



National Transportation Safety Board Aviation Accident Final Report

Location:	Detroit, MI	Accident Number:	CHI01LA296
Date & Time:	08/28/2001, 1805 EDT	Registration:	N617GA
Aircraft:	Dassault/SUD Fan Jet Falcon	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The airplane sustained substantial damage on impact with terrain and objects after traveling off the end of the runway during a main wheels up landing. The captain reported that prior to takeoff, he closed the cargo door and the copilot confirmed the door light was out. After takeoff at an altitude of about 600 feet, the cockpit door popped open and the crew noticed the cargo door was open. The captain elected to return to land. The captain reported he requested repeatedly for gear and flaps extension, but the copilot was late in doing so and it "caused us to overshoot the runway centerline." The copilot then began calling for a go around/missed approach at which time he raised the gear and retracted some of the flaps. The copilot reported the captain continued to descend toward the runway and overshoot the runway centerline to the right. The copilot reported that at this time he lowered the gear. The nose gear extended prior to touchdown, however the main gear did not. The airplane touched down approximately 1/2 way down the runway and traveled off the end. A witness reported noticing that the exterior door latch was not down as the airplane taxied to the runway.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The wheels up landing performed by the flightcrew during the emergency landing and improper aircraft preflight by the pilot in command. Factors were the unsecured cargo door, the cemetery fence, and the lack of crew coordination during the flight.

Findings

Occurrence #1: MISCELLANEOUS/OTHER
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (C) AIRCRAFT PREFLIGHT - IMPROPER - PILOT IN COMMAND
2. (F) DOOR,CARGO/BAGGAGE - NOT SECURED

Occurrence #2: WHEELS UP LANDING
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Findings

3. (C) WHEELS UP LANDING - INADVERTENT - FLIGHTCREW
4. (F) CREW/GROUP COORDINATION - INADEQUATE - FLIGHTCREW

Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: LANDING - ROLL

Findings

5. (F) OBJECT - FENCE

Factual Information

On August 28, 2001, about 1805 eastern daylight time, a Dassault/SUD Fan Jet Falcon, N617GA, piloted by an airline transport pilot rated pilot and commercial rated copilot, sustained substantial damage on impact with terrain and objects during a main wheels up landing on runway 33 (5,090 feet by 100 feet, dry, grooved asphalt) at Detroit City Airport (DET), Detroit, Michigan. The airplane came to rest off the departure end of runway 33. The non-scheduled domestic cargo flight was operating under 14 CFR Part 135. Visual meteorological conditions prevailed at the time of the accident. The flight was on an IFR flight plan. The pilot and copilot reported no injuries. The flight originated from DET and was destined for Greater Rockford Airport, near Rockford, Illinois. The flight declared an emergency and returned to DET for a landing at the time of the accident.

The captain stated that after the freight was loaded, he closed the cargo door making sure it was over center. He reported the copilot stated "door light out" at which time he clipped all the cargo net straps on the door and on the floor. The captain reported that after takeoff at an altitude of about 600 feet, the cockpit door opened, they heard a loud noise, and the copilot confirmed that the cargo door was open. The captain reported he had the copilot call the tower to inform them that they were returning with an emergency. The captain reported the tower cleared them to land and reminded them to extend the gear. The captain reported that he repeatedly requested the copilot to lower the gear and flaps. The captain reported the gear and flaps were extended late which "...caused us to overshoot the runway centerline." The captain reported that the copilot started to call for an overshoot, but the captain replied that they were going to land. He reported that he was having difficulty controlling the airplane and he was worried about sustaining foreign object damage to the left engine from cabin debris. The captain reported that unknown to him, the copilot retracted the flaps and gear. The copilot extended the gear once again when he realized that the captain was going to land.

The captain reported the nose gear extended and locked, but there was no braking. He reported he selected the electro-pump to the left and "shut the engines." The captain reported he steered the airplane away from the runway edge light and between the cement posts of the cemetery fence. The airplane came to rest 30 feet past the fence.

The pilot reported that on base leg he requested that the copilot extend the flaps. When he went to move them himself, he saw the copilot move the flap handle "apparently the wrong way." The captain reported, "Had the flaps been extended when requested, there is no doubt in my mind that I would have touched on the numbers."

The captain reported, "I would normally have detected the F/O odd actions immediately, but the cargo door was open [which] made the airplane behave somewhat differently than usual" and "The cockpit was very noisy, but not enough that he would not hear my commands, [which] I repeated and he acknowledged, but choose to disregard."

The copilot reported, "Pre-flight planning, engine start up and taxi was conducted in accordance with standard operating procedures, in which main cargo door light was checked twice as per the check list." The copilot reported the cargo door opened shortly after takeoff. He reported that just prior to the turn from downwind to base the captain called for flaps and gear at which time he lowered the gear and extended 25 degrees of flaps. The copilot reported

the captain then called for the flaps to be lowered to 40 degrees at which time he extended the flaps further. The copilot reported he then became alarmed when seeing the position of the airplane relative to the runway at which time he shouted to the captain "go miss, go miss go around." He reported the captain glanced at him momentarily and continued toward the runway. The copilot then selected gear up and raised the flaps to 25 degrees while still indicating to the captain to go around. The copilot reported the captain continued to descend toward the runway while the airplane was "dangerously low on altitude [less than] 100' AGL." The copilot indicated in a drawing that the airplane then passed through the runway centerline and the captain "...aggressively reversed bank to the right. Approximate height 50' AGL with steep angle of bank." The copilot reported that at this point he stopped his efforts for a missed approach and he lowered the gear. According to a drawing the copilot indicated that the airplane touched down about half way down the runway.

A witness stated that he looked out the window and noticed the exterior door latch was not down. He reported that a truck driver also mentioned to him that the latch was up. The witness reported that the airplane was taxiing down the runway and he was unable to see if the crew had secured the latch prior to takeoff.

Pilot Information

Certificate:	Airline Transport	Age:	59, Male
Airplane Rating(s):	Multi-engine Land; Multi-engine Sea; Single-engine Land; Single-engine Sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last Medical Exam:	07/09/2001
Occupational Pilot:		Last Flight Review or Equivalent:	06/16/2001
Flight Time:	24000 hours (Total, all aircraft), 900 hours (Total, this make and model), 14000 hours (Pilot In Command, all aircraft)		

Co-Pilot Information

Certificate:	Commercial	Age:	38, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
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 Medical Exam:	08/15/2001
Occupational Pilot:		Last Flight Review or Equivalent:	06/05/2001
Flight Time:	3000 hours (Total, all aircraft), 131 hours (Total, this make and model), 2520 hours (Pilot In Command, all aircraft), 125 hours (Last 90 days, all aircraft), 44 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Dassault/SUD	Registration:	N617GA
Model/Series:	Fan Jet Falcon	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	88
Landing Gear Type:	Retractable - Tricycle	Seats:	3
Date/Type of Last Inspection:	09/12/2000, AAIP	Certified Max Gross Wt.:	28660 lbs
Time Since Last Inspection:	518 Hours	Engines:	2 Turbo Fan
Airframe Total Time:	13282.6 Hours	Engine Manufacturer:	General Electric
ELT:		Engine Model/Series:	CF700-2D-2
Registered Owner:	GRAND AIRE EXPRESS INC	Rated Power:	4500 lbs
Operator:	GRAND AIRE EXPRESS INC	Air Carrier Operating Certificate:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	GXPA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	DET, 626 ft msl	Observation Time:	1753 EDT
Distance from Accident Site:	1 Nautical Miles	Direction from Accident Site:	150°
Lowest Cloud Condition:	Few / 7500 ft agl	Temperature/Dew Point:	27° C / 8° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	7 knots, 360°	Visibility (RVR):	
Altimeter Setting:	29.97 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:			
Departure Point:	DETROIT, MI (DET)	Type of Flight Plan Filed:	IFR
Destination:	ROCKFORD, IL (RFD)	Type of Clearance:	IFR
Departure Time:	1800 EDT	Type of Airspace:	Class D

Airport Information

Airport:	DETROIT CITY (DET)	Runway Surface Type:	Asphalt
Airport Elevation:	626 ft	Runway Surface Condition:	Dry
Runway Used:	33	IFR Approach:	Unknown
Runway Length/Width:	5090 ft / 100 ft	VFR Approach/Landing:	Unknown

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	Edward F Malinowski	Adopted Date:	05/13/2003
Additional Participating Persons:	Steve Bucher; FAA; Belleville, MI		
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 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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