Aviation Investigation Final Report

Location:	McKinney, Texas	**Accident Number:**	CEN24LA037
Date & Time:	November 11, 2023, 12:41 Local	**Registration:**	N751HP
Aircraft:	Charles L. Hayes Lancair IVP Turbine	**Aircraft Damage:**	Substantial
Defining Event:	Landing area overshoot	**Injuries:**	1 Minor, 2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that while in cruise at flight level (FL) 250, the airplane sustained a sudden loss of pressurization. He descended the airplane to 10,000 ft mean sea level (msl) and continued to his planned destination. He had not previously landed at the destination airport, so he performed a touch and go landing “to see the field,” and then flew a standard traffic pattern for landing. On the downwind leg the ball on the top of the power lever unscrewed and the pilot continued the approach. The pilot reported the airplane touched down in the first 500 ft of the runway without a float or a bounce in ground effect. He immediately “hit [the] brakes gently” and maintained the runway centerline. For about 5 to 10 seconds, the pilot unsuccessfully attempted to move the power lever into beta-reverse and applied maximum braking; however, the brakes faded, and the stopping power decreased. The airplane subsequently exited the end of the runway, went through an airport perimeter fence, and struck a moving vehicle on a roadway. The airplane sustained substantial damage to the fuselage and right wing.

A review of a cellular telephone camera video provided to the National Transportation Safety Board showed that the airplane touched down near the midpoint of the 3,002 ft runway, bounced and touched down again. Tire skid marks were observed about 200 ft beyond the runway’s midpoint and continued for about 1,300 ft until the airplane exited the runway surface. Automatic dependent surveillance-broadcast (ADS-B) and avionics data showed the airplane’s groundspeed was between 96 and 99 knots and the flaps were extended to 40° during the final approach.

Postaccident examination of the airplane revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded a normal landing. Although the power lever

ball top unscrewed, the power lever functioned normally between full power and reverse settings.

Probable Cause and Findings

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

The pilot's failure to attain the proper touchdown point during landing, which resulted in a runway excursion and collision with terrain and a vehicle.

Findings

Personnel issues	Decision making/judgment - Pilot
Aircraft	Descent/approach/glide path - Not attained/maintained

Factual Information

History of Flight

Landing	Landing area overshoot (Defining event)
Landing	Runway excursion

On November 11, 2023, about 1241 central standard time, an experimental amateur-built Lancair IVP Turbine airplane, N751HP, sustained substantial damage when it was involved in an accident near McKinney, Texas. The pilot and passenger were not injured, and an occupant in an automobile sustained minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to the pilot, while at FL 250 west of Abilene, Texas, the cockpit door seal failed, and the airplane sustained a sudden loss of pressurization. The pilot contacted air traffic control for an immediate descent. The pilot descended the airplane to 10,000 ft msl and continued the flight to Aero Country Airport (T31), McKinney, Texas. Following the emergency descent, the pilot noted no aircraft systems anomalies. About 5 minutes after establishing cruise flight at 10,000 ft to T31, the pilot noted an amber caution light for the propeller rpm which was indicating 1,920 rpm. The pilot reduced the propeller rpm to 1,800 and the caution light turned off. The pilot continued the flight to T31.

The pilot reported he had not previously landed at T31 and performed a touch and go landing on runway 17 “to see the field.” The pilot climbed the airplane to the traffic pattern altitude and flew a normal traffic pattern to land on runway 17. During the downwind leg, the pilot pulled back the power lever and the ball on top of the lever (see Figure 1) came off in his hand. The pilot handed the ball to the passenger and continued the landing at the flight idle power position.

Figure 1. Cockpit power lever and ball.

The pilot stated the airplane touched down in the first 500 ft of the runway without a float or a bounce in ground effect; he immediately “hit [the] brakes gently” and maintained the runway centerline. For about 5 to 10 seconds, the pilot unsuccessfully attempted to move the power lever into beta-reverse. The pilot applied maximum braking; however, the brakes faded, and the stopping power decreased. The airplane exited the end of the runway, went through an airport perimeter fence, and struck a moving vehicle on a roadway. The airplane sustained substantial damageto the fuselage and right wing.

ADS-B and avionics data showed the airplane’s groundspeed was between 96 and 99 knots and the flaps were extended to 40° during the final approach.

A witness, located on a general aviation ramp on the east side of T31, video recorded the airplane’s landing on his cellular telephone. The video showed the airplane touch down, bounce, and touch down again near the midpoint of the 3,002 ft asphalt runway and evidence of braking action (smoke from main landing gear wheels/tires) occurred about 3 seconds later. The wheel/tire smoke continued until the airplane exited the runway surface.

According to the T31 airport manager who examined the runway surface after the accident, the first visible tire skid marks were about 200 ft past the midpoint of the runway. The skid marks remained visible for about 1,300 ft until the airplane departed the end of the asphalt surface.

The airplane continued 14 ft to the perimeter fence and then traveled 93 ft to the spot where it collided with a moving automobile in the roadway.

Postaccident examination of the airplane revealed cable continuity from the cockpit power lever to the propeller governor. The cockpit control lever, without the ball top, was actuated between full power and the reverse positions with no anomalies noted. The cockpit door seal was intact, and no damage was noted to the seal adhesive or materials.

A review of the aircraft maintenance records revealed that on March 29, 2022, the original Hayes IVP Turbine experimental airplane was modified with a RDD Enterprises, LLC, LX7 kit, which included major modifications to the fuselage, wings, empennage, and turbine engine. After the completion of the modifications, the airplane was placed back into the airplane's Phase 1 operating limitations flight test program for purposes of testing the LX7 conversion. Per the airplane maintenance records, on August 26, 2022, and 11.3 hours since the completion of the modifications, the airplane completed the Phase 1 flight test hour requirements.

According to RDD Enterprises, LLC, the landing roll distance is 800 ft (at maximum landing weight), and the landing distance over a 50 ft obstacle is 1,800 ft.

The pilot also reported that before delivery and after he acquired the airplane, the airplane sustained several discrepancies and issues, including a door seal that failed during pre-delivery flight testing.

Pilot Information

Certificate:	Commercial; Private	**Age:**	62,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	June 12, 2023
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	April 3, 2023
Flight Time:	1588 hours (Total, all aircraft), 57.5 hours (Total, this make and model), 1315 hours (Pilot In Command, all aircraft), 48 hours (Last 90 days, all aircraft), 26 hours (Last 30 days, all aircraft), 1.2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Charles L. Hayes	**Registration:**	N751HP
Model/Series:	Lancair IVP Turbine	**Aircraft Category:**	Airplane
Year of Manufacture:	2002	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	LIV404
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	Condition	**Certified Max Gross Wt.:**	3850 lbs
Time Since Last Inspection:	85 Hrs	**Engines:**	1 Turbo prop
Airframe Total Time:	as of last inspection	**Engine Manufacturer:**	Pratt & Whitney
ELT:	Installed	**Engine Model/Series:**	PT6-A-135
Registered Owner:	On file	**Rated Power:**	750 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KTKI,569 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	12:53 Local	**Direction from Accident Site:**	99°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 7000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	100°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.25 inches Hg	**Temperature/Dew Point:**	17°C / 4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Midland, TX (MDD)	**Type of Flight Plan Filed:**	IFR
Destination:	McKinney, TX	**Type of Clearance:**	VFR
Departure Time:	11:14 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	Aero Country T31	**Runway Surface Type:**	Asphalt
Airport Elevation:	765 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	17	**IFR Approach:**	None
Runway Length/Width:	3002 ft / 60 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	1 Minor	**Aircraft Explosion:**	None
Total Injuries:	1 Minor, 2 None	**Latitude, Longitude:**	33.203562,-96.742227(est)

Administrative Information

Investigator In Charge (IIC):	Sauer, Aaron
Additional Participating Persons:	Matthew Spawn; FAA; North Texas, TX
Original Publish Date:	May 14, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=193375