Airspeed limitations in KIAS

Vne	154 (also max window open speed)
Vno	125
Va	113 @ 2,550lbs
	89 @ 1,634lbs
Vfe	102@ 10 degrees
	86 @ 40 degrees

Weight limits (Normal Category) – *Utility data in POH*

Maximum ramp weight:	2,550 lbs.
Maximum t/o weight:	2,550 lbs.
Maximum lndg weight:	2,550 lbs.
Baggage:	200 lbs.

Airspeeds for ***EMERGENCY OPERATION*** in KIAS

Engine failure after takeoff:

Wing flaps up	76
Wing flaps down	66

Landing without engine power:

Flaps up	76
Flaps down	66

Speeds

Chandelle entry	113 knots
Lazy Eights entry	113 knots
Steep turns entry	113 knots

Spins - PROHIBITED

Vy	76 KIAS sea level
Vx	64 KIAS sea level
Vbg	76 KIAS
Vso	49 KIAS
Vs1	55 KIAS

Max crosswind velocity - 17 knots

PREFLIGHT

1. Control wheel - Release belts
2. Master switch - ON
3. Fuel quantity gauges - Check
4. Master switch - OFF
5. Ignition - OFF
6. Exterior - Check for damage
7. Control Surfaces - Check for interference
    a. free of ice, snow, frost
8. Hinges - Check for interference
9. Wings - Free of ice, snow, frost
10. Stall warning - Check
11. Navigation lights - Check
12. Fuel tanks - Check supply visually
    a. secure caps
13. Fuel tank sumps - Drain and check for water, sediment and proper fuel
14. Fuel vents - Open
15. Main gear struts - Proper inflation (4.50 in.)
16. Tires - Check
17. Brake blocks - Check
18. Pitot head - Remove cover – holes clear
19. Windshield - Clean
20. Propeller and spinner - Check
21. Fuel and oil - Check for leaks
22. Oil - Check level
23. Dipstick - Properly seated
24. Cowling - Secure
25. Inspection covers - Secure
26. Nose wheel tire - Check
27. Nose gear strut - Proper inflation (3.25 in.)
28. Air inlets - Clear
29. Alternator belt - Check tension
30. Tow bar and control locks – Stow
31. Baggage - Stowed properly – secure
32. Baggage door - Close and secure

33. Fuel strainer - Drain
34. Primary flight controls - Proper operation
35. Cabin door - Close and secure
36. Required papers - On board
37. Seat belts and harness - Fastened/adjust

BEFORE STARTING ENGINE

1. Brakes - Set
2. Carburetor heat - Full COLD
3. Fuel selector - Desired tank

STARTING ENGINE WHEN COLD

1. Throttle - 1/4" open
2. Master switch - ON
3. Electric fuel pump - ON
4. Mixture - Full RICH
5. Starter - Engage
6. Throttle - Adjust
7. Oil pressure - Check

STARTING ENGINE WHEN HOT

1. Throttle - 1/2" open
2. Master switch - ON
3. Electric fuel pump - ON
4. Mixture - Full RICH
5. Starter - Engage
6. Throttle - Adjust
7. Oil pressure - Check

STARTING ENGINE WHEN FLOODED

1. Throttle - Open full
2. Master switch - ON
3. Electric fuel pump - OFF
4. Mixture - Idle cut-off
5. Starter - Engage
6. Mixture - Advance
7. Throttle - Retard
8. Oil pressure - Check

STARTING WITH EXTERNAL POWER SOURCE

1. Master switch - OFF
2. All electrical equipment - OFF
3. Terminals - Connect
4. External power plug - Insert in fuselage

Proceed with normal start

5. Throttle - Lowest possible RPM
6. External power plug - disconnect from fuselage
7. Master switch - ON – check ammeter
8. Oil pressure - Check

TAXIING

1. Chocks - Removed
2. Taxi area - Clear
3. Throttle - Apply slowly
4. Brakes - Check
5. Steering - Check

GROUND CHECK

1. Throttle - 1800 RPM
    a. Magnetos - Max. drop 175 RPM / Max. diff. 50 RPM
    b. Vacuum - 5.0" Hg. ± 0.1
    c. Oil temp - Check
    d. Oil pressure - Check
    e. Air conditioner - Check
    f. Annunciator panel - Press-to-test
    g. Carburetor heat - Check

Engine is warm for takeoff when throttle can be opened without engine faltering.

    h. Electric fuel pump - OFF
    i. Fuel pressure - Check
2. Throttle - Retard

BEFORE TAKEOFF

1. Master switch - ON
2. Flight instruments - Check
3. Fuel selector - Proper tank
4. Electric fuel pump - ON

5. Engine gauges - Check
6. Carburetor heat - OFF
7. Seat backs - Erect
8. Mixture - Set
9. Primer - Locked
10. Belts, harness - Fastened/adjusted
11. Empty seats - Seat belts fastened
12. Flaps - Set
13. Trim tab - Set
14. Controls - Free
15. Doors - Latched
16. Air conditioner - OFF

NORMAL TAKEOFF

1. Flaps - Set
2. Tab - Set
3. Accelerate to 52 to 65 KIAS, back pressure to rotate to climb attitude

SHORT FIELD, OBSTACLE CLEARANCE

1. Flaps - 25 degrees (second notch)
2. Accelerate to 41 to 49 KIAS depending on a/c wt.
3. Control wheel - Back pressure to rotate to climb attitude
    a. After breaking ground, accelerate to 45 to 54 KIAS depending on aircraft weight
    b. Accelerate to best flaps up angle of climb speed – 64 KIAS, slowly retract the flaps and climb past the obstacle.
4. Accelerate to best flaps up rate of climb speed – 76 KIAS

SOFT FIELD

1. Flaps - 25 degrees (2nd notch)
2. Accelerate to 41-49 KIAS depending on a/c wt.
3. Control wheel - Back pressure to rotate to climb attitude
    a. After breaking ground, accelerate to 45 to 54 KIAS depending on aircraft weight
    b. Accelerate to best flaps up rate of climb speed 76 KIAS

4. Flaps - Retract slowly

CLIMB

1. Best rate (flaps up) - 76 KIAS
2. Best angle (flaps up) - 64 KIAS
3. En route - 87 KIAS
4. Electric fuel pump - OFF > 400 AGL

CRUISING

Reference performance charts and Avco- Lycoming Operator's Manual.

1. Normal max power - 75%
2. Power - Set per power table
3. Mixture -Adjust

NORMAL DESCENT

1. Throttle - 2500 rpm
2. Airspeed - 126 KIAS
3. Mixture - Rich
4. Carburetor Heat - On if required

POWER OFF DESCENT

1. Carburetor Heat - On if required
2. Throttle - Closed
3. Airspeed - As required
4. Mixture - As required
5. Power - Verify with throttle every 30 seconds

APPROACH AND LANDING

1. Fuel selector - Proper tank
2. Seat backs - Erect
3. Belts/harness - Fasten/adjust
4. Electric fuel pump - ON
5. Mixture - Set
6. Flaps - Set – 102 KIAS max
7. Air conditioner - OFF
8. Trim to 75 KIAS
9. Final approach speed (flaps 40 degrees) - 66 KIAS

STOPPING ENGINE

1. Flaps - Retract
2. Electric fuel pump - OFF
3. Air conditioner - OFF
4. Radios - OFF
5. Throttle - Full aft
6. Mixture - Idle cut-off
7. Magnetos - OFF
8. Master switch - OFF

PARKING

1. Parking brake - Set
2. Control wheel - Secured with belts
3. Flaps - Full up
4. Wheel chocks - In place
5. Tie downs - Secure

ENGINE FIRE DURING START

1. Starter - Crank engine
2. Mixture - Idle cut-off
3. Throttle - Open
4. Electric fuel pump - OFF
5. Fuel selector - OFF
6. Abandon if fire continues

ENGINE POWER LOSS DURING TAKEOFF

1. If sufficient runaway remains for a normal landing, land straight ahead.
2. If insufficient runaway remains:
    a. Maintain safe airspeed
    b. Make shallow turns to avoid obstructions Flaps as situation requires
3. If sufficient altitude to attempt a restart:
    a. Maintain safe airspeed
    b. Fuel selector - Tank containing fuel
    c. Electric fuel pump - Check ON
    d. Mixture - Check RICH
    e. Carburetor heat - ON
    f. Primer - Locked
    g. If still no power, plan power off landing

ENGINE POWER LOSS IN FLIGHT

1. Fuel selector - Tank containing fuel
2. Electric fuel pump - ON
3. Mixture - Check RICH
4. Carburetor heat - ON
5. Engine gauges - Check for indication of cause of pwr loss
6. Primer - Check locked
7. If no fuel pressure is indicated, check tank selector position is on a tank containing fuel.
8. When power is restored:
    a. Carburetor heat - OFF
    b. Electric fuel pump - OFF
9. If power is not restored, prepare power off landing.

10. Trim for 76 KIAS

POWER OFF LANDING

1. Locate suitable field. Establish spiral pattern
2. 1000 ft. above field at downwind position for normal landing approach.
3. When field can easily be reached,
    a. slow to 66 KIAS for shortest landing.
4. Touchdowns should normally be made at lowest possible airspeed with full flaps.
5. When committed to landing: Ignition - OFF
    a. Master switch - OFF
    b. Fuel selector - OFF
    c. Mixture - Idle cut-off
    d. Seat belt and harness - Tight

FIRE IN FLIGHT

Source of fire - Check

1. Electrical fire (smoke in cabin):
    a. Master switch - OFF
    b. Vents – Open
    c. Cabin heat - OFF
    d. Land as soon as practicable.

2. Engine fire:
    a. Fuel selector - OFF
    b. Throttle - Closed
    c. Mixture - Idle cut-off
    d. Electric fuel pump - Check OFF
    e. Heater and defroster - OFF
    f. Proceed with power off landing procedure.

HIGH OIL TEMPERATURE

1. Land at nearest airport and investigate the problem.
2. Prepare for a power off landing.

LOSS OF OIL PRESSURE

1. Land as soon as possible and investigate cause.

2. Prepare for power off landing.

LOSS OF FUEL PRESSURE

1. Electric fuel pump - ON
2. Fuel selector - Check on full tank

ALTERNATOR FAILURE

1. Verify failure
2. Reduce electrical load as much as possible.
3. Alternator circuit breakers - Check
4. Alt switch - OFF 1 second then ON
5. If no output:
    a. Alt switch - OFF
6. Reduce electrical load and land as practical.

SPIN RECOVERY

1. Throttle - Idle
2. Ailerons - Neutral
3. Rudder - Full opposite to direction of rotation
4. Control wheel - Full forward
5. Rudder - Neutral when rotation stops
6. Control wheel - Smoothly regain level flight altitude

OPEN DOOR

1. Slow airplane to 87 KIAS
2. Cabin vents - Close
3. Storm window - Open
4. If upper latch is open - Latch
5. If side latch is open - Pull on armrest while moving latch handle to latched position
6. If both latches are open - Side latch, then top

CARBURETOR ICING

1. Carburetor Heat - ON
2. Mixture - Max. smoothness

ENGINE ROUGHNESS

1. Carburetor heat - ON
2. If roughness continues after one min:
    a. Carburetor heat - OFF

b. Mixture - Max smoothness
c. Electric fuel pump - ON
d. Fuel selector - Switch tanks
e. Engine gauges - Check
f. Magneto switch -"L"&"R" then BOTH
g. If operation is satisfactory on either one, continue on that magneto at reduced power and full "RICH" mixture to first airport.
h. Prepare for power off landing