DA40-180 (Ted Yin v1.1)

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 ···················· note
- ► Master ··················· off
- ► Controls ···· free & correct
- ► Hobbs Time ············· note

Walkaround

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

Pre-Start

- ► Passenger ················ brief
- ► Rear Door ············· secure
- ► Canopy ············· pos. 1/2
- ► Seat Belts ················ on
- ► Brakes ·············· test/set
- ► Circuit Brkrs. ········· check
- ► Strobe (ACL) ············· on
- ► Avionics ················· off
- ► Essential Bus ··········· off
- ► Mixture ········· idle cutoff
- ► Prop ··············· high RPM
- ► Friction ··············· adjust
- ► Master (Battery) ·········· on
- ► Rudder Pedals ········ adjust
- ► G1000 DB Date ········· check
- ► Fuel Selector ········· least

Start

- ► Throttle ·················· 1.2"
- ► Electric Pump ············· on
- ► Warm
  - • Mixture ············· 1-3 sec
- ► Cold
  - • Mixture ············· 3-5 sec
  - • Throttle ············· 0.4"
- ► "Clear Prop!"
- ► Mags. ················· start
  - • Mixture ················ rich
- ► Throttle ·········· 1000 RPM
- ► Mixture ······· lean (peak)
- ◊ Oil Pressure ·········· 15 sec
- ► Electric Pump ············ off
- ► Alternators ··············· on
- ► Engine Indicators ···· check

Pre-Taxi

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

Run-Up

- ► Brake ···················· set
- ► Seat Belts ············· check
- ► Canopy/Door ············ lock
- ► Door Warning ············ off
- ► Flight Controls ······· check
- ► Instruments
  - • Alternate Static ···· check
  - • GPS/System/Ann. ····· check
  - • AP ················· MET/HDG
  - • Heading/Altitude ······· set
  - • Com/Nav/FPL ············ set
  - • MFD Range/Track Up ··· set
  - • Instruments ··········· scan
  - • Lights ········· as required
- ► Engine
  - • Fuel Selector ····· fullest
  - • Mixture ················ rich
  - • Throttle ········· 2000 RPM
  - • Cycle Prop x3 ··· -250~500
  - • Mags. L/R ··· -175, +/-50
  - • Alternate Air ········ check
  - • (Standby Alternator)
    - · Master (Alt.) ·········· off
    - · STBYALT ON ·············· on
    - · Electrical Load increase
    - · STBYALT ON ········ flashing
    - · Master (Alt.) ··········· on
  - • Indicators ············· check
  - • Throttle ················ idle
  - • Throttle ·········· 1000 RPM
  - • Mixture ················ lean
  - • Each Tank ···· 1 min, 1500

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
- ► (Standby Alternator ·· off)
- ► Master ··················· off

Post-Flight

- ► Flight Plan ············· close
- ► Hobbs Time ············· note
- ► Under Seats ··········· check
- ► Gust Lock ················ on
- ► Pitot Cover ··············· on
- ► Tiedowns/Chocks ········· on
- ► Canopy/Door ············ lock

Flooded Engine

- ► Electric Pump ············ off
- ► Mixture ····· lean (full aft)
- ► Throttle ······· mid 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
    - · Up ········· 76/73/68/60
    - · T/0 ········· 74/72/66/59
    - · LDG ········ 73/71/63/58
- ► Va ············ MAM 40-227
  - • yes ········ 111 @ 2646-2284
  - • no ········· 108 @ 2535-2161
  - • o/w ········· 94 @ <2284/2161
- ► Bank: 30/45/60° ·· 58/68/83

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` ··········· as required
- • `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` ············ as required
- ▸ `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
- • `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` ············ as required
- • `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
- ▸ Transponder ···· 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