

In Focus Special

Handling a trim runaway

Guidance on handling a trim runaway

March 2019

Trim runaway was a possible scenario identified by the Air Accidents Investigation Branch in a report into a 2017 Piper PA-31 fatal accident. The pilot reported pitch control problems and diverted to Caernarfon Airport where the aircraft crashed on an attempted landing. The elevator trim was found in a significantly nose-down position. You can read the full AAIB report in the [AAIB March 2019 bulletin](#).

Handling an electric trim runaway

Ask a bunch of pilots if they could handle an electric trim runaway in flight, and the likelihood is that some will say “Yeah, sure, how hard can it be...?” The answer to that is ‘potentially very hard indeed’.

Just ask anyone who’s simply flown by error out of trim, manual or electric, and they’ll tell you precisely that, depending on things like the size of the elevator, the aircraft’s speed and the control mechanisms, the pull or push on the yoke or stick can be worse than you might think. Some accidents have occurred where forces of around 20 kg have been needed to keep the aircraft straight and level – some might think ‘Is that all?’... But when did you last try lifting that for a sustained period of time whilst trying to fly accurately?

Don’t believe it? If an electric trim runs away, it happens quickly. Depending on the type, just three seconds can put you significantly out of trim, and within five seconds an aircraft can be almost unmanageable.

Just think about that for a moment; if left badly out of trim mid-flight, how would a pilot on their own cope with the heavy yoke/stick forces, while trying to manage the myriad other tasks such as engine management, navigation and radio?

[This abridged report by Robert I Snow*](#) of a flight in a light aircraft type answers some of those questions and provides a sobering insight into the issues involved.

“At lift-off I was holding an annoying amount of forward pressure to maintain the proper climb angle,” he says. “It didn’t seem excessive, but I was immediately aware that there was no way we could do this all the way to our destination.

“Returning to the airfield, even at reduced speed, the amount of forward pressure needed to maintain control, inconsequential at first, had become exhausting by midfield on the downwind leg. I needed both hands to control the pitch.

* Robert I Snow writes for AOPA in the U.S.