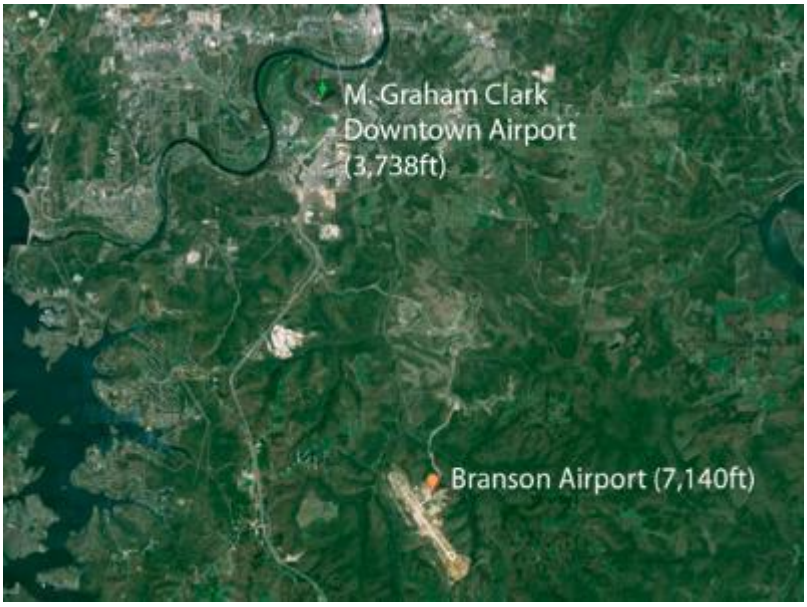
Landing at the wrong airport - a failure of pilot decision-making?

31 January 2014 By Bill Read Royal Aeronautical Society

Given the wide range of modern technical and navigational positioning aids now available to pilots, it might seem bizarre that they could lose track of where they were going. However, in recent months, there have been a series of incidents in which civil airliners have accidentally landed at the different airport from their intended destination. **BILL READ** looks at the on-going problem of wrong landings and what might be the underlying causes.

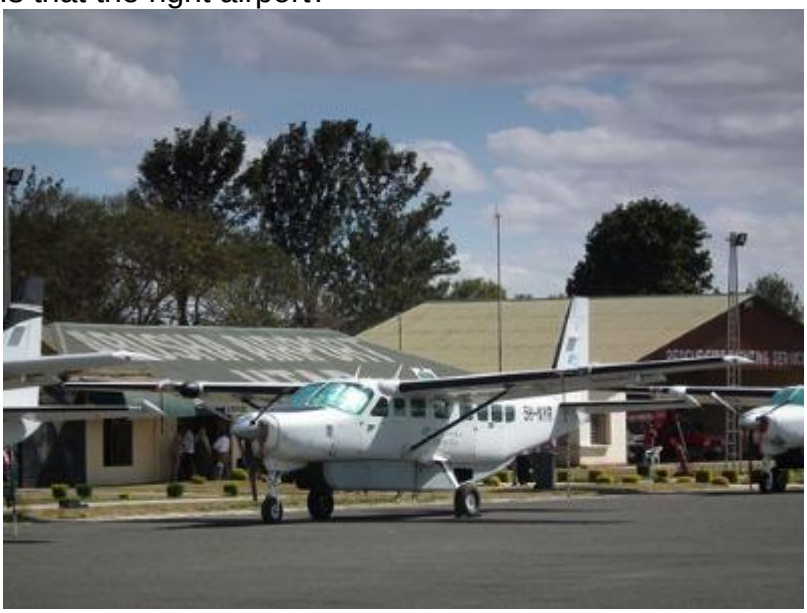


M*ap showing the locations of M. Graham Clark Downtown Airport and Banson Airport, Missouri*

On 12 January a Southwest Airlines Boeing 737-700 with 124 passengers and five crew took-off from Chicago Midway Airport on a flight to Dallas, Texas with an intermediate stop at Branson, Missouri. When the aircraft landed at its first stop, passengers aboard Flight 4013 did not notice anything untoward, until they were informed that they had accidently landed at M. Graham Clark Downtown Airport, a local airport 7 miles away from Branson. The passengers later discovered that they had had a lucky escape, as the runway at Graham Clark is only 3,738ft long, compared with 7,140ft at Branson Airport, so the aircraft had to brake hard to stop in time before the runway ended over a ravine. As it was, it was impossible for the 737 to take-off again while fully laden, so the passengers had to disembark and be taken to their destination by other means.

When the incident was investigated, evidence from the cockpit voice recorder (CVR) showed that the Southwest flight crew had been informed by air traffic control (ATC) that they were 15 miles from Branson, to which the crew responded that they had the airfield in sight. The pilots had even programmed the approach into Branson into the flight management system (FMS) but upon sighting the airport beacon and runway lights at Graham Clark, they landed there using a visual approach. According to reports, it was only after landing that the crew realised they had landed at the wrong airport. Both pilots were suspended by the airline. The captain later reported that this was his first flight into Branson Airport while the first officer had only flown once into Branson during daylight.

Is that the right airport?



Arusha Airport showing the more usual type of aircraft it handles. (Wikipedia)

This was not the only incident in which an aircraft had landed at the wrong airport but was one of no fewer than four such incidents within a space of less than two months. Less than a week after the Branson incident, there was another close call on 17 January when an Air-India 787 attempted to land at Melbourne Essendon Airport, instead of Melbourne International Airport, 4.5nm away. Both airports have a similar layout with the runways offset by only 1 degree The flight crew made an initial approach to Essendon and only discontinued at just over 1,000ft after being notified by Melbourne ATC. It was fortunate, that a landing was not attempted, as the runway at Essendon is not considered to be long enough to safely land a Dreamliner.

The two January incidents followed two other wrong landings in the last two months of 2013. On 18 December 18, an Ethiopian Airlines 767-300ER, en route for Kilimanjaro International Airport in Tanzania landed 50km away at a small regional airport in Arusha. As with the 737 Branson landing, the runway proved too short to land a large aircraft (Arusha's runway is only half the length of that at Kilimanjaro) but, in this case, the 767 did run off the end and came to rest with its nose-gear in soft ground. Some reports say that the aircraft did stop before the end of the runway and only came off the end while attempting to turn. All 213 passengers and crew had to remain aboard the aircraft for around 3.5 hours until stairs arrived from Kilimanjaro to enable them to disembark safely.
Reports on the incident said that the 767 had been prevented from landing at Kilimanjaro because of a disabled Cessna light aircraft aircraft blocking the runway. The aircraft was then diverted to Arusha due to a shortage of fuel. What has not yet been explained is why the 767 went to Arusha instead of diverting to alternative larger airports at Dar es Salaam, Mombasa or Nairobi. One report suggests that the aircraft was cleared by ATC to land on Kilimanjaro’s shortened runway 27 but ended up landing at Arusha instead.

Dreamlifter makes unexpected detour

Boeing's giant cargo Dreamlifter hit the news in 2013 when it landed at the wrong airport. (Boeing)

A month earlier, there was another wrong landing in Kansas in the USA on 20 November 2013 when a modified 747-400 Dreamlifter cargo aircraft operated by Atlas Air landed at Colonel James Jabara Airport municipal airport in Wichita, nine miles from its intended destination of McConnell Air Force Base.

Despite a shorter runway, the aircraft was later able to take-off safety. According to reports, the Dreamlifter pilot told ATC that he 'couldn't read his handwriting' and got confused between east and west.

This was not the first such incident in the region. On 19 June 2004 Ellsworth AFB received an unexpected visitor when a Northwest Airlines A319 landed there by accident, having mistaken it for Rapid City, South Dakota.

Other wrong landings

Although the number of wrong landings is statistically tiny compared to the total number of flights which operate every year, the problem is a persistent one that seems to refuse to go away. According to statistics published on the website www.thirdamendment.com/wrongwayhtml, there are one or more wrong landings reported nearly every year. In addition to these incidents, there have been a additional number of 'near-mistakes' in which pilots did not actually touch down and aborted approaches before landing – which do not always go on record.

The reasons why

The reasons for each mistaken landing are not always consistent but a number of common factors can be identified.

1. Many of the incidents occur at night in locations where there are a number of airports (civil and military) in close proximity (in the case of the 747 Dreamlifter-Jabara landing, there were three airports in close proximity).

2. Some wrong landings occur where two airports share certain physical characteristics, such as having runways facing the same direction

3. Pilots are unfamiliar with the airports and may not know that there is a risk of mistaking one for another.
4. Despite being in communication with ATC at the correct destination airport and having the correct co-ordinates for that airport loaded into the aircraft's navigation system, pilots prefer to rely on what they think that can see out the cockpit window.

There have been some incidents which cannot be explained by any of these factors. One of the most geographically-challenged wrong landings occurred in 1995 (check) when a Northwest Airlines DC-10-40 on a flight from Detroit to Frankfurt landed at Brussels – a distance of 300km away. According to reports, both cabin crew and passengers were aware that the aircraft was landing at the wrong airport because they could follow it on the seatback IFE aircraft position display but the cabin crew were reluctant to talk to the flightdeck crew. The pilots are reported to have only realised their mistake after the aircraft was on approach to Brussels but decided to land anyway.
The cause of the Northwest-Brussels landing was at first attributed to Shannon ATC which was alleged to have entered an incorrect code into the aircraft's ATC flight plan data. However, this was denied by the Irish Aviation Authority which claimed that the crew had acknowledged its destination as Frankfurt and that the correct data was passed to the London Air Traffic Control Centre (LATCC). The DC-10 should have passed over Brussels but began to descend towards the airport, addressing the controller as 'Frankfurt'. The aircraft was subsequently cleared for an ILS approach to Brussels' runway 25L, which is the same runway orientation as Frankfurt but with different ILS frequencies.

Summary

In conclusion, it appears that, despite pilots having access to electronic and navigational aids to determine their destination, they often rely on visual approaches into what turns out to be the wrong airport. Up to now, the consequences of a wrong landing have resulted in nothing worse than embarrassment for airlines and flight crew and inconvenience for passengers. But, given the number of instances in which large aircraft have landed at small airports with short runways or airports which might have had other traffic on a runway – the issue of wrong landings may be one which needs to be resolved by safety authorities before a real tragedy occurs.

Related RAeS Conference

The subject of pilot decision making will be debated at the forthcoming RAeS Flight Operations Group two-day conference on 25 March entitleAircraft Commander in the 21st Century: Decision making, are we on the right path? The conference will feature speakers from airlines, the military, ATC, pilot training and regulators who will discuss the issue of how aircraft commanders make decisions and what resources they have available to help them.
- See more at: http://aerosociety.com/News/Insight-Blog/1802/Landing-at-the-wrong-airport-a-failure-of-pilot-decisionmaking#sthash.lPcoHqF6.dpuf