	0625 PDT	Type of Airspace:	Class B; Class D; Class E

## Airport Information

Airport:	STAPLETON INTERNATIONAL (DEN)	Runway Surface Type:	Concrete
Airport Elevation:	5333 ft	Runway Surface Condition:	Dry
Runway Used:	26	IFR Approach:	Visual
Runway Length/Width:	8599 ft / 150 ft	VFR Approach/Landing:	Full Stop

## Wreckage and Impact Information

Crew Injuries:	7 None	Aircraft Damage:	Substantial
Passenger Injuries:	157 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	164 None	Latitude, Longitude:	

## Administrative Information

Investigator In Charge (IIC):	ARNOLD W SCOTT	Adopted Date:	11/03/1993
Additional Participating Persons:	BOB LOFLIN; DENVER, CO		
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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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