

# CALLBACK

From NASA's Aviation Safety Reporting System

# ASRS

Number 203

May 1996

## Aircraft Sick Call



A recent issue of Callback discussed flight crew illness and incapacitation. An aircraft can become “incapacitated,” too, sometimes with a little help from its crew—the other half of the human-machine team. Reporters offer some stories of how their aircraft came to be on the injured list.

Distraction from nearby traffic was the undoing of an air carrier crew and its aircraft.

■ *As we started our takeoff roll, the autothrottles advanced power to the maximum. At approximately 80 knots, I noticed an overshoot on the #2 engine's N1 [compressor speed] to approximately 100.7%, the target being 97.3%. I attempted to correct the power setting manually. As we rotated, we adjusted our heading to clear [VFR traffic ahead]. I looked down to the engine instruments and noticed both red overtemp lights were on on the EGT gauges. We immediately selected climb thrust, which brought all the readings back to normal. We continued to monitor the instruments looking for anything abnormal, but everything was normal for the rest of the flight. We accomplished the appropriate checklists and made logbook entries as required.*

*Our eyes were outside the cockpit, our first priority being traffic avoidance. Had we been on the instruments, we would have noticed the high EGTs [before they peaked]. Apparently, both engines had to be changed.*

A clear division of cockpit tasks is necessary for the crew to keep up with the ever-changing engine instruments, as well as the ever-changing environment outside the cockpit.

### Red Carpet Treatment

The First Officer of a corporate aircraft reports an unusual cause of an “overheated” engine:

■ *Upon initiation of the takeoff roll, we noticed a noise on the left side of the aircraft, and the aircraft veered left. It felt like a blown tire; however, it was an engine failure. We immediately aborted and pulled off the runway. The Tower reported fire and smoke from the left engine. The PIC shut it down and did the engine fire checklist. We taxied to the ramp and exited the aircraft.*

*Mechanic's inspection [revealed the presence of] a “red carpet” mat like that laid on the ground under the door. The mat was placed on the wing by the mechanic, who then moved the aircraft with a tug. As we had completed*

*our preflight inspection, we did not look for the mat or any other abnormality. On takeoff roll, the mat had been sucked into the left engine. The fire was the mat burning inside the engine.*

*Since the red carpet is still in use, one of the pilots now makes a quick walk-around to see that all the mats are in their proper places.*

### More Hot Stuff

The next report describes how a biplane received damage, and how its pilot got hurt as well.

■ *I had just finished washing the aircraft. I hot-started it, and put in too much throttle. It got away from me and hit the building. My intent was to taxi to the hangar. I had not put on my seatbelt (stupid!). Therefore, I got a cut over my eye when the aircraft stopped. The propeller, engine, and left wing were all damaged, and the frame may be bent.*

The aircraft's brakes could have failed if they got wet during the wash job. In any event, seatbelts are a “must” anytime the aircraft engine is started.

### All Hands On Deck

A light twin aircraft sustained damage at the hands of a student during a training flight. The instructor reports:

■ *[During takeoff], just as we reached rotation speed, the student raised the nose and, for no explainable reason, he reached down and raised the gear at the same time. The left prop hit the runway. He yanked back on the yoke to try and climb. I took control of the airplane and while I was doing so, my student reduced both throttles to idle in an attempt to abort! I reapplied full power and lowered the nose to normal climb attitude. In discussing this with the student after the fact, he was at a total loss as to why he did what he did. It is because of incidents exactly like this one that I do not do touch-and-go landings.*

Instructors need to watch where students put their hands. Visual verification of the control being moved is paramount in a cockpit full of levers, knobs and switches.

ASRS Recently Issued Alerts On...
Ambiguous A-320 ECAM procedures
Inoperative static port heaters on several B-727s
Unreliable UHF frequencies at a Connecticut airport
Unreliable NDB navigation between Florida and Cuba
B737-400 rudder pedal restriction attributed to older PCUs

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

February 1996 Report Intake	
Air Carrier Pilots	1774
General Aviation Pilots	658
Controllers	84
Cabin/Mechanics/Military/Other	34
<b>TOTAL</b>	<b>2550</b>

# Check...then Double-Check



Many accidents and incidents have been attributed in part to misuse or non-use of cockpit checklists. An air carrier Captain reports on a minor checklist omission that, fortunately, did not cause a major incident.

■ *The aircraft was ready for pushback and the ground crew called on the interphone saying that they were ready. I announced to the ground crew, “Brakes off, door lights out, cleared to push.” Just after pushback began, the tug operator brought the aircraft to an abrupt stop, and said there was still an agent in the rear cargo bin. I looked up and saw the aft cargo light illuminated. Apparently the First Officer and myself both failed to see the illuminated aft cargo light on the overhead panel. Both pilots should check items on the checklist, and confirm that the proper response and action have been taken.*

Many pilots respond to checklist items with a simple “Check,” “Set,” or “OK.” Our reporter echoes a suggestion made in research studies of checklist usage: a safer response is a value (“N1 reading 97.5%” or “Altimeter set 29.88”) or a status (“Fuel valve open” or “Hydraulic warning light out”) for the item identified.

Pilots who are accustomed to flying a particular aircraft develop habit patterns specific for that aircraft. A problem can occur when old habits are used with a new aircraft, as our next reporter points out:

■ *After a hiatus from flying, I got checked out to rent an aircraft. On aircraft I used in the past, the transponder had only an OFF/ON setting. When turned on, the Mode C was automatic. In this aircraft, the transponder had STBY/ON/ALT settings, the “ALT” being Mode C. I should have made a note of this.*

*I took off on my second flight since the checkout. I turned the knob on the transponder and noted the yellow return light. About half-way through the flight, I noted the transponder was only set on “STBY.” I immediately set it to “ON,” then remembered I needed “ALT” setting for the encoder.*

*During preflight I used a generic checklist. I have now made my own checklist, and have highlighted “transponder check” and added a note about checking the “ALT” setting. When switching aircraft, I need to be extra alert about differences in equipment.*

Checklists often need to be customized. Even among same make and model aircraft, slight equipment variations and different cockpit layouts can lead to overlooking crucial items if a generic checklist is used.

## Landing Checks

Some pilots have cockpit rituals to help remind them of an item to monitor or action to be accomplished. A long-

standing landing ritual proved to be somewhat less than foolproof, according to the next reporter, an air carrier Captain.

■ *The copilot suspected we may not have switched to Tower during the IMC approach, and may not have had a landing clearance. We do not have a checklist procedure to confirm landing clearance. I usually turn on the taxi light when we are cleared to land and then do a scan of lights and switches at 500 feet AGL. I either did not do this scan or missed the switch position due to the workload. Now I plan to brief the Flight Engineer to confirm landing clearance before sliding the last tab on the mechanical landing checklist.*

## “GUMP” and Other Short-Cuts

Many reporters refer to using GUMP (Gas, Undercarriage, Mixture, Prop) as a final pre-landing check. A few reporters have suggested expanded versions of GUMP to help remember additional tasks, such as seatbelts (making GUMPS) or radios (making GRUMP). One reporter wrote to object to the apparent overreliance on such short-cuts:

■ *First it was “GUMP.” Then it was “GUMPS.” Now I read “GRUMPS.” Soon it will be “GRAMPS,” or maybe “GRAMS.” What happened to the old fashioned way, namely, using the original checklist that was certificated with the airplane?*

GUMP is useful as a supplemental memory-jogger when a pilot's hands are full of landing tasks. However, the reporter makes a valid point: nothing can replace the proper use of the appropriate checklist, whether it is the original checklist, or one suitably customized for the equipment installed in a particular aircraft.

A commuter airline Captain relied on another checklist short-cut, which resulted instead in a navigational deviation.

■ *It is standard [checklist] procedure to tune and set com and nav radios prior to departure. I reached for the enroute chart [to check frequencies]. My copilot stated that there was no need, as he had made a “cheat sheet.” I looked at it briefly and it appeared to match our route. After departing, we were given a vector to join the airway. There were no nav flags and the CDI was full scale to the side. We were just becoming suspicious when Center advised us we had flown through the airway. The “cheat sheet” was correct except for the nav frequency.*

Morse Code identification of the navigation frequency is the approved method of verifying correct frequency selection. Cheat sheets can be helpful, but won't do any good if the information is incorrect.