

**PILOT'S
FLIGHT CREW CHECKLIST**

C-172 N

Manufacture date 1978

N 1401E

USAF ACADEMY AERO CLUB

P.O. BOX 77

AIR FORCE ACADEMY, CO 80840

719-333-4423

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B

**C-172 N / N1401E
KTS**

ROTATION	55
NORMAL CLIMB	70
SHORT FIELD TAKE-OFF	59
BEST GLIDE	65
V_x (SL-10,000 MSL)	55
V_y (SL-10,000 MSL)	73-68
V_s	47
V_{so}	41
V_{fe}	110/85
V_a weight	97/89/80 (2300/1950/1600)
DOWNWIND	85
BASE	75
FINAL	65
SHORT FINAL FLAPS UP	60
SHORT FINAL FLAPS DOWN	55
USABLE FUEL Gals all flt conditions	40
MAX WEIGHT	2550

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**