



**NTSB** National Transportation Safety Board

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*Office of Aviation Safety*

**Empire Flight 8284**  
**ATR-42 Landing Accident**  
**January 27, 2009**  
**Lubbock, Texas**  
Leah D. Yeager - IIC

# Details

- January 27, 2009
- 0437 AM CST
- Empire 8284
- ATR-42-320
- Landed 300 feet short of runway
- FedEx Feeder Flight
- Night instrument meteorological conditions





El Paso, TX (KELP)

Lubbock, TX (KLBB)

Midland, TX (KMAF)

Fort Worth, TX (KAFW)

New Mexico

Oklahoma

Arkansas

Texas

Louisiana

Mississippi

323 mi

Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
© 2009 Europa Technologies  
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Image USDA Farm Service Agency  
31°17'58.94" N 99°13'07.72" W

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Eye alt 1009.43 mi

# Details

- Cessna 208 Caravans unable to operate due to weather conditions
- FAA restrictions
- Arrived at Fort Worth Alliance Airport at 1218 AM on January 27

# Details

- Weather information
- Advised of light freezing drizzle
- Empire GOM approval of operations
- No de-icing prior to departure

# Details

- Departed at 0313
- Level 3 ice protection used during flight (moderate to severe per Captain)
- Icing ceased at 14,000 feet
- Advised of light freezing drizzle
- ILS 17R approach

# Details

- Captain briefed approach
- First Officer limitations
- Crew ascertained that First Officer could fly approach

# Details

- Airplane cleared to land
- Airplane configuration
- Flap asymmetry
- Crew verification of flap problem



# Details

- First of 5 stick shaker warnings
- Autopilot disconnected
- First Officer suggested to go-around and Captain said no
- Captain took control of airplane
- Airplane impacted ground 300 feet short of runway





Photo provided by FAA

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Photo provided by FAA

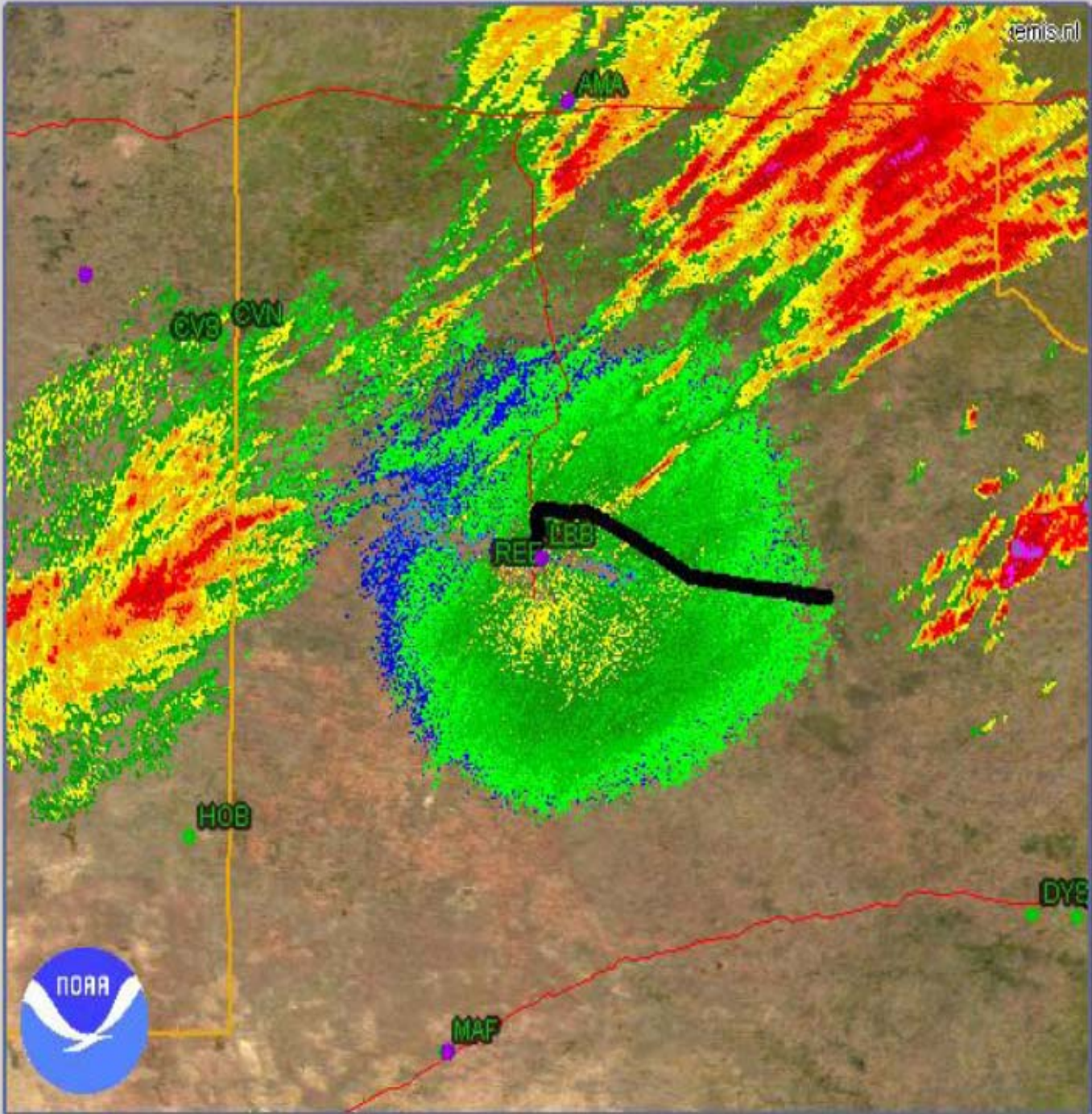
NTSB





# Weather
















- Wind from 020 degrees at 11 knots, gusting to 18 knots
- 2 miles visibility
- Light freezing drizzle and mist
- Overcast at 500 feet
- Temperature -08 degrees C
- Dew Point -09 degrees C



NEXRAD LEVEL-II  
KLBB - LUBBOCK, TX  
01/27/2009 10:34:35 GMT  
LAT: 33/39/15 N  
LON: 101/48/50 W  
ELEV: 3258 FT  
VCP: 31

REFLECTIVITY  
ELEV ANGLE: 0.57

Legend: dBZ (Category)

	$\geq + 28$ (15)
	+ 24 (14)
	+ 20 (13)
	+ 16 (12)
	+ 12 (11)
	+ 8 (10)
	+ 4 (9)
	0 (8)
	- 4 (7)
	- 8 (6)
	- 12 (5)
	- 16 (4)
	- 20 (3)
	- 24 (2)
	$\leq - 28$ (1)



TWR: Empire eighty two eighty four Lubbock Tower runway one seven right clear to land. winds zero one zero at eight.



National Transportation Safety Board *Public Hearing*

04:34:09

159 knots 1570 feet

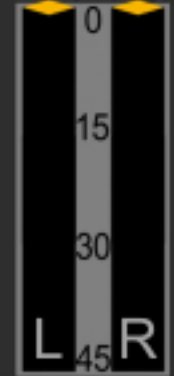
Shaker OFF Pusher OFF

Power (%)

Flap (dg)



Rudder Pedal (in)



Auto Pilot ON



# Response

- NTSB response
- Weather delays
- Examination of wreckage
- Conducting interviews
- Collecting records

# Performance Data

- DFDR and performance analysis
- Ice accretion
- Flap asymmetry
- No stall, loss of lateral control, or sudden change in aileron hinge movement

# Performance Data

- Stick shaker
- Ice accretion did not exceed control authority
- Right flap did not extend
- Left flap extended approximately 8-10 degrees
- Flap asymmetry detection system functioned as designed
- Initiating flap asymmetry event part of on-going investigation

# On-Scene Documentation

- Engine and flight control documentation

# Areas of Inquiry

- Crew resource management (CRM)
- Training
- FAA guidance for operations in icing conditions
- Design and performance of ATR-42 with a flap anomaly in icing conditions
- Avionics systems and aircraft design modifications to mitigate icing effects

# NTSB Staff

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# Parties to the Investigation

Federal Aviation Administration

Empire Airlines

Federal Express

# Accredited Representatives

Bureau of d'Enquetes et d'Analyses (BEA)

ATR

Transportation Safety Board of Canada

Pratt and Whitney

NTSB







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