Aviation Investigation Final Report

Location:	Memphis, Missouri	**Accident Number:**	CEN20CA320
Date & Time:	July 31, 2020, 07:05 Local	**Registration:**	N90834
Aircraft:	Cessna A188	**Aircraft Damage:**	Substantial
Defining Event:	Miscellaneous/other	**Injuries:**	1 Minor
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot reported that he had just started flying this airplane five days before the accident as a contract pilot. Over the past four days, the operator had the airplane on the "ready pad" with all of the tie-downs and gust locks already removed. On the day of the accident, the airplane was tied down with all of the gust locks still installed. Prior to takeoff, the pilot completed a preflight inspection but did not remove the rudder gust lock. During the takeoff roll, the pilot had to use the brakes to keep the airplane centered on the runway, which made for a much longer takeoff roll. The airplane dragged in the 10 ft high corn off the end of the runway and lost lift, so the pilot made a forced landing in a field. During the landing roll the airplane collided with a tree and sustained substantial damage to the fuselage, both wings, and empennage. The pilot reported that there were no mechanical malfunctions with the airplane. He stated that he should have completed a more thorough preflight inspection.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot did not remove the rudder gust lock during the preflight inspection, which resulted in a forced landing and collision with a tree.

Findings

Personnel issues	Preflight inspection - Pilot
Aircraft	Directional control - Attain/maintain not possible

Factual Information

History of Flight

Initial climb	Loss of control in flight
Initial climb	Collision during takeoff/land
Initial climb	Miscellaneous/other (Defining event)
Initial climb	Off-field or emergency landing

Pilot Information

Certificate:	Commercial	**Age:**	59,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Single
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:**	June 22, 2020
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	November 11, 2018
Flight Time:	2153 hours (Total, all aircraft), 153 hours (Total, this make and model), 2153 hours (Pilot In Command, all aircraft), 211 hours (Last 90 days, all aircraft), 159 hours (Last 30 days, all aircraft), 13 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N90834
Model/Series:	A188 B	**Aircraft Category:**	Airplane
Year of Manufacture:	1979	**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	18803322T
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	April 15, 2020 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	1531.5 Hrs at time of accident	**Engine Manufacturer:**	Continential Motors
ELT:	Not installed	**Engine Model/Series:**	IO-520-D
Registered Owner:	Woods Flying Service Llc	**Rated Power:**	300 Horsepower
Operator:	Woods Flying Service Llc	**Operating Certificate(s) Held:**	Agricultural aircraft (137)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KIRK,965 ft msl	**Distance from Accident Site:**	24 Nautical Miles
Observation Time:	10:55 Local	**Direction from Accident Site:**	223°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	40°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.97 inches Hg	**Temperature/Dew Point:**	25°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Memphis, MO	**Type of Flight Plan Filed:**	None
Destination:	Memphis, MO	**Type of Clearance:**	None
Departure Time:	07:03 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	40.396945,-92.181663(est)

Preventing Similar Accidents

Flight Control Locks (SA-048)

The Problem

Accidents have occurred after pilots omitted seemingly obvious procedures, such as removing flight control locks and performing flight control checks before takeoff. Errors of omission are frequently associated with interruptions, distractions, time pressures, divided attention, and complacency about standard operating procedures (SOPs).

What can you do?

- Pilots of all experience levels should follow SOPs and use checklists, which serve as a memory aid to help counteract human performance vulnerabilities. Do not rely on memory alone.
- Recognize that procedural omissions are also common in many other types of accidents, including those involving gear-up landings, fuel starvation, incorrect fuel pump settings, and flap misconfigurations.
- Be prepared to abort the takeoff if something does not seem right. When a pilot is confronted with a sudden, abnormal event, responses are more likely to be delayed or inappropriate. Having a plan will help reduce reaction time and can result in a safer response.

- When flying alone, read the checklist aloud and touch the applicable switch or control. Research has shown that touching an object while verbally communicating enhances the probability that an activity has been accomplished.
- Avoid using improvised control lock devices that may be inconspicuous and easily overlooked during preflight checks.

See https://www.ntsb.gov/Advocacy/safety-alerts/Documents/SA-048.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):	Lindberg, Joshua
Additional Participating Persons:	Ryan McCarty; Federal Aviation Administration; St. Louis, MO
Original Publish Date:	February 2, 2021
Last Revision Date:	
Investigation Class:	Class 4
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=101723