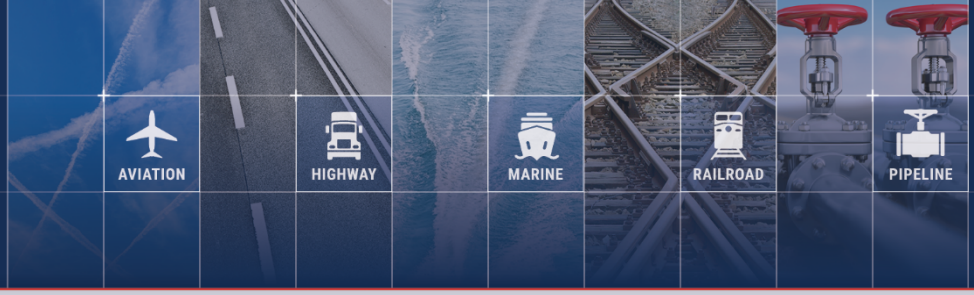

Aviation Investigation Final Report

Location:	SEATTLE, Washington	**Incident Number:**	SEA88IA108
Date & Time:	June 12, 1988, 22:17 Local	**Registration:**	N308AS
Aircraft:	BOEING 727-200	**Aircraft Damage:**	Minor
Defining Event:		**Injuries:**	7 Minor, 81 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

AFTER THE MAIN GEAR TOUCHED DOWN, THRUST LEVERS WERE PLACED IN THE IDLE REVERSE POSITION. ONCE THE AIRCRAFT'S NOSE GEAR CONTACTED THE RUNWAY, BRAKING AND FULL REVERSE THRUST WAS APPLIED. THE AIRCRAFT STARTED TO DRIFT TO THE LEFT OF THE RUNWAY CENTERLINE. THE PILOT APPLIED ASYMMETRICAL BRAKING WITH NO CHANGE IN DIRECTIONAL CONTROL. THE PILOT THEN COMBINED THE USE OF ASYMMETRICAL BRAKING WITH ASYMMETRICAL REVERSE THRUST. AS A FINAL EFFORT TO PREVENT THE AIRCRAFT FROM DEPARTING THE RUNWAY, THE CAPTAIN USED THE TILLER. THE AIRCRAFT CAME TO REST ON A GRASSY AREA BETWEEN THE PARALLEL RUNWAYS. THE AIRCRAFT IS EQUIPPED WITH 'LIGHTWEIGHT' CLAMSHELL THRUST REVERSERS. THE RIGHT HAND THRUST REVERSER ON THE NUMBER 2 ENGINE WAS FOUND FAILED IN THE OPEN (FORWARD THRUST) POSITION. THRUST REVERSER LIGHTS DID NOT INDICATE ANY ABNORMALITIES. AN OVERSTRESS FRACTURE OF THE LOWER INNER HINGE WITH A FATIGUE FRACTURE THROUGH THE FLANGE OF THE UPPER OUTER HINGE WAS FOUND BY METALLURGICAL EXAMINATION.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be:

Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: LANDING - ROLL

Findings
1. (C) THRUST REVERSER,DOOR - FATIGUE
2. (C) THRUST REVERSER,DOOR - FAILURE,PARTIAL
3. (C) THRUST REVERSER - ASYMMETRICAL
4. (F) DIRECTIONAL CONTROL - NOT MAINTAINED - PILOT IN COMMAND
5. (F) REMEDIAL ACTION - IMPROPER - PILOT IN COMMAND
6. (F) INADEQUATE TRAINING(EMERGENCY PROCEDURE(S)) - COMPANY/OPERATOR MANAGEMENT
7. (F) INFORMATION UNCLEAR - MANUFACTURER

Occurrence #2: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: LANDING - ROLL

Findings
8. OBJECT - RUNWAY LIGHT

Factual Information

Pilot Information

Certificate:	Airline transport; Commercial; Flight engineer	**Age:**	40,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	June 2, 1988
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	9240 hours (Total, all aircraft), 7803 hours (Total, this make and model), 123 hours (Last 90 days, all aircraft), 53 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BOEING	**Registration:**	N308AS
Model/Series:	727-200 727-200	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Transport	**Serial Number:**	227
Landing Gear Type:	Retractable - Tricycle	**Seats:**	134
Date/Type of Last Inspection:	May 31, 1988 100 hour	**Certified Max Gross Wt.:**	190000 lbs
Time Since Last Inspection:	98 Hrs	**Engines:**	3 Turbo fan
Airframe Total Time:		**Engine Manufacturer:**	P&W
ELT:	Installed, not activated	**Engine Model/Series:**	JT8D-17R
Registered Owner:	UNITED STATES TRUST CO. OF NY	**Rated Power:**	16400 Horsepower
Operator:	ALASKA AIRLINES, INC.	**Operating Certificate(s) Held:**	Flag carrier (121)
Operator Does Business As:		**Operator Designator Code:**	AS

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	SEA ,429 ft msl	**Distance from Accident Site:**	
Observation Time:	22:35 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	20 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	30°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	15°C / 9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	PORTLAND , OR (PDX)	**Type of Flight Plan Filed:**	IFR
Destination:	SEATTLE , WA (SEA)	**Type of Clearance:**	IFR
Departure Time:	21:45 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	SEATTLE-TACOMA INT'L. SEA	**Runway Surface Type:**	Asphalt
Airport Elevation:	429 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	34R	**IFR Approach:**	None
Runway Length/Width:	11900 ft / 150 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	6 None	**Aircraft Damage:**	Minor
Passenger Injuries:	7 Minor, 75 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	7 Minor, 81 None	**Latitude, Longitude:**	47.300323,-122.310119(est)

Administrative Information

Investigator In Charge (IIC):	Carrera, Candace
Additional Participating Persons:	R K MCGUIRE; SEATTLE , WA C./E MUTH/DUTCHNOWSKI; SEATTLE , WA RALPH PETERSON; SEATTLE , WA J W PURVIS; SEATTLE , WA
Original Publish Date:	June 7, 1989
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=40743