Aviation Investigation Final Report

Location:	Anchorage, Alaska	**Accident Number:**	ANC13LA067
Date & Time:	July 23, 2013, 20:00 Local	**Registration:**	N4814
Aircraft:	Cessna 180A	**Aircraft Damage:**	Substantial
Defining Event:	Aircraft wake turb encounter	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot had been cleared to land long on the runway as requested, but, because he became aware of a faster airplane that would be landing behind his airplane, he decided to land closer to the approach end so that he could exit the runway about midfield instead. The pilot reported that the new landing location resulted in an encounter with turbulence and a left crosswind from the lingering jet blast from a Boeing 747 that departed from an adjacent runway. The airplane veered sharply right during the wheel landing and ground-looped. The air traffic controller had included a "caution jet blast" advisory in the pilot's landing clearance, and Federal Aviation Administration guidance states that pilots conducting operations under visual flight rules are expected to adjust the flightpath, as necessary, to avoid wake encounters.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's loss of directional control of the airplane during a wheel landing.

Findings

Personnel issues	(general) - Pilot
Personnel issues	Aircraft control - Pilot
Aircraft	Directional control - Not attained/maintained

Factual Information

History of Flight

Landing-flare/touchdown	Aircraft wake turb encounter (Defining event)
Landing-landing roll	Loss of control on ground

On July 23, 2013, about 2000 Alaska daylight time, a Cessna 180A tailwheel-equipped airplane, N4814, veered right and ground-looped during landing at the Ted Stevens Anchorage International Airport (ANC), Anchorage, Alaska. The commercial pilot was not injured, and the airplane sustained substantial damage. The personal flight was operated under the provisions of 14 Code of Federal Regulations Part 91 with no flight plan filed. Visual meteorological conditions prevailed. The flight departed from Scooter's Landing Strip Airport (AK84), Sterling, Alaska, about 1930.

The pilot stated that the ANC tower controller cleared his flight to land on runway 7L and approved his request to land long on the 10,600-foot runway. He stated that he typically landed the airplane on the last 2,000 to 3,000 feet of the runway so that he could exit near the end. He stated that this time, he was mindful of a Beech 1900 airplane that would be landing behind his airplane, so he planned to land and exit about midfield instead. The pilot stated that, during the approach and while his airplane was about 50 feet above the ground, his airplane encountered a "jet blast" from a Boeing 747 that had departed from runway 33 (which intersects runway 7L near the approach end). The pilot stated that the jet blast included a crosswind from the left and felt "like light to moderate turbulence" with "two distinct bumps." The pilot stated that his airplane made it through the jet blast and that he performed a wheel landing about 75 miles per hour. Shortly thereafter, the airplane veered sharply to the right and ground-looped.

The airplane sustained damage to the left main landing gear, fuselage, both wings, left aileron, and left elevator. The pilot reported no known mechanical malfunctions what would have precluded normal operation of the airplane. The pilot stated that the landing clearance that the ANC tower controller provided to him included a "caution, jet blast" advisory. The pilot stated that he believed that the light quartering tailwind present at the time of his landing enabled the jet blast winds from the Boeing 747 to drift eastward into the runway environment.

Chapter 7, Section 3 of the Federal Aviation Administration (FAA) Aeronautical Information Manual provides guidance to pilots of light aircraft regarding wake turbulence, which includes jet engine blast and wake vortices. The chapter describes vortex behavior and provides guidance for avoiding wake turbulence encounters. Section 7-3-1 notes that jet engine blast can cause damage and upsets if encountered at close range, and section 7-3-4 notes that, because wake vortices are the by-product of wing lift, the vortices are generated the moment that the departing transport category aircraft leaves the ground (after the point of rotation). Section 7-3-6 notes that, for pilots operating under visual flight rules, "WHETHER OR NOT A WARNING OR INFORMATION HAS BEEN GIVEN [by an air traffic controller]…, THE PILOT IS EXPECTED TO ADJUST AIRCRAFT OPERATIONS AND FLIGHT

PATH AS NECESSARY TO PRECLUDE SERIOUS WAKE ENCOUNTERS" (capitalization emphasis in original document)."

The pilot was involved in a previous ground-loop accident in the airplane on May 23, 2006. In that accident, the airplane bounced during landing in crosswind conditions and veered to the right, sustaining substantial damage.

Pilot Information

Certificate:	Commercial	**Age:**	59
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	July 7, 2012
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	July 6, 2013
Flight Time:	(Estimated) 3000 hours (Total, all aircraft), 1400 hours (Total, this make and model), 1500 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N4814
Model/Series:	180A	**Aircraft Category:**	Airplane
Year of Manufacture:	1957	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	32847
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	March 31, 2013 Annual	**Certified Max Gross Wt.:**	2650 lbs
Time Since Last Inspection:	25 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	8400 Hrs at time of accident	**Engine Manufacturer:**	CONT MOTOR
ELT:	C91A installed, not activated	**Engine Model/Series:**	O-470 SERIES
Registered Owner:	On file	**Rated Power:**	230 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	ANC,151 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Few / 600 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 25000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	290°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.03 inches Hg	**Temperature/Dew Point:**	22°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sterling, AK (AK84)	**Type of Flight Plan Filed:**	None
Destination:	Anchorage, AK (ANC)	**Type of Clearance:**	VFR
Departure Time:		**Type of Airspace:**	Air traffic control;Class C

Airport Information

Airport:	TED STEVENS ANCHORAGE INTL ANC	**Runway Surface Type:**	Asphalt
Airport Elevation:	151 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	07L	**IFR Approach:**	None
Runway Length/Width:	10600 ft / 150 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	61.174167,-149.998062(est)

Administrative Information

Investigator In Charge (IIC):	Gagne, Catherine
Additional Participating Persons:	Robin Broomfield; FAA - Anchorage FSDO; Anchorage, AK
Original Publish Date:	July 30, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=87558