

Eckrote Debra

From: MARTY MOSIER [REDACTED]@gmail.com>
Sent: Friday, September 24, 2021 5:51 AM
To: Bledsoe James; Mitchell Vasin
Subject: Updated AFM supplement for Osborne Tip Tanks Received from GAMI
Attachments: N222HC Weight and Balance Calculator 25 June 2021 Post AC weight V3.xls; AFMS A36TC (Selector).pdf

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James:

As a follow up to our email exchange earlier this week, attached is the AFM supplement I received from GAMI as a replacement for the one that burned in the accident. I also included an updated W&B spreadsheet.

The AFM supplement I received from GAMI has a different CG location for the tip fuel tanks than the one that was in the AFM before. Also, one of the forward CG corner points at light weight is slightly different from the graph in the original document. I sent an email to GAMI asking why the changes, but have not received a reply. I updated the W&B spreadsheet to reflect the new values

The changes do not affect the results, the plane was still inside the operating envelope.

Thank you.

Regards,

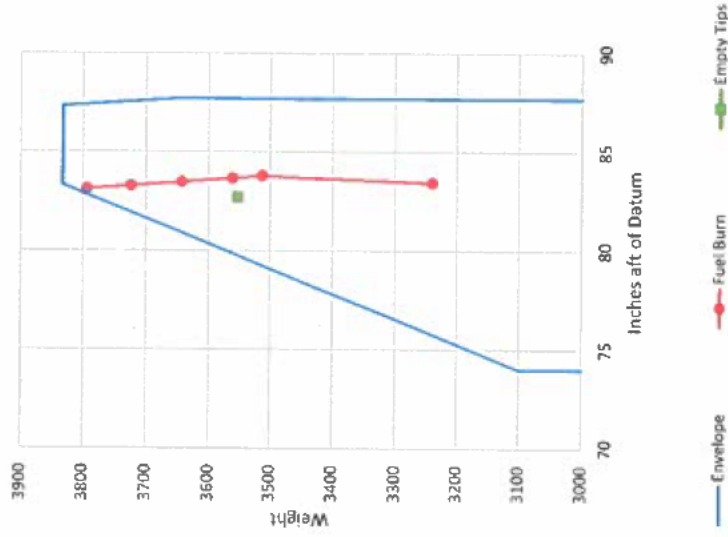
Marty

Bonanza A-36TC N222HC Weight and Balance (Post AC - 13 June 2021 W&B)

	Weight	Arm	Moment
Basic Empty Weight	2,563.88	80.19	205,598
Number of third row seats	0	-64	155
Empty Weight (Normal)	2,500	78.27	195,678
Pilot	250	82	20,500
Front Seat Passenger	170	82	13,940
3rd and 4th seat occupants	Forward Facing	120	33,600
	Rear Facing	0	115
5th and 6th seat occupants or general baggage	20	152	3,040
Aft most baggage compartment	70 pounds max	180	3,600
Subtotal - Zero Fuel	3,240	83.45	270,358
Fuel: (@6.02 lbs/gal)			
Main Tank Fuel - 74/64/54	54	75	24,381
Tip Fuel - 40 gal max	40	89.5	21,552
Ramp Weight	3,806	83.11	316,290
Start & Taxi fuel	-12	75	-903
Takeoff Condition	92	83.13	315,387

Crew FS 75-82
P#3&4 FS 115-120
P#5&6 FS 150
100LL 6.02 lb/gal

Weight/CG Envelope



Range @ 18 gal/hr 5.1 Hours

CG movement assuming use main fuel only and leave tips full

	Gallons	Fuel Wt	Average Fuel/CG	Fuel Moment	Total AC weight	Total AC Moment	CG	Hrs of flt
CG Location at Takeoff	92	554	81.2	44,955	3,794	315,313	83.1	
at 75% TO fuel in mains	80.5	485	82.2	39,837	3,724	310,195	83.3	0.6
at 50% TO fuel in mains	67	403	83.7	33,742	3,643	304,100	83.5	1.4
at 25% TO fuel in mains	53.5	322	85.8	27,647	3,562	298,004	83.7	2.1
at 10% TO fuel in mains	45.4	273	87.8	23,990	3,513	294,347	83.8	2.6
TO CG Location if tips were empty (Reference only)	52	313	75	23,478	3,553	293,836	82.7	

BEECHCRAFT A36TC
LANDPLANE

PILOT'S OPERATING HANDBOOK AND
FAA APPROVED AIRPLANE FLIGHT MANUAL
SUPPLEMENT

GENERAL

This document is to be attached to the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual when the airplane is equipped with 20 gallon Wing Tip Tanks, Osborne Tank & Supply part #55000, which have been installed in accordance with Osborne Installation Instructions, No. 11990.

This document supersedes or adds to the Pilot's Operating Handbook and FAA Approved Airplane Flight Manual only where covered in the items contained herein.

The Osborne Tank & Supply POH and AFMS Supplement 96035 is applicable to the Beechcraft Model A36TC POH/AFM dated November, 1978 or later. P/N 36-590003.

LIMITATIONS

1. WEIGHT LIMITS

NORMAL CATEGORY

Maximum Ramp Weight.....3849 lbs.

Maximum Take-Off Weight.....3833 lbs.

Maximum Landing Weight.....3650

All weight in excess of 3650 lbs. must be wing tip fuel.

UTILITY CATEGORY

Maximum weight of 3650 lbs. and tip tanks empty.

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2. CENTER OF GRAVITY LIMITS (Landing Gear Extended)

PORTYARD LIMITS

74.0 inches aft of datum to 3100 lbs. with straight line variation to 83.3 inches at 3833 lbs.

APT LIMITS

87.7 inches aft of datum to 3650 lbs., to 87.3 inches at 3833 lbs.

Straight line variation between points.

C.G. of tip tank fuel is 89.5 inches aft of datum.

3. MANEUVER LIMITS

There is no change to the previously approved UTILITY CATEGORY at weights of 3650 lbs. or less, and with empty tip tanks. For weights in excess of 3650 lbs. or with fuel in the tip tanks, the approval is based on NORMAL CATEGORY.

4. FLIGHT LOAD FACTOR LIMITS

3833 lbs.

Flaps Up.....3.8 G

3650 lbs.

Flaps Up(Empty Tip Tanks)....4.4 G

Flaps Down.....3.0 G

5. REQUIRED EQUIPMENT FOR VARIOUS CONDITIONS OF FLIGHT

FUEL EQUIPMENT: The tip tank fuel quantity indicator and its selector switch must be operative if fuel is to be carried in the tip tanks, and the tip tank crossfeed valve must be operative.

6. FUEL

TOTAL FUEL capacity is increased by a maximum capacity of 40 gallons (20 gallon in each tip).

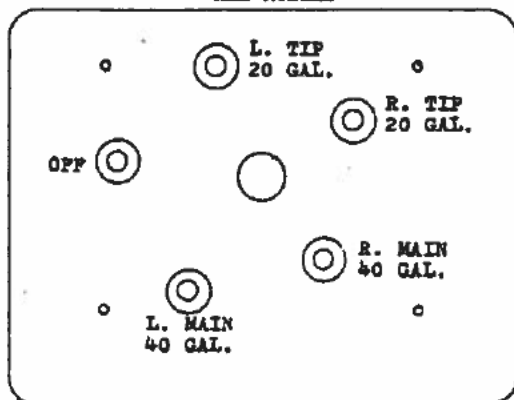
7. FUEL MANAGEMENT

Fuel in the tip tanks is for use in level flight only and is to be used after at least 10 gallons have been used from the "Left Main" tank.

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8. PLACARDS

ON FUEL TANK SELECTOR - ALL MODELS -

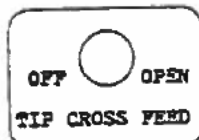


OPTIONAL LOCATION - IN FULL VIEW OF PILOT

WARNING
TURN OFF STROBE LIGHTS WHEN
TAXIING IN VICINITY OF OTHER
AIRCRAFT, OR DURING FLIGHT
THROUGH CLOUDS, FOG OR HAZE.

STANDARD POSITION LIGHTS TO
BE ON FOR ALL NIGHT OPERATIONS.

OPTIONAL LOCATION - IN FULL VIEW OF PILOT



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EMERGENCY PROCEDURES

No change.

NORMAL PROCEDURES

1. Load tip tank fuel symmetrically. If unsymmetrical fuel loading should occur in flight, adequate control is available for landing.
2. Use fuel from the "Left Main" tank until at least ten (10) gallons have been used. Fuel from the tip tanks may then be used in level flight only.
3. To use fuel from the tip tanks, turn the selector to either the left-hand or right-hand tip position. The tip tank selected will feed to the engine when the tip crossfeed switch is in the "OFF" position. When the tip crossfeed switch is in the "OPEN" position and the selector in either tip position, both tips will feed simultaneously to the engine.
4. The tip crossfeed switch must be in the "OFF" position except when actual tip fuel crossfeed is being used. Re-check the "LEFT MAIN" fuel quantity periodically and return to the "LEFT MAIN" selection any time its quantity is above 3/4 full. The engine return line feeds excess fuel back into the "LEFT MAIN" tank.
5. Normal tip tank fuel usage is accomplished with the tip crossfeed switch in the "OPEN" position. However, if asymmetrical fuel loading occurs, place the crossfeed switch in the "OFF" position and select the "HEAVY" tip tank until the load is symmetrical. Return the crossfeed switch to the "OPEN" position.
6. When tip tank fuel has been used, return the selector to a "MAIN TANK" position. If the tip tank lines have been run completely dry in flight, air may be trapped in the line when tip tanks are subsequently filled. This air pocket in the line may prevent feeding of fuel from the tip tanks. To avoid this condition, operate the power plant from each wing tip tank separately until steady flow is assured during

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ground run-up prior to flight. Use engine boost pump (low boost on turbo charged engines) if required during fuel switch-over.

7. The unuseable fuel has been determined to be 2 ounces per tank (level flight).

PERFORMANCE

1. Stall Speeds - Power Idle
Flaps Up - No change up to 3600 lbs.

<u>WEIGHT</u>	<u>Knots, CAS</u>	<u>Knots, IAS</u>
3600	65	62
3700	66	63
3833	67.5	64.5

Flaps Down - No change up to 3600 lbs.
maximum landing weight.

2. Climb - Reduce published rate of climb by 100 ft./min. at 3833 lbs. for the flaps up configuration above 3650 lbs. The balked landing climb remains unchanged since the maximum landing weight is 3650 lbs.

WEIGHT AND BALANCE

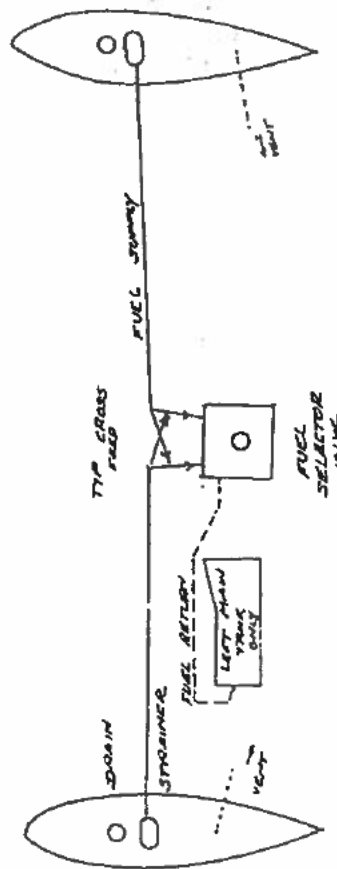
The net weight change for the installation is 19 lbs. and 2 ounces. The C.G. of the fuel in the tip tanks is 89.5 inches aft of the datum.

FUEL SYSTEM

FUEL CELLS - Tip Tanks

The tip tanks have a net useable capacity of 20 gal. each, and are designed to feed the engine directly by selecting either tip tank at the "Fuel Selector Valve". Normal tip tank usage is accomplished with the tip tank crossfeed switch in the "OFF" position.

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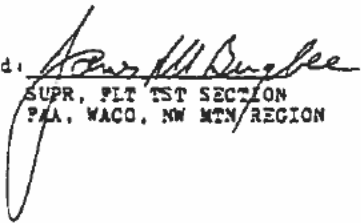
FUEL SYSTEM SCHEMATIC
Add to existing system

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HANDLING, SERVICING, AND MAINTENANCE

Servicing - Load tip tanks symmetrically. When tip tank fuel has been used, return the selector to a "MAIN TANK" position. If the tip tank lines have been run completely dry in flight, air may be trapped in the line when tip tanks are subsequently filled. This air pocket in the line may prevent feeding of fuel from the tip tanks. To avoid this condition, operate the power plant from each wing tip tank separately until steady fuel flow is assured during ground run-up prior to flight. Use engine boost pump (Low boost on turbo charged engines) if required during fuel switch-over.

FAA APPROVED UNDER S.T.C. SA6-1629

Approved: 

SUPR, FLT TST SECTION
FAA, WACO, NW MTN/REGION

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