

DA40-180 (Ted Yin v1.2)

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 Brkr.s..... check
- ▶ Strobe (ACL)..... on
- ▶ Avionics..... off
- ▶ Essential Bus..... off
- ▶ Mixture..... idle cutoff
- ▶ Prop..... high RPM
- ▶ Friction..... adjust
- ▶ Master (Battery)..... on
- ▶ Rudder Pedals..... adjust
- ▶ 11000 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
 - Indicators..... check
 - (Standby Alternator)
 - Master (Alt.)..... off
 - STBYALT ON..... glow
 - Elect. Load..... increase
 - STBYALT ON..... flashing

- Master (Alt.)..... on
- STBYALT ON..... dark
- Elect. Load..... normal
- 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
- ▶ Covers/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/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 @ <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, $\leq 75\%$
 - Best ... 100°F (55°C) lower
 - Higher Power richer
- ▶ 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
 - $\leq 50^\circ\text{F}$ (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