

DA40-G1000 (Ted Yin v0.7)

## Ground Operations

### Initial

- ▶ Papers - A.R.O.W.
- ▶ Controls - free & correct
- ▶ Mags. - key out
- ▶ Mixture - idle cutoff
- ▶ Throttle - idle
- ▶ Electrical - off
- ▶ Essential Bus - off
- ▶ Avionics - off
- ▶ Master - on
- ▶ Fuel Pump - check
- ▶ Fuel - note
- ▶ Flaps - check & set T/0
- ▶ Lights/Pitot - test
- ▶ Master - off
- ▶ Hobbs Time - note

### Walkaround

- ▶ Canopy/Door - check
- ▶ Fuel/Oil - test/sample
- ▶ Caps/Drains/Vents
- ▶ Surfaces/Controls
- ▶ Stall Strips/Fairings
- ▶ Exhaust/Antennas
- ▶ Prop/Air Intakes x3
- ▶ Pitot/Static/Stall
- ▶ Gear/Tires/Brakes
- ▶ Ties/Chocks
- ▶ Final Walkaround

### Pre-Start

- ▶ Rear Door - secure
- ▶ Rudder Pedals - adjust
- ▶ Seat Belts
- ▶ Parking/Brakes - test/set
- ▶ Circuit Brkr. - check
- ▶ Strobe (ACL) - on
- ▶ Avionics - 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"
- ▶ "Prop Clear!"
- ▶ Mags. - start
- ▶ Throttle - 1000 RPM
- ▶ Oil Pressure - 15 secs.
- ▶ Electric Pump - off
- ▶ Master Alt. - on
- ▶ Engine Inst. - no Xs
- ▶ Volts/Amps - [25-30] [ >0 ]
- ▶ Fuel Pressure - 14-35 psi
- ▶ Mixture - lean (peak)

### Pre-Taxi

- ▶ Flaps - UP, then T/0
- ▶ 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 - correct
- ▶ Instruments - scan
- ▶ Alternate Static - check
- ▶ AP - MET/HDG
- ▶ Trim - T/0
- ▶ Fuel Selector - fullest
- ▶ Hdg./Alt. Bugs
- ▶ GPS/Status Bar/Ann. Test
- ▶ MFD Range/Track Up
- ▶ Comm/Nav/VOR/FP
- ▶ Mixture - rich
- ▶ Throttle - 2000 RPM
- ▶ Cycle Prop x3 - 250-500
- ▶ Mags. L/R - 175, 50.
- ▶ Alternate Air - check
- ▶ Engine Inst. - check
- ▶ Idle Check
- ▶ 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
- ▶ Tiedowns/Chocks
- ▶ Pitot Cover
- ▶ Gust Lock
- ▶ Close Flight Plan
- ▶ Hobbs Time - note
- ▶ Check Under Seats
- ▶ 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
- ▶ Weights
  - 2646/2535/2205/1874 lbs
- ▶ Vg = 76/73/68/60
- ▶ Vy(Up) = 76/73/68/60
- ▶ Vy(T/0) = 67/66/60/54
- ▶ Approach Speeds
  - Up - 76/73/68/60
  - T/0 - 74/72/66/59
  - LDG - 73/71/63/58
- ▶ Va
  - MAM 40-227
    - yes - 111 @ 2284-2646
    - no - 108 @ 2161-2535
  - below 2161/2284 - 94

## In-Flight Operations

### Pre-Takeoff

- ▶ Abort Plan/Lost Comm.
- ▶ Canopy/Door - lock
- ▶ Fuel Selector - fullest
- ▶ Flaps - T/O
- ▶ **Mixture** - rich
- ▶ **Prop** - high RPM
- ▶ Pitot Heat - as required
- ▶ Review Airspeeds
- ▶ Time - note/start

### Takeoff

- ▶ "Lights, Camera, Action"
  - **Electric Pump** - on
  - Mixture/Prop/Throttle
- ▶ Engine Inst. - green
- ▶ Vr - 59; then 67-60 KIAS
- ▶ Safe Altitude
  - **Prop** - 2400 RPM
  - **Pump** - off
  - Lights - as required

### Climb

- ▶ T/O: Vy = 67-54 KIAS
  - 68 minus 1.8 per 100 lbs under 2646
- ▶ Cruise
  - Flaps - UP
  - Vy = 76-60 KIAS
- ▶ **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**
  - Higher Power - richen
  - Economy: max EGT & ≤75%  
· Best: 100°F(55°C) lower
- ▶ High Altitude - **pump** on
- ▶ Flow Check (≈15 min)
  - Trim, Fuel (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) per min.

### Pre-Landing

- ▶ ATIS/Rwys & Patterns
- ▶ "CCGUMPSF"
  - **G**: Fuel Selector  
· downwind/fullest
  - **M**: **Mixture** - rich
  - **P**: **Prop** - high RPM
  - **P**: **Pump** - on
  - **S**: Seat Belts - secure
  - **F**: Flaps - as required  
· T/O <108 KIAS  
· LDG <91 KIAS
- ▶ Trim - as required
- ▶ Lights - as required
- ▶ Approach - 73-58 KIAS

### 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

### CO Contamination

- ▶ Cabin Heat - off
- ▶ Ventilation - open
- ▶ Emergency Windows - open
- ▶ Forward Canopy - partially open (DO NOT lock/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**
  - **Speed**: 76-60 KIAS
  - Windmill: 1:8.8, 1.45nm/1kft
  - Stationary: 1:10.3, 1.7nm/1kft
- ▶ Wind and Landing Site
- ▶ Longer Flow
  - Engine Inst.
  - Short Flow Again
- ▶ Windmill Restart
  - Airspeed ≥ 70 KIAS
  - **Mags.** - both
  - **Mixture** - lean then slowly richen
- ▶ Stationary Restart
  - Airspeed ≥ 80 KIAS
  - Electrical - off
  - Avionics - off
  - Master - on
  - **Mags.** - start

- ▶ **No Restart**
  - Fuel Selector - off
  - **Mixture** - idle cutoff
  - Mags. - off
  - Master - off
  - Belt and Seat - check
  - 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

- ▶ Cabin Heat - off
- ▶ Emergency Switch - on
- ▶ Master - off
- ▶ Emergency Windows - open
- ▶ Forward Canopy - partially
- ▶ Land ASAP

## Initial

- ▶ Papers - A.R.O.W.
- ▶ Control Lock - off
- ▶ Mags. - key out
- ▶ Mixture - idle cutoff
- ▶ Throttle - idle
- ▶ Avionics - off
- ▶ Fuel Shutoff - on
- ▶ Fuel - both
- ▶ Master - on
- ▶ Fuel - note
- ▶ Flaps - down
- ▶ Lights/Pitot - test
- ▶ Avionics on/off - fans
- ▶ Master - off
- ▶ Hobbs Time - note

## Walkaround

- ▶ Fuel/Oil - dip/sample
- ▶ Caps/Drains/Vents
- ▶ Surfaces/Controls
- ▶ Exhaust/Antennas
- ▶ Prop/Belt/Air Intake
- ▶ Pitot/Static/Stall
- ▶ Gear/Tires/Brakes
- ▶ Ties/Baggage Door
- ▶ Final Walkaround

## Pre-Start

- ▶ Doors - secure
- ▶ Belts/Seat Track
- ▶ Brakes - check, set
- ▶ Circuit Brkr. - check
- ▶ Passenger - brief
- ▶ Beacon - on
- ▶ Avionics - off
- ▶ Fuel - both

## Start

- ▶ Stby. Battery - test/arm
- ▶ Engine Ind. - no Xs
- ▶ Volts - [E>24] [M<1.5]
- ▶ Amps - S<0/ann on
- ▶ Prime:
  - Mixture - idle cutoff
  - Brakes - secure
  - Master - on
  - Throttle - slight
  - Aux. Pump - on
  - Mixture - prime
    - warm: 0-3 sec
    - cold: 3-5 sec
  - Aux. Pump - off

- ▶ Mixture - 3/4 rich
- ▶ "Prop Clear!"
- ▶ Mags. - start
- ▶ Throttle - 1000 RPM
- ▶ Oil Pressure - 30 secs.
- ▶ Volts/Amps - [E>24] [M<0]
- ▶ Mixture - lean for taxi

## Pre-Taxi

- ▶ Flaps - up
- ▶ 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 - test

## Run-Up

- ▶ Brakes - set
- ▶ Seat Belts - check
- ▶ Doors/Windows - secure
- ▶ Flight Controls - correct
- ▶ Instruments - scan
- ▶ Alternate Static - check
- ▶ AP - MET/HDG
- ▶ Trim - takeoff
- ▶ Fuel - on/both
- ▶ Hdg./Alt. Bugs
- ▶ GPS/Status Bar/Ann. Test
- ▶ MFD Range/Track Up
- ▶ Comm/Nav/VOR/FP
- ▶ Mixture - rich
- ▶ Throttle - 1800 RPM
- ▶ Mags. - 150, 50
- ▶ Engine Inst. - check
- ▶ Idle Check
- ▶ Throttle - 1000 RPM
- ▶ Mixture - lean
- ▶ Lights - as required
- ▶ ADSB Handheld - on

## Pre-Takeoff

- ▶ Abort Plan/Lost Comm.
- ▶ Fuel - on/both
- ▶ Flaps - 0-10°
- ▶ Mixture - rich
- ▶ Aux. Pump - off
- ▶ Pitot heat - as required
- ▶ Review Airspeeds
- ▶ Time - note/start

## Takeoff

- ▶ "Lights, Camera, Action"
  - Mixture/Throttle
- ▶ Engine Inst. - green
- ▶ Vr - 55 kts
- ▶ Vx - 62 kts, Vy - 74 kts

## Climb / Cruise

- ▶ Cruise Climb - 75-85 kts
  - Flaps - up
- ▶ Mixture - lean >3000'
- ▶ Flow Check (↻15 min)
  - Fuel, Trim
  - Flaps, Engine Inst.
  - Mixture, Throttle
  - Master, Mag., Pump

## Descent

- ▶ Mixture - richen slowly
- ▶ Throttle - as required
- ▶ Flow Check

## Pre-Landing

- ▶ ATIS/Rwys & Patterns
- ▶ "CCGUMPSF"
  - G: Fuel - on/both
  - M: Mixture - rich
  - S: Seat Belts - secure
  - F: Flaps - as required
- ▶ Trim - as required
- ▶ Ldg. Light - on
- ▶ Approach - 80-65 kts

## Post-Landing

- ▶ Throttle - 1000 RPM
- ▶ Mixture - lean
- ▶ Flaps - up
- ▶ Pitot Heat - off
- ▶ Trim - takeoff
- ▶ Lights - as required
- ▶ Clearance - obtain

## Shutdown

- ▶ ELT - check (121.5)
- ▶ Avionics - off
- ▶ Lights - off
  - Beacon - on
- ▶ Throttle - 1000 RPM
- ▶ Mags. - off then both
- ▶ Mixture - idle cutoff
- ▶ Mags. - key out
- ▶ Master - off
- ▶ Tach Time - note
- ▶ Stby. Battery - off

## Post-Flight

- ▶ ADSB Handheld - off
- ▶ Tiedowns/Chocks
- ▶ Pitot Cover
- ▶ Fuel - switch to L/R
- ▶ Gust Lock
- ▶ Close Flight Plan
- ▶ Hobbs Time - note
- ▶ Check Under Seats
- ▶ Cabin / Baggage - lock
- ▶ Post-Flight Walkaround

## Engine Failure

- ▶ Short Flow
  - Fuel - on/both
  - Mixture - full/check
  - Electrical Pump - on
  - Alternate Air - on
  - Mags. - check all
- ▶ **Glide and Trim**
  - **Speed: 68 kts**
  - **Ratio: 9, 1.48nm/1000ft**
- ▶ Wind and Landing Site
- ▶ Longer Flow
  - Engine Indicators
  - Short Flow Again
- ▶ **No Restart**
  - Fuel - off
  - Mixture - idle cut-off
  - Prop/Throttle - off
  - Mags. - off
  - Master - off
  - Belt and Seat - check
  - Unlatch Door
  - Brace
- ▶ Approach - 80/70/65 kts