

BC:hjp

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Dear Dave,

I apologise for having taken so long to write to you on my experience with the Jacobson Flare at the Australian Aviation College. In my defence, the time lapse has enabled me to provide you now with some positive feedback on the technique.

My assessment is as objective as it can be, given that I have not had the time for a dedicated evaluation. As you know, I implemented the technique on my appointment to the position of Chief of Standards and Testing four years ago. Since that time, some four hundred and sixty students have graduated from the College, including ninety two Qantas Level One students.

We have been fortunate also in having a stable instructor population of around fifty five, which includes management staff. I think you would agree that this has given the technique quite extensive exposure. The method that I employed was based on a three tiered approach. Namely

- education of the instructors;
- evaluation of student performances on flight tests and remedials ; and
- validating understanding through instructor rating renewals (all of which are conducted by me).

I'll talk about each of these areas in turn.

Firstly, education of instructors. As you know I conduct job interviews with all potential instructor employees at the College. This process involves the applicant delivering a pre-flight briefing on introductory circuits. I then fly the sequence with them. The standard of presentation on base/final technique and flare point has been appalling. Flare point variations presented included "about now", windsock height, fifty feet on the altimeter (!) and even the height of the Shell garage on the airport boundary. From this, it was not hard to reach the conclusion that the true test of a person's ability to teach the landing technique is simply to ask the question "How do you do it?" A thread of consistency in these briefings was that on the approach power controls rate of descent and attitude looks after airspeed. There was a total absence of teaching to an optimum angle and the visual cues that can be used to assess it. To start with there was a similar level of confused thinking on technique among the existing staff. So the first positive aspect of the Jacobson Flare was standardisation, which is now at a high level. The emphasis is directed at achieving an optimum visual approach angle, from the descent point in the base turn to the flare point.

The technique was received with a great deal of enthusiasm and interest within the College. Not surprising, considering the lack of alternatives. It is now used very successfully with a workcycle on final of Aim Point, Aspect, Centreline, Airspeed.

In essence, this is defining a pattern of eye movement with any observed change dictating what to do with the power and the elevator. I believe this really facilitates an instinctive co-ordination of both. Perhaps even more importantly, it greatly assists in the fault analysis process. It becomes a quick and relatively simple task to isolate a problem area in the approach.

The concept of a stabilised approach is well understood. However, in these aircraft the final stage of flap is taken quite late on final and the aerodynamic pitch change that follows has caused some confusion in the area of aimpoint maintenance. My advice to instructors is, in initial circuits, to select the final stage of flap as the aircraft rolls wings level on final. This will allow consolidation of the final technique and work cycle from the very beginning. With experience, the student may stabilise later and fly to the full flap aimpoint position.

The second approach was that of student evaluation on tests and remedials. I had hoped to be able to say that the technique would achieve a shorter time to first solo. I believe it would do, but there are just too many other factors which affect it, not the least being that our students have English as a second language. Also, with a mean student population of one hundred and sixty, I have been unable to spread myself far enough. However, I can say that at least ninety percent of our students achieve first solo within 1.8 to 2.0 hours of the syllabus. Those that don't normally come to see me and in the main, the simplicity of the technique has allowed an easy analysis and remedy.

The most common problem I have encountered is aimpoint maintenance in the last one hundred feet or so of the approach. Here the two most common faults are firstly transferring to aimpoint two too early and secondly fixation on the cut-off point. For variations in angle of approach, there has been little appreciation of the attendant need to adjust the rate of elevator input for the flare. The longitudinal stability characteristics of the Grob G115 make it particularly intolerant of rapid elevator inputs, even at the recommended threshold speed. On the plus side, this has enabled me to reinforce the adaptability of the technique for variations in angle of approach and the need to achieve an optimum angle. Prior to the one hundred foot point, I have found speed/power co-ordination and awareness very good.

Finally, validating understanding among instructors. In all instructor rating renewals, I assess the ability to teach the approach and flare. My main criticisms relate to instructional technique and not to any misunderstanding of the Jacobson Flare itself. I have proposed what some might consider to be a somewhat radical approach to the instructional process in the circuit. It hinges on the fundamental principles of demonstrating, directing and finally monitoring the student in a carefully sub-divided sequence. In the circuit case, the demonstration starts on final approach and works its way backwards around the various legs. The sequence I employ and recommend is as follows :

- Introductory demonstration of the complete circuit. Minimum talking. Identify aimpoint and cut off point.
- Second circuit. Set up on correct angle and emphasise. Have the student follow through and point to the position of aim point one in the canopy. Demonstrate that by small elevator inputs the aim point will move. Pre-brief aimpoint two will assume same position after the flare. Ask student to call when cut off point disappears under cowlings.

- Third circuit. Pre-brief base entry on downwind. Demonstrate base turn entry and base leg. On final student will control aim point position with elevator. Instructor controls power. Direct student through final and flare using elevators only.
- Fourth circuit. Pre-brief use of power/airspeed. Direct base turn entry and base. On final, student controls power in response to airspeed, instructor controls aim point.
- Fifth circuit. Pre-brief downwind leg. Demonstrate downwind. Monitor base turn entry. Direct student through final using both elevator and power.
- and so on.

To this point, the student has seen the optimum angle of approach five times, starting from the very first one. In this initial exercise it will be necessary to demonstrate off angle situations and how to regain the optimum. I have only provided a skeleton outline of the sub-division, but it has been accepted universally and is working very well.

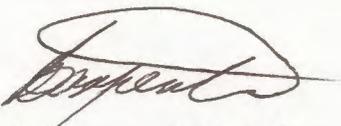
Finally, you will notice that the theme of this letter has addressed the points relating to the teaching of the method, rather than the method itself. That is because I have absolutely no doubts about its effectiveness and relevance to airline sponsored ab-initio students (or to anybody else for that matter). It is the mainstay of technique taught at this College. By adopting this approach and refining the teaching methods, the foundation has been laid for extending its application to the heavy jet community. I see that as the task of the Check and Training Captains who, despite their competence and ability in their aircraft type, will have a much easier task in quickly developing these same qualities in a crew member new to type. Particularly in the "new" Qantas, with such a diverse range of aircraft types and the inevitable crew migrations that will follow. What an ideal opportunity to acknowledge how you are in fact doing it, and standardise in a way which will facilitate an easy transition between the stabilised approach in the Jetstream and that of the Boeings, etc.

To finish on a lighter note, I originated an internal newsletter titled "Standards & Testing FEEDBACK". In the last edition, I included an article on base and finals technique which you may find amusing. If it wasn't for the fact that the great majority of GA trained instructors are still perpetuating this rubbish, I probably would too.

Let me know if you would like more information. I hope to be flying the Canberra again soon despite sponsorship knockbacks from just about every major corporation in the country. My last hope was the Department of Defence and it seems that they have agreed to my request to align the aircraft with the RAAF museum, which will include fuel. Unfortunately, the aircraft is U/S in the USA and won't make it to the Grand Prix. Late November - maybe.

Looking forward to seeing you next time you're in Adelaide.

Regards,



BARRY CARPENTER
Chief of Standards & Testing

Encl. Extract from Feedback