

CHIRP GA FEEDBACK

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EDITORIAL

As I noted in Issue 56, when I was invited to implement the recommendations of an independent review of CHIRP in 1995, there was no General Aviation (GA) Programme. However, from the small number of GA related reports that were submitted at that time it was apparent that most, if not all, contained useful flight safety lessons from which other GA pilots might benefit. It was also clear from a review of Air Accidents Investigation Branch reports of GA related fatal/serious accidents that many GA accidents had similar causes, with the only difference being the individuals/aircraft involved. With these facts in mind, I sought the assistance of several colleagues with considerable GA experience and with the support of the Civil Aviation Authority set up a separate GA Programme in 1999.

We have covered a wide range of safety issues over a fourteen-year period during which the technology available to many GA pilots has made major advances. However, as in the case of technological advances in road safety such as the Anti-lock Braking System (ABS), we have a tendency to assume that we can reduce the margin of safety as the improved technology will always provide adequate protection. Regrettably, this is not the case; therefore it is hardly surprising that the causes of GA accidents and serious incidents have remained similar throughout my tenure and are primarily human factors related.

Most GA pilots fly as a leisure activity; however, flying demands a level of professionalism if the risks associated with flying are to be adequately mitigated. One example relates to the use of GPS; it is apparent that some pilots carry out little or no pre-flight planning of their flight/route on the assumption that a GPS will provide the required navigation information and will be available, and accurate, throughout the flight. But what if the GPS fails or the route passes close to either a busy airfield or Controlled Airspace? Many of the more serious airspace infringements and Airprox incidents could be avoided by adequate pre-flight planning, which includes a plan for contingencies such as a deterioration in the en route/destination weather or a GPS failure.

This will be my last issue of GA FEEDBACK as I will be retiring from this role in September. I would like to take this opportunity to acknowledge the wide range of expertise and specialist assistance that the members of the CHIRP General Aviation Advisory Board have provided to me since 1999, and to thank all of you who have contributed to this Programme.

A final couple of thoughts - Throughout my flying career as a military and later a commercial development test

pilot, I was often reminded that a simple, undemanding flight could change unexpectedly and rapidly into a highly demanding task. I was also very aware that should a serious emergency situation occur a successful outcome would invariably depend on my level of preparedness and that of every member of the crew. As an example, in every type of aircraft that I have flown, prior to entering the runway on every flight, I mentally rehearse the actions that I would take if an engine failed at the most critical point during or just after take-off. This was equally relevant whether I was flying a Cirrus Moth, de Havilland Mosquito, military fast jet or commercial airliner.

Do you prepare yourself adequately for every flight? A few minutes spent planning/reviewing the route and thinking about and visualising your actions in the event of an engine/navigation equipment failure in the quiet of your home or the clubhouse might turn out to be the most valuable few minutes that you will ever spend.

My very best wishes to you all.

Peter Tait

RIGHT-OF-WAY IN THE VISUAL CIRCUIT

One of the issues most frequently raised through this Programme since its inception relates to Right-of-Way in the visual circuit.

Coincidentally, an assessment of the major safety risks by the Civil Aviation Authority undertaken in 2012 identified the risk of a mid-air collision in Class 'G' airspace to be one of the most significant and, within this risk category, the risk of a mid-air collision in the visual circuit was identified as worthy of particular attention. A Working Group, in which CHIRP was invited to participate, was established to identify the specific risks and how these might be adequately mitigated.

One specific risk the Working Group identified was that associated with a pilot who elects to make a straight-in join when other aircraft are established in the circuit pattern. The following report provides a good example of the problem

Report Text: Hello - I have a question about right of way in a circuit

I wonder if you could cast some light on a situation that I encountered recently. I was approaching a licensed aerodrome with an air/ground frequency, and had joined the circuit on the downwind leg. There was no traffic in front of me, but I was soon joined by another aircraft behind me. At this point a third aircraft called from outside the circuit and called a 'straight in' join, whilst outside the ATZ. I suspected a possible conflict, and kept a sharp eye out for it. Sure enough, the third aircraft passed just in front of me whilst I was on base

www.chirp.co.uk

FREEPOST RSKS-KSCA-SSAT, CHIRP, 26 Hercules Way, Farnborough GU14 6UU (UK only)

confidential@chirp.co.uk

Freefone (UK only): 0800 214645 or +44 (0) 1252 378947

leg, some 3-400 yards distant. I had to go around, as did the aircraft behind me. Upon landing I discussed this with the radio operator and was informed this situation was 'a bit of a grey area' due to traffic on final having right of way vs aircraft already established in the circuit.

Can you cast any light as to who would have legal right of way in this situation please?

The relevant Rules of the Air Regulations are:

Flight in the vicinity of an aerodrome - 12

(1) Subject to paragraph (2), a flying machine, glider or airship flying in the vicinity of what the commander of the aircraft knows, or ought reasonably to know, to be an aerodrome shall:

(a) conform to the pattern of traffic formed by other aircraft intending to land at that aerodrome or keep clear of the airspace in which the pattern is formed; and

(b) make all turns to the left unless ground signals otherwise indicate.

(2) Paragraph (1) shall not apply if the air traffic control unit at that aerodrome otherwise authorises.

Order of landing - 13

(1) An aircraft landing or on its final approach to land shall have the right-of-way over other aircraft in flight or on the ground or water.

(2) An aircraft shall not overtake or cut in front of another aircraft on its final approach to land.

(3) If an air traffic control unit has communicated to any aircraft an order of priority for landing, the aircraft shall approach to land in that order.

(4) If the commander of an aircraft is aware that another aircraft is making an emergency landing, he shall give way to that aircraft.

(5) If the commander gives way in the circumstances referred to in paragraph (4) at night then, notwithstanding that he may have previously received permission to land, he shall not attempt to land until he has received further permission to do so.

(6) Subject to paragraphs (2), (3) and (4), if two or more flying machines, gliders or airships are approaching any place for the purpose of landing, the aircraft at the lower altitude shall have the right-of-way.

The reporter's query was discussed with the CAA and the following statement was subsequently received:

"The response of pilots established in the circuit depends on the correct behaviour of the pilot joining the circuit. Calling a "Straight-In Join" is clearly a failure to comply with Rule 12 (1)(a) of the Rules of the Air in that, in the example quoted, this did not "conform to the pattern of traffic formed by other aircraft intending to land at that aerodrome....."

Calling a "Straight In" join does not give the joining aircraft any priority over other aircraft in the circuit, however once the "Final" radio call is made at the appropriate position, there must be no doubt that the aircraft on final approach has priority. The aircraft on left or right base should go around, climb to circuit height if he/she has descended below it and re-join the circuit on the cross-wind or down-wind leg. As with all approaches to land, "if in doubt go around".

However annoying it might be for the pilot on base leg to be "trumped" by someone who is more than 2 miles from the runway but has called "final", there may be a number of valid reasons why he has done so. Even if he has done so for invalid reasons, it is safer and much more advisable to discuss and resolve such issues when everyone is on the ground, than try to second guess intentions and needs in the air.

A pilot who joins "straight in" when there are other aircraft in the circuit is not only exercising poor airmanship but also might be in breach of the Rules of the Air Regulations. An alleged breach of Regulations can be reported to the CAA on Form FCS1520 via the following link:

<http://www.caa.co.uk/application.aspx?Catid=33&pagetype=65&appid=11&mode=detail&id=4320>

If such a breach is proved, the CAA will consider enforcement action ranging from prosecution, a formal caution or licensing action.

Pending the final outcome of the Visual Circuit Procedure Working Group, to which we have both contributed, the CAA continues to recommend the Standard Overhead Join as the safest and most practical way of joining a circuit, unless local procedures or other operations at the airfield such as parachuting prevent it, because it gives the joining pilot time to identify the correct runway in use, acquire situational awareness of other circuit traffic and complies with the Rules of the Air.

CHIRP Comment: So what options do you have if you encounter a similar situation to that reported above? The first is to discuss the matter after landing with the other pilot(s) on the basis of the CAA advice; the second is to submit a report directly to the CAA as described. A third option is to file an Airprox report if you consider that a collision was only averted by you executing a go-around; the Airprox Board will investigate the circumstances associated with such incidents.

Finally, don't be tempted to 'barge in' via a straight-in approach unless the circuit pattern is clear or you are able to do so without causing any difficulty to aircraft established in the circuit. For any other type of join (crosswind/downwind/base-leg) remember that you must give due consideration to all other aircraft already established in the landing pattern or remain clear.

MORE CLOSE ENCOUNTERS

Report Text: I was the commander/instructor of a circuit detail at ###. A light aircraft called on the airfield frequency and reported that he intended to pass one and a half miles to the west of the airfield and was asked to report abeam by the Flight Information Service Officer.

Having turned downwind at 1,000ft on the QFE, the transiting aircraft was seen approaching head-on but above. The aircraft passed over us, close enough for me to easily read its registration. I reported that had the aircraft been any lower, I would have filed an Airprox report, to which the response was that his altitude was 2,000ft on the QNH and he had us in sight.

As the airfield elevation is close to 500ft, the aircraft was flying in the Aerodrome Traffic Zone, on a reciprocal heading to the circuit direction, breaking many rules, but the major one is that of common sense and airmanship. The weather was 50km plus visibility with a cloudbase of at least 3,500ft, so why was it necessary to plan to fly at such a height and heading that put it into probable conflict with circuit traffic? Had we been climbing into the overhead for a departure, the aircraft would have been invisible below our nose and a collision quite probable. Could the pilot responsible be made aware of the lack of airmanship demonstrated?

As an aside, on the same day another circuit conflict occurred with a joining aircraft cutting in front of an aircraft conducting circuit training. Seemingly, the joining traffic didn't see the circuit traffic, even though advised by the FISO, and a vociferous complaint from the circuit aircraft. I understand that words were spoken between the involved pilots after landing!

Circuit joining and etiquette is a subject well worth attention.

Lessons Learned:

1. Keep sending out the safety messages and distribute them as widely as possible.
2. Discuss route planning in Biennial reviews.

CHIRP Comment: This report is a useful reminder that the upper limit of an Aerodrome Traffic Zone is based on the airfield elevation and must be accounted for appropriately when transiting on the local or Regional QNH.

The reporter was advised that the circumstances of the incident in which he was involved warranted the submission of an Airprox report; this would permit the Airprox Board to discuss the incident with the pilot of the other aircraft involved. An Airprox report was subsequently filed and is the subject of an investigation.

MORE THOUGHTS ON HAND-SWINGING

Report Text: As all pilots do, I was waiting somewhere for something in aviation and to help time pass looking through the obligatory pile of magazines and came across a copy of CHIRP with an article about hand swinging. [Ed: GA FEEDBACK Issue 52; Page 4].

My experience of aviation is 35 years as a Licensed Aircraft Engineer; in addition I learnt to fly on Tiger Moths and hold an ATPL with 5,000 + hrs experience.

I have hand swung almost every piston engine in light aeroplanes for one reason or another. I was taught from the start NEVER turn both magnetos 'ON' unless the installation that you are starting has dual impulse magnetos; if not then only the impulse magneto is turned on until the engine is running!

CHIRP Comment: An impulse magneto contains a spring loaded mechanism which delays rotation of the magneto momentarily during starting. When the mechanism releases, the magneto shaft spins faster than the engine under the influence of the spring until it catches up; this retards and improves the ignition spark permitting easier starting. After starting the spring loaded mechanism is overridden by the centrifugal force generated by the running engine. Starting with the

normal magneto also 'ON' may cause the engine to backfire before reaching top dead centre causing the propeller to rotate backwards with a risk of injury.

Remember that hand-swinging any propeller is potentially hazardous and proper instruction should be obtained before attempting to do so. We published a 'good practice' guide on hand-swinging in GA FEEDBACK Issue 53; a copy is available for download at: www.chirp.co.uk/downloads/gafb/gafb53.pdf

CONTROL ZONE CROSSING DECLINED

Report Text: While attempting to fly from my base to an airfield that I routinely visit, I was refused entry into the ZZZ CTA. This forced me to depart radically from my pre-prepared route to the extent that I had to fly over high ground - an area that was subject to mountain waves and turbulence.

I have done this trip many times before and seldom penetrate Controlled Airspace, as I usually route below part of the CTA. However, there is only about 1,200ft of terrain separation available below the CTA on this route and in the very strong winds I feared that I might encounter a lee wave rotor or similar at that height.

Consequently, I positioned myself at 6,000ft in VMC and requested clearance to cross the zone. I have done this on previous occasions without problems. On this occasion there were three IFR flights inbound from the Southwest and I was advised that it would be completely impossible to route me between them.

Now I have every sympathy with the controller and have no desire to impede the progress of any commercial flight even for one moment, but I would like to highlight a few apparent loopholes in the way the Rules of the Air are being interpreted. Firstly, I know of no rule that gives IFR traffic priority over VFR (except in the circuit). In any case I could have flown IFR if it would have helped but the term 'IFR' is widely used to mean 'commercial air traffic' although I know of no rule that gives CAT priority over private flights. I could have been routed around the Zone avoiding the high ground. As it was, I revised my route and, when clear of nearby Class 'A' airspace, climbed to FL85 (which was above the tops of the clouds in this area) having first contacted ### Information to confirm that this was not putting me in the way of traffic on the airway. Fortunately I was carrying that most maligned of aviation accessories, a GPS, which greatly reduced my workload.

The ZZZ controllers are usually extremely helpful and it may have been the case that on this occasion that even with the assistance of radar I could not have been threaded through the inbound aircraft. I would, however, be interested to know what the legalities are of refusing a transiting aircraft entry to a piece of Class D airspace when safety considerations make crossing the airspace the most reasonable course of action.

CHIRP Comment: NATS advised that IFR and VFR traffic is afforded equal priority and whilst ATC may refuse a request to enter Controlled Airspace, this would be most unlikely if the controller had been aware of the reporter's concern. It should be noted that it is NATS policy that Air Traffic Service Units maintain a record of transits, re-routings and refusals.

If you consider that a refusal to enter Controlled Airspace might have significant flight safety implications, advise the controller accordingly as other options might be available. Similarly, a polite post-flight telephone call to the ATC/watch manager explaining the reason for the requirement to cross the CTA on some occasions would permit the manager to offer advice on a mutually acceptable plan for a future similar situation.

MORE ON INSTRUCTING STANDARDS

Report Text: After completing the engine power checks at the hold for the active runway, I noticed that my instructor was texting whilst I was running through the checklist. I didn't care too much about this, because with 17 hours flying I am familiar with the run-up checks and making sure that the engine is running correctly.

The surface wind was a direct crosswind. I lined up on the runway after making my R/T calls, and was ready for take-off. I noticed that my instructor was STILL texting on his phone or doing something on the internet. I tried to ignore it and just carried on with the normal take-off; when I got airborne I followed the after departure checklist.

At this point my instructor was still fiddling around with his phone. This made me feel as though the instructor was not at all interested in what I was doing. Trying to ignore this I carried on flying the downwind leg, and turned base leg for the runway. When I was on approach, the instructor was still texting on his mobile phone. I just simply said the instructor's name to which the instructor replied with "Yeah". The instructor then set me up nicely on the approach, as I hadn't flown in a while even though I had 17 hours. When we were nicely on the approach my instructor then got his phone out again. At this point I wasn't sure whether he was getting his mobile phone out to "re-assure" me that he didn't need to take control, or if he was just being plain rude. Personally, I felt quite annoyed at the fact that the instructor was taking no notice and wasn't paying attention at what I was doing. I landed the aircraft with a small amount of guidance from the instructor, and as I came to a rolling stop the instructor's phone starting to ring; the instructor ignored the call but still got the phone out. After this episode of the mobile phone interruption he started to take notice more in what I was doing during the flight and put his phone away. I felt a lot more confident at this point and a lot more reassured.

When I next had a flying lesson with the same instructor I told him that I was not happy that he had got his phone out and was not taking any notice. After this the instructor got extremely "snappy" with me. Every time I would mention something or ask a question I would get a "telling off" or "blunt" reply. After this flight I felt extremely saddened that my instructor wasn't interested in my flying. After all, I'm paying to be instructed; I'm not paying for someone to just 'sit' in the aircraft and take no notice to me, but take more notice on what's showing up on his phone.

Lessons Learned: In this incident I have learned that I think it's about time I chose a different instructor. I don't wish to pay for training for my PPL when my instructor is not at all interested in what I'm doing.

CHIRP Comment: Whilst it might be the case that the instructor had been obtaining relevant information prior to take-off, behaviour such as that described during an instructional flight is unacceptable.

As we have emphasised before, if you consider your instruction to be inadequate for whatever reason and a discussion with the instructor fails to assuage your concerns, either raise the matter directly with the flying school management and request a change of instructor or seek another flying school.

SAFETY CONCERNS

Report Text: I hope you can help; I'm looking for some advice on what I should do regarding some concerns I have about safety and maintenance at a flying club

Obviously I'd prefer this to be confidential but I do feel I need to raise my concerns somewhere. Is CHIRP the best way to do this, or is there a contact at the CAA or BMAA I should use?

In brief, the aircraft operated by the club have been maintained for some time by individuals with no aviation engineer background. As far as I know, bigger checks such as the 50-hour check are done by a freelance engineer, assisted by the volunteers.

On a safety point of view, the club aircraft are regularly flown overweight, sometimes excessively so with full fuel, two passengers and luggage. There have also been occasions when members have felt under pressure to fly in weather that either sometimes exceeded the limitations of the aircraft or was simply not really suitable for their level of experience.

I hope you can help advise me where the best place is to take this concern. I do feel there has been a very gradual slide in standards at the club and it's only a matter of time before something serious happens there. I've spoken to a few other members and we all agree that this needs looking into.

CHIRP Comment: The reporter's assumption that the aircraft maintenance should be undertaken by a Licensed Aircraft Engineer is not correct. A procedure whereby tasks are signed off by an independent engineer is appropriate.

As regards safety, the British Microlight Aircraft Association (BMAA) advised that there is no approval process for microlight flying training schools. The BMAA promotes 'good practice' and might be able to assist but has no enforcement authority. The CAA advised that if there is substantive evidence of a breach of the Air Navigation Order reported to them, the CAA would review the situation with the relevant organisation.

The practice of operating modern microlight aircraft above the maximum permitted weight is a wider problem, since the more powerful engines now available lead some pilots to conclude that it is safe to do so; this is particularly so where the maximum permitted weights of some imported types have been reduced to comply with the relevant UK regulations. It should be remembered that operating an aircraft outside the manufacturer's Operating Manual limitation can have significant insurance implications for the aircraft owner.
