

**FLIGHT MANUAL
SUPPLEMENT**

Flightcraft, Inc.
STC No. SA2682NM

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
FOR
BEECH MODEL 36 AND A36 NORMAL CATEGORY AIRPLANES
S/N E-262 R/N N122PC

This supplement must be attached to the appropriate DOA approved Airplane Flight Manual when a Continental Model IO-550-B engine and McCauley D3A32C409-82NDB-2 propeller with associated spinner are installed on Beech Model 36 and A36 airplanes. The information contained herein supplements or supersedes the basic manual only in those areas listed herein. For limitations, procedures and performance information not contained in this supplement, consult the basic Airplane Flight Manual.

FAA Approved: Stewart R. Miller
Assistant Manager, Seattle
Aircraft Certification Office

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Page 1 of 8

I. GENERAL

No change

II. LIMITATIONS

Delete all limitations dealing with Utility Category Operation.

POWER PLANT LIMITATIONS

ENGINE

The modified 36 and A36 airplanes are powered by one Continental IO-550-B, fuel-injected, direct drive, aircooled, horizontally opposed, 6-cylinder, 550 cubic inch displacement, engine rated at 300 Hp.

OPERATING LIMITATIONS

Take-off and Maximum

Continuous Power.....Full Throttle, 2700 rpm

Cylinder Head Temperature

Maximum.....238°C

Oil Temperature

Minimum (Take-off)..... 24°C

Maximum.....116°C

Oil Pressure

Minimum (Idle)..... 10 psi

Maximum.....100 psi

Fuel Flow

Maximum..... 27.4 gph

AUX FUEL PUMP

The HI position of the auxiliary fuel pump is not to be used during flight except when failure of the engine-driven fuel pump occurs. Use LOW position for fuel vaporization problems.

PROPELLER SPECIFICATIONS

The modified 36 and A36 airplanes are equipped with McCauley constant-speed three-blade propeller using a D3A32C409-X hub with X-82NDB-2 blades. The pitch settings at the 30 inch propeller blade station are: Low $13.7^{\circ} \pm .2^{\circ}$; High, $28.8^{\circ} \pm .5^{\circ}$. The propeller diameter is: Max. 80 inches; Min. 78 1/2 inches. The letters appearing in the place of the X represent minor variations in the propeller hub or blades. They do not affect eligibility of interchangeability.

11. LIMITATIONS (Continued)

POWER PLANT INSTRUMENT MARKINGS

OIL TEMPERATURE

Caution Range (Yellow Radial)..... 24° to 38°C
Operating Range (Green Arc)..... 38° to 116°C
Maximum (Red Radial)..... 116°C

OIL PRESSURE

Minimum (Idle) (Red Radial)..... 10 psi
Caution Range (Yellow Arc)..... 10 to 30 psi
Operating Range (Green Arc)..... 30 to 60 psi
Maximum (Red Radial)..... 100 psi

TACHOMETER

Operating Range (Green Arc)..... 1800 to 2700 rpm
Maximum (Red Radial)..... 2700 rpm

CYLINDER HEAD TEMPERATURE

Operating Range (Green Arc)..... 116° to 238°C
Maximum (Red Radial)..... 238°C

MANIFOLD PRESSURE

Operating Range (Green Arc)..... 15.0 to 29.6 in. Hg
Maximum (Red Radial)..... 29.6 in. Hg

FUEL FLOW

Operating Range (Green Arc)..... 3.0 to 27.4 gph
Maximum (Red Radial)..... 27.4 gph

No other powerplant limitation changes.

MANEUVER LIMITS

This is a normal category airplane. Spins are prohibited. No acrobatic maneuvers are approved except those listed under Approved Maneuvers.

APPROVED MANEUVERS

(Use original table)

Minimum fuel for above maneuvers - 10 gallons each main tank.

Maximum slip duration..... 30 seconds

II. LIMITATIONS (Continued)

FLIGHT LOAD FACTOR LIMITS

<u>FLAPS UP</u>	<u>FLAPS DOWN</u>
3.8 positive g's	3.0 positive g's
1.52 negative g's	

No other maneuver limitation changes.

PLACARDS

Operational placard mounted on the instrument panel in full view of the pilot:

NORMAL CATEGORY AIRPLANE

This airplane must be operated in compliance with the operating limitations stated in the form of placards, markings, and manuals. Maximum weight 3600 lbs. Refer to weight and balance data for loading instructions. Occupied seats must be in upright position during takeoff and landing. Altitude lost in stall recovery 300 ft. Flight maneuvering load factors: Flaps up 3.8g's; Flaps down 3.0g's; no aerobatic maneuvers approved, except those listed below:
(Add airspeed table from existing placard)

Fuel boost pump and switch markings mounted on the instrument panel adjacent to the propeller and throttle controls in full view of the pilot:

HI
OFF
LOW

AUX FUEL PUMP
HI FOR PRIMING AND ENGINE
DRIVEN PUMP FAILURE ONLY

No other placards changes.

II. LIMITATIONS: (Continued)

Noise Level

This powerplant modification results in no acoustical change from the originally approved airplane configuration.

No determination has been made by the FAA that the noise levels of this airplane are or should be acceptable or unacceptable for operation at, into, or out of, any airport.

The above statement notwithstanding, the relative noise level of the modified aircraft has been verified and approved by the FAA by comparative means to the original Beech powerplant configurations.

No other Limitation changes.

III. EMERGENCY PROCEDURES

ENGINE FAILURE

DURING TAKE-OFF GROUND ROLL

1. Throttle - CLOSED
2. Braking - MAXIMUM
3. Fuel Selector Valve - OFF
4. Battery and Alternator Switches - OFF

IN FLIGHT

If engine failure occurs immediately after lift off, landing straight ahead is usually advisable. Maintain 85 kts. minimum. If sufficient time is available, accomplish the following:

1. Fuel Selector Valve - SELECT OTHER TANK (feel for detent)
2. Magneto/Start Switch - CHECK BOTH
3. Auxiliary Fuel Pump - HI
4. Mixture Control - FULL RICH, then LEAN AS REQUIRED

If No Restart

1. Auxiliary Fuel Pump - OFF
2. Mixture - FULL RICH
3. Magneto/Start Switch - CHECK LEFT: RIGHT, THEN BOTH
4. Alternate Air T-Handle - PULL AND RELEASE

III. EMERGENCY PROCEDURES (Continued)
ENGINE FAILURE (Continued)

If No Restart

1. Select most favorable landing site.
2. The use of landing gear is dependent on the terrain where landing must be made.
3. See LANDING WITHOUT POWER Procedures.

WARNING

If power is restored with the Auxiliary Fuel Pump - HI, THEN MANUAL adjustment of the mixture control will be required for all power changes to prevent engine roughness. Do not retard throttle to idle until landing is assured.

ROUGH RUNNING ENGINE

1. Aux Fuel Pump - LO
2. Mixture - FULL RICH, then LEAN as required
3. Magneto/Start Switch - CHECK LEFT; RIGHT, THEN BOTH

PROPELLER OVERSPEED

1. Throttle - RETARD
2. Airspeed - REDUCE UNTIL RPM IS AT OR BELOW 2700 RPM
3. Oil Pressure - CHECK

WARNING

If loss of oil pressure was the cause of overspeed, the engine will seize after a short period of operation. (See LANDING WITHOUT POWER Procedure earlier in this Section)

No other procedure changes.

IV. NORMAL PROCEDURES

BEFORE STARTING

Add to the end of existing statement:

Auxiliary Fuel Pump - LO

Auxiliary Fuel Pump - OFF

AT STARTING

Add item 4:

4. Auxiliary Fuel Pump - HI until fuel flow peaks, then OFF

IV. NORMAL PROCEDURES (Continued)
AT STARTING (Continued)

Add to the end of existing statement:

HOT STARTS

1. Mixture - IDLE CUT-OFF
2. Propeller - HIGH RPM
3. Throttle - FULL OPEN
4. Auxiliary Fuel Pump - HI, for 30-60 seconds, then, OFF
5. Mixture - FULL RICH
6. Auxiliary Fuel Pump - HI until fuel flow peaks then, OFF
7. Throttle - CLOSE, THEN OPEN APPROXIMATELY 1/2 inch
8. Magneto/Start Switch - START position release to BOTH when engine starts.
9. Auxiliary Fuel Pump - HI momentarily after starting to purge the system then, OFF.

BEFORE TAKE-OFF

Add to the end of existing statement:

Auxiliary Fuel Pump - OFF

CLIMB

Add to the end of existing statement:

Auxiliary Fuel Pump - OFF. If engine roughness or fuel flow fluctuations occur - LO and manually lean to the following fuel flow schedule:

MANUAL LEANING FUEL FLOW SCHEDULE
FOR FULL THROTTLE
AND 2700 RPM

PRESSURE ALTITUDE (Feet)	FUEL FLOW (gph)
SL	26.0
2000	24.0
4000	22.5
6000	21.0
8000	19.5
10,000	18.0
12,000	16.5
14,000	15.0
16,000	13.5

Manual leaning fuel flows for full throttle and 2500 rpm are 1 gph less than those shown on the schedule.

IV NORMAL PROCEDURES (Continued)
CLIMB (Continued)

CAUTION

Engine roughness, fuel flow fluctuation or low fuel flow can occur when climbing on hot days. These can be eliminated by switching the auxiliary fuel pump from OFF to LO and manually leaning to the preceding fuel flow schedule.

No other procedure changes.

V. PERFORMANCE

Performance with the Continental IO-550-B engine and McCauley D3A32C409-82NDB-2 propeller equals or exceeds the performance with the original engine.

No other change.