

35" bushwheels

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Date 7/18/16
Tach 288

Gross Weight 1750

Owners are responsible for proper loading of their own aircraft

Weight and Balance Reconstruction, N109T

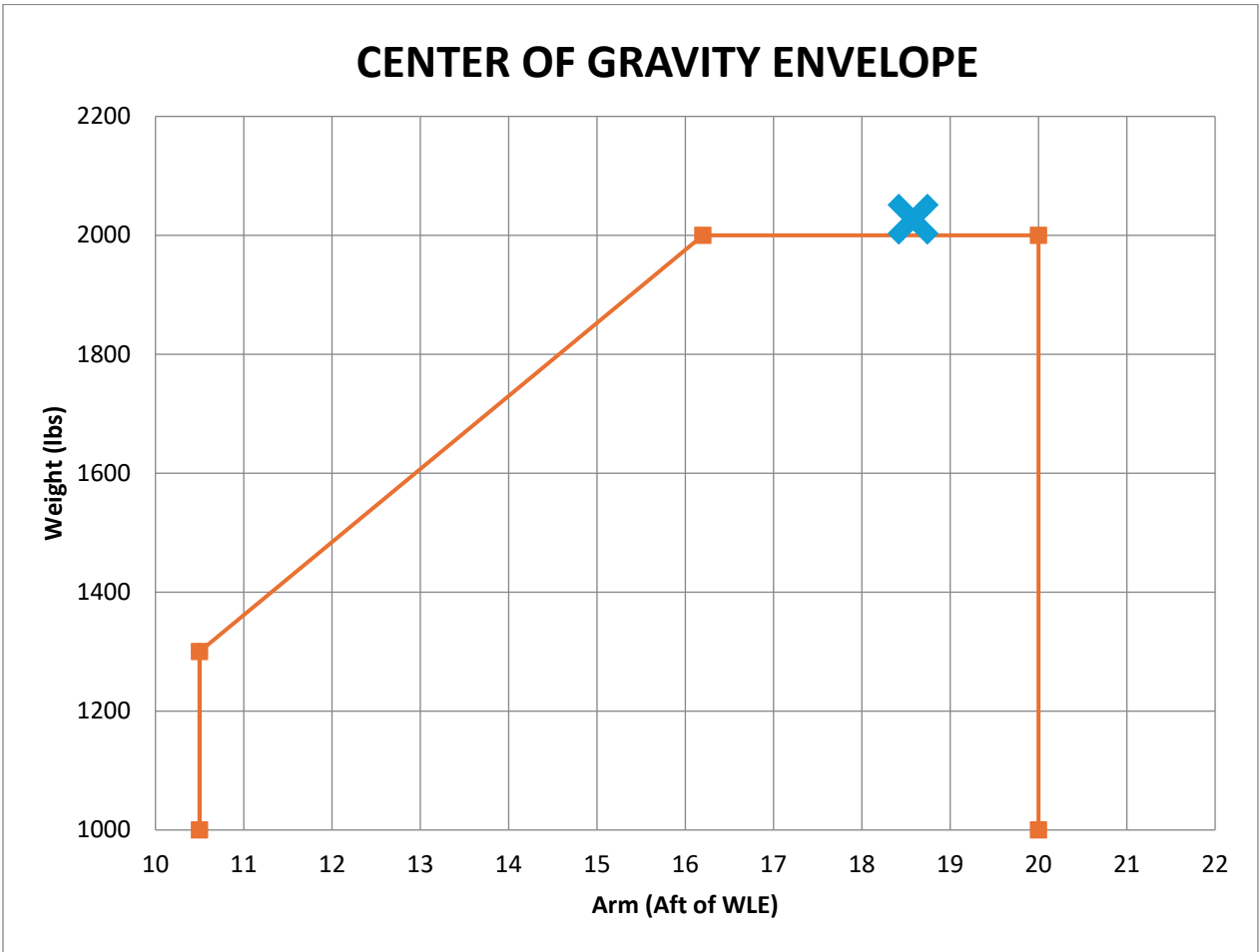
1: Data Sources

- a. Basic Empty Weight- Aircraft was reweighed on scales in 2013. A note on the report for this weight and balance states the aircraft was weighed with full oil and no fuel. A weight and balance addendum was calculated in 2016 following the installation of STC landing gear shock struts.
- b. Pilot weight- The pilot's self-reported weight at last medical plus an estimated clothing weight of 15 lbs and the arm provided by the aircraft's original weight and balance document.
- c. Aft seat- Moose meat weighed with a scale at the accident site. The meat appeared centered in the aft seat and was secured by parachord and the aft harness. The arm provided by the aircraft's original weight and balance document.
- d. Aft baggage- The estimated weight of miscellaneous items and arm provided by STC SA02128AK fuselage with extended baggage area.
- e. Belly pod- Moose meat weighed with a scale at the accident site. The arm of estimated based on the location of the meat found onscene and its proximity to the wing lift strut, which has an arm that was previously determined.
- f. Antlers- The estimated weight of the antlers based on reports from the hunters. The arm of the wing lift struts was derived from an STC for the replacement of the lift struts (SA02101AK) that listed the weight and arm for the struts.
- g. Fuel- The amount of fuel was estimated based on the pilot's statement to witnesses that the aircraft had "just enough fuel" to return to Holy Cross. Though the aircraft has an STC for larger fuel tanks, the STC does not indicate the arm of the fuel had changed, therefore the arm from the aircraft's original weight and balance document was used.
- h. NOTE: Although the aircraft's original weight and balance document listed arms and example loadings with reference to the datum, the Wipaire Gross Weight Increase STC provides a weight and balance with arms referencing the wing leading edge (WLE). All the below calculations are performed with arms referencing the WLE, which the aircraft's original weight and balance shows is 60 inches forward of WLE.

2: Zero Fuel Weight

With no fuel on board, the aircraft was above its maximum gross weight by 27.2 lbs.

ITEM	WT. (LBS.)	ARM (IN.)	MOMENT (IN. LBS.)
BASIC AIRPLANE	1320.2	15.06	19880.80
PILOT'S SEAT	187.0	11.00	2057.00
AFT SEAT	270.0	37.00	9990.00
AFT BAGGAGE	30.0	26.00	780.00
BELLY POD	150.0	22.50	3375.00
ANTLERS	70.0	22.50	1575.00
FUEL GAL. (MAIN)		24.00	0.00
TOTAL WEIGHT <u>2027.2</u> CG <u>18.58</u> TOTAL MOMENT <u>37657.80</u>			



3. Weight with Fuel

With 15 gallons of fuel, the aircraft was 117.2 lbs over its maximum gross weight.

ITEM	WT. (LBS.)	ARM (IN.)	MOMENT (IN. LBS.)
BASIC AIRPLANE	1320.2	15.06	19880.80
PILOT'S SEAT	187.0	11.00	2057.00
AFT SEAT	270.0	37.00	9990.00
AFT BAGGAGE	30.0	26.00	780.00
BELLY POD	150.0	22.50	3375.00
ANTLERS	70.0	22.50	1575.00
FUEL GAL. (MAIN)	90.0	24.00	2160.00
TOTAL WEIGHT <u>2117.2</u> CG <u>18.81</u> TOTAL MOMENT <u>39817.80</u>			

