



## MODEL PA-34-200T CHECK LIST (1975 & 1976 MODELS ONLY)

### PREFLIGHT PER PILOT'S OPERATING MANUAL

#### BEFORE STARTING ENGINES

1. Seats - Adjusted and locked
2. Seat belts, shoulder harness - Fastened
3. Parking brake - Set
4. Circuit breakers - In
5. Radios - Off
6. Cowl flaps - Open
7. Alternate air - Off
8. Alternators - On

#### STARTING ENGINES

1. Fuel selector - On
2. Mixture control - Rich
3. Throttle control - Open half way
4. Propeller control - Forward
5. Master switch - On
6. Ignition switches - On
7. Electric fuel pump - (for models without primer system installed only) on as required, then off
8. Propeller - Clear
9. Starter - Engage
10. Primer button - (for models with primer system installed only) on as required, then off
11. Throttle - Retard when engine starts
12. Oil pressure - Check
13. Repeat steps 1 through 11 with the other engine.

See Pilot's Operating Manual for Flooded Starts, Starts with External Power and Cold Weather Starts.

14. Alternators - Checked
15. Gyro pressure - Checked

#### TAXI

- Brakes - Check
- Flight instruments - Check
- Heater & defroster - Check
- Fuel selectors - On
- Autopilot - Off
- Electric fuel pump - Off

#### PRETAKEOFF CHECK

If there is no hesitation in engine action when the throttle is advanced, the engine is warm enough to proceed with engine run-up.

1. Parking brake - On
2. Engine run-up
  - a. Mixture controls - Forward
  - b. Propeller controls - Forward
  - c. Throttle controls - Forward to 1000 RPM
  - d. Propeller controls - Check feather
  - e. Throttle controls - Forward to 1900 RPM
  - f. Propeller controls - Exercise
  - g. Propeller controls - Full forward
  - h. Alternate air controls - On, then off.
  - i. Magnetos - Check
    - Normal drop - 100 RPM
    - Maximum drop - 150 RPM
    - Maximum differential drop - 50 RPM
  - j. Alternator output - Check
  - k. Gyro pressure gauge - 4.5 to 5.2 in. Hg.
  - l. Throttles - 800-1000 RPM
3. Fuel selectors - On
4. Alternators - On
5. Engine gauges - In the green
6. Annunciator panel - press to test, all lights on.
7. Altimeter - Set
8. Attitude indicator - Set
9. Directional Gyro - Set
10. Clock - Wound and set.
11. Mixtures - Set
12. Propellers - Forward position
13. Quadrant friction - Adjusted
14. Alternate air - Off
15. Cowl flaps - Set
16. Seat backs - Erect
17. Wing flaps - Set
18. Trim (stabilator and rudder) - Set
19. Seat belts and harness - Fastened
20. Empty seats - seat belts - Fastened
21. Controls - Free, full travel
22. Doors - Latched
23. Auxiliary (or electric) fuel pumps - Off
24. Pitot heat - As required

See Pilot's Operating Manual for Takeoff, Climb and Cruise Procedures.

### BEFORE LANDING

1. Seat backs - Erect
2. Seat belts and shoulder harness - Fastened
3. Fuel selectors - On
4. Cowl flaps - Set as required
5. Auxiliary (or electric) fuel pumps - Off
6. Mixture controls - Rich
7. Propellers - Set
8. Landing gear - Down (three green lights & nose wheel in mirror)
9. Flaps - Set as required:

10° (1st notch)	160 MPH Max.
25° (2nd notch)	140 MPH Max.
40° (3rd notch)	125 MPH Max.

See Pilot's Operating Manual for Landing Procedure.

### POST LANDING

After leaving the runway:

1. Wing flaps - Retract
2. Cowl flaps - Fully open
3. Alternate air - Off

### SHUT DOWN

1. Heater (if on) - Switch to FAN for 2 minutes, then OFF
2. Radio & electrical equipment - Off
3. Mixture controls - Idle cut-off
4. Magneto switches - Off
5. Master switch - Off
6. Parking brake - On, if required

**NOTE: IF AN INCONSISTENCY OF INFORMATION EXISTS BETWEEN THIS CHECK LIST AND THE PILOT'S OPERATING MANUAL, THE PILOT'S OPERATING MANUAL SHALL BE THE AUTHORITY.**



**MODEL PA-34-200T  
EMERGENCY  
CHECK LIST  
(1975 & 1976 MODELS ONLY)**

**ENGINE FIRE**

In case of engine fire on the ground

1. If engine has not started
  - a. Mixture - IDLE CUT-OFF
  - b. Throttle - OPEN
  - c. Turn engine with starter
2. If engine has already started and is running, continue operating to try pulling the fire into the engine.
3. In either case stated in (1) & (2) if the fire continues longer than a few seconds, the fire should be extinguished by the best available external means.
4. If external fire extinguishing is to be applied
  - a. Fuel selector valves - OFF
  - b. Mixture - IDLE CUT-OFF

In case of engine fire in flight  
(on the affected engine)

1. Fuel selector - OFF
2. Throttle - CLOSE
3. Propeller - FEATHER
4. Mixture - IDLE CUT-OFF
5. Heater - OFF (in all cases of fire)
6. Defroster - OFF (in all cases of fire)
7. If terrain permits - Land immediately

**ENGINE FAILURE DURING TAKEOFF**

The single engine minimum control speed is 80 MPH (CAS).

If engine failure occurs during takeoff ground roll and 100 MPH (CAS) has not been attained, CLOSE BOTH THROTTLES IMMEDIATELY AND STOP STRAIGHT AHEAD. If inadequate runway remains to stop, then:

1. Throttles - CLOSED
2. Brakes - Apply maximum braking
3. Master switch - OFF
4. Fuel selectors - OFF
5. Continue straight ahead, turning to avoid obstacles as necessary.

If engine failure occurs during takeoff ground roll or after lift-off with gear still down and 100 MPH (CAS) has been attained:

1. If adequate runway remains, CLOSE BOTH THROTTLES IMMEDIATELY, LAND IF AIRBORNE, AND STOP STRAIGHT AHEAD.
2. If the runway remaining is inadequate for stopping, the pilot must decide whether to abort the takeoff or to continue. The decision must be based on the pilot's judgement considering loading, density altitude, obstructions, the weather, and the pilot's competence. If the decision is made to continue, then:
  - a. Maintain heading & airspeed
  - b. Retract landing gear when climb is established
  - c. Feather inoperative engine (see feathering procedure).

**FEATHERING PROCEDURE**

Feather before RPM drops below 800.

1. Minimum control speed - 80 MPH
2. Best R/C speed single engine - 105 MPH
3. Maintain direction & airspeed above 90 MPH
4. Mixture controls - Forward
5. Propeller controls - Forward
6. Throttle controls - 40 inches Hg
7. Flaps - Retract
8. Gear - Retract
9. Identify inoperative engine
10. Throttle of inoperative engine - Retard to verify.
11. Mixture of inoperative engine - Idle cut-off
12. Propeller of inoperative engine - Feather
13. Trim - As required
14. Maintain 5° bank toward operating engine
15. Auxiliary (or electric) fuel pump of inoperative engine - OFF
16. Magnetos of inoperative engine - OFF
17. Cowl flaps - Close on inoperative engine, use as required on operative engine
18. Alternator of inoperative engine - OFF
19. Electrical load - Reduce to prevent battery depletion
20. Fuel management - Fuel OFF inoperative engine; consider crossfeed use.

### ENGINE FAILURE DURING CLIMB

The single engine minimum control speed for this airplane is 80 MPH (CAS).

If engine failure occurs when airspeed is below 80 MPH (CAS) reduce the power on the good engine as required to maintain directional control. Reduce nose attitude to accelerate toward the single engine best rate of climb speed of 105 MPH. Then feather inoperative engine (see feathering procedure).

If engine failure occurs when the airspeed is above 80 MPH (CAS):

1. Maintain directional control
2. Adjust airspeed toward the single engine best rate of climb speed of 105 MPH
3. Feather inoperative engine (see feathering procedure)

### ENGINE FAILURE IN ICING CONDITIONS

If engine failure occurs during icing flight, select ALTERNATE AIR and attempt to restart engine. If unable to restart engine:

1. Feather inoperative propeller (see feathering procedure).
2. Maintain airspeed at or above 105 MPH (CAS).
3. Descend if necessary to maintain airspeed.
4. Reduce electrical loads per alternator failure procedure.
5. Avoid further icing conditions if possible.
6. Land as soon as practical.
7. Maintain at least 105 MPH (CAS) during final approach.
8. Do not extend landing gear until certain of making field.
9. Do not lower wing flaps until certain of making field.
10. Use 25° flaps rather than full flaps for landing.

### ENGINE DRIVEN FUEL PUMP FAILURE

The fuel boost pump will provide approximately 25% power in the event of engine driven fuel pump failure. The following procedure should be observed:

Models Without Primer System Installed

1. Electric fuel pump - ON
2. Throttle - Full forward
3. Propeller - Full forward
4. Mixture - As required for smooth operation
5. Land as soon as practical.

Models With Primer System Installed

1. Auxiliary fuel pump - On HIGH
2. Throttle - As required
3. Propeller - As required
4. Mixture - As required for smooth operation.
5. Land as soon as practical.

### ENGINE FAILURE WITH REAR CABIN AND CARGO DOORS REMOVED

The single engine minimum control speed for this configuration is 81 MPH (CAS). If engine failure occurs at an airspeed below 81 MPH, reduce power as necessary on the operating engine to maintain directional control.

### FUEL MANAGEMENT DURING SINGLE ENGINE OPERATION

A crossfeed is provided to increase range during single engine operation. Fuel system operation is as follows:

Cruising

1. When using fuel from tank on the same side as the operating engine:
  - a. Fuel selector of operating engine in ON position
  - b. Fuel selector of inoperative engine in OFF position
  - c. Auxiliary (or electric) fuel pumps OFF (except in case of engine driven pump failure, electric fuel pump on operating engine side must be used)
2. When using fuel from tank on the side opposite the operating engine:
  - a. Fuel selector of operating engine in "X-FEED" (CROSSFEED) position
  - b. Fuel selector of inoperative engine in OFF position
  - c. Auxiliary (or electric) fuel pumps OFF (except in case of engine driven pump failure, electric fuel pump on operating engine side must be used)

Landing

1. Fuel selector of operating engine in ON position
2. Fuel selector of inoperative engine in OFF position

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## MODEL PA-34-200T

### SPIN RECOVERY

Intentional spins are prohibited. In the event that an unintentional spin is encountered, recovery can be accomplished by immediately using the following procedures:

1. Retard both throttles to the idle position
2. Apply full rudder in the direction opposite the spin rotation
3. Let up all back pressure on the control wheel. If nose does not drop immediately push control wheel full forward
4. Keep ailerons in neutral
5. Maintain the controls in these positions until spin stops, then neutralize rudder
6. Recover from the resulting dive with smooth back pressure on the control wheel. No abrupt control movement should be used during recovery from the dive, as the positive limit maneuvering load factor may be exceeded.

### UNFEATHERING PROCEDURE

1. Fuel selector inoperative engine - ON
2. Auxiliary (or electric) fuel pump inoperative engine - OFF
3. Throttle - Open 1/4 inch
4. Propeller control - Forward to cruise RPM position
5. Mixture - Rich
6. Magneto switches - ON
7. Starter - Engage till prop windmills
8. Throttle - Reduced power till engine is warm
9. If engine does not start - prime as required (for models without primer system installed prime by turning electric fuel pump of inoperative engine on for 10 seconds)
10. Alternator - ON

### ELECTRICAL FAILURES

In the event that the ALT annunciator light illuminates:

1. Observe ammeters to determine which alternator is inoperative.
2. If both ammeters show zero output, reduce electrical loads to the minimum.

3. Turn off both alternator switches, then:
  - a. Turn them momentarily on one at a time while observing ammeters.
  - b. Determine the alternator showing the LEAST (but not zero) amperes and turn its switch on.
4. Turn electrical loads on as required but do not exceed 60 amperes.
5. If one ammeter shows zero output, cycle its switch off, then on. If this fails to restore output, check the circuit breakers; reset once if required.
  - a. If the alternator remains inoperative, reduce electrical loads if necessary, and continue flight.
  - b. Take corrective maintenance action before further flights.

### WARNING

Compass error may exceed 10° with both alternators inoperative.

### NOTE

The markings on the ammeters (loadmeters) require mental interpolations to estimate the ampere values noted. Operating the alternators at less than 65 amperes will assure that the battery will not be depleted.

In the event of an alternator failure during flight in icing conditions:

1. Attempt to reset alternator overvoltage relay.
2. Check circuit breakers and reset if possible.

If unable to restore alternator:

3. Turn off all avionics except one NAVCOM and TRANSPONDER.
4. Turn off electric windshield to maintain 65 AMP load.
5. If icing conditions continue terminate flight as soon as practical.
6. Prior to landing electric windshield may be turned on if necessary. Battery may be depleted and gear may require free-fall extension.

### GYRO PRESSURE SYSTEM FAILURES

A malfunction of the gyro pressure system will become apparent as a reduction of indication on the gauge. A red button annunciator will show in case of a feathered engine or gyro pressure pump failure.

In the event of gyro pressure system malfunction (gyro pressure lower than 4.5 inches of mercury):

1. Increase engine RPM to 2575
2. Descend to an altitude, if possible, at which 4.5 inches of mercury pressure can be maintained
3. Use Turn Indicator (Electric) to monitor the Direction Indicator and Attitude Indicator performance.

#### **SINGLE ENGINE LANDING**

1. Feather inoperative engine (see feathering procedure)
2. Do not extend landing gear until certain of making field
3. Do not lower wing flaps until certain of making field

Maintain additional altitude and speed during approach, keeping in mind that landing should be made right the first time and that a go-around may require the use of full power on the operating engine, making control more difficult.

A final approach speed of 105 miles per hour and the use of 25° rather than full wing flaps will place the airplane in the best configuration for a go-around should this be necessary, but it should be avoided if at all possible. Under some conditions of loading and density altitude a go-around may be impossible, and in any event the sudden application of power during single engine operation makes control of the airplane more difficult.

#### **SINGLE ENGINE GO-AROUND**

If a single engine go-around cannot be avoided proceed as follows:

1. Mixture - Forward
2. Propeller - Forward
3. Throttle - 40 inches Hg
4. Flaps - Retract
5. Landing gear - Retract
6. Airspeed - One engine inoperative best rate-of-climb speed 105 MPH
7. Trim - Set
8. Cowl flap - As required (operating engine)

#### **MANUAL EXTENSION OF LANDING GEAR**

Check the following before extending the gear manually:

1. Circuit breakers - Check
2. Master switch - ON
3. Alternators - Check
4. Navigation lights - OFF (daytime)

To extend the gear, reposition the clip covering the emergency disengage control downward, clear of the knob, and proceed as listed below:

1. Reduce power; airspeed not to exceed 100 MPH
2. Place landing gear selector switch in "GEAR DOWN LOCKED" position
3. Pull emergency gear extension knob
4. Check for 3 green lights

#### **LANDING GEAR UNSAFE WARNINGS**

The red landing gear light will illuminate when the landing gear is in transition between the full up position and the down and locked position. The pilot should recycle the landing gear if continued illumination of the light occurs. Additionally, the light will illuminate when the gear warning horn sounds. The gear warning horn will sound at low throttle settings with the gear in the up position.

#### **GEAR-UP EMERGENCY LANDING**

1. Approach with power at a normal airspeed
2. Leave flaps up (to reduce wing and flap damage)
3. Close the throttles just before touchdown
4. Turn off the master and ignition switches
5. Turn fuel selector valves to OFF
6. Contact the surface at minimum airspeed

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