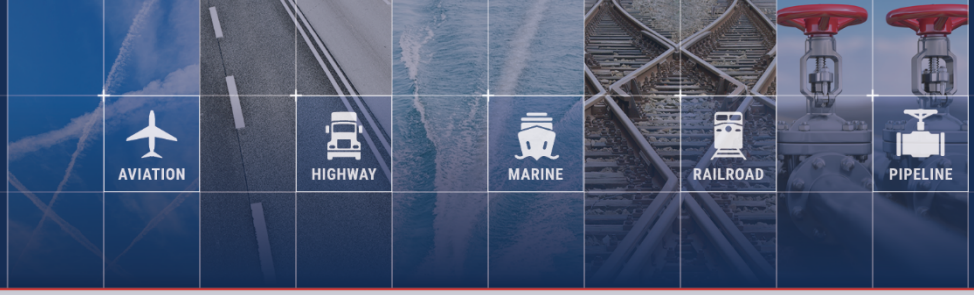

Aviation Investigation Final Report

Location:	Columbus, Ohio	**Accident Number:**	CEN14LA239
Date & Time:	May 9, 2014, 15:37 Local	**Registration:**	N718MV
Aircraft:	Cessna 525C	**Aircraft Damage:**	Substantial
Defining Event:	Fire/smoke (non-impact)	**Injuries:**	4 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The multi-engine turbofan airplane was substantially damaged when the left engine experienced an uncontained fire during engine start. After being alerted to the fire by ground crewmembers, the flight crew shut down both engines and egressed the airplane. At the time of engine start, the airplane was subject to gusting crosswinds up to 24 knots. The aircraft flight manual specified a maximum allowable crosswind component of 19 knots during ground starts. The accident is consistent with a disruption of airflow through the engine due to the crosswind, which resulted in an engine fire.

Probable Cause and Findings

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

The flight crew's decision to attempt an engine start in conditions that exceeded the engine's maximum allowable ground start crosswind component limitation.

Findings

Aircraft	Powerplant parameters - Incorrect use/operation
Personnel issues	Incorrect action selection - Flight crew

Factual Information

History of Flight

Prior to flight	Preflight or dispatch event
Standing-engine(s) start-up	Fire/smoke (non-impact) (Defining event)
Standing-engine(s) start-up	Attempted remediation/recovery
Standing-engine(s) shutdown	Evacuation
Other	Fire/smoke (post-impact)

On May 9, 2014, about 1537 eastern daylight time, a Cessna 525C multi-engine turbofan airplane, N718MV, was substantially damaged during an engine start at Rickenbacker International Airport (LCK), Columbus, Ohio. The two crewmembers and two passengers were not injured. The airplane was registered to Foxy Air 2009 LLC; Columbus, Ohio, and was being operated by Capital City Jet Center, Inc.; Columbus, Ohio. Day visual meteorological conditions (VMC) prevailed at the time of the accident and an instrument flight rules (IFR) flight plan had been filed for the 14 Code of Federal Regulations Part 135 on-demand passenger flight. At the time of the accident the airplane was preparing to depart LCK for a flight to Bolton Field Airport (TZR), Columbus, Ohio.

The airplane was parked on the ramp and oriented on a heading of 325 degrees true with the main cabin door shut and the right engine operating. The flight crew had initiated a start sequence on the left engine when witnesses outside the airplane notified them of a fire in the left engine. The flight crew then shut down both engines, closed the left firewall shutoff, activated the fire bottle, and all four occupants evacuated through the main cabin door. The fire continued to burn and was extinguished by aircraft rescue and fire fighting (ARFF) crews who arrived quickly. The fire resulted in substantial damage to empennage, and the left engine pylon. The rear of the left engine cowling was mostly consumed.

At 1535, the official surface weather observation site at LCK, reported wind from 210 degrees true at 19 knots, gusting to 27 knots, visibility of 10 miles, temperature 25 degrees Celsius (C), dew point 12 degrees C, and an altimeter setting of 29.87 inches of Mercury.

A standard headwind/crosswind component chart for the reported surface wind shown above revealed a tailwind component of 8 to 11 knots (steady wind/gusts respectively), and a crosswind component of 17 to 24 knots (steady wind/gusts respectively).

According to the Federal Aviation Administration approved Airplane Flight Manual, page 2-210-7, the airplane had a maximum allowable tailwind component ground start limitation of 19 knots and a maximum allowable crosswind component ground start limitation of 19 knots.

The engine was removed from the wreckage and examined. The thermally damaged elastomer stator insert assembly in the engine was repaired and the engine was operated in an engine test cell. The engine was started two times using the FADEC from the accident aircraft. The tests verified that both FADEC channels and igniters operated normally. During the test cell engine run a timed acceleration check from ground idle to takeoff power also verified that the engine operated within the allowable specifications. A

postaccident examination of the airplane revealed no evidence of any preimpact mechanical malfunctions or failures that would have prevented normal operations.

Pilot Information

Certificate:	Airline transport; Flight instructor	**Age:**	44,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:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	May 2, 2014
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	April 28, 2014
Flight Time:	(Estimated) 8125 hours (Total, all aircraft), 1450 hours (Total, this make and model), 7776 hours (Pilot In Command, all aircraft), 128 hours (Last 90 days, all aircraft), 45 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Other flight crew Information

Certificate:	Commercial	**Age:**	51,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	4-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:**	April 18, 2013
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 1341 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N718MV
Model/Series:	525C	**Aircraft Category:**	Airplane
Year of Manufacture:	2011	**Amateur Built:**	
Airworthiness Certificate:	Commuter	**Serial Number:**	525C0041
Landing Gear Type:	Retractable - Tricycle	**Seats:**	10
Date/Type of Last Inspection:	March 6, 2014 AAIP	**Certified Max Gross Wt.:**	17230 lbs
Time Since Last Inspection:		**Engines:**	2 Turbo fan
Airframe Total Time:	740 Hrs at time of accident	**Engine Manufacturer:**	WILLIAMS
ELT:	C126 installed, not activated	**Engine Model/Series:**	FJ 44-4A
Registered Owner:	FOXY AIR 2009 LLC	**Rated Power:**	3600 Lbs thrust
Operator:	CAPITAL CITY JET CENTER INC	**Operating Certificate(s) Held:**	On-demand air taxi (135)
Operator Does Business As:	CAPITAL CITY JET CENTER INC	**Operator Designator Code:**	YMHA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KLCK,744 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	19:35 Local	**Direction from Accident Site:**	342°
Lowest Cloud Condition:	Few / 4000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	19 knots / 27 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	210°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.87 inches Hg	**Temperature/Dew Point:**	25°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Columbus, OH (KLCK)	**Type of Flight Plan Filed:**	IFR
Destination:	Columbus, OH (KTZR)	**Type of Clearance:**	IFR
Departure Time:		**Type of Airspace:**	Class D

Airport Information

Airport:	Rickenbacker KLCK	**Runway Surface Type:**	
Airport Elevation:	744 ft msl	**Runway Surface Condition:**	Dry
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	4 None	**Latitude, Longitude:**	39.815834,-82.932502(est)

Administrative Information

Investigator In Charge (IIC):	Latson, Thomas
Additional Participating Persons:	Lee Thiel; FAA Columbus FSDO; Columbus, OH Peter J Basile; Cessna - Textron; Wichita, KS Troy Lewis; Williams International; Commerce Township, MI
Original Publish Date:	December 12, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=89207