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## Engine failure following birdstrike, Boeing 747-200, September 25, 1993

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**Micro-summary:** This Boeing 747-200 encountered an engine failure following ingesting a Gadwell duck, which damaged the spinner.

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**Event Date:** 1993-09-25 at 0835 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).
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 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: ANC93IA188		Aircraft Registration Number: N629US	
		Occurrence Date: 09/25/1993		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
<b>Location/Time</b>					
Nearest City/Place ANCHORAGE		State AK	Zip Code 99515	Local Time 0835	Time Zone ADT
Airport Proximity: On Airport		Distance From Landing Facility: 1		Direction From Airport: 240	
<b>Aircraft Information Summary</b>					
Aircraft Manufacturer BOEING		Model/Series 747-200		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
<b>Narrative</b>					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
<p>On September 25, 1993, at 0835, Alaska daylight time, a Boeing 747-200, N629US, experienced a partial power loss after it had ingested 28 ounce Gadwell duck into its number one engine during takeoff rotation at Anchorage International Airport. The pilot in command shut down the affected engine, dumped fuel and landed without further incident at 0911. The airplane was operated by Northwest Airlines on a regularly scheduled cargo flight to Tokyo as NW Flight 905, under 14 CFR Part 121, on an international IFR flight plan. Visual meteorological conditions existed. A flight crew of 3 were the only persons on board, and they were uninjured. Damage was limited to the number one engine and the event was classified as incident damage.</p> <p>The pilot told NTSB and FAA investigators that while he noticed waterfowl in the area on taxi out, he did not see birds at the time he experienced the engine failure. The airplane reportedly weighed 752,000 pounds at takeoff and dumped 84,300 pounds of fuel while orbiting at the direction of ATC. The landing gross weight was approximately 628,000 pounds. Investigators found blood and material resembling feather parts in the number one engine inlet. Damage was seen to the rotor blades of the fan, inside and outside of the inlet cowl. The fiberglass spinner cone was destroyed. No wing or fuselage damage was seen.</p> <p>The engine damage was examined by Northwest Airlines with the assistance of Pratt &amp; Whitney. The NTSB was advised that failure was due to downstream ingestion of fiberglass spinner parts and pieces of first stage fan blades.</p> <p>The NTSB investigator contacted Pratt &amp; Whitney at East Hartford Connecticut. The powerplant investigator at P&amp;W told the NTSB that there "were a limited amount of 10 ply fiberglass spinners out there." He said that "P&amp;W was aware of about one inflight failure per year with these thin spinners from bird strikes." He also said that he and the FAA had discussed it and didn't feel that an AD (Airworthiness Directive) was necessary, but that they were watching the numbers (as an in-house study). He also said that these were being replaced with a newer model spinner that had 20 plys, and there were no known instances of inflight failure known.</p> <p>The findings of the investigation were forwarded to the NTSB's Engineering Division ((AS-40). On October 4, 1993, the NTSB NW Field Office was advised that the Engineering Division was reviewing the information for possible safety recommendation activity.</p>					
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 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: ANC93IA188			
		Occurrence Date: 09/25/1993			
		Occurrence Type: Incident			
<b>Landing Facility/Approach Information</b>					
Airport Name ANCHORAGE	Airport ID: ANC	Airport Elevation 144 Ft. MSL	Runway Used 32	Runway Length 10496	Runway Width 150
Runway Surface Type: Asphalt					
Runway Surface Condition: Dry					
Type Instrument Approach: NONE					
VFR Approach/Landing: None					
<b>Aircraft Information</b>					
Aircraft Manufacturer BOEING		Model/Series 747-200		Serial Number	
Airworthiness Certificate(s): Transport					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 286	Certified Max Gross Wt.	750000 LBS	Number of Engines: 4	
Engine Type: Turbo Fan	Engine Manufacturer: P&W	Model/Series: JT9-D7F	Rated Power: 58000 LBS		
- Aircraft Inspection Information					
Type of Last Inspection Continuous Airworthiness	Date of Last Inspection 09/1993	Time Since Last Inspection 6 Hours	Airframe Total Time 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 NORTHWEST AIRLINES, INC		Street Address MINNEAPOLIS-STPAUL AIRPORT			
		City ST PAUL	State MN	Zip Code 55121	
Operator of Aircraft NORTHWEST AIRLINES, INC		Street Address MINNEAPOLIS-STPAUL AIRPORT			
		City ST PAUL	State MN	Zip Code 55121	
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: Scheduled; International; Cargo					

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: ANC931A188
	Occurrence Date: 09/25/1993
	Occurrence Type: Incident

**First Pilot Information**

Name On File	City On File	State On File	Date of Birth	Age
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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

Airplane Rating(s): Multi-engine Land

Rotorcraft/Glider/LTA:

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--w/ waivers/lim.	Date of Last Medical Exam: 06/1993
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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	20000	5000	1000	19000	4000	2000	500			
Pilot In Command(PIC)	18000	4500	1000	15000	2000	1000	500			
Instructor										
Last 90 Days	210	210		210						
Last 30 Days	70	70		70						
Last 24 Hours	6	6	6							

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

Type of Flight Plan Filed: IFR	
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Departure Point Same as Accident/Incident Location	State	Airport Identifier	Departure Time 0835	Time Zone ADT
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Destination TOKYO, JAPAN	State	Airport Identifier NRT	
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Type of Clearance: IFR

Type of Airspace: Class D

**Weather Information**

Source of Briefing:  
Commercial Weather Service; PATWAS

Method of Briefing:

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: ANC93IA188
	Occurrence Date: 09/25/1993
	Occurrence Type: Incident

**Weather Information**

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
0845			0 Ft. MSL	0 NM	0 Deg. Mag.

Sky/Lowest Cloud Condition: Unknown	0 Ft. AGL	Condition of Light: Day
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Lowest Ceiling: Overcast	6000 Ft. AGL	Visibility: 15	SM	Altimeter: "Hg
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Temperature: 7 °C	Dew Point: °C	Wind Direction: 340	Density Altitude: Ft.
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Wind Speed: 10	Gusts:	Weather Conditions at Accident Site: Visual Conditions
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Visibility (RVR): 0 Ft.	Visibility (RVV) 0	SM	Intensity of Precipitation: Unknown
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Restrictions to Visibility: None

Type of Precipitation:

**Accident Information**

Aircraft Damage: Minor	Aircraft Fire: None	Aircraft Explosion: None
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Classification: U.S. Registered/U.S. Soil

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot				3	3
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
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: ANC93IA188

Occurrence Date: 09/25/1993

Occurrence Type: Incident

Administrative Information

Investigator-In-Charge (IIC)

DOUGLAS R. HERLIHY

Additional Persons Participating in This Accident/Incident Investigation:

TERRY A BATEMAN

FSDO-03

ANCHORAGE, AK 99510