CHIRP GA FEEDBACK

Issue No: 72 **2/2017**

CONTENTS

EDITORIAL

In the last Edition of FEEDBACK we published a report about glider flying in close proximity to cloud. It prompted several readers to contact us to explain that the associated CHIRP comments, while correct, were incomplete and potentially misleading. We said that 'when operating under VFR pilots (both Power AND Glider) must observe the appropriate rules for separation from cloud (for flight above 3000ft: 1500m horizontally and 300m (1000ft) vertically clear of cloud). This is a true statement, if operating under VFR. However, it is also true that glider pilots can operate under IFR and fly closer to cloud than 1500m/1000ft, i.e. fly in IMC. Operating under IFR would normally require some kind of instrument rating for powered pilots but glider pilots are not required to hold a licence (expected to change under EASA regulation in April 2018) and consequently have no requirement to hold an instrument or cloud flying rating (the requirement for which is defined within the licence) in order to operate under IFR. The net effect is that currently in the UK in Class G airspace, a glider pilot can legally operate under, around (within 1500m/1000ft) and in cloud, whether below or above 3000ft amsl. In practice, practically all UK glider pilots operate under the auspices of the BGA or a military club with BGA affiliation, which ensures a robust framework of pilot certification and risk management, including training for activities such as cloud flying.

It is difficult to know how frequently glider pilots fly in cloud. When using thermal lift it is normal to find gliders circling (thermalling) beneath Cu cloud where they climb up to cloud base. From there they set off towards the next suitable Cu cloud beneath which they repeat the process to make progress along their route. In wave conditions gliders may be found upwind of and above lenticular clouds that mark the existence of mountain waves.

Electronic conspicuity is the way forward for all airspace users to advertise their presence and be alerted to proximate traffic. There are a variety of solutions with varying degrees of interoperability and FEEDBACK readers are encouraged to investigate and invest in devices appropriate to their aircraft type and operations.

Ian Dugmore – Chief Executive

Back to Top

SEAT FAILURE ON TAKE-OFF

Report Text: On Sunday 16 October 2016 a Cessna 150 crashed at Bourn airfield on take-off and I sent a text to my flying partner saying that I thought it could be the classic case of seat lock failure. This is where the seat lock is not fully engaged and as the pilot rotates it can rush back. The pilot hangs onto the yoke and the aircraft pitches up, stalls and spins in.

The following weekend we both arrived at the airfield and again discussed the possible reason for the crash. We checked out my Cessna [ ] and prepared for start-up. As I am aware of the seat failure situation, I always lock the pin in place and then "rattle" the seat back and forth to check that it is locked.

We taxied out to the warm up area and I carried out my pre-flight checks. Again as part of my checks I "rattled" the seat. I then lined up on the runway, did a few more checks and opened the throttle. As I approached take-off speed I rotated the aircraft and when we were about 10 feet off the ground, my seat suddenly shot backwards. My arms were at full stretch and I could not reach the rudder pedals or the throttle (I am short).

CHIRP, Centaur House, Ancells Business Park, Ancells Road, FLEET, GU51 2UJ
reports@chirp.co.uk

My co-pilot shouted at me “Nose Down!” and I shouted back “Take Control! He pushed the yoke forward and the aircraft wallowed then went downwards picking up speed. We cleared the runway and climbed out and he asked what had happened.

We did a circuit and I asked him if he was OK landing from the right seat and he said “Possibly!” Not a good answer, so I pulled my seat forward and locked the pin again. I noticed that it did not have any tension from the spring that pulls it downwards and keeps it in place. We decided that I would land the aircraft but he would follow me through and take control for a go around if necessary. I landed OK and taxied back to the ramp.

Upon examination, we found that the spring had broken and was hanging on one point. I took out the spring and thought I would check how bad the spring was. I got a pair of pliers to bend the top of the spring which snapped off. I bent another bit and that snapped off. The spring which I assume was the same age as the aircraft as it was painted the same colour as the seat (51 years), was completely metal fatigued.

Lessons Learned: I have now changed both front seat springs but it has occurred to me that the springs have a limited life and they should perhaps be replaced over a certain period, say 10 years. Unfortunately, Cessna charge £25 for each spring which may discourage owners to replace them at regular intervals.

A further point is that we as pilots who often fly as P2 should practise flying from the right seat in case of emergency, especially landing and in a crosswind. The situation is so different from what one is used to.

Even though the accident the week previously was fresh in my mind, my seat rushing back still came as a shock and if my co-pilot had not taken control immediately, the situation could have been very much worse.

***CHIRP* Comment:** Loss of control incidents are reportable as Mandatory Occurrence Reports (MORs) and this reporter had complied with the requirement. Since seat slippage can occur on any aircraft with a moveable seat, it is vital to check the security of the seat, as this pilot did, whether or not the seat has recently been moved. Although the incident was caused by a failure of the lock pin spring, there is a history of problems with other aspects of the seat and a relevant and extant FAA Airworthiness Directive FAA AD 2011-10-09 that applies to many models of Cessna aircraft. The summary extract says:

> *“SUMMARY: We are superseding an existing airworthiness directive (AD) for Cessna Aircraft Company (Cessna) 150, 152, 170, 172, 175, 177, 180, 182, 185, 188, 190, 195, 206, 207, 210, T303, 336, and 337 series airplanes. That AD currently requires repetitive inspections and replacement of parts, if necessary, of the seat rail and seat rail holes; seat pin engagement; seat rollers, washers, and axle bolts or bushings; wall thickness of roller housing and the tang; and lock pin springs. This new AD requires retaining all of the actions from the previous AD and adding steps to the inspection procedures in the previous AD. This AD was prompted by added steps to the inspection procedures, added revised figures, and clarification of some of the existing steps. We are issuing this AD to prevent seat slippage or the seat roller housing from departing the seat rail, which may consequently cause the pilot/co-pilot to be unable to reach all the controls. This failure could lead to the pilot/co-pilot losing control of the airplane.”*

It should be noted that the FAA AD 2011-10-09 inspections and any actions arising (cleaning, replacement due to wear, cracking etc.) should continue to be performed every 12 months or every 100 HR TIS, whichever comes sooner, and the work should be carried out by a qualified aircraft engineer.

Back to Top

ACCIDENT REPORT

Report Text: Earlier this year I had the shame of my first flying accident and I can blame nobody but myself.

I went for a short flight in my group's [aircraft type] from the strip where it has been based [for several years]. The weather was excellent and CAVOK all the way with about 3-4 oktas cloud cover. The flight went very well right up to the very last minute.

I had the strip in sight and called on [frequency] to announce arrival then again on downwind. Turned base and lined up with the runway, no crosswind at all. Time was very early afternoon so no sun in eyes problem, called final and made a perfect approach and only just as I flared and the mains were touching did I think, "where have all these weeds come from?" The ground was very rough and there was a bang underneath. The nose dropped, prop struck and left wing dropped.

"I have crashed and am unhurt" were my first thoughts followed by an immediate switching off of master switch and a hasty exit.

Looking at the scene I then realised I had chosen to land on the rough uncultivated strip alongside the runway which has a surface worse than a ploughed field.

What led me to identify this as the runway escapes me since I knew it was there. Being somewhat yellow in colour it is more evident than the runway, which is green, and the field alongside the runway on the other side was also green with new crop. However my brain had locked in to a decision and my concentration was on the technicalities of making another smooth landing. I have subsequently been told that this type of error is not unknown and even has a fancy name, confirmation bias.

Fortunately I have not damaged the structure and 2 new undercarriage legs and a new prop should fix it according to the experts. I do not expect to repeat this error but relate this story as a warning to others that what you believe you are doing may not actually be the real situation. Maybe I had relaxed my positional awareness because I "knew" the home field so well.

There were no runway markers on the airfield at the time of the incident but there are now which will serve to assist others not to repeat my error.

***CHIRP* Comment:** This type of accident has happened in other places. Fortunately on this occasion the pilot was uninjured and the aircraft repairable. It is worth pointing out that, in addition to obvious damage, whenever a propeller is damaged by contact with the ground, vegetation etc. the engine should be checked for shock loading. The absence of runway markers was almost certainly a contributory factor in the incident but the reporter is correct to highlight confirmation bias as the probable cause:

> Confirmation bias describes a situation where a person will ignore facts or information that does not conform to their preconceived mental model, and will assume as true any information that does conform to their beliefs (Nickerson, 1998).

This is very dangerous in all manner of ways in aviation and we are grateful to the reporter for bringing us this example of the phenomenon. Guarding against it is difficult but awareness is a good first step. Always be on your guard and if any single thing looks out of place, seems a bit odd or if you are doing something you have done many times before – beware!

Back to Top

POSSIBLE INFRINGEMENT

Report Text: I called [ ] ATC asking for a Basic Service. I was given the QNH which I entered into my altimeter; Sky Demon and GPS confirmed the same altitude - 2400 ft. After approximately 4 minutes I was called by [ ] ATC warning me that I was about to enter their controlled airspace at 2600 ft. (controlled airspace minimum 2500 ft.) I informed them that my instruments confirmed that my altitude was 2400 ft. ATC asked to change to Mode A!!! Due to my relative low hours I had no idea how to change from Mode C to Mode A. I therefore switched off my transponder and immediately descended to 2000 ft.

On reaching [destination] I spoke to the avionics engineer about my recent experience. “Ha,” he said, "your encoder is transmitting the wrong reading!!!" Now I know more detail about my transponder, which at the time was reading 200 ft. out. On my next local flight I called [ ] ATC for an altitude check which now confirmed a 100 ft. error (Understand the maximum acceptable error is 200 ft.)

I wonder how many other GA pilots have Infringed/Not Infringed due to their transponder error.

Lessons Learned: Having completed my flight training and gaining my PPL in [ ] hours I had no idea how to change to Mode A (Lesson Learnt).

Never fly close to Controlled Airspace.

Periodically ask ATC to confirm your transponder altitude reading.

Would I have really infringed or not?

***CHIRP* Comment:** The aircraft equipment is one element in the transponder system and there is always the possibility of an error or fault. Therefore it is advisable, when at liberty to choose one’s altitude and/or route, to allow a comfortable margin from Controlled Airspace. Doing so has the added benefit of requiring less concentration on height keeping and more capacity for navigation and lookout. Pilots should routinely fly with Mode C/Altitude selected on but occasionally, if the aircraft’s Mode C is out of tolerance, ATCOs may ask for it to be switched off/Mode A selected. Therefore pilots must know how to use the various modes of any equipment they plan to use. The accuracy of aircraft transponders is checked annually as part of the airworthiness requirement for certification and permits to fly. There is no harm in asking for verification from ATC periodically - provided it isn’t carried out to excess.

Back to Top

SERVICE REFUSAL

Report Text: On multiple occasions whilst transiting areas in the vicinity of [ ] CTA/CTR Basic or Traffic Services requested but [ ] ATC refused outside the hours of 0930-1730L on each occasion claiming "LARS closed, unable to provide services". Basic Service does not require LARS. Each occasion multiple other aircraft on frequency also requesting and being refused service. In one case a commercial company callsign requested a reason and was told "management decision" and nothing further was said. This is an unacceptable situation particularly in a busy area for transit traffic close to [ ] CTA/CTR. The whole point of ATSOCAS is that some form of flight following is available.

Lessons Learned: [] provide a service as per ATSOCAS norms.

***CHIRP* Comment:** The Unit is funded to provide a LARS for a certain number of hours each day. There isn't a blanket ban on providing a service outside the LARS hours – it depends on traffic levels. The controller's reference to a 'management decision' when asked why there was no service available may have been an attempt to forestall an undesirable protracted discussion over the RTF. The reporter is correct that a Basic Service could be provided outwith a LARS but a Basic Service does not comprise a flight following service. A Basic Service would be available from London Information but a better option would be to use the Unit's listening squawk and frequency. Even if aircraft are not equipped with a transponder, there can be a benefit from listening out on the appropriate listening frequency. In either case, if the QNH is required it could probably be obtained simply by listening but it could also be requested. In the event of an emergency a Mayday call on the listening frequency would certainly attract an appropriate response and assistance from the Unit no matter what time of day.

Back to Top

ATC MIS-CONTROL

Report Text: On his NPPL navigation test, my candidate chose a direct route, just inside the edge of [ ] MATZ and asked for a MATZ crossing. He was tentative in his RT, but made a correct initial call, after which he was told to 'standby'. Eventually he was told to pass his message, which was not very accurate but included the request to transit the Zone en route to [turning point]. The aircraft has no SSR. The controller told us to set [ ] QFE, and asked us to turn East for identification. I asked to continue on course to allow the navigation test to continue, and gave our position as 2 miles north of [a disused aerodrome marked on the ICAO 1:500,000 chart]. The controller said he needed to observe our turn before he could give Zone transit, and he could not accept my reported position since he did not know where [the disused airfield] was. He stated categorically that he would vector us back to our track once the identification was complete.

The candidate chose to follow the controller's instructions. 2 or 3 minutes later the controller advised us that we could 'resume own navigation'. No assistance was offered at this time. Shortly afterwards a different controller took over the position who also did not provide vectors back to our track. I am concerned that the treatment my candidate received in this case is likely to discourage him in future from contacting an Air Traffic Control unit with the attendant safety benefits which such contact provides. As a civilian aircraft we did not need clearance to cross the MATZ (in fact we never entered it because of the 'identification turn'), so I hold that the identification was unnecessary. Certainly the LARS controller should be able to identify ground features marked on the CAA chart of his local area. The hand-over was apparently inadequate, because the promise of vectors to return to track was not kept.

Lessons Learned: The lesson my candidate learned was to avoid talking to [ ] ATC at all costs!

RAF Safety Centre Comment: The event appeared to be as a result of high-workload for the LARS controller coupled with a potential misunderstanding from the [reporting aircraft] crew (they were informed that they could resume own navigation with a MATZ crossing, however, they maintained their heading - possibly expecting a vector to regain their initial track). To alleviate ATC workload, a handover between LARS controllers occurred, resulting in a second controller contacting the [reporting] crew some 4:30mins after the call to resume own navigation.

It is obvious from the tone of the CHIRP report that the originator is disappointed with the service provided by the LARS controller. However, this opinion may stem from a number of misapprehensions including:

- The ability for ATC controllers to determine an aircraft's location (ATC displays do not display ½ mil charts for controlling aircraft and [the disused airfield] is not a recognised VRP).
- The requirement for the identification turn (the aircraft was not transponder equipped and required identification to ensure they were deconflicted with traffic in the [ ] visual circuit).

- Permitted actions following a clearance to "resume own navigation" (although there may have been an expectation that a specific heading would have been provided to regain track, this was not requested by the pilot).

The Regional Airspace User Working Group provides a valuable opportunity to air safety concerns and develop a greater understanding of the requirements of users and service providers. For further information of the nearest Airspace User Working Group see below.

Although the report originator may be disappointed with the service provided in this instance, it is reassuring that the aircraft was in communication with LARS and had requested a MATZ crossing. Communication between military ATC units and civilian traffic is encouraged, wherever practicable, to ensure safety for all air users operating within or in close proximity to a MATZ. I hope that this précis [of the investigation report] serves to reassure you that the RAF takes such incidents seriously and strives to reduce Flight Safety risks wherever we are able.

***CHIRP* Comment:** The response from the RAF Safety Centre reflects the importance the RAF attaches to investigating comments about the service provided by its controllers. Military controllers typically change locations far more frequently than their civilian counterparts and may not be as familiar with the surrounding area as a civilian controller. It is important therefore, for pilots (and controllers!) to refer only to large geographic features or published references. It is also worth reminding ourselves that controllers, just like pilots, may be inexperienced in their role as well as location. It is necessary for controllers to positively identify aircraft without transponders by requesting and observing a turn. If this results in a significant displacement from the planned track and vectors back are not forthcoming, pilots should ask. Indeed, in any situation in which pilots require assistance from ATC they should request it.

Back to Top

Regional Airspace Users Working Group (RAUWG)

The main aim of each RAUWG is to act as a collaborative forum which seeks to reduce the risk of mid-air collision. RAUWGs give shared airspace users, both military and civilian, the opportunity to liaise with each other in a relaxed and informal environment. Meetings are held across the country on a 6 monthly basis and they normally take place at a Royal Air Force station that is the most central or the most appropriate for the region. You are invited to contact your local group and get involved.

Area	Hosting Unit	Point of Contact	Telephone
Central Southern England	MOD Boscombe Down	DSATCO	01980 662994
East Anglia	RAF Marham	SATCO	01760 337261 Ext 3425
East of Scotland	RAF Leuchars	SATCO	01334 857280
Lincolnshire	RAF Cranwell	SATCO	01400 267283
London (location varies)	RAF Northolt	SATCO	0208 833 8364
North of England (location alternatives)	RAF Leeming RAF Linton-on-Ouse	SATCO RAF Leeming	01677 457229
North of Scotland	RAF Lossiemouth	SATCO	01343 817414
Oxfordshire	Oxford Airport	SATCO RAF Benson	01491 827008
Wales and West Midlands (location alternatives)	RAF Shawbury	SATCO	01939 250351 Ext 7231
	RAF Valley	SATCO	01407 762241 Ext 7204