

CALLBACK

From NASA's Aviation Safety Reporting System

ASRS

Number 225

March 1998

Aircraft Rock 'n' Roll

ASRS receives many reports of fuel mismanagement and fuel exhaustion, common causes of engine failures and forced landings. Less common is fuel contamination, which can come as a surprise, even after a pilot takes the precautionary measures of a thorough pre-flight and ground run-up. A general aviation pilot reports on the hazards of hidden water, and speculates on whether wing-rocking might have prevented the problem.

■ *This [high-wing] aircraft has long-range tanks installed. It had not been flown in two months and had been stored outdoors, so a thorough pre-flight was completed. The wing tanks were three-quarters full and [the sumps] were drained twice. The gascolator was fully drained and checked for water and contaminants. Total engine ground run time was about 40 minutes at 1,200-1,700 rpm, with normal engine indications.*

Shortly after takeoff, Departure Control indicated that the aircraft's transponder was inoperative, and requested that we return to the airport.

During the approach, an extended slip was used due to right crosswinds. Taxiing to the hangar, the engine quit and would not restart. The aircraft was manually pushed to the hangar area. Examination of the fuel tanks, fuel line, gascolator, and carburetor fuel bowl revealed water in all areas. After draining, the engine restarted easily.

With a history of damage to the left wing, one or both fuel tanks may have become warped or wavy, allowing water to collect at points other than the fuel drains. This allowed water to remain undetected during a normal pre-flight, a 40-minute ground run and in flight. Although it is not recommended in the pilot's operating handbook, rocking the aircraft wings during aircraft pre-flight might move any distributed water to the fuel drain.

Any rocking of wings should come early in the pre-flight, so that the water and contaminants have plenty of time to settle in the sumps before the sumps are drained. Many flight schools make this standard procedure.

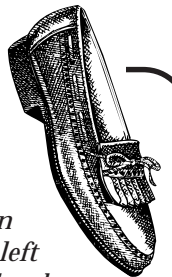
Next, an air carrier Captain reports that both the ground crew and the flight crew failed to detect a different sort of fuel-related problem. In this case, improper defueling procedure was the cause of the incident.

■ *We needed to off-load 7,200 lb. of fuel. The fueler had us transfer fuel from the wing tanks to the center tank so he could defuel. When defueling was complete, I closed the crossfeed valve, which was confirmed by the First Officer. Immediately at lift-off, the left wing was very heavy, needing about 60° wheelthrow for level flight. I saw a fuel imbalance of 4,000 lb. between the wing tanks, and 3,300 lb. in the center tank. The center tank had been empty at*

the gate. I opened the crossfeed and fed both engines from the left tank. I was able to balance the fuel load for landing.

[Maintenance] confirmed that the defuel valve and door had been left open. The fueler had missed closing the valve and door after defueling. A possible reason for his missing the valve was the flaps and slats were left down at the gate due to landing on snow and ice. During the before-starting-engines checklist at the gate, I noted the proper fuel and distribution, and that the crossfeed valve was closed. Due to night taxi at an unfamiliar airport on ice and snow, I failed to detect the fuel imbalance prior to takeoff. Had our takeoff been delayed 5-10 minutes longer, the aircraft might not have been controllable after lift-off. We should encourage crews to check fuel balance prior to taking the runway.

Leaving the defuel valve open prevents closing of the defueling door, and impairs the crew's ability to control fuel transfer. Diligent use of checklists—by both the ground crew and the flight crew—can help prevent this situation. The ground crew's checklist should include an item to check the security of the defuel valve and door. The flight crew's checklist usually provides more than one opportunity to review proper fuel distribution. This is particularly important after any type of fuel transfer operation. ▲



If The Shoe Fits...

■ *I set out to fly...to brush up on crosswind taxi/takeoff/landing procedures. On the second landing, while in the flare, my left shoe fell off while applying left rudder. The shoe landed in front of the left rudder pedal and heel brake. The right crosswind started to pivot the aircraft to the right, and I discovered the shoe blocked access to the left rudder pedal and brake. Without left rudder capability, I was unable to prevent the aircraft from turning right into the wind. The aircraft departed the runway to the right onto a level grass area. I finally kicked the shoe free of the pedals and braked to a stop with one shoe off, one shoe on. Taxied back to the ramp and shut down for a thorough inspection. No damage to aircraft or airport property.*

Despite nearly 20 years experience, I was unable to overcome the effects on an errant shoe on a crosswind landing. In the future, I will pay more attention to the fit of my shoes before commencing flight. ▲

ASRS Recently Issued Alerts On...

Inadequate taxiway lighting at an Alabama airport
In-flight separation of B-757 wing-skin leading edge
In-flight engine nacelle panel separation on a BE1900
False TCAS II alerts attributed to a failed electrical bus
Smoke alarm activation due to deicing fluid in cargo door seals

A Monthly Safety Bulletin
from
The Office of the NASA
Aviation Safety Reporting
System,
P.O. Box 189,
Moffett Field, CA
94035-0189

<http://olias.arc.nasa.gov/asrs>

January 1998 Report Intake

Air Carrier Pilots	1999
General Aviation Pilots	633
Controllers	85
Cabin/Mechanics/Military/Other	70
TOTAL	2787

Of Arms and “Legs” Onboard

Last month we shared some ASRS reports describing the difficulties encountered by cabin crew members. This month we add two sobering reports about passengers authorized to carry firearms onboard the aircraft. In the first report, the Captain was apparently the last to know of the presence of armed passengers onboard.

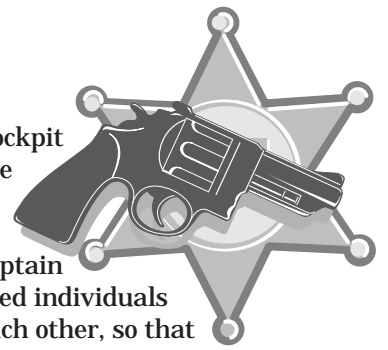
■ *Before boarding, I was told that a government VIP was traveling. After the flight, I discovered that the VIP was accompanied by...two armed individuals, and that we had no notification to the Flight Attendant [FA] or to the PIC.*

Later... I found out that the armed personnel were briefed to tell the FA that they were armed; they did not do so. The Ramp Supervisor knew the escorts were armed, and he told our FA that we had “two leg passengers in Row 4” (“leg” being the code word for armed passenger). Needless to say, no one told us that was the code, so the FA thought he meant, “Two passengers with hurt legs.” The armed individuals did not display their special boarding passes to the FA. Not only that, they did not sit in their assigned Row 4 seats.

The FA solicitously asked the two passengers in Row 4 if their legs were OK. They were.

At some air carriers, policy requires that when an armed passenger is admitted to the aircraft, the Passenger Service

Representative come to the cockpit to inform the flight crew of the location of the passenger. When more than one armed passenger is on board, the Captain also makes sure that the armed individuals are privately introduced to each other, so that neither will be startled by the sight of another weapon-carrying passenger.



Another crew was first surprised, then very concerned about a firearm left unattended. The First Officer reports:

■ *In cruise, the lead Flight Attendant came into the cockpit visibly shaken and told us there was a gun hanging in the lavatory. I recalled the notice of an armed individual riding as a passenger, so the Captain sent the Second Officer [SO] back to talk to this person. He confirmed the gun was his, and, after showing his identification, was allowed to retrieve his firearm. The SO observed that this individual was obviously a nervous flier and was sweating excessively.*

Law enforcement officers are entrusted with the responsibility of carrying weapons onboard the aircraft, and that responsibility is very serious. If a person is nervous about flying, that feeling might cloud his judgment. ▲

Cleared to Land...Almost

Landing without a clearance incidents don't usually result in dire consequences, but the potential for a hazardous situation certainly exists. An air carrier Captain attributes his failure to obtain a landing clearance to a typical scenario—cockpit workload and instructions for a delayed frequency change.

■ *Approach Control asked us to maintain 250 knots and cleared us for the approach. Inside XYZ intersection, ATC requested 210 knots and to contact Tower at the outer marker. Then ATC requested we maintain 190 knots. Due to the greater than normal airspeed [when we reached] the outer marker, I was concentrating on configuring the aircraft for landing. We forgot to switch to Tower at the outer marker, and landed without a clearance.*

The First Officer adds: “Contact Tower at the outer marker” is an invitation for this type of incident. In our situation, Approach gave us several more instructions **after** telling us to contact Tower at the outer marker.

To ensure that Tower has been contacted, some pilots have developed a habit of always checking that they are on Tower frequency at a fixed point in the Approach, such as at the outer marker or after completing the landing checklist. If the pilots have reached that pre-determined point without receiving instructions to change to Tower frequency, they can make the request to Approach Control. Whatever memory techniques are employed to

prevent landing without a clearance, each requires discipline on the pilot's part to be effective.

Distraction is another commonly-reported cause of failure to obtain a landing clearance. A general aviation flight instructor, returning home after a pleasant afternoon's VFR flight, succumbed to the distraction of a non-essential task and missed an essential frequency change.

■ *Approach gave me vectors...and I was cleared straight-in for Runway 10. While I was approaching the runway, I decided to check the settings needed for an ILS approach. I wanted to see what the correct speed and flaps setting for a stabilized approach would be. Just short of the runway the thought crossed my mind that I didn't remember being cleared to land. Then I thought, “Of course I was cleared to land when I was given a straight-in for Runway 10.”*

[When I called Ground], they...sounded like they didn't know where I was. I told them I was on [taxiway] Charlie. They responded that I might be on Charlie, but I was also on [Approach Control frequency]. And so I was. I had never changed the frequency to Tower, nor had I talked to the Tower, nor had I been cleared by the Tower to land.

I think if I hadn't been so intent on getting those “numbers” for an ILS approach, I would have been paying more attention to the fact that I wasn't talking to Tower—or, more importantly, that they weren't talking to me. ▲