



National Transportation Safety Board Aviation Incident Final Report

Location:	CASPER, WY	Incident Number:	DEN871A145A
Date & Time:	06/02/1987, 1012 MDT	Registration:	N297US
Aircraft:	BOEING 727-251	Aircraft Damage:	None
Defining Event:		Injuries:	60 None

Flight Conducted Under: Part 121: Air Carrier - Scheduled

Analysis

BOEING 727 (NORTHWEST FLT 354) & USAF EC-135 (SLUM 51) WERE INVOLVED IN A NR COLLISION AT FL 330. THE MISHAP OCCURRED AS FLT 354 WAS ENE BND ON J-158 & SLUM 51 WAS FLYING ON A RADIAL-DISTANCE (R/D) FLT PLN, FLYING BTN R/D PTS SOUTH OF J-158. AS SLUM 51 APCHD ITS MOST WESTERN PT, THE CREW REQD A RGT TURN TO A R/D PT THAT WAS NOT THE NEXT LISTED PT ON THEIR FLT PLN. THE TRAINEE CTLR (T/C) DIDN'T REALIZE SLUM 51 WAS REQG A ROUTE CHG, BUT THOUGHT THE FLT WANTED TO TURN BACK EAST TO THE NEXT FILED R/D PT WITH A RGT TURN (INSTEAD OF A L TURN AS PREVIOUSLY DONE). THE T/C REPLIED, 'UNABLE RGT TURN, MAKE A LEFT TURN.' THE INSTRUCTOR HEARD THE REQ, BUT THOUGHT THE T/C'S REPLY WAS DISAPPROVAL OF A ROUTE CHG. AS THE CTLRS TURNED THEIR ATTN TO OTR (HVY/COMPLEX) TRAFFIC, SLUM 51 CONTD A 270 DEG L TURN (TO NORTH) & CONVERGED WITH FLT 354. THE 9020 (PRIMARY) COMPUTER WAS INOP; THE DARC (BACKUP) COMPUTER HAD NO CAPABILITY OF DISPLAYING PROJECTED ROUTES OR PROVIDING CONFLICT ALERT. NO FLOW CTL RESTRICTIONS WERE IN EFFECT TO RDC THE AMOUNT OF TRAFFIC.

Probable Cause and Findings

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

Findings

Occurrence #1: NEAR COLLISION BETWEEN AIRCRAFT

Phase of Operation: CRUISE - NORMAL

Findings

1. (F) RADAR, EN ROUTE - FAILURE, PARTIAL
2. ARTCC SERVICE
3. (F) EXCESSIVE WORKLOAD (TASK OVERLOAD) - ATC PERSONNEL (ARTCC)
4. (F) IMPROPER DECISION - FAA (OTHER/ORGANIZATION)
5. (C) RADIO COMMUNICATIONS - NOT UNDERSTOOD - ATC PERSONNEL (ARTCC)
6. (C) ATC CLEARANCE - INACCURATE - ATC PERSONNEL (ARTCC)
7. COMMUNICATIONS/INFORMATION/ATC - NOT UNDERSTOOD - PILOT OF OTHER AIRCRAFT
8. (F) RADAR, CONFLICT ALERT - INOPERATIVE
9. (C) IFR SEPARATION STANDARDS - NOT MAINTAINED

Factual Information

Pilot Information

Certificate:	Airline Transport	Age:	44, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt
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:	05/13/1987
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	12230 hours (Total, all aircraft), 10000 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	BOEING	Registration:	N297US
Model/Series:	727-251 727-251	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	21789
Landing Gear Type:	Retractable - Tricycle	Seats:	134
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	191500 lbs
Time Since Last Inspection:		Engines:	3 Turbo Fan
Airframe Total Time:		Engine Manufacturer:	P&W
ELT:	Not installed	Engine Model/Series:	JT8D
Registered Owner:	NORTHWEST AIRLINES, INC.	Rated Power:	14500 lbs
Operator:	NORTHWEST AIRLINES, INC.	Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:		Operator Designator Code:	NWAA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0000	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	0 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:			
Departure Point:	SAN FRANCISCO, CA (SFO)	Type of Flight Plan Filed:	IFR
Destination:	MINNEAPOLIS, MN (MSP)	Type of Clearance:	IFR
Departure Time:	0000	Type of Airspace:	Class A

Wreckage and Impact Information

Crew Injuries:	6 None	Aircraft Damage:	None
Passenger Injuries:	54 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	60 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	ROBERT D JOHNSON	Report Date:	10/17/1988
Additional Participating Persons:			
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 pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).