



# National Transportation Safety Board

## Aviation Incident Data Summary

<b>Location:</b>	CHICAGO, IL	<b>Incident Number:</b>	CHI001A037
<b>Date &amp; Time:</b>	12/01/1999, 1431 CST	<b>Registration:</b>	N606AW
<b>Aircraft:</b>	British Aerospace BAE 146-200A	<b>Injuries:</b>	1 Minor, 48 None
<b>Flight Conducted Under:</b>	Part 121: Air Carrier - Scheduled		

### Analysis

The airplane collided with the terminal building at the O'Hare International Airport. The captain reported he used the procedures in the BAE 146 Pilot Operating Handbook, to transfer fluid between the green and yellow hydraulic systems while the airplane was parked at the gate. He stated he then set the parking brake and checked the hydraulic system pressure. The captain reported they completed the before start, starting engines, and after engine start checklists at which time he signaled to the ramp personnel to remove the chocks. He reported the airplane then started to roll forward. He stated the parking brake was set and all four engines were running. The captain reported he tried the green braking and emergency yellow brake systems, however, the airplane continued to move. He then selected the anti-skid switch to battery and positioned the thrust levers to fuel off. The airplane traveled approximately 50 feet prior to contacting the bottom of the upper level of the terminal and a lower level door at gate B-20C. Postincident inspection of the brakes, hydraulic system, anti-skid system, squat switches, and related electrical system components failed to reveal why the airplane would have moved with the parking brake set. The initiation of the rolling event was not captured on the DFDR. The airplane is designed so that the DFDR does not record when the parking brake is set. On December 10, 1999, the operator issued an Alert Bulletin, prohibiting flight crews from performing hydraulic system fluid transfers. On August 25, 2000, the operator issued another Alert Bulletin, once again allowing flight crews to perform hydraulic system fluid transfers. On September 1, 2000, another Alert Bulletin was issued once again prohibiting flight crews from performing hydraulic system fluid transfers.

### Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this incident to be: An undetermined failure in the hydraulic system, which resulted in the airplane's entire braking system becoming temporarily inoperative. A factor associated with the incident was the airport terminal building that was contacted by the airplane.

### Findings

Occurrence #1: ON GROUND/WATER COLLISION WITH OBJECT  
Phase of Operation: STANDING - ENGINE(S) OPERATING

#### Findings

1. (F) OBJECT - HANGAR/AIRPORT BUILDING
2. (C) HYDRAULIC SYSTEM - UNDETERMINED
3. LANDING GEAR,PARKING BRAKE - INOPERATIVE
4. LANDING GEAR,NORMAL BRAKE SYSTEM - INOPERATIVE
5. LANDING GEAR,EMERGENCY BRAKE SYSTEM - INOPERATIVE

## Pilot Information

<b>Certificate:</b>	Airline Transport; Commercial	<b>Age:</b>	
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land; Single-engine Sea	<b>Instrument Rating(s):</b>	Airplane
<b>Other Aircraft Rating(s):</b>	None	<b>Instructor Rating(s):</b>	None
<b>Flight Time:</b>	16691 hours (Total, all aircraft), 4273 hours (Total, this make and model), 178 hours (Last 90 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	British Aerospace	<b>Registration:</b>	N606AW
<b>Model/Series:</b>	BAE 146-200A BAE 146-20	<b>Engines:</b>	4 Turbo Fan
<b>Operator:</b>	AIR WISCONSIN	<b>Engine Manufacturer:</b>	Lycoming
<b>Operating Certificate(s) Held:</b>	Flag carrier (121)	<b>Engine Model/Series:</b>	ALF-502R-5
<b>Flight Conducted Under:</b>	Part 121: Air Carrier - Scheduled		

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Unknown	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	ORD, 668 ft msl	<b>Weather Information Source:</b>	Weather Observation Facility
<b>Lowest Ceiling:</b>	Overcast / 6000 ft agl	<b>Wind Speed/Gusts, Direction:</b>	17 knots / 23 knots, 200°
<b>Temperature:</b>	6° C	<b>Visibility:</b>	10 Miles
<b>Precipitation and Obscuration:</b>			
<b>Departure Point:</b>	(ORD)	<b>Destination:</b>	MOLINE, IL (MLI)

## Airport Information

<b>Airport:</b>	O'HARE INTERNATIONAL (ORD)	<b>Runway Surface Type:</b>	
<b>Runway Used:</b>	0	<b>Runway Surface Condition:</b>	
<b>Runway Length/Width:</b>			

## Wreckage and Impact Information

<b>Crew Injuries:</b>	3 None	<b>Aircraft Damage:</b>	Minor
<b>Passenger Injuries:</b>	45 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	1 Minor	<b>Aircraft Explosion:</b>	None
<b>Latitude, Longitude:</b>			

## Administrative Information

Investigator In Charge (IIC): PAMELA S SULLIVAN      Adopted Date: 07/17/2001

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 [pubinq@ntsb.gov](mailto:pubinq@ntsb.gov), or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

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