



Aviation Investigation Final Report

Location:	Chamblee, Georgia	Accident Number:	ERA19TA122
Date & Time:	March 9, 2019, 15:47 Local	Registration:	N505GF
Aircraft:	Gulfstream GIV	Aircraft Damage:	Substantial
Defining Event:	Landing area undershoot	Injuries:	14 None
Flight Conducted Under:	Part 91: General aviation - Executive/Corporate		

Analysis

The flight crew were preparing to land after a cross-country corporate flight with 12 passengers. The pilot reported that the approach was normal but that, during the landing flare, he felt an “unusually hard impact.” The landing roll and taxi to the runway were uneventful. Examination of the airplane revealed substantial damage to the fuselage, and photographs revealed two tire tracks in the grass about 18 ft before the runway threshold and loose dirt and grass around the threshold, consistent with the airplane's main landing gear touching down in the grass and subsequently impacting the threshold. The pilot flying reported that this was his first landing on that runway at the destination airport. The flight crew did not report any preimpact mechanical malfunctions or failures with the airplane. It is likely that the flight crew failed to maintain the proper glidepath during the approach.

Probable Cause and Findings

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

The flight crew's incorrect glidepath and flare to landing, which resulted in a landing area undershoot and the main landing gear's collision with the runway threshold.

Findings

Aircraft	Landing flare - Incorrect use/operation
Aircraft	Descent/approach/glide path - Incorrect use/operation
Personnel issues	Aircraft control - Flight crew

Factual Information

History of Flight

Landing-flare/touchdown	Landing area undershoot (Defining event)
Landing-flare/touchdown	Abnormal runway contact

On March 9, 2019, at 1547 eastern standard time, a Gulfstream G-IV, N505GF, was substantially damaged during landing at Dekalb-Peachtree Airport (PDK) Chamblee, Georgia. The two airline transport pilots and 12 passengers were not injured. The airplane was registered to and operated by Waffle House Inc. under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a corporate flight. Day visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed for the flight, which originated from Bozeman Yellowstone International Airport (BZN), Bozeman, Montana, about 1236.

The crew reported that the enroute portion of the flight was normal. Upon arrival into the Atlanta area, air traffic control advised them runway 34 at PDK, which was 3,967-ft-long, was in use and runway 21L/ 3R, which was 6,001-ft-long, was closed until 1600, which was about 20 minutes from then. The crew requested to hold until the longer runway opened, but shortly thereafter after determining they had the landing performance, advised that they would be able to land on runway 34. The pilot reported that the approach to landing was normal, but during the landing flare, he felt an "unusually hard impact." The landing roll and taxi to the ramp were uneventful.

During a hard landing inspection, substantial damage was found to the fuselage. The flight crew did not report any preimpact mechanical malfunctions or failures with the airplane. The pilot flying reported that this was his first landing on runway 34 at PDK.

Photographs provided by the airport manager revealed that two tire tracks commenced in the grass about 18 ft prior to the runway 34 threshold, and loose dirt and grass were observed around the threshold.

According to Federal Aviation Administration (FAA) airman records, the pilot flying held an airline transport pilot certificate and was issued a first-class medical certificate in January 2019. He reported a total flight time of 4,920 hours, of which 125 hours were in the accident airplane make and model. The second pilot held an airline transport pilot certificate and was issued a first-class medical certificate in May 2018. He reported a total flight time of 8,139 flight hours, of which 972 hours were in the accident airplane make and model.

According to FAA airworthiness records, the airplane was powered by two turbo-fan Rolls-Royce Tay 611-8 engines. The most recent continuous airworthiness inspection was completed in February 2019.

At 1553, the reported weather at PDK included 6 statute miles visibility, haze, a broken cloud layer at 3,700 ft above ground level, variable wind at 4 knots, temperature 17°C, dew point 12°C, and barometric pressure of 30.01 inches of mercury.

Pilot Information

Certificate:	Airline transport	Age:	46,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	5-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	January 7, 2019
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	January 24, 2019
Flight Time:	4920 hours (Total, all aircraft), 125 hours (Total, this make and model), 2800 hours (Pilot In Command, all aircraft), 36 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft)		

Pilot Information

Certificate:	Airline transport	Age:	47,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	5-point
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	May 24, 2018
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	May 10, 2018
Flight Time:	8139 hours (Total, all aircraft), 972 hours (Total, this make and model), 5789 hours (Pilot In Command, all aircraft), 46 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 3.4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Gulfstream	Registration:	N505GF
Model/Series:	GIV UNDESIGNAT	Aircraft Category:	Airplane
Year of Manufacture:	1995	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	1275
Landing Gear Type:	Retractable - Tricycle	Seats:	16
Date/Type of Last Inspection:	February 20, 2019 Continuous airworthiness	Certified Max Gross Wt.:	75000 lbs
Time Since Last Inspection:		Engines:	2 Turbo fan
Airframe Total Time:	14406.3 Hrs at time of accident	Engine Manufacturer:	Rolls-Royce
ELT:	C126 installed, not activated	Engine Model/Series:	TAY 611-8
Registered Owner:		Rated Power:	13850 Lbs thrust
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KPDK,998 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	15:53 Local	Direction from Accident Site:	332°
Lowest Cloud Condition:		Visibility	6 miles
Lowest Ceiling:	Broken / 3700 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	None / None
Wind Direction:		Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	30.01 inches Hg	Temperature/Dew Point:	17°C / 12°C
Precipitation and Obscuration:	Moderate - None - Haze		
Departure Point:	Bozeman, MT (BZN)	Type of Flight Plan Filed:	IFR
Destination:	Chamblee, GA (PDK)	Type of Clearance:	IFR
Departure Time:	10:36 Local	Type of Airspace:	Class D

Airport Information

Airport:	Dekalb-Peachtree PDK	Runway Surface Type:	Asphalt
Airport Elevation:	998 ft msl	Runway Surface Condition:	Dry
Runway Used:	34	IFR Approach:	Visual
Runway Length/Width:	3967 ft / 150 ft	VFR Approach/Landing:	Full stop;Straight-in

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	12 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	14 None	Latitude, Longitude:	33.872776,-84.300552(est)

Administrative Information

Investigator In Charge (IIC):	Gerhardt, Adam	
Additional Participating Persons:	Juli O'Gorman; FAA/FSDO; Atlanta, GA	
Original Publish Date:	December 3, 2020	Investigation Class: 3
Note:	The NTSB did not travel to the scene of this accident.	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=99097	

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).