

CALLBACK

From NASA's Aviation Safety Reporting System



Issue 391

August 2012

NIGHT VISUAL APPROACHES



The vast majority of visual approaches are completed without incident, but as evidenced by a number of reports that come to ASRS, the procedure is not always error free. The predominant “lesson learned” mentioned in these reports is: back up the visual approach with all available course and glideslope guidance or better yet, use an instrument approach procedure. This issue of *CALLBACK* looks specifically at incidents associated with night visual approaches.

A Wake Up Call

A very experienced B737 Captain offers some sage advice on how easy it is to be lulled into a sense of complacency when making a visual approach on a calm, clear night... even if you're Sky King.

■ *So, it's a clear night, calm winds. I've been to [this airport] many times, though never at night.... We planned a flaps 40, visual approach to Runway 2L, backed up by the ILS. In retrospect, I should have planned the ILS backed up by the visual, but had I done that, I wouldn't be writing to you... Once I was "sure" I had the runway, I asked for the visual. We were cleared to descend to 2,000 feet; cleared for the visual approach.... I decided to go to Heading Select and cut just inside the Final Approach Fix. I'm already a little low because, like an idiot, I am thinking [the airport] is at sea level, not 400+ feet. So we are out of 2,000 feet, throw the gear down, run the Landing Check, and I am making a slow turn to the runway, or so I thought. Well, I was turning, but looking at Runway 2R. The VASI is red over red which isn't jiving with the ILS for Runway 2L. With some help from [the First Officer] I realize I am looking at the wrong runway and make a correction to the left. It wasn't radical as we were still a couple of miles out. It finally dawns on me that I am low so I add power and essentially level off. Now mind you, I've only been flying big jets for about 35 years now and you'd think I'd have realized that if I level off with flaps 40 it will take a lot of power... So to keep it interesting, I add what I think*

is enough power and of course I'm still concentrating on getting over to the centerline and on the glide slope. I was about a dot and a half low. "Ref speed" was 132 knots. The First Officer reminded me of that at 130 knots and I pushed the power up. He re-reminded me of that at 127 knots and I pushed the power up a lot as I finally realized that I was essentially level going back to the glide slope. Speed came back up to 140 knots and then up to 145, of course. Now I'm maybe 500 feet AGL, back on Glide Slope and in the slot, pulling the power back a bit because we actually get to descend now; uneventful touchdown and rollout.

Moral of the story: 1.) keep hiring people like the First Officer 2.) at night, and I don't care if you are Sky King talking to Penny... ALWAYS fly the ILS if there is one and 3.) I swear it doesn't matter if you have been there one time or one thousand times, night is different. Your eagle eyes are not near as much help to you as that panel in front of you. Two minutes extra is worth it for the aging process. Flying the ILS eliminates the need for gauging the turn to final, debating which runway you are going to, etc. If there is no ILS then there is some electronic guide you can use. Pick a safe altitude to start it and follow it to the runway. I learned this same lesson like 25 years ago, but evidently I left that lesson in some other part of my brain last night. Pass this on: being low and slow and not on the localizer or glide path at night is very disconcerting. You are completely out of your element and your brain is racing to fix it, but you don't look at the right stuff. An excellent First Officer picks up on that and feeds you the info that you, for whatever reason, aren't getting.... Everyone can learn from this. Restating the obvious is essential, but some people like me don't seem to get it every time. Events in my career have not occurred with malfunctions or weather; usually. They happen on nights like last night, where everything is even better than normal so you think you'll be Sky King and do the perfect visual and landing. Problem is, that usually works until the one time it doesn't. I, for one, just got another wake up call.

“The Hurrier I Go, the Behinder I Get”

– Lewis Carroll, *Alice in Wonderland*

In an effort to save time, this B757-200 Crew gave up a planned ILS approach in favor of a visual to another runway. The ensuing rush to get set up for the visual along with some unforeseen factors turned a “shortcut” into a long way around to the original ILS approach.

■ *As Captain and Pilot Flying, I briefed the ILS Runway 10 Approach.... While on descent we had a map shift on the map depiction but it seemed normal. We continued...and descended to 4,000 feet. Approach offered vectors to a visual to Runway 33L which was at about 11 o'clock, 13 miles, and asked if we saw the runway. The First Officer, Pilot Monitoring, said he saw the runway, but I did not. I asked the First Officer to call it since he could see it. I punched in the ILS 33L approach on the FMS and turned about 10 degrees left to go direct to the Final Approach Fix and initiated a rapid descent down to 1,500 feet, the Final Approach Fix altitude, with gear and flaps. I had an intercept of about five degrees to final. The First Officer was tuning the ILS Runway 33L and trying to identify it. Evidently they had just opened the runway and had not turned on the ILS yet. We inquired about the ILS being up and I could still not see Runway 33L. Approach issued a go-around and we... took vectors to the ILS Runway 10 for a normal landing.*

Trying to save some flight time, I had opted for the straight-in visual to Runway 33L over a vector for Runway 10 which was 90 degrees to our flight path. This compressed our set up time and opportunity to thoroughly monitor the approach. I should have had a visual on the runway before accepting the visual instead of accepting the First Officer's sighting of the runway. Evidently Runway 33L had just opened up and they had not turned on the ILS for that runway so we did not have the backup of the Glide Path or Final Approach Course in the FMS map. The approach lights were down low and I should have asked to turn them up. The map shift placed the actual Runway at our one o'clock and offset about three-tenths of a mile. That, combined with our five degree angle to final at the Final Approach Fix, made it difficult to locate the airport from the FAF. The First Officer saw Runway 33L, but was engaged in tuning and trying to identify the turned off ILS. We were descending from 4,000 feet to 1,500 feet, extending the gear and flaps, setting up NAV systems; just doing too many things at one time. The biggest mistake was not continuing on the approach we had briefed and set up previously.

Fly the approach you plan and brief. Be sure both pilots confirm sighting the runway. Don't rush the approach. Be aware of map shift and get position confirmed. Don't fly approaches at night without backup course and glideslope guidance.

Moonlight Serenade: “Terrain Terrain”

This B737 Crew was familiar with the airport, they had good visibility, and the terrain was well lit by moonlight. The Captain explains how things could still go wrong on a night visual approach.

■ *Approximately 30 miles south of [the airport], we received clearance for a visual approach to Runway 1R; VASI out of service. I discussed with the First Officer the implications of descending visually in mountainous terrain, off the published route, with no glideslope information. We were lulled into a false sense of security by familiarity with the area, good visibility, and terrain being well lit by a full moon. Approximately 10 miles from [the airport] the Controller issued a “Below MVA (Minimum Vectoring Altitude)” alert. We were at 4,100 feet MSL. Seconds later, a GPWS (Ground Proximity Warning System) warning “Terrain Terrain” sounded. We had the terrain in sight. An immediate climb was initiated per company procedure. We then continued to the airport and landed.*

I feel there was a lack of perception caused by contributing factors such as good weather, experience at this airport, and both pilots “outside” the cockpit with terrain in sight. A decrease in ability to perceive our actual AGL altitude resulted. It is not uncommon to get an alert in mountainous terrain, but when one can see so clearly and feel comfortable with the clearance from terrain, it really scares one to hear the alarm.

Emphasis should be placed on following an approach procedure's ground track and altitude restrictions while on the visual or, better yet, avoid visual approaches at night, especially in designated mountainous terrain. Emphasize training on factors contributing to CFIT (Controlled Flight Into Terrain).

Additional information on some of the problems associated with visual approaches can be found in *CALLBACK #287* (August, 2003):

http://asrs.arc.nasa.gov/publications/callback/cb_287.htm

ASRS Alerts Issued in June 2012	
Subject of Alert	No. of Alerts
Aircraft or Aircraft Equipment	13
Airport Facility or Procedure	9
ATC Equipment or Procedure	18
Company Procedure	1
TOTAL	41

391
A Monthly Safety Bulletin from
**The NASA
Aviation Safety
Reporting System**
P.O. Box 189,
Moffett Field, CA
94035-0189
<http://asrs.arc.nasa.gov>

June 2012 Report Intake	
Air Carrier/Air Taxi Pilots	3807
General Aviation Pilots	1181
Controllers	856
Cabin	282
Mechanics	135
Dispatcher	117
Military/Other	24
TOTAL	6402