

FUEL

Aviation Gasoline 80/87 (red) minimum grade or alternate grades 100LL (blue) or 100/130 (green). See Engine Manufacturer's Bulletin.

Standard fuel system: Two 20-gallon tanks in wings. Total 34 gallons usable.

Optional fuel system: Two 20 gallon main tanks in wings and either one 10 gallon or one 20 gallon auxiliary tank installed in the baggage compartment. All of the capacity of the 10 gallon tank is usable. The 20 gallon tank adds 19 gallons usable fuel to the system.

OIL CAPACITY

The oil capacity is 10 quarts.

WEIGHTS (Normal)

|                               |          |
|-------------------------------|----------|
| Maximum Ramp Weight .....     | 2560 lbs |
| Maximum Take-Off Weight ..... | 2550 lbs |
| Maximum Landing Weight .....  | 2550 lbs |

WEIGHTS (Utility)

|                               |          |
|-------------------------------|----------|
| Maximum Ramp Weight .....     | 2110 lbs |
| Maximum Take-Off Weight ..... | 2100 lbs |
| Maximum Landing Weight .....  | 2100 lbs |

CABIN DIMENSIONS

|                     |                 |
|---------------------|-----------------|
| Length .....        | 6 ft 11 in.     |
| Height .....        | 4 ft 2 in.      |
| Width .....         | 3 ft 6 in.      |
| Entrance Door ..... | 36 in. x 37 in. |

POWER PLANT LIMITATIONS

ENGINE

|                                       |                         |
|---------------------------------------|-------------------------|
| Take-off<br>(one minute) .....        | Full Throttle, 2300 rpm |
| Maximum continuous<br>operation ..... | Full Throttle, 2050 rpm |

NOTE

Other engines are approved for this model Bonanza but not installed as original equipment. These are listed in the FAA Aircraft Specification A-777 or approved by Supplemental Type Certificate.

FUEL

Aviation Gasoline 80/87 (red) minimum grade or alternate grades 100LL (blue) or 100/130 (green). See Engine Manufacturer's Bulletin.

OIL

Ashless dispersant oils must meet Continental Motors Corporation Specification MHS-24A. Refer to APPROVED ENGINE OILS, Section 8, Servicing.

**Section II  
Limitations**

**BEECHCRAFT  
Bonanza 35**

**FUEL**

Take-off on left main tank.

Standard fuel system: Two 20-gallon tanks in wings. Total 34 gallons usable.

Optional fuel system: Two 20 gallon main tanks in wings and either one 10 gallon or one 20 gallon auxiliary tank installed in the baggage compartment. All of the capacity of the 10 gallon tank is usable. The 20 gallon tank adds 19 gallons usable fuel to the system.

Use auxiliary fuel in level flight only and do not use for take off or landing. Use at least 10 gallons from left main tank before use of auxiliary fuel or right main tank.

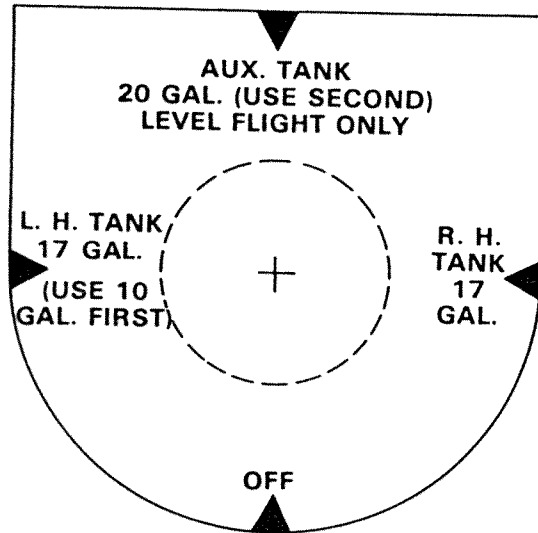
When operating fuel selector, feel for detent position.

Do not take off when the Fuel Quantity Gage indicates in the Yellow Band or with less than 10 gallons in each main tank.

Maximum slip duration: 30 seconds

PLACARDS (Cont'd)

*On Fuel Selector Valve On Airplanes  
Equipped With 20 Gal. Auxiliary Fuel Tanks:*

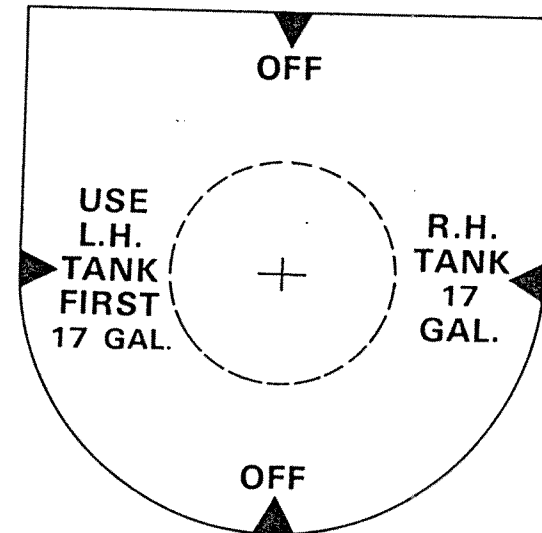


*On Fuel Selector Panel: (use with 35-924065 fuel selector valve)*

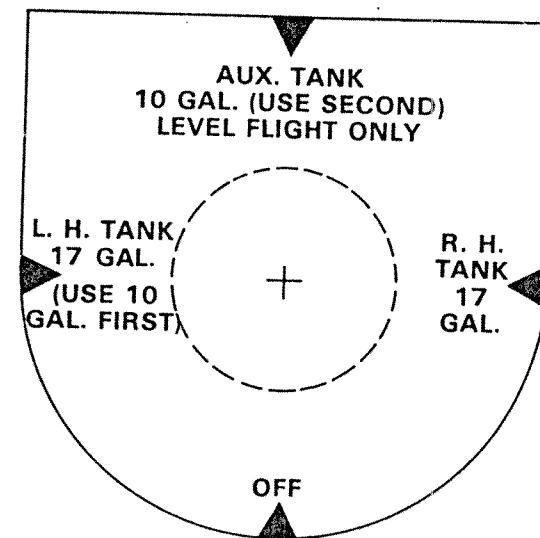
**TO SELECT TANK  
PUSH HANDLE  
DOWN, ENGAGE  
VALVE AND TURN.  
KEEP HANDLE  
ENGAGED WHEN  
NOT PUMPING.**

PLACARDS

*On Fuel Selector Valve:*



*On Fuel Selector Valve On Airplanes  
Equipped With 10 Gal. Auxiliary Fuel Tanks:*



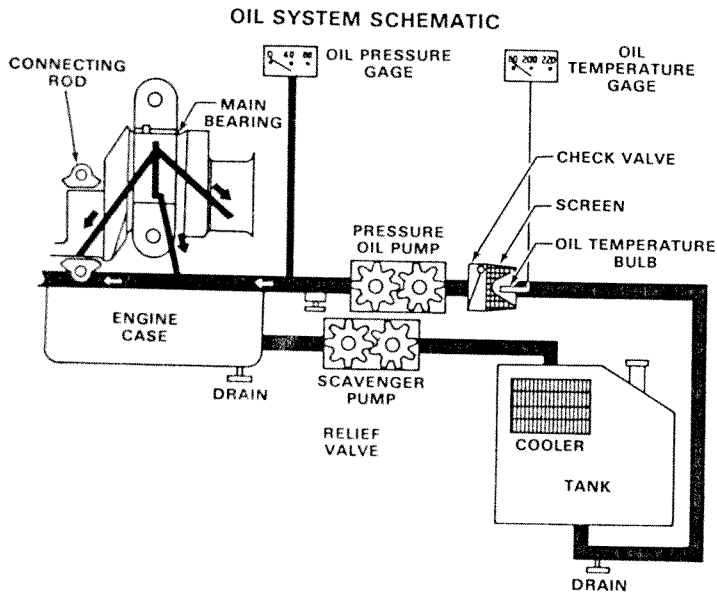
**Section VII  
Systems Description**

**BEECHCRAFT  
Bonanza A35 and B35**

**OIL SYSTEM**

In the Bonanza's oil system, oil is fed to the engine oil pump from a supply tank mounted just above and behind the engine. The return oil is picked up by a scavenging pump and returned to the supply tank, passing through a cooler which is an integral part of the tank. The oil tank capacity is 2-1/2 gallons. The filler neck of the A35 is accessible by raising the left engine cowling. The B35 has an access door on the left upper cowl. The level should be checked after each flight using the dipstick fastened to the filler cap. The normal oil operating level should be maintained at 8 to 10 quarts.

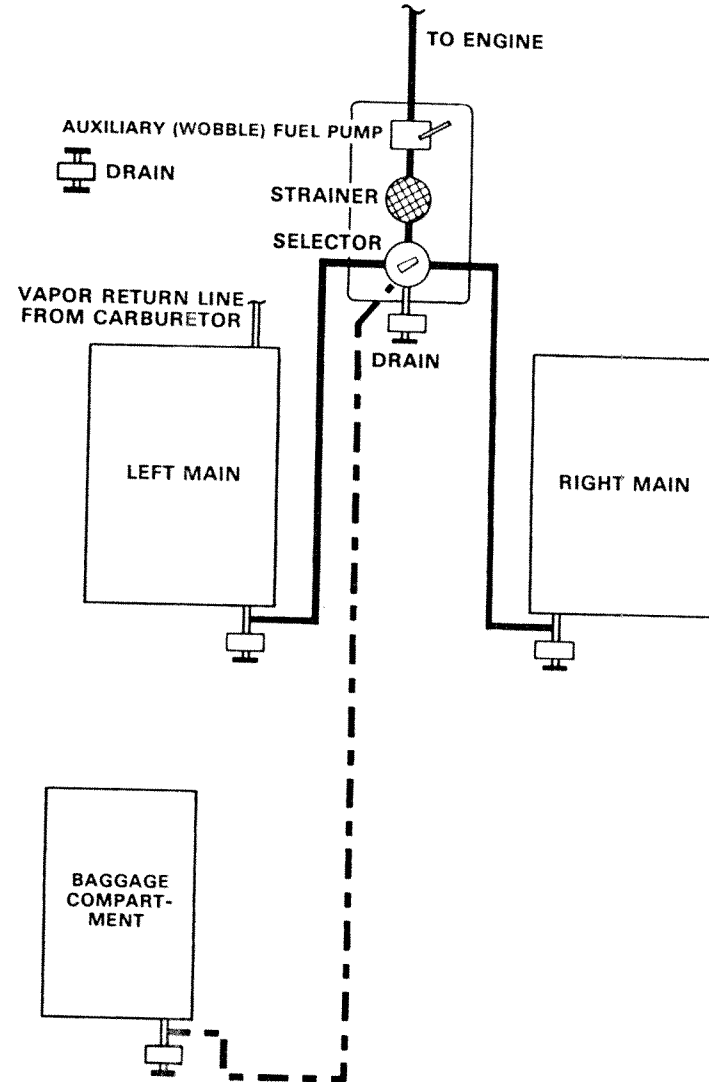
Both oil pumps, the oil screen and a check valve to prevent oil from draining from the tank into the engine sump are incorporated in the engine accessory section. There is no engine oil shut-off valve and the system is so designed that oil bypass arrangements are unnecessary.



**Section VII  
Systems Description**

**BEECHCRAFT  
Bonanza 35**

**FUEL SYSTEM SCHEMATIC**



## **FUEL MANAGEMENT**

---

### **POOR TECHNIQUES**

Poor fuel management is often the cause of aircraft accidents. Some airplane accident reports have listed such poor fuel management techniques as switching to another fuel tank after the before takeoff runup was completed, and then experiencing engine problems on takeoff. Other reports tell of pilots switching fuel tanks at a critical point on the approach to a landing and inadvertently selecting an empty tank when there is not enough time to compensate for the subsequent loss of power. Flying low during day crosscountry, or moderately low at night, can be hazardous if a fuel tank runs dry. Too much altitude may be lost during the time it takes to discover the reason for power loss, select a different fuel tank, and restart the engine. Pilots should be thoroughly familiar with the airplane fuel system and tank switching procedures. Furthermore, it is an unsafe technique to run a fuel tank dry as a routine procedure, although there are exceptions. Any sediment or water not drained from the fuel tank could be drawn into the fuel system and cause erratic operation or even total power loss.

### **FUELING THE AIRCRAFT**

The aircraft should be on level ground during all fueling operations, since filling the tanks when the aircraft is not level may result in a fuel quantity less than the maximum capacity. Rapid filling of a fuel tank, without allowing time for air in the tank to escape, may result in a lower fuel quantity. Some single engine aircraft that allow simultaneous use of fuel from more than one tank have fuel tanks with interconnected vent lines. If the tanks are filled with fuel and the aircraft allowed to sit with one wing lower than the other, fuel may drain from the higher tank to the lower and subsequently out the fuel vent. This will result in loss of fuel. This fuel loss may be prevented by placing the fuel selector in a position other than "both".

Some Cessna single-engine airplanes have long, narrow fuel tanks. If your airplane is so equipped, it may be necessary to partially fill each tank alternately, and repeat the sequence as required to completely fill the tanks to their maximum capacity. This method of fueling helps prevent the airplane from settling to a wing-low attitude because of increased fuel weight in the fullest wing tank.

It is always the responsibility of the pilot-in-command to ensure sufficient fuel is available for the planned flight. Refer to the airplane operating handbook for proper fueling procedures.

## **UNUSABLE FUEL**

Unusable fuel is the quantity of fuel that cannot safely be used in flight. The amount of unusable fuel varies with airplane and fuel system design, and the maximum amount is determined in accordance with Civil or Federal Aviation Regulations (CARs or FARs). Unusable fuel is always included in the airplane's licensed or basic empty weight for weight and balance purposes. Unusable fuel should never be included when computing the endurance of any airplane.

## **FUEL PLANNING WITH MINIMUM RESERVES**

Airplane accidents involving engine power loss continue to reflect fuel starvation as the primary cause or a contributing factor. Some of these accidents were caused by departing with insufficient fuel onboard to complete the intended flight. Fuel exhaustion in flight can mean only one thing - a forced landing with the possibility of serious damage, injury, or death.

A pilot should not begin a flight without determining the fuel required and verifying its presence onboard. To be specific, during VFR conditions, do not take off unless there is enough fuel to fly to the planned destination (considering wind and forecast weather conditions), assuming the airplane's normal cruising airspeed, fly after that for at least 30 minutes during the day, or at least 45 minutes at night.

Departure fuel requirements are a little different when operating under IFR conditions. Do not depart an airport on an IFR trip unless the airplane has enough fuel to complete the flight to the first airport of intended landing (considering weather reports and forecasts) and fly from that airport to the planned alternate airport, and afterwards still fly at least 45 minutes at normal cruising speed.

## **FLIGHT COORDINATION VS. FUEL FLOW**

The shape of most airplane wing fuel tanks is such that, in certain flight maneuvers, the fuel may move away from the fuel tank supply outlet. If the outlet is uncovered, fuel flow to the engine may be interrupted and a temporary loss of power might result. Pilots can prevent inadvertent uncovering of the tank outlet by having adequate fuel in the tank selected and avoiding maneuvers such as prolonged uncoordinated flight or sideslips which move fuel away from the feed lines.

It is important to observe the uncoordinated flight or sideslip limitations listed in the respective operating handbook. As a general rule, limit uncoordinated flight or sideslip to 30 seconds in duration when the fuel level in the selected fuel tank is 1/4 full or less. Airplanes are usually considered in a sideslip anytime the turn and bank "ball" is more than one quarter ball out of the center (coordinated flight) position. The amount of usable fuel decreases with the severity of the sideslip in all cases.

## **FUEL SYSTEM CONTAMINATION**

---

### **ADEQUATE PREFLIGHT OF THE FUEL SYSTEM**

A full preflight inspection is recommended before each flight for general aviation airplanes. Inspection procedures for the fuel system must include checking the quantity of fuel with the airplane on level ground, checking the security of fuel filler caps and draining the fuel tank sumps, fuel reservoir(s), fuel line drain(s), fuel selector drains, and fuel strainer(s). To ensure that no unsampled fuel remains in the airplane, an adequate sample of fuel from the fuel strainer must be taken with the fuel selector valve placed in each of its positions (BOTH, LEFT, RIGHT, etc.). Some Cessna airplanes are equipped with a fuel reservoir(s). If so equipped, the pilot should be aware of the location of the fuel reservoir(s) and its drain plug or quick-drain. The fuel reservoir(s) on most single-engine airplanes is located near the fuel system low point where water will accumulate. Therefore, the fuel reservoir(s) must be drained routinely during each preflight inspection. Periodically check the condition of the fuel filler cap seals, pawls, and springs for evidence of wear and/or deterioration which indicates a need for replacement. Check fuel cap adapters and seals to insure that the sealing surfaces are clean and not rusted or pitted. Deformed pawls may affect the sealing capabilities of the seals and/or cause it to be exposed to detrimental weather elements. Precautions should be taken to prevent water entry into fuel tanks, due to damaged filler caps and every effort made to check and remove all water throughout the fuel system. Umbrella caps will assist in preventing water entry into the fuel tank through the fuel filler.

It is the pilot's responsibility to ensure that the airplane is properly serviced before each flight with the correct type of fuel. The pilot must take the time to inspect the airplane thoroughly, making sure all of the fuel filler caps are installed and secured properly after visually checking the fuel quantity with the airplane on level ground. During the check of the fuel tanks, observe the color and odor of the fuel while draining a generous sample from each sump and drain point into a transparent container. Check for the presence of water, dirt, rust, or other contaminants. Never save the fuel sample and risk the possibility of contaminating the system. Also, ensure that each fuel tank vent is clear of restrictions (i.e., dirt, insect nests, ice, snow, bent or pinched tubes, etc.). Refer to the airplanes Maintenance Manual for fuel tank vent removal and inspection if needed.

## **PROPER SAMPLING FROM QUICK DRAINS**

The fuel system sumps and drains should always be drained and checked for contaminants after each refueling and during each preflight inspection. Drain at least a cupful of fuel into a clear container to check for solid and/or liquid contaminants, and proper fuel grade. If contamination is observed, take further samples at all fuel drain points until fuel is clear of contaminants; then, gently rock wings and, if possible, lower the tail to move any additional contaminants to the sampling points. Take repeated samples from all fuel drain points until all contamination has been removed. If excessive sampling is required, completely defuel, drain and clean the airplane fuel system, and attempt to discover where or how the contamination originated before the airplane flies again. Do not fly the airplane with contaminated or unapproved fuel. If an improper fuel type is detected, the mandatory procedure is to completely defuel and drain the fuel system.

Extra effort is needed for a proper preflight of all fuel drains on a float plane. If water is detected after rocking the wings and lowering the tail, the aircraft should not be flown until after the fuel system is completely drained and cleaned.

## **80 versus 100 OCTANE FUEL**

When 80 octane (red) fuel began to be replaced by 100LL (blue) there was concern about the service life expectancy of low compression engines. It was claimed that some engines experienced accelerated exhaust valve erosion and valve guide wear from the use of highly leaded 100/130 (green) avgas in engines that were rated to use a minimum grade of 80 octane fuel. Engine manufacturers have provided amended operating procedures and maintenance schedules to minimize problems resulting from the use of high lead 100/130 avgas. Experience has now proven that low-compression aircraft engines can be operated safely on 100LL avgas providing they are regularly operated and serviced in accordance with the operating handbook or other officially approved document.

## **AVGAS versus JET FUEL**

Occasionally, airplanes are inadvertently serviced with the wrong type of fuel. Piston engines may run briefly on jet fuel, but detonation and overheating will soon cause power failure. All piston-engine airplanes should have fuel filler restrictors installed to prevent jet fuel from being pumped into the fuel tanks. An engine failure caused by running a turbine engine on the wrong fuel may not be as sudden, but prolonged operation on avgas will severely damage the engine because of the lead content and differing combustion temperature of the fuel. Time limitations for use of avgas in turbine engines are listed in the operating handbook.



## **AUTOMOTIVE GASOLINE/FUEL**

Never use automotive gasoline in an airplane unless the engine and airplane fuel system are specifically certified and approved for automotive gasoline use. The additives used in the production of automotive gasoline vary widely throughout the petroleum industry and may have deteriorating effects on airplane fuel system components. The qualities of automotive gasoline can induce vapor lock, increase the probability of carburetor icing, and can cause internal engine problems.

## **FUEL CAP SECURITY**

The consequence of a missing or incorrectly installed fuel filler cap is inflight fuel siphoning. Inflight siphoning may distort the fuel cell on some airplanes with bladder-type fuel cells. This distortion will change the fuel cell capacity, and may interfere with the operation of the fuel quantity indicator sensing mechanism inside the cell. This condition will generally cause an erroneous and misleading fuel quantity reading and may result in incomplete filling for the next flight.

## **CONTAMINATION**

Solid contamination may consist of rust, sand, pebbles, dirt, microbes or bacterial growth. If any solid contaminants are found in any part of the fuel system, drain and clean the airplane fuel system. Do not fly the airplane with fuel contaminated with solid material.

Liquid contamination is usually water, improper fuel type, fuel grade, or additives that are not compatible with the fuel or fuel system components. Liquid contamination should be addressed as set forth in the section entitled "Proper Sampling from Quick Drains", and as prescribed in the airplane's approved flight manual.

**Airworthiness Directive**  
**This AD has been Cancelled.**

**Click "Here" to go to Airworthiness Directives database and search for current AD.**

▶ **Federal Register Information**

▼ **Header Information**

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [64 FR 10560 No. 43 03/05/1999]

Docket No. 98-CE-61-AD; Amendment 39-11061; AD 99-05-13

RIN 2120-AA64

Airworthiness Directives; Raytheon Aircraft Company 17, 18, 19, 23, 24, 33, 35, 36/A36, A36TC/B36TC, 45, 50, 55, 56, 58, 58P, 58TC, 60, 65, 70, 76, 77, 80, 88, and 95 Series Airplanes

**PDF Copy (If Available):**

▼ **Preamble Information**

AGENCY: Federal Aviation Administration, DOT

ACTION: Final rule

SUMMARY: This amendment adopts a new airworthiness directive (AD) that applies to certain Raytheon Aircraft Company (Raytheon) 17, 18, 19, 23, 24, 33, 35, 36/A36, A36TC/B36TC, 45, 50, 55, 56, 58, 58P, 58TC, 60, 65, 70, 76, 77, 80, 88, and 95 series airplanes. This AD requires installing a placard on the fuel tank selector to warn of the no-flow condition that exists between the fuel tank detents. This AD is the result of reports of engine stoppage on the affected airplanes where the cause was considered to be incorrect positioning of the fuel selector. The actions specified by this AD are intended to help prevent a lack of fuel flow to the engine caused by incorrect positioning of the fuel selector, which could result in loss of engine power.

DATES: Effective April 19, 1999.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of April 19, 1999.

ADDRESSES: Service information that applies to this AD may be obtained from the Raytheon Aircraft Company, P.O. Box 85, Wichita, Kansas 67201-0085; telephone: [REDACTED] or [REDACTED]. This information may also be examined at the Federal Aviation Administration (FAA), Central Region, Office of the Regional Counsel, Attention: Rules Docket No. 98-CE-61-AD, Room 1558, 601 E. 12th Street, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Mr. Scott West, Aerospace Engineer, Wichita Aircraft Certification Office, FAA, 1801 Airport Road, Mid-Continent Airport, Wichita, Kansas 67209; telephone: [REDACTED] facsimile: [REDACTED]

#### **SUPPLEMENTARY INFORMATION:**

##### **Events Leading to the Issuance of This AD**

A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to certain Raytheon 17, 18, 19, 23, 24, 33, 35, 36/A36, A36TC/B36TC, 45, 50, 55, 56, 58, 58P, 58TC, 60, 65, 70, 76, 77, 80, 88, and 95 series airplanes was published in the Federal Register as a notice of proposed rulemaking (NPRM) on October 9, 1998 (63 FR 54399). The NPRM proposed to require installing a placard, part number 36-920059-1, on the fuel tank selector to warn of the no-flow condition that exists between the fuel tank detents. Accomplishment of the proposed action as specified in the NPRM would be in accordance with Raytheon Mandatory Service Bulletin No. 2670, Revision No. 1, dated May, 1998.

The NPRM was the result of reports of engine stoppage on the affected airplanes where the cause was considered to be incorrect positioning of the fuel selector.

Interested persons have been afforded an opportunity to participate in the making of this amendment. No comments were received on the proposed rule or the FAA's determination of the cost to the public.

##### **The FAA's Determination**

After careful review of all available information related to the subject presented above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed except for minor editorial corrections. The FAA has determined that these minor corrections will not change the meaning of the AD and will not add any additional burden upon the public than was already proposed.

##### **Cost Impact**

The FAA estimates that 15,200 airplanes in the U.S. registry will be affected by this AD. The placard that will be required for this AD may be obtained through a Raytheon Aircraft Authorized Service Center at no cost to the owners/operators of the affected airplanes. Since an owner/operator who holds at least a private pilot's certificate as authorized by sections 43.7 and 43.9 of the Federal Aviation Regulations (14 CFR 43.7 and 43.9) may accomplish this placard installation, the only cost impact upon the public will be the approximate 30 minutes it will take each owner/operator to install the placard.

##### **Regulatory Impact**

The regulations adopted herein will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the final evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by

contacting the Rules Docket at the location provided under the caption "ADDRESSES".

### List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

#### PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### § 39.13 [Amended]

2. Section 39.13 is amended by adding a new airworthiness directive (AD) to read as follows:

#### ▼ Regulatory Information

**99-05-13 RAYTHEON AIRCRAFT COMPANY** (All type certificates of the affected airplanes previously held by the Beech Aircraft Corporation): Amendment 39-11061; Docket No. 98-CE-61-AD.

Applicability: The following airplane models and serial numbers, certificated in any category:

| Model                                      | Serial Number      |
|--|--------------------|
| B17L                                       | all serial numbers |
| SB17L                                      | all serial numbers |
| B17B                                       | all serial numbers |
| B17R (Army UC-43H)                         | all serial numbers |
| C17L (Army UC-43J)                         | all serial numbers |
| SC17L                                      | all serial numbers |
| C17B (Army UC-43G)                         | all serial numbers |
| SC17B                                      | all serial numbers |
| C17R (Army UC-43E)                         | all serial numbers |
| SC17R                                      | all serial numbers |
| D17A (Army UC-43F)                         | all serial numbers |
| D17R (Army UC-43A)                         | all serial numbers |
| D17S (Army UC-43, UC-43B, Navy GB-1, GB-2) | all serial numbers |
| SD17S                                      | all serial numbers |
| E17B (Army UC-43D)                         | all serial numbers |
| SE17B                                      | all serial numbers |
| E17L                                       | all serial numbers |
| F17D (UC-43C)                              | all serial numbers |
| SF17D                                      | all serial numbers |

|               |                        |
|---------------|------------------------|
| G17S          | all serial numbers     |
| D18S          | all serial numbers     |
| E18S          | all serial numbers     |
| E18S-9700     | all serial numbers     |
| G18S          | all serial numbers     |
| G18S-9150     | all serial numbers     |
| H18           | all serial numbers     |
| A23-19        | all serial numbers     |
| 19A           | all serial numbers     |
| M19A          | all serial numbers     |
| B19           | all serial numbers     |
| 23            | all serial numbers     |
| A23           | all serial numbers     |
| A23A          | all serial numbers     |
| B23           | all serial numbers     |
| C23           | all serial numbers     |
| A23-24        | all serial numbers     |
| A24           | all serial numbers     |
| A24R          | all serial numbers     |
| B24R          | all serial numbers     |
| C24R          | all serial numbers     |
| F33A          | CE-290 through CE-1791 |
| E33C and F33C | CJ-26 through CJ-179   |
| 35            | all serial numbers     |
| 35R           | all serial numbers     |
| A35           | all serial numbers     |
| B35           | all serial numbers     |
| C35           | all serial numbers     |
| D35           | all serial numbers     |
| E35           | all serial numbers     |
| F35           | all serial numbers     |
| G35           | all serial numbers     |
| H35           | all serial numbers     |
| J35           | all serial numbers     |
| K35           | all serial numbers     |
| M35           | all serial numbers     |
| N35           | all serial numbers     |
| P35           | all serial numbers     |
| S35           | all serial numbers     |
| V35           | all serial numbers     |

|         |                       |
|---------|-----------------------|
| V35TC   | all serial numbers    |
| V35A    | all serial numbers    |
| V35A-TC | all serial numbers    |
| V35B    | all serial numbers    |
| V35B-TC | all serial numbers    |
| 36      | all serial numbers    |
| A36     | E-185 through E-3046  |
| A36TC   | all serial numbers    |
| B36TC   | EA-242 through EA-591 |
| 45      | all serial numbers    |
| A45     | all serial numbers    |
| D45     | all serial numbers    |
| 50      | all serial numbers    |
| B50     | all serial numbers    |
| C50     | all serial numbers    |
| D50     | all serial numbers    |
| D50A    | all serial numbers    |
| D50B    | all serial numbers    |
| D50C    | all serial numbers    |
| D50E    | all serial numbers    |
| E50     | all serial numbers    |
| F50     | all serial numbers    |
| G50     | all serial numbers    |
| H50     | all serial numbers    |
| J50     | all serial numbers    |
| 95-55   | all serial numbers    |
| 95-A55  | all serial numbers    |
| 95-B55  | all serial numbers    |
| 95-C55  | all serial numbers    |
| D55     | all serial numbers    |
| E55     | all serial numbers    |
| 56TC    | all serial numbers    |
| A56TC   | all serial numbers    |
| 58      | TH-1 through TH-1798  |
| 58P     | all serial numbers    |
| 58TC    | all serial numbers    |
| 60      | all serial numbers    |
| A60     | all serial numbers    |
| B60     | all serial numbers    |
| 65      | all serial numbers    |
| A65     | all serial numbers    |

|          |                    |
|----------|--------------------|
| A65-8200 | all serial numbers |
| 70       | all serial numbers |
| 76       | all serial numbers |
| 77       | all serial numbers |
| 65-80    | all serial numbers |
| 65-A80   | all serial numbers |
| 65-B80   | all serial numbers |
| 65-88    | all serial numbers |
| 95       | all serial numbers |
| B95      | all serial numbers |
| B95A     | all serial numbers |
| D95A     | all serial numbers |
| E95      | all serial numbers |

NOTE 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required within the next 75 hours time-in-service (TIS) after the effective date of this AD, unless already accomplished.

To prevent a lack of fuel flow to the engine caused by incorrect positioning of the fuel selector, which could result in loss of engine power, accomplish the following:

(a) Install a placard, part number 36-920059-1, on the fuel tank selector to warn of the no-flow condition that exists between the fuel tank detents. Accomplish this installation in accordance with Raytheon Mandatory Service Bulletin No. 2670, Revision No. 1, dated May, 1998.

(b) Installing the placard, as specified in paragraph (a) of this AD, may be performed by the owner/operator holding at least a private pilot certificate as authorized by section 43.7 of the Federal Aviation Regulations (14 CFR 43.7), and must be entered into the aircraft records showing compliance with this AD in accordance with section 43.9 of the Federal Aviation Regulations (14 CFR 43.9).

(c) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

(d) An alternative method of compliance or adjustment of the compliance time that provides an equivalent level of safety may be approved by the Manager, Wichita Aircraft Certification Office (ACO), 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, Kansas 67209. The request shall be forwarded through an appropriate FAA Maintenance

Inspector, who may add comments and then send it to the Manager, Wichita ACO.

NOTE 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Wichita ACO.

(e) The installation required by this AD shall be done in accordance with Raytheon Mandatory Service Bulletin No. 2670, Revision No. 1, dated May, 1998. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from the Raytheon Aircraft Company, P.O. Box 85, Wichita, Kansas 67201-0085. Copies may be inspected at the FAA, Central Region, Office of the Regional Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

(f) This amendment becomes effective on April 19, 1999.

▼ **Footer Information**

▼ **Comments**



**Airworthiness Directive**  
**This AD has been Cancelled.**

**Click "Here" to go to Airworthiness Directives database and search for current AD.**

▶ **Federal Register Information**

▼ **Header Information**

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [65 FR 42855 7/12/2000]

Docket No. 98-CE-61-AD; Amendment 39-11061; AD 99-05-13 R1 WD

RIN 2120-AA64

Airworthiness Directives; Raytheon Aircraft Company Beech 17, 18, 19, 23, 24, 33, 35, 36/A36, A36TC/B36TC, 45, 50, 55, 56, 58, 58P, 58TC, 60, 65, 70, 76, 77, 80, 88, and 95 Series Airplanes

**PDF Copy (If Available):**

▼ **Preamble Information**

AGENCY: Federal Aviation Administration, DOT

ACTION: Final rule; withdrawal.

SUMMARY: This amendment withdraws Airworthiness Directive (AD) 99-05-13, which currently applies to Raytheon Aircraft Company (Raytheon) Beech 17, 18, 19, 23, 24, 33, 35, 36/A36, A36TC/B36TC, 45, 50, 55, 56, 58, 58P, 58TC, 60, 65, 70, 76, 77, 80, 88, and 95 series airplanes. AD 99-05-13 requires installing a placard on the fuel tank selector to warn of the no-flow condition that exists between the fuel tank detents. Since the issuance of AD 99-05-13, the Federal Aviation Administration (FAA) has re-evaluated all information related to this subject, and determined that the subject matter in this AD is an operational issue and does not address an unsafe condition. Accordingly, this action withdraws AD 99-05-13.

DATES: Effective July 5, 2000.

FOR FURTHER INFORMATION CONTACT: Mr. Jeff Pretz, Aerospace Engineer, Wichita Aircraft Certification Office, FAA, 1801 Airport Road, Mid-Continent Airport, Wichita, Kansas 67209; telephone: [REDACTED] facsimile: [REDACTED]

**SUPPLEMENTARY INFORMATION:**

***Discussion***

**Has FAA taken any action to this point?** Reports of engine stoppage on Raytheon Beech 17, 18, 19, 23, 24, 33, 35, 36/A36, A36TC/B36TC, 45, 50, 55, 56, 58, 58P, 58TC, 60, 65, 70, 76, 77, 80, 88, and 95 series airplanes caused FAA to issue AD 99-05-13, Amendment 39-11061 (64 FR 10560, March 5, 1999). AD 99-05-13 currently requires installing a placard on the fuel tank selector to warn of the no-flow condition that exists between the fuel tank detents.

After issuing AD 99-05-13, we re-evaluated all information related to the subject matter of this AD and determined that:

- the positioning of the fuel selector is an operational issue and not an unsafe condition under part 39 of the Federal Aviation Regulations (14 CFR part 39) and should be handled by other methods;
- normal operating and procedural information such as this should be handled through regular revisions to the Airplane Flight Manual (AFM) or Pilot's Operating Handbook (POH); and
- issuing an AD to require a placard that conveys normal operating information reduces the pilots' sensitivity to true emergency information that should be conveyed by placards.

Consequently, FAA issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to withdraw AD 99-05-13. This proposal published in the *Federal Register* as a notice of proposed rulemaking (NPRM) on March 30, 2000 (65 FR 16845).

**Was the public invited to comment?** The FAA invited interested persons to participate in the making of this amendment. The following describes each comment and presents FAA's response.

***Comment Issue No. 1: AD is Valid if an Unsafe Condition Exists***

**What is the Commenter's Concern?** One commenter states that FAA is withdrawing this AD because it is an operational issue and should be handled by other methods. The commenter believes that the AD is valid because FAA has the authority to issue an AD on any issue as long as an unsafe condition exists.

**What is FAA's Response to the Concern?** We concur that we have the authority and responsibility to act on an unsafe condition, regardless of the factors that create the unsafe condition. We were in error in including information in the NPRM specifying that an operational procedure cannot be the subject of an AD. However, we determined that the fuel selector valve, when functioning properly and used properly, does not create an unsafe condition. The FAA determined that the procedures to operate the fuel selector valve are readily available and that our authority is not to issue AD's against aircraft where the operators do not operate the equipment correctly. Utilizing positive detent to assure that the fuel valve is fully open to the tank selected is considered a standard design practice in the aircraft industry.

We are not changing the AD action as a result of this comment.

***Comment Issue No. 2: AD is Needed for Airplanes Without an AFM/POH***

**What is the Commenter's Concern?** One commenter states that many airplanes currently affected by AD 99-05-13 are not required to have a POH, and Civil Aviation Regulations (CAR) part 3 allows a manufacturer to use placards instead of an AFM. The

commenter believes that, for these reasons, the AD is valid.

**What is FAA's Response to the Concern?** We concur that many aircraft do not require a POH and were certificated under CAR part 3 where the use of placards is acceptable over an AFM. However, airplanes in this situation usually only have placards installed that contain safety information when an unusual design, operating, or handling characteristic is prevalent.

The FAA has the authority to issue an AD to require operational placards. However, as discussed above, utilizing a positive detent to assure that the fuel valve is fully open to the tank selected is considered a standard design practice in the aircraft industry.

We are not changing the AD action as a result of this comment.

***Comment Issue No. 3: Placards Are Necessary to Convey Safe Operation***

**What is the Commenter's Concern?** One commenter states that the AD is valid because placards are necessary to convey safe operation for airplanes certificated under the Civil Aviation Regulations and part 23 of the Federal Aviation Regulations (14 CFR part 23). The commenter also states that placards should not be limited to only emergency information.

**What is FAA's Response to the Concern?** We concur that placards are not just limited to emergency information. All required placards should convey information for safe operation. However, both CAR 3.777/3.777-1 and 14 CFR 23.1541 state that placards should convey safe operation information if the aircraft has unusual design, operation, or handling characteristics. As discussed previously, utilizing a positive detent to assure that the fuel valve is fully open to the tank selected is considered a standard design practice in the aircraft industry.

We are not changing the AD action as a result of this comment.

***Comment Issue No. 4: FAA has Changed the Definition of Unsafe Condition***

**What is the Commenter's Concern?** One commenter states that, by withdrawing AD 99-05-13, FAA will have changed the historical definition of an unsafe condition. We infer that the commenter wants to maintain the effectiveness of AD 99-05-13.

**What is FAA's Response to the Concern?** We do not concur that we have altered the definition of an unsafe condition. Determination of an unsafe condition is based on each individual situation. Factors that are considered include the design, operation, or handling characteristics of the type design airplanes. As discussed above, utilizing a positive detent to assure that the fuel valve is fully open to the tank selected is considered a standard design practice in the aircraft industry.

We are not changing the AD action as a result of this comment.

***Comment Issue No. 5: Numerous Occurrences Justify the Current AD***

**What is the Commenter's Concern?** One commenter states that placing a warning placard specifying the safe operation of the fuel selector as AD 99-05-13 requires supports the 49 occurrences from the records of the National Transportation Safety Board (NTSB). We infer that the commenter wants to maintain the effectiveness of AD 99-05-13.

**What is FAA's Response to the Concern?** We do not concur with the commenter's assessment. We have reviewed 37 reports of the above-referenced 49 occurrences (commenter only provided 37). Approximately half of the occurrences listed the cause as

fuel starvation in combination with the fuel selector not positioned in the detent. The most prevalent cause was failure to follow checklist procedures. In no instance was the pilot's lack of knowledge or understanding of the positioning of the fuel selector listed as the cause of the occurrence.

In addition, NTSB has not recommended that FAA issue an AD on this subject. Therefore, we conclude that the commenter believes NTSB supports the placard requirement, when in fact, NTSB has made no recommendation supporting it. Again, utilizing a positive detent to assure that the fuel valve is fully open to the tank selected is considered a standard design practice in the aircraft industry.

We are not changing the AD action as a result of this comment.

#### ***The FAA's Determination***

**What is FAA's final determination on this issue?** Based on the above information, FAA has determined that there is no need for AD 99-05-13 and that it should be withdrawn.

This action withdraws AD 99-05-13. Withdrawal of AD 99-05-13 will not preclude us from issuing another notice in the future, nor will it commit us to any course of action in the future.

#### ***Regulatory Impact***

Since this action only withdraws an AD, it is not an AD and, therefore, is not covered under Executive Order 12866, the Regulatory Flexibility Act, or DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979).

#### ***List of Subjects in 14 CFR Part 39***

Air transportation, Aircraft, Aviation safety, Safety.

#### ***The Withdrawal***

Accordingly, FAA withdraws AD 99-05-13, Amendment 39-11061 (64 FR 10560, March 5, 1999).

### **▼ Regulatory Information**

**99-05-13 RAYTHEON AIRCRAFT COMPANY (Formerly Beech):** Amendment 39-11061  
Docket No. 98-CE-61-AD.

Applicability: Models 17, 18, 19, 23, 24, 33, 35, 36/A36, A36TC/B36TC, 45, 50, 55, 56, 58, 58P, 58TC, 60, 65, 70, 76, 77, 80, 88, and 95 Series Airplanes.

### **▼ Footer Information**

Issued in Kansas City, Missouri, on July 5, 2000.  
Michael Gallagher,  
Manager, Small Airplane Directorate,  
Aircraft Certification Service.

### **▼ Comments**

**FAA.gov Home | Privacy Policy | Web Policies & Notices | Contact Us | Help**

**Readers & Viewers:** [PDF Reader](#) | [MS Word Viewer](#) | [MS PowerPoint Viewer](#) | [MS Excel Viewer](#) | [WinZip](#)

## SERVICE BULLETIN

**Beech****ATA CODE 11-30****TITLE: PLACARDS AND MARKINGS - INSTALLATION OF FUEL SELECTOR PLACARD****SYNOPSIS OF CHANGE**

This Service Bulletin has been revised and is produced in the new Raytheon Aircraft Company Service Bulletin format. Relevant technical changes are marked with change bars in the outside margin. The original Service Bulletin was never issued due to revised effectivity.

### 1. Planning Information

#### A. Effectivity

(1) Airplanes

All Raytheon Aircraft Beech piston powered airplanes to include the following models:

17, 18, 19, 23, 24 Series;

Debonair/Bonanza 33 Series, F33A Serials CE-290 through CE-1791; E33C, F33C, Serials CJ-26 through CJ-179; 35 Series; 36 Series; A36, Serials E-185 through E-3046; A36TC Series; B36TC, Serials EA-242 through EA-591;

45 Series;

Twin Bonanza 50 Series;

Baron 55 Series; 56 Series; 58, Serials TH-1 through TH-1798; 58P Series; 58TC Series;

Duke 60 Series;

Queen Air 65, 70, 80, 88 Series;

Duchess 76 Series;

Skipper 77 Series;

Travel Air 95 Series

If you are no longer in possession of this airplane, please forward this information to the present owner.

Raytheon Aircraft Company (RAC) issues Service Information for the benefit of owners and fixed base operators in the form of two classes of Service Bulletins. The first class, Mandatory Service Bulletins (red border) includes changes, inspections and modifications that could affect safety or crashworthiness. RAC also issues Service Bulletins with no red border which are designated as either recommended or optional in the compliance section within the bulletin. In the case of recommended Service Bulletins, RAC feels the changes, modifications, improvements or inspections will benefit the owner/operator and although highly recommended, Recommended Service Bulletins are not considered mandatory at the time of issuance. In the case of Optional Service Bulletins, compliance with the changes, modifications, improvements or inspections is at the owner/operator's discretion. Both classes are mailed to:

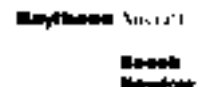
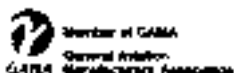
(a) RAC Authorized Service Centers.

(b) Owners of record on the FAA Aircraft Registration Branch List and the RAC International Owner Notification/Registration Service List.

(c) Those having a publications subscription.

Information on Owner Notification Service or subscription can be obtained through any RAC Authorized Service Center. As Mandatory Service Bulletins and Service Bulletins are issued, temporary notification in the Service Bulletin Master Index should be made until the index is revised. Warranty will be allowed only when specifically defined in the Service Bulletin and in accordance with the RAC Warranty Policy.

Unless otherwise designated, RAC Mandatory Service Bulletins, Service Bulletins and RAC Kits are approved for installation on RAC airplanes in original or RAC modified configurations only. RAC Mandatory Service Bulletins, Service Bulletins and Kits may not be compatible with airplanes modified by STC installations or modifications other than RAC approved kits.



## SERVICE BULLETIN

---

(2) Spares

None.

### **B. Reason**

This Service Bulletin is being issued to add placards to the fuel selector because Raytheon Aircraft Company has received reports of incidents and accidents involving Beech piston airplanes in which engine stoppage may have been caused by incorrectly positioning the fuel selector between tank detents.

### **C. Description**

This Service Bulletin provides instructions for the installation of a placard on the fuel selector to warn of the no-flow condition that exists between the fuel tank detents.

### **D. Compliance**

Raytheon Aircraft Company considers this to be a mandatory modification and it must be accomplished as soon as possible after receipt of this Service Bulletin, but no later than the next scheduled inspection.

An Airworthiness Directive has been requested on the matter covered by this Service Bulletin.

### **E. Approval**

The engineering data contained in this Service Bulletin is FAA approved.

### **F. Manpower**

The following information is for planning purposes only:

Estimated man-hours: 0.5 hour.

Suggested number of men: 1 man.

The above is an estimate based on experienced, properly equipped personnel complying with this Service Bulletin. Occasionally, after work has started, conditions may be found which could result in additional man-hours.

### **G. Weight and Balance**

None.

### **H. Electrical Load Data**

Not changed.

### **I. Software Accomplishment Summary**

Not applicable.

### **J. References**

None.

## SERVICE BULLETIN

---

### K. Publications Affected

The following changes to the FAA Approved Flight Manuals and Applicable Pilot's Operating Handbooks will be issued concurrently:

- A new Model 56TC/A56TC Approved Airplane Flight Manual
- Temporary Changes to the Applicable Pilot's Operating Handbooks
- Temporary Changes to the Applicable FAA Approved Flight Manuals
- A new FAA Approved Airplane Flight Manual Supplement to Models 95, B95, B95A, D95A, and E95

### L. Interchangeability of Parts

Not applicable.

### M. Warranty Credit

None.

## 2. Material Information

### A. Materials - Price and Availability

Contact a Raytheon Aircraft Authorized Service Center for information.

### B. Industry Support

Not applicable.

### C. Airplanes

The following part required for this modification may be ordered through a Raytheon Aircraft Authorized Service Center:

| Part Number | Description | Quantity Per Airplane |
|-------------|-------------|-----------------------|
| 36-920059-1 | Placard     | 1 Sheet               |

Raytheon Aircraft Company expressly reserves the right to supersede, cancel and/or declare obsolete, without prior notice, any parts or publications that may be referenced in this Service Bulletin.



## SERVICE BULLETIN

The following materials may be obtained locally:

| Part Number    | Description | Quantity Per Airplane |
|----------------|-------------|-----------------------|
| TT-N-95 Type 2 | Naphtha     | As Required           |

### D. Spares

Not applicable.

### E. Reidentified Parts

None.

### F. Tooling - Price and Availability

Not applicable.

## 3. Accomplishment Instructions

This Service Bulletin shall be accomplished as follows:

### NOTE

Should any difficulty be encountered in accomplishing this Service Bulletin, contact Raytheon Aircraft Company at [REDACTED] or [REDACTED]

### A. Airplane

### NOTE

This modification may be accomplished by an FAA licensed pilot.

- (1) Figures 1 and 2 (and matching placards attached) are to be used primarily for the serials shown but may be used as an example of suitable configurations for typical Beech single-engine and twin-engine Beech airplanes. The no-flow sectors include the areas between tank detents and any "OFF" selection. Ensure that the placard does not cover any existing words or markings.
- (2) Figure 3 (and matching placards attached) shows representative warning which should be attached to the fuel selector valve area and Flight Manual.
- (3) The placards on the bottom of the sheet with "ENGINES" in plural, are to be used for twin engine airplanes only. The rest should be used on single engine airplanes. Cut the appropriate placard from the sheet and trim to fit on available space of the fuel selector valve. Do not remove the paper from the backside of the placard until the placard is ready to be installed.

|                |
|----------------|
| <b>WARNING</b> |
|----------------|

**Cleaning fluid is flammable. Maintain adequate ventilation.**

## SERVICE BULLETIN

---

- (4) Dampen a soft cloth sparingly with solvent, and clean the face of the fuel selector valve.
- (5) Remove paper from adhesive side of the placard and affix to face of fuel selector valve.
- (6) Ensure all work areas are clean and clear of tools and miscellaneous items of equipment.
- (7) Insert Figure 3 at the end of your AFM, if applicable. If your airplane has a POH or POM, you will receive a Temporary Revision or Supplement.
- (8) Return airplane to service.

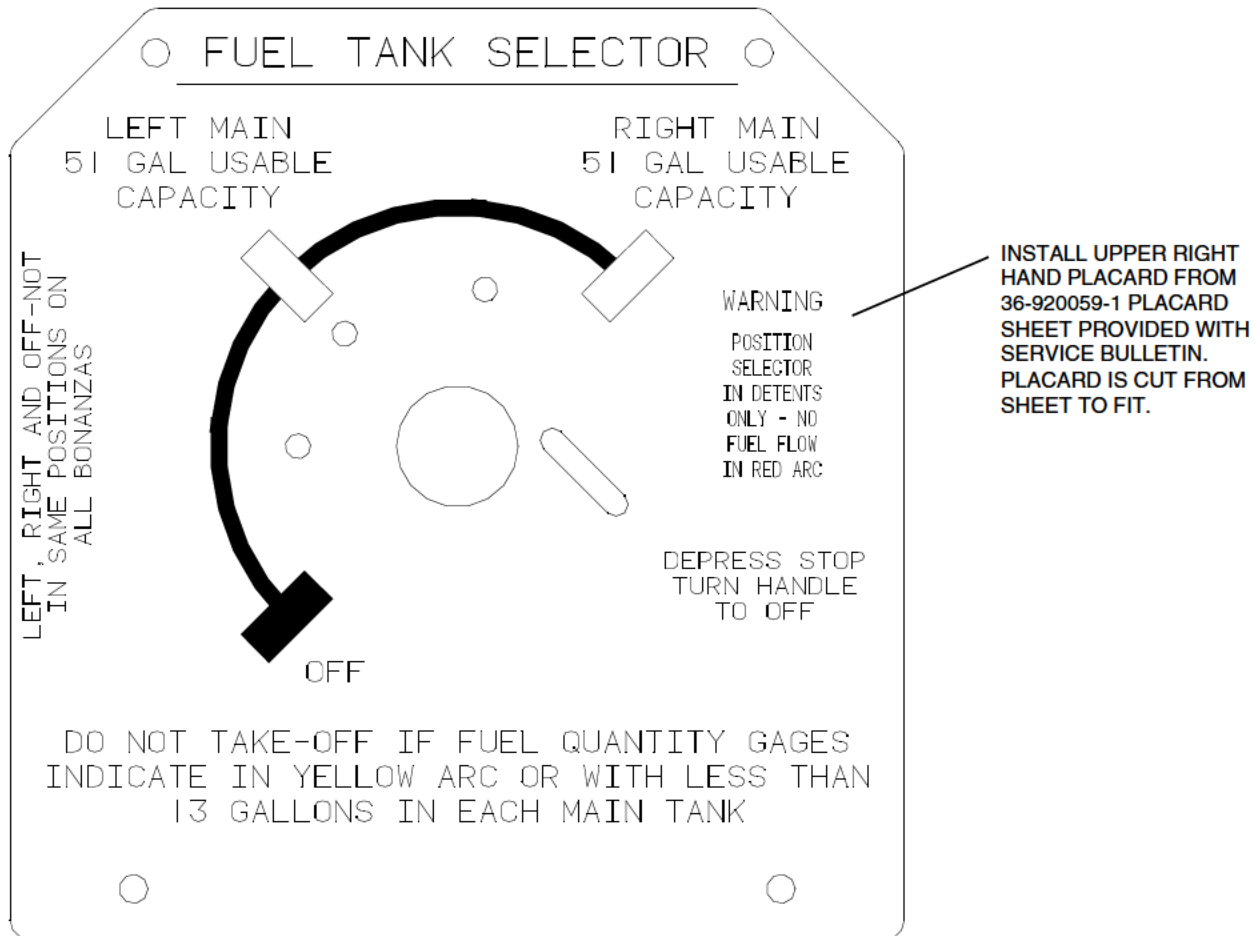
### **B. Spares**

Not applicable.

### **C. Record of Compliance**

Upon completion of this Service Bulletin, make an appropriate maintenance record entry.

### SERVICE BULLETIN



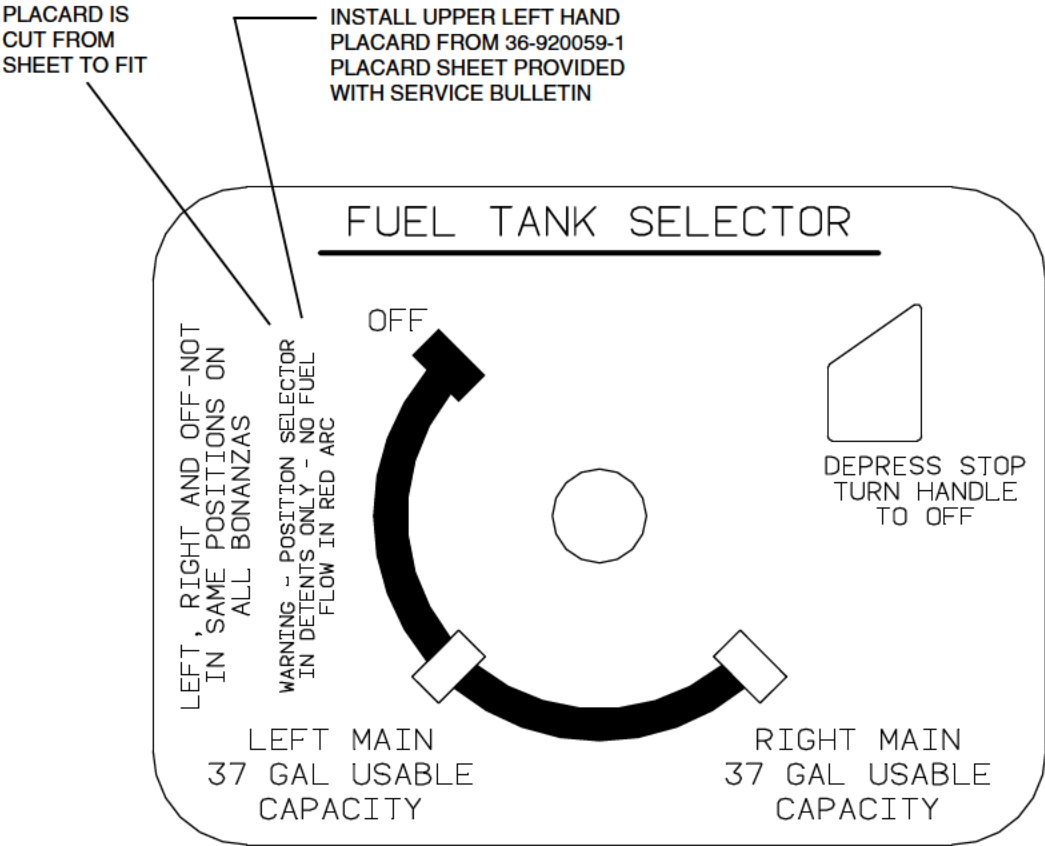
FUEL SELECTOR VALVE  
(B36TC SHOWN, A36TC SIMILAR)

EFF: A36TC SERIAL EA-1 THRU EA-241 AND EA-243 THRU EA-272 WITH BEECH KIT NO. 36-9008-1 INSTALLED, KIT SERIAL NUMBERS 101 THRU 389 ONLY. B36TC SERIALS EA-242 AND EA-273 THRU EA-591.

B267001.AI

Figure 1

**SERVICE BULLETIN**



FUEL TANK SELECTOR COVER  
EFF: F33A - CE-1014 THRU CE-1791  
F33C - CJ-156 THRU CJ-179  
A36 - E-2062 THRU E-3046

B267002.AI

Figure 2

## SERVICE BULLETIN

---

WARNING - POSITION SELECTOR  
IN DETENTS ONLY - NO FUEL  
FLOW IN RED ARC

WARNING  
POSITION  
SELECTOR  
IN DETENTS  
ONLY - NO  
FUEL FLOW  
IN RED ARC

WARNING - POSITION SELECTOR IN DETENTS ONLY - NO FUEL FLOW TO ENGINE BETWEEN DETENTS

WARNING  
POSITION SELECTOR IN DETENTS ONLY  
NO FUEL FLOW TO ENGINE BETWEEN DETENTS

WARNING  
POSITION SELECTOR  
IN DETENTS ONLY  
NO FUEL FLOW TO ENGINE  
BETWEEN DETENTS

WARNING  
POSITION  
SELECTOR  
IN DETENTS  
ONLY - NO  
FUEL FLOW  
TO ENGINE  
BETWEEN  
DETENTS

WARNING - POSITION SELECTORS IN DETENTS ONLY - NO FUEL FLOW TO ENGINES BETWEEN DETENTS

WARNING  
POSITION SELECTORS IN DETENTS ONLY  
NO FUEL FLOW TO ENGINES BETWEEN DETENTS

WARNING  
POSITION SELECTORS  
IN DETENTS ONLY  
NO FUEL FLOW TO ENGINES  
BETWEEN DETENTS

WARNING  
POSITION  
SELECTORS  
IN DETENTS  
ONLY - NO  
FUEL FLOW  
TO ENGINES  
BETWEEN  
DETENTS

B267003.AI

**Placard Sheet P/N 36-920059-1**

# Carburetor Icing Probability Graph – CEN21LA151

Airplane: Beech 35

Engine: Continental Motors E-185-8

Fuel: 100LL

Accident Date: 03/06/2021

Accident Location: Palestine, TX

Accident Time: 1217 CT

Weather: KPSN 061815Z [1215 CT] AUTO 06011KT 10SM  
CLR 16/03 A3032 RMK AO2

Celsius to Fahrenheit Conversion:

Temperature, 16° C = 60.8° F

Dew Point, 3° C = 37.4° F

Source: Federal Aviation Administration

Special Airworthiness Information Bulletin CE-09-35

Carburetor Icing Prevention

