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Introducing the Jacobson Flare

For over 100 years aviators have, for the most part, known **WHAT** we are trying to achieve when landing an aeroplane; it's the **HOW** that has been so elusive.

My long-held view is that the visual approach and landing manoeuvre is the worst taught and most neglected topic in the entire flight training syllabus, both civil and military because, until 1987, there had never been a universal, quantifiable and consistently reliable approach and landing training technique. Flight training schools still attempt to teach outdated methods which date directly to World War 1 (1914-18).

In order to land any airplane consistently well, pilots must know the answers to five important, yet simple questions, relating to their aeroplane type:

1. Where to aim?
2. How to aim?
3. When to flare?
4. How much to flare?
5. How fast to flare? (That is, the flare rate)

Let me pose this question: Have you ever seen a flight training manual or an article, or heard an instructor (or any pilot) offer - without '*mumbo jumbo*', '*smoke and mirrors*', or a bunch of useless clichés - a factual and complete answer to even ONE of these questions, let alone ALL FIVE?

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It is in this context that I wish to introduce you to my Jacobson Flare - the world's first and only universal, quantifiable and consistently reliable approach and landing flare training technique.

While learning to fly at YMMB Moorabbin, Victoria, in 1965, at the age of 17 years, I regarded what I was taught then, in respect of HOW to land an airplane, as inadequate, to say the least. That view was only reinforced as my career in Trans-Australia Airlines (TAA) progressed from 1970, (becoming Australian Airlines Ltd from 1987) and on to Qantas Airways Ltd following the merger in 1992 – retiring in 2010 – and the subject of landing training remains the 'elephant in the room', to this day. The silence on the subject of HOW to land, in flight training manuals from any source, is deafening.
Key considerations have been overlooked or ignored:

1. Many flight training schools still teach conflicting flight path control philosophies, ignoring the differing requirements mandated by whether or not variable engine power (propellor aircraft) or thrust (jet aircraft) is available. This can cause coordination issues, affecting passenger comfort, flight path stability, inconsistent landing quality and, ultimately, serious flight safety issues.

2. The conventional concept of using flare height is flawed mathematically because, on a standard 3º final approach path, whether visually- or instrument-based, any vertical error, whether high or low, compounds x 20 times as a longitudinal error deeper or shorter, respectively, along the runway. (This applies equally to the manual and auto-flare manoeuvre, based on radio altimeters and GPWS calls.) The standard 3º path angle is generally exaggerated in instructional materials' approach profile diagrams, thus masking this critical issue.

3. The vertical dimension of flare height is invisible to the pilot; it's an educated, yet unreliable guess of pilot eye height above the runway and it varies with every different aircraft. Even if flying just one airplane type regularly, this guess is inconsistent. A great many variables, summarized as aircraft, environmental (both airport- and weather-related) and pilot performance, apply.

4. The entire flare manoeuvre is based on the flawed assumption that it can only be mastered by educated guesswork, backed up by nothing better than repetition and practice, to develop judgment and perception, 'feel' and 'the look' - NONE of which can be taught.

During that early training time from 1965, I had an idea, inspired by the celebrated 1943 RAF 617 Sqn 'Dambusters' application of simple triangulation for their bombsights and belly-mounted twin spotlights which fixed their height at 18m over water, at night.

Clearly, I had insufficient flying experience back then to act on that inspiration. Much later, as an experienced flight instructor and DC-9-30 training captain with Trans-Australia Airlines (TAA), I borrowed the Dambusters' simple triangulation - used to great effect - and since 1985 have applied it to the development of a longitudinal flare point based on a visual fix, rather than the conventional and mathematically flawed, inconsistent guess of a vertical flare height.

Added to other key elements, this longitudinal flare point quickly became the basis of the World's first and only universal, quantifiable and unassailable approach and landing training technique, in a Paper I wrote and presented for the 1987 Australian Aviation Symposium.

I have applied and taught this technique ever since 1985, for 18,000 of my 24,000 total hours' flight experience, for many GA pilots and for all 50 of my airline first officer and command trainees.

Put simply, it is well proven - for thousands of pilots, in over 70 countries.
By invitation, I presented the Jacobson Flare at the complete series of 1997 Civil Aviation Safety Authority (CASA) Flight Safety Seminars around Australia. The response by the pilots present at each venue was overwhelming; they wanted these answers which, to my knowledge, are not available from any other source.

The Jacobson Flare App is available for iOS and Android on the iTunes App Store and GooglePlay, respectively, for the average cost of flying just one single circuit in a typical light training aircraft. Compared with the cost of repetitive circuit training, the price is negligible: the advantages priceless. The cost is recouped in flying just one less necessary circuit!

The App answers all FIVE of the questions featured above and many more. It is essentially a 350-page e-manual, fully illustrated and explained with detailed text, and 6 video clips. It also includes a comprehensive Reference Section, with 5 vital, inter-active calculators that will serve pilots through an entire career.

Flight safety is greatly enhanced and there are huge savings to be made for pilots, owners and operators, through significant time and cost savings in

- Reduced training time to first solo (at least around 50% reduction). See first solo stats - China Southern WAFC

- Learning the technique ONCE and then applying it to successive aeroplane conversions, through an entire career;

- Greatly reduced stress on students and their instructors;

- Reduced general wear and tear on aircraft undercarriage, wheels, tyres and brakes;

- Huge reduction in serious damage to aircraft undercarriage, propellers and airframe extremities, caused by poor technique or runway overruns;

- Greatly increased safety through reduced injuries and fatalities;

- Reduced runway occupancy times, for operators and for ATC.

You are invited to check out the testimonial comments from many experienced pilots, at https://www.jacobsonflare.com/testimonials/ and much further information is available on www.jacobsonflare.com .

37 years ago, I developed a solution. However, the industry is yet to realise that it has a problem. The pathetic fallback, '*We've always done it, this way*', is just not good enough, anymore.

If you agree, contact me and let us start a conversation on how you can introduce the Jacobson Flare to your Flight Training College training syllabus.

This has been a career-long campaign and I am now seeking your support to bring it to the attention of your flight training working group, with whom I should be pleased to work closely: to share my extensive experience in researching, developing, proving and teaching the Jacobson Flare - in GA and airline aircraft types ranging from sailplanes to the A380.
I refer you also to this independent Paper on Landing Flare Performance, published by the Faculty of Aerospace Engineering, Delft University of Technology, The Netherlands.

Before replying, please visit www.jacobsonflare.com and its various tabs. I commend The Jacobson Flare LITE.pdf as the best introduction yet to this subject.

Finally, here is a response from former RAAF Air Commodore John Chesterfield ; one from former Head of Standards and Testing Barry Carpenter; and one from prominent aviation theory school Head, Bob Tait.

I look forward to yours.

With kind regards,

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