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## Runway overrun, Boeing 747-251F, October 15, 2000

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**Micro-summary:** Following alarming "thumps", this Boeing 747-251F aborted its takeoff, resulting in a runway overrun.

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**Event Date:** 2000-10-15 at 0035 ADT


**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: ANC011A007		Aircraft Registration Number: N629US	
		Occurrence Date: 10/15/2000		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place ANCHORAGE		State AK	Zip Code 99502	Local Time 0035	Time Zone ADT
Airport Proximity: On Airport		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer Boeing		Model/Series 747-251F		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 October 15, 2000, about 0035 Alaska daylight time, a Boeing 747-251F airplane, N629US, sustained minor damage during an aborted takeoff at the Ted Stevens Anchorage International Airport, Anchorage, Alaska. The airplane was being operated as an instrument (IFR) cargo flight to the John F. Kennedy International Airport, New York City, New York, under Title 14, CFR Part 121, when the incident occurred. The airplane was operated as Flight 904, by Northwest Airlines Inc., St. Paul, Minnesota. The captain, first officer, and second officer, were not injured. Visual meteorological conditions prevailed. An IFR flight plan was filed.</p> <p>The airplane was departing runway 32 at the Ted Stevens Anchorage International airport. The captain reported that while taxiing to runway 32 for departure, the crew heard a "thump" type of noise. After discussion, the noise was attributed to the airplane tires running over a rut. The captain continued taxiing. During the takeoff roll, about 130 knots indicated airspeed (IAS), the captain heard and felt another "thump", followed by a substantial vibration. The captain said he aborted the takeoff about 148 knots IAS, and applied maximum braking and maximum reverse thrust. The airplane ran off the paved end of runway 32, into a clearway consisting of soft dirt, stopping about 486 feet beyond the paved end of the runway. Two omnidirectional approach lighting system (ODALS) fixtures, installed as lead-in lights for runway 14, were struck by the airplane as the landing gear wheels sank into the soft terrain.</p> <p>Examination of the runway and airplane revealed a large amount of shredded tire debris on the runway, beginning about 1,500 feet from the beginning of runway 32. Gouge marks on the runway, consistent with tire wheel rims, were also visible on the runway. At the point of rest, the number 11, and number 12 tires, installed as the two aft tires on the right body landing gear assembly, were shredded and destroyed. Tires one through four, were inflated and undamaged. The number five tire was cut, torn and flat. Tires six, seven and eight, were flat. Tires nine and ten were still inflated. Tires 13, 14, 15, and 16, were flat. The nose wheel tires were undamaged and inflated. The airplane also received minor damage to the underside of the right flap assembly, damage to the right main landing gear hydraulic brake system, a landing gear door, and damage to the brake assemblies. There was no evidence of fire.</p> <p>Beginning at the arrival threshold, runway 32 has 10,696 feet available. The captain elected to utilize runway 32 extension procedures. Aircraft with combined weight, stage length, or other condition, may request an extended departure from runway 32. The extension for runway 32 provides for a takeoff runway available (TORA), and an accelerate/stop distance available (ASDA) of 11,584 feet. An additional 1,000 feet of clearway is available at the departure end of the runway. Beyond the 1,000 feet of clearway, the terrain drops away sharply at the end of a small bluff, to a road below the bluff.</p> <p>According to Northwest Airlines personnel, the airplane's gross weight is 817,000 pounds. The airplane's takeoff gross weight (TOGW) for the flight was 794,200 pounds. For takeoff operations</p>					
FACTUAL REPORT - AVIATION					
Page 1					

National Transportation Safety Board

## FACTUAL REPORT

AVIATION

NTSB ID: ANC011A007

Occurrence Date: 10/15/2000


Occurrence Type: Incident


## Narrative (Continued)

on runway 32, the runway takeoff gross weight (RTOG) was 795,300 pounds. The RTOG is allowable weight for takeoff calculated by the operator. It takes into consideration numerous variables, including runway length, temperature, headwinds or tailwinds, obstructions, any inoperative brake systems, pressure altitude corrections, etc. The takeoff decision speed (V1) for the airplane was 165 knots. The rotation speed (VR) for the airplane was 174 knots.

Examination of data from the airplane's flight data recorder (FDR) indicated that in frame number 65267, the airspeed was 148.2 knots. Eight seconds later, at 166.7 knots, the number four engine thrust reverser deployed, and all engine thrust settings were decreasing. One second later, all of the thrust reversers indicated they were deployed, and all engine thrust was near idle. Over the next 24 seconds, all of the engine's thrust settings increased during reverse, and the airspeed slowed to below 50 knots.

At 0101, an Aviation Routine Weather Report (METAR) at Anchorage was reporting, in part: Wind, 260 degrees (true) at 03 knots; visibility, 10 statute miles; clouds and sky condition, 8,500 feet broken, 10,000 feet overcast; temperature, 38 degrees F; dew point, 36 degrees F; altimeter, 29.11 inHg.

 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: ANC011A007			
		Occurrence Date: 10/15/2000			
		Occurrence Type: Incident			
<b>Landing Facility/Approach Information</b>					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
ANCHORAGE INTERNATIONAL	PANC	144 Ft. MSL	32	11584	150
Runway Surface Type: Asphalt					
Runway Surface Condition: Dry					
Type Instrument Approach:					
VFR Approach/Landing:					
<b>Aircraft Information</b>					
Aircraft Manufacturer		Model/Series		Serial Number	
Boeing		747-251F		22388	
Airworthiness Certificate(s): Transport					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 3	Certified Max Gross Wt.	817000 LBS	Number of Engines: 4	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Turbo Fan	P&W	JT9D-7J	48000 LBS		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
AAIP		Hours	Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? Yes	ELT Operated? No	ELT Aided in Locating Accident Site?			
<b>Owner/Operator Information</b>					
Registered Aircraft Owner		Street Address			
NORTHWEST AIRLINES INC.		5101 NORTHWEST DR.			
		City	State	Zip Code	
		ST. PAUL	MN	55111	
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: NWAA		
- 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: Non-scheduled; Domestic; Cargo					

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: ANC011A007
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**First Pilot Information**

Name On File	City On File	State On File	Date of Birth	Age 53
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Sex: M	Seat Occupied: Left	Principal Profession: Civilian Pilot	Certificate Number:
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Certificate(s): Airline Transport; Flight Engineer

Airplane Rating(s): Multi-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): None

Type Rating/Endorsement for Accident/Incident Aircraft? Yes	Current Biennial Flight Review?
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Medical Cert.: Class 1	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 10/2000
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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	5225	3972				400	150			
Pilot In Command(PIC)	1854	600								
Instructor										
Last 90 Days	85									
Last 30 Days										
Last 24 Hours	2									

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 PANC	Departure Time 0035	Time Zone ADT
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Destination NEW YORK	State NY	Airport Identifier KJFK	
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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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<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
PAN	0101	ADT	144 Ft. MSL	0 NM	0 Deg. Mag.
Sky/Lowest Cloud Condition: Unknown			0 Ft. AGL	Condition of Light: Night/Dark	
Lowest Ceiling: Broken		8500 Ft. AGL		Visibility: 10 SM	Altimeter: 29.00 "Hg
Temperature: 3 °C	Dew Point: 2 °C	Wind Direction: 227		Density Altitude: Ft.	
Wind Speed: 3	Gusts:	Weather Conditions at Accident Site: Visual Conditions			
Visibility (RVR): 0 Ft.	Visibility (RVV) 0 SM	Intensity of Precipitation: Unknown			
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				1	1
Cabin Attendants					
Other Crew					
Passengers					
- TOTAL ABOARD -				3	3
Other Ground	0	0	0		0
- GRAND TOTAL -	0	0	0	3	3

National Transportation Safety Board

**FACTUAL REPORT**

**AVIATION**



NTSB ID: ANC011A007

Occurrence Date: 10/15/2000

Occurrence Type: Incident

Administrative Information

Investigator-In-Charge (IIC)

SCOTT ERICKSON

Additional Persons Participating in This Accident/Incident Investigation:

JACK T SEYMOUR (FAA)  
4510 INTERNATIONAL AIRPORT  
ANCHORAGE, AK 99502