



Cedric Flood's grandson James, three, practising for his instrument rating



Chloe Mason – flying since two, now eight, and already better at the paperwork than her dad Clive

▷ – or let them do on their own, like riding their bikes/scooters/skateboard outside in the street.

We also need to take care not to wrap our children in cotton wool and fret about removing all risks. We just end up breeding an ineffectual snowflake generation.

We need to expose them to new experiences, broaden their horizons and show them that they can achieve the extraordinary.

Tony Prentice: Life is full of risks, and it is how those risks are managed that counts. It is necessary for children to learn how to deal with risk to become capable adults.

In Scouting, a programme of adventurous activities is provided to foster this process. As part of the program a microlight activity was set up in 1989, giving air-experience flights. The activity is still in operation and is entering its 30th year, with thousands of Scouts flown without any injury to those taking part.

The vast majority enjoy the experience and wish to fly again. Some have gone on to be pilots in their own right in military, civilian and commercial aviation. (*Stand by for a great history of Kent Scout Microlight Club in your next MF – Ed.*)

Tim Griffin: Well done Geoff Hill for publishing what may turn out to be the most controversial letter for some time.

Lucy Holdcroft (née Griffin) didn't become the youngest flexwing pilot by her parents or the BMAA being over-cautious. She now regularly takes her stepdaughter Millie, seven, for local bimbles.

There are, of course, risks, but these can be minimised by a sensible balance between adventure and caution. We are in danger of bringing up a new generation of narrow-minded kids scared of their own shadows.

Kevin Woods: While I realise they are not allowed to eat mud and play with the elec-

trical sockets (explains my hair!) as we did in the Sixties, I do feel John Kingsley is being rather over-cautious.

Without the younger generation, flying of all persuasions will die though lack of new pilots. The BMAA is already seeing that, I believe – look at the photos in our magazine, the majority are old men (I include myself in that category).

I visited four completely deserted airfields on a perfectly flyable New Year's Day, and I was flying an old school flexwing, so it was not too rough for the more up to date aeroplanes.

Mr Kingsley's letter did make me see red!

Deepak Mahajan: We must introduce all young people to the joys of flight. They love it! Compare the joy of flying shown by a young person to the hassle and boredom of a car, train, or plane journey.

I have taken all my four children flying in microlights since they were three, and they loved the thrill of flight. Please don't let the opinion of one risk-averse person stop young people from enjoying flying.

Clive Mason: I would say flying any type of aircraft is safer than motorway driving. We may be amateurs in the flying world, but that doesn't mean we are unsafe or dangerous.

The joy and privilege of flying should be shared by any age. I've been taking my daughter Chloe flying since she was two, she's now eight, and when she grows another 6cm or so, she can reach the pedals – and she's already better at the paperwork than me.

Cedric Flood: I've been taking my grandson James flying since he was three. He's 12 now, and what really annoys me is that he spots aircraft miles away, long before I can see them.

David Baker: I have 11 grandchildren. All have flown in either flex or three-axis, and most of them both. My best flying weekend was with a four-year-old granddaughter to Sandown, where we camped and caught the bus to town for a curry.

Andy Mackinnon: I have taken two of my grandkids up, and they loved it, but I can appreciate John's point of view. At the end of it, it's a personal decision from both pilot and parents.

Simon Dutton: I thought the letter was daft, as it suggests you shouldn't let kids take any risks at all. It's our job as grown-ups to help youngsters understand what risks are and how to mitigate.

Damien Graham: I took my eight-year-old daughter up in my flexwing, and my wife was fine with that, but I wouldn't take any of my kids as pillion on my motorcycle!

Darren Beaumont: Having spent the last 10 years gainfully employed to manage aviation safety risks, I've no qualms taking my two young sons flying in my two-stroke-powered X-air, but I have serious reservations flying with certain airlines and/or in certain certified aircraft types!

Mick Broom: My lad wanted to fly, so we started on fixed-wing to satisfy his mum's concerns and I made the decision to go. Now it's the other way around: I want to fly and Dave decides if it's safe to go.

Bill Davis: I'm just so glad my parents weren't risk-averse and didn't wrap me in cotton wool. As a child I experienced the thrill of flying, skiing, motorbiking, surfing, and so much more.

I am who I am because my parents exposed me to adventures that enhanced my life and created in me a desire to achieve.

Phil Thomas: The memories created for them are invaluable. □

Trim, the lurking gotcha

It makes life much easier for pilots, but can bite if not treated with respect, says Flight Training Liaison and Safety Officer **John Teesdale**

THIRTY years ago, very few microlights had adjustable trim, but these days most new models, both flexwing and fixed-wing, tend to have at least pitch trimmers fitted as standard.

This change reflects the huge increase in performance, particularly top-end cruise speed, achieved over that period.

These simple secondary controls make life much easier for the pilot, but many of them need treating with respect or they can bite you.

Two popular training and touring aircraft, the Ikarus C42 and the EV97 Eurostar, have pitch trimmers that come under this heading.

Your instructor may have trained you to recognise and deal with these potential problems on your training aircraft, but we are going to have a look at both of them here in detail, so that you will be aware of the problems should you transfer to the other type at a later date.

The C42 and the Eurostar trim systems are quite different. The C42 is electrically operated via buttons fore and aft on the top of the central stick, whereas the Eurostar is operated via a lever between the seats (see C42 Fig 1, on the right, and Eurostar Fig 1, overleaf). Each system has its own problems.

The C42: a pussycat, but beware

The C42 trim, as any instructor knows, can be very easily accidentally operated, particularly during line-up for takeoff, when the instructor has his hand hovering over the stick, covering the student's movements while "pattering" the takeoff.

It's so easy to let your hand descend onto the trim buttons so that the trim is set wrongly, quite possibly to full nose-down or – worse – nose-up, as the takeoff is commenced. You won't notice the trim indicator light moving as you are looking, quite correctly, out of the screen! (see C42 Fig 2)

The student is then faced with a massive unexpected stick force required to maintain attitude. Simply relaxing to stick neutral will probably result in



C42 (l-r)
Fig 1 Trim operated via buttons fore and aft on the top of the central stick
Fig 2 It's so easy to let your hand descend onto the trim buttons

loss of control. Forewarned is, of course, forearmed and good instructors have been simulating trim set wrongly at takeoff for years, even though it was not in the old syllabus. It is now compulsory in the new syllabus, under Exercise 16e, Systems Failures – Trim Runaway.

This mistake is not confined to takeoff alone either, as our illustrious editor Geoff Hill found out one day:

The first time I took Cate up in the C42, I was letting her fly for a bit, since she had started lessons but never got her licence because she was too busy to keep them up, and suddenly the nose started pitching up.

'Stick forward, dear. Stick forward!' I said, louder the second time as the nose continued to pitch up and the speed dropped.

▷



SAFETY

▷ 'I'm trying to push it forward!'
'OK. I have control. Bloody hell.'
That last bit was when I realised it needed a fair bit of force to maintain straight and level. Then I realised that the trim was fully up. She'd obviously been accidentally pressing the trim button on the top of the stick. Which I hadn't mentioned to her.



Eurostar (from top)
Fig 1 Trim operated via a lever between the seats
Fig 2 Easy for a passenger to accidentally catch the lever
Fig 3 A misplaced hand may have been the cause of two fatal accidents

There was a slightly silent atmosphere all the way back to the airfield...

So you have been warned! If you intend to let the passenger have a pole around, brief them not to press any buttons!

The Eurostar: like a finely tuned instrument, very sensitive in pitch

As with the C42, we can look at problems at takeoff (or, more critically, go-around) and during cruise.

During the approach, if full flap (third position) is used, a large amount of aft trim will be required. If a go-around is initiated, care must be taken to retract flap in stages and re-trim each time.

Failure to retrim in stages will result in massive rearward stick force, which must be resisted with forward pressure on the stick to maintain a safe attitude.

As with the C42, relaxing to stick neutral will produce a massive pitch-up, resulting in loss of control. Clearly, if a landing on full flap is made, followed by a backtrack and new takeoff, then trim must be reset or the same mistake could be made.

Now to the cruise. There have been two fatal accidents in UK-registered Eurostars en route in the cruise in recent years. The AAIB reports have been inconclusive, but trim has been suggested as a possible contributor in both cases. So what can go wrong?

The trim lever is situated between the seats, very conveniently, if not too conveniently, to hand.

It has been suggested that in both cases there was some kind of accidental pushing forward of the trim lever.

Why this happened has not been fully established, but it's not difficult to imagine. Perhaps the pilot or passenger simply wanted to adjust his seating position. He put both hands down to lift himself up, caught the trim lever and... (see Eurostar Figs 2 and 3).

Whatever the reason, it seems that the sudden forward movement of the trim lever produced a massive nose-down pitch, known as a bunt.

This would have taken the pilot by surprise, who would yank back on the stick to oppose the movement, and in so doing over-stress the aircraft.

Prevention – better than cure

So how can you prevent yourself getting in these situations? Let's apply some threat and error management again!

Firstly, get yourself some good training. This article should not be taken as a substitute for good instruction. When converting to a new type, always take some conversion training with a microlight instructor who is current on type.

Most pre takeoff checklists have a "T" for Trim in them somewhere, but the problem, as described above for the C42, can show itself after the checks have been completed, while lining up.

Now, I hate pilots sitting on the runway doing checks, but I do allow a final "Fuel, Flaps, Trim" check just before hitting the power.

"Trim" in this case means looking at the indicator light on the C42, or checking the position of the trim lever on the Eurostar.

This can also be used when doing repeated takeoffs and landings where a stop and backtrack is involved.

The full CHIFTWAP isn't necessary, but Fuel, Flaps, Trim will catch the gotchas mentioned above.

After that, practice lots of go-arounds, retracting flap and retrimming in stages.

To prevent the cruise gotchas, make sure your passenger is thoroughly briefed for your aircraft.

Footnotes

Please note that these trim systems, and therefore problems, are not unique to the C42 and Eurostar. I have only dealt with these machines because they are very popular and I have personal experience of both types and their problems.

The SkyRanger has a high-mounted trim lever, which is much less likely to be moved accidentally, but is nonetheless not immune to being set wrongly at takeoff. Again, running through "Fuel, Flaps, Trim" just before you commence the takeoff run will help you prevent this.

The EuroFox has trim and flap (flaperon) levers mounted side-by-side. They need to be moved almost in parallel, which I think is an excellent design feature.

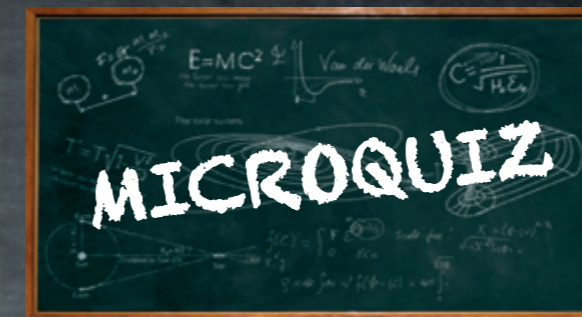
Many flexwing aircraft nowadays also have both pitch and roll trim, which if not correctly applied at takeoff can also cause problems.

These are usually of omission, ie forgetting to apply pitch trim, which can lead to large pitch forces being needed to rotate the aircraft into the air.

Incorrectly set roll trim will cause large corrective roll inputs to be needed after takeoff.

Expanding the normal flexwing lining-up checks to include "Trim" will again catch these gotchas. □

“ Trim is suggested to have been a factor in two fatal Eurostar accidents



- 1 It is mandatory to complete an entry into a flying logbook after each flight. For how long must you keep this record of your flights?
 - a for two years from the date of the last entry
 - b for 90 days from the date of the last entry
 - c for one year from the date of the last entry
- 2 Avgas equipment is usually marked:
 - a red
 - b black
 - c green
- 3 A Tropical Continental airstream may be best described as:
 - a cold and dry
 - b warm and moist
 - c warm and dry
- 4 The region of the atmosphere which is normally stable and has few clouds is known as:
 - a atmosphere
 - b stratosphere
 - c jetstream
- 5 The meridian passing through Greenwich is known as:
 - a the main meridian

- b the prime meridian
 - c the Tropic of Cancer
- 6 Allowing for 1h reserve fuel, how far can an aircraft travel with 50 litres of useable fuel, using 22 l/h with a groundspeed of 90kt?
 - a 204.5nm
 - b 114.5nm
 - c 106.5nm
 - 7 Dihedral can help:
 - a increase stability in roll
 - b decrease stability in roll
 - c decrease stability in yaw
 - 8 The stall speed in a 30° bank turn increases compared to level flight by:
 - a 7%
 - b 41%
 - c 75%
 - 9 What is the standard radio call said by a controller indicating that he/she wants you to go-around?
 - a G-XX go around, I say again, go around, please acknowledge
 - b G-XX go around
 - c G-XX abort landing
 - 10 Which of the following ATC services would not necessarily provide traffic information/deconfliction advice?
 - a traffic service
 - b deconfliction service
 - c basic service

MF's quizmaster Lawrence Bell is the developer of QuizAero, the online groundschool for microlight student pilots, quizaero.co.uk.

Answers on p25