



**MEMORANDUM FOR RECORD**

**Investigator: Brian C. Rayner  
Senior Air Safety Investigator  
Eastern Region**

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**Date: September 3, 2015  
Reference: POH Excerpts Fuel  
NTSB Accident Number: ERA13FA348 Conway, SC**

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**Narrative:**

**Mr. Paul Yoos, Sr. Air Safety Investigator, Textron Aviation, provided information with regards to the accident airplane's fuel system by telephone and email. The following was excerpted from an email and the airplane's Pilot Operating Handbook.**

Brian,

The following are selected extracts from the POH/AFM that discuss fuel quantity values; minimum fuel and yellow arc quantity, and what tanks should be selected for takeoff and landings:

Section II, Limitations:

**FUEL QUANTITY**  
Yellow Arc (22-Gal Main Tank) ..... E to 1/2 Full  
Yellow Arc (37-Gal Main Tank) ..... **E to 1/4 Full**

Your photo indicates the airplane was equipped with 37 gallon main tanks

## FUEL

*TOTAL FUEL with left and right main and auxiliary fuel systems full:*

### Standard Fuel System

Capacity ..... 112 Gallons  
Usable ..... 106 Gallons

### Optional Fuel System

Capacity ..... 142 Gallons  
Usable ..... 136 Gallons

## FUEL MANAGEMENT

Takeoff and land on main fuel tanks only. When operating fuel selector, feel for detent position.



Do not take off if Fuel Quantity Gages indicate in Yellow Arc or with less than 13 gallons in each main tank.



The fuel crossfeed system to be used during emergency conditions in level flight only.

Turning type takeoffs or takeoffs immediately following fast taxi turns are prohibited if the airplane is not equipped with two baffled leading edge fuel tanks or a fuel reservoir in each leading edge fuel tank or a combination of the two.

### Maximum slip or skid duration:

20 seconds for airplanes with unbaffled main fuel tanks or without reservoirs in either wing.

30 seconds for airplanes with baffled main fuel tanks or reservoirs in both wings.

*On Or Forward Of Fuel Selector Handles:  
(TE-1 thru TE-851)*

**DO NOT TAKE OFF IF FUEL QUANTITY GAGES  
INDICATE IN YELLOW ARC OR WITH LESS  
THAN 13 GALLONS IN EACH MAIN TANK**

In Section IV, Normal Procedures – Before Starting:

9. Fuel Selector Valves - CHECK OPERATION THEN SET TO MAIN
10. Induction Air - FILTERED
11. All Circuit Breakers, Switches and Equipment Controls - CHECK
12. Battery Switch and Alternator Switches - ON (If external power is used, Alternator Switches - OFF
13. Fuel Quantity Indicators - CHECK QUANTITY MAIN AND AUXILIARY. Fuel quantity selector switch to MAIN. (See LIMITATIONS for take-off fuel)
14. Landing Gear Position Lights - CHECK



#### **BEFORE LANDING**

1. Seat Belts and Shoulder Harnesses - FASTENED, SEAT BACKS UPRIGHT
2. Fuel Selector Valves - CHECK (MAIN TANKS)



In Section VII, Systems Description:

#### **FUEL REQUIRED FOR FLIGHT**

Flight planning and fuel loading is facilitated by the use of fuel quantity indicators that have been coordinated with the usable fuel supply. It is the pilot's responsibility to ascertain that the fuel quantity indicators are functioning and maintaining a reasonable degree of accuracy, and be certain of ample fuel for a flight. A minimum of 13 gallons of fuel is required in each wing system before takeoff.

Attached are my working performance sheets. I used the following information:

Temp was ISA+10 C  
Cruise altitude 2,500 ft  
Duration of flight 90 minutes  
Takeoff from Conway and a low approach at Myrtle Beach

I used two power conditions 24in MP @2300 RPM and 21 in. MP at 2300 RPM

At 24in MP @2300 RPM each engine burned 32 gallons

At 21 in. MP at 2300 RPM each engine burned 27 1/4 gallons

The main tank capacity on this airplane was 40 gallons, so 3/8 tank would be about 15 gallons  
Note: 37 gallons useable

Each aux tank is 31 gallons, so 3/8 tank would be 11 5/8 gallons

Note: 31 gallons useable

Use main tanks for takeoff and landing, and use aux tanks for level cruise flight only.