

CALLBACK



From NASA's Aviation Safety Reporting System

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Third Annual Award Learning Lessons

The incidents featured in *CALLBACK* provide an opportunity to learn from the diverse experiences reported to the ASRS program. While many incidents involve inadvertent mistakes, other reports describe mishaps that were handled with skill, initiative, and professionalism. This month's report excerpts were selected as "best" examples among recent incidents that document the value of training, communication, and teamwork when things go wrong.

to safely land the aircraft without damage. I attribute this to proper emergency procedures, and a thorough understanding of aerodynamics.

And the Winners are...



Best Solo Performance

The outstanding performance of this student pilot during a solo cross-country emergency was enhanced by helicopter training, and a thorough understanding of flight dynamics.

■ *...During solo cross-country...the engine began to run rough. I put the mixture in full rich with the problem getting worse. I put the carb heat on and trimmed the C-150 to its best glide speed. Within 30 seconds, the engine at full power would only develop 1700-1800 rpm. At that time I turned 180 degrees into the wind while putting a direct to ZZZ1 airport. I was tuned on the ZZZ1 VOR and centered the needle so as to not drift my course. I then checked both magnetos and engine oil pressure / temperature, all of which were normal. I was over rolling hills and knew I wasn't going to make the airport.*

The pilot made several Mayday calls on local frequencies, but no one responded.

As I passed through 1,700 feet MSL, I saw a small set of telephone lines in my original landing area. With partial power applied, I was unable to maintain my altitude, but could reduce my rate of descent. I dropped 10 degrees of flaps to gain lift and banked hard at about 300 feet. I crossed a hedgerow of 80-foot trees, knowing I would make my landing area. [I] dropped full flaps to get down, because slipping the aircraft into the field would not have allowed me to line up with the rows in the field made by the owner's tractor. At about 15 feet AGL, I cut the fuel off to the motor, and pulled the engine off. At 5 feet I flared, holding the nose up until I heard the stall horn. I continued to hold the nose off as the mains touched. I applied full brake pressure after the nose settled. The aircraft was landed with about 75 feet of ground run and no damage.

The cause of the failure is believed to be a dropped cylinder or valve. As a student fixed wing pilot, I was able to use my experience as a commercial instrument helicopter pilot



Best Performance in a Supporting Role

An air traffic controller's performance during an emergency earned rave reviews from this ASRS reporter who was an audience to the event.

■ *I was on an IFR flight plan...level at 4,000 feet MSL in IMC. Just after I had been handed off to another sector, a single-engine non-instrument rated pilot called in with a low fuel emergency. He was initially at 7,500 feet MSL on top of a solid undercast. The Center controller (who I feel must have been a pilot) did a phenomenal job of helping this pilot in the course of the emergency. (He did indeed run out of fuel and ended up making an off-field landing, at night, on a road.) In my opinion, this controller was paramount in keeping the pilot from entering a 'graveyard' spiral and keeping his focus on what he needed to do next. The pilot made an uneventful off-field landing without incident!*

There are occasions when pilots and controllers may disagree and may be reluctant to give praise when praise is due...At least one pilot appreciates [this controller's] dedication, professionalism, and adroitness in dealing with a life-threatening situation.



Best Performance in a Medical Drama

A Captain describes how great teamwork by a stellar cast produced a memorable performance.

■ *Approximately 1 hour into flight...I was notified by our first Flight Attendant (FA) that we had a woman in her 70's that was pale, with shortness of breath, complaining of chest pain, and that there were 3 doctors on board who were administering to her needs. The first FA said that she would supply us with a [medical] form shortly, and give us an update on the woman's condition.... We were given the [medical] form which indicated that the woman appeared to be quite sick, and were told that all three of the doctors on board were in agreement that she urgently needed further medical attention. We were able to relay this information to Dispatch and, with their agreement, began a diversion to ZZZ1, the nearest suitable airport from our present position...The FA's were advised to prepare the cabin for our diversion, we declared a medical emergency, and were on the ramp in ZZZ1 in about 10 minutes. The woman was removed from the plane on a gurney and transported by paramedics.*

Subject of Alert	No. of Alerts
Aircraft or aircraft equipment	69
Airport facility or procedure	54
ATC procedure, operations or equipment	45
Company policy	7
Chart, Publication, or Nav Database	9
Maintenance procedure	8
TOTAL	192

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December 2006 Report Intake	
Air Carrier/Air Taxi Pilots	2179
General Aviation Pilots	788
Controllers	156
Cabin/Mechanics/Military/Other	258
TOTAL	3381

I was extremely impressed by the professionalism and quick response of our Flight Attendants, as well as my First Officer in getting the aircraft on the ground as quickly as he did...I believe the quick response from Dispatch, the crew, onboard doctors, and ATC contributed to the hopefully positive outcome for our passenger.



Best Performance in a Takeoff “Role”

The flight crew of a B737 was following the script for a normal takeoff roll, with the Captain using a Heads-up Guidance System (HGS) to monitor V-speeds. But as the aircraft neared rotation speed, the Captain had to improvise:

■ *...The preceding aircraft (a B747) departed from the runway extension of Runway 32. We observed the long takeoff roll of the aircraft (55-60 seconds from beginning of the roll to rotation)...Nothing abnormal was noted on the departure of the B747...Tower issued takeoff clearance for our flight. The First Officer was flying and commenced the takeoff roll shortly after clearance was received. Takeoff roll was uneventful as we approached V1. I was monitoring speed through the HGS (Heads-up Guidance System) to make the appropriate call (V1/VR/V2) to the First Officer. My eyes were focused at infinity through the HGS in order to see the speed display and as we approached V1, I noticed what appeared to be a black smudge on the runway. It actually appeared to be just an area of heavier than normal rubber on the pavement as is normal in the landing zones. As I called V1 at 5 knots prior to V1 (SOP) and removed my hand from the thrust levers, I realized that the black smudge was beginning to show relief and was actually rising above the runway surface. At about the VR call, I determined that the black smudge was a large debris field from a total tire failure perhaps 1000-1500 feet in front of us. The First Officer had just commenced a normal rotation and I was concerned that we may impact the debris, so I applied a little extra back pressure on the yoke and commented that I was ‘coming on it a little.’ With a slightly higher than normal rotation rate, we became airborne about 500-1000 feet prior to the debris. Tower was notified as was the preceding aircraft...*

As we flew over the debris, I noted that what I had initially seen was the entire outer tread of a large aircraft tire. There was also significant tire debris scattered all around the general area...Impact at high speed (rotation) would have almost certainly led to severe or catastrophic damage to our aircraft...I think the HGS and my scan through it for V-speeds greatly assisted in earlier recognition and better reaction time. The First Officer...did not see the debris until I began assisting with the rotation.



Best Performance by a Duo on a Night Flight

A CFI and a student on a night IFR flight kept their cool, even when conditions in the cockpit heated up.

■ *Plan was to complete an IFR cross country training flight...As we entered nighttime conditions we continued the flight with the use of personal lighting equipment and overhead lighting installed in the plane as the panel lighting installed in [the] airplane was not functioning properly. We started our descent...without incident. We were cleared for the approach and told to descend to 6000 feet and report commencing the DME arc. It was at that time that we both smelt and saw smoke coming from the left side rudder pedals. We very quickly turned off all electrical switches and I notified Approach Control that we had smoke in the cockpit...Approach Control asked if we needed assistance and if we were declaring an emergency. I advised that...we needed to get down as soon as possible. They immediately advised us that ZZZ was 6 miles east of our position and cleared us direct...and report airport in sight. At that time the student was instructed to fly the plane and I would handle the radios and checklist...In the descent to the airport the smoke did not intensify but rather seemed to subside. The student handled the landing and we landed safely without further incident...*

The following day maintenance looked over the plane and found evidence of faulty lighting wiring. It was this wire insulation that had begun to melt.

In reviewing the situation I am proud of my student and feel that we worked as a team in order to handle the situation. Approach Control was very responsive and provided timely assistance throughout the situation.



Best Animated Feature

This MD-80 cockpit and cabin crew were well rehearsed for their roles in an “animated” post-landing event.

■ *After clearing [the] runway...After Landing Checklist [was] called for and completed by the First Officer. This included start-up of the APU and selecting bleed air from it. Sometime after this, flight attendants called on interphone accompanied by banging on the cockpit door. First Officer answered interphone and I listened in. They advised smoke of unknown origin in cabin. I turned off air conditioning packs and APU bleed air and asked if they could stand by, as we were almost to the gate. One stated that we must get out now! In the background I could hear lavatory smoke alarm chimes over the interphone. Just about the same time smoke appeared in the cockpit coming through the cockpit door. I stopped the aircraft on taxiway... set brakes, ordered the cabin to evacuate, donned oxygen mask and called for evacuation checklist. Somewhere in the melee, the First Officer notified Ground of what was taking place and to dispatch emergency equipment. After completion of the checklist, I ordered the First Officer to evacuate and I went to cabin for passenger check. Only one flight attendant remained on board and we both went down the L1 slide. No injuries were reported to me and 140 passengers were evacuated in about one minute. Textbook [perfect] almost.*

Post flight inspection revealed an oil leak in the APU compartment that was then ingested into the air conditioning system, causing the smoke.