

DA-40: Preflight

WX & personal minimums ..Checked
Weight and balance.....Checked

External & Cockpit

Pitot tube coverRemove
Control lockRemove
Ignition..... Off and key removed
Hobbs time..... Check and record
AROW documentsCheck
Fire extinguisher & hammerCheck
All electrical switches Off
Circuit breakersCheck in
Mixture..... Full lean
Prop RPM..... Full forward
Throttle..... Idle
Master BAT switch On
Fuel quantity indicators.....Check
Exterior lights and pitot heat On
Exterior lights..... Check operational
Pitot heatCheck warm
Interior lights..... Check operational
All lights and pitot heat..... Off
MFD database Check current
Master BAT switch Off

Each Wing

Wing surface Inspect
Step Inspect
Air intake Inspect for blockage
Fuel quantity Measure
Fuel vent..... Inspect for blockage
Strut..... Inspect
Wheel fairing Inspect
Tire inflation Check (36 psi)
Tire tread..... Inspect
Tire, wheel, brake..... Inspect
Brake line Inspect
Stall warning (left wing) Inspect
Fuel vents Inspect
Pitot tube (left wing) Inspect
Landing light (left wing) Inspect
Taxi light (left wing) Inspect
Wing tip Inspect
Position light, strobe light Inspect
Tiedown ropeRemove
Aileron and linkage Inspect
Aileron hinges Inspect
Aileron paddle..... Check for objects
Flap and linkage..... Inspect
Flap hinges and safety pin..... Inspect

Rear

Windows..... Clean
Skin Inspect
Antennas..... Inspect
Control surfaces..... Inspect
Hinges Inspect
Elevator trim tab Inspect
Rudder trim tab..... Inspect
Tiedown rope..... Remove
Tail skin..... Inspect

Front

Windows..... Clean
Oil level Min. 4 qts (6 preferred)
Cowling Inspect
Air intakes Inspect
Propeller blades Inspect
Spinner Inspect
Nose landing gear Inspect
Nose tire and wheel Inspect
Nose tire tread Inspect
Nose tire inflation Check (29 psi)
Nose tire fairing..... Inspect
Exhaust Inspect
Antennas..... Inspect
Venting pipes..... Check for blockage
Fuselage underside Check

Fluids

Wing fuel sumps (2) ... Drain & check
Nose fuel sump Drain & check
Fuel quantity (2) Check visually
Fuel filler caps (2) Secure

Final Check

All tires Roll and check
Rear door .. Closed, latched, unlocked
Area Clear
Tie-downs..... Removed
Chocks..... Removed

DA-40: Engine Start, Taxi, and Runup

Engine Start

Rudder pedals... Adjusted and locked
Passengers briefed
..... Seats, belts and harnesses
..... Door operation
..... Headset
..... Emergency procedures
..... Emergency supplies
..... Sterile cockpit
..... Looking for traffic
Cell phones..... Off
Safety harnesses Latched
Rear door..... Closed and latched
Front canopy Position 1 or 2
Alternate static Closed
Essential bus switch Off
Avionics master switch Off
Alternate air Closed
Throttle..... Full idle
Prop RPM..... Full forward
Mixture..... Full lean
Parking brake Set
Fuel selector Least full tank
Master BAT switch On
Annunciators Check
Strobe light switch On
Nav lights On (night)
Fuel pump switch On (note noise)
Throttle..... 1/4" open
Mixture..... Rich for 4 seconds
..... Steady fuel flow, then full lean
If engine is cold, throttle 1/2" open
Brakes Hold tight
Propeller area Check and yell
Ignition switch..... Start
When engine fires, mixture full rich
Throttle..... Adjust to 1000 RPM
Oil pressure Check in green
Master ALT switch On
Ammeter and voltage Check
Fuel pump Off
Fuel flow Check in green
Mixture..... Lean as appropriate

Pre-Taxi

Avionics switch On
Annunciators Check appropriate
PFD No red Xs after 45 seconds
Engine fuel quantity Set in MFD
Standby AI..... Pull to cage
Flaps Check UP-T/O-LDG-UP
Fuel selector Fullest tank
MFD AUX page 6 No red Xs
MFD AUX page 4 User profile set
Lights..... As required
Autopilot self test Complete
ATIS/AWOS Received
Altimeters (G1000, standby, autopilot)
..... Set
Parking brake..... Off

Taxi

Pilot brakes Test
Co-pilot brakes Test
Standby AI..... Level during turns
..... No dip during acceleration
Compass Moves freely

Engine Runup

Parking brake..... Set
Flight controls..... Free and correct
Ailerons, elevator, rudder
Electric trim..... Check (L/R/both)
Autopilot..... Test
Elevator trim..... Set for takeoff
Engine instruments Green
Circuit breakers Check in
Fuel pump switch On
Mixture Rich (below 5000')
Throttle 2000 RPM
Prop RPM Cycle 3 times
..... (500 RPM max drop)
MFD Set to ENGINE
Magnetto check
(Max 175 RPM drop, 50 RPM diff)
Check EGT increase each time
Oil temp & pressure..... Check
Throttle Idle (Smooth)
Throttle 1000 RPM
Fuel pump..... Off
MFD Map page
Mixture Lean as appropriate

DA-40: Takeoff through Shutdown

Avionics Setup

GPS flight plan..... Loaded
Appropriate GPS leg Activated
Comm freqs.....Set
VOR freqsSet
Inset map..... Set (Terrain)
CDI.....Set
HSI OBS Set (if needed)
Bearing pointersSet
Transponder code.....Set
MFD map.....Set
(Topo, Declutter, Airway)
Heading bugSet
Altitude preselect Set (Bug, A/P)
Marker beacon.....Set
Timer.....Set

Takeoff

CanopyClosed and latched
Rear door.....Closed and latched
Seat belts & harnesses.....Latched
Flight instruments Check & Set
AnnunciatorsNo red or yellow
..... (pitot OK)
Trim T/O
Flaps..... T/O
Mags..... Both
Fuel pump switchOn
Alternate airClosed
Parking brake Off
Appropriate T/O technique..... Choose
Speeds & emergency plansReview
Rotate at59 KIAS
Climb at.....54 – 67 KIAS
(until obstacles cleared)

When cleared onto the runway:

Takeoff time Record
LightsAll on
Mixture..... Rich (below 5000 feet)
Prop..... Full

Climb

Flaps (at 73 KIAS) Retract
At 1000' AGL:
Prop RPM.....2400 RPM
Fuel pump switch Off
Check pressure in green
Vy (flaps up)60 – 76 KIAS

Cruise

6000' power settings:
75% power...25.3" 2400 RPM, 11.0 gph
65% power...24.5" 2200 RPM, 9.5 gph
55% power...23.5" 2000 RPM, 8.0 gph
45% power 20.0" 2000 RPM
Lights.....As required
Mixture Lean with MFD assist
Fuel selector Switch hourly
Pitot heat.....On in rain or clouds

When new altimeter setting received:
G1000, standby altimeter, autopilot

Before Landing

(L) Lights..... On as appropriate
(G) Fuel pump switchOn
(G) Fuel selectorFullest tank
(U) BrakesTest, heels on floor
(M) Mixture Full rich
(P) Prop RPM Full forward
(S) Safety harnesses.....Latched
Final approach speed ... 58 – 73 KIAS
(No flaps 60 – 76 KIAS)

Go-Around

Throttle Full
Flaps Retract to T/O
Airspeed 54 – 67 KIAS
FlapsRetract
..... Continue with CLIMB checklist

After Landing

FlapsUp
Mixture Lean as appropriate
Trim..... T/O
Fuel pump..... Off
Pitot heat.....Off
Lights.....As required

Best glide 60 – 76 KIAS

Shutdown and Securing

Avionics switch..... Off
Lights Off
Throttle..... 1000 RPM
Ignition..... Off briefly, then Both
Mixture..... Full lean
Ignition switch..... Off, remove key
Engine time Record
Master BAT/ALT switches Off
Essential bus switch Off

In tie-down spot:

Tiedown ropes Attach
Hobbs time and squawks Record
Control lock..... Install
Pitot tube cover..... Install
Canopy and rear door Locked

DA-40: In-Flight Emergency Procedures

Engine Failure During Flight

Airspeed 60 – 76 KIAS (flaps up)
Turn toward preselected field

If time permits, try to restart:

Fuel selector valve Switch tanks
Mixture..... Rich
Alternate air Open
Fuel pump On
Ignition switch..... Both
..... Start (if propeller stopped)

If time permits, call for help:

Transponder 7700
Radio Last frequency or 121.5
... Announce MAYDAY and position

Passengers Brief
(Door operation, seat belts,
seat/crash position, exiting airplane)

When committed to landing:

Fuel selector valve Off
Mixture..... Idle cut-off
Ignition switch..... Off
Flaps..... As required
Master switch Off

Engine Fire in Flight

Cabin heat..... Off

Turn toward preselected field

Fuel selector valve Off
Mixture Idle cut-off
Throttle Full
Ignition switch..... Off
Fuel pump..... Off
Master switch Off
Seat belts Tight
Passengers Brief
(Door operation, seat belts,
seat/crash position, exiting airplane)

Electrical Fire in Flight

Emergency switch On
Master switch Off
Cabin heat..... Off
Emergency windows Open
Fire extinguisher Activate
..... (if needed)
Airplane Land ASAP

Alternator Failure

Circuit breakers Check
ALT master Off
ALT master On
Essential bus On
Unnecessary equipment Off
Airplane Land ASAP
Emergency switch On
..... (if needed)