



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	Las Vegas, Nevada	Accident Number:	DCA13FA071
Date & Time:	April 5, 2013, 12:51 Local	Registration:	N560UW
Aircraft:	Airbus 321	Aircraft Damage:	Substantial
Defining Event:	Tailstrike	Injuries:	192 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

The flight crew stated that the captain was the pilot flying and the first officer was the pilot monitoring. The captain stated that, once he turned off the autopilot while on the approach to runway 25L, he thought "the winds seemed a little stronger..." than what was reported, and it felt "a little squirrely." He said he initiated the flare within about 20 feet above the ground and pitched up for the flare, but stated he did not feel any pitch response, so he brought the nose up a little more to arrest the descent. Upon initial touchdown, he estimated that the airplane bounced about 5-10 feet back into the air. On the subsequent touchdown, the airplane's tail struck the runway.

Postaccident investigation revealed substantial damage to the underbelly and aft bulkhead area. The skin was abraded over a large area through its thickness in several areas of the pressure vessel. One frame was fractured along with several fractured shear ties and frame clips.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the captain's improper recovery from a bounced landing which resulted in a tailstrike.

Findings

Aircraft	Landing flare - Capability exceeded
Personnel issues	Incorrect action sequence - Pilot

Factual Information

History of Flight

Landing-flare/touchdown	Tailstrike (Defining event)
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On April 5, 2013, about 1251 pacific daylight time, U. S Airways flight 1733, an Airbus 321-231, N560UW, experienced a tail strike while landing on runway 25L at McCarran International Airport (LAS), Las Vegas, Nevada. The airplane incurred substantial damage and there were no injuries to the 187 passengers and 6 crew members on board. The scheduled domestic passenger flight was operating under the provisions of 14 CFR Part 121 and originated from Charlotte/Douglas International Airport (CLT), Charlotte, North Carolina.

The captain was the pilot flying and the first officer was the pilot monitoring. According to flight crew statements, the takeoff, climb, cruise and descent were uneventful. Prior to descent, the captain briefed a visual approach to runway 25L at LAS, which would be backed up by the instrument landing system (ILS). He also included a brief of the A321's 7.5 degree pitch limit. The crew reported that visual meteorological conditions with light and variable winds were initially reported at LAS, however, the winds (VMC) became gusty around the time of the accident. The captain stated that, once he turned off the autopilot while on the approach to runway 25L, he thought "the winds seemed a little stronger..." than what was reported, and it felt "a little squirrely."

According to the flight crew, the approach was stabilized, on speed, and on glide path. Flaps were selected FULL and autobrakes were selected LOW. The approach speed was 158 knots. When the captain began to initiate the flare within about 20 feet above the ground and pitched up "just a tad" for the flare, but stated he did not feel any pitch response, so he brought the nose up a little more to arrest the descent. Upon initial touchdown, he estimated that they bounced about 5-10 feet back into the air and the airplane struck its tail on the second touchdown. During post flight inspection, the flight crew confirmed damage to the tail.

During post accident interviews, the captain told investigators that he would typically bring the thrust to idle when he heard the "Retard" auto callout. For this landing, he said he did not see a speed buffer like normal on the speed tape, so he held the thrust in a little longer. He said that he started to initiate the flare within about 20 feet above the ground and pitched up "just a tad" for the flare, but did not feel any pitch, so he brought it up a little more to arrest the descent and still did not feel any pitch change.

DAMAGE TO AIRPLANE

The airplane incurred substantial damage to the underbelly and aft bulkhead area. The skin was abraded through its thickness in several areas of the pressure vessel. Skin was eroded in sections 17 & 18; Frames and cargo floor support structure at Frames 63 and 64 were bent; Frame 64 cargo floor support cross brace had severed; Frame clips at Frame 65 were severed as well as the tab between clip and Stringer 44; Frame clips at Frames 62, 63, 66, and 67 were damaged; Frames 64-67, the rivets that connect the frame clip to the stringer had sheared, the butt splice strap at Frame 64 was damaged;

stringers 43L, 44, and 43R had damage at Frame 65; the vertical strut at Frame 65 between cargo floor structure and passenger floor beam had a bent attached structure; Floor beam at Frame 65 had twisted; the cargo floor support structure at Frames 63 and 64 had deformed; the internal doubler around potable water service panel in proximity to Frame 65 was damaged.

PERSONNEL INFORMATION

At the time of the accident, the captain held an Airline Transport Pilot (ATP) certificate, issued on January 13, 2008, with airplane Multi-Engine Land and Sea ratings. He held type ratings in CE-500, DC-9, A-320, B-737, ERJ-170, and ERJ-190, as well as a Flight Engineer certificate issued March 16, 1983. He had accumulated 14,119 flight hours of which 3,000 was as pilot in command and 3,543 hours in the A319/320/321. He held a FAA First Class Medical Certificate, issued November 19, 2012, with no limitations.

The first officer held an ATP certificate, issued August 24, 2008, with airplane Multi-Engine Land rating. He held type ratings in DHC-8, BE-400, MU-300, B-757 B-767, and A-320. He had accumulated over 14,000 hours of total flight experience, of which 1,700 were in A319/320/321. He held a First Class Medical Certificate, issued October 5, 2012, with no limitations.

METEOROLOGICAL INFORMATION

Five minutes after the event, the KLAS METAR, showed that the winds were from 040 degrees at 11 knots, gusting to 17 knot. The visibility was 10 statute miles, with few clouds at 12,000 feet, and a scattered layer at 25,000 feet. The altimeter measured 29.85 in Hg. One hour before they were stated as variable at 4 knots.

ADDITIONAL INFORMATION

The flight data recorder (FDR), manufactured by L-3 Communications, model FA-2100, was recovered and forwarded to the NTSB Vehicle Recorder Laboratory for download. The FDR recording contained approximately 108 hours of data. The incident flight was the last flight on the recording and its duration was approximately 4 hours, 13 minutes.

Pilot Information

Certificate:	Airline transport	Age:	54
Airplane Rating(s):	Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	November 19, 2012
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	July 29, 2012
Flight Time:	14119 hours (Total, all aircraft), 3542 hours (Total, this make and model)		

Co-pilot Information

Certificate:	Airline transport; Flight instructor	Age:	46
Airplane Rating(s):	Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	5-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	October 5, 2012
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	November 28, 2012
Flight Time:	13081 hours (Total, all aircraft), 1744 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Airbus	Registration:	N560UW
Model/Series:	321 231	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Transport	Serial Number:	5300
Landing Gear Type:	Retractable - Tricycle	Seats:	198
Date/Type of Last Inspection:	April 5, 2013 Continuous airworthiness	Certified Max Gross Wt.:	205000 lbs
Time Since Last Inspection:		Engines:	2 Turbo fan
Airframe Total Time:	1677 Hrs at time of accident	Engine Manufacturer:	International Aero Engines
ELT:	Installed, not activated	Engine Model/Series:	V2533A5
Registered Owner:	U.A Airways Inc	Rated Power:	31600 Lbs thrust
Operator:	U.A Airways Inc	Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:		Operator Designator Code:	USAA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	LAS,2181 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	18:56 Local	Direction from Accident Site:	86°
Lowest Cloud Condition:	Few / 25000 ft AGL	Visibility	
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots / None	Turbulence Type Forecast/Actual:	/ None
Wind Direction:		Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	29.88 inches Hg	Temperature/Dew Point:	26°C / 0°C
Precipitation and Obscuration:			
Departure Point:	Charlotte, NC (CLT)	Type of Flight Plan Filed:	IFR
Destination:	Las Vegas, NV (LAS)	Type of Clearance:	IFR
Departure Time:	11:23 Local	Type of Airspace:	Unknown

Airport Information

Airport:	Las vegas LAS	Runway Surface Type:	Concrete
Airport Elevation:	2181 ft msl	Runway Surface Condition:	Dry
Runway Used:	25L	IFR Approach:	Visual
Runway Length/Width:	10525 ft / 150 ft	VFR Approach/Landing:	Go around

Wreckage and Impact Information

Crew Injuries:	6 None	Aircraft Damage:	Substantial
Passenger Injuries:	186 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	192 None	Latitude, Longitude:	36.799999,-115.300003(est)

Administrative Information

Investigator In Charge (IIC): Lovell, John

Additional Participating Persons:

Original Publish Date: April 6, 2020

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=86601>

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).