

DA40-1A00 (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

Run-Up

- ▶ Brake..... set
- ▶ Seat Belts..... check
- ▶ Canopy/Door..... lock
- ▶ Door Warning..... off
- ▶ Flight Controls..... check
- ▶ Instruments
- ▶ Alternator 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
- ▶ Fuel Selector..... fullest
- ▶ Mixture..... rich
- ▶ Throttle..... 2000 RPM
- ▶ Cycle Prop x3..... -250-500
- ▶ Mags. L/R..... -175, +/-50
- ▶ Alternate Air..... check
- ▶ (Standby Alternator)
- ▶ Master (Alt.)..... off
- ▶ STBYALT ON..... on
- ▶ Electrical Load increase
- ▶ STBYALT ON..... flashing
- ▶ Master (Alt.)..... on

Run-Up

- ▶ Brake..... set
- ▶ Seat Belts..... check
- ▶ Canopy/Door..... lock
- ▶ Door Warning..... off
- ▶ Flight Controls..... check
- ▶ Instruments
- ▶ Alternator 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
- ▶ Fuel Selector..... fullest
- ▶ Mixture..... rich
- ▶ Throttle..... 2000 RPM
- ▶ Cycle Prop x3..... -250-500
- ▶ Mags. L/R..... -175, +/-50
- ▶ Alternate Air..... check
- ▶ (Standby Alternator)
- ▶ Master (Alt.)..... off
- ▶ STBYALT ON..... on
- ▶ Electrical Load increase
- ▶ STBYALT ON..... flashing
- ▶ Master (Alt.)..... on

- ▶ Brake..... set
- ▶ Seat Belts..... check
- ▶ Canopy/Door..... lock
- ▶ Door Warning..... off
- ▶ Flight Controls..... check
- ▶ Instruments
- ▶ Alternator 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
- ▶ Fuel Selector..... fullest
- ▶ Mixture..... rich
- ▶ Throttle..... 2000 RPM
- ▶ Cycle Prop x3..... -250-500
- ▶ Mags. L/R..... -175, +/-50
- ▶ Alternate Air..... check
- ▶ (Standby Alternator)
- ▶ Master (Alt.)..... off
- ▶ STBYALT ON..... on
- ▶ Electrical Load increase
- ▶ STBYALT ON..... flashing
- ▶ Master (Alt.)..... on

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

- ▶ Indicators..... check
- ▶ Throttle..... idle
- ▶ Throttle..... 1000 RPM
- ▶ Mixture..... lean
- ▶ Each Tank..... 1 min, 1500

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

Post-Flight

- ▶ Flight Plan..... close
- ▶ Hobbs Time..... note
- ▶ Under Seats..... check
- ▶ Gust Lock..... on
- ▶ Pitot Cover..... on
- ▶ Tiedowns/Chocks..... on
- ▶ Canopy/Door..... lock

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

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** 21-24"
- ▶ **Prop** 1800-2400 RPM
- ▶ **Mixture** rich
- ▶ Economy ... max EGT, <=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
- ▶ <= 50°F (22.8°C)/min.

Pre-Landing

- ▶ ATIS/Rwys/Approach Plan
- ▶ "CCGUMPSP"
- ▶ **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 73-58
- ▶ (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
- ▶ 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..... [E2L] [D0]
- 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/AT/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

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-Start

- Doors..... secure
- Belts/Seat Track
- Brakes..... check, set
- Circuit Brkrs..... check
- Passenger..... brief
- Beacon..... on
- Avionics..... off
- Fuel..... both
- Stby. Battery..... test/arm
- Engine Ind..... no Xs
- Volts..... [E>24] [M<1.5]
- Amps..... SC0/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

Start

- Stby. Battery..... test/arm
- Engine Ind..... no Xs
- Volts..... [E>24] [M<1.5]
- Amps..... SC0/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

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
- ▶ "TNSAFE" & "PAVE"