

CALLBACK



From NASA's Aviation Safety Reporting System

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“Classic Traps”



A “trap,” as ASRS reporters use this term, is an undesirable circumstance or outcome from which escape is difficult. In almost all cases, the trap is self-made. A pilot may not have reviewed charts and is involved in an airspace incursion. Pilots talking to ATC sometimes hear what they “expect” to hear and become involved in unintended surface and airborne incidents. Maintenance technicians may not check parts catalogs adequately, and fail to install required washers and spacers. A pilot becomes fixated on cockpit duties and may fail to comply with ATC instructions. Yet another pilot engages in scud-running and succumbs to the urge to “get home.” These “classic” traps are those that are well-known to ASRS analysts and have been reported to the program many times. In this issue of CALLBACK, we look at some of these “classic traps” – and at how these situations may be avoided.

The Class B Trap

ASRS recently received multiple reports from airline crews who exceeded the 200-knot speed limit below the Class B floor of one international airport. This report from a First Officer was representative:

■ On the arrival to ZZZ [we] received vectors for right downwind for ILS 19R at ZZZ. At 5,000 feet MSL approximately 10 miles west of the field, the controller asked our airspeed. We replied 250 knots. He said something like, “You’re the third company in a row that has exceeded the speed as briefed.” When we queried him further, he stated that his facility chief had briefed [several companies] on the need to fly at 200 KIAS below the Class B airspace. We examined our charts and found that the flight path did indeed pass under a small corner of the YYY Class B with a floor of 7,000 feet...

Both the Captain and I had been into ZZZ several times and did not recall ever having this problem...This familiarity...led us to be complacent regarding checking the notes on the [commercial chart] page and carefully [reviewing] the charts regarding the Class B. Better discipline in checking notes/charts even in familiar territory will help prevent a recurrence.

The arrival/approach charts do not depict the boundaries or floors of the Class B airspace. One must consult the low altitude enroute chart to find the exact area in question. Also the aircraft...has map displays but does not depict airspace. In other words, the information is not obviously available, and [is] therefore easy to miss.

The Clearance Anticipation Trap

A number of “trap” reports received by ASRS involve pilots’ anticipation of ATC clearances. In a typical scenario, a pilot receives a clearance the same way repeatedly, until a response is ingrained. Then a change to the clearance is introduced – but the pilot’s response is based on reflexive (unthinking) habit patterns.

A Baron 58 pilot, anxious to do “everything right” at a major airport, got caught in the trap of anticipating taxi instructions:

■ Clearance Delivery instructed [me] to stay on frequency and notify when ready to taxi. Upon notification, I was instructed to monitor Ground. I interpreted the instruction to commence taxi to the active and monitor Ground...Instead of contacting Ground, I made the wrong assumption that the controller was monitoring both frequencies...I got caught in the trap of anticipating taxi instructions and caught off mental guard when told to monitor [Ground] instead of what I would normally do – contact Ground when ready to taxi.

A charter pilot was very familiar with a departure procedure at an airport, but got used to flying the departure without an initial altitude restriction:

■ ...I was given the departure with my clearance and took off from Runway 24. I am thoroughly familiar with this procedure, flying out of [airport] 20 times a month. My departures are normally at night. The 1,500-foot altitude restriction is usually not an issue at these hours and I am cleared to 4,000 feet on initial contact with Departure. I guess I became conditioned to ignore the altitude restriction. On this flight I continued to climb until ATC informed me of the altitude. I was then at 2,000 feet. I was instructed to maintain 2,000 feet at that time. Fortunately, I do not believe my violation caused a traffic conflict. This incident has [taught] me to be extra vigilant about not falling into the trap of anticipating a clearance.

A C172 pilot was accustomed to VFR flight following with a local TRACON that “automatically” cleared the aircraft through all Class C and Class D airspace in the area. Then the pilot flew to another part of the state:

■ I realized that I was in ZZZ Class D airspace but that I was still not handed off to the ZZZ Tower controller. This was my first trip to the ZZZ area and I was unfamiliar with the...local procedures...I queried TRACON and was told to switch frequency to Tower. When I did, a Piper Cherokee who seemed to be flying a wide pattern for Runway 26 passed very close to me. I turned and the Cherokee turned to avoid a collision. The controller in the Tower asked me to call him upon landing...I will never repeat this mistake! As PIC, all airspace is my responsibility and I will never make the same assumptions regarding the final handoff...

ASRS Alerts Issued in September 2006	
Subject of Alert	No. of Alerts
Aircraft or aircraft equipment	7
Airport facility or procedure	11
ATC procedure or equipment	6
Maintenance procedure	2
Company policy	2
TOTAL	28

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September 2006 Report Intake	
Air Carrier/Air Taxi Pilots	1863
General Aviation Pilots	865
Controllers	298
Cabin/Mechanics/Military/Other	136
TOTAL	3162

The Fixation Trap

Fixation (cognitive tunneling) is focusing on some flying tasks to the exclusion of others that may be just as important to the safe outcome of flight. A GA pilot flying single-pilot IFR reported a loss of situational awareness while preoccupied with icing, an electrical problem, and programming chores for the GPS.

■ *...I had been cleared by Approach to descend from 9,000 feet and intercept the Runway 15 Localizer. I flew through the Localizer and missed two calls from Approach. This resulted in Approach having to reroute two other aircraft.*

The weather was deteriorating, with ceilings lowering rapidly, visibility dropping below 2 miles, and snow. I had picked up light/moderate ice during the initial descent from 13,000 feet and observed that the left alternator was not indicating that it picked up any load. The “alternator out” warning light was not flashing. In the process of analyzing the electrical issue and picking up the ATIS, I lost track of how far past the fix I was. As a result, when Approach cleared me to 3,500 feet, and to intercept the Runway 15 Localizer...I did not establish a rate of descent necessary to comply. Further, in listening to the new ATIS, loading the approach for Runway 15 in the GPS, and continuing to monitor parts of the electrical system, I missed 2 calls from Approach...I also realized that I had flown through the Localizer...

I fell into the trap of becoming overly focused on parts of the task, and lost situational awareness...What was missing was the ability to properly prioritize and stay focused on just flying the approach...Prevention: a mental checklist when working on a non-routine flight issue, something along the lines of: 1) fly the plane, 2) what’s most important right now? 3) relax, 4) repeat steps 1-3.

The Get-Homeitis Trap

A C150 pilot tried to race a thunderstorm back to the airport of departure:

■ *...A thunderstorm was approaching from the north. It was clear to the south. We decided to depart quickly and fly to the south. We departed rapidly, only to find quickly [deteriorating] visibility. I would estimate the visibility to be less than one mile. Upon reaching an altitude of 100 feet, I turned the aircraft to the left to bring it around for a quick landing before the situation got worse. We climbed up to about 300 feet AGL. I was sitting in the right seat and did not see the aircraft hangar I overflew at such a low altitude...*

I landed without incident and taxied back to the hangar in torrential rain and thunderstorms. An FAA representative/inspector met us. He stated we were in violation of FAR 91.13, careless or reckless operation. Why did I do such a... thing? I wanted to get home. I saw an opportunity. I took a chance...I will never do it [race a thunderstorm] again.

Besides ‘Get-Homeitis,’ I had the feeling that I could do this. I’m a great pilot, nothing can happen to me. Luckily, I was able to break the chain of events before it broke me.

The Nose Tire Assembly Trap

In a maintenance scenario reported many times to ASRS, a technician is asked to change a B767-300 nose tire assembly. The work is performed and the aircraft is returned to service. All seems to be well – until a later inspection finds that the wheel washers or wheel spacers are missing. Here’s how that can happen:

■ *Technician Y and [I] were assigned to the ETOPS [Extended Range Operations] and overnight check on Aircraft X. I don’t recall who found the left nose tire worn, but I proceeded to get the equipment to change the assembly. Technician Z...rolled out a new tire assembly. I jacked up the nose tire and loosened the lock bolts and the axle nut. Usually, once the axle nut is broken loose, the tang washer will slide right off the axle. Unfortunately, in this case, the tang washer stuck to the tire assembly, and neither Technician Y...nor I noticed this...At the conclusion of the routine check, I signed off the tire on the logbook... The aircraft departed without incident and a few days later during a preflight inspection, maintenance noticed the improperly installed nose tire assembly. The fact is the tang washer on the removed tire stuck to the bearing with grease and it did not occur to me that one belonged there with the new assembly.*

Affected airlines have now started adding special instructions about the B767-300 washers/spacers to their job cards. In the meantime, maintenance technicians should be aware that both washers and spacers can stick to greasy wheel assembly parts, and be easy to miss.

Submit Your ASRS Report ELECTRONICALLY!

Electronic Report Submission (ERS) – the ability to fill out an ASRS report on a computer and send it to ASRS via a secure Internet connection – is now operational. All ASRS Reporting Forms (General Pilot, Air Traffic Control, Maintenance, and Cabin Crew) can now be sent electronically via the ASRS website at:

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

ASRS has fully explored privacy protection and confidentiality concerns for secure Electronic Report Submission. ASRS has worked with NASA’s Jet Propulsion Laboratories (JPL) – home to the Mars Rovers – to apply sophisticated new technology to ERS that will ensure confidentiality.

The next time you experience a safety incident or have a safety concern, take ERS for a test flight and try out this new technology!