



National Transportation Safety Board Aviation Accident Final Report

Location:	North Pole, AK	Accident Number:	ANC16CA050
Date & Time:	08/02/2016, 2105 AKD	Registration:	N8512Q
Aircraft:	HOLLEY CAROL L ANTARES	Aircraft Damage:	Substantial
Defining Event:	Loss of control on ground	Injuries:	1 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot reported that while practicing stop-and-go landings with a crosswind condition, the tricycle-gear weight-shift control (WSC) airplane "weathervaned" to the right upon touchdown. In an attempt to correct for the weathervane, the pilot applied right pedal, the airplane departed the runway to the right, and tipped over coming to rest on the right leading edge of the wing. The airplane sustained substantial damage to the wing keel.

A Federal Aviation Administration (FAA) aviation safety inspector who responded to the accident site reported that he observed no mechanical malfunctions or failures with airframe and engine that would have precluded normal operation and none was reported to him by the pilot.

In the recommendation section of the National Transportation Safety Board Accident/Incident Reporting Form 6120.1, the pilot stated that the accident may have been avoided if he had additional training that concentrated on ground handling and crosswind condition operations.

The FAA has published the Weight-Shift Control Aircraft Flying Handbook FAA-H-8083-5 (2008). This handbook discusses crosswind landing procedures for WSC airplanes and states in part:

When in final approach, the wind correction angle (crab angle) is established by heading toward the wind with the wings level so that the aircraft's ground track remains aligned with the centerline of the runway. This crab angle is maintained all the way to touchdown, when the rear wheels hit first and rotate the carriage and wing around so the front wheel touches the ground with the carriage going straight. However, if in turbulent air or pitched forward during the touchdown, with the front wheel touching the ground first, the pilot should lightly control the steering of the front wheel to be headed in the direction the carriage is going. WSC carriage front landing gear typically has camber that tends to steer the front wheel naturally in the direction of travel, so a light touch on the front wheel as it touches the ground allows it to find its own direction of travel. Once the front wheel is on the ground, lower the nose to keep the WSC on the ground and steer as required down the center of the runway.

The procedure for the wing during the roundout is the same as that for normal and turbulent roundout and touchdowns. The exception is that after touchdown the windward wing should be lowered slightly so the wind cannot get under it to flip the WSC aircraft during later landing roll and taxi.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain directional control of the weight-shift control airplane during the landing in a crosswind condition, which resulted in a runway excursion, a tip over of the wing, and a collision with terrain.

Findings

Aircraft	Directional control - Not attained/maintained (Cause) Crosswind correction - Not attained/maintained (Cause)
Personnel issues	Aircraft control - Pilot (Cause)
Environmental issues	Crosswind - Response/compensation

Factual Information

History of Flight

Landing	Other weather encounter Loss of control on ground (Defining event) Runway excursion Collision with terr/obj (non-CFIT)
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Pilot Information

Certificate:	Commercial; Military; Private; Student	Age:	39, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Front
Other Aircraft Rating(s):	Glider; Helicopter	Restraint Used:	4-point
Instrument Rating(s):	Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With Waivers/Limitations	Last Medical Exam:	06/03/2016
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 3124.8 hours (Total, all aircraft), 6.8 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	HOLLEY CAROL L	Registration:	N8512Q
Model/Series:	ANTARES MA2	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental Light Sport	Serial Number:	24150HS
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	07/05/2016, Annual	Certified Max Gross Wt.:	992 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	20.7 Hours	Engine Manufacturer:	Rotax
ELT:	Not installed	Engine Model/Series:	503
Registered Owner:	On file	Rated Power:	50 hp
Operator:	On file	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	PAFB, 454 ft msl	Observation Time:	0458 UTC
Distance from Accident Site:	7 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	310°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Scattered / 6000 ft agl	Temperature/Dew Point:	19°C / 13°C
Lowest Ceiling:	Broken / 18000 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	7 knots, 300°	Visibility (RVR):	
Altimeter Setting:	29.94 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	NORTH POLE, AK (95Z)	Type of Flight Plan Filed:	None
Destination:	NORTH POLE, AK (95Z)	Type of Clearance:	None
Departure Time:	2100 AKD	Type of Airspace:	Class G

Airport Information

Airport:	BRADLEY SKY-RANCH (95Z)	Runway Surface Type:	Gravel
Airport Elevation:	483 ft	Runway Surface Condition:	Dry
Runway Used:	15	IFR Approach:	None
Runway Length/Width:	4100 ft / 60 ft	VFR Approach/Landing:	Stop and Go; Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None		

Administrative Information

Investigator In Charge (IIC):	Michael J Hodges	Adopted Date:	12/05/2016
Additional Participating Persons:	Andrew Noble; FAA Fairbanks FSDO; Fairbanks, AK		
Publish Date:	12/05/2016		
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=93757		

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