

CALLBACK

From NASA's Aviation Safety Reporting System



Issue 521

June 2023

Walkaround Wisdom and Preflight Gems

A thorough walkaround inspection and associated activities could mitigate a host of problems that might develop during flight or ground operations. The charge to conduct a good walkaround flows from 14 CFR 91.3(a), which assigns direct responsibility and grants final authority as to the operation of an aircraft to the Pilot in Command (PIC) of that aircraft.

The walkaround inspection and associated activities necessarily cover a large number of items typically described in an Airplane Flight Manual (AFM) or Aircraft Operating Manual (AOM). In the spirit of the CFR and from a practical point of view, most everything that is possible to observe is also covered. Accordingly, the walkaround inspection and preflight activities are important to the safety of any flight.

This issue of *CALLBACK* showcases reported incidents that occurred during walkaround inspections and associated activities. Note the variety of incident types, the reporters' actions, and the pearls of wisdom in each narrative.

Lost and Found

An observant DA42 Twin Star student pilot made some interesting discoveries while performing these walkarounds.

■ *I began preflighting the aircraft...and noticed the right main gear had cord showing, and the left main was missing slip marks. I switched aircraft and began preflighting [again]. Inspecting the left main fuel tank, I discovered a fuel nozzle cover in the tank. [It was] the small rubber cover that goes over the nozzle when fueling. I removed the cover, and [my] instructor delivered it to the [FBO] employee fueling another aircraft. The flight...continued without further incident. Ensure the visual checking of fuel tanks before every flight.*

A Woeful Tail

Following related maintenance work, this Airbus ambulance helicopter pilot pondered how a critical item was missed during the preflight walkaround inspection.

■ *Maintenance did a tail rotor inspection that morning and needed me to do the run-up to check the balance afterward. They had done a Required Inspection Item (RII) inspection on the work. I did my preflight walkaround and looked at the cowlings, latches, tape, wires, and track and balance equipment. I climbed in and started it up, running Engine*

Number 1 up to idle. Since it was a track and balance, I expected it to not be a normal feeling tail rotor, but this was more vibrations than I would have expected. The maintainer said to shut it down and not even start the other engine. We shut the helicopter down and used the brake to stop the blades. Upon inspection, one of the tail rotor blades had been installed facing the wrong direction. In the future, I will do more than a normal preflight walkaround following maintenance even if it had an RII. I knew the blades had come off; I held the blade while [the maintainer] was on the ladder. Why I didn't look at the direction of the rotors when I looked at them, I don't know, aside from complacency and reliance on the RII. To ensure this won't happen again, I will be sure to verify all aspects of the work that was done with verbal confirmation and the maintainer present.

Unverified Assumptions

Although all ended well, this Flight Instructor overlooked a detail that quickly placed the aircraft and crew in jeopardy.

■ *That morning, I met [my student], a private pilot to whom I am providing instrument instruction, at ZZZ1 airport. When I arrived, [the student] had already conducted a preflight inspection of the aircraft... Unfortunately, I did not verify the fuel quantity in the aircraft and relied on the student to do so. The plan for this flight was to do the RNAV...approach into ZZZ2, go missed [approach], and then fly VFR back to ZZZ1. After the missed approach at ZZZ2 and upon reaching 3,500 feet, the engine quit without warning. I took control of the airplane, requested priority with ZZZ2 Approach, and turned toward ZZZ. I was cleared for the runway and landed...without further incident. We could not restart the plane in the air or on the ground.*

There is some background needed at this point. Prior to this flight, I was the last person to fly this plane. As part of our standard practice, after the last flight, I requested fuel service from the FBO and asked that the plane be put away for the night. Assuming the FBO would honor my request, I left for the evening. When I arrived at the airport, my student had completed the preflight and confirmed there was fuel in the aircraft. I've flown with this student many times and found him to be a very competent pilot... Accordingly, I did not have reason to think there was not enough fuel in the aircraft. When we started the plane, we reset the fuel totalizer for full

fuel, so when the engine quit, I expected there to be nearly 40 gallons of fuel in the plane when it was, indeed, empty.

There are several lessons to learn here. As an instructor, you can never fully trust your student, even if he or she is a certificated pilot, and it's important to verify all information. Another factor was expectation bias. As part of our standard practice, the aircraft is always put away with full fuel, and the FBO has never failed to honor this request. When I arrived at the airport, I expected the aircraft to have full fuel, and I expected my student to verify this for me. Another factor is that it is impossible to view the fuel gauges from the right seat on the Cessna Cardinal as they are on the left of the pilot side yoke, so I was unable to use them to verify the fuel state. In order to prevent a recurrence, I am going to suggest to the club that we standardize a way to measure the fuel and to make it a requirement to measure fuel before every flight. The aircraft's fuel quantity is difficult to check visually since there is a spring-loaded cover over the fuel port. At the end of the day, however, I was the Flight Instructor and should have verified the fuel quantity before departing.

Hazardous Materials Compromised

During preflight inspection activities, this B767 First Officer (FO) discovered and mitigated a dangerous flight hazard.

■ During the HAZMAT [preflight] inspection, I discovered a flammable liquid box that was crushed on the bottom of the stack. There were no fumes or spillage, but the box had "Do Not Stack" on the side. We determined it was not safe to transport in its condition after having a discussion with Dangerous Goods (DG) personnel. It was removed, and we continued the flight after a 35-minute delay. Cause: Improper loading of hazardous cargo. Suggestions: Properly load cargo. Pay attention to hazardous goods documentation.

Instructor's Chagrin

This Flight Instructor ponders a humbling thought spawned by a discovery made during a student preflight inspection.

■ [I was conducting] a local seaplane training flight in a Piper PA-18-150 Supercub on amphibious floats. The student was getting instruction...to add-on a single-engine seaplane rating to his commercial pilot certificate. It was our third training flight. The flight was mostly on water operations with multiple takeoffs and landings. Water conditions were fairly calm but not glassy, with about 5 to 7 knots of wind.... The flight was uneventful, and I...did not have to touch the controls for most of the flight. Takeoffs and landings were smooth, and no anomalies were noted by myself or the student. The flight ended...with no incidents.

The preflight inspection of the aircraft by the next student discovered a failure of the furthest outboard section of the right elevator just past the hinge point. That student found this failure approximately 30 minutes after the conclusion of our flight. We cannot be certain that the failure existed or occurred during our training flight, as no abnormal aircraft handling characteristics were noted by me or my student. However, based on the timeline, it is probable that the failure could have existed or occurred during our flight. The cause of the failure is unknown at this time.

Hidden in Plain Sight

An item barely visible was missed on this B777 walkaround inspection and resulted in an expensive air turnback.

■ After landing at ZZZ, we tail-swapped into an aircraft coming out of the paint shop. We discussed the need for a thorough preflight, paying note to the static ports, pitot tubes, etc., and I as FO conducted the exterior and supernumerary area preflight. The weather was broken clouds and daylight hours. After takeoff, we raised the gear and soon received a GEAR DISAGREE EICAS message due to left main landing gear disagreement. We notified ATC, leveled at 10,000 feet, and maintained airspeed at 250 knots. We completed the non-normal checklist for gear disagree. We contacted Dispatch, and they recommended we return to ZZZ. On [downwind]... we lowered the gear and received a normal gear down indication, landing without incident.

Once parked, Maintenance inspected the left main and found one gear pin installed without a gear pin flag attached to it... Maintenance informed us that four of their maintenance team had each conducted individual walkarounds, and none of the four who inspected the aircraft noticed the gear pin was still installed. Four local Maintenance personnel had inspected the aircraft individually. They annotated in the Airworthiness Release Document (ARD) that they had pulled and stowed all the gear pins. I, as FO, had walked around the aircraft and did not observe the pin still installed. It appears that there may not have been a gear pin flag attached to the gear pin,...making the pin challenging to see. The aircraft came out of a non-Company facility after significant work. All walkarounds require a thorough inspection, however, out of a non-Company city, it's fair to say extra diligence is required. Additionally,...instead of looking for pins and flags, it would be better to look for an empty gear pin hole.

[Sign up for the UAS Safety In Sight email today!](#)

Stay connected to learn more about emerging UAS safety topics and ASRS UAS safety reporting.

ASRS Alerts Issued in April 2023	
Subject of Alert	No. of Alerts
Airport Facility or Procedure	5
ATC Equipment or Procedure	6
Other	2
TOTAL	13

521
A Monthly Safety
Newsletter from
The NASA
Aviation Safety
Reporting System
P.O. Box 189
Moffett Field, CA
94035-0189
<https://asrs.arc.nasa.gov>

April 2023 Report Intake	
Air Carrier/Air Taxi Pilots	4,723
General Aviation Pilots	1,421
Flight Attendants	724
Controllers	403
Military/Other	275
Mechanics	216
Dispatchers	148
TOTAL	7,910