

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 Brkr. .... 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 Bat. .... 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 Alt. .... 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

- ▶ Parking Brake ..... set
- ▶ Seat Belts ..... check
- ▶ Canopy/Door ..... lock
- ▶ Door Warning ..... off
- ▶ Flight Controls ..... check
- ▶ Instruments ..... scan
- ▶ Alternate Static ..... check
- ▶ AP ..... MET/HDG
- ▶ Trim ..... T/O
- ▶ Fuel Selector ..... fullest
- ▶ Heading/Altitude ..... set
- ▶ Aux/GPS/Ann. .... check
- ▶ MFD Range/Track Up ..... set
- ▶ Comm/Nav/FPL ..... set
- ▶ Mixture ..... rich
- ▶ Throttle ..... 2000 RPM
- ▶ Cycle Prop x3 ..... 250-500
- ▶ Mags. L/R ..... -175, +/-50
- ▶ Alternate Air ..... check
- ▶ Engine ..... check
- ▶ Throttle ..... idle
- ▶ Throttle ..... 1000 RPM

- ▶ Mixture ..... lean
- ▶ 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
- ▶ Canopy/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
- ▶ Weights .....
  - 2646/2535/2205/1874 lbs
- ▶ 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
- ▶ Fuel Selector ..... fullest
- ▶ Flaps ..... T/0
- ▶ **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/0: 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,  $\leq 75\%$
- 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
- $\leq 50^\circ\text{F}$  (22.8°C)/min.

### Pre-Landing

- ▶ ATIS/Rwys/Approach Plan
- ▶ "CCGUMPSF"
- **G** Fuel Selector
- **M** **Mixture** ..... rich
- **P** **Prop** ..... high RPM
- **P** **Pump** ..... on
- **S** Seat Belts ..... secure
- **F** Flaps ..... as required
- T/0 ..... <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/0
- ▶ 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/0
- ▶ 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
- Fuel Selector ..... fullest
- **Mixture** ..... full/check
- **Pump** ..... on
- Alternate Air ..... on

- 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