

COMMAND AND CONTROL

The BGA Safety Team considers some hazards involved when flying with another pilot

The most dangerous glider crew, it's often stated, is two instructors. While this isn't generally borne out by our accident statistics, there are particular risks when two qualified pilots fly together.

WHO HAS CONTROL?

In August 2020, an RV6 light aircraft crashed into a field 4km north of its home airfield in Delaware, USA [1]. The aircraft owner, in his mid-50s and with over 2,000 hours in his logbook, was in the right-hand seat, while his younger friend, who had around 300 hours, was in the left seat. The aircraft had dual controls, but the flight instruments would conventionally have been best placed for flight from the left seat. After take-off, the owner flew two 360° turns while his friend checked a newly-installed flight instrument. Thereafter, each pilot believed that the other was flying the aeroplane – the owner considering it the conventional role for the pilot in the left seat, the other assuming it would be the more experienced owner. Both expressed concern about the other's flying, but neither checked who was in control.

The BGA Instructor Manual [2] emphasises the importance of stating and acknowledging control transfer ("You have control"/"I have control") from the start of a pilot's training. It's crucial to continue this practice whenever two pilots are flying together, even if they seem to respond intuitively.

WHO'S HANDLING THE CONTROLS?

A slightly different situation caused a Jabiru aircraft to collide with a stationary glider in the UK in 2019 [3]. The owner in the left-hand seat considered himself pilot in command; in the right-hand seat, the handling pilot was flying the type for the first time. The cockpit was again optimised for a pilot in the left-hand seat and, in particular, the flap control



was inaccessible from the handling pilot's position. When the pilot elected to go-around from a rejected landing, the owner decided to retract one stage of flaps, but accidentally retracted them completely. The aircraft descended sharply and drifted onto the stationary glider.

While it is generally good to make use of an extra pair of eyes and hands, it's crucial that the handling pilot isn't taken by surprise by the other person's actions and that the pilots' roles are clearly agreed beforehand. In this case, it might have been better for the approach and landing to be flown from the left seat, from where the flap control would have been accessible and more easily seen.

WHO SHOULD HAVE CONTROL?

Another aspect of the Jabiru accident is that the aircraft has a single control stick mounted centrally between the two pilots; if a pilot is not used to flying left-handed, it's probably wiser to leave the take-off and landing to the pilot in the left seat. The situation is similar in a Grob 109 or Dimona, from the right seat of which the airbrakes must be operated with the right hand and thus the stick again held with the left. Several accidents have occurred when pilots instinctively muddled the two controls. There can be other differences between cockpit positions in two-seat gliders: the view and visibility (including ground run wingtip clearance) differ between front and rear

seats, and the undercarriage can in some cases be operated only from the front.

WHO'S IN COMMAND?

In December 1978, a United Airlines DC-8 inbound from Denver crashed six miles from Portland International Airport in Oregon, USA [4]. The aircraft had flown a holding pattern for nearly an hour while the two pilots and flight engineer had been engrossed with trouble-shooting a landing gear problem. None of the crew had properly monitored the fuel state. This accident prompted the wider use of Crew Resource Management [5]. Having more than one pilot means that tasks can be divided between them – but someone has to decide who'll do what.

There's a difference between being in control and in command. The Air Navigation Order (ANO) [6] sets out the responsibilities of the pilot in command (PIC), who is implicitly in charge for the duration of the flight: they don't automatically include flying the aircraft, but do involve responsibility for the safety of the flight overall. The distinction is not helped by the rules in some jurisdictions that allow suitably qualified pilots to log as 'PIC' time for which they are the sole manipulator of controls, regardless of whether they are the pilot in command for the flight [7].

From the point of view of flight safety, there should be a single pilot in command, determined beforehand for the entire flight. Legally, unless the aircraft requires more than one pilot, the other pilot is a passenger, though the PIC can ask the passenger to assist. The commercial, multi-pilot world distinguishes between PIC, Pilot Flying and Pilot Monitoring.

WHO SHOULD HAVE COMMAND?

While a pilot may be qualified and able to fly an aircraft, that doesn't mean that they're

competent to intervene when another pilot is flying. This requires a positive and possibly unpopular decision to take control, as well as the handling skills to do so. Unless the PIC is an instructor, and has therefore been trained and checked in such aspects, it makes sense for the PIC to fly critical stages such as the take-off and landing, and be responsible for decisions about routing and field landings, so that the PIC is in direct control for the aspects for which he or she carries responsibility. This should be agreed between the pilots before the flight.

SAFETY PILOT?

In rare cases, a qualified pilot with a medical condition carrying a risk of incapacitation may be prohibited from flying solo, and required by the CAA to fly with a 'safety pilot' qualified to act as PIC should incapacitation occur [8]. Incapacitation is assumed to be a rare but clear-cut event in which a suitably qualified pilot should be able to take over. Except in this narrow specific circumstance, there is no such thing as a 'safety pilot'. If a companion is thought prudent as an ageing pilot's faculties deteriorate, for example, then the companion should be PIC and (unless the companion is an instructor) the ageing pilot a passenger.

NINETY-DAY CURRENCY

The same applies when a power pilot has not flown three take-offs and landings within the previous 90 days. Normally the pilot would fly the required circuits solo, but the ANO [6] permits a pilot with a (non-'Part-FCL') UK PPL or NPPL to be accompanied by a qualified pilot, provided that they have been informed of the situation. Crucially, the accompanying pilot is on board as a passenger, with no legal

authority to override decisions made by the PIC; the pilot qualifications are needed only to ensure appreciation of the risk involved [9]. If the PIC needs someone to take over or advise, they must fly with an instructor.

ASSISTING THE PILOT IN COMMAND

A second pilot can be a huge help to the pilot in command by sharing the lookout, flying, navigation, radio calls, monitoring the flight, assisting with decision-making and spotting wing drop during the launch. Unfortunately, an 'authority gradient' can exist if the PIC is senior in age, experience or qualifications, or owns the aircraft. The combination of all four is not uncommon when ageing pilots extend their flying careers by recruiting a younger, fitter pilot for the spare place in their private two-seater. As an example, a 91-year-old pilot with 6,000 hours was killed in 2020 while flying his two-seat glider together with a pilot passenger, whose concerns at the progress of the flight were ignored [10].


Personality differences can create an authority gradient even between pilots with similar qualifications and experience. Commercial aviation addresses this through 'graded assertiveness' and 'structured intervention' – templates for expressing concerns and proposed actions clearly and constructively. Key phrases, such as opening with 'Hey Captain', indicate that the speaker is performing a formal duty to speak out [11].

SAFE TWO-PILOT FLYING

To ensure that the pitfalls described here are avoided, it helps to:

- agree beforehand who will be PIC, what's expected of each pilot and, taking into account cockpit layout, who will sit where.

- agree a duty to speak up about concerns, and how disagreements will be resolved.
- hand over control formally, stating 'You/I have control'.
- ensure that someone is always flying the aircraft, looking out, and monitoring height, weather, airspace, fields, fuel, etc.

'Mutual' flights with other pilots should then be safe and enjoyable. 

Tim Freearge and the BGA safety team

■ The CAA's CAP 737 [5] covers many human factors in aviation, and the BGA's Managing Flying Risk [12] addresses aspects of flying with other pilots.

[1] NTSB, Accident Investigation Final Report ERA20CA298 (2021)

<https://tinyurl.com/flyright2426>

[2] BGA, Instructor Manual (2011)

<https://tinyurl.com/flyright2427>

[3] AAIB, Accident Investigation G-ROYC (2020) <https://tinyurl.com/flyright2428>

[4] NTSB, Aircraft Accident Report NTSB-AAR-79-7 (1979)

<https://tinyurl.com/flyright2429>

[5] CAA, CAP 737 (2023)

<https://tinyurl.com/flyright2430>

[6] Air Navigation Order (2016)

<https://tinyurl.com/flyright2431>

[7] FAA, 14 CFR 61.51(e) (2024)

<https://tinyurl.com/flyright2432>

[8] CAA, Safety Pilot Information Sheet

(2013) <https://tinyurl.com/flyright2433>

[9] CAA, Change to 90 day recency

requirement for private pilots (2015)

<https://tinyurl.com/flyright2434>

[10] AAIB, Accident Investigation G-CFST

(2021) <https://tinyurl.com/flyright2435>

[11] USHST, H-SE 22A (2020)

<https://tinyurl.com/flyright2436>

[12] BGA, Managing Flying Risk – flying with other pilots <https://tinyurl.com/flyright2437>

PREVIOUS 'FLY RIGHT' ARTICLES

- The perils of distraction (Apr/May 19)
- Keeping safe in thermals (June/July 19)
- Why it is good to think ahead (Aug/Sep 19)
- The effects of wind gradient (Oct/Nov 19)
- A fun but safe introduction (Dec 19/Jan 20)
- Stop the drop (Feb/Mar 20)
- Avoiding upset (Apr/May 20)
- Backroom boys (June/July 20)
- Cockpit muddle (Aug/Sep 20)

- Safe rotation (Oct/Nov 20)
- Cockpit remedies (Dec 20/Jan 21)
- COVID currency (Feb/Mar 21)
- Eroded margins (Apr/May 21)
- A good lookout (June/July 21)
- Trouble with turbos (Aug/Sept 21)
- 'Hopefully' is not an option (Oct/Nov 21)
- Act when the launch fails (Dec 21/Jan 22)
- Time to solve a knotty problem (Feb/Mar 22)
- RTFM: Read the flight manual (Apr/May 22)

- Startling events (June/July 22)
- Collision risks (Aug/Sep 22)
- Winter hazards (Oct/Nov 22)
- Swiss cheese (Dec 22/Jan 23)
- An expensive mistake (Feb/Mar 23)
- What's changed? (Apr/May 23)
- Aerotow eventualities (June/July 23)
- Problems with probabilities (Aug/Sept 23)
- Winch nuances (Oct/Nov 23)
- Heart troubles (Dec 23/Jan 24)
- Inadvisable turn (Feb/March 24)
- Partial failures (Apr/May 24)
- Safe separation (June/July 24)