

CALLBACK

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Tricks of Sun and Storm



Sunny summer days are often associated with great flying, but can be tough on pilots' eyes. Sunglasses that help cut glare in the cockpit may sometimes create another hazard, as this air carrier Captain reports:

■ *While taxiing out, after turning onto the taxiway, we noticed the cargo door light on and company personnel on the ramp waving. We notified Ground Control, and company personnel came to the aircraft and secured the cargo door. This happened in part due to the annunciator light being quite dim and in the far corner of the panel. [Since I had sunglasses on], it was quite difficult to see.*

Sunglasses are available in a wide variety of tints, some of which may alter the color and brightness of annunciator and warning lights. Polarized sunglasses, although effective against reflective glare, may reveal strain patterns present in some aircraft windshields. These patterns may visually distract pilots. Many air carrier operations manuals specifically prohibit the use of polarized sunglasses. Pilots should explain to their eye care providers that the sunglasses will be used for flying, and that it is important not only to be able to see colored warning lights and electronic displays, but to avoid visual distortions and distractions.

Mirage

Another impediment to a pilot's vision is the refraction of light rays on a hot day. Heat in the atmosphere acts as a lens to create a distorted view of reality—a mirage. The mirage may give the illusion that an object is present, when, in fact, no object exists at close hand. The opposite situation, as reported by a general aviation pilot, is a case in which the watery mirage effect masks a very real hazard:

■ *Hot and hazy day. Runway 06 was in use. I had the CTAF on while doing my pre-flight checks at the approach end of runway 06. I checked both ends of the runway, saw no traffic, made my departure call and started takeoff. Unknown to me, an airplane had approached and landed on runway 24 while I did my run-ups, etc. Just before rotation speed, I noticed the other airplane on the runway. I had enough room to rotate and side-slip to the right, and missed the other plane by a good margin. I'd heard nothing on the radio. An airport employee said he hadn't either.*

Incidents like this can be prevented by: 1) using your radio at uncontrolled fields; 2) obtaining airport advisory, i.e., which runway is in use; and 3) exercising great care on hot, muggy days. Heat rising from the runway may distort your view of objects at the other end.

Desert Storm

In the Southwestern U.S. and some foreign locations, the approach of seasonal thunderstorms may be signaled by dangerous emissaries—sand and dust clouds that precede the storm front at low and high altitudes, presenting a hazard to both general aviation and air carrier aircraft. An air carrier Captain tells a harrowing tale of an encounter with one such dervish in Middle Eastern airspace:

■ *Flight approaching [Middle Eastern] airport was cleared to descend to FL120. An area of isolated embedded thunderstorms was being passed. Aircraft had been slowed to turbulence penetration speed and was deviating around thunderstorms on descent with good radar returns received. At FL180, an area of mild precipitation showed on radar; not unlike ground clutter, it would not contour. Rain increased in intensity followed by a very brown substance which appeared to be wet sand. The windshields were damaged, #2 engine flamed out, and the "pull up" [terrain warning] signal occurred several times. The time in the heavy rain/sand was very short...but the intensity of the deluge was considerable.*

After flying through the sand cloud, the aircraft continued on and landed uneventfully. My main concern was the lack of adequate return from a perfectly good radar and the hazard involved in flying through wet sand. The radome was damaged, the landing light lenses blown out, and the windshields partly crazed over. All the static wicks were also missing.

This aircraft's Ground Proximity Warning System (GPWS) apparently interpreted the sand cloud as terrain and signaled a pull-up. ▲

ASRS on the "Web"

Earlier this year, we announced that ASRS has an Internet site. It can be reached by typing the following address exactly as it appears:

<http://www-afo.arc.nasa.gov/ASRS/ASRS.html>

We hope you'll visit us soon to sample some of our aviation safety fare, including an ASRS overview, and pilot/controller reporting forms. Also available through the Adobe Acrobat Reader are back issues of two ASRS publications — *CALLBACK* from December 1994 to the present, and *Directline* from Winter 1990 to the present. Soon, you will be able to access these two publications directly in an "html" format. ▲

ASRS Recently Issued Alerts On...

Toe-brake failure on an ATR-42
Flap asymmetry control problems on an E-120
Loose rocks on taxiways at a Mississippi airport
Uncommanded spoiler deployment on a B737-200
Radar display strobing at a Florida TRACON facility

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April 1996 Report Intake

Air Carrier Pilots	1872
General Aviation Pilots	667
Controllers	112
Cabin/Mechanics/Military/Other	43

TOTAL 2694

Taxi To, Not Through



ASRS frequently receives reports of runway incursion incidents attributed to the forgetting of taxi rules, faulty crew coordination, and unmet expectations. Our first reporter belatedly remembered the basic rule of taxiing—proceed only as far as instructed, and never onto the assigned takeoff runway without specific permission.

■ *We were cleared to taxi to 16L. As we approached 16L, I looked for traffic, saw none, and continued across. As the nose of the aircraft entered the runway area, I saw a small airplane on final. It was too late to stop, so I sped up to cross faster. The other airplane landed without incident.*

Listening to Ground earlier, I had heard him give, "Taxi 16L via...hold short of 16L," [to another aircraft]. Because I did not get the "hold short," I was in the mind set that I was cleared to cross, forgetting the old basic that "taxi to" is permission to cross all runways except the active. We get so used to being told where to hold short that when it is not said, we forget about this exception to the basic rule about taxiing.

Not unlike real estate, in which the key words are "location, location, location," so it is with taxi instructions. Controllers usually are quite explicit about directing an aircraft where to taxi, and when.

Lack of cockpit coordination during taxi caught this flight crew off-guard, as the First Officer reports:

■ *After touchdown, the Local Controller instructed us to exit runway 22 using the forward high-speed taxiway and hold short of runway 27. I read back those instructions, and proceeded to complete the after-landing checklist. The Captain must not have understood our instructions to hold short, and continued to taxi across [runway] 27. He asked me, "We were cleared to cross, right?" and I replied, "No." Lack of proper communication and understanding of instructions between crew members were factors in the situation.*

The Captain involved in this same incident had expectation on his mind:

■ *I had been doing this same flight for almost 2 months; runway 22 had been the runway 90% of the time, and every landing on 22 had been followed by, "Exit the highspeed, cross 27, [contact] Ground the other side." I mistakenly expected this, and wanted to hear it.*

Confirmation between crew members of the controller's instructions, and clarification with the controller if necessary, might have prevented this incident. When in doubt, check it out!

High-Speed Taxi

Taxiway incursions are also common, usually occurring when an aircraft taxis without clearance onto a taxiway from a runway or ramp area. An air carrier Captain reports a near ground collision resulting from another aircraft's apparent failure to obtain taxi clearance.

■ *While we were taxiing from the gate to taxiway A, a jet landed and exited the runway at the intersection of A and the high-speed taxiway at a high rate of speed directly toward our aircraft. I was forced to take evasive action to stay safely out of his path. I queried Tower if he had cleared the aircraft off at that exit, and he replied that he had not.*

This incident was not so close as to pose an immediate, direct hazard to my aircraft and passengers...largely owing to the fact that my crew saw an unsafe situation rapidly developing and took timely evasive action.

Fortunately, "see and avoid" works well on the ground, too.

A high-speed "taxi" incident of a different sort is reported by a general aviation pilot:

■ *I was on a long straight-in approach to runway 1L. At about 15 miles out, I was asked by the Approach Controller if I had the airport in sight...and as I got closer, he asked if I had the runway in sight. I answered yes as I could see the right runway and what I thought was the left runway. After I was switched to the Tower, he asked if I had the runway in sight. I answered affirmative, as I could see the two runways I had identified earlier. I landed on the left one. As I slowed to turn off, the Tower told me I had landed on the taxiway.*

By then it was quite clear to me, as where I turned off was at the start of runway 1L. I should have looked at the diagram of the runways I had with me long before I landed...

Other pilots have also reported experiencing this embarrassment. ▲