



**INSTALLATION OF SADDLE TANKS**

**FOR**

**BEECHCRAFT KING AIR AIRPLANES**

**200, 200C, 200CT, 200T, A200, A200C, A200CT, B200, B200C,**

**B200CGT, B200CT, B200GT, B200T, 300, B300, AND B300C**

**SUPPLEMENTAL TYPE CERTIFICATE NUMBER SA11142SC**

**FAA APPROVED**

**AIRPLANE FLIGHT MANUAL SUPPLEMENT**

Airplane Serial No: \_\_\_\_\_

This supplement must be attached to the appropriate FAA Approved Airplane Flight Manual when the aircraft is modified in accordance with STC SA11142SC. The information contained herein supplements or supersedes the basic Airplane Flight Manual only in those areas listed herein. For limitations, procedures and performance information not contained in this supplement, consult the basic Airplane Flight Manual or Pilot's Operating Manual, as applicable.

FAA APPROVED

A handwritten signature in black ink, appearing to read "J. J. [unclear]", written over a horizontal line.

**FOR** Manager, Southwest Flight Test Section, AIR-713  
Federal Aviation Administration  
Fort Worth, TX

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CENTEX AEROSPACE INCORPORATED, 7925 KARL MAY DRIVE, WACO, TX 76708

REFERENCE ONLY



AIRPLANE FLIGHT MANUAL SUPPLEMENT NO. 045-1  
FOR BEECHCRAFT 200 AND 300 SERIES AIRPLANES WITH  
CENTEX AEROSPACE SADDLE TANKS CONVERSION

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## INTRODUCTION

This supplement should be read carefully by the owner and the operator in order to become familiar with the operation of the airplane having now been modified by the installation of the CenTex Aerospace ST190, ST120, or ST72 “Saddle Tanks” auxiliary fuel tank system. The ST190 Saddle Tanks system increases usable fuel quantity by 190 gallons. The ST120 Saddle Tanks system increases usable fuel quantity by 120 gallons. The ST72 Saddle Tanks system increases usable fuel quantity by 72 gallons.

The terminology used in this supplement matches the terminology used in the basic Airplane Flight Manual and Pilot Operating Manual. This includes the definitions of warnings, cautions, and notes. Also, you will find the format of limitations, procedures, and checklists herein match the AFM and POM format for the 200, A200, B200, 300 and B300 series airplanes.

## COMPATIBLE MODIFICATIONS

The following STC-approved modifications have been found to be compatible with the Saddle Tank installation:

1. SA11103SC, CenTex Aerospace Halo 250 Commuter Category Conversion of Beechcraft King Air 200 Series Airplanes

It is up to the installer to determine whether any other STC-approved modifications are compatible with the CenTex Aerospace Saddle Tanks conversion.

**LIST OF EFFECTIVE PAGES**

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## SECTION 2 LIMITATIONS

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## INTRODUCTION

The limitations shown in this section are approved by the Federal Aviation Administration and must be observed while operating Beechcraft King Air 200, A200, B200, 300 and B300 series airplanes that have been modified by the CenTex Aerospace Saddle Tank Conversion STC. This STC approves the installation of a set of auxiliary fuel tanks that have a total capacity of 190 US gallons for the ST190 Saddle Tanks, 120 US gallons for the ST120 Saddle Tanks, and 72 US gallons for the ST72 Saddle Tanks.

King Air models 200CT, 200T, A200CT, B200CT, and B200T are limited to the airplane configuration with the wing-tip fuel tanks removed and optional wing tips installed.

### WARNING

Do not operate the aircraft with the 53-gallon tip tanks installed.

## USABLE FUEL LIMITS

Maximum Usable Fuel Quantity (with ST190 tanks) ..... 734 gallons  
Maximum Usable Fuel Quantity (with ST120 tanks) ..... 664 gallons  
Maximum Usable Fuel Quantity (with ST72 tanks) ..... 616 gallons

## OTHER LIMITATIONS (Airplanes with Saddle Tanks installed)

### ST190

1. Both left and right main and auxiliary tanks must be full of fuel before fuel can be added to the Saddle Tanks.
2. Maximum allowed fuel imbalance between left and right side Saddle Tanks is 300 pounds (45 gallons).

### ST120

1. Both left and right main and auxiliary tanks must be full of fuel before fuel can be added to the Saddle Tanks.
2. Maximum allowed fuel imbalance between left and right side Saddle Tanks is 100 pounds (15 gallons).
3. Maximum weight of cargo carried inside each ST120 Saddle Tank storage compartment is 100 pounds.

### ST72

1. Both left and right main and auxiliary tanks must be full of fuel before fuel can be added to the Saddle Tanks.
2. Maximum allowed fuel imbalance between left and right side Saddle Tanks is 100 pounds (15 gallons).
3. Maximum weight of cargo carried inside each ST120 Saddle Tank storage compartment is 150 pounds.

**PLACARDS**

1. *On top of each ST190 Saddle Tank adjacent to the fuel filler cap;*

**SADDLE TANK FUEL**  
USE JET FUEL  
SEE PILOTS OPERATING  
MANUAL FOR FUEL DESIGNATIONS  
CAPACITY 95 U.S. GAL  
WITH WINGS LEVEL  
MAIN & AUXILIARY TANKS MUST BE FULL  
BEFORE FILLING SADDLE TANKS

*or, on top of each ST120 Saddle Tank adjacent to the fuel filler cap.*

**SADDLE TANK FUEL**  
USE JET FUEL  
SEE PILOTS OPERATING  
MANUAL FOR FUEL DESIGNATIONS  
CAPACITY 60 U.S. GAL  
WITH WINGS LEVEL  
MAIN & AUXILIARY TANKS MUST BE FULL  
BEFORE FILLING SADDLE TANKS

*or, on top of each ST72 Saddle Tank adjacent to the fuel filler cap.*

**SADDLE TANK FUEL**  
USE JET FUEL  
SEE PILOTS OPERATING  
MANUAL FOR FUEL DESIGNATIONS  
CAPACITY 36 U.S. GAL  
WITH WINGS LEVEL  
MAIN & AUXILIARY TANKS MUST BE FULL  
BEFORE FILLING SADDLE TANKS

2. *Vent line drain valve.*  
*On underside of wing outboard of main landing gear fairing.*

**FUEL DRAIN**

3. *Sump drain valve*  
*On inboard rear side of ST190 Saddle Tanks*  
*Or, on underside of wing inboard of main landing gear fairing below ST120 or*  
*ST72 Saddle Tanks*

**FUEL DRAIN**

4. *Fuel line drain valve*  
*(drain valve no longer installed, placard deleted)*

5. *On inside of ST120 Saddle Tank storage door.*

COMBINED WEIGHT OF CARGO  
MUST NOT EXCEED 100 POUNDS

CARGO MUST BE SECURELY  
FASTENED BEFORE FLIGHT

DO NOT LEAVE DOOR UNLATCHED  
LATCH DOOR WHEN CLOSED

*Or, on inside of ST72 Saddle Tank storage door.*

COMBINED WEIGHT OF CARGO  
MUST NOT EXCEED 150 POUNDS

CARGO MUST BE SECURELY  
FASTENED BEFORE FLIGHT

DO NOT LEAVE DOOR UNLATCHED  
LATCH DOOR WHEN CLOSED

6. *On top of each auxiliary tank adjacent to the fuel filler cap.*

**CAUTION**

DO NOT OPEN AUX TANK CAP  
IF THERE IS FUEL IN THE  
SADDLE TANK



### **SECTION 3**

#### **EMERGENCY PROCEDURES**

##### **NO CHANGES**

See the basic Beechcraft Airplane Flight Manual or Pilot Operating Handbook for Emergency Procedures.

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**SECTION 3A**  
**ABNORMAL PROCEDURES**

NO CHANGES

See the basic Beechcraft Airplane Flight Manual or Pilot  
Operating Handbook for Abnormal Procedures.

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## PROCEDURES BY FLIGHT PHASE

### NOTE

Refer to all applicable Supplements for flight phase procedures for optional equipment installed in the airplane. The procedures listed below are required for airplanes modified by the installation of the CenTex Aerospace Saddle Tanks STC.

Steps marked with an \* may be omitted except for first flight of the day and after adding fuel to the Saddle Tanks.

### PREFLIGHT INSPECTION

Add the following steps.

#### COCKPIT

After Fuel Quantity (main & auxiliary).....CHECK

Saddle Tanks Fuel Quantity Indicators ..... CHECK FUEL QUANTITY

#### LEFT WING

Saddle Tank Filler Cap..... SECURE

\* Saddle Tank Sump ..... DRAIN

\* Saddle Tank Vent Line ..... DRAIN

Airplanes with ST120 or ST72 Saddle Tanks

Saddle Tank Storage Door ..... CLOSED AND LATCHED

#### RIGHT WING

Saddle Tank Filler Cap..... SECURE

\* Saddle Tank Sump ..... DRAIN

\* Saddle Tank Vent Line ..... DRAIN

Airplanes with ST120 or ST72 Saddle Tanks

Saddle Tank Storage Door ..... CLOSED AND LATCHED

### CAUTION

Do not open the auxiliary tank cap if there is fuel in the Saddle Tank. Opening the cap and the anti-siphon valve (flapper) can result in fuel flowing out of the auxiliary tank if the Saddle Tank contains fuel.

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## **SECTION 5 PERFORMANCE**

### **NO CHANGES**

See the basic Beechcraft Airplane Flight Manual or Pilot  
Operating Handbook for Performance Data.

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### ST190 SADDLE TANKS WEIGHT AND MOMENT TABLE

The table below provides the weight and moment of fuel carried in the Saddle Tanks. Use this weight and moment information when calculating the aircraft weight and balance.

#### King Air 200 Series and King Air 300

Fuel per Tank <i>Gallons</i>	Total Fuel <i>Gallons</i>	Total Weight * <i>Pounds</i>	Moment * <i>Inch-lbs/100</i>
5	10	67	168
10	20	134	329
20	40	268	635
30	60	402	943
40	80	536	1246
50	100	670	1545
60	120	804	1840
70	140	938	2133
80	160	1,072	2425
90	180	1,206	2715
95	190	1,273	2860

#### King Air B300 (350)

Fuel per Tank <i>Gallons</i>	Total Fuel <i>Gallons</i>	Total Weight * <i>Pounds</i>	Moment * <i>Inch-lbs/100</i>
5	10	67	178
10	20	134	348
20	40	268	674
30	60	402	1001
40	80	536	1323
50	100	670	1641
60	120	804	1956
70	140	938	2268
80	160	1,072	2579
90	180	1,206	2889
95	190	1,273	3044

\* Based on Jet-A turbine fuel at 6.7 lbs/gal.

**ST190**

***King Air 200 Series, King Air 300, and King Air B300 (350)***

**USABLE FUEL PER TANK**

95 Gallons

**UNUSABLE FUEL PER TANK**

0.7 Gallons

**UN-DRAINABLE FUEL PER TANK**

0.15 Gallons

- ST120 and ST72 Saddle Tanks Information Continued On Following Pages -

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## ST120 SADDLE TANKS WEIGHT AND MOMENT TABLE

The tables below provide the weight and moment of fuel and cargo carried in the ST120 Saddle Tanks. Use this weight and moment information when calculating the aircraft weight and balance.

### King Air 200 Series and King Air 300

<b>Fuel per Tank</b> <i>Gallons</i>	<b>Total Fuel</b> <i>Gallons</i>	<b>Total Weight *</b> <i>Pounds</i>	<b>Moment *</b> <i>Inch-lbs/100</i>
5	10	67	148
10	20	134	293
20	40	268	577
30	60	402	859
40	80	536	1141
50	100	670	1422
60	120	804	1699

<b>Cargo per Tank</b> <i>Pounds</i>	<b>Moment</b> <i>Inch-lbs/100</i>
25	60
50	120
75	180
100	240

\* Based on Jet-A turbine fuel at 6.7 lbs/gal.

## ST120 SADDLE TANKS WEIGHT AND MOMENT TABLE

### King Air B300 (350)

Fuel per Tank <i>Gallons</i>	Total Fuel <i>Gallons</i>	Total Weight * <i>Pounds</i>	Moment * <i>Inch-lbs/100</i>
5	10	67	158
10	20	134	312
20	40	268	616
30	60	402	917
40	80	536	1218
50	100	670	1518
60	120	804	1815

Cargo per Tank <i>Pounds</i>	Moment <i>Inch-lbs/100</i>
25	64
50	127
75	191
100	254

\* Based on Jet-A turbine fuel at 6.7 lbs/gal

### ST120

King Air 200 Series, King Air 300, and King Air B300 (350)

### USABLE FUEL PER TANK

60 Gallons

### UNUSABLE FUEL PER TANK

0.75 Gallons

### UN-DRAINABLE FUEL PER TANK

0.15 Gallons

- ST72 Saddle Tanks Information Continued On Following Page -



## ST72 SADDLE TANKS WEIGHT AND MOMENT TABLE

The tables below provide the weight and moment of fuel and cargo carried in the ST72 Saddle Tanks. Use this weight and moment information when calculating the aircraft weight and balance.

### King Air 200 Series and King Air 300

<b>Fuel per Tank</b> <i>Gallons</i>	<b>Total Fuel</b> <i>Gallons</i>	<b>Total Weight *</b> <i>Pounds</i>	<b>Moment *</b> <i>Inch-lbs/100</i>
5	10	67	138
10	20	134	274
20	40	268	545
30	60	402	816
36	72	482	978

<b>Cargo per Tank</b> <i>Pounds</i>	<b>Moment</b> <i>Inch-lbs/100</i>
25	60
50	120
75	180
100	240
125	300
150	360

\* Based on Jet-A turbine fuel at 6.7 lbs/gal.

## ST72 SADDLE TANKS WEIGHT AND MOMENT TABLE

### King Air B300 (350)

Fuel per Tank <i>Gallons</i>	Total Fuel <i>Gallons</i>	Total Weight * <i>Pounds</i>	Moment * <i>Inch-lbs/100</i>
5	10	67	147
10	20	134	292
20	40	268	582
30	60	402	872
36	72	482	1044

Cargo per Tank <i>Pounds</i>	Moment <i>Inch-lbs/100</i>
25	64
50	127
75	191
100	254
125	317
150	381

\* Based on Jet-A turbine fuel at 6.7 lbs/gal

### ST72

*King Air 200 Series, King Air 300, and King Air B300 (350)*

#### USABLE FUEL PER TANK

36 Gallons

#### UNUSABLE FUEL PER TANK

0.70 Gallons

#### UN-DRAINABLE FUEL PER TANK

0.15 Gallons

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## **ST190 SADDLE TANKS (190 GALLONS)**

### **SADDLE TANKS FUEL SYSTEM**

The CenTex Aerospace ST190 auxiliary fuel tanks or “Saddle Tanks” add 190 gallons (95 gallons each) of usable fuel capacity to the airplane fuel system. These tanks ride on top of the wing behind the nacelle. The contour of the tank’s lower surface matches that of the wing and fits like a saddle. Five attachment points on the wing hold each tank in place. An aerodynamic fairing streamlines the region between the rear of the engine nacelle and tank.

The tanks are constructed solely from aluminum and are an assembly of a formed shell, segmented floor panels, and internal baffles. The tank shell and floor are 0.080 inch thick aircraft grade aluminum that makes the tanks very durable and easy to repair, and provides excellent protection against lightning strikes and corrosion. The internal baffles, which are constructed from 0.050 inch thick aircraft grade aluminum, control fuel sloshing and provide stiffness. The pieces are joined by a combination of riveted and welded seams. A special sealant (PRC PR1422) is applied internally to seal the seams. Removable panels in the shell and floor provide access to the inside in case a repair is needed. Each tank weighs approximately 90 pounds.

A flush mounted filler cap, which is lightning safe, is located on top of the tank. When securing the cap, it should be properly aligned with the adjacent index mark to ensure proper sealing. As with all fuel tank caps, it is a matter of safety to ensure the cap is closed properly and sealed. Figure 7-1 shows the location of the Saddle Tank filler cap.

**FIGURE 7-1  
SADDLE TANK FILLER CAP**



For ST190 Saddle Tanks, a sump drain with a push-to-open valve is located at the inboard rear corner of each tank. Opening the drain valve allows fuel from the lowest point in the tank to escape, which serves as a means to remove water or other contaminants. Figure 7-2 shows the location of the tank sump drain valve.

FIGURE 7-2  
TANK SUMP DRAIN



Fuel in the ST190 Saddle Tank enters the airplane fuel system through an interconnected line between the tank and the auxiliary tank. The line is constructed of 5/8 inch diameter aluminum tubing. The Series 1 line traverses through the rear of the wheel well fairing under the rear spar and into the wheel well. A drain is provided at the lowest point (under the rear spar) so any contaminants that may have collected in the line can be removed. Figure 7-3 shows the location of the drain valve.

FIGURE 7-3  
FUEL LINE DRAIN



An update called the Series 2 line traverses a short distance along the rear wing spar web and then turns forward passing through the web and into the auxiliary tank bay. It feeds fuel into the auxiliary tank bladder through a nipple fitting and is secured by clamps inside the bladder. There is no low point in the line, therefore, no fuel drain is provided.

Figure 7-4 shows a sump drain valve located between the inverter cooling louvers on the underside of the wing. This drain ensures the vent line outboard of the Saddle Tank is dry. A small amount of fuel (less than one ounce) may collect at this location. If larger amounts of fuel are routinely drained at this location, the suction relief and check valves in the fuel tank vent system should be checked for proper operation.

FIGURE 7-4  
VENT LINE DRAIN

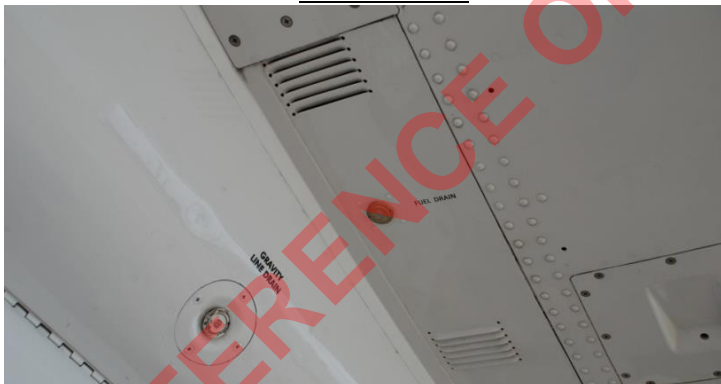


Figure 7-5 is a schematic of the fuel system with the Saddle Tank system depicted in red. Due to the Saddle Tank being on top of the wing, fuel in the Saddle Tank flows downward into the auxiliary tank assisted by gravity. Fuel inside the auxiliary tank is handled by the existing fuel system, which pumps it into the nacelle tank.

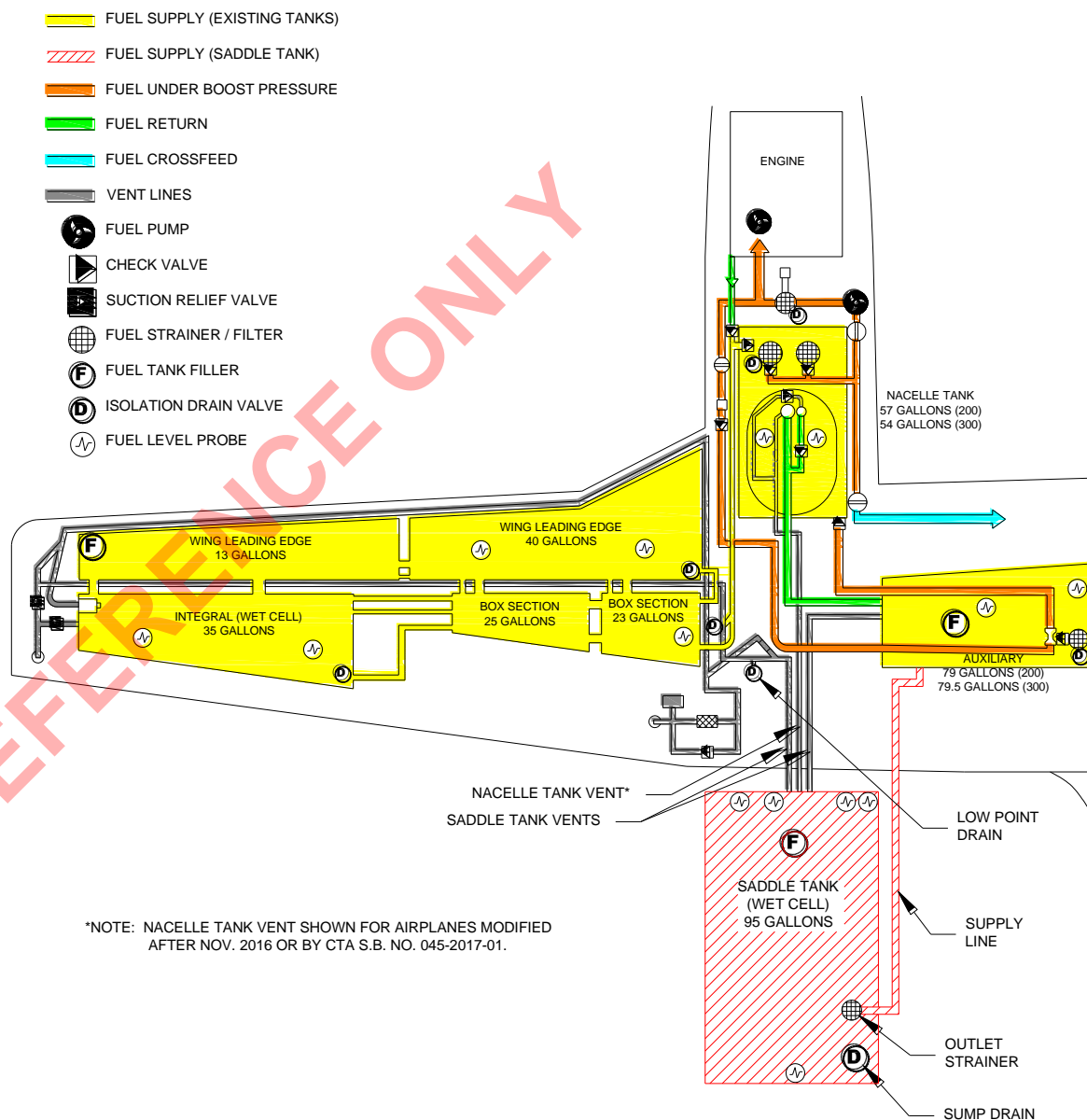
**CAUTION**

Do not open the auxiliary tank cap if there is fuel in the Saddle Tank. Opening the cap and the anti-siphon valve (flapper) can result in fuel flowing out of the auxiliary tank if the Saddle Tank contains fuel.

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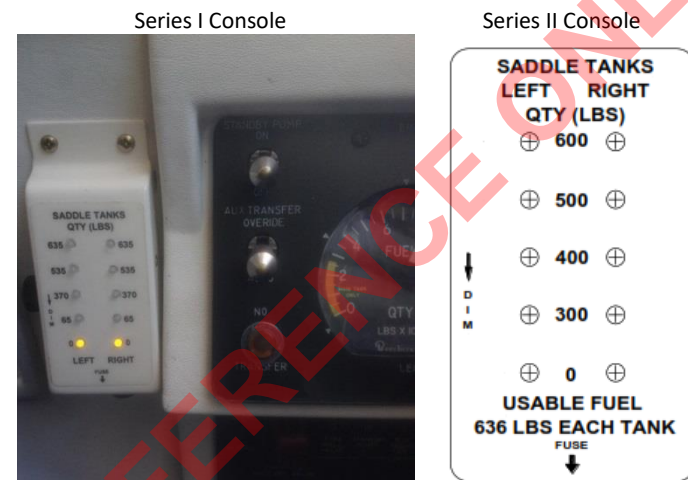
FIGURE 7-5  
ST190 FUEL SYSTEM SCHEMATIC (190 GALLON)



**FUEL QUANTITY INDICATOR SYSTEM**

The approximate amount of fuel in the Saddle Tanks is indicated inside the cockpit by a display of LED lights. These indicator lights are contained in a small console mounted next to the Fuel Control Panel. Each LED light is activated by an optical sensor installed in the wall of the tank. When the sensor lens is submersed in fuel it closes an internal switch that activates the light. Figure 7-6 shows the fuel quantity indicator. Note the difference in the fuel quantity at each LED light position on the Series I and Series II Consoles. The change to Series II consoles corresponds to a relocation of the optical sensors in tanks manufactured after March 2019.

FIGURE 7-6  
SADDLE TANKS FUEL QUANTITY INDICATOR CONSOLE



The system is powered through the FUEL QTY circuit breaker located in the Fuel System Circuit Breaker panel. A ½ amp fuse provides additional protection from electrical faults. The fuse is located in the bottom of the indicator console and is easily accessible.

All of the LED lights that indicate a fuel quantity above zero are green in color. An illuminated green light indicates the quantity of fuel in the corresponding tank is at least the amount shown on the label next to the light. A non-illuminated light indicates the quantity of fuel inside the tank is less than the amount specified by the label.

The empty ("0") indicator light has two colors – green and amber. When fuel is present in the Saddle tank, the light color is green. The color will change to amber when the tank is empty. The amber illumination also shows that the system is operational when all other lights are not illuminated. A non-illuminated empty light indicates a failure of the indicator system has occurred.

A dimmer switch is located on the left side of the console to adjust intensity of the LED lights.

## **ST120 SADDLE TANKS (120 GALLONS + STORAGE COMPARTMENT)**

### **ST120 SADDLE TANKS FUEL SYSTEM**

The CenTex Aerospace ST120 auxiliary fuel tanks or “Saddle Tanks” add 120 gallons (60 gallons each) of usable fuel capacity to the airplane fuel system with an integral storage compartment at the aft section of the tank. These tanks ride on top of the wing behind the nacelle. The contour of the tank’s lower surface matches that of the wing and fits like a saddle. Five attachment points on the wing hold each tank in place. An aerodynamic fairing streamlines the region between the rear of the engine nacelle and tank.

The tanks are constructed solely from aluminum and are an assembly of a formed shell, segmented floor panels, and internal baffles. The tank shell and floor are 0.080 inch thick aircraft grade aluminum that makes the tanks very durable and easy to repair, and provides excellent protection against lightning strikes and corrosion. The internal baffles, which are constructed from 0.050 inch thick aircraft grade aluminum, control fuel sloshing and provide stiffness. The pieces are joined by a combination of riveted and welded seams. A special sealant (PRC PR1422) is applied internally to seal the seams. Removable panels in the shell and floor provide access to the inside in case a repair is needed. Each tank weighs approximately 90 pounds.

A flush mounted filler cap, which is lightning safe, is located on top of the tank. When securing the cap, it should be properly aligned with the adjacent index mark to ensure proper sealing. As with all fuel tank caps, it is a matter of safety to ensure the cap is closed properly and sealed. Figure 7-7 shows the location of the Saddle Tank filler cap.

FIGURE 7-7  
ST120 SADDLE TANKS FILLER CAP



For ST120 Saddle Tanks, a sump drain with a push-to-open valve is located on the underside of the wing inboard of the main landing gear fairing. Opening the drain valve allows fuel from the lowest point in the tank to escape, which serves as a means to remove water or other contaminants. Figure 7-8 shows the location of the tank sump drain valve.

FIGURE 7-8  
TANK SUMP DRAIN



Fuel in the ST120 Saddle Tank enters the airplane fuel system through an interconnected line between the tank and the auxiliary tank. The line is constructed of 5/8 inch diameter aluminum tubing. The Series 1 line traverses through the rear of the wheel well fairing under the rear spar and into the wheel well. A drain is provided at the lowest point (under the rear spar) so any contaminants that may have collected in the line can be removed. Figure 7-3 shows the location of the drain valve.

FIGURE 7-3  
FUEL LINE DRAIN



An update called the Series 2 line traverses a short distance along the rear wing spar web and then turns forward passing through the web and into the auxiliary tank bay. It feeds fuel into the auxiliary tank bladder through a nipple fitting and is secured by clamps inside the bladder. There is no low point in the line, therefore, no fuel drain is provided.

Figure 7-10 shows a sump drain valve located between the inverter cooling louvers on the underside of the wing. This drain ensures the vent line outboard of the Saddle Tank is dry. A small amount of fuel (less than one ounce) may collect at this location. If larger amounts of fuel are routinely drained at this location, the suction relief and check valves in the fuel tank vent system should be checked for proper operation.

FIGURE 7-10  
VENT LINE DRAIN

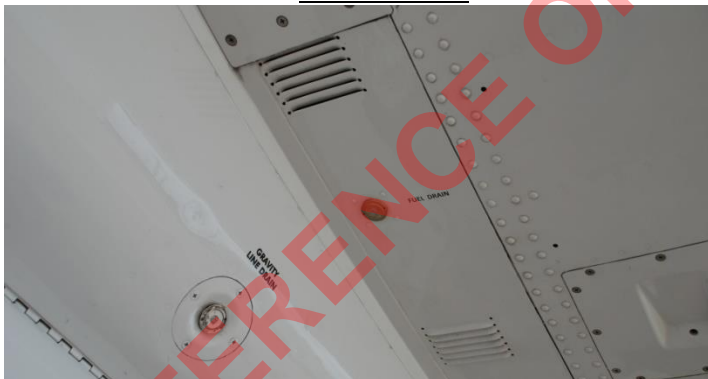


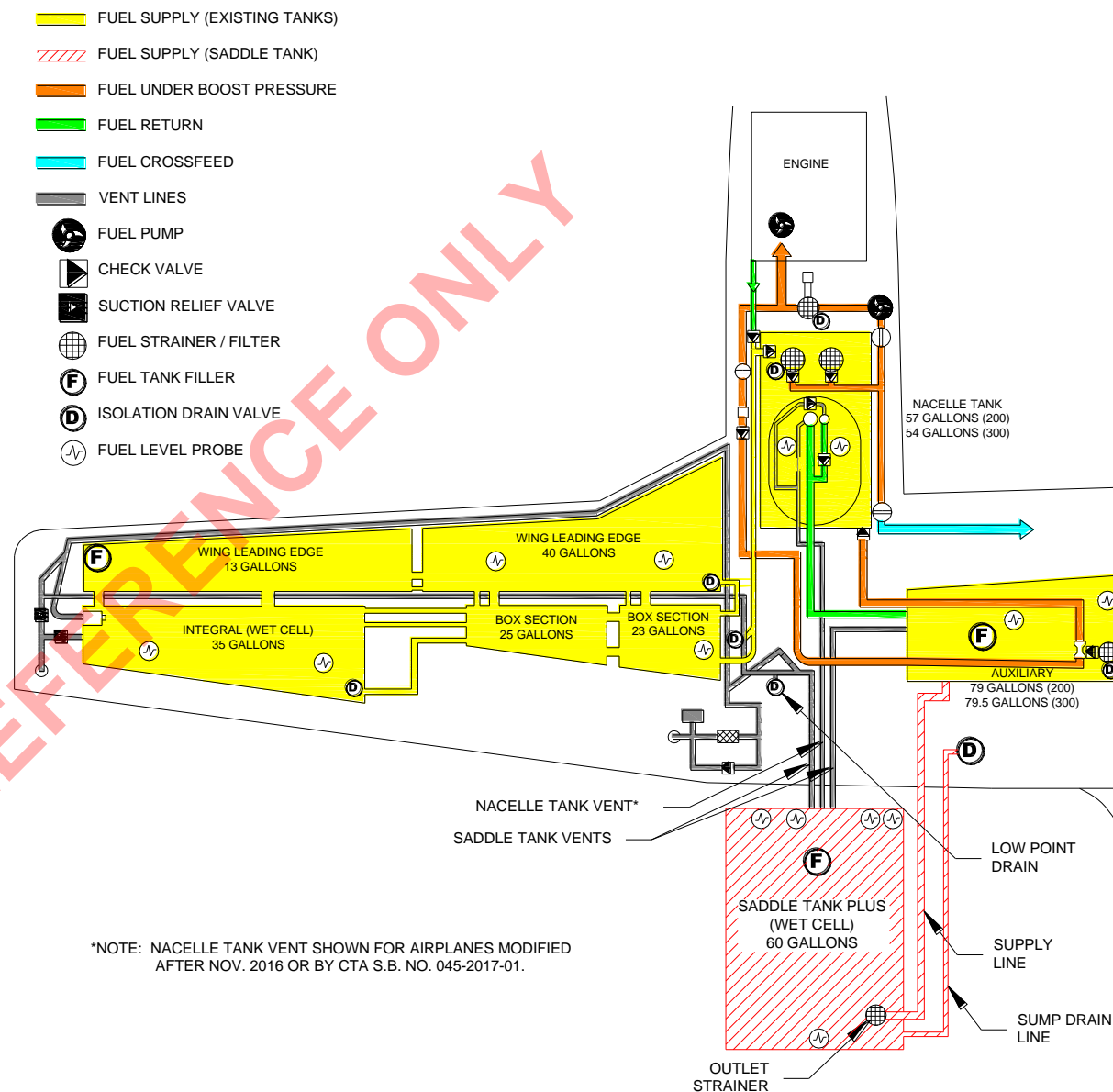
Figure 7-11 is a schematic of the fuel system with the ST120 Saddle Tanks system depicted in red. Due to the Saddle Tanks being on top of the wing, fuel flows downward into the auxiliary tank assisted by gravity. Fuel inside the auxiliary tank is handled by the existing fuel system, which pumps it into the nacelle tank.

**CAUTION**

Do not open the auxiliary tank cap if there is fuel in the Saddle Tank. Opening the cap and the anti-siphon valve (flapper) can result in fuel flowing out of the auxiliary tank if the Saddle Tank contains fuel.

REFERENCE ONLY

FIGURE 7-11  
ST120 FUEL SYSTEM SCHEMATIC (120 GALLON)



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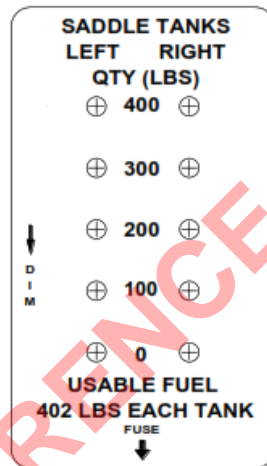
REFERENCE ONLY



### FUEL QUANTITY INDICATOR SYSTEM

The approximate amount of fuel in the ST120 Saddle Tanks is indicated inside the cockpit by a display of LED lights. These indicator lights are contained in a small console mounted next to the Fuel Control Panel. Each LED light is activated by an optical sensor installed in the wall of the tank. When the sensor lens is submersed in fuel it closes an internal switch that activates the light. Figure 7-12 shows the fuel quantity indicator console.

FIGURE 7-12  
ST120 SADDLE TANKS FUEL QUANTITY INDICATOR CONSOLE



The system is powered through the FUEL QTY circuit breaker located in the Fuel System Circuit Breaker panel. A ½ amp fuse provides additional protection from electrical faults. The fuse is located in the bottom of the indicator console and is easily accessible.

All of the LED lights that indicate a fuel quantity above zero are green in color. An illuminated green light indicates the quantity of fuel in the corresponding tank is at least the amount shown on the label next to the light. A non-illuminated light indicates the quantity of fuel inside the tank is less than the amount specified by the label.

The empty ("0") indicator light has two colors – green and amber. When fuel is present in the Saddle tank, the light color is green. The color will change to amber when the tank is empty. The amber illumination also shows that the system is operational when all other lights are not illuminated. A non-illuminated empty light indicates a failure of the indicator system has occurred.

A dimmer switch is located on the left side of the console to adjust intensity of the LED lights.

**ST120 SADDLE TANK STORAGE COMPARTMENT**

Each ST120 Saddle Tank storage compartment is a non-pressurized, non-heated compartment that may be used for storage of cargo up to a maximum of 100 lbs. To open the Saddle Tank storage door, depress the two buttons located aft of the door to release the latches. An attached gas spring will assist to open the door and maintain it in the open position. Any cargo carried in the storage compartment must be properly secured with cargo straps utilizing the six "D" rings inside the compartment. Prior to flight, close and latch the door. Note that the latch buttons will indicate a bright orange color when in the un-latched position. A keyed door lock is also provided in addition to the latches to prevent unauthorized access to the compartment.

FIGURE 7-13

ST120 SADDLE TANK STORAGE COMPARTMENT



## **ST72 SADDLE TANKS (72 GALLONS + STORAGE COMPARTMENT)**

### **ST72 SADDLE TANKS FUEL SYSTEM**

The CenTex Aerospace ST72 auxiliary fuel tanks or “Saddle Tanks” add 72 gallons (36 gallons each) of usable fuel capacity to the airplane fuel system with an integral storage compartment at the aft section of the tank. These tanks ride on top of the wing behind the nacelle. The contour of the tank’s lower surface matches that of the wing and fits like a saddle. Five attachment points on the wing hold each tank in place. An aerodynamic fairing streamlines the region between the rear of the engine nacelle and tank.

The tanks are constructed solely from aluminum and are an assembly of a formed shell, segmented floor panels, and internal baffles. The tank shell and floor are 0.080 inch thick aircraft grade aluminum that makes the tanks very durable and easy to repair, and provides excellent protection against lightning strikes and corrosion. The internal baffles, which are constructed from 0.050 inch thick aircraft grade aluminum, control fuel sloshing and provide stiffness. The pieces are joined by a combination of riveted and welded seams. A special sealant (PRC PR1422) is applied internally to seal the seams. Removable panels in the shell and floor provide access to the inside in case a repair is needed. Each tank weighs approximately 90 pounds.

A flush mounted filler cap, which is lightning safe, is located on top of the tank. When securing the cap, it should be properly aligned with the adjacent index mark to ensure proper sealing. As with all fuel tank caps, it is a matter of safety to ensure the cap is closed properly and sealed. Figure 7-14 shows the location of the Saddle Tank filler cap.

FIGURE 7-14  
ST72 SADDLE TANKS FILLER CAP



For ST72 Saddle Tanks, a sump drain with a push-to-open valve is located on the underside of the wing inboard of the main landing gear fairing. Opening the drain valve allows fuel from the lowest point in the tank to escape, which serves as a means to remove water or other contaminants. Figure 7-15 shows the location of the tank sump drain valve.

FIGURE 7-15  
TANK SUMP DRAIN



Fuel in the ST72 Saddle Tank enters the airplane fuel system through an interconnected line between the tank and the auxiliary tank. The line is constructed of 5/8 inch diameter aluminum tubing. The Series 1 line traverses through the rear of the wheel well fairing under the rear spar and into the wheel well. A drain is provided at the lowest point (under the rear spar) so any contaminants that may have collected in the line can be removed. Figure 7-3 shows the location of the drain valve.

FIGURE 7-3  
FUEL LINE DRAIN



An update called the Series 2 line traverses a short distance along the rear wing spar web and then turns forward passing through the web and into the auxiliary tank bay. It feeds fuel into the auxiliary tank bladder through a nipple fitting and is secured by clamps inside the bladder. There is no low point in the line, therefore, no fuel drain is provided.

Figure 7-17 shows a sump drain valve located between the inverter cooling louvers on the underside of the wing. This drain ensures the vent line outboard of the Saddle Tank is dry. A small amount of fuel (less than one ounce) may collect at this location. If larger amounts of fuel are routinely drained at this location, the suction relief and check valves in the fuel tank vent system should be checked for proper operation.

FIGURE 7-17  
VENT LINE DRAIN

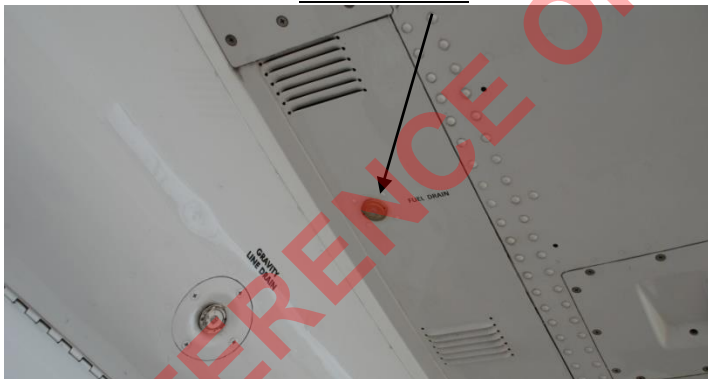


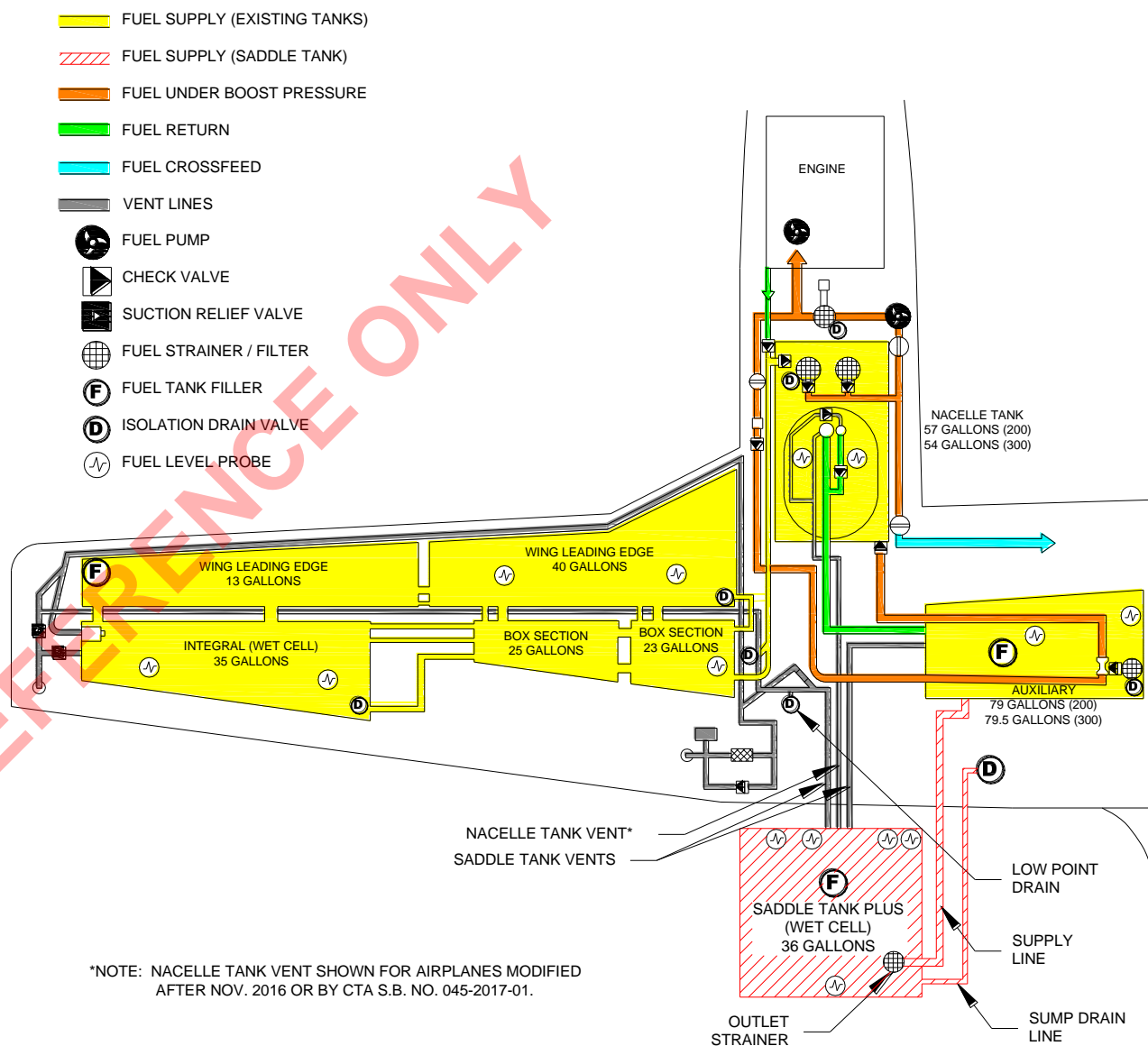
Figure 7-18 is a schematic of the fuel system with the ST72 Saddle Tanks system depicted in red. Due to the Saddle Tanks being on top of the wing, fuel flows downward into the auxiliary tank assisted by gravity. Fuel inside the auxiliary tank is handled by the existing fuel system, which pumps it into the nacelle tank.

**CAUTION**

Do not open the auxiliary tank cap if there is fuel in the Saddle Tank. Opening the cap and the anti-siphon valve (flapper) can result in fuel flowing out of the auxiliary tank if the Saddle Tank contains fuel.

REFERENCE ONLY

FIGURE 7-18  
ST72 FUEL SYSTEM SCHEMATIC (72 GALLON)



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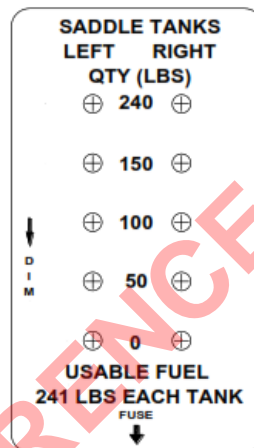
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### FUEL QUANTITY INDICATOR SYSTEM

The approximate amount of fuel in the ST72 Saddle Tanks is indicated inside the cockpit by a display of LED lights. These indicator lights are contained in a small console mounted next to the Fuel Control Panel. Each LED light is activated by an optical sensor installed in the wall of the tank. When the sensor lens is submersed in fuel it closes an internal switch that activates the light. Figure 7-19 shows the fuel quantity indicator console.

FIGURE 7-19  
ST72 SADDLE TANKS FUEL QUANTITY INDICATOR CONSOLE



The system is powered through the FUEL QTY circuit breaker located in the Fuel System Circuit Breaker panel. A ½ amp fuse provides additional protection from electrical faults. The fuse is located in the bottom of the indicator console and is easily accessible.

All of the LED lights that indicate a fuel quantity above zero are green in color. An illuminated green light indicates the quantity of fuel in the corresponding tank is at least the amount shown on the label next to the light. A non-illuminated light indicates the quantity of fuel inside the tank is less than the amount specified by the label.

The empty ("0") indicator light has two colors – green and amber. When fuel is present in the Saddle tank, the light color is green. The color will change to amber when the tank is empty. The amber illumination also shows that the system is operational when all other lights are not illuminated. A non-illuminated empty light indicates a failure of the indicator system has occurred.

A dimmer switch is located on the left side of the console to adjust intensity of the LED lights.

**ST72 SADDLE TANK STORAGE COMPARTMENT**

Each ST72 Saddle Tank storage compartment is a non-pressurized, non-heated compartment that may be used for storage of cargo up to a maximum of 150 lbs. To open the Saddle Tank storage door, depress the two buttons located aft of the door to release the latches. An attached gas spring will assist to open the door and maintain it in the open position. Any cargo carried in the storage compartment must be properly secured with cargo straps utilizing the six "D" rings inside the compartment. Prior to flight, close and latch the door. Note that the latch buttons will indicate a bright orange color when in the un-latched position. A keyed door lock is also provided in addition to the latches to prevent unauthorized access to the compartment.

FIGURE 7-20  
SADDLE TANK STORAGE COMPARTMENT  
(ST120 Shown)



## **SECTION 8**

### **HANDLING, SERVICING, & MAINTENANCE**

#### **NO CHANGES**

See the basic Beechcraft Airplane Flight Manual or Pilot Operating Handbook for Handling, Servicing, and Maintenance information.

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