

CHIRP GA FEEDBACK

Issue No: 53

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ADMINISTRATION/CABIN CREW MANAGER APPOINTMENT

We are pleased to advise that Miss Stephanie Colbourne has joined the CHIRP team in the role of Administration/Cabin Crew Manager.

Stephanie previously held a flight training administration position with a UK airline.

EDITORIAL

In the last issue (GA FEEDBACK Issue 52; Page 4), we published a report titled 'The Oldest Swinger in Town' which included some comments on hand swinging techniques.

We have received a number of subsequent comments, some endorsing the points made by the reporter and others offering examples where particular engines may require a different technique. We are also aware that a letter has been published in 'Light Aviation' magazine (August 2012; Page 11) referencing the report published in GA FEEDBACK.

We are most grateful to those who have contributed comments on the subject but, in view of the wide variety of engines and ignition systems that are able to be started by hand-swinging, we have decided that it would not be appropriate to attempt to cover all of the relevant detailed points in GA FEEDBACK.

Instead, we offer the following general guidance for those less experienced in the practice:

1. Don't attempt to hand-swing a propeller without proper instruction from someone who is familiar with the manufacturer's recommended starting procedure for the aircraft type.
2. Make sure that you understand the engine/propeller/electrical system configuration and the implications of each on starting the engine.
3. In particular, be aware of the type of magneto fitted, as the engine starting characteristics of an impulse coupled magneto may be very different from those associated with a non impulse magneto. If more than one magneto is fitted, ensure that you know the details of each.
4. Ensure that the cockpit is occupied by a competent individual who has been adequately briefed on the starting procedure and emergency actions.
5. Confirm that the parking brake, if fitted, is 'ON' or chocks are fitted in such a way that they can be removed safely with a rotating propeller.
4. Always treat a propeller as 'live', even if the magneto switches are 'OFF' and, if relevant, the ignition key is not in situ.

5. Avoid wearing any loose fitting clothing, scarves, ties etc., that could be drawn into the propeller arc; remove rings from fingers to avoid interference with the propeller and possible serious injury; wear a glove if swinging a metal propeller.

CONDITIONAL CLEARANCES (GAFB 52) - A COMMENT

In the last issue, we published a report regarding a conditional clearance issued by an ATCO when the runway entry stop-bars were still lit. Several readers commented on the reported sequence of the ATC instruction:

Report Text: With reference to the report 'Runway Entry Stop-bars and Conditional Clearances' published in GA FEEDBACK Issue 52, the ATC instruction to the Training Captain was reported to have been "Line up and wait after landing light aircraft", which was read back verbatim.

If as reported, this conditional clearance was incorrectly given and compounded in the verbatim read back.

The correct instruction should have been "After the landing light aircraft, line up and wait runway ##". A cautious reminder to all, regardless of experience, to use the correct phraseology, as laid down in the current edition of CAP413.

CHIRP Comment: We elected to emphasise the importance of not crossing an illuminated Stop-bar and not to comment on the phraseology.

However, the comment above is correct; both the Manual of Air Traffic Services - Part 1 and CAP413 require the 'condition' associated with an instruction to be issued prior to the instruction itself.

FREQUENCY REFERENCE CARDS (GAFB 52) - A COMMENT

In our comments accompanying the report 'A Close Call' in the last issue (Page 4), we noted that up-to-date Frequency Reference Cards can be downloaded from the NATS AIS website.

Report Text: In the latest CHIRP GA FEEDBACK (2/2012) you say that "Up-to-date" reference cards can be downloaded from the NATS/AIS website.

These are the cards that accompany a new chart and are therefore only correct at the time of publication.

For example, Shawbury Zone is shown as 120.775 but was changed recently to 133.15.

It would be better for pilots to use the AIP or a VFR flight planner like Sky Demon (where the data is updated every 28 days).

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CHIRP Comment: Those readers with longer memories might recall that Frequency Reference Cards (FRCs) were updated at the same frequency as the UK AIP (every 28 days - known as the 'AIRAC cycle'). However, this comment is correct; the current AIS website policy is to update the FRC as noted above.

The FRC updating policy has been raised with the CAA and NATS; the latter now manages the provision of AIS data and the AIS website.

Pending any change to the future policy for updating FRC information on the AIS website, the recommendation above to use the AIP or flight planning data updated in accordance with the AIRAC cycle is endorsed.

OVERFLYING AERODROMES - A WORD OF CAUTION

Report Text: I am writing in relation to the report 'Close Encounter - Overflying Aircraft' published in GA FEEDBACK Issue 50 (Page3), which involved the overflight of an airstrip at low altitude.

A comment on the above report published in Issue 51 (Page1) highlighted the CHIRP recommendation not to fly through an airstrip's overhead stating 'in [his/her] opinion it is one of the safer ways to cross'. The subsequent CHIRP comment mentioned the height of the overflying aircraft in the original article (500ft AGL) and stated, 'transiting overhead at an altitude which provides separation from joining aircraft or is above the maximum height of an ATZ is entirely appropriate'.

I would like to add a vital caveat to the advice in respect of gliding operations. There are aerodromes (as defined in The Air Navigation Order; Section 1; Part 33), marked on aeronautical charts (so a transiting pilot ought reasonably to know of their existence) and with regular circuit patterns, where transiting overhead is most definitely not the safer way to cross. In addition to being identified with a 'G' in the circular chart symbol, the clue to the overhead transit being unsafe is the small numbers (In thousands and hundreds of feet) at the bottom right of the circle indicating the maximum altitude (above Mean Sea Level) for winch cables.

Many of these aerodromes are located on the top of ridges so, it is important to consider the following:

1. The maximum altitude is calculated using a minimum cable height of 2,000ft AGL plus the aerodrome elevation (those all important small numbers). At some sites the cable may extend above 2,000ft AGL.
2. The possible need to fly below 3,000ft altitude to make use of 'clear of cloud and in sight of surface' VFR,
3. There is likely to be a concentration of aircraft underneath those puffy cotton wool clouds that you only need to 'keep clear of',

Perhaps giving these aerodromes a suitably wide berth is the best solution.

Finally, from experience, I wholeheartedly agree with the writer's comment on 'careless fly-bys'.

CHIRP Comment: In 2011 the UK Airprox Board investigated 10 overflight incidents involving glider/microlight sites. In several cases, the overflying aircraft was below the maximum winch height.

In addition to winch operations, many gliding clubs also use aero-towing aircraft; these can operate to a considerable height above the aerodrome, are less manoeuvrable when towing and retain a long cable behind after releasing a glider.

For similar reasons aerodromes at which parachute operations are conducted should be given a suitably wide berth.

LOSS OF VISUAL REFERENCE

Report Text: Crossing Northumberland on my way back from Scotland to East Anglia earlier in the year, I was unexpectedly hit by a heavy snow shower that was not in the forecast.

I didn't fly into it; rather, it landed on me like a net being dropped from above. There was a complete whiteout with no warning. I continued to peer through the whiteness in the hope of regaining a visual reference.

After no more than fifteen to thirty seconds I gave up and looked down. The AI was showing that the roll angle was over thirty degrees to the right, the pitch was ten degrees down and the speed was rising through the yellow sector en route to the red. The altimeter was unwinding like a spring. Despite this, my balance organs were still telling me that I was straight and level.

Fortunately, my IMC instructor had spent a lot of time putting me in unusual attitudes and I believe my recovery was satisfactory. I regained control and left the snow shower safely after another minute or so.

Lessons Learned: The main point of this report is the speed with which I entered an unusual attitude on losing visual reference. It was almost immediate. In training, the student knows that he or she is in an unusual attitude because the instructor hands back control with the words, "recover".

What shocked me in this instance was the speed with which I lost control and the fact that I was unaware of it for far too long. I was over a mountainous area and was flying at a VMC safe altitude rather than an IFR Minimum Safe Altitude which would have been five hundred feet higher.

It was pure luck that I did not hit terrain during the uncontrolled descent.

CHIRP Comment: Sadly, the General Aviation fatal accident statistics include very similar cases to that described above where a loss of visual reference has led to a loss of control. In this case, the reporter was extremely fortunate to have been able to regain control in the height available.

Four points are worth emphasising:

1. Whatever your overall experience, look well ahead, anticipate the possibility of encountering adverse weather, and plan your avoiding action.
2. If your training, recency, or flight instruments will not enable you to fly a Rate 1 turn through 180 degrees competently, ensure that you remain well clear of clouds/adverse weather and always in sight of the ground. This is particularly important in the case of light, non-stabilised helicopter types and should include the option, if necessary, of making a precautionary landing.

3. Revert to instrument references ideally before but if not, immediately on losing visual reference.

4. If you hold an IMC/Instrument Rating, ensure that you maintain proficiency in both instrument flying and recovering from unusual positions; it could save your life.

MORE THOUGHTS ON INSTRUCTING STANDARDS

In GA FEEDBACK Issue 51 (Page 4) we published a report 'Instructing Standards and Human Factors' in which we commented that the relationship between an instructor and a student is most important.

(1)

Report Text: Yes, the relationship is very important but what is more important is an instructor who can adapt to anyone and even more important, can teach things besides the books.

However, I will give you an example where changing instructors or flight school is not always the best option: As an FAA instructor, I conducted a flight review on a student, who completed the flight manoeuvres to a barely acceptable standard and was unable to land the aircraft to an acceptable standard.

I would not give him his renewal at that time so he went someplace else; he was not required to demonstrate his proficiency in manoeuvres, stalls etc., and got the renewal!

I have over 2,000 hours of instructing and all successful. A major change is needed!

(2)

Report Text: Following the CHIRP discussion about varying instructors, [GA Feedback 51] I can offer an example of the effect of different instructional attitudes.

In the RAF I failed my Final Handling Test after 96 hours flying, and was sent home. When circumstances eventually allowed, I decided to get a private licence. My first instructor was young, enthusiastic and bossy. I had not flown for fifteen years, so my reactions were obviously slow. Each time I started thinking, say, "Speed is dropping off", he would say "Watch your speed!" He continued to nag me about height, slipping turns, trim, headings, and everything else, always just as I was nagging myself, until I became a twitching wreck.

In the end I asked for a change of instructor. The new instructor's attitude was quite different. Flying was to be enjoyed. He watched, rather than nagged. He kept quiet and let me sort myself out. I relaxed and soon had my licence. A lifetime of pottering about in light aircraft has followed, for which I am very grateful. So a change of instructor, as in your comment, was indeed "the most appropriate course of action"

Lessons Learned: If truly unhappy with an instructor's attitude, change your instructor. Flying is expensive and should be enjoyed.

CHIRP Comment: One of the key skills of a good instructor is the ability to assess the most appropriate teaching method which will permit each student to attain the required standard or to realise their maximum potential in the most effective manner, and to adapt his/her instructional technique accordingly.

CAMOUFLAGE PAINT SCHEMES

Report Text: I was flying as P2 with a friend of mine in a motor glider at ### Airfield. We both have PPLs and are experienced with flying the aircraft and the airfield. We were practising circuits with touch-and-go landings alternating who was the handling pilot for each circuit.

On the circuit in question, we heard a radio call about an aircraft back-tracking and saw an aircraft back-tracking on the adjacent grass strip. We continued our approach to the runway. At only about 100ft did both of us realise that there was an 80% scale kit built military replica back-tracking the hard runway and that its position was an extreme collision risk if we continued the approach to the point of touch-down. Obviously, I carried out a go-around.

The military replica was painted with camouflage marking and did not have any strobe or navigation lights visible. The weather was overcast with cloud-base only about 1,000ft QFE. Earlier there had been some showers and the runway had patches of dry tarmac and patches of wet tarmac, making it easy for the camouflage of the replica to blend in. After the go-around we continued into the circuit for another landing.

What was particularly noteworthy was that we knew exactly where the replica was on the runway; and even with both of us looking directly at the position where we knew it was, we could not distinguish the aircraft as being there. In fact we heard the pilot of the replica advise commencement of take-off roll (By that stage we were starting the base leg, which with the relatively slow speed of the motor glider would normally allow adequate separation from departing aircraft so we continued the circuit); even with the replica moving it was extremely difficult to see against the patchwork background of wet and dry tarmac until it became airborne.

The visibility was reasonable throughout our flying that day of about 8km; and hence wasn't really a factor in distinguishing aircraft on the runway whilst in the circuit. In fact there had been a number of other aircraft and microlights operating whilst we were circuit flying which we hadn't had any difficulty in seeing at any stage. After finishing our flying, we found out that the replica was a visiting aircraft which had departed; hence we weren't able to discuss our experience with the pilot.

Lessons Learned:

1. Under certain light and against certain backgrounds, camouflaged aircraft can be extremely difficult to see. For civilian pilots such as myself, who haven't experienced flying near camouflaged aircraft, it can be a surprise just how much harder they are to see.

2. On airfields like ### which have multiple active runways with similar directions, it is easy for pilots hearing another pilot's announcement of back-tracking to attribute that announcement to the aircraft that they can easily see back-tracking the other runway, such that they believe that the runway they are intending to land on is clear when in fact it is occupied.

Suggestions:

1. Warn operators of camouflaged aircraft of their substantially increased risk of not being detected by

other pilots; leading to an increased chance of a collision.

2. Recommend that camouflaged aircraft are fitted with strobe lights and navigation lights and that these are always used when taking off and landing.

3. Warn pilots operating at airfields that have multiple active runways of the risk of confusion of radio calls as to which aircraft and which runways they apply to.

CHIRP Comment: There are no restrictions on the use of camouflaged paint schemes or requirements for the use of strobe/navigation lights during daytime operations; thus all pilots should be aware of the reduced conspicuity of such paint schemes, particularly against some ground backgrounds, in the same way that white paint schemes are more difficult to see against a bright background.

It is also important to remember that an object that has a small rate of change of position relative to an observer is more difficult to detect visually.

A final general point: A radio call should identify the location of the aircraft. When operating at airfields with parallel hard/grass runways it is much clearer for other pilots if the call includes either 'hard' or 'grass' (e.g. "G-### backtracking 25 Grass")

ENGINE FAILURE AFTER TAKE OFF

Report Text: It was a bright sunny day, temperature 14°C, dew point 6°C, with quite a lot of large cumulus clouds in the area. I filled the tanks of the Grob 115 D2, which I had hired, with the intention of flying to a nearby little used strip for aerobatics.

The take off was uneventful and I proceeded to climb out towards the strip. On reaching 1,000 feet still at full power and still in the climb, I checked that the aircraft was "clean", i.e. flaps were up, my harness WAS tightened (for aerobatics), and fuel pressure and temps and pressures were in the green.

At 1,200 feet, just before I switched off the electric fuel pump, I decided to change from the "BOTH" position for the fuel tanks, which is the normal position for take off, to the left hand tank. Almost immediately, the engine lost power, smoothly, no coughs, no splutters. My first thought was a problem with the petrol as I had just fully filled the tanks. I switched the electric fuel pump back on, turned the fuel selector knob back to "BOTH" and double checked that the fuel "CUT OFF" knob, which is directly behind the tank selector knob, was indeed still on the "ON" position. There was no response, the propeller continued to slow up until it stopped completely.

As there was no height to dive the aircraft into starting I went through the starting procedure, i.e. fuel cock was ON; tanks were on "BOTH"; electric pump was ON; throttle reduced; mixture up to rich to prime it then to LEAN; turned the key and cranked the engine a number of times; there was no response. I was now down to 800 feet, I fortunately had a long flat field just to the right of the nose where I proceeded to and landed safely, with no damage to the aeroplane or myself.

On arrival of the engineer he was able to start the aircraft without much problem and he suggested that it could have been icing. I certainly had not applied the

ALTERNATE air, which I should have done, but I had it in my head that it was a fuel starvation problem of some sort and the temperature and dew point did not suggest icing at full power. The aircraft was flown safely back to base. I am told numerous tests were done and parts replaced, as a precaution, but I feel I do not have an answer to the incident.

Lessons learned: Do not touch the fuel selector knob until at sortie height - it may not have stopped the incident but it may have given me more time to re-start the engine.

CHIRP Comment: The presence of large cumulus clouds would indicate that the air mass was relatively moist. This, together with an estimated OAT of 10-12° at 1,200ft and a dewpoint of 6°, would indicate a relatively high possibility of carburettor icing occurring at moderate/high power settings (as shown in the chart in the CAA GA Safety Sense Leaflet No.14). The onset of carburettor icing could lead to a similar situation to that described.

However, Grob 115 D2 models are fitted with a fuel injected engine [AEIO-320DIB], which would significantly reduce the risk of ice contamination. Thus, the reporter's failure to select Alternate Air was unlikely to have contributed to the subsequent engine failure since the use of Alternate Air in a fuel injected engine is primarily to prevent the build up of impact ice and this would have been most improbable given the temperature/dewpoint of the air mass in which the reporter was operating at the time.

Subsequent to the aircraft's recovery to base, a sample of the fuel uplift of 100LL was proved not to be a factor. On a subsequent flight it was noted that if the mixture was set at the recommended "1 cm from stop", the fuel flow was between 9 and 10 galls per hour at full power in the climb, compared with that recommended (between 11 and 12 galls per hour); however, it is not clear whether this degree of 'leaning' of the mixture had contributed to the failure described. Interestingly, the recommended technique in the Royal Air Force 'E' model is to adjust the mixture to set a fuel flow (55 litres/hr) at full power during the pre-take off checks.

In the reporter's case a suitable landing area was known to be available. More generally, two points about engine failures are worth making, particularly for less experienced pilots:

1. Following an engine failure at a relatively low altitude the three most important immediate actions are: establish and maintain the best glide speed; select a suitable field; plan your approach. Only then if time permits: troubleshoot the problem; secure the engine if necessary; inform ATC.

2. Having carried out a successful forced landing, the most prudent course of action is not to fly again without either having established a positive cause for the engine failure or having completed a detailed engineering investigation.

ANYTHING TO REPORT?

If you would like to submit a report to CHIRP, you can do so by submitting an electronic report via our secure website www.chirp.co.uk or download a report form from our website and post/fax it to us (Contact details: see P1).