

### Retired Qantas captain calls for rethink on landing technique

“Landing technique is one of those activities like breathing for pilots – we do it routinely but almost none can give an accurate and succinct explanation to a non-pilot of how we do it,” said Capt. David Jacobson at a lecture in October in Melbourne to members of the Royal Aeronautical Society.

Capt. Jacobson, who retired in 2010 from Qantas as a former B737 check and training captain and high time instructor on a wide range of aircraft, from light aircraft to the DC-9 and B737, was recently elected as a Fellow of the Royal Aeronautical Society (see photo with Capt. Jacobson at right), so his credentials are impeccable. But it was whilst pre-solo in 1965 that David first wondered about a simple and effective technique to learn and conduct smooth and accurate visual final approach and touchdown consistently every time. “Landing is the most critical manoeuvre in every flight, so there is no excuse for not getting it right” said David, referring to the potpourri of techniques now taught to student pilots, mostly using the trial and error approach. “Landing accidents still account for about 54% of all accidents, just as they did in 1965,” reported David. “Although everything else in aviation has progressed, the landing is still taught as it was in 1918.”

What has become known as the Jacobson Flare involves hand-flying the approach path towards the chosen touchdown aim point until passing a pre-determined visual fix on the runway. That point is reached when it passes out of the cockpit view below the instrument panel or coaming. Then a defined pitch up (or flare) takes a steady four seconds until flying towards an aim point 2, usually at the far end of the runway.

During the flare, the pilot smoothly reduces the power/thrust to idle, as we’ve always done. Jacobson claims this deceptively simple technique has been demonstrated to result in smooth landings every time on aircraft from gliders right through to the A380 and everything in between. It is easily learned in flight simulators.

In the last several years he has developed an app for the iPad that explains the entire manoeuvre, including the mechanics of the simple high-school trigonometry involved, and calculates the runway length offset from the aim point that serves as the flare commencement fix, different for each aircraft type.

The technique is deceptively simple because the single triangle involved accounts for many of the possible variables in any landing, like wind, flap settings, density altitude, approach path angle, as well as runway slope, width and even length.

This optical technique also reduces the substantial source of errors from estimating the height beneath the wheels, instead requiring the pilot merely to react when the instrument panel and the cut-off point align.

David was inspired to use this visual fix by the 1943 RAF 617 Sqn ‘Dam Busters’ operation. The entire manoeuvre, from approach to touchdown, is defined and is fully visible to the pilot.



David reports that many instructors and an unknown number of flight schools have now adopted the Jacobson Flare technique and, in 30 years of advocating this change from the existing haphazard approach, no one has been able to point out an error in the technique.

However, there has been official indifference towards standardising on this approach. ATSB was dismissive, saying that “It does not, and cannot, mandate standards and recommended practices; this is the purview of the Civil Aviation Safety Authority (CASA)”.

In turn, CASA in 2015 responded that it was not in any position to endorse or encourage the use of any proprietary technique. CASA maintain this was the purview of flight training schools and air operators certificate holders, although they wished Capt. Jacobson well in his endeavours.

So whose responsibility is it to set and reach for a higher bar of flight proficiency, reduce accidents and increase safety?

Surely the logical aspects of this simple technique could become part of the vast array of flight standards that now guide the behaviour of all pilots.

David Jacobson would rather see the standards lifted, insurance claims reduced and lives saved than make his app a commercial success.

“The app exists to reveal the solution, researched and proven 30 years ago; yet the industry still doesn’t realise that there is a problem. The landing is, in my view, the most neglected topic in aviation”, he said.

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