

**PILOT'S  
FLIGHT CREW CHECKLIST**

**C-172 N**

Manufacture date 1978

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**N 1401E**

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**USAF ACADEMY AERO CLUB**

**P.O. BOX 77**

**AIR FORCE ACADEMY, CO 80840**

**719-333-4423**

**20 October 2021**

**B**

**C-172 N / N1401E  
KTS**

<b>ROTATION</b>	<b>55</b>
<b>NORMAL CLIMB</b>	<b>70</b>
<b>SHORT FIELD TAKE-OFF</b>	<b>59</b>
<b>BEST GLIDE</b>	<b>65</b>
<b>V<sub>x</sub> (SL-10,000 MSL)</b>	<b>55</b>
<b>V<sub>y</sub> (SL-10,000 MSL)</b>	<b>73-68</b>
<b>V<sub>s</sub></b>	<b>47</b>
<b>V<sub>so</sub></b>	<b>41</b>
<b>V<sub>fe</sub></b>	<b>110/85</b>
<b>V<sub>a</sub> weight</b>	<b>97/89/80 (2300/1950/1600)</b>
<b>DOWNWIND</b>	<b>85</b>
<b>BASE</b>	<b>75</b>
<b>FINAL</b>	<b>65</b>
<b>SHORT FINAL FLAPS UP</b>	<b>60</b>
<b>SHORT FINAL FLAPS DOWN</b>	<b>55</b>
<b>USABLE FUEL Gals all flt conditions</b>	<b>40</b>
<b>MAX WEIGHT</b>	<b>2550</b>

## **PREFLIGHT**

### **INTERIOR INSPECTION**

1. Hobbs- and Tach-Meter Reading ----- **VERIFY**
2. Required Documents ----- **ON BOARD**
3. CO Detector Exp Date & Color ----- **CHECK**
4. Avionics Master Switch ----- **OFF**
5. Mixture ----- **IDLE CUT OFF**
6. Electrical Switches ----- **OFF**
7. Circuit Breakers ----- **IN**
8. Control Wheel Lock ----- **REMOVE**
9. Ignition Switch ----- **OFF**
10. Primer ----- **IN AND LOCKED**
11. Battery ----- **ON**
12. Voltage Light ----- **ON**
13. Fuel Quantity ----- **CHECK**
14. Flaps ----- **DOWN 30 DEGREES**
15. Landing Light ----- **CHECK, THEN OFF**
16. Pitot Heat ----- **CHECK, THEN OFF**
17. Nav / Beacon Lights ----- **CHECK, THEN OFF**
18. Battery ----- **OFF**
19. Beacon Light Switch ----- **ON**
20. Alternate Static Air ----- **CHECK, THEN OFF**
21. Elevator Trim ----- **SET FOR TAKE OFF**
22. Fuel Selector ----- **BOTH**

### **EXTERIOR INSPECTION**

#### **LEFT SIDE**

1. Fuel Tank Sump ----- **DRAIN**
2. Baggage Door ----- **CLOSED AND LOCKED**
3. E.L.T. Antenna ----- **CONDITION**
4. Left Fuselage & Bottom ----- **CONDITION**

## **EMPENAGE**

### **LEFT SIDE**

1. Vertical Stabilizer ----- **CONDITION**
2. Horizontal Stabilizer ----- **CONDITION**
3. Left Elevator ----- **CONDITION**
  - Movement and Stops ----- **CHECK**
  - Security (cable & Hinges) ----- **CHECK**
4. VOR Antenna ----- **CONDITION**
5. Rudder ----- **CONDITION**
  - Movement and Stops ----- **CHECK**
  - Security (Cable & Hinges) ----- **CHECK**
6. Tie Down ----- **REMOVE**

### **RIGHT SIDE**

8. Right Elevator ----- **CONDITION**
  - Movement and Stops ----- **CHECK**
  - Security (Cable & Hinges) ----- **CHECK**
  - Trim Tab (Alignment) ----- **CHECK**
9. Horizontal Stabilizer ----- **CONDITION**
10. Vertical Stabilizer ----- **CONDITION**
11. Right Side Fuselage ----- **CONDITION**

### **RIGHT MAIN LANDING GEAR**

1. Main Gear Strut ----- **CHECK**
2. Brake Assembly ----- **CHECK**
3. Tire Inflation & Condition ----- **CHECK**
4. Hub Nut & Pin ----- **CHECK**
5. Chock ----- **REMOVE**

## RIGHT WING

1. Fuel Tank Sump ----- DRAIN
2. Flap ----- CONDITION & SECURE
  - Tracks & Rollers ----- CONDITION
  - Control Rod ----- SECURE
3. Aileron ----- CONDITION & MOVEMENT
  - Hinges & Control Rod ----- SECURE
4. Wing Tip ----- CONDITION
5. Leading Edge ----- CONDITION
6. Under Surface of Wing & Strut ----- CONDITION
7. Tie Down ----- REMOVE
8. Fuel Quantity ----- CHECK VISUALLY
9. Fuel Filler Cap ----- SECURE
10. Top of Wing and Antennas ----- CONDITION
11. Air Vent Inlets ----- CLEAR

## NOSE

1. Windshield ----- CONDITION & CLEAN
2. Cowling Fasteners ----- SECURE
3. Radio Cooling Vent ----- CLEAR
4. Oil Quantity ----- CHECK
5. Oil Dipstick ----- SECURE
6. Fuel Strainer -----PULL OUT 4 SECONDS
7. Oil Access Door ----- SECURE
8. Spinner and Propeller ----- CONDITION
9. Engine Cooling Air Inlets ----- CLEAR
10. Alternator Belt ----- CHECK
11. Carburetor Air Filter ----- CONDITION
12. Nose Gear Strut ----- EXTENSION 3"
  - Steering Rods ----- SECURE
  - Shimmy Dampener ----- CONDITION
13. Tire ----- INFLATION & CONDITION
14. Tie Down ----- REMOVE
15. Static Port ----- CLEAR
16. Radio Cooling Vent ----- CLEAR
17. Cowling Fasteners ----- SECURE

## LEFT WING

1. Fuel Quantity ----- CHECK VISUALLY
2. Fuel Filler Cap ----- SECURE
3. Top of Wing and Antennas ----- CONDITION
4. Air Vents Inlets ----- CLEAR
5. Pitot Tube ----- -CHECK
6. Fuel Vent ----- CHECK
7. Stall Warning Horn Vent ----- CLEAR
8. Tie Down ----- REMOVE
9. Under Surface of Wing & Strut ----- CONDITION
10. Wing Leading Edge ----- CONDITION
11. Wing Tip ----- CONDITION
12. Aileron ----- CONDITION & MOVEMENT
  - Hinges and Control Rod ----- SECURE
13. Flap ----- CONDITION & SECURE
  - Tracks & Rollers ----- CONDITION
  - Control Rod ----- SECURE

## LEFT MAIN LANDING GEAR

1. Main Gear Strut ----- CHECK
2. Brake Assembly ----- CHECK
3. Tire Inflation & Condition ----- CHECK
4. Hub Nut & Pin ----- CHECK
5. Chock ----- REMOVE
6. Aircraft ----- ROLL FORWARD 1 FOOT
7. All Tires ----- CHECK AGAIN

## PASSENGER BRIEFING

1. Use of Seat Belt & Shoulder Harness
2. Operation of Fresh Air Vents
3. Latching of Doors & Windows
4. Location of Emergency Exits
5. Location of Survival Equipment

## BEFORE STARTING ENGINE

1. Seat & Seat Belts ----- ADJUST & SECURE
2. Flight Controls ----- FREE & CORRECT
3. Key ----- IN IGNITION

## NORMAL START

1. Mixture ----- RICH
2. Throttle ----- PUMP ONCE, THEN OPEN 1/8 INCH
3. Carburetor Heat ----- COLD
4. Primer ----- AS REQUIRED
5. Master Switch ----- ON
6. Propeller Area ----- CLEAR
7. Ignition Switch ----- START

- release when engine starts

If engine fails to start within 10 blades, stop cranking and allow starter to cool for 2 minutes.

## HOT START =====

1. Mixture ----- RICH
2. Throttle ----- PUMP ONCE, OPEN 1"
3. Carburetor Heat ----- COLD
4. Master ----- ON
5. Propeller Area ----- CLEAR
6. Ignition Switch ----- START

- =====
8. Throttle-----1000 RPM
  9. Oil Pressure / Suction ----- CHECK
  10. Ammeter / Voltage light ----- CHECK/OUT

## AFTER ENGINE START

1. Avionics Master Switch ----- ON
2. Nav Lights (Night) ----- ON
3. Flaps ----- UP (check visually)
4. Mixture ----- LEAN 1" (above 3000 MSL)
5. Radios ----- ON / SET FREQUENCIES
6. ATIS/ASOS ----- WEATHER/RUNWAY INFO

## TAXI

1. Obtain Taxi Clearance or announce on CTAF
2. Toe Brakes ----- CHECK
3. Control Surfaces ----- (according wind) POSITION
4. Flight Instruments during taxi ----- CHECK

## RUNUP

1. Brakes ----- HOLD
2. Throttle ----- 1700 RPM
3. Mixture --- above 3000' MSL LEAN FOR MAX POWER
4. Suction / Engine Instruments ----- CHECK
5. Ammeter ----- CHECK
  - Alternator OFF
  - Check ammeter discharge, Voltage Light ON
  - Alternator ON
  - Check ammeter charge, Voltage Light OUT
6. Carburetor Heat ----- CHECK
7. Magnetos ----- CHECK
  - check right first, 125 max drop / 50 max diff
8. Throttle ----- IDLE CHECK, THEN 1000 RPM
  - smooth engine operation
  - idle RPM
  - oil pressure
9. Mixture ----- ENRICHEN 1 FULL TURN
10. Flight Instruments ----- SET
11. Nav Instruments ----- SET COURSE

- 12. Departure Procedure ----- REVIEW
- 13. Emergency Procedures ----- REVIEW
- 14. Doors & Windows ----- CLOSED & LOCKED

**BEFORE TAKE-OFF**

- 1. Obtain T/O clearance or announce on CTAF
- 2. Landing Light ----- ON

**NORMAL TAKE-OFF**

- 1. Wing Flaps ----- UP
- 2. Carburetor Heat ----- COLD
- 3. Throttle ----- FULL OPEN
- 4. RPM 2300 / Oil pressure / Airspeed ----- CHECK
- 5. Rotate ----- 55KTS
- 6. Normal Climb Speed ----- 70KTS

**SHORT FIELD TAKE-OFF**

- 1. Wing Flaps -----UP
- 2. Carburetor Heat ----- COLD
- 3. Brakes ----- APPLY
- 4. Throttle ----- FULL OPEN
- 5. RPM (2300) / Oil Pressure ----- CHECK
- 6. Brakes ----- RELEASE
- 7. Elevator Control -----SLIGHTLY TAIL LOW
- 8. Climb Speed ----- 59 KTS
  - until all obstacles are cleared then climb at Vy-70

**SOFT FIELD TAKE-OFF**

- 1. Wing Flaps ----- 10°
- 2. Carburetor Heat ----- COLD
- 3. Brakes ----- DO NOT APPLY
- 4. Throttle as necessary to keep rolling.
- 5. Elevator Control ----- FULL BACK
- 6. Throttle ----- FULL OPEN
  - when aligned with the runway
- 7. Elevator Control ----- RELAX
  - after nose wheel is clear off the ground
- 8. RPM (2300) / Oil Pressure / Airspeed ----- CHECK

- 9. When airborne level off immediately and accelerate using ground effect, climb at Vx-59 until obstacles are cleared then, climb at Vy-70
- 10. Flaps ----- RETRACT INCREMENTALLY

**ENROUTE**

**CLIMB**

- 1. Normal Climb Speed ----- 70KTS
- 2. Throttle ----- FULL OPEN
- 3. RPM / Oil Pressure / Temp ----- CHECK
- 4. Flaps ----- UP
- 5. Landing Light ----- OFF

**CRUISING**

- 1. Throttle ----- 2200 – 2700 RPM
  - not more than 75%
- 2. Mixture ----- LEAN AS REQUIRED
  - WARNING: Improper leaning procedures will greatly reduce endurance.
- 3. Trim ----- ADJUST
- 4. Engine Instruments ----- CHECK
- 5. Flight Instruments ----- CHECK

**DESCENT**

- 1. Fuel Quantity ----- CHECK
- 2. Mixture ----- RICH AS REQUIRED
- 3. Carburetor Heat ----- AS REQUIRED
- 4. Throttle-----AS DESIRED

**LANDING**

**BEFORE LANDING**

- 1. Landing Light ----- ON
- 2. Carburetor Heat ----- ON
- 3. Throttle ----- AS REQUIRED

4. Mixture ----- RICH AS NECESSARY
5. Fuel Selector ----- BOTH
6. Seat Belt and Harness ----- FASTEN

#### NORMAL LANDING

1. Airspeed ----- 60KTS flaps up  
----- 55KTS flaps down
2. Touchdown ----- MAIN WHEELS FIRST
3. Landing Roll ----- LOWER NOSE WHEEL GENTLY
4. Braking ----- MINIMUM REQUIRED

#### GO-AROUND

1. Throttle ----- FULL OPEN
2. Carburetor Heat ----- COLD
3. Flaps ----- 20°
4. Establish Climb Attitude----- Vx-60 or Vy-70
5. Flaps -----RETRACT INCREMENTLLY

#### TOUCH-AND-GO PROCEDURE

1. Flaps ----- UP
2. Throttle ----- FULL OPEN
3. Carburetor Heat ----- COLD
4. Rotate ----- 55 KTS
5. Normal Climb Speed ----- 70 KTS

#### SHORT FIELD LANDING

1. Airspeed ----- 60KTS flaps up  
----- 55 KTS flaps up
2. Throttle ----- REDUCE TO IDLE
3. Touchdown ----- MAIN WHEELS FIRST
4. Flaps ----- RETRACT
5. Brakes ----- APPLY HEAVILY

#### SOFT FIELD LANDING

1. Airspeed ----- 60K flaps up  
----- 55K flaps down
2. Throttle ----- AS REQUIRED
  - touch on main wheels first as soft as possible
3. Landing Roll ----- LOWER NOSE WHEEL GENTLY
  - as late as possible
4. Elevator Control ----- (speed permitting) FULL BACK
5. Brakes ----- DO NOT APPLY
6. Flaps ----- DO NOT RETRACT
7. Throttle ----- AS NECESSARY
  - to keep rolling until clear of runway

#### AFTER LANDING

1. Landing Light ----- OFF
2. Carburetor Heat ----- OFF
3. Flaps ----- UP
4. Obtain taxi clearance or announce on CTAF

#### POST FLIGHT

##### SHUT DOWN

1. Avionics Master Switch ----- OFF
2. Nav Lights (if used) ----- OFF
3. Throttle ----- IDLE
4. Magneto Grounding ----- CHECK
5. Throttle ----- 1000 RPM
6. Mixture ----- IDLE CUT OFF
7. Throttle ----- CLOSE
8. Ignition Switch ----- OFF & KEY REMOVED
9. Master Switch ----- OFF
10. FLIGHT PLAN ----- CLOSE

## **SECURING AIRCRAFT**

- 1. Control Wheel Lock ----- (except in hanger) INSTALL**
- 2. Headsets ----- STOW**
- 3. Cabin Vents, Air & Heat Knobs ----- CLOSED**
- 4. CO Detector Color ----- CHECK**
- 5. Hobbs and Tach Readings / Key ----- RECORD**
- 6. Sun Screen (summer) ----- INSTALL**
- 7. Seat Belt & Should Harness ----- STOW**
- 8. Fuel Selector ----- LEFT OR RIGHT**
- 9. Remove personnel belongings, including trash**
- 10. Inspect Tires ----- CHECK FOR TREAD CORD**
- 11. Chocks ----- INSTALL**
- 12. Oil Access Door (summer only) ----- OPEN**
- 13. Windshield ----- CLEAN**
- 14. Tie Downs ----- INSTALL**
- 15. Master Switch ----- RE-CHECK OFF**
- 16. Doors & Windows ----- CLOSE AND LOCK**
  - Do not lock airplane in hangar**
  - Windows open (summer only)**
- 17. Checklist ----- STOW BETWEEN PILOT SEATS**