

An Excess of Skill?

How does a GA aircraft crash with two experienced pilots on board?
Does the plethora of expertise in the cockpit actually increase the risk?
If so, what can be done to reduce the uncertainty over who is in charge?

Many pilots regard flying with an aviating mate one of the most pleasurable journeys they can make. For CAA Flight Operations Inspector, Terry Curtis, a day out with a fellow enthusiast is “really good fun”.

“A most enjoyable experience,” he says.

While two-pilot data is not collected by the CAA, American research indicates that about 12 per cent of GA (General Aviation) accidents happen to aircraft with at least two experienced pilots on board.

Without data or voice recorders, it’s impossible to know exactly how that can happen. But it does.

There are plenty in GA who say it is precisely having two pilots in a GA cockpit that heightens the risk of an occurrence.

Terry Curtis, who’s been a training captain for many years, and used to supervising others of equal rank, says often those dynamics are a function of the pilots’ personalities.

“If I’m not the pilot-in-command (PIC), I don’t touch any controls, unless I’m asked to. I might make suggestions, if something concerns me, but I don’t touch anything.

“But there are pilots who, having been in charge of a cockpit for many years, find it almost impossible to cede complete control to someone else – even a mate of equal ability.”

American pilot Mike Twombly, writing for the International Council of Aircraft Owner and Pilot Associations, describes a tense trip with a flying mate.

“During my stint in the left seat, he made a small adjustment to one of the power levers. I found his presumption odd and more than a little annoying, but in the interest of harmony I said nothing.

Then, on the landing rollout, he reached over and flipped the flap lever up to the Retract position. “Don’t do that!” I snapped.

*Immediately, a tense silence pressurized the small cockpit. After exiting the runway and completing the after-landing checklist, I spoke through semi-clenched teeth: “Don’t ever touch anything unless you first tell me what you are going to do, and I acknowledge.” He nodded, looking embarrassed by his action and a little embittered by my reaction.”**

The opposite can also cause problems, says CAA Aviation Safety Adviser, Carlton Campbell.

“You can have a PIC who’s intimidated by the person sitting in the right hand seat. And the person sitting in the right hand seat knows it.



*Don't Touch That Dial – *Flight Training*, 2002

"That can lead to difficulties if there's a flying incident brewing. The PIC defers too quickly to the other pilot, or the other pilot is too quick to question and overrule what the PIC has chosen to do."

"I recall a Tiger Moth accident in Central Otago – the PIC had more than 400 hours. On the day he crashed, he had a commercial pilot in the front seat.

"It was likely that the PIC would have deferred to that commercial pilot as being more qualified and more experienced, and a better pilot than him. But the commercial pilot had no type experience on that aircraft.

"They followed the Otago rail line, low-level circuiting around and looking at the train. They took the plane low down in a valley, and ended up crashing. Both were killed."

Peter Hendriks, chief pilot and owner of Wanaka's Classic Flights, says a planeload of experienced pilots can be the worst case scenario.

"No-one wants to say anything, even if they're worried, for fear of losing face, or causing offence."

At the root of the problem is the lack of standard operating procedures, such as those used by airlines, to remove the ambiguity about who does what, should the plane fly into trouble. Or who does what, full stop.

Often, the biggest nod GA pilots will give to that, is 'you be PIC today'.

"That's not really enough," says Peter Hendriks. "The pilots need to agree on what that actually means, how the two of them are going to manage the flight."

Formation flying offers a good illustration of how that could go.

Dave Brown is a member of the Roaring Forties Harvard display team, and overseer of NZ Warbirds Association aerobatic and display training. He says while good formation flying is all about discipline, there are three things that help prevent a pilot following the leader into the ground.

"The leader does everything during the flight – radios, lookout, navigation, decisions on the right positioning and energy for each manoeuvre.

"But prior to any formation flight, all the pilots are thoroughly briefed and have the opportunity to ask questions, seek clarification, and make comments.

"Secondly, at any time during a formation flight, any one of the pilots who sees a threat to safety – a mechanical mishap with

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their own aircraft, or an 'intruder' aircraft, for instance – can call a 'knock-it-off', and without questioning, the whole formation, including the leader, will abandon the exercise and deal with the abnormal situation. Everyone understands the importance, and urgency, of the knock-it-off call.

"Lastly, after every display we have a debrief. Frank Parker – president of the Warbirds Association – often gets a box at the beginning of a debrief and says 'that's for your egos', meaning the session has to be where home truths can be aired, and are to be regarded as a very important part of learning.

"The first question of any debrief is, 'any safeties?' and someone might say 'I think we were too close to the hill and I had trouble holding on in the turn' and there is no deriding of that, even if it comes from someone new to formation flying.

"There's always room for improvement, and that includes of the formation leader."

Dave says display sequences are also planned, "by committee".

"Anyone has the right to veto a new manoeuvre. Someone might say 'we've tried this three times and I'm still not comfortable with it, I'd rather we gave it away'. And we will."

The airline sector has agreed phraseology – part of its Crew Resource Management – for the first officer to use to persuade

the captain to desist from their course of action.

Terry Curtis, who flew in the left hand seat for Mount Cook Airlines for 20 years, says first officers, who become uncomfortable with the decisions the captain is making, would start by saying something like, 'I'm not entirely happy with this' and progress through to 'Captain, you must listen to me!' which is the agreed-upon phrase for the captain to desist immediately from his or her course of action.

He agrees that in GA, two flying mates need to come up with a similar statement.

"'I have control' is pretty effective," Terry says, laconically.

Terry has had to use it a couple of times, once when the PIC was so involved with other things, he forgot to 'fly' the plane.

"We had an approaching aircraft, which I mentioned to this chap a couple of times. When it was obvious I did not have his attention, I finally said 'I have control!' and moved away from the other aircraft's flight path.

"He took control back pretty quickly and moved us further away from the second aircraft, but by then the panic was over.

"We survived and the plane was unscathed but it wasn't the nicest of things to be dealing with."

Terry says the two pilots should be talking all the time.

Advice from Dave Brown, Cathay Pacific captain, Warbirds display pilot, and flight examiner:

All pilots should review the weather and NOTAMs, ideally together, because that will provide opportunities to discuss possible options for the route, weather and so forth. Other pilots can also ask questions or raise any concerns about the PIC's plan. If the other pilots don't like the plan or have concerns about the safety of the flight, that's the time to say so, and if necessary opt to stay behind. Often, if the weather is marginal and someone stands up and says they're not going, it inspires others to review their plan and delay the flight for an improvement.

When flying with other pilots, allocate them tasks when workload is high. For example, in your takeoff brief you could ask them to make the MAYDAY call if the engine fails. On a cross country you could get them to call the FIS and get updated weather for you.

If you do encounter weather along your route, talk about what you are seeing, what you think you will encounter further along track, and what you are thinking of doing. That will save them wondering what you are going to do next, and will give them an opportunity to offer their thoughts, provide some local knowledge or recent experience, and in the worst case, state their concerns for the safety of the flight.

If that communication is done in a timely and efficient manner, then the PIC should have time to evaluate all the inputs and possibly revise the plan.

At the end of the flight, a discussion or debrief can be useful in reinforcing any learning points from the flight for all concerned, particularly if the flight hasn't gone as planned!

“Discussing how the trip is going, and listening to one another. The PIC needs to realise that while the final decision about what to do rests with him or her, the ‘passenger pilot’ might have flown that route before, or seen similar weather.”

Dave Brown is a Cathay Pacific captain, and tries to set the tone of a flight right from dispatch.

“I try to get the opinions of the crew members as to what we should do. I don’t say ‘I think we’ll take 90 tonnes of fuel, what do you think?’ I’ll say ‘you’ve seen the weather, and given our load, how much fuel do you think we should take?’ That encourages them to feel confident in expressing their opinions.

“You can generally rely on an Aussie first officer to tell you what they think! But the brand new second officer, especially from a culture that is quite hierarchical, may hold back.

“I like to discuss the flight as I go. Say something like, ‘I’m thinking of doing such-and-such, are you all happy with that?’ If I’ve set the right tone from the start, they will feel comfortable pointing out any issues they see in what I want to do.

That also provides good opportunities for an experienced pilot to pass on some of his or her experience to a less experienced pilot.”

Peter Hendriks says there should be a clearer indication of who will do what before the GA flight begins.

Do you have a story to tell about the dynamics of a cockpit with more than one experienced pilot on board?

CAA Intelligence Analyst Dominik Gibbs is keen to hear such stories, to examine the nature of that risk.

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“Radio for instance, and in what circumstances the non-flying pilot’s opinion will absolutely have to be taken notice of.”

Carlton Campbell says he’s conscious of making the roles explicit because he often flies with pilots with as many flying hours as him.

“So while there may be two people who can rightfully have control, generally one will be more qualified to be PIC – perhaps more experienced on type, for instance.

“If I’m getting into a cockpit with someone equally qualified, I’ll say ‘you’re more current and more experienced in this aircraft. If there’s an emergency, I’m not going to do any taking over. I’ll sit back, and offer suggestions, but that’s all’.”

To read about how two pilots can work well together in the same cockpit, go straight to our next article *Flying on a Dying Engine*. ■

