



“Don't do this, it's dangerous”

*In recent issues of General Aviation we have asked whether we're making the best possible job of training people to fly helicopters. Here **Derek Jones***, one of the UK's top instructors, asks whether we have forsaken basic principles*

There can be no argument that rather too many small helicopters penetrate controlled airspace, lose control turning out of wind in the hover, roll over, lose control when inadvertently entering cloud, fail to get into autorotation following power loss, and so on. In the end it must come down to how people are trained, and therefore it is down to the flying instructors. Perhaps we may be losing sight of some basic principles of flying instruction which were established many years ago.

First, a little bit of history. In the period immediately before and in the early years of the First World War, there was no formal method of instructing in the air. Pupils learned (or didn't learn) by imitating their instructors, whose own knowledge and skill was often faulty. Pupils were warned of all sorts of dangers, particularly “stunting”, which included even moderate turns. This led them to do flat turns with rudder, holding off bank with aileron. Predictably this often resulted in a spin, and a horrendous accident rate. Not surprisingly pupil morale was low, and they arrived at the Western Front barely able to fly their aircraft.

Major Robert Smith Barry changed all this at the School of Special Flying at Gosport. (The book about him, ‘Pioneer Pilot’ is sadly out of print but should be required reading for all would-be instructors). He evolved the format of instruction which we (should) follow today, viz – briefing, demonstration, pupil practice and instructor critique.

However, he also laid down some fundamental principles of learning to fly:

“The word ‘danger’ should never be used in training

aviators. Ignorance is the cause of most accidents, and instead of being told that a manoeuvre is dangerous, pupils should be taught how to do it, and how to correct the inevitable errors.”

“The instructor should never touch the controls himself when it is possible to have the pupil correct his error... the greatest asset of an aviator is confidence.”

What concerns me is that evidence suggests that in the helicopter training world, we are in danger of losing sight of the above principles and reverting to the “do not do this, it is dangerous – possibility of serious injury or death” philosophy which occurs ever more frequently in flight manuals, written with an eye to possible litigation.

Some quotations from people I have flown with over the recent years.

“At times I was not sure who was flying the helicopter.”

“My instructor was always grabbing the controls before I had time to correct a problem.”

“I don't do autorotations when I'm flying by myself; I've been told that they are dangerous.”

“I've never done a low speed autorotation.

Isn't there the possibility of vortex ring?”

“My CFI didn't allow me to do engine off landings with students.”

How has this come about? It would be easy to simply say that the hours required before starting a CPL/H modular course (the most common route these days due to the high cost of the integrated route) and similarly, the hours before starting an FI/H course, have been reduced too far. Or that instructors often do not stay in the business long enough because of

low pay (all possibly true).

However it is not really the system which is at fault, but often the manner in which the whole process from the beginning happens in practice. The PPL/H course was only meant to enable a private pilot to achieve a reasonable standard of safety in undemanding situations, not as part of a module leading to greater things. Given that

the minimum course hours are unlikely to be changed, it seems to me that the five hours instrument time could with benefit be reduced to one hour, and the other four hours used to improve navigation skills. The content of the navigation syllabus has expanded over the years with no corresponding increase in hours. The five hours instrument time seems only to give an unjustified impression of capability. Better to emphasize the helicopter's ability to land almost anywhere when the weather turns nasty.

The modular system assumes that in the intervening period before the CPL/H module, the pilot will enhance his skills and experience such that the flying element of the module is essentially a brushing up and polishing exercise. It cannot be anything else, because subtracting the instrument time only leaves 20 hours, a large part of which can be absorbed in navigation. In reality, the pilot is occupied in this period with the distance learning process for the CPL/H or ATPL/H ground exams, and therefore tends to “bore holes in the sky” to make up the hours as cheaply as possible. This usually means solo, as dual is more expensive. Therefore he is often largely unsupervised, so skills tend to stagnate, or worse, degrade and bad habits creep in.

Points for debate

A suggestion for debate. The 170A test was originally introduced when there was no requirement to do any further training after the hours-building phase, and was intended to prevent GFT attempts which were likely to fail. It seems to me that this test would more usefully be done before the CPL/H module, so that the candidate has an incentive to upgrade his skills before entering the course.

We now come to the FI/H course. Yes, there is a pre-course test with an FIE, but the 30 hour FI/H course can only seek to teach how to teach the sequences. There is no time to eliminate bad habits or correct deficiencies in

‘The greatest asset of an aviator is confidence’

Left: we may cause accidents by failing to demonstrate their causes fully in training
Right: Derek Jones, one of Britain's most experienced helicopter instructors

previous training. Also, there is no time really to explore the problems of fault analysis and recovering the situation from errors in the corners of the flight envelope, particularly in engine-off landings. The result of this process is that instructors are often not confident of their own ability to retrieve situations. They may therefore be reluctant to allow errors to develop sufficiently so that the student recognises that he has made them, and more importantly, learns how to correct them himself.

Another suggestion for debate. Perhaps the idea that instructor training, seminars, revalidations/renewals etc should be carried out by a civilian "Central Flying School" that does nothing else has merit, instead of our current decentralised system that is prone to develop lack of standardisation.

I have a nasty suspicion that some of the well-publicised Robinson accidents where the rotor chopped the tail off were simply the result of a reluctance to enter autorotation quickly enough following partial or complete power



loss, most often as a result of carburettor icing. Autorotation seems to have become a manoeuvre that is only entered after much thought, consultation of the omens and reciting the correct incantations. The net result of the current process in my view is that PPL/H pilots are often ill prepared to take action in the event of anything unexpected, and let's face it, problems mostly are unexpected.

We have now come full circle. PPL/H graduates go on to become CPL/H graduates who often go on to become instructors in the minimum allowed time with the ability to

patter the sequences but little beyond that. There is more to being a flying instructor than just patterning the sequences. To a great degree, a flying instructor is akin to an actor giving a performance. It is essential to give the impression of calmness and confidence and to be able to demonstrate all the manoeuvres in the flight envelope. This skill has to be based on confidence in one's own ability. Then the right balance has to be struck between safety and allowing the pupil to learn to correct his own errors. This will not happen if the instructor is sitting poised over the controls like a coiled spring with waves of tension flowing across the cockpit; patterning whilst the student is flying, instantly preventing errors, or worse still employing the "heavy controls" technique. The psychology of instructing is at least as important as the mechanical skills.

Perhaps we need to constantly remind ourselves of the simple basic principles espoused by Major Smith Barry so long ago. They still apply today as they did then. ■

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