DA40-180 (Ted Yin v1.0)

Ground Operations

Initial

- ► Papers ·················· A.R.O.W.
- ► Fire Extinguisher ···· check
- ► Mags. ················· key out
- ► Electrical ··················· off
- ► Avionics ···················· off
- ► Essential Bus ·········· off
- ► Mixture ········· idle cutoff
- ► Prop ················ high RPM
- ► Throttle ···················· idle
- ► Master ························ on
- ► Flaps ······· check & set T/O
- ► Lights/Pitot ············· test
- ► Fuel Pump ·············· check
- ► Fuel ························ note
- ► Master ························ off
- ► Controls ···· free & correct
- ► Hobbs Time ·············· note

Walkaround

- ► Fuel/Oil ········· test/sample
- ► Caps/Drains/Vents
- ► Surfaces/Controls
- ► Stall Strips/Fairings
- ► Exhaust/Antennas
- ► Prop/Air Intakes x3
- ► Pitot/Static/Stall
- ► Struts/Tires/Brakes
- ► Ties/Chocks
- ► Canopy/Door
- ► Final Walkaround

Pre-Start

- ► Rear Door ············· secure
- ► Rudder Pedals ········· adjust
- ► Seat Belts ················· on
- ► Parking/Brakes ····· test/set
- ► Circuit Brkrs. ·········· check
- ► Strobe (ACL) ··············· on
- ► Avionics ···················· off
- ► Essential Bus ·········· off
- ► Fuel Selector ·········· least
- ► Canopy ················ pos. 1/2
- ► Passenger ················ brief

Start

- ► Prime
- • Mixture ········ idle cutoff
- • Prop ················ high RPM
- • Friction ·············· adjust
- • Master (Battery) ········· on
- • Throttle ················· 1.2"

- • Electric Pump ············· on
- • Warm
- · Mixture ············· 1-3 sec
- • Cold
- · Mixture ············· 3-5 sec
- · Throttle ················· 0.4"
- ► Electric Pump ············· off
- ► "Prop Clear!"
- ► Mags. ·················· start
- • Mixture ·················· rich
- ► Throttle ·········· 1000 RPM
- ► Oil Pressure ······· 15 secs.
- ► Fuel Pressure ···· 14-35 psi
- ► Master (Alternator) ······ on
- ► Volts/Amps ···· 25-30V/2-75A
- ► Engine Inst. ··········· no Xs
- ► Mixture ·········· lean (peak)

Pre-Taxi

- ► Flaps ·········· UP, then T/O
- ► Lights ·········· as required
- ► Avionics ·············· on/set
- ► GPS ··················· DB date
- ► Fuel Totalizer ········· enter
- ► ATIS ······· PFD/backup/AP(?)
- ► Radio ····················· test
- ► Transponder ··········· squawk
- ► Check ········· TC/AI/HSI<->MC
- ► Clearance ·············· obtain
- ► Brakes ············ release/test

Run-Up

- ► Brake ····················· set
- ► Seat Belts ·············· check
- ► Canopy/Door ·············· lock
- ► Door Warning ·············· off
- ► Flight Controls ······ check
- ► Heading/Altitude ········· set
- ► Comm/Nav/FPL ············· set
- ► Engine
- • Fuel Selector ······ fullest
- • Mixture ··················· rich
- • Throttle ············ 2000 RPM
- • Cycle Prop x3 ···· -250~500
- • Mags. L/R ···· -175, +/-50
- • Alternate Air ········· check
- • Indicators ············· check
- • Throttle ················· idle
- • Throttle ·········· 1000 RPM
- • Mixture ················· lean
- ► Full Check (initial)
- • Alternate Static ····· check
- • GPS/System/Ann. ····· check
- • AP ···················· MET/HDG

- • MFD Range/Track Up ···· set
- • Instruments ············· scan
- • Lights ·········· as required
- • (ADSB Handheld ·········· on)

Shutdown

- ► ELT ············· check (121.5)
- ► Avionics ···················· off
- ► Electrical ··················· off
- • ACL Strobes ················ on
- ► Throttle ·········· 1000 RPM
- ► Mags. ········· off then both
- ► Mixture ········· idle cutoff
- ► Mags. ················· key out
- ► Tach Time ··············· note
- ► Master ························ off

Post-Flight

- ► (ADSB Handheld ·········· off)
- ► Flight Plan ············· close
- ► Hobbs Time ·············· note
- ► Under Seats ·············· check
- ► Gust Lock ··················· on
- ► Pitot Cover ················· on
- ► Tiedowns/Chocks ··········· on
- ► Canpoy/Door ·············· lock
- ► Post-Flight ······ walkaround

Flooded Engine

- ► Electric Pump ············· off
- ► Mixture ···· lean (full aft)
- ► Throttle ······· 1/2 position
- ► Mags. ·················· start
- ► When engine fires:
- • Throttle ·················· idle
- • Mixture ····· rich (rapidly)
- ► Finish up normal start

Airspeeds (KIAS)

- ► Vr ···································· 59
- ► Vs0 ········ 49, Vs1 ········ 52
- ► Mass ··· 2646/2535/2205/1874
- • Vg ·············· 76/73/68/60
- • Vy(Up) ········· 76/73/68/60
- • Climb(T/O) ···· 67/66/60/54
- • Approach Speeds
- · Up ················· 76/73/68/60
- · T/O ············· 74/72/66/59
- · LDG ············· 73/71/63/58
- ► Va
- • MAM 40-227
- · yes ······· 111 @ 2646-2284
- · no ········· 108 @ 2535-2161
- • o/w 94 @ below 2284/2161
- ► Steep Turn: <=45°, >=68

In-Flight Operations

Pre-Takeoff

- ▸ Abort Plan/Lost Comm.
- ▸ Canopy/Door ················· lock
- ▸ Trim ···························· T/O
- ▸ Fuel Selector ······· fullest
- ◯ ▸ Flaps ························· T/O
- ▸ `Mixture` ···················· rich
- ▸ `Prop` ··················· high RPM
- ▸ Pitot Heat ······· as required
- ▸ (Air Conditioner ······· off)
- ▸ Review Airspeeds
- ▸ Time ···················· note/start

Takeoff

- ▸ "Lights, Camera, Action"
- • `Electric Pump` ············ on
- • Mixture/Prop/Throttle
- ▸ Engine Inst.·············· green
- ◯ ▸ Vr····· 59, then ····· 67-60
- ▸ Safe Altitude
- • `Prop` ················ 2400 RPM
- • `Pump` ······················· off
- • Lights ············ as required

Climb

- ▸ T/O: Vy ······· 67-54 KIAS
- ▸ Cruise ······· 76-60 KIAS
- • Flaps ························· UP
- ▸ `Mixture` ···················· rich
- • >5000 hold const. EGT
- ◯ ▸ `Prop` ················ 2400 RPM
- ▸ `Throttle` ···················· full
- ▸ Engine Inst.·············· green
- ▸ Trim················· as required
- ▸ High Altitude ···· `pump` on

Cruise

- ▸ Flaps ························· UP
- ▸ `Throttle` ·············· 21-24"
- ▸ `Prop` ······· 1800-2400 RPM
- ▸ `Mixture`
- • Economy ···· max EGT, <=75%
- • Best····· 100°F(55°C) lower
- • Higher Power········ richen
- ◯ ▸ High Altitude ···· `pump` on
- ▸ Flow Check (∿15 min)
- • Trim, Switch Tanks
- • Mixture/Prop/Throttle
- • Flaps, Engine Inst.
- • Pump, Mag., Master
- ▸ CHT ··················· 150-400°F
- ▸ Oil ··················· 165-220°F

Descent

- ▸ `Mixture` ······· richen slowly
- ▸ `Throttle` ········· as required
- ▸ `Prop` ········· 1800-2400 RPM
- ▸ High Altitude ····· `pump` on
- ▸ CHT Cool Down
- • <= 50°F(22.8°C)/min.

Pre-Landing

- ▸ ATIS/Rwys/Approach Plan
- ▸ "CCGUMPSF"
- `G` Fuel Selector ········ fullest
- `M` `Mixture` ············ rich
- `P` `Pump` ················· on
- `P` `Prop` ········· high RPM
- `S` Seat Belts ······· secure
- `F` Flaps ······ as required
- · T/O ··················· <108 KIAS
- · LDG ··················· <91 KIAS
- ▸ Trim ············· as required
- ▸ Lights ············ as required
- ▸ Approach Speed ········· 73-58
- ▸ (Air Conditioner ······· off)

Go Around

- ▸ `Throttle` ···················· full
- ▸ Vy ············· 67-54 KIAS
- ▸ Flaps ························· T/O
- ▸ Safe Altitude
- • `Prop` ················ 2400 RPM
- • `Pump` ······················· off
- • Lights ············ as required
- • Cruise Climb

Post-Landing

- ▸ `Throttle` ············ 1000 RPM
- ▸ `Mixture` ···················· lean
- ▸ Flaps ························· UP
- ▸ `Electric Pump` ············ off
- ▸ Pitot Heat ················· off
- ▸ Trim ·························· T/O
- ▸ Lights ············ as required
- ▸ Clearance ············· obtain

CO Contamination

- ▸ Cabin Heat ················· off
- ▸ Ventilation ············· open
- ▸ Emergency Windows ····· open
- ▸ Canopy ···· open (partially,
- `DO NOT unlock rear door`
- during flight)

Engine Failure

- ▸ Short Flow
- 1. Fuel Selector fullest
- 2. `Mixture` ·· full/check
- 3. `Pump` ··················· on
- 4. Alternate Air ······· on
- 5. Mags.·········· check all

Glide and Trim

- • Airspeed ······· `76-60 KIAS`
- • Windmill ········ 1.45nm/1kft
- • Stationary ······· 1.7nm/1kft
- ▸ Wind and Landing Site
- ▸ Longer Flow
- • Engine Inst. ··········· check
- • Short Flow

Windmill Restart

- • Airspeed ········· 70-80 KIAS
- • Mags.····················· `both`
- • `Mixture` ········ lean then
  slowly richen

Stationary Restart

- • Airspeed ·········· 80 KIAS
- • Electrical ················· off
- • Avionics ···················· off
- • Master··················· on
- • Mags.····················· `start`

Engine-off Landing

- • Fuel Selector ············· off
- • `Mixture` ······· idle cutoff
- • Mags.······················ off
- • Master ····················· off
- • Belt and Seat ········· check
- • Flaps·····LDG (when able)
- • Unlatch Door?/Brace

Engine Fire

- ▸ Cabin Heat ················· off
- ▸ Emergency Descent
- ▸ Landing is ensured
- • Fuel Selector············· off
- • `Throttle` ················· full
- • `Pump` ······················· off
- • Master ····················· on
- • Emergency Windows ····· open
- ▸ Engine-off Landing

Electrical Fire

- ▸ Emergency Switch ········ on
- ▸ Master················· off
- ▸ Cabin Heat ················· off
- ▸ Emergency Windows ······ open
- ▸ Canopy ················ partially
- ▸ Land ASAP