

DA40-160 (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

- ▶ 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
- ▶ GA000 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"
- ▶ "Prop Clear!"
- ▶ Mags. start
- ▶ Mixture rich
- ▶ Throttle 1000 RPM
- ▶ Mixture lean (peak)
- ▶ Oil Pressure 15 sec
- ▶ Electric Pump off
- ▶ Alternators on
- ▶ Engine Inst. check
- ▶ Fuel Pressure 14-35 psi
- ▶ Volts/Amps 25-30V/2-75A

Pre-Taxi

- ▶ Flaps UP, then T/O
- ▶ Lights as required
- ▶ Avionics on/set
- ▶ Fuel Totalizer enter
- ▶ ATIS PFD/backup/AP(?)
- ▶ Radio test
- ▶ Transponder squawk
- ▶ Check TC/Alt/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
- ▶ Com/Nav/FPL set
- ▶ Engine
- ▶ Fuel Selector fullest
- ▶ Mixture rich
- ▶ Throttle 2000 RPM
- ▶ Cycle Prop x3 -250-500
- ▶ Mags. L/R +/-50
- ▶ Alternate Air check
- ▶ Indicators check
- ▶ Throttle idle
- ▶ Throttle 1000 RPM
- ▶ Mixture lean
- ▶ Each Tank 1 min, 1500
- ▶ Full Check (initial)
- ▶ Alternate Static check
- ▶ GPS/System/Ann. check
- ▶ AP MET/HDG

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
- ▶ GA000 DB Date check
- ▶ Fuel Selector least

Start

- ▶ Throttle 1.2"

- ▶ 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
- ▶ (Standby Alternator off)
- ▶ Master off

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)

- ▶ V_r 59
- ▶ V_{SO} 49, V_{S1} 52
- ▶ Mass 2546/2535/2205/1874
- ▶ 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
- ▶ V_a MAM 40-227
- ▶ yes 111 @ 2546-2284
- ▶ 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** 23-24"
 - ▶ **Prop** 1800-2400 RPM
 - ▶ **Mixture** rich
 - ▶ Economy max EGT, <=75%
 - ▶ Best 100°F(59°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
- ▶ <= 50°F(22.8°C)/min.

Pre-Landing

- ▶ ATIS/Rwys/Approach Plan
 - ▶ "CGIMPSF"
 - ▶ **G** Fuel Selector
 - ▶ **M** **Mixture** rich
 - ▶ **P** **Pump** on
 - ▶ **P** **Prop** high RPM
 - ▶ **S** Seat Belts secure
 - ▶ **F** Flaps as required
 - ▶ T/O <100 KIAS
 - ▶ LDG <91 KIAS
 - ▶ Trim as required
 - ▶ Lights as required
 - ▶ Approach Speed 73-56
 - ▶ (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
- ### C0 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 1.45m/1kft
 - ▶ Stationary 1.7m/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