

Texas Skies Flight School  
**Multi-Engine Operating Procedures**  
Effective Nov 2021

## 1 5C1 Operations

### *Fueling*

The DA42 requires Jet-A fuel. The preferred method for refueling is via the fuel truck. Pilots must supervise refueling to ensure the appropriate fuel (Jet-A) is used.

If the auxiliary fuel tanks are used, both tanks must be refueled to the maximum level. Only then will the pilot have accurate information concerning the fuel quantity in the auxiliary tanks, as no fuel gauges exist for the auxiliary tanks.

Main fuel tank caps should be verified closed and locked in the correct position (tab forward), and auxiliary fuel tank caps should be secure with the cover locked.

### *Hangaring*

Ground movement and hangaring of the DA42 should only be performed under supervision and direction of TSFS Staff.

## 2 Normal Aircraft Operations

### *Daily Check*

Before the first flight of the day, the following checks should be performed:

- Check the canopy, side door, and baggage compartment doors for cracks and major scratches.
- Check the hinges of all doors.
- Tire inflation pressure check (main wheels: 4.7 bar/68 PSI; nose wheel: 6.0 bar/87 PSI)
- Visual inspection of both spinners and their attachment.

### *Preflight Inspection*

When switching the ELECTRIC MASTER ON, the electrically-driven hydraulic gear pump may activate itself for 5-20 seconds in order to restore the system pressure. If the pump continues to operate continuously or periodically, there is a malfunction in the landing gear system and the flight preparation should be terminated.

When the stall warning heat is on while on the ground, STAL HT FAIL may be indicated on the PFD as the stall warning will overheat and shut off.

If the Gear Warning/Fire Detector aural alert or the warning on the PFD does not appear, terminate the flight. Unscheduled maintenance is required.

The proper function of the elevator backstop is indispensable for the safety of flight, as the handling qualities during power-on stalls are degraded significantly when the elevator backstop is inoperative. If the elevator backstop does not function properly, terminate flight preparation. See AFM Chapter 7.

### *Brakes*

Due to the design of the rudder pedal and the proximity to the toe brakes, there is risk of accidental use of braking during the takeoff or landing roll. The high pressure of the main tires can easily cause flat spots. To mitigate this risk, students will verbally call "heels to the floor" before taxi, takeoff, and

### *Engine Shutdown*

After turning the ENGINE MASTER OFF, wait until the G1000 engine indications are red X'd or yellow X'd prior to switching the ELECTRIC MASTER OFF to ensure that engine and flight data can be written to non-volatile memory before removing electrical power.

Before shut-down, the engine must run for at least 1 minute with the power levers at 10% to avoid heat damage of the turbocharger.

## **3 Single-Engine Operations**

### *Safety*

The instructor shall thoroughly brief the student on which engine will be failed during simulated engine failure, to ensure the student responds to the "inoperative" engine and does not fail the "operative" engine by accident.

### *In-Flight Engine Shutdown & Restart*

Engines should not be shut down with the FUEL SELECTOR valve, as the high pressure fuel pump may be damaged.

Do not engage the starter while the propeller is windmilling. At airspeeds below 100 KIAS, it is possible that the propeller may windmill intermittently. Care should be taken to ensure that the propeller is stationary when the starter is engaged.

After the engine has started, the power lever should be set to a moderate power setting until engine temperatures have reached the green range.