

CALLBACK



From NASA's Aviation Safety Reporting System

Number 360

December 2009

What Would You Have Done?

This month we offer another "interactive" issue of **CALLBACK**, inviting you to exercise your decision-making skills in response to dilemmas described by ASRS reporters. The front page presents four incident report excerpts followed by several plausible decision choices. Which of these choices seem the safest to you? On the back page, you will find the rest of the story – the actions taken by reporters to resolve their situations. You may find that reporters' actions do not always reflect what you would have done, or represent optimal safety solutions. We hope you will find this material thought-provoking.

The First Half of the Story

Situation #1: "The Only Visible Damage Was a Dent..." (C-172 Pilot)

I flew a rental plane from my home base...on a pleasure flight with a friend (also a pilot) as the only passenger... I landed on a turf runway, and taxied along the runway towards the parking area... As I approached the parking area, I moved slightly to the left of the centerline of the runway, setting up for a right turn farther down to park... As I continued taxiing, the plane suddenly had some sort of impact that forced it into a sharp 90-degree turn to the left, and it continued on a path straight towards the brush and trees that border the runway. I hit the brakes, but was not able to stop—perhaps slipping on the turf—before the nose of the plane entered just a little bit into the brush, with the prop chopping up small branches and splitting a small tree (approximately 3-inch diameter). The tree broke and fell sideways hitting the far leading edge of the left wing. Even though the plane had stopped, the engine continued to run until I stopped it by pulling the mixture knob...

After pushing the plane back, we did a thorough inspection. The only visible damage was a dent on the far end of the leading edge of the wing, and flaps and ailerons functioned normally. The engine started normally, with all instruments in the proper range. I used power to park the plane alongside the other planes. No mechanical services were available. I then considered my options, in consultation with my pilot passenger....

What would you have done?

- Arrange alternate transportation back home
- Call the rental FBO and ask for help
- Fly the airplane back to home base
- ???

Situation #2: "Don't Sink, Don't Sink" (B737 First Officer)

Upon departure from Reno (heavy: 143,000 pounds), received notice of a Bonanza at 6,000 feet (1,500 feet AGL). At the same time, TCAS presented a target in front of us

with a +200 foot separation. The target was immediately yellow, and then an RA instructed us to descend. The Captain immediately descended as the flaps were still retracting. The TCAS commanded a 1,500 FPM descent. We were 1,500 feet AGL at this time. While complying with the RA, the aircraft Ground Proximity Warning System issued a caution, 'Don't Sink, Don't Sink'....

What would you have done?

- Arrest the descent and begin a climb
- Arrest the descent and level off
- Continue descent and pass underneath the Bonanza
- ???

Situation #3: "I Discovered a Socket Rail Missing" (Maintenance Technician)

I was performing Phase task cards for the left and right engines, aft equipment bay, assisting in jacking aircraft, replacing an APU fire bottle, and clearing a deferral write-up. I worked different tasks at the same time due to the aircraft going up and off jacks. The aircraft was running late and I still had leak checks to be performed on engine runs. My toolbox is shadowed and my normal routine is to inventory my toolbox after each task...I taxied the aircraft to the gate, but as we were returning to the hangar we were told to return to the gate to assist with repositioning aircraft due to a late tail swap. Upon returning to the hangar, I inventoried my toolbox and discovered a socket rail missing....

What would you have done?

- Go to Craig's List and buy a used socket rail
- Return to the gate area to search for the tool
- Report the missing tool to a Supervisor
- ???

Situation #4: A Passenger Stuck in the Lavatory (EMB-145 Captain)

During climb to cruise altitude the Flight Attendant notified us that a passenger had gone into the lavatory and could not get the door open to come out. She said that she and the [stuck] passenger had tried multiple times to no avail to get the lavatory door open...As we were about 50 miles from [destination], I called Maintenance on the radio and told them our predicament. After a brief discussion with Maintenance, they told us of a possible way to get the door open. We had been switched over to Approach Control and were now only about 30 miles from the airport. I relayed the information to the Flight Attendant and had her try the way Maintenance had suggested to get the lavatory door open. Again, she was unsuccessful [getting] the lavatory door open. At this point we were less than 10 minutes from landing and there was severe weather west of the airport and moving east....

What would you have done?

- Assist the Flight Attendant with a crash ax
- Tell the passenger to stay seated for landing
- Divert to an alternate airport
- ???

ASRS Alerts Issued in October 2009	
Subject of Alert	No. of Alerts
Aircraft or aircraft equipment	10
Airport facility or procedure	7
ATC equipment or procedure	4
Maintenance procedure	1
Total	22

A Monthly Safety Bulletin from
**The Office of the NASA
 Aviation Safety Reporting
 System,**
 P.O. Box 189,
 Moffett Field, CA
 94035-0189
<http://asrs.arc.nasa.gov/>

October 2009 Report Intake	
Air Carrier/Air Taxi Pilots	2846
General Aviation Pilots	923
Controllers	42
Cabin/Mechanics/Military/Other	454
TOTAL	4265

The Rest of the Story: The Reporter's Actions

Situation #1: "The Only Visible Damage Was a Dent..." (C-172 Pilot)

- **The Reporter's Action: Fly the airplane back to home base**

■ Key factors in my decision-making process were: 1) The engine was not stopped forcefully by any impact on the prop, but continued running until I stopped it, 2) The engine had started and functioned normally when I parked the plane, and 3) Nose and prop showed no signs of damage. This led to the assessment that the engine and prop would operate normally. Furthermore, the dent in the left wing did not appear large enough to have any significant influence on the plane's flying characteristics, especially with only 2 persons on board...Based on this assessment, I made the decision that I would go through a thorough preflight, a normal engine start, then back-taxi on runway, perform a run-up, and if all instruments and run-up showed all the proper readings and passed all checks, I would take off, climb and stay close to the airport until assured that the plane responded correctly to all control inputs and that it kept a stable flight attitude. Should anything unusual be noticed, I could land back on the runway. My passenger agreed with my decision and felt comfortable with the plan.

This plan was carried out, everything functioned normally, and I decided to head back to the home base. The flight to and landing at the home base airport were smooth and uneventful, without any indication whatsoever that anything was out of order....

After a mechanic had examined the plane...I was briefed on the damage the mechanic had detected. I also was informed and given a copy of the 2004 Airworthiness Directive (04-10-14), which contains a change in the definition of a 'prop strike or sudden stoppage,' and which requires compliance with the Airworthiness Directive...It was explained to me that the prop strike that occurred fit this change definition, and that, therefore, the return flight to the home base was not in compliance with the Airworthiness Directive...Had I known of the Airworthiness Directive, I certainly would not have flown the plane back....

Situation #2: "Don't Sink, Don't Sink" (B737 First Officer)

- **The Reporter's Action: Arrest the descent and begin a climb**

■ The Captain immediately arrested the descent and then commenced a climb. We never saw the traffic. We were

only 1000 feet AGL and the terrain was rising in front of us (red on the EFIS screen). The aircraft was able to climb safely away from the terrain once the climb was commenced. The Captain called the Tower the next day and related to me that the Bonanza was on a downwind and the Tower thought there was adequate separation. Our B737 apparently thought differently, resulting in something that should be of concern: an RA commanding a descent at a low altitude in rising terrain. I have never had a Resolution Alert at such a low altitude, and I have never had a Ground Proximity caution resulting from a TCAS RA maneuver. We could not out-climb the Bonanza, it was directly in our climb path. Even if we saw it, which we didn't, we were in a canyon without room to maneuver clear, other than descending and passing underneath it at 1,000 feet AGL...We were lucky it was daylight.

Situation #3: "I Discovered a Socket Rail Missing" (Maintenance Technician)

- **The Reporter's Action: Report the Missing Tool to a Supervisor**

■ I notified my Supervisor who immediately checked on the status of the aircraft. It was on final at [destination]. He called [the airport] to check the aircraft and the socket rail was recovered. I should have been more assertive, stuck with one task at a time and inventoried my toolbox after each task. If not for the repositioning of the aircraft at the gate, I still would have had time to discover the missing tool before flight. I had the right process but not the right sequence.

Situation #4: A Passenger Stuck in the Lavatory (EMB-145 Captain)

- **The Reporter's Action: Tell the Passenger to Stay Seated for Landing**

■ I told the Flight Attendant to have the passenger take a seat to the best of his ability in the lavatory and had her prepare for landing. The landing was uneventful and reaching the gate Maintenance personnel came on board before any passenger deplaned and were able to open the lavatory door by releasing the hinge pins. An AML entry was made.

The First Officer's report on the same incident added, "The passenger that was stuck in the bathroom was not injured [and] seemed to be in good spirits after the event."