

Photo courtesy of CAA/Pen Mackay

“ENGAGE THE BRAIN. SLOW DOWN. **ZIG-ZAG.**”



Taildraggers figure high in the stats for ground occurrences.¹

Manoeuvring your tailwheel aircraft carefully and slowly on the ground is not only – and obviously – good for safety, it can save you money. Think insurance cover.

Two recent accidents involving taildraggers on the ground at Timaru Airport has Aaron Pearce worried.

The South Canterbury Aero Club CFI says a tailwheel pilot who’s taxiing or manoeuvring without their brain engaged 100 percent of the time is inviting trouble.

“Real skill is needed to negotiate a tailwheel aircraft on the ground. Unfortunately, the number of recent taildragger incidents is highlighting a lack of skill – or care – and has insurance companies more reluctant to underwrite these machines.” »

¹ For the period 2016-2021, the average rate of reported aerodrome occurrences across New Zealand, per 10,000 flights, was 78 percent higher for taildraggers than for non-taildraggers. Source: CAA.

» A long-time aviation insurer, Arden Jennings, says this depends on the individual pilot. He says that, in recent years, his industry has become much more wary about insuring taildraggers, particularly if the pilot has low hours.

“Today’s general aviation insurance market pays a lot more attention to both the aircraft and the pilots who want to fly them.

“If the pilot wants to get a tailwheel rating, underwriters will sometimes require the pilot get more hours in a nose-wheel aircraft first.”

He says before providing an insurance quote on an aircraft, the insurers will also sometimes want to know where the pilot will get their tailwheel training.

“They might even want to know where the aircraft will be operating from.”

It starts with good instruction

Arden says it’s not that insurers just want to come down hard on pilots wanting to get a tailwheel rating. They just like to “see a suitably thought-out programme to help the pilot make a positive start to flying the tailwheel”.

Aaron Pearce says that reflects the significance of good quality instruction.

He’s surprised, however, by the number of pilots signed off to fly a tailwheel, having been taught just one method of takeoff, or landing.

“I’ve jumped in with some pilots who’ve been flying a tailwheel for a while and asked them to demonstrate a three-point or a wheeler, and they’ve responded with, ‘Oh I wasn’t taught that’.”

Arden Jennings says that, in his experience, the most common cause of accidents in taildraggers is a lack of pilot skills, training and currency.

Aaron says it’s not uncommon, even for a relatively current and competent pilot, to take between five and ten hours, dual and solo, to get a tailwheel rating.

//They’re not simple to operate but lots of pilots like that challenge. //

“By the time you do general handling, 3-pointers, wheelers, soft-field/3-point takeoffs, bounce recovery, crosswinds, sealed runways and emergencies, you can easily chew up five to seven hours.

“This is just in setting the building blocks, feel, and habits for your student, and for them to go away and be in a position to be safe while learning on their own and developing into a competent tailwheel pilot.

“In my opinion, the pilot is not ready to hold the rating unless they can competently operate the machine within the limits of the flight manual, including up to the maximum demonstrated crosswind, as well as performing all the landing techniques the machine is capable of.”

Extra skills needed

CAA aviation safety advisor Mark Houston can testify to the extra skills needed to handle the tailwheel.

He learned to fly in a Piper Cub because he wanted, at that time, to fly Harvards in the RNZAF.

The rest of his ab initio group learned to fly in a Piper Cherokee.

“They went solo hours before me, because the tailwheel design meant I had to think about propeller torque, slipstream, aircraft mass, centre of gravity, and so on.

“But come cross-country time, I converted to the Cherokee after just one hour of type training and was completing the cross-country training in comfort and at *speed*.”

“Later, when all my mates had their PPLs, they wanted to fly the Cub. It was fun to watch them bouncing and swerving over the grass runways trying to tame the whole 90 horsepower of the ‘dreaded taildragger’.”

Dave Phillips has flown Tiger Moths for almost 50 years. He says it’s a curious and challenging aircraft to fly.

“They’re extremely manoeuvrable, great for aerobatics, but there’s also a Model T Ford aspect to them – they’re not simple to operate but lots of pilots like that challenge.”

Zig-zag

The Tiger Moth Club of New Zealand notes that, “Accidents prove how ‘dangerous’ (and expensive!) ground operations are in taildraggers, the majority of incidents consisting of hitting objects during taxi”.

Aaron Peace says he’s amazed by the number of times he’s witnessed tailwheels, with limited – if any – forward visibility, being operated without weaving.

// To me, it's just imperative that if you've got a great big propeller out there in front of you, you weave to check where you're going. //



Dave Phillips is incredulous at the idea of taxiing in a straight-ahead manner.

“If you want to keep a good relationship with your insurance company, you’d best weave,” he laughs.

“To me, it’s just imperative that if you’ve got a great big propeller out there in front of you, you weave to check where you’re going.”

Speed

The FAA *Airplane Flying Handbook*¹ notes that, “Because of the relative placement of the main gear and the centre of gravity, tailwheel aircraft are inherently unstable on the ground.

“Because of this inbuilt instability, the most important lesson that can be taught in tailwheel airplanes is to taxi and make turns *at slow speeds*.” (Vector emphasis)

“That means taxiing like your brakes are going to fail,” says Aaron. “If you can’t roll to a stop before you hit what’s ahead of you, you’re going too fast.

“Often, tailwheel pilots are taxiing far too fast for the environment, with little consideration for the traffic, ground obstacles, wind and sunstrike, or – in the worst case – the need for an emergency stop should a vehicle or another aircraft pull in front of them accidentally.”

Dave says stopping distance will depend on the combination of the drag from the tailskid (in a Tiger Moth), the idle RPM setting on the engine, the ground surface texture, the slope, and the wind velocity.

“All these factors must be constantly reassessed to keep your ‘safe manoeuvring bubble’ free of obstacles.

“If taxiing on a sealed taxiway, putting one wheel in the grass will slow the aircraft and much improve directional control.”

Good old-school airmanship

“We can all do our part to keep the insurance down when it comes to tailwheels,” says Aaron.

“Pilots need to pay attention and exercise some common sense, good old-school airmanship and threat and error management.

“That all starts with slowing down and engaging the brain.

“We instructors also need to step up, making sure we’re sending off our newly minted tailwheel pilots with a full toolbox of skills and understanding to operate the machine confidently and safely in most conditions.”

And, presumably, keeping the insurers happy as well. 🙄

Comments or queries? Email CAA’s Personnel and Flight Training team at pft@caa.govt.nz.

¹ www.faa.gov > Airplane Flying Handbook