



Aviation Investigation Final Report

Location:	Warrenton, Virginia	Accident Number:	GAA16CA477
Date & Time:	September 9, 2016, 12:15 Local	Registration:	N750SS
Aircraft:	PACIFIC AEROSPACE CORP LTD 750XL	Aircraft Damage:	Substantial
Defining Event:	Loss of control on ground	Injuries:	14 None
Flight Conducted Under:	Part 91: General aviation - Skydiving		

Analysis

The pilot reported that this was his third skydiving flight of the day and he performed a back taxi on the runway for takeoff. He further reported that as he rotated the airplane for takeoff, he heard a "steady" stall warning horn, the flight controls felt mushy, and the airplane would not climb. The pilot reported that he aborted the takeoff and applied max braking and reverse thrust, but the airplane overran the runway remaining. Subsequently, the landing gear collapsed and the airplane collided with a fence.

The left and right wing sustained substantial damage.

After the accident, the pilot reported that he observed the wing flaps in the fully retracted position. He reported that the flaps should have been set to 20 degrees for takeoff. The pilot reported that he forgot to set the flaps during the back taxi for takeoff because he was communicating with other airplanes near the airport. The pilot reported that he did not use a physical checklist, but he did run through a checklist mentally.

The pilot reported no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to set the wing flaps for takeoff, which resulted in an aerodynamic stall, an aborted takeoff, and a runway overrun.

Findings

Personnel issues	Forgotten action/omission - Pilot
Aircraft	Takeoff distance - Not attained/maintained
Aircraft	Configuration - Incorrect use/operation
Aircraft	Angle of attack - Capability exceeded
Aircraft	TE flap control system - Not used/operated
Aircraft	Angle of attack - Capability exceeded
Environmental issues	Fence/fence post - Contributed to outcome

Factual Information

History of Flight

Takeoff	Stall warn/stick-shaker/pusher
Takeoff	Aerodynamic stall/spin
Takeoff-rejected takeoff	Loss of control on ground (Defining event)
Takeoff-rejected takeoff	Runway excursion
Takeoff-rejected takeoff	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Commercial	Age:	36, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	4-point
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	December 9, 2015
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	November 21, 2014
Flight Time:	(Estimated) 1657 hours (Total, all aircraft), 229 hours (Total, this make and model), 1017 hours (Pilot In Command, all aircraft), 197 hours (Last 90 days, all aircraft), 80 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Passenger Information

Certificate:		Age:	
Airplane Rating(s):		Seat Occupied:	Center
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	Male
Airplane Rating(s):		Seat Occupied:	Rear
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	Male
Airplane Rating(s):		Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	
Airplane Rating(s):		Seat Occupied:	Left
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:	Age:	
Airplane Rating(s):	Seat Occupied:	Left
Other Aircraft Rating(s):	Restraint Used:	Lap only
Instrument Rating(s):	Second Pilot Present:	No
Instructor Rating(s):	Toxicology Performed:	No
Medical Certification:	Last FAA Medical Exam:	
Occupational Pilot: No	Last Flight Review or Equivalent:	
Flight Time:		

Passenger Information

Certificate:	Age:	
Airplane Rating(s):	Seat Occupied:	Right
Other Aircraft Rating(s):	Restraint Used:	Lap only
Instrument Rating(s):	Second Pilot Present:	No
Instructor Rating(s):	Toxicology Performed:	No
Medical Certification:	Last FAA Medical Exam:	
Occupational Pilot: No	Last Flight Review or Equivalent:	
Flight Time:		

Passenger Information

Certificate:	Age:	
Airplane Rating(s):	Seat Occupied:	Unknown
Other Aircraft Rating(s):	Restraint Used:	Lap only
Instrument Rating(s):	Second Pilot Present:	No
Instructor Rating(s):	Toxicology Performed:	No
Medical Certification:	Last FAA Medical Exam:	
Occupational Pilot:	Last Flight Review or Equivalent:	
Flight Time:		

Passenger Information

Certificate:		Age:	Male
Airplane Rating(s):		Seat Occupied:	Unknown
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	Male
Airplane Rating(s):		Seat Occupied:	Unknown
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	Male
Airplane Rating(s):		Seat Occupied:	Unknown
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	Female
Airplane Rating(s):		Seat Occupied:	Unknown
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	Male
Airplane Rating(s):		Seat Occupied:	Unknown
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	Male
Airplane Rating(s):		Seat Occupied:	Unknown
Other Aircraft Rating(s):		Restraint Used:	Lap only
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	PACIFIC AEROSPACE CORP LTD	Registration:	N750SS
Model/Series:	750XL NO SERIES	Aircraft Category:	Airplane
Year of Manufacture:	2005	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	115
Landing Gear Type:	Tricycle	Seats:	6
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	7500 lbs
Time Since Last Inspection:		Engines:	1 Turbo prop
Airframe Total Time:		Engine Manufacturer:	Pratt & Whitney
ELT:	Installed, not activated	Engine Model/Series:	PT6A-34
Registered Owner:	MAXIM AVIATION LLC	Rated Power:	750 Horsepower
Operator:	D.C. Skydiving Center	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KHWY,390 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	16:15 Local	Direction from Accident Site:	230°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/ None
Wind Direction:		Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	29.97 inches Hg	Temperature/Dew Point:	33°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Warrenton, VA (7VG0)	Type of Flight Plan Filed:	None
Destination:	Warrenton, VA (7VG0)	Type of Clearance:	None
Departure Time:	12:15 Local	Type of Airspace:	Class G

Airport Information

Airport:	WARRENTON AIR PARK 7VG0	Runway Surface Type:	Concrete;Dirt;Grass/turf
Airport Elevation:	442 ft msl	Runway Surface Condition:	Dry
Runway Used:	22	IFR Approach:	None
Runway Length/Width:	2215 ft / 70 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	13 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	14 None	Latitude, Longitude:	38.650833,-77.789718(est)

Preventing Similar Accidents

Preventing Rote Callouts (SA-018)

The Problem

Occasionally, pilots will make callouts without first verifying the cockpit indication that corresponds with the callout because they are acting out of habit and make the callouts based on what they expect to see but do not take the time to verify it. Rote callouts can prevent or delay the pilots' proper response during a critical phase of flight or cause the pilots to think that an action has been taken when it has not. All pilots can be vulnerable to making errant callouts if they become complacent, which allows habits and expectations to influence their responses. Taking explicit steps to direct attention, methodically verify the status of a checklist item, and make callouts using standard phraseology can reduce the chances of making errors.

What can you do?

- Do not become complacent and respond out of habit when running a checklist. For every callout, there should be a corresponding indication or setting. Train yourself to direct your attention on the indicator or display long enough to be sure of what the indicator is telling you every time. Physically touching a control or pointing to an indicator can be a useful technique.
- Adopt a methodical pace when reading or responding to checklist items so that you can ensure that you see and verify each cockpit indication.
- Cross check related indications to see if the aircraft's performance is changing. For example, a callout of "flaps fifteen" may be accompanied by a characteristic change in pitch attitude and airspeed, so know what to expect on the other instruments, not just the flap position indicator.
- Be attentive to an indicator's color and do not anticipate a color change before it occurs. For example, a thrust reverse indicator is often amber when reversers are in transit but green when reversers are fully deployed.
- Make a point of giving and receiving a proper response to checklist callouts. Improper or nonstandard phraseology, nods, mumbles, and nonverbal signals are unacceptable.
- Operational distractions, such as radio calls, can interrupt or drown out a callout. Stay focused and assertive and repeat the callout if needed. Prevent nonoperational distractions, such as cockpit conversations, by implementing a "sterile cockpit" where callouts are expected.
- Set an example. If you make your callouts crisp and catch any missed indications, your fellow pilot will likely follow suit.
- Awareness is a large part of the solution. Add callout awareness to your preflight briefings and be ready to verbalize each and every discrepancy.

See <https://www.nts.gov/Advocacy/safety-alerts/Documents/SA-018.pdf> for additional resources.

The NTSB presents this information to prevent recurrence of similar accidents. Note that this should not be considered guidance from the regulator, nor does this supersede existing FAA Regulations (FARs).

Administrative Information

Investigator In Charge (IIC):	Gerhardt, Adam
Additional Participating Persons:	John Teehan; FAA; Dulles, VA
Original Publish Date:	January 18, 2017
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=93995

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).