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Date: April 17, 2023

Subject: WPR22FA304, Weight / Balance and Performance Summary

A. Accident

Location: Yellow Pine, Idaho
Date: August 15, 2022
Aircraft: Aviat Aircraft Inc., A-1A, N26HV

B. Weight and Balance information

An estimated weight and balance of the airplane prior to flight was calculated using the following:

- Most recent weight and balance, dated July 25, 2022
- Reported or measured weights of the occupants
- Baggage recovered from accident location
- Full fuel levels (50 gal), -10 (40 gal) and half tanks (25 gal)
- Front seat positions at common range
- Rear seat passengers at common range
- Canine located

Fuel - Full			
Item	Weight	Arm	Moment
Airplane	1357.3	73.86	100252.59
Front (Pilot)	216	72.5	15660
Rear (Pass)	202	99	19998
Canine	38	120	4560
Cargo pod	66	99	6534
Fuel (50 gal)	300	84	25200
Totals	2179.3	79.02	172204.59

Figure 1: View of airplane weight and balance with full fuel.

Fuel - -10 Gallons			
Item	Weight	Arm	Moment
Airplane	1357.3	73.86	100252.59
Front (Pilot)	216	72.5	15660
Rear (Pass)	202	99	19998
Canine	38	120	4560
Cargo pod	66	99	6534
Fuel (40 gal)	240	84	20160
Totals	2119.3	78.88	167164.59

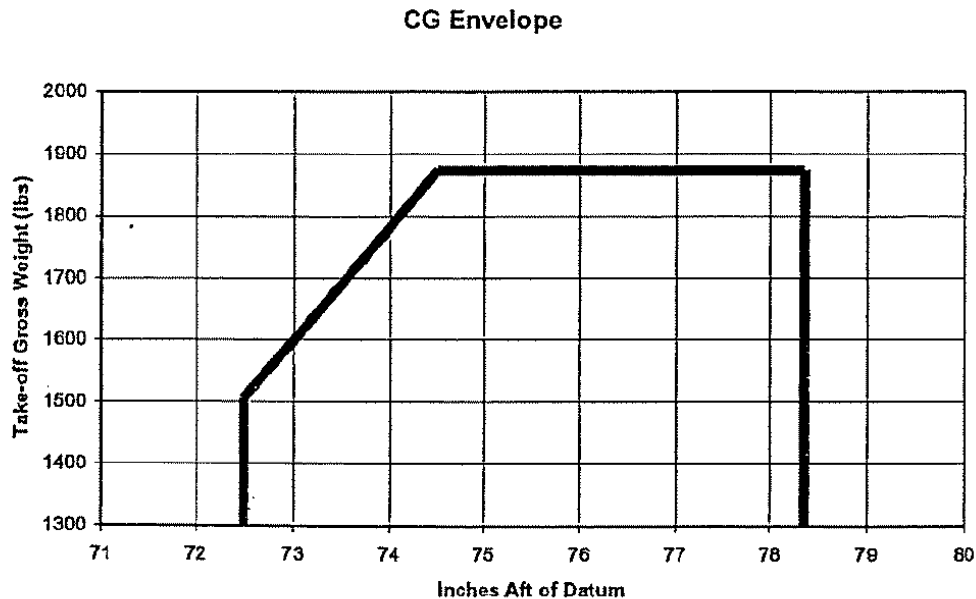
Figure 2: View of airplane weight and balance with 40 gal of fuel.

Fuel - 1/2 tanks			
Item	Weight	Arm	Moment
Airplane	1357.3	73.89	100252.59
Front (Pilot)	216	82	17712
Rear (Pass)	202	82	16564
Canine	38	120	4560
Cargo pod	66	99	6534
Fuel (25 gal)	150	57	8550
Totals	2029.3	75.97	154172.59

Figure 3: View of airplane weight and balance with 25 gal of fuel.

Utilizing -10 gal fuel levels (40 gallons), reported or measured occupants weight, recovered baggage, canine, and the weight of the airplane was estimated to be about 229 lbs over the maximum gross weight. The center of gravity (CG) was

calculated using the passenger and seat locations in the most favorable position and was found to be outside the published CG envelope.



C. G. ENVELOPE

Figure 4: View of center of gravity range from airplane flight manual.

C. Performance

The automated weather observation station located on the McCall Municipal Airport, McCall, Idaho, reported that, about the time of the accident, the temperature was 10° C, dew point was 3° C and the barometric pressure was 30.16.

The calculated density altitude at the accident location and time of the accident was about 5,256 ft and a pressure altitude of 4,740 ft.

Utilizing the performance instructions noted within the airplane flight manual, the assumed altitude and pressure altitude conditions, an airplane loaded at maximum gross weight, the calculated climb performance would have been about 900 ft per minute (fpm).

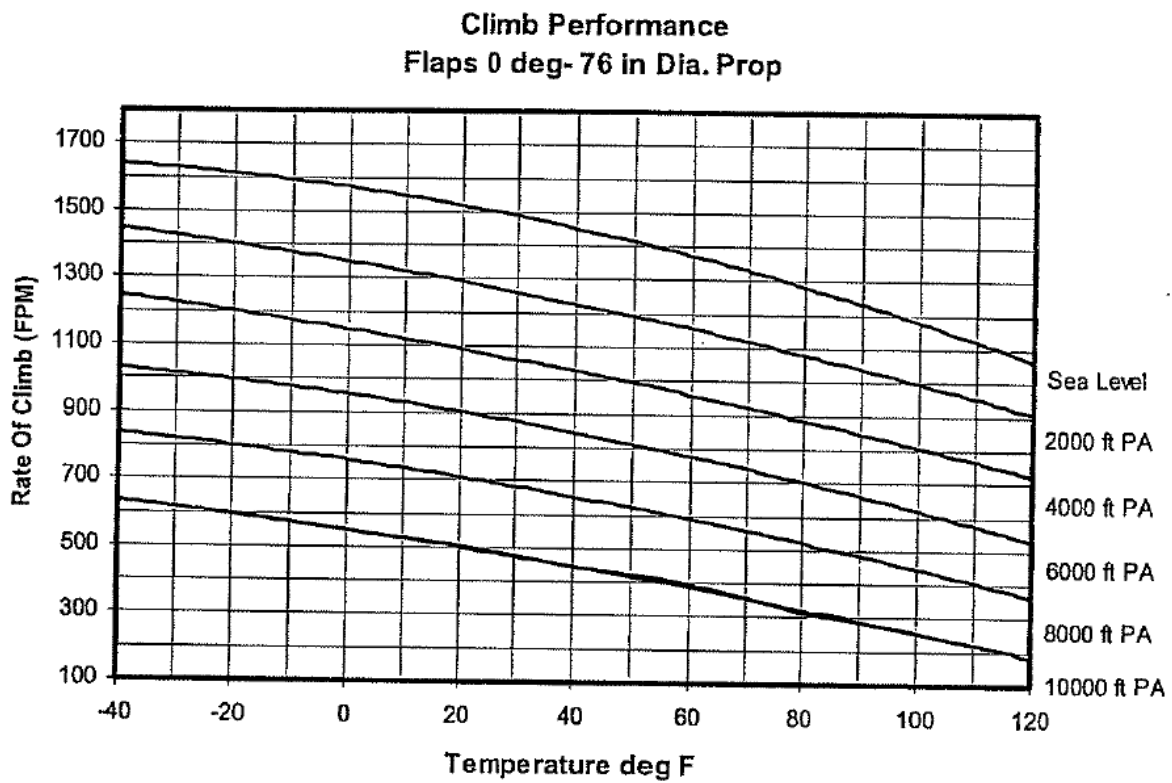


Figure 5: View of climb performance chart from airplane flight manual.

Submitted by:

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