Aviation Investigation Final Report

Location:	POMPEYS PILLAR, Montana	**Accident Number:**	SEA95LA193
Date & Time:	August 22, 1995, 19:30 Local	**Registration:**	N87TJ
Aircraft:	HALL KITFOX 1	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot attempted to take off from a 700-foot wheat field which had been cut to stubble. He reported the aircraft's gross weight as 907 pounds; its maximum gross weight is 950 pounds. Density altitude was approximately 5,900 feet. The pilot stated that since the aircraft was experimental category, no takeoff data charts were available for preflight planning. He reported that he rotated the aircraft at 40 mph, but he had 'no lift.' He then aborted the takeoff but was unable to stop the aircraft before reaching the end of the takeoff area. The aircraft went through a barbed-wire fence, struck a series of ditches and flipped over. A takeoff distance estimate, using a generic takeoff performance computer, predicted a required takeoff distance of approximately 600 feet. The pilot stated in his accident report that he thought the accident could have been prevented by a 'no go decision sooner in [the] takeoff roll.'

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's delayed decision to abort the takeoff. High density altitude, unavailabilty of aircraft takeoff performance data, and the short rough takeoff area were factors in the accident.

Findings

Occurrence #1: OVERRUN
Phase of Operation: TAKEOFF - ABORTED

Findings

1. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE
2. (F) TERRAIN CONDITION - ROUGH/UNEVEN
3. (F) TERRAIN CONDITION - SHORT RUNWAY/LANDING AREA
4. (F) AIRCRAFT MANUALS,PERFORMANCE INFORMATION - UNAVAILABLE
5. (C) ABORTED TAKEOFF - DELAYED - PILOT IN COMMAND

Occurrence #2: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: TAKEOFF - ABORTED

Findings
6. OBJECT - FENCE

Factual Information

On August 22, 1995, approximately 1930 mountain daylight time, a Kitfox 1, N87TJ, sustained substantial damage when it collided with a fence in an aborted takeoff from an unprepared surface on a farm near Pompeys Pillar, Montana. Neither the private pilot nor his passenger were injured. The pilot owned, but had not built, the kit-built airplane, which was powered by a Rotax 532 engine rated at 65 horsepower. The intended flight was to be a local 14 CFR 91 flight. Visual meteorological conditions prevailed and no flight plan had been filed.

The pilot reported that he attempted to take off with himself (weight 180 pounds), a 200-pound passenger, and 10 gallons of fuel on board. He reported the gross weight of the airplane at takeoff as 907 pounds and a maximum gross weight for the aircraft of 950 pounds. He reported weather information from Automatic Terminal Information Service (ATIS) as: temperature 89 degrees Fahrenheit, altimeter setting 29.95 inches Hg, and wind from 060 degrees magnetic at 4 knots. (NOTE: Billings, approximately 23 miles away, is the nearest ATIS broadcast to the accident site.) He reported that the attempted takeoff area was approximately 3,203 feet above sea level and that the available surface consisted of approximately 700 feet of wheat field stubble. Based on the ATIS weather conditions and takeoff area elevation reported by the pilot, density altitude at the time of the accident was 5,900 feet.

According to a diagram supplied by the pilot, his takeoff attempt was to the north. His report stated: "Take off roll sluggish, tried to rotate at 40 mph, no lift. Decreased power, applied brakes, not enough runway left. Went through barbed wire fence and hit small irrigation ditch...then veered to the right into two big ditches and flipped over...."

After the accident, the pilot stated in a telephone interview with the investigator that because the airplane was certified as an experimental category aircraft, there was no takeoff performance data provided with the aircraft for preflight planning, other than generic specifications stated by the kit manufacturer, and that he believed that the accident "wouldn't have happened if more of a performance chart were available." The investigator subsequently utilized a SkyStar Aircraft Corporation advertising brochure and a commercially available generic takeoff performance computer to estimate takeoff distance required under conditions approximating the accident. The SkyStar brochure gave the takeoff distance for the Kitfox Classic IV, equipped with a 65-hp engine and at a gross weight of 1,200 pounds, as 250 feet. Utilizing this entering distance, the following conditions were then set on the computer: fixed-pitch propeller, temperature 90 degrees F; 3,200 feet pressure altitude; soft field/mud/snow surface condition; zero slope and wind; and 95 percent of maximum gross weight. The computer predicted takeoff distance for the conditions entered to be approximately 600 feet.

The pilot submitted an excerpt from his logbook with his accident report. The following

remark had been entered on the line for the accident flight: "Misjudged takeoff in stubble field no wind no go [too] late...." Additionally, in his accident report, he made the following recommendation as to how the accident could have been prevented: "no go decision sooner in takeoff roll." Finally, the passenger submitted a statement in which he stated: "...I think the pilot was a little late in deciding to go or not go".

Pilot Information

Certificate:	Private	**Age:**	31,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	April 12, 1995
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	174 hours (Total, all aircraft), 66 hours (Total, this make and model), 154 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	HALL	**Registration:**	N87TJ
Model/Series:	KITFOX 1 KITFOX 1	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	158
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	October 28, 1994 Annual	**Certified Max Gross Wt.:**	950 lbs
Time Since Last Inspection:	66 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	91 Hrs	**Engine Manufacturer:**	ROTAX
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	532
Registered Owner:	NICHOLS, ERIC S.	**Rated Power:**	65 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	BIL ,3649 ft msl	**Distance from Accident Site:**	26 Nautical Miles
Observation Time:	19:30 Local	**Direction from Accident Site:**	233°
Lowest Cloud Condition:	Clear	**Visibility**	50 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	60°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	32°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	19:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	45.910209,-107.929756(est)

Administrative Information

Investigator In Charge (IIC):	Nesemeier, Gregg
Additional Participating Persons:	TERRY VAN NATTA; HELENA , MT
Original Publish Date:	April 18, 1996
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=42231