



NTSB National Transportation Safety Board

Office of Aviation Safety

John DeLisi, Director Office of Aviation Safety

63rd Annual Business Aviation Safety Summit
May 10 -11, 2018





Independent

- The NTSB reports directly to Congress.
- The NTSB has no regulatory authority.

Board Members

- Five Board Members, 5-Year Terms
- Presidential Appointment, Confirmed by Senate



Chairman
Robert Sumwalt



Member
Bella Dinh-Zarr



Member
Earl Weener



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NTSB Mission

- Determine probable cause of transportation accidents
- Make safety recommendations to prevent reoccurrence



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National Transportation Safety Board
Washington, D.C. 20594

Safety Recommendation

Date: May 20, 1999

In reply refer to: A-99-47 through -50

Honorable Jane F. Garvey
Administrator
Federal Aviation Administration
Washington, D.C. 20591

On April 19, 1999, at about 12:45 p.m. eastern daylight time, a Beech T-34A, N1405W, operated by Sky Warriors, Inc., collided with the ground near Rydal, Georgia, following an in-flight separation of the right wing. Both the air transport pilot and the passenger, who was also a licensed pilot, were fatally injured. No flight plan was filed for the air combat simulation flight, which had departed Fulton County Airport in Atlanta, Georgia, at about 12:00 noon. The flight was conducted under Title 14 Code of Federal Regulations (14 CFR) Part 91, and visual weather conditions prevailed at the time of the accident.

The operator reported that N1405W and another T-34 initiated the engagement as a predetermined altitude and direction. After the initial turn toward each other, N1405W started a descending turn. According to the pilot of the second T-34, while N1405W maneuvered in the descending turn, the right wing separated from the airplane. The airplane entered a rapid spin and impacted the ground. The major portion of the right wing assembly, minus the inboard over-the-wing walk surface and the inboard section of the aft spar, was found about 1 mile north of the main wreckage center. The remainder of the right wing was located about 1/4 mile northeast of the major portion of the wing.

Examination of fractured portions of the right wing was conducted at the Safety Board's materials laboratory. The wing had separated through the wing fitting area, which attaches the wing to the fuselage. The structure of the wing in this area is very complex, being constructed from multiple sections riveted together to form the front and aft spars. The lower cap of the front spar in the area of the separation, for example, consists of a U-shaped center hinge extension, a filler plate, the wing fitting tang, and two vertically oriented J-shaped channels, with at least three vertically oriented reinforcement strips riveted to the two J-shaped channels. The lower cap of the aft spar, which carries less load than the forward spar, separated through an area consisting of the T-shaped wing fitting with two L-shaped angles attached.

Metallographic examination of the lower cap of the right wing aft spar revealed two large fatigue regions in the wing fitting, adjacent to the outboard edge of the "hubs" portion of the fitting. The fatigue cracking began on the forward side of the horizontal portion of the fitting, at the bottom edge, where a radius in the fitting allowed for the flush attachment of a plate to the

711

Each Safety Recommendation:

- Designates the party or person expected to take action.
- Describes the action the board recommends.
- States the safety need to be satisfied.



Acceptance Rate

82%

Today's Question

Is there a difference between flying safely and preventing accidents?



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Today's Question

Flying Safely

- Fatigue Risk Management
- Pilot Training
- LOC

Preventing Accidents

- Teterboro, NJ
- Akron, OH



Learjet 35A

Teterboro, NJ
May 15, 2017



Summary

- Operated by Trans-Pacific Jets
- Approach to Teterboro Airport
- 2 fatalities; no ground injuries
- Part 91 positioning flight
- Visual meteorological conditions



Pilot Experience

- Captain
 - 6,600 total hours, 850 Learjet
 - Let go from previous SIC job – “absolutely not ready to check out as Captain”
 - Driver’s license suspended (excess points)
 - Convicted of assault with deadly weapon
 - Notices of Disapproval – Commercial, ATP Checkrides
 - CAE Simuflite Lear 35 Training – “Not recommended for checkride”

Pilot Experience

- SIC
 - Resigned from previous Lear 35 SIC job after “weak performance” notice
 - Convicted of assault on police officer
 - 2X disapproval on Private Pilot checkrides
 - CAE Simuflite Lear 35 Training – “Not recommended for checkride”
 - Assigned SIC – 0 duties (pilot monitoring only)

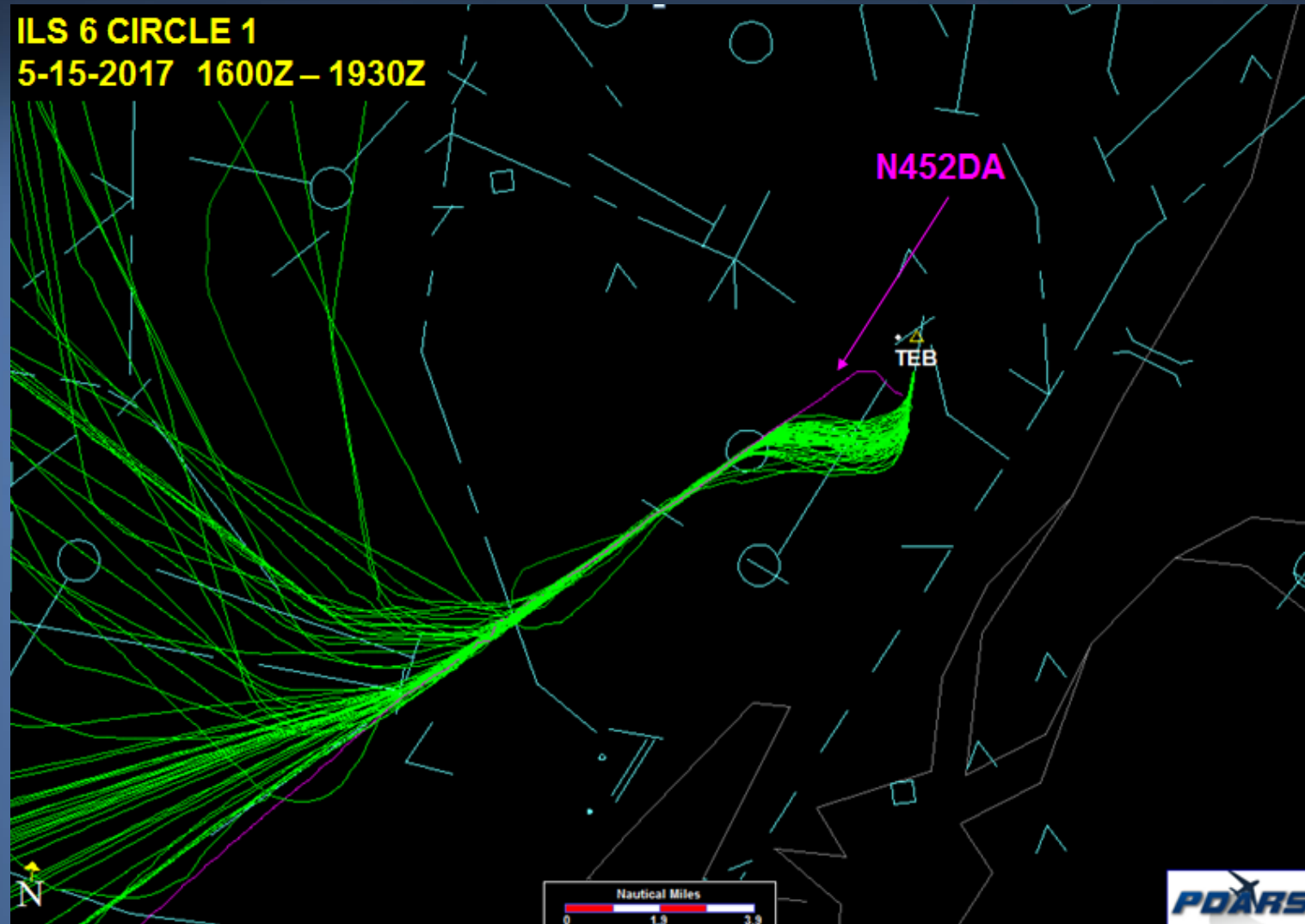


Flight History

- Third flight of the day
- Departed PHL for short repositioning flight
- SIC – 0 was the Pilot Flying
- Captain filed for 27,000 ft (?)
- Flight was cleared to 4,000 ft
- Flew the ILS Rwy 6 Circle to Runway 1



Airplane Track



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Initial Findings

- 30 min Cockpit Voice Recorder
- 131 expletives, 115 were f*** or f***ing
= expletive deleted



CVR Transcript Excerpts

HOT-1 yeaah. what the # man. we're a #
Learjet. get us # higher.

HOT-1 we won't # make it if we got four thousand. she's a
idiot. get us someone else if she can't do it.



CVR Transcript Excerpts

HOT-1

comments about violating airspeed
restriction, attempts to slow down, pulls
throttle to idle



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CVR Transcript Excerpts

HOT -1 Watch the airspeed

HOT -2 Your flight controls (*emphasized*)

EGPWS Five Hundred

EGPWS Sink rate. Pull up.



CVR Transcript Excerpts

- HOT -2 I'm gonna give ya your controls, okay?
- HOT -1 Alright my controls.
- HOT -1 # (spoken in angry tone)
- HOT -1 Watch my airspeed



CVR Transcript Excerpts

- HOT -2 Vref
- HOT -2 add airspeed. [emphasized] airspeed. airspeed.
airspeed. [exclaimed]
- HOT -1 stall. [strained voice]
- HOT -1 #



Safety Issues

- Pilot hiring, competency, and training
- Failure to perform ANY required checklists
- Unstabilized approach required go-around
- No flight data monitoring by operator





National Transportation Safety Board

Crash During Nonprecision Instrument Approach

Execuflight Hawker 700A
Akron, Ohio
November 10, 2015



Photo by Juan Carlos Photography

Accident Summary

- Part 135 on-demand charter flight
- 9 fatalities – 2 pilots and 7 passengers
- Apartment building destroyed
- No one on ground injured
- Instrument meteorological conditions



Aerial View of Accident Site and Runway 25



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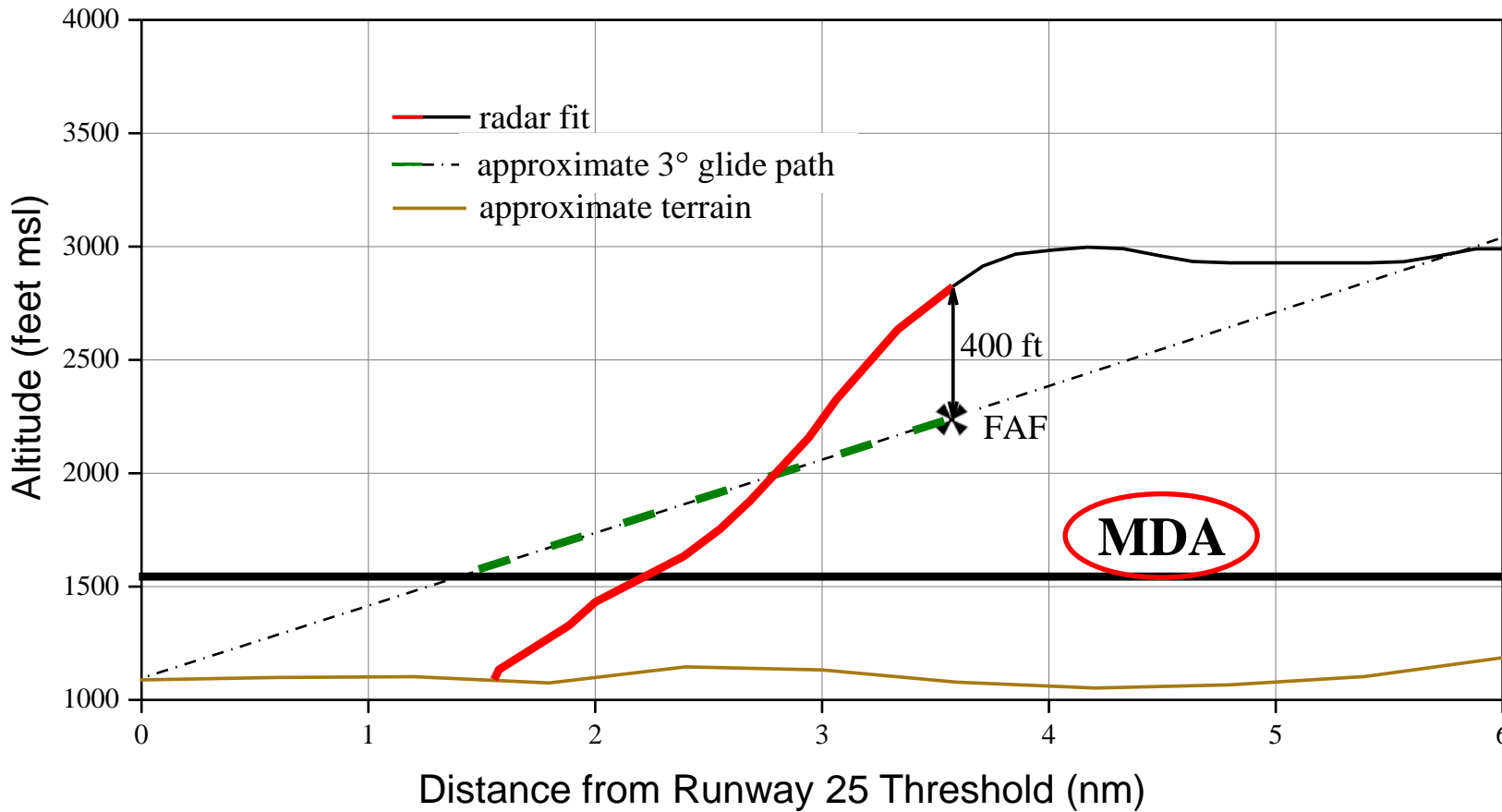


Pilots' Recent Employment

- Both pilots had been terminated by their most recent employer
- Captain failed to attend training
- First officer terminated for unsatisfactory work performance



Profile View of Approach



Standard Operating Procedures (SOPs)

- SOPs are basic element of safe aviation operations
- Flight crew failed to comply with numerous SOPs



Standard Operating Procedures Not Followed

- Alternate airport required but not filed
- Weight and balance incorrectly calculated
- First officer was flying pilot on revenue flight, contrary to informal practice
- Captain briefed approach, contrary to standard operating procedures

Standard Operating Procedures Not Followed

- Approach briefing incomplete, and approach checklist not performed
- Flaps improperly configured to 45°
- Landing checklist never completed
- Captain did not call out “minimums”
- Speed dropped below approach speed without go-around

Probable Cause

The flight crew's mismanagement of the approach and multiple deviations from company procedures, which placed the airplane in an unsafe situation and led to an unstabilized approach, a descent below minimum descent altitude without visual contact with the runway environment, and an aerodynamic stall.



Flight Data Monitoring (FDM)

- Operational FDM can provide valuable data to operators
- FDM programs provide an opportunity to correct deviations from SOPs

Safety Recommendations

- Require all Part 135 operators to install flight data recording devices capable of supporting a flight data monitoring program.
- Require all Part 135 operators to establish a structured flight data monitoring program.





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