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

- 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

- 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

Airspeeds (KIAS)
- V_r ··················· 59
- V_{s0} ····· 49, V_{s1} ··· 52
- Mass ··· 2646/2535/2205/1874
- V_g ············· 76/73/68/60
- V_y(Up) ········· 76/73/68/60
- Climb(T/O) ······· 67/66/60/54
- Approach
  - Up ············· 76/73/68/60
  - T/O ············ 74/72/66/59
  - LDG ············ 73/71/63/58
- MAM 40-227
- V_a
  - yes ········· 111 @ 2646-2284
  - no ·········· 108 @ 2535-2161
  - o/w ··· 94 @ <2284/2161
- Bank: 30/45/60° 58/68/83

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
- Vy .... 67-60 KIAS
- Flaps .... UP
- [Mixture] .... rich
- Safe Altitude
- [Prop] .... as required
- [Pump] .... off
- Lights .... as required

Climb
- T/O: Vy .... 67-54 KIAS
- Cruise .... 76-60 KIAS
- High Altitude .... [pump] on
- Trim .... as required
- Engine Inst. .... green
- [Throttle] .... full
- [Prop] .... as required
- >5000 hold const. EGT
- [Mixture] .... rich
- Lights .... as required

Cruise
- Flaps .... UP
- [Throttle] .... 21-24"
- [Prop] .... 1600-2400 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)
- Mags.

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
- Emergency Switch .... on
- Master .... off
- Cabin Heat .... off
- Ventilation .... open
- Emergency Windows .... open
- Canopy .... open (partially,
- [DO NOT unlock rear door during flight)]

Electrical Fire
- Emergency Switch .... on
- Master .... off
- Cabin Heat .... off
- Emergency Windows .... open
- Emergency Windows .... open
- Canopy .... partially
- Land ASAP

Engine Fire
- Cabin Heat .... off
- Emergency Descent
- Landing is ensured
- Fuel Selector .... off
- [Throttle] .... full
- [Pump] .... off
- [Mixture] .... idle cutoff
- Fuel Selector .... off
- Mags. .... off
- Master .... off
- Belt and Seat .... check
- Flaps .... LDG (when able)
- Unlatch Door?/Brace

Engine Failure
- 1. Fuel Selector .... fullest
- Short Flow
- 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
- Master .... off
- Mags. .... off
- [Mixture] .... idle cutoff
- Fuel Selector .... off

Engine-off Landing
- Mags. .... off
- Master .... on
- Avionics .... off
- Electrical .... off
- Airspeed .... 80 KIAS
- Master .... off
- Flaps .... LDG (when able)
- Unlatch Door?/Brace
- [start]