



WESTERN
Skyways
INC.

GOLD SEAL AIRCRAFT ENGINES

**FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
FOR
BEECHCRAFT
DEBONAIR 35-C33A AND
BONANZA E33A, F33A, V35, V35A, V35B, S35, 36, A36**

**INSTALLATION OF
WESTERN SKYWAYS
TURBO-NORMALIZED IO-520-B, -BA, OR -BB ENGINE
STC SA8676SW**

Model No. _____
Registration No. _____
Serial No.: _____

This supplement must be attached to the appropriate FAA Approved Airplane Flight Manual when the aircraft is modified in accordance with **STC SA8676SW**. The information contained herein supplements or supersedes the Airplane Flight Manual only in those areas listed herein. For information not contained in this supplement, consult the basic Airplane Flight Manual.

FAA APPROVED

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Revision B Issue Date: JAN 23, 2009
Original Issue Date: JUN 26, 2006



SECTION IV NORMAL PROCEDURES

For procedures other than those listed in this section, refer to the basic Airplane Flight Manual.

STARTING

For all aircraft except for A36 aircraft (S/N E-1946, E-2104, and E-2111 and after), change

Auxiliary Fuel Pump - ON to Auxiliary Fuel Pump - HI.

BEFORE TAKEOFF

No change except:

Mixture - FULL RICH

TAKEOFF

Take-Off Power 29.6 in. Hg and 2700 RPM

1. Power - SET
 - a. Throttle - 29.6 in. Hg
 - b. Propeller - 2700 RPM
 - c. Mixture - FULL RICH
2. Auxiliary Fuel Pump - OFF. Select LO if above 10,000 feet.

Remaining TAKEOFF procedure is unchanged.



MAXIMUM PERFORMANCE CLIMB

Maximum Continuous Power 29.6 in. Hg or Full Throttle,
whichever occur first, and 2700 RPM
Airspeed See Basic AFM

1. Cowl Flaps - FULL OPEN
2. Power - SET as above.
3. Mixture - FULL RICH. Fuel flow should be between approximately 28.0 and 30.5 gph up to critical altitude (approximately 17,000 feet pressure altitude). Above the critical altitude, the fuel control unit should maintain the following approximate schedule when at full throttle:

MANIFOLD PRESSURE (in. Hg)	APPROX. FUEL FLOW (gph)
29.0	27.7 to 28.7
28.0	27.0 to 28.0
27.0	26.4 to 27.4
26.0	25.7 to 26.7
25.0	25.1 to 26.1
24.0	24.3 to 25.3

4. Airspeed - as above
5. Engine Temperatures - Monitor
6. Auxiliary Fuel Pump - LO above 10,000 feet or if fuel flow begins fluctuating and/or decreases below minimum fuel flows above.
7. Oxygen - As Required



CRUISE CLIMB

Cruise Climb Power 29.6 in. Hg or Full Throttle,
whichever occur first, and 2500 RPM
Airspeed See Basic AFM

1. Cowl Flaps - FULL OPEN
2. Power - SET as above.
3. Mixture - FULL RICH. Fuel flow should be between 26.5 and 28.5 gph up to critical altitude (approximately 18,000 feet pressure altitude). Above the critical altitude, the fuel control unit should maintain the following approximate schedule when at full throttle:

MANIFOLD PRESSURE (in. Hg)	APPROX. FUEL FLOW (gph)
29.0	26.1 to 27.1
28.0	25.5 to 26.5
27.0	24.9 to 25.9
26.0	24.4 to 25.4
25.0	23.9 to 24.9

4. Airspeed - as above
5. Engine Temperatures - Monitor
6. Auxiliary Fuel Pump - LO above 10,000 feet or if fuel flow begins fluctuating and/or decreases below minimum fuel flows above.
7. Oxygen - As Required

CRUISE

1. Cowl Flaps - CLOSE
2. Power - SET

WARNING

Retarding the throttle to idle may cause engine combustion to cease depending upon mixture setting, auxiliary fuel pump operation, and altitude. If the engine fails, the engine will normally restart by conducting ENGINE FAILURE/LOSS OF ENGINE POWER – IN FLIGHT – IF DUE TO RETARDING ENGINE TO IDLE in Section III Emergency Procedures of this AFMS.

NOTE

Set Cruise Power (Manifold Pressure and RPM) using Sea-Level (SL) conditions for the appropriate outside air temperature in the CRUISE POWER SETTINGS tables and charts in the basic AFM.

3. Auxiliary Fuel Pump - OFF. Select LO if above 10,000 feet or if fuel flow fluctuates or decreases.

CAUTION

Before a climb is initiated at climb power settings when above 10,000 feet, and if not already, select LO on the auxiliary fuel pump.

4. Mixture - SET FUEL FLOW using TIT as described in LEANING MIXTURE USING THE TURBINE INLET TEMPERATURE (TIT) INDICATION procedure below in this AFMS.
5. Engine Temperatures - MONITOR
6. Oxygen - As Required

WARNING

Resulting fuel flows due to this installation are similar to the basic AFM published fuel flows at sea-level when operating below the critical altitude and are greater than the basic AFM published fuel flows when at higher altitudes. No re-determination of range and endurance has been made for this installation. To ensure required fuel reserves will be maintained during any flight, the pilot must monitor fuel consumption and fuel quantity indications.

NOTE

If being used, do not turn Auxiliary Fuel Pump OFF after the mixture has been leaned without first returning mixture control to FULL RICH.

Do not select a higher power setting after mixture has been leaned without first returning mixture control to FULL RICH.

The mixture should be readjusted after a change in altitude, even if the power setting has not changed.

Above the critical altitude:

- a. Minimum recommended power settings is 18 in. Hg. and 2100 RPM.
- b. Power reductions or increases should be made slowly with necessary mixture adjustments in a sequence of two or three increments.
- c. Any change in RPM will result in a change in manifold pressure. A decrease in RPM under some conditions will produce an increase in manifold pressure.
- d. Any change in airspeed will result in a corresponding change in manifold pressure.

LEANING MIXTURE USING THE TURBINE INLET TEMPERATURE (TIT) INDICATION

This section replaces the LEANING USING THE EXHAUST GAS TEMPERATURE INDICATOR (EGT) in the basic AFM. The TIT indication will be used as primary for leaning the engine mixture. If installed, the EGT indication is supplemental.

A thermocouple-type Turbine Inlet Temperature (TIT) probe is mounted at the inlet of the turbine portion of the turbocharger. This probe is connected to the STC approved TIT indicator on the instrument panel.

Use the TIT indication to lean the fuel/air mixture for engine power settings of 25 in. Hg. manifold pressure and 2500 RPM or less in the following manner, other wise use FULL RICH.

WARNING

Resulting fuel flows due to this installation are similar to the

basic AFM published fuel flows at sea-level when operating below the critical altitude and are greater than the basic AFM published fuel flows when at higher altitudes. No re-determination of range and endurance has been made for this installation. To ensure required fuel reserves will be maintained during any flight, the pilot must monitor fuel consumption and fuel quantity indications.

1. If the J.P. Instruments EDM 700/800, Electronics International UBG-16, or equivalent approved TIT indicator is installed and used as primary TIT indication, sequence the indicator using the STEP button to digitally display the TIT indication.
2. After engine power is set (25 in. Hg. manifold pressure and 2500 RPM or less), lean the mixture to peak TIT or 1650°F (899°C), whichever comes first.

CAUTION

Do not exceed TIT Limit of 1650°F (899°C) or CHT limit of 238°C (460°F) when leaning.

3. Then en-richen the mixture until the TIT indications shows a drop of 100°F (rich side).

DESCENT

1. Altimeter - SET
2. Cowl Flaps - CLOSED
3. Power - AS REQUIRED (avoid prolonged idle power settings and low cylinder head temperatures.)

WARNING

Retarding the throttle to idle may cause engine combustion to cease depending upon mixture setting, auxiliary fuel pump operation, and altitude. If the engine fails, the engine will normally restart by conducting ENGINE FAILURE/LOSS OF ENGINE POWER – IN FLIGHT – IF DUE TO RETARDING ENGINE TO IDLE in Section III Emergency Procedures of this AFMS.

NOTE

Minimum recommended power setting is 18.0 in. Hg and 2100 RPM and with Mixture leaned to 100°F rich of peak TIT or 1650°F (899°C) whichever comes first.

Maintain cylinder head temperatures of 116°C (240°F) or greater.

If manifold pressure begins to increase during descent, retard throttle to maintain original power setting.

4. Auxiliary Fuel Pump - OFF. Select LO if above 10,000 feet or if fuel flow fluctuates or decreases.

NOTE

Do not turn Auxiliary Fuel Pump OFF after mixture has been leaned without first returning mixture control to FULL RICH.

5. Mixture - LEANED TO 100°F rich of peak TIT or 1650°F, whichever comes first.
6. Flaps - AS REQ'D
7. Windshield Defroster - AS REQ'D (ON before descent into warm, moist air)

BEFORE LANDING

No change except:

Mixture - FULL RICH

Auxiliary Fuel Pump - OFF. Select LO if above 10,000 feet.

BALKED LANDING

No change except:

Throttle - 29.6 in. Hg and 2700 RPM



AFTER LANDING

No change except

Auxiliary Fuel Pump - OFF

NOTE

During the landing roll-out or while taxiing to park, the engine may shutdown for continuous engine operations with the throttle reduced completely to idle.

NOISE CHARACTERISTICS

This modification is considered to have "no acoustical change".



SECTION V PERFORMANCE

Even though performance may be improved, the performance data published in the basic Airplane Flight Manual should be used for planning purposes.

WARNING

Resulting fuel flows due to this installation are similar to the basic AFM published fuel flows at sea-level when operating below the critical altitude and are greater than the basic AFM published fuel flows when at higher altitudes. No re-determination of range and endurance has been made for this installation. To ensure required fuel reserves will be maintained during any flight, the pilot must monitor fuel consumption and fuel quantity indications.