AIRSPEEDS (KIAS)

VNE ......... 149

VNO ......... 111

VA ........... 93-104

VFE ......... 85

VY ........... 67 @ S.L.

VX ........... 54 @ S.L.

VS1 .......... 40

VS0 .......... 35

**Mission Flight Academy**

**Version 1.0**

**1/26/2021**

**CABIN**

1. Check Discrepancies and Inspections

2. Required Papers in Airplane . . . . . . . . . . . . . . . (AROW)

3. Remove control wheel lock.

4. Check ignition switch OFF.

5. Primer . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .LOCKED

6. Turn on master switch and check fuel quantity indicators; then turn off master switch.

7. Check fuel selector valve handle on BOTH.

8. Master Switch ON for:

9. Flaps . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . FULL

10. Beacon/Strobes . . . . . . . . . . . . . . . . . . . . . . . . . .TEST

11. NAV Lights . . . . . . . . . . . . . . . . . . . . . . . . . . . . TEST (Night Operations)

12. Landing Light . . . . . . . . . . . . . . . . . . . . . . . . . . .TEST (Night Operations)

13. Interior Lights . . . . . . . . . . . . . . . . . . . . . . . . . . .TEST (Night Operations)

14. Master Switch . . . . . . . . . . . . . . . . . . . . . . . . . . .OFF

15. Fuel Shutoff Valve . . . . . . . . . . . . . . . . . . . . . . . ON

16. Check baggage door for security. Lock with key if children are to occupy child’s seat.

**FUSELAGE AND EMPENNAGE**

1. Fuselage/Empennage . . . . CHECK CONDITION
2. Disconnect tail tie-down.
3. Check control surfaces for freedom of movement and security. [BELOW]

4. Elevator . . . . . . . . . . . . . . .CHECK Attachment & Movement

5. Rudder. . . . . . . . . . . . . . . . CHECK Attachment & Movement

6. Trim Tab . . . . . . . . . . . . . . CHECK Attachment & Movement

**RIGHT WING**

1. Flap . . . . . . . . . . . . . . . . CHECK Attachment & Movement

2. Check aileron for freedom of movement and security. [Attachment, Movement, & 3 weights]

3. Leading Edge . . . . . . . . .CHECK CONDITION

4. Disconnect wing tie-down.

5. Check main wheel tire for proper inflation. [Condition, Inflation, & Brakes]

6. Chalk . . . . . . . . . . . . . . . REMOVE

7. Fuel Drain . . . . . . . . . . . TEST (100 Low Lead/Blue)

8. Visually check fuel quantity; then check fuel filler cap secure.

**NOSE**

1. Check oil level. Do not operate with less than six [6] quarts. Fill to eight [8] quarts for extended flights.

2. Before first flight of day and after each refueling, pull out strainer drain knob for about four [4] seconds to clear fuel strainer of possible water and sediment. Check strainer drain closed. If water is observed, there is a possibility that the fuel tank sump contains water. Thus, the fuel tank sump drain plugs and fuel selector valve drain plug should be removed to check for the presence of water.

3. Check propeller and spinner for nicks and security.

4. Alternator Belt . . . . . . . . . TIGHT

5. Oil Cooler . . . . . . . . . . . . . UNOBSTRUCTED

6. Check landing light for condition and cleanliness.

7. Check carburetor air filter for restrictions by dust or other foreign matter.

8. Check nose wheel strut and tire for proper inflation. [4 fingers]

9. Disconnect tie-down rope.

10. Windshield . . . . . . . . . . . . .CHECK CONDITION

11. Inspect flight instrument static source opening on side of fuselage for stoppage (left side only).

**LEFT WING**

1. Check main wheel tire for proper inflation.

2. Visually check fuel quantity, then check fuel filler cap secure.

3. Remove pitot tube cover, if installed, and check pitot tube opening for stoppage.

4. Check fuel tank vent opening for stoppage.

5. Check stall warning vent opening for stoppage.

6. Disconnect wing tie-down.

7. Leading Edge . . . . . . . . . . CHECK CONDITION

8. Check aileron for freedom of movement and security. [Attachment, Movement, and 3 weights]

9. Flap . . . . . . . . . . . . . . . . . .CHECK Attachment and Movement

10. Chalk . . . . . . . . . . . . . . . . .REMOVE

**BEFORE STARTING ENGINE**

1. Passenger Briefing . . . . . . COMPLETE

2. Seats, Seat Belts and Shoulder Harnesses -- Adjust and lock.

3. Fuel Selector Valve -- BOTH.

4. Brakes -- Test and set.

5. Radios and Electrical Equipment -- OFF.

6. Circuit Breakers . . . . . . . . CHECK IN

**STARTING ENGINE**

1. Mixture -- RICH.

2. Carburetor Heat -- COLD.

3. Key . . . . . . . . . . . . . . . . . . .IN IGNITION

4. Primer -- 1 - 2 strokes as required (none if engine is warm). Close and lock primer. \*\*Only if temp is 40F or colder

5. Throttle – Pump 3 times – Then open 1/8”.

6. Master Switch -- ON.

7. Beacon/Strobes . . . . . . . . . ON

8. Brakes . . . . . . . . . . . . . . . . ON

9. Propeller Area -- CLEAR.

10. Ignition Switch -- START (release when engine starts).

11. Throttle . . . . . . . . . . . . . . . .IDLE (1000 RPM or Below)

12. Oil Pressure -- Check.

13. Ammeter . . . . . . . . . . . . . . CHARGING

**BEFORE TAXI**

1. Safety Briefing . . . . . . . . . .Emergency Exit, Seat Belts, Fire Ext

 PIC, Positive Exchange of Controls

2. Radios/Avionics . . . . . . . . ON

3. Transponder . . . . . . . . . . . .ON (Set 1200 or Assigned Squawk)

4. Flight Instruments . . . . . . . CHECK CONDITION

5. Flaps . . . . . . . . . . . . . . . . . .UP

6. Radio . . . . . . . . . . . . . . . . . SET

7. Cross Wind Controls . . . . . APPLY

**TAXI**

1. Brakes . . . . . . . . . . . . . . . . . . . . TEST

2. Turn and Slip Indicator . . . . . . . CHECK

3. DG, Compass . . . . . . . . . . . . . . .CHECK PROPER OPERATION

**[RUN-UP] BEFORE TAKEOFF**

1. Parking Brake -- Set.

2. Flight Controls -- Check for free and correct movement.

3. Fuel Selector Valve -- BOTH.

4. Elevator Trim Control Wheel -- TAKE-OFF setting.

5. Mixture . . . . . . . . . . . . . . . . . .RICH

6. Throttle Setting -- 1700 RPM.

 7. Engine Instruments and Ammeter -- Check.

8. Suction Gauge -- Check (4.6 to 5.4 inches of mercury).

9. Magnetos -- Check (RPM drop should not exceed 125 RPM on either magneto or 50 RPM differential between magnetos).

10. Carburetor Heat -- Check operation.

11. Ammeter . . . . . . . . . . . . . . . . .CHARGING

12. Flight Instruments and Radios -- Set.

13. Throttle . . . . . . . . . . . . . . . . . . IDLE

14. Throttle Friction Lock . . . . . . .ADJUST

15. Optional Autopilot or Wing Leveler -- Off.

16. Lights . . . . . . . . . . . . . . . . . . . AS REQUIRED

17. Radios/Avionics . . . . . . . . . . . SET

18. Transponder . . . . . . . . . . . . . . ALTITUDE

19. Cabin Doors and Window -- Closed and locked.

20. Take Off Brief . . . . . . . . . . . . .RWY, Engine Failure, Purpose

**ROUGH MAG PROCEDURE**

1. Throttle . . . . . . . .2000 RPM

2. Mixture . . . . . . . .LEAN PK RPM

3. Time . . . . . . . . . .30 SECONDS

4. Mixture . . . . . . . .RICH

5. Throttle . . . . . . . 1700 RPM

Continue RUNUP @ Step 9

**TAKE-OFF.**

**NORMAL TAKEOFF.**

1. Wing Flaps -- 0°.

2. Carburetor Heat -- Cold.

3. Power -- Full throttle.

4. Elevator Control Lift nose wheel at 60 MPH.

5. Climb Speed -- 75 to 85 MPH.

**[SHORT FIELD TAKEOFF] MAXIMUM PERFORMANCE TAKE-OFF.**

1. Wing Flaps -- 0°.

2. Carburetor Heat -- Cold.

3. Brakes -- Apply.

4. Mixture . . . . . . . . . . . . . . . RICH

5. Power -- Full throttle.

6. Brakes -- Release.

7. Airplane Attitude -- Slightly tail low.

7. Elevator Control . . . . . . . . ROTATE @ 50 KIAS

8. Climb Speed -- 68 MPH until all obstacles are cleared.

9. Wing Flaps . . . . . . . . . . . . RETRACT @ 60+ KIAS

**CLIMB**

1. Airspeed -- 80 to 90 MPH.

NOTE

If a maximum performance climb is necessary, use speeds shown in the Maximum Rate-Of-Climb Data char in Section VI.

1. Power -- Full Throttle.
2. Mixture -- Full Rich (mixture may be leaned over 3000 feet).

**CRUISING**

1. Pitch. . . . . . . . . . . . . . . . . . LEVEL FLIGHT

2. Power -- 2200 to 2700 RPM.

NOTE

Maximum cruise RPM varies with altitude. For details, refer to Section IV.

3. Elevator Trim Control Wheel -- Adjust.

4. Mixture -- Lean for maximum RPM.

5. Fuel. . . . . . . . . . . . . . . . . . .CONFIRM QTY

**MANEUVERS**

1. Airspeed . . . . . . . . . . . . . . Va 93 - 104

2. Place to Land. . . . . . . . . . . IN EMERGENCY

3. Clearing Turns. . . . . . . . . . 2 x 90degee (First Left then Right)

**[DESCENT] LET-DOWN.**

1. Mixture -- Rich.

2. Power -- As desired.

3. Carburetor Heat -- As required to prevent carburetor icing.

**APPROACH**

1. **G**as . . . . . . . . . . . . . . . . . . SELECTOR ON BOTH

2. **U**ndercarriage . . . . . . . . . . GOOD TIRE INFLATION

3. **M**ixture . . . . . . . . . . . . . . . RICH

4. **P**rop . . . . . . . . . . . . . . . . . .FIXED

5. **S**eatbelts . . . . . . . . . . . . . . FASTENED

6. **S**witches………………….LIGHTS AS REQUIRED

7. Fuel Selector Valve -- BOTH.

8. Mixture -- Rich.

9. Carburetor Heat -- Apply full heat before closing throttle.

10. Wing Flaps -- As desired.

11. Airspeed -- 70 to 80 MPH (flaps up), 65 to 75 MPH (flaps down).

**BALKED LANDING (GO-AROUND).**

1. Power -- Full throttle.
2. Carburetor Heat -- Cold.
3. Wing Flaps -- Retract to 20°.
4. Upon reaching an airspeed of approximately 65 MPH, retract flaps

 slowly.

**NORMAL LANDING**

1. Airspeed . . . . . . . . . . . . . . 70-80 (Flaps Up) or 65-75 (Flaps 30°)

2. Wing Flaps . . . . . . . . . . . . AS DESIRED (Below 85 KIAS)

3. Airspeed . . . . . . . . . . . . . . 55-65 KIAS FINAL APPROACH

4. Touchdown -- Main wheels first.

5. Landing Roll -- Lower nose wheel gently.

6. Braking -- Minimum required.

**SHORT FIELD LANDING**

1. Airspeed . . . . . . . . . . . . . . 60-70 KIAS (Flaps Up)

2. Wing Flaps . . . . . . . . . . . . 30° (Below 85 KIAS)

3. Airspeed . . . . . . . . . . . . . . MAINTAIN 55 KIAS FINAL APPROACH

4. Touchdown……………….MAIN GEAR FIRST

5. Brake……………………..APPLY HEAVILY

6. Wing Flaps……………….RETRACT

**AFTER LANDING**

1. Wing Flaps -- Up.

2. Carburetor Heat -- Cold.

3. Transponder . . . . . . . . . . . STANDBY or ON

**SECURING AIRCRAFT**

1. Parking Brake -- Set.

2. Radios and Electrical Equipment -- OFF

3. Transponder . . . . . . . . . . . 1200/OFF

4. Magnetos . . . . . . . . . . . . . . CHECK GROUND

5. Throttle . . . . . . . . . . . . . . . 1200 RPM

6. Mixture -- Idle cut-off (pulled full out).

7. Ignition and Master Switch -- OFF.

8. Control Lock -- Installed

9. Secure . . . . . . . . . . . . . . . TIE DOWN and LOCK

10. Flight Plan . . . . . . . . . . . CLOSE