Aviation Investigation Final Report

Location:	Odessa, Texas	**Accident Number:**	CEN22LA166
Date & Time:	March 29, 2022, 18:45 Local	**Registration:**	N469SL
Aircraft:	Beech B200	**Aircraft Damage:**	None
Defining Event:	Clear air turbulence encounter	**Injuries:**	1 Serious, 5 None
Flight Conducted Under:	Part 91: General aviation - Business		

Analysis

The pilot reported that while descending at about 160 kts during an instrument approach in visual meteorological conditions with the autopilot engaged, and passing through 5,000 ft msl, the airplane encountered “a sudden pocket” of severe clear air turbulence for one second, resulting in the loss of about 300 ft of altitude. A passenger in the cabin, who was in the process of restraining himself when the turbulence encounter occurred, hit his head on the cabin ceiling and sustained a serious injury. The autopilot was turned off, the pilot continued with the approach, and the airplane landed at the destination airport without further incident.

The airplane did not sustain any damage from the turbulence encounter. The pilot reported there were no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation. The pilot reported that at the time of the accident, an AIRMET for moderate turbulence below 12,000 ft msl and high surface winds was active for the area.

The passengers were verbally instructed by the pilot to make sure their restraint systems were fastened. The pilot activated the cabin seatbelt sign as an aural and visual warning as reinforcement.

Probable Cause and Findings

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

The airplane’s encounter with severe clear air turbulence that was not forecasted, which resulted in a serious injury to an unrestrained passenger.

Findings

Environmental issues	Clear air turbulence - Effect on personnel
Environmental issues	Clear air turbulence - Awareness of condition
Environmental issues	Clear air turbulence - Contributed to outcome
Environmental issues	Clear air turbulence - Compliance w/ procedure
Personnel issues	Use of equip/system - Passenger
Aircraft	Passenger compartment equip - Not used/operated

Factual Information

History of Flight

Approach	Clear air turbulence encounter (Defining event)

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	31,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	August 2, 2021
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	May 20, 2021
Flight Time:	(Estimated) 4000 hours (Total, all aircraft), 1300 hours (Total, this make and model), 3800 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 50 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N469SL
Model/Series:	B200 None	**Aircraft Category:**	Airplane
Year of Manufacture:	1982	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	BB-1036
Landing Gear Type:	Retractable - Tricycle	**Seats:**	10
Date/Type of Last Inspection:	September 14, 2021 AAIP	**Certified Max Gross Wt.:**	12500 lbs
Time Since Last Inspection:		**Engines:**	2 Turbo prop
Airframe Total Time:	9044 Hrs as of last inspection	**Engine Manufacturer:**	Pratt & Whitney Canada
ELT:	C126 installed, not activated	**Engine Model/Series:**	PT6A-52
Registered Owner:	Vole Enterprises, LLC	**Rated Power:**	850 Horsepower
Operator:	Integrated Pain Associates, PLLC	**Operating Certificate(s) Held:**	None
Operator Does Business As:	Integrated Pain Associates, PLLC	**Operator Designator Code:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KODO,2983 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	18:53 Local	**Direction from Accident Site:**	310°
Lowest Cloud Condition:	Clear	**Visibility**	6 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	26 knots / 33 knots	**Turbulence Type Forecast/Actual:**	Clear air / Clear air
Wind Direction:	300°	**Turbulence Severity Forecast/Actual:**	Moderate / Severe
Altimeter Setting:	29.47 inches Hg	**Temperature/Dew Point:**	29°C / -8°C
Precipitation and Obscuration:	Moderate - None - Haze		
Departure Point:	Temple, TX (TPL)	**Type of Flight Plan Filed:**	IFR
Destination:	Odessa, TX	**Type of Clearance:**	IFR
Departure Time:	17:41 Local	**Type of Airspace:**	Class C

Airport Information

Airport:	Odessa Airport-Schlemeyer Field ODO	**Runway Surface Type:**	Asphalt
Airport Elevation:	3004 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	29	**IFR Approach:**	Global positioning system;RNAV
Runway Length/Width:	6200 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	None
Passenger Injuries:	1 Serious, 4 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 5 None	**Latitude, Longitude:**	31.917969,-102.37715(est)

Administrative Information

Investigator In Charge (IIC):	Hodges, Michael
Additional Participating Persons:	John Sims; FAA Lubbock FSDO; Lubbock, TX
Original Publish Date:	July 1, 2022
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=104886