



*Beechcraft*  
***Mentor T-34B***

*Checklist*



Beechcraft  
**Mentor T-34B**

**PREFLIGHT CHECK.**  
**BEFORE EXTERIOR INSPECTION.**

1. Form 781- check.
2. Battery and ignition switches- check OFF.
3. Aileron trim tab wheel - 0 degrees.
4. Rudder trim tab knob - 0 degrees.
5. Elevator trim tab wheel - 0 degrees.
6. Landing gear handle - DOWN.
7. Landing gear emergency retract switch - OFF and safetied.
8. Canopy emergency release handle seal - undamaged.
9. Flight controls - unlocked.
10. Flight information publications - check. Check that required navigation and letdown publications are aboard aircraft and accessible.
11. Rear Cockpit Check for Solo Flight.
12. Safety belt - secure.
13. Shoulder harness - secure.
14. Headset - stowed.
15. Flight controls - free from obstruction.
16. Directional indicator - caged.
17. Fuel booster pump override switches - FORWARD COCKPIT CONTROL.
18. Rear canopy - closed and locked.

**EXTERIOR INSPECTION.**

Starting at the inboard trailing edge of the left wing, perform the following exterior inspection check using the inspection route outlined. During this inspection, check all exterior surfaces for skin damage or other obvious defects. In addition, check beneath the aircraft for signs of fluid leakage.

1. Left wing.
  - a. Wing flap - check.
  - b. Aileron - check; trim tab for servo action.
  - c. Leading edge and landing light - check.
  - d. Pilot tube - check.
  - e. Fuel quantity - check, cap secure.
  - f. Air intake - check, screen clean.
2. Left main gear.
  - a. Wheel chocks - in place.
  - b. Tire - check.
  - c. Wheel brake - check puck, hydraulic line, adjusting pin recessed 3/16 inch maximum.
  - d. Strut - check.
  - e. Landing gear doors - check.
  - f. Wheel well - unobstructed.
3. Nose section.
  - a. Left augmentor tube - unobstructed.
  - b. Left cowling - secure.
  - c. Propeller - check.
  - d. Passing light - secure.
  - e. Air intake - check, unobstructed.
  - f. Strut - check.
  - g. Tire and static wire - check.
  - h. Nose landing gear doors - check.
  - i. Wheel well - unobstructed.
  - j. Right cowling - secure.
  - k. Battery and battery retainer bar - secure.
  - l. Battery sump jar - check.
  - m. Exterior canopy emergency release handle - undisturbed.
  - n. Right augmentor tube - unobstructed.
4. Right main gear - check same as left main gear.
5. Right wing.



Beechcraft  
**Mentor T-34B**

- a. Air intake - check, screen clean.
- b. Fuel quantity - check, cap secure.
- c. Leading edge and landing light - check.
- d. Wing tip and navigation light - check.
- e. Aileron - check; trim tab for servo action.
- f. Wing flap - check.
- 6. Fuselage right side.
  - a. Fuel tank vent - check, 12 degrees forward pitch.
  - b. Antenna - secure.
  - c. Static air vent - unobstructed.
- 7. Empennage.
  - a. Right horizontal stabilizer - check.
  - b. Right elevator and trim tab - check.
  - c. Vertical fin - check.
  - d. Rudder - check; trim tab for anti-servo action.
  - e. Navigation light - check.
  - f. Left elevator and trim tab - check.
  - g. Left horizontal stabilizer - check.
- 8. Fuselage left side.
  - a. Tail skid - check.
  - b. Under side - check.
  - c. Static air vent - unobstructed.
  - d. Baggage compartment - check, door secured.

#### **WARNING.**

If aerobatics are to be performed, remove all equipment or other objects from the baggage compartment.

- e. Fuel tank vent - check, 12 degrees forward pitch.

#### **ON ENTERING THE AIRCRAFT.**

##### **INTERIOR INSPECTION.**

- 1. Seat - adjust and lock.
- 2. Seat belt and shoulder harness - fastened.
- 3. Inertia reel lock - check.
- 4. Parking brakes - set.
- 5. Flight controls - check freedom of movement and response.
- 6. Wing flap lever - NEUTRAL.  
If flaps are not up, move flap lever to UP; When flaps are up, move lever to NEUTRAL.
- 7. Landing light switches - OFF.
- 8. Fuel selector valve handle - LEFT TANK (if tank is 3/4 or more full).

#### **NOTE**

Each time the fuel tank selector valve handle is moved from one position to the other, the "click and feel" method should be utilized in conjunction with lining up the handle pointer with the marked position on the fuel tank selector.

- 9. Fuel booster pump switch - LEFT.
- 10. Trim tabs - set for take-off.
  - a. Aileron trim tab wheel - 0 degrees.
  - b. Rudder trim tab knob - 3 degrees RIGHT (R).
  - c. Elevator trim tab wheel - 3 degrees UP.
- 11. Engine control quadrant friction lock knob - adjusted.
- 12. Mixture level - IDLE CUT-OFF.
- 13. Propeller lever - FULL INCREASE.
- 14. Throttle - cracked 1/4 inch.
- 15. Ignition switch - OFF.
- 16. Landing gear handle - DOWN.
- 17. Landing gear emergency retract switch - guard safetied.
- 18. Carburetor heat handle - IN and LOCKED.



Copyright 2004 Carenado®



Beechcraft  
**Mentor T-34B**

19. Clock and altimeter - set.
  20. Vertical Velocity Indicator - check for zero reading.
  21. Attitude indicator and directional indicator - uncaged.
  22. Primer switch - OFF.
  23. Safter switch - OFF.
  24. Battery switch - OFF.
  25. Generator switch - ON.
  26. Cockpit air handles - as desired.
  27. Landing gear emergency handcrank - disengaged (clutch knob UP and LOCKED).
  28. Inverter switch - OFF.
  29. Light switches and rheostats - OFF.
  30. Radio switch - OFF.
  31. Pitot heater switch - OFF (guard down).
  32. Circuit breakers - IN.
  33. Battery switch - ON.
- If external power is available, leave battery switch OFF.*
34. Landing gear position indicators - check.
  35. Landing gear warning light - test.
  36. Fuel quantity gages - check.
  37. Fuel pressure (booster pump) - check.
  38. Generator and inverter warning lights - check illuminated.
  39. Navigation lights - check STEADY and FLASH positions.
  40. External gear down indicator lights - check illuminated.
  41. Passing light - check.
  42. Pitot heat - check.
  43. Instrument and console lights - check.
  44. Landing lights - check.
  45. Flashlight on board and ready for use - check.

#### **BEFORE STARTING ENGINE.**

*Always make sure a fire guard is posted, the propeller area clear, and wheel chocks in place before starting engine. Set the parking brake and leave canopy open until the engine is running.*

#### **STARTING ENGINE.**

*The engine can be started from the front cockpit only. Start the engine as follows:*

1. Starter - engage.

*Check for possible hydraulic lock as engine makes first two revolutions. If hydraulic lock is suspected or encountered, discontinue starting at-tempt and have lower spark plugs removed to drain fluid from cylinders before a restart is attempted.*

2. Ignition switch - BOTH (after two engine revolutions).

#### **CAUTION.**

*Primer is very sensitive. Prime 1/2 to one second when engine is cold. Only a rapid momentary actuation is required when the engine is hot. Primer is neither recommended nor required for warm weather starts.*

3. Mixture lever - FULL RICH.

4. Starter switch - OFF (after engine starts).

*Continue to prime intermittently, if necessary, to keep engine running.*

#### **NOTE.**

*If engine does not fire after 10 to 15 seconds of continuous cranking or if engine starts then ceases firing, release starter which and proceed as follows:*

- a. Fuel booster pump switch - OFF.
- b. Ignition switch - OFF.
- c. Mixture lever - IDLE CUT-OFF.
- d. Throttle - OPEN.

*Attempt to clear engine of excess fuel by turning it over several times with starter then repeat starting procedure.*





## Beechcraft Mentor T-34B

5. Throttle - 1000 rpm.

6. Oil pressure gage - check.

If oil pressure does not start to rise within 10 seconds or reach 30 psi in 30 seconds, shut down engine and investigate.

### ENGINE GROUND OPERATION.

1. Throttle - 1200 to 1600 rpm (for engine warm-up)

Warm up engine at the lowest speed between 1200 and 1600 rpm at which smooth operation is obtained until the oil temperature shows a definite increase or until the oil pressure is stabilized. Do not exceed 1600 rpm until oil temperature has reached minimum operating temperature.

#### NOTE.

When aircraft serviced with Grade 1100 oil has been exposed to low temperature weather, warm up engine at or below 1600 rpm until the oil temperature reaches 30°C then increase the rpm until the oil temperature reaches 40°C before operating the propeller control through several complete cycles.

### BEFORE TAXIING.

During engine warm-up, make the following test:

1. Engine instruments - check.

2. Manifold pressure purge valve button - depress (hold for 3 to 5 seconds).

3. Radio switch - ON.

4. Electrical system.

a. Generator voltage - 28 28.5 volts.

b. Loadmeter - check.

c. Generator warning light - out at 900 rpm.

d. Inverter switch - check STANDBY and MAIN.

Set inverter switch to STANDBY position, then to MAIN, to test inverter operation. The inverter warning light should go out when switch is moved to either position and illuminates when the switch is at OFF position. Leave inverter switch at MAIN after completion of check.

5. Pitot Heat

Turn pitot heater switch on and observe increase on loadmeter.

Return switch to OFF position until just prior to take-off.

6. Wing flaps - check operation, wing flap lever-Neutral.

7. Cage and uncage attitude indicator. Cage the J-8 Attitude Indicator to insure proper erection.

#### NOTE.

*The J-8 Attitude Indicator should be energized for at least 30 seconds prior to caging.*

8. Fuel booster pump switch-OFF.

9. Fuel selector valve handle - Right Tank. Check right tank for proper operation - Fuel booster pump switch ON then OFF.

10. Fuel selector valve handle - LEFT TANK (if more than 3/4 full).

11. Idle speed - check.

12. Ignition switch - check (grounded).

Set throttle at 700 rpm and quickly turn ignition switch to OFF and back to BOTH and note whether engine momentarily stops firing. If engine does not stop firing completely, one or more magneto leads are not grounding properly and the engine should be shut down immediately. As soon as the engine stops, warn ground crew to keep clear of the propeller.

#### CAUTION.

*Perform this check as rapidly as possible to avoid backfiring.*

13. Radio operation - check.

### TAXIING.

1. Area - check clear for taxi.

2. Wheel chocks - removed.





Beechcraft  
**Mentor T-34B**

### 3.Brakes - check.

Hold feet on rudder pedals, release parking brake and let aircraft roll forward. Test brakes before building up taxiing speed by applying firm toe pressure on both pedals.

Taxiing is simplified by the tricycle landing gear and the rudder pedal linkage to the nose wheel. The good visibility and steerable nose wheel give excellent ground handling characteristics. The initial roll should be straight ahead and turns started while the aircraft is in motion. Turning from a standstill requires more power and shortens tire and brake life. Start turns with rudder pedal steering of the nose wheel. To tighten the turn after full pedal deflection is reached, apply brake on the inside of the turn. When stopping the aircraft, stop with the nose wheel straight.

### 4.Flight instruments - check.

a. Magnetic compass (stand by).Card swings freely, bowl full of liquid.

b. Airspeed indicator reading - check.

c. Altimeter - Set current altimeter setting in the Kollsman window and check for allowable altimeter error.

#### NOTE.

*It is possible to continuously rotate the barometric set knob after baro scale is out of view until eventually the numbers will reappear in the Kollsman window from the opposite side. If the correct altimeter setting is then established the altimeter will read approximately 10,000 feet in error. Special attention should be given to assure that the 10,000 foot pointer is reading correctly.*

d. Turn and Slip Indicator - Check needle deflecting in the direction of turn while taxiing; ball free in race.

e. Attitude Indicator - Set the miniature aircraft on the 90 degree indices on the side of the case; check for precession error during taxi turns.

### DOWN-WIND TAXIING.

Down-wind taxiing will usually require little or no throttle after the initial roll is established. To avoid overheating the engine when taxiing down-wind, keep the use of power to a minimum. Rather than ride the brakes, let speed build up and apply brakes occasionally.

### CROSS-WIND TAXIING.

In taxiing crosswind, the aircraft has the normal tendency to "weathervane" (turn into the wind) due to the wind force acting on the rudder area, however, the

"weathervaning" tendency is not difficult to overcome. The nose wheel linkage from the rudder pedals provides the steering control necessary for safe and efficient ground handling. Hold any rudder pressure necessary to correct for a crosswind.

### ENGINE RUN UP.

Before turning onto the runway, turn as near into the wind as practical, stop the aircraft clear of the runway, with the nose wheel straight, apply toe brakes and perform the following checks.

1.Fuel selector valve handle - LEFT TANK.

#### CAUTION.

*Sine some aircraft vent the carburetor to the left tank only, warm up, taxi, run up and take-off on the left tank. Just prior to take-off, do not switch to a tank that has not been used extensively in ground operation, since an unnoticed defect in the fuel delivery system could cause loss of engine power during a critical period of take-off operation.*

2.Propeller lever - FULL INCREASE.

3.Mixture lever - FULL RICH.

4.Engine instruments - check.

5.Propeller governor - check at 1800 rpm. Note 150-200 rpm drop.

#### NOTE.







## Beechcraft Mentor T-34B

To prevent propeller surge during cold weather operation, operate the propeller control through several complete cycles to replace the oil in the propeller system with warm engine oil.

Pull the propeller lever back toward DECREASE until 1600 rpm is obtained (no detent in quadrant) or until contact with the detent is made, in quadrants so equipped. When the desired rpm drop is obtained, return the propeller lever to full INCREASE.

6. Ignition system - check at 200 rpm, 75 rpm maximum drop.

Turn ignition switch to RIGHT (R), note rpm drop and return ignition switch to BOTH until rpm stabilizes. Turn ignition switch to LEFT (L), note drop and return to BOTH.

### NOTE.

A marginal rpm drop may be due to fouled plugs resulting from prolonged operation at idle rpm. Advance the throttle to full power for a few seconds in an attempt to clear engine and repeat test.

7. Carburetor heat system - check at 2000 rpm.

Pull carburetor heat handle full out and check for approximately one-half inch decrease in manifold pressure and a rise in carburetor air temperature. Return carburetor heat handle to full IN.

8. Engine power - check (2475  $\pm$  75 rpm). Advance the throttle with a smooth motion to full OPEN (full power) and check to see then the desired rpm is obtained. Acceleration and deceleration during this check should be smooth without backfire, coughing or roughness.

9. Directional indicator - set.

Set take-off heading under top index. Set pointer with magnetic compass and check for proper indications while taxiing to take-off position.

### NOTE.

Run engine up to full power only on paved areas to avoid damage to the propeller and aircraft from loose gravel kicked up by the propeller. If no paved surface is available, full power and acceleration checks may be made on the initial portion of the take-off run.

### BEFORE TAKE-OFF.

1. Fuel booster pump switch appropriate tank - ON.

### NOTE.

Fuel booster pump operation prohibited on airplanes not modified by T.O. 1T34A-542 except during engine start and during flight when fuel pressure gage indicates less than 9 psi.

2. Wing flaps - up (lever - NEUTRAL).

3. Trim tabs - repeat 10, interior inspection.

a. Aileron trim tab wheel - 3 degrees UP.

4. Friction knob lock - adjusted.

5. Mixture lever - FULL RICH.

6. Propeller lever - FULL INCREASE.

7. Engine instruments - check.

8. Flight controls - freedom of movement and proper response.

9. Canopy - position optional.

10. Safety belt and shoulder harness - adjusted.

11. Inertia reel - LOCKED.

12. Flight instruments - set.

After aligning aircraft and runway heading on the dial are set at the top of the case aligned with the index.

13. Pitot Heat - Climatic.

The pitot heat should be on if IFR flight is anticipated or if take-off and flight is to be made in weather conditions where icing and/or moisture is probable.

### TAKE-OFF.

Take-off in this aircraft presents no special problems and is further simplified by good visibility and the use of nose wheel steering.

Although this is true, any take-off can be improved by proper technique





Beechcraft  
**Mentor T-34B**

and careful planning. Plan your take-off according to the following variables affecting take-off techniques: field elevation, gross weight, wind, outside air temperature, type of runway, and height and distance of the nearest obstacles. A normal take-off as outlined herein will give the take-off performance covered in the Performance Data in the Appendix.

#### **NORMAL TAKE-OFF.**

Release the brakes and roll into take-off position, aligning the nose wheel with the runway, and advance the throttle smoothly to full OPEN (2600 rpm). During the initial roll, maintain directional control with rudder pedal steering of the nose wheel. The rudder becomes effective for directional control at about 35 knots IAS. When you feel good response to elevator control (approximately 50 to 55 knots) apply back pressure to the stick and raise the nose wheel off the runway. When the aircraft is ready, it will fly itself off the ground at 60 to 65 knots IAS.

#### **MINIMUM RUN TAKE-OFF**

For a minimum run take-off, line up with the runway, apply toe brakes and set 75 per cent flaps. Advance the throttle to full OPEN (2600 rpm) and release the brakes. Do not assume a nose-high (take-off) attitude so that runway may be cleared as soon as minimum flying airspeed (approximately 55 knots IAS) is reached. When clear of the runway, retract the gear and drop the nose slightly to gain a safe airspeed; continue with the normal take-off and climb procedure.

#### **OBSTACLE CLEARANCE TAKE-OFF.**

Use the same procedure as given for a minimum run take-off to the point of assuming a nose-high attitude. Do not assume the nose high (take-off) attitude until reaching approximately 55 knots IAS. Clear the ground, retract the gear and as soon as a 70 knot airspeed has been attained, hold this airspeed for maximum angle of climb until obstacle is cleared. Accelerate to normal climb speed and retract flaps; continue normal climb.

#### **NOTE.**

*With normal speeds and the engine developing full power (2600 rpm), no particular caution need be exercised in retracting the flaps since acceleration will be sufficient to offset any tendency for the aircraft to sink. Under conditions of minimum airspeed and/or less than full power, caution should be exercised and the flaps raised in increments of 25 to 30 percent.*

#### **CROSSWIND TAKE-OFF.**

In accomplishing a crosswind take-off, directional control may be more difficult to maintain, therefore, use smooth application of power and attempt to correct for the crosswind by holding upwind aileron and by using rudder pedal steering of the nose wheel. If these are not sufficient at the start of the take-off roll, due to the absence of aerodynamic control, some use of brakes may be necessary; however, brakes should not be used after take-off roll is underway since every application of brakes on the take-off roll will lengthen the take-off run. Hold the nose wheel down longer than in a normal take-off, using aileron as required to hold wings level. As required flying airspeed is reached, make a definite pull-off to avoid sideskipping as the aircraft starts to become airborne. When definitely airborne, correct for drift by making a coordinated turn into the wind. Refer to the Appendix, Performance Data for selection of lift-off speed under variable cross wind conditions.

#### **NIGHT TAKE-OFF.**

Night take-off procedure is similar to normal daytime take-off; however,





Beechcraft  
**Mentor T-34B**

you should be thoroughly familiar with the location of all switches and control in the cockpit. Align the aircraft with the runway carefully before starting take-off run, preferably using a sighting point to aid in directional control during the run. After becoming airborne, maintain take off attitude longer than in normal daytime take-off and again altitude required to clear obstacles before assuming normal climb attitude.

#### **AFTER TAKE-OFF - CLIMB.**

1. Landing gear handle - UP.
2. Landing gear position indicators - check.  
Raise flaps before gear and flaps-down airspeed is reached. Aircraft will climb with nose slightly higher.
3. Propeller lever 2600 rpm (at 100 knots IAS).
4. Carburetor heat handle - climatic.  
Climb is normally with full throttle, 2600 rpm. You will note that manifold pressure drops off as altitude increases. Refer to the Climb Chart in the Performance Data, for fuel consumption, recommended airspeeds and rates of climb for varying altitudes and gross weights.
5. Fuel booster pump switch - OFF.

#### **CRUISE.**

After the aircraft has reached cruising altitude, trim for level flight and adjust power as necessary to attain cruising airspeed.

#### **DESCENT.**

1. Carburetor heat handle - climatic.
2. Mixture lever - FULL RICH.
3. Fuel selector valve handle - Fullest tank (left tank if more than 3/4 full).
4. Parking brake handle - IN.
5. Radio proper frequency - check.
6. Throttle - 15 in. Hg.  
Descent from cruising altitude is best accomplished by letting down in a fast, low-power cruise. During prolonged glides or gliding turns the engine should be cleared at least every 180 degrees of turn, or as often as necessary. Clearing the engine has a threefold purpose: To keep the cylinder head temperature above 107 degrees centigrade, to prevent the engine from becoming "loaded up" due to an excessive rich idle mixture, and to give an early warning of carburetor icing during cold weather operation. The throttle should be applied smoothly and evenly during this clearing process to prevent "killing" the engine event an over-rich mixture condition is present.

#### **BEFORE LANDING.**

1. Carburetor heat handle - in and locked.
2. Propeller lever - 2400 rpm.
3. Fuel booster pump switch appropriate tank - ON.

#### **NOTE.**

*Fuel booster pump operation prohibited on airplanes not modified by T.O 1T34A-542 except during engine start and during flight when fuel pressure gage indicates less than 9 psi.*

4. Canopy position - Optional.
5. Shoulder harness - Locked.
6. Initial approach.
  - a. Airspeed - 130 knots IAS.
7. 180 degree turn to downwind leg.
  - a. Throttle - Retard until horn blows.
  - b. Propeller lever - FULL INCREASE.
8. Downwind leg.
  - a. Landing gear handle - DOWN. Check position indicators, warning horn and lights.





Beechcraft  
**Mentor T-34B**

b. Wing flap handle - DOWN.

9. 180 degree turn to final approach.

a. Airspeed 80 knots IAS.

10. Final approach.

a. Airspeed - 75 knots IAS.

b. Landing and taxi light switch - as required.

Check brake system by depressing brake pedals and noting resistance to pedals. Plan to enter traffic on a downwind leg at 105 to 110 knots and approximately 1000 feet.

#### **LANDINGS.**

##### **NORMAL LANDING.**

Normal landing in this aircraft is made with 100 per cent flaps, using either a power-on or power-off approach. In using flaps, lowering approximately 50 per cent on the base leg will help to establish a suitable glide angle for approach and the additional flap can then be applied on the approach as determined by wind velocity. Speed should be decreased throughout the pattern to approximately 80 knots for the base leg and to approximately 75 knots as you begin the flare-out. Start flaring-out just over the end on the runway and, if a power-on approach is used, start removing power simultaneously with flare-out. Round out with a smooth, continuous increase of back pressure on the stick and touch main wheels first, holding the nose wheel off with back pressure and maintaining directional control on the runway with rudder. Lower the nose wheel while you still have ample elevator control the use nose wheel steering for directional control. Let speed dissipate as much as practicable before using brakes. Do not hold brake continuously while slowing down, since braking action and brake life are both improved by using short, intermittent applications of brake.

##### **MINIMUM-RUN LANDING.**

A minimum-run landing involves touching down at the lowest speed practicable, to cut down the landing roll. Since this is a maximum-performance maneuver and the aircraft is barely above stalling speed, care must be exercised in handling of the flight controls. Abrupt stick movements could cause a stall and allowing the aircraft to yaw will increase the tendency to roll with the stall. To execute a minimum-run landing, lower full flaps after turn onto final approach and slow the aircraft to 50 knots, controlling the rate-of-descent with power. Plan to land as short as possible and start flare-out just over the fence, using very gradual stick pressure. Keep power on until the touchdown, as slower flying speed is possible with power. Immediately at touchdown, cut the throttle, lower the nose wheel smoothly to the runway and apply brakes.

##### **CAUTION.**

*Don't use brakes before letting the nose wheel down; doing so can cause the aircraft to pitch, dropping the nose wheel hard.*

##### **CROSSWIND LANDING.**

Landing in a crosswind presents no special problems except the elimination of drift correction, at the proper moment, to avoid touching down in a skid. Correction for drift may be accomplished by three methods: crabbing, carrying the upwind wing low (a slip), or a combination of both. Crabbing is most successful for the traffic pattern phase while a combination is most successful for landing. Generally, less flaps should be used, depending on the velocity and angle of the wind since stall characteristics and ground handling characteristics, in a crosswind, are less desirable with full flaps. Approach the runway with crab, but eliminate most of the crab on nearing the runway by replacing the crab with an upwind wing low attitude. Touch down easily onto the low main wheel while flying airspeed remains and



Beechcraft  
**Mentor T-34B**

allow the aircraft to settle smoothly onto the opposite gear. Lower the nose wheel smoothly to the runway to preserve directional control. If an excessive amount of crab should remain just prior to touchdown, attempt to eliminate it at point of touchdown by use of rudder. If excessive skidding across the runway appears imminent, make a coordinated turn to realign with the runway and drop upwind wing to correct for tendency to drift.

#### **NIGHT LANDING.**

Night landing technique is similar to normal daytime landing, except that judgment of distance may be somewhat affected in semi-darkness and with runway floodlights. If runway floodlights are used, avoid locking at the beam of light as there may be a tendency to level off on top of it instead of the runway. Don't use landing lights until at a low enough altitude for them to be of use and avoid using them in thick haze, smoke or fog, as reflected light from the particles in the air will reduce, instead of enhance, visibility.

#### **GO-AROUND.**

Make the decision to go around as early as possible, in the landing approach, to provide a safe margin of air speed and altitude. The go-around procedure is a normal maneuver and does not become an emergency procedure unless it is started too late. Accuracy of judgment and early recognition of the need to go around are important; these are developed by practice.

#### **AFTER LANDING.**

After landing roll, clear the runway and perform the following checks:

1. Fuel booster pump switch - OFF.
2. Wing flap lever - UP then neutral.
3. Trim tabs - set.
  - a. Aileron trim tab wheel - 0 degrees.
  - b. Rudder trim tab knob - 0 degrees.
  - c. Elevator trim tab wheel - 0 degrees.

#### **NOTE.**

*When landing is made on unprepared runway, retract the flaps as soon as the nose wheel touches the runway, if practical, to reduce the possibility of damage to the flaps from mud or gravel thrown up by the wheels. Also use caution taxiing over uneven or soft terrain and use a minimum of throttle in loose gravel or sand.*

#### **POST FLIGHT ENGINE CHECK.**

Park the aircraft with the nose wheel straight, set the parking brake and make the following checks:

1. Instruments - check.
2. Engine idle speed - check.

With the throttle in fully CLOSED position, the engine should idle at 600 to 700 rpm.
3. Ignition switch - check (grounded).

Set throttle at 700 rpm and quickly turn ignition switch to OFF and back to BOTH and note whether engine momentarily stop firing. If engine does not stop firing completely, one or more magneto leads are not grounding properly and the engine should be shut down immediately. As soon as the engine stops, warn ground crew to keep clear of the propeller.

4. Ignition system - check at 200 rpm, 75 rpm maximum drop.

Turn ignition switch to RIGHT (R), note rpm drop and return ignition switch to BOTH until rpm stabilizes. Turn ignition switch to LEFT (L), note drop and return to BOTH.

#### **NOTE.**

A marginal rpm drop may be due to fouled plugs resulting from prolonged operation at idle rpm. Advance the throttle to full power



## Beechcraft Mentor T-34B

for a few seconds in an attempt to clear engine and repeat test.

5. Engine power - check (2475  $\pm$  75 rpm).

Advance the throttle with a smooth motion to full OPEN (full power) and check to see that the desired rpm is obtained. Acceleration and deceleration during this check should be smooth without back fire, coughing or roughness.

### NOTE.

Run engine up to full power only on paved areas to avoid damage to the propeller and aircraft from loose gravel kicked up by the propeller.

### ENGINE SHUT DOWN.

1. Parking brake - set.

2. Ignition switch - check (if not done during post flight).

3. Throttle - 1000 rpm (for one minute).

4. Mixture lever - IDLE CUT-OFF.

### NOTE.

If engine fails to stop firing when mixture lever is moved to IDLE CUT-OFF the fuel

metering valve is stuck open, accomplish the following:

a. Ignition switch - leave at BOTH.

b. Throttle - open slightly.

c. Fuel selector valve handle - OFF.

After propeller rotation has stopped completely:

5. Fuel selector valve handle - OFF.

6. Throttle - CLOSED.

7. Ignition switch - OFF.

8. Electrical switches - OFF.

### B

### BEFORE LEAVING AIRCRAFT.

1. Flight controls - LOCKED.

2. Form 781 - completed.

3. Wheel chocks - in place.

4. Parking brake handle - IN.

5. Pitot cover - in place.

### ENGINE FAILURE.

Engine failure is usually preceded by symptoms which will enable you to take preventive action if you are alert to operating conditions at all times. Instant and complete engine failure most often occurs due to fuel flow or ignition failure. This type of failure due to mechanical causes is seldom encountered. Failure due to carelessness or improper operating techniques is not at all rare and should be guarded against by constant attention to such things as cylinder head temperature, oil pressure, sound of the engine, manifold pressure and rpm and by observing the operating limitations. Land as soon as possible if engine failure is indicated.

### ENGINE FAILURE DURING TAKE-OFF (prior to becoming airborne).

1. THROTTLE - CLOSED.

2. BRAKES - APPLY.

3. Canopy position - open.

4. Mixture lever - IDLE CUT-OFF.

5. Fuel selector valve handle - OFF.

6. Ignition switch - OFF.

7. Battery switch - OFF.

8. Generator switch - OFF.

As soon as the aircraft stops, get clear at once.

### ENGINE FAILURE DURING TAKE-OFF (after becoming airborne).

1. GLIDE - ESTABLISH.

2. CANOPY POSITION - OPEN.





Beechcraft  
**Mentor T-34B**

3. **MIXTURE LEVER - IDLE CUT-OFF.**

4. **Fuel selector valve handle - OFF.**

5. **Ignition switch - OFF.**

6. **Battery switch - OFF.**

7. **Generator switch - OFF.**

Complete landing and as soon as the aircraft stops, get clear at once.

**NOTE.**

*When engine failure from an unknown cause occurs, there is always the possibility of a resultant engine fire. For this reason, any items of the engine shutdown which cannot be completed before landing, should be completed as soon as practicable on the ground.*

**ENGINE FAILURE IMMEDIATELY AFTER TAKE-OFF** (over unprepared landing area).

*If the engine fails after the aircraft has left the ground and there is not sufficient prepared landing area remaining in front of the aircraft, lower the nose to avoid a stall and prepare to land straight ahead.*

**WARNING.**

*Under no circumstances should a turn be attempted at low altitude with a dead engine, except slight deviations to avoid hitting an obstacle. A controlled crash landing straight ahead is preferable to the likelihood of a stall causing an uncontrolled roll, and crash, out of a turn.*

**1. LANDING GEAR HANDLE - UP.**

**WARNING.**

*Make no attempt to land on unprepared or unfamiliar terrain with the landing gear extended.*

**NOTE.**

*Approximately 7 to 8 seconds are required to extend the gear and approximately 10 seconds are required for retraction.*

2. **CANOPY - OPEN.**

3. **MIXTURE LEVER - IDLE CUT-OFF.**

4. **FUEL SELECTOR VALVE HANDLE - OFF.**

5. **IGNITION SWITCH - OFF.**

6. **BATTERY SWITCH - OFF.**

7. **GENERATOR SWITCH - OFF.**

Accomplish a gear-up landing.

**ENGINE FAILURE DURING FLIGHT.**

*In the event of engine failure during flight, maintain 90 knots IAS for best glide distance and prepare for a forced landing. Attempt to start engine if deemed reasonably safe and if altitude permits. If engine fails to re-start, shut down engine and make a forced landing ; at night or if a forced landing is not possible, bail out.*

*Immediately upon encountering partial power failure, such as loss of power, loss of fuel pressure, rough running engine, etc., proceed as follows:*

1. **AIRSPPEED - MAINTAIN 90 KNOTS.**

**CAUTION.**

*Many engine failures are the result of fuel starvation due to poor fuel planning, therefore, is not certain from which tank fuel selector valve handle when switching tanks. It is otherwise possible to switch into the OFF position inadvertently.*

**NOTE.**

*Do not lock shoulder harness until after cutting all switches that cannot be reached with the harness locked. If you don't have time to get the harness locked, the automatic lock will function on impact.*



Copyright 2004 Carenado®





Beechcraft  
**Mentor T-34B**

2. FUEL SELECTOR VALVE HANDLE - SWITCH TANKS.
3. FUEL BOOSTER PUMP SWITCH - ON (APPROPRIATE TANK).
4. THROTTLE - ADVANCE 1/2 INCH BEYOND PRESENT SEETING.
5. MIXTURE LEVER - FULL RICH.
6. Propeller lever - FULL INCREASE.
7. Ignition switch - check BOTH.
8. Battery switch - check ON.
9. Generator switch - check ON.
10. CARBURETOR HEAT HANDLE - CLIMATIC.

Complete Power Failure:

1. AIRSPEED - MAINTAIN 90 KNOTS.
2. ATTEMPT ENGINE AIRSTART IF ALTITUDE PERMITS.

Engine Air Start:

1. Mixture lever - IDLE CUT-OFF.
2. Propeller lever - FULL INCREASE.
3. Fuel selector valve handle - OFF.

Turning the fuel selector valve OFF for a few seconds will clear the engine in the event of excessive fuel flow.

**NOTE.**

*If the failure was due to the fuel metering valve sticking in full open position, the*

*carburetor will deliver an excess of fuel, with constant flooding.*

*Shutting off fuel*

*momentarily will clear the engine and possibly restore operation.*

4. Throttle - FULL OPEN.

5. Fuel selector valve handle - ON (fullest tank).

6. Fuel booster pump switch - ON (appropriate tank).

7. Throttle - 1/4 INCH OPEN.

8. Mixture lever - FULL RICH.

9. Primer switch - AS REQUIRED.

- a. If engine fires, primer switch - ON (as required to reach field).

10. If engine fails to restart, make FORCED LANDING or BAIL OUT.

**FUEL PRESSURE DROP - ENGINE OPERATING NORMALLY.**

If the fuel pressure drops below the operating limits, but the engine continues to operate normally, the cause may be one or more of the following: primer leakage, oil dilution solenoid leakage, engine driven fuel pump by-pass valve leakage, clogged pressure line, instrument failure, or line leakage. Whenever fuel pressure drops and the engine continues to operate normally, the first concern of the pilot must be to guard against the outbreak of an engine fire. The greatest danger lies in the fact that the pilot develops a false sense of security because no fire exists at the time the fuel pressure drop is noticed nor after a prolonged period of flight. However, when the throttle is retarded (as in preparation for a landing), an engine fire develops and the results are usually disastrous. What has happened is that a fuel leak existed, but the cooling and dispersing effect of the airflow through the engine compartment at cruising speed has prevented the start of a fire. When the throttle was retarded, the airspeed dropped and the airflow was reduced sufficiently to permit ignition of the leaking fuel. Any change in the airflow pattern, such as reducing RPM or entering a climb, can start a fire if a fuel leak exists. Increasing the power is less likely to start a fire since airspeed will be increased, but even here there is a possibility of fire since the exhaust heat and flame pattern may change sufficiently to outweigh the increase in cooling airflow.

Accordingly, it must be the objective of the pilot to eliminate the leaking fuel before any change is made to the airflow or exhaust pattern. The most effective means of accomplishing this is by moving the mixture lever to IDLE CUT-OFF before any throttle reduction, or any other engine shutdown procedure is initiated. An additional advantage of moving the mixture lever to IDLE CUT-OFF is that it



Copyright 2004 Carenado®





Beechcraft  
**Mentor T-34B**

*provides the most rapid means of eliminating exhaust stack flames and reducing exhaust heat.*

**DURING GROUND OPERATION.**

*If the fuel pressure drops below minimum operating limits during ground operation, but the engine continues to operate normally, stop the aircraft, shut down the engine, and have a fire guard stand by. DO NOT TAKE OFF until the cause has been investigated and corrected.*

**DURING FLIGHT.**

*One of the following two alternative courses of action will be use in the event of a fuel pressure drop during flight while the engines continues to operate normally: keep the engine in operation until a suitable landing area is reached or keep the engine in operation at or above cruising speed while maintain watch for fire.*

**KEEP THE ENGINE IN OPERATION UNTIL A SUITABLE LANDING AREA IS RECHED.**

*The aircraft should be maneuvered to a position from which a forced landing can be accomplished prior to any throttle manipulation, then shut the engine down and make a forced landing.*

**ENGINE SHUTDOWN.**

**1.MIXTURE LEVER - IDLE CUT-OFF**

**WARNING.**

*Whenever fuel pressure drops and engine continues to operate normally, mixture lever must be moved to off before airspeed is reduced, or before any engine shutdown procedure is initiated such as retarding the throttle.*

**2.Propeller lever - FULL DECREASE.**

**3.Throttle - CLOSED.**

**NOTE.**

*The landing gear warning horn will sound and the landing gear warning light will illuminate as soon as the throttle is closed. The horn may be silenced and the warning light extinguished by pressing the landing gear warning horn silencing button.*

**4.FUEL SELECTOR VALVE HANDLE - OFF.**

**5.FUEL BOOSTER PUMP SWITCH - OFF.**

**6.Ignition switch -OFF.**

**7.Battery switch - OFF.**

**8.Generator switch - OFF.**

**NOTE.**

*For landing use MAXIMUM GLIDE and FORCED LANDING procedures. If a landing as possible on a runway, turn battery switch on long enough to extend the gear, if it appears reasonably safe.*

**KEEP THE ENGINE IN OPERATION AT OR ABOVE CRUISING SPEED WHILE MAINTAINING WATCH FOR FIRE.**

*This may be done if it can be reasonably ascertained that the indicated fuel pressure drop has not resulted from a fuel leak. The aircraft should be maneuvered to a position from which a safe power-of landing can be accomplished prior to any throttle manipulation. Upon retarding the throttle a close watch should be maintained for fire. If a fire should occur, use ENGINE FIRE DURING FLIGHT procedures.*

**NOTE.**

**TO KEEP THE ENGINE IN OPERATION UNTIL A SUITABLE LANDING AREA IS**

*REACHED is generally the safest; however, the pilot's proficiency, size and condition of the landing site, weather conditions, and known conditions of the aircraft are factors to be considered.*

**MAXIMUM GLIDE.**

*The greatest gliding distance can be attained by leaving the gear and flaps up, pulling the propeller lever to full DECREASE (selecting positive high pitch) and maintaining 90 knots IAS. At design gross weight, this will give a glide ratio, however, will decrease by approximately 25 per cent if the propeller is not in positive high pitch.*





Beechcraft  
**Mentor T-34B**

**NOTE.**

*Opening the canopy will slightly decrease the glide ratio. To obtain positive high pitch on aircraft equipped with a detent in the engine control quadrant, by pass the detent and pull the propeller lever to the full extent of quadrant travel.*

**CAUTION.**

*The engine is not to be operated at speeds below 1600 rpm, with power on, because of the development of excessively high B.M.E.P. Once over a chosen landing area, the glide ratio can be decreased by positioning the propeller lever to full INCREASE. Additional drag, if required, may be gained by lowering the flaps and gear.*

**NOTE.**

*The landing gear should be down only if landing is to be made on a prepared runway or smooth surface.*

**SIMULATED FORCED LANDING.**

1. Throttle - CLOSED.

**CAUTION.**

*It is important to cushion the high inertia loads on the master rod bearings which occur at conditions of high RPM and low manifold pressure. It is well to remember that each hundred RPM requires at least one inch manifold pressure. Operation at high RPM and low manifold pressure should be kept to a minimum.*

2. Glide - Establish 90 knots IAS (to High Key).

3. Canopy position - Open (Both cockpits, if occupied).

4. Fuel selector valve handle - Switch tanks.

5. Fuel booster pump switch - ON (appropriate tank).

6. Fuel pressure gage - Check.

7. Wing flaps UP (lever - NEUTRAL).

8. Mixture lever - FULL RICH.

9. Propeller lever - FULL INCREASE.

10. Trim - as necessary.

**FORCED LANDING.**

1. Throttle - CLOSED.

2. GLIDE - ESTABLISH 90 KNOTS IAS (to high key).

3. CANOPY POSITION - OPEN (Both cockpits, if occupied).

4. Fuel selector valve handle - OFF.

5. Fuel booster pump switch - OFF.

6. Propeller lever - UP.

7. Mixture lever - IDLE CUT OFF.

8. Propeller lever - FULL DECREASE.

**LANDING PATTERN.**

1. High key point (1500-2000 feet) :

a. Landing gear handle - DOWN (if landing on prepared surface or runway). Maintain 80 knots IAS.

**WARNING.**

*Make no attempt to land on unprepared or unfamiliar terrain with the landing gear extended.*

b. Wing flap lever - As required.

2. Low Key Point (1200-1500 feet, 80 knots IAS):

a. Ignition switch - OFF.

b. Battery switch - OFF.

c. Generator switch - OFF.

3. Base Key Point (800-1000 feet):

a. SHOULDER HARNESS - LOCKED.

b. Maintain 80 knots IAS.

4. Final Approach:

a. Trim - As necessary.

b. Maintain 80 knots IAS.

**NOTE.**





Beechcraft  
**Mentor T-34B**

*The 360° Force Landing pattern is typical and may require modifications to fit existing conditions.*

#### **PROPELLER FAILURE.**

1. Throttle - CLOSED.
  2. Pitch attitude - increase.
  3. Propeller lever - FULL DECREASE.
- If Propeller Is Uncontrollable:*
4. Wing flap lever - DOWN.
  5. Airspeed - approximately 60 knots.

#### **PROPELLER BOLT FAILURE.**

*The pilot can recognize propeller bolt failure by a definite and unusual vibration of the engine. When propeller bolt failure is suspected, the following procedure should be accomplished:*

1. Smoothly reduce throttle to idle, maintain safe airspeed.
  2. Check landing gear and flaps up.
  3. Slowly reduce propeller control to 1600 rpm.
  4. Smoothly advance throttle to maintain 90 knots airspeed and level flight (approximately 21-23 inches MAP).
  5. Proceed directly to the nearest available airport and land. If altitude or other conditions make above procedure unsafe, power will be reduced to any extent possible, with emphasis placed on smooth movement of propeller control. The above procedures will place minimum stress on the remaining propeller (control) bolt.
- Failure of either the governing system or the linkage from the propeller lever will result in the propeller going to full low pitch (high rpm). The governor control arm connecting with the propeller lever linkage is spring-loaded to the full high rpm position and any other failure resulting in loss of oil flow or oil pressure to the propeller hub will also result in full low pitch due to the centrifugal twisting moment on the blades. Under power-on conditions, full low pitch will result in engine over-speeding. Should a runaway propeller condition occur, close the throttle immediately and pull the aircraft up into a climb to introduce a load on the engine and slow it down, then attempt to bring the rpm within normal range with the propeller lever. If the propeller cannot be controlled, continue flight under reduced power. Slow the aircraft until airspeed is below gear and flaps-down limit airspeed then lower the flaps and maintain approximately 15 knots above stalling speed, keeping rpm from exceeding maximum, if possible, and land immediately.*

#### **PROPELLER OPERATION WITH NO POWER.**

*In the event of engine failure, provided there is oil pressure, sufficient propeller control is available to establish and maintain positive high pitch operation and consequently maximum glide.*

#### **FIRE.**

##### **NOTE.**

*No engine fire extinguishing system is installed on this aircraft.*

#### **ENGINE FIRE DURING START.**

*Fire during starting may occur in either the induction or exhaust systems. However, pilot technique is the same in combating both types of fires. If fire occurs, keep the engine turning in an attempt to clear or start the engine, as the fire may be blown out the exhaust or drawn through the engine and extinguished. Engine fire is not readily apparent from the cockpit, since the exhaust augmentor tubes are at the underside of the fuselage. Should a fire occur during starting, continue cranking with starter in an attempt to get engine started. If engine fails to start and fire persists, shutdown the engine as follows:*





Beechcraft  
**Mentor T-34B**

1. MIXTURE LEVER - IDLE CUT-OFF
2. THROTTLE - FULL OPEN, CONTINUE CRANKING.

#### CAUTION

*Do not use primer to start engine as priming will not facilitate most starts and may aggravate the fire.*

3. FUEL SELECTOR VALVE HANDLE - OFF.
4. IGNITION SWITCH - OFF.
5. Starter switch - OFF.
6. BATTERY SWITCH - OFF.
7. SIGNAL GROUND CREW TO USE FIRE EXTINGUISHERS.
8. Get clear of aircraft.

*The engine compartment is accessible for fire fighting through a push-in access door on the right side of the engine compartment. Do not attempt to restart the engine if the fire extinguished is used.*

#### ENGINE FIRE AFTER START.

*If engine starts and fire persist, shutdown the engine as follows:*

1. MIXTURE LEVER - IDLE CUT-OFF.
2. THROTTLE - FULL OPEN.
3. FUEL SELECTOR VALVE HANDLE - OFF.
4. IGNITION SWITCH - OFF.
5. BATTERY SWITCH - OFF.
6. SIGNAL GROUND CREW TO USE FIRE EXTINGUISHERS.
7. Get clear of aircraft.

#### ENGINE FIRE DURING FLIGHT.

1. MIXTURE LEVER - IDLE CUT-OFF.
2. FUEL SELECTOR VALVE HANDLE - OFF.
3. Ignition switch - OFF.
4. Battery switch - OFF.
5. Generator switch - OFF.
6. Make FORCED LANDING or BAIL OUT.

*Use the foregoing procedure if it is deemed impractical to attempt to extinguish an engine fire in flight. Never attempt to land the aircraft with a serious fire that cannot be extinguished if there is sufficient altitude to bail out. The decision to bail out will depend on judgment and the seriousness of the fire.*

#### NOTE.

*If a forced landing is possible on a runway, turn the battery switch on long enough to extend the gear, if it appears reasonably safe, otherwise, extend the gear manually or land with gear up.*

#### FUSELAGE FIRE IN FIGHT.

1. Canopy position - closed .  
*Closing the canopy and reducing airspeed will minimize draft through the cockpit.*
2. Cockpit air handles - FULL OUT.
3. Battery switch - OFF.
4. Generator switch - OFF.

*Turn on the switches, one at a time, in an attempt to determine the nature of the fire. If the fire is not stopped by turning off electrical power supply and no other means of extinguishing it appears feasible, either bail out or land the aircraft, depending on altitude and seriousness of fire. A landing should not be attempted with a serious fire if there is sufficient altitude to bail out.*

#### WING FIRE.

*There is little that can be done to control a wing fire, except to try to blow fire out by slipping the aircraft away from the fire. If the fire cannot be extinguished immediately in this manner, bail out.*

#### ELECTRICAL FIRE.



Copyright 2004 Carenado®



## Beechcraft Mentor T-34B

1. Battery switch - OFF.
2. Generator switch - OFF.
3. All electrical equipment - OFF.
4. All circuit breakers - OUT.

All circuits except starter relays are protected by circuit breakers, which isolate a short-circuit and tend to prevent a fire. Should an electrical fire start, however, try to locate the faulty circuit by using the foregoing procedure. Turn on the generator and battery switches, one at a time, to determine if either circuit is faulty. If the generator and battery circuits are all right, monitor the remaining switches and circuit breakers one at a time to locate and isolate the shorted circuit. If the shorted circuit is not located, use only that equipment which it may become necessary to use. Refer to ELECTRICAL SYSTEM EMERGENCY OPERATION, this section.

### SMOKE AND FUME ELIMINATION.

1. Cockpit cold air handle - IN.
2. Cockpit air handle - OUT.

#### NOTE.

*The cockpit hot air valves should be left closed since the possibility of the duct system being damaged by the fire may direct additional smoke to the cockpit.*

3. Canopy position - open.

Reduce airspeed and use the foregoing procedure to relieve the cockpit of smoke and fumes. If conditions get worse, stand by to bail out.

### BAIL OUT.

1. Wing flap lever - DOWN.

Reduce speed as much as possible, with full flaps, to provide a more tail high attitude.

2. Canopy - OPEN or jettison.
3. Seats - full up.

4. Safety belt and shoulder harness - unfasten.

Make sure safety belts and shoulder harness will not foul on clothing or parachute on exit.

5. Headset - remove.

#### WARNING.

*- In a spin, both pilots should out toward the outside of the spin to minimize the possibility of being struck by the aircraft.*

*- Seat cannot be raised to full up position for spin bailout, due to centrifugal force.*

*Make the decision to abandon the aircraft while there is still plenty of altitude and (when possible) power and directional control. Head the aircraft toward an uninhabited area and jettison the canopy if desired. To leave the front cockpit, crawl out on the wing and dive off the trailing edge head first (at high airspeed, pull yourself out in a vaulting dive onto the wing, as it is possible to be swept off the wing while climbing out). To leave the rear cockpit, dive overboard toward the trailing edge.*

### LANDING EMERGENCIES (Except ditching).

#### GEAR UP LANDING.

1. CANOPY POSITION - OPEN.

2. Wing flap lever - DOWN.

When committed to Landing:

3. Throttle - CLOSED.

4. MIXTURE LEVER - IDLE CUT-OFF.

5. Fuel selector valve handle - OFF.

Just Before Touchdown:

6. IGNITION SWITCH - OFF.

7. BATTERY SWITCH - OFF.

8. GENERATOR SWITCH - OFF.







Beechcraft  
**Mentor T-34B**

#### 9. INERTIA REEL - LOCKED.

##### **NOTE.**

*Lock inertia reel only after turning off all switches which would be out of reach after the inertia reel is locked, the automatic lock will function on impact.*

*If the gear cannot be extended, use the foregoing procedure and land wheels-up. Make a normal approach using power and flaps as required to provide a slightly nose high attitude, but not fully stalled. Touch down in this attitude and as soon as the aircraft has stopped, get clear at once. Gear-up landings should be accomplished preferably on hard surface, since soft ground or sod tends to roll up into chunks, damaging the underside of the fuselage.*

#### **LANDING WITH NOSE GEAR RETRACTED.**

1. CANOPY POSITION - OPEN.

2. Throttle - CLOSED.

3. MIXTURE LEVER - IDLE CUT-OFF.

4. Elevator trim tab wheel - full nose down.

5. IGNITION SWITCH - OFF.

6. BATTERY SWITCH - OFF.

7. GENERATOR SWITCH - OFF.

8. Fuel selector valve handle - OFF.

*Should the nose gear fail to extend, make a normal approach and landing. After touching main wheels down, hold the nose up as long as possible with full back stick and initiate the foregoing procedure before the nose settles onto the ground. Get clear of the aircraft as soon as it stops.*

#### **LANDING ON UNPREPARED RUNWAY.**

*Landing procedure for unprepared strips is similar to normal landing on paved runways, except that if the surface is very rough, touch down as smoothly as possible to minimize shocks loads on the landing gear. If feasible, avoid using full flaps on loose gravel, as particles thrown up by the wheels would damage flaps. Use brakes with caution on soft or uncertain ground, to prevent digging the nose wheel into the ground.*

#### **LANDING WITH FLAT TIRE.**

*A flat tire on a main wheel will act as a brake when on the ground, tending to turn the aircraft into the flat. Touch down well over to the opposite side of the runway to allow room for a swerve and hold directional control with opposite brake. A flat nose wheel tire will reduce nose wheel stability and hard applications of brake should be avoided. After landing with a flat tire, park the aircraft clear of the runway and shut down the engine; do not taxi in with a flat tire.*

##### **CAUTION.**

*Do not taxi without brakes. Call the tower operator and request a toe to move the aircraft into maintenance.*

#### **LANDING WITH ONE MAIN GEAR RETRACTED.**

*Due to the design of the gear actuation system, all gear being extended and retracted through push rods from a single actuator, failure of one gear to extend is very unlikely. Should a break in the linkage occur, the affected gear will usually drop to the extended position. If at any time one gear position indicators fails to indicate gear fully extended, have the gear position checked visually by another pilot or by the control tower on a fly-by. If it is verified that one gear is not fully extended, attempt to retract all gear and make a gear up landing.*

*If all gear cannot be retracted, make a normal approach with full flaps and power on, to reduce landing speed to a minimum, carrying the wing slightly lower on the down and locked side. Touch down smoothly on the down and locked main gear, holding the opposite*



Copyright 2004 Carenado®





Beechcraft  
**Mentor T-34B**

wing up with aileron as long as possible after nose wheel touches down. As soon as the down and locked gear touches down, proceed as follows:

1. CANOPY POSITION - OPEN.
2. Throttle - CLOSED.
3. MIXTURE LEVER - IDLE CUT-OFF.
4. Fuel selector valve handle - OFF.
5. IGNITION SWITCH - OFF.
6. BATTERY SWITCH - OFF.
7. GENERATOR SWITCH - OFF.

As wing tip strikes the ground, apply opposite brake hard. Get clear of the aircraft as soon as it stops.

#### **EMERGENCY ENTRANCE.**

Both canopies can be removed from the outside in an emergency, by means of an external canopy emergency release handle on the right side of the fuselage, just below the forward end of the front canopy rail. Pulling the handle out releases both sets of canopy rails from the fuselage and both assemblies can then be removed.

#### **DITCHING.**

Since all survival equipment carried will be personal equipment, there is usually no reason to ditch the aircraft; a bail-out is preferable. If, for some reason, ditching is necessary, use the radio distress procedure and plan to touch down before all fuel is exhausted, to have power for a controlled approach.

1. LANDING GEAR HANDLE - CHECK UP.
2. CANOPY POSITION - OPEN.
3. Battery switch - OFF.
4. SAFETY BELT - FASTENED.
5. Life raft or life preserver - check.
6. Wing flap lever - DOWN.

Make normal approach with power, if possible, and flare out to normal landing attitude. Approach stall attitude at a speed at which full control of aircraft can be maintained. Unless wind is high or sea is rough, plan approach heading parallel to any uniform swell pattern and try to touch down along wave crest just after crest passes. If wind is as high as 25 knots or surface is irregular, the best procedure is to approach into the wind and touch down on falling side of wave. Just before touchdown:

7. Ignition switch - OFF.
8. INERTIA REEL - LOCKED.

Get clear of the aircraft as soon as it comes to rest, since it may stay afloat only a few seconds. Stay near the site of the ditching if possible, to aid search personnel in rescue efforts.

#### **FUEL SYSTEM EMERGENCY OPERATION.**

##### **FUEL PUMP FAILURE.**

If the engine-driven fuel pump fails, fuel can be supplied to the engine by turning on the electrically-driven booster pump in the tank being used. The booster pump provides sufficient pressure for all normal engine operation in flight.

#### **ELECTRICAL POWER SUPPLY SYSTEM EMERGENCY OPERATION.**

##### **DC POWER FAILURE.**

If failure of the generator occurs, illuminating the generator warning light, or if generator voltage consistently exceeds 30 volts, the generator switch should be turned OFF. All non-essential electrical equipment should be turned off to conserve battery power for gear extension. In the event of a complete electrical power failure, or if it becomes necessary to turn both generator and battery switches



Copyright 2004 Carenado®



Beechcraft  
**Mentor T-34B**

*OFF, the primary flight attitude instruments will be inoperative and the gear will have to be extended manually.*

#### **AC POWER FAILURE.**

*If the inverter warning light illuminates, indicating failure of the main inverter, turn the inverter switch to **STANDBY**. If the light still illuminates, no ac power is available and the attitude and directional indicators will be inoperative.*

#### **WING FLAP EMERGENCY OPERATION.**

*No emergency operation of the wing flaps is provided.*

#### **LANDING GEAR EMERGENCY OPERATION.**

##### **LANDING GEAR EMERGENCY RETRACTION.**

*To retract the landing gear on the ground in an emergency, move the landing gear emergency retract switch **UP**.*

##### **NOTE.**

*The landing gear emergency retract switch is guarded in the **DOWN** position with a safety wired guard. To operate the switch, break the safety wire by forcing the guard up.*

##### **LANDING GEAR EMERGENCY EXTENSION.**

*Procedure to follow in lowering the gear manually is shown. Exercise care to fully engage the clutch knob before attempting to crank the gear down.*

##### **NOTE.**

*If electrical power is available, continue extension until gear position indicators*

*show all gear fully extended; if all electrical power is off, the gear position indicators will be inoperative and the crank should be operated until it cannot be moved further.*

---

#### **IMPORTANT NOTE.**

*This is a complete checklist include in the Real Flight Manual of T-34 Mentor ...Some functions of this list don't work in MFS but all information has been included to teach you this interesting airplane. This software is intended for entertainment purposes **ONLY**. And this is not an instructional on how to fly the real Beechcraft Mentor.*

---



Copyright 2004 Carenado®