DA40-G1000 (Ted Yin v0.8)

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/O
- ▶ 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 Brkrs. - 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/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 - correct
- ▶ Instruments - scan
- ▶ Alternate Static - check
- ▶ AP - MET/HDG
- ▶ Trim - T/O
- ▶ 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
- ▶ Canpoy/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/O) = 67/66/60/54
- ▶ Approach Speeds
  - Up - 76/73/68/60
  - T/O - 74/72/66/59
  - LDG - 73/71/63/58
- ▶ Va
  - MÄM 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