



MEMORANDUM OF RECORD

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Subject: Post accident actions taken by Liberty University School of Aeronautics (LUSOA)

Narrative

After the accident, LUSOA took the following actions:

- On February 9, 2015, held a safety briefing with flight instructors and faculty, during which the CFI involved in the accident briefed the circumstances of the flight. After arriving at the aircraft and verbally confirming the fuel level with the student pilot, he did not personally perform a visual or tactile check of the fuel tank level. He described the sequence of events and his thoughts that lead to the oversight, as a 'lessons learned' example for other instructors and faculty.
- Enacted new procedures with regard to preflight activities, fueling and dispatch protocols, which were subsequently codified into the Flight Operations Manual (excerpted below).
- On March 26, 201, held a safety briefing with all students to discuss the circumstances of the accident, as well as the new procedures.

LUSOA Flight Operations Manual – Post accident changes

The following procedures were included in the Flight Operations Manual **at the time of the accident (Revision 6)**:

2.6 Dispatch and Redispach Procedures

2.6.5 Liberty Ops (Radio Frequency)

C. Each pilot should call dispatch ten minutes before landing, with an update on fuel onboard and any discrepancies. (e.g. “Liberty Ops, 2373M, ten minutes, 30 gallons, no discrepancies”). The ten-minute call is not recommended if the aircraft is in the pattern or the aircraft has only one working radio.

D. After shutdown, the pilot should give dispatch a “times in” call with the Hobbs time, tach time, fuel onboard and any discrepancies. Pilots flying the Piper Seminole must provide the heater Hobbs after each flight.

2.9 Fuel Requirements

2.9.1. Fuel Reserves

A. Dual Flights:

1. On VFR flights, pilots must plan to land with at least 1 hour of fuel.
2. On IFR flights, pilots must plan to land with at least 1 hour of fuel remaining or meet the requirements of 14 CFR 91.167, whichever is greater.

B. Solo Flights:

1. All solo cross-country flights must launch with the maximum amount of fuel permitted by weight and balance.
2. Pre-Private students must plan to land with at least 2 hours of fuel.
3. Post-Private students must plan to land with at least 1 hour of fuel.
4. Solo IFR flights require permission from the DO or his designee and pilots must plan to land with at least 1 hour of fuel remaining or meet the requirements of 14 CFR 91.167, whichever is greater.

2.9.2. Minimum Fuel Procedures

A. Pilots who estimate that they will land with less than the required fuel reserves must land at the nearest suitable airport that has fuel.

B. Pilots must declare “Minimum Fuel” with ATC when they estimate that they will land with less than 30 minutes onboard.

1. “Minimum Fuel” informs ATC that the pilot has enough fuel to reach the destination, but cannot accept undue delays. This is not yet an emergency situation, but could become one if ATC initiates any delays.

C. Pilots must declare emergency fuel with ATC when they estimate that they will land with less than 15 minutes remaining.

1. Declaring an emergency informs ATC that the pilot needs traffic priority to ensure a safe landing.
2. The pilot should report the amount of fuel remaining in minutes.

2.14 Preflight Action

2.14.3. Preflight Inspection

A. The airplane must be inspected in accordance with the applicable LUSOA Pilot’s Checklist.

B. If the aircraft must be left unattended after the preflight inspection, the pilot must complete at least a walk around inspection prior to engine start. This visual inspection is to ensure proper fueling, cap security, and to ensure no damage has occurred since the preflight inspection.

C. Until the student has soloed, the instructor must accompany the student and observe the preflight inspection.

D. On dual flights, the instructor must also check at least the following items:

1. Registration date
 2. Airworthiness certificate properly displayed
 3. Oil cap security
 4. Fuel cap security
 5. Covers, tie-down ropes, wheel chocks are removed
 6. Cargo secured
 7. Landing gear door and cowling security (P28R and PA44)
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The following amendments were implemented in the FOM **after the accident occurred (Revision 7)**:

2.9.3 Fuel Quantity Checks

- A. Prior to leaving IOC, each crew must check the estimated amount of fuel as recorded by dispatch.
- B. Prior to engine start, each fuel tank must be physically measured using the straw type dipstick, unless the tank is visibly full.

1. The fuel "dipstick" in the C150 and PA28R should be held parallel to the airplanes vertical axis and measured from the *aft* part of the fuel filler neck.
2. The "fuelhawk" in the C172 should be measured from the forward part of the fuel filler neck, ahead of the rib at the bottom of the tank.
3. The PA44 dipstick uses rings to indicate fuel quantity. Bottom ring indicates 20 gallons. Each ring is a 10 gallon increment.

CAUTION: Measurement accuracy can be a factor of the aircraft's relative attitude on the ground when measuring fuel levels and should be taken into account.

NOTE: Do not leave the dipstick immersed in fuel longer than necessary to take the measurement. Prolonged immersion may weaken the outer coating causing delamination.

- C. During the preflight and before takeoff checklist, each crew must note the indicated amount of fuel as displayed on the fuel gauge.
- D. Prior to flight, each crew must brief the fuel required for the flight (hours of intended flight + reserve) compared to the onboard amount of fuel.
 1. Example:
 - a) "We intend to fly for 2 hours plus an hour reserve, and we have 4 hours of fuel onboard."

2.14.3 Preflight Inspection

- C. The instructor must accompany the student and observe the preflight inspection.
- D. The instructor must physically observe fuel in each tank and oil in each engine prior to flight.