

DA40-160 (Ted Yin v1.1)

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 Brkrs..... check
- ▶ Strobe (ACL)..... on
- ▶ Avionics..... off
- ▶ Essential Bus..... off
- ▶ Mixture..... idle cutoff
- ▶ Prop..... high RPM
- ▶ Friction..... adjust
- ▶ Master (Battery)..... on
- ▶ Rudder Pedals..... adjust
- ▶ G1000 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

Shutdown

- ▶ 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

Post-Flight

- ▶ Fuel Totalizer..... enter
- ▶ ATIS..... PFD/backup/AP
- ▶ Radio..... test
- ▶ Transponder..... check
- ▶ Check..... AI/HSI(MC)/TC
- ▶ Clearance..... obtain
- ▶ Brakes..... release/test
- ▶ Canopy/Door..... lock

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

Airspeeds (KIAS)

- ▶ V_r..... 59
- ▶ V_{S0}..... 49, V_{S1}..... 52
- ▶ Mass..... 2646/2535/2205/1874
- ▶ 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 @ 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/0
- ▶ 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** as required
 - ▶ **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** 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, <=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
 - ▶ <= 50°F (22.8°C)/min.

Pre-Landing

- ▶ ATIS/Rwys/Approach Plan
- ▶ "CCGUMP5F"
 - ▶ **G** Fuel Selector
 - ▶ **M** **Mixture** rich
 - ▶ **P** **Pump** on
 - ▶ **P** **Prop** high RPM
 - ▶ **S** Seat Belts secure
 - ▶ **F** Flaps as required
 - ▶ T/0 <100 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** 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/0
 - ▶ Lights as required
 - ▶ Transponder as required
 - ▶ Clearance obtain
- ▶ **C0 Contamination**
 - ▶ Cabin Heat off
 - ▶ Ventilation open
 - ▶ Emergency Windows open
 - ▶ Canopy open (partially,
 - ▶ D0 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

CL72S-G1000 (Ted v1.2)

Initial

- Mixture..... 3/4 rich
- "Prop Clear!"
- Mags..... start
- Throttle..... 1000 RPM
- Oil Pressure..... 30 secs.
- Volts/Amps..... [E>24] [E>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/Alt/HSI<=>MC
- Clearance..... obtain
- Brakes..... test

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 Brkrs..... 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..... SCD/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

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
- Stby. Battery..... off

Pre-Landing

- ATIS/Rwys & Patterns
- "CCGJMPSF"
- 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

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
- "CCGJMPSF"
- 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
- ▶ Tie-downs/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: 60 kts**
 - **Ratio: 9, 1.48m/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

Flight Planning Checklist (Ted Yin V0.5)

Airports

- ▶ ATIS/Tower/Ground Frequencies
- ▶ Runways and Pattern
- Rwy Length
- Multiple Rwys?
- TPA & Directions
- ▶ Descent and Approach Plan
 - Slow Down (engine cooling)
 - Reach TPA in time with stable rate
 - Terrain Hazards
- ▶ Taxiways and FB0 (Refueling)
- ▶ Obstructions/Mountains
- ▶ Emergency Landing during T/O
- ▶ Airport Guide (check website)

Route

- ▶ Cruising Altitude
 - Westerly vs. Easterly (even/odd kft)
 - Glide Range
 - Terrain Separation (e.g. 2000+)
 - Cloud Clearance (Detour?)
 - Climb Performance & Oxygen
- ▶ Obstructions
- ▶ Flat Land vs. Mountains
- Highway is a good start
- ▶ SUA/TFR
- ▶ Fuel Reserve & Diversions

Aircraft

- ▶ Fuel
- ▶ Weight and Balance
- MTOW
- CG before/after the flight
- ▶ T/O & LDG distance to clear obstacles

Weather

- ▶ Airports
 - Ceiling
 - Visibility
 - Wind (crosswind, gusts)
 - Density Altitude
- ▶ En Route
 - Cloud Base & Coverage
 - Wind Aloft
 - Icing (freezing point, day/night?)
- AIRMET & SIGMETs
- IMC

IMC

- Convective Weather
- Known Icing Conditions
- ▶ Global Picture
- Fronts
- Satellite Image (trend of moisture)
- ▶ Resources

• AWC <https://aviationweather.gov/>

• Windy <https://www.windy.com/>

• C0D <https://weather.cod.edu/satrad/>

Before Go

- ▶ This Sheet
- ▶ Leidos (1800wx) Briefing
- ▶ PPL & Med & Driver's License
- ▶ Flight Bag
- ▶ Garmin inReach Beacon
- ▶ iPad: foreflight pack up
- ▶ Water & Energy Bars
- ▶ "TNSAFER" & "PAVE"