

CHIRP FEEDBACK

Issue No: 35

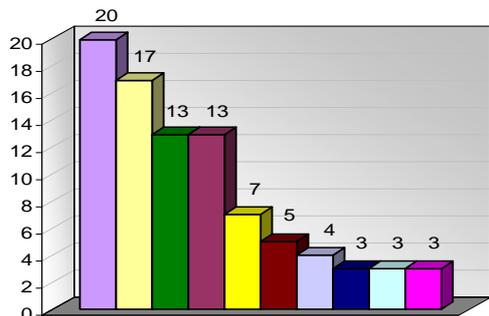
Spring 2008

EDITORIAL

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**Most frequent GA Issues Reported
12 months to February 2008**



- Handling/Operation**
Airmanship, Handling of A/c, Operation of Equipment
- Procedures**
Use by Reporter, Use by Others, Adequacy
- Aircraft Technical**
Propulsion, Design, Systems
- Situational Awareness**
In the Air
- Near Miss**
Airprox, Near Collision with Terrain, Loss of Separation
- Air Traffic Management**
Level of Service, Separation
- Maintenance**
Standards/Workmanship, Base
- Licensing**
Flight Crew, Engineering
- Individual Error**
Conflict, Lack of Leadership, Insufficient Team Work
- Ground Handling**
Loading, Refuelling, Taxiing

REPORTS

TOO MUCH POWER

Report Text: Recently started flying a new build Vans RV9A with a 160hp Superior engine. All previous hours on 100hp Continental powered Cessna/Bolkow aircraft with 800fpm climb rates (at maximum).

On climb out saw another aircraft crossing the upwind end of the runway to go to the downwind leg right above us.

Do not know if he saw me but I was reminded of the following:

1. New relatively high performance aircraft. Climb rates in excess of 1,500fpm put me into an area of possible conflict never before possible.
2. Advice since to delay climb @ 700 feet and to improve look out.

CHIRP Comment: As the reporter notes, flying a relatively high performance aircraft raises new/different airmanship challenges, one of which is the climb profile after take-off.

If flying a high performance type and planning to remain in the visual circuit you might conclude that once safely established in the climb after reaching 500ft agl, making a smooth power reduction to maintain a rate of climb of between 500 and 1,000ft/min will permit a shallower climb angle, assist in your lookout and should provide separation from joining aircraft crossing the upwind end of the runway at circuit height; this procedure will also have the additional benefit of preserving engine life.

On the other hand, if you wish to maintain full power after take off, then it is most important to clear your climb-out flight path visually before commencing your take off and also to maintain a good lookout in the climb for any aircraft making a standard overhead join, using clearing turns if necessary.

The Red Arrows are hosting a special Military/Civil Air Safety Day at RAF Scampton on 14 March 2008. If you are interested in attending, details of how to apply are on the CHIRP website at www.chirp.co.uk

A General Aviation Safety Newsletter

from **CHIRP** the Confidential Human Factors Incident Reporting Programme

AIR TRAFFIC SERVICES OUTSIDE CONTROLLED AIRSPACE (ATSOCAS)

The CAA recently announced that the introduction of the proposed changes to ATSOCAAS has been delayed in order to allow more time to consider the many responses received by the end of the consultation process. The CAA is working with the other Airspace and Safety Initiative partners to introduce the improved ATSOCAAS procedures as soon as practicable.

GA pilots are reminded that the existing air traffic services for operations outside Controlled Airspace will continue to be available and should be used; these services are described in the Aeronautical Information Publication (UK AIP) and Aeronautical Information Circulars (AICs).

Pilots are also reminded of the importance of using Mode A and Mode C, if fitted, at all times unless specifically instructed otherwise by ATC, and of the services/procedures that are available when flying in the vicinity of Controlled Airspace; these include the recent extension of the Lower Airspace Radar Service. All of these are unaffected by the decision to delay the introduction of the ATSOCAAS changes.

For more information/updates on ATSOCAAS see: www.airspacesafety.com

BAD WEATHER EN ROUTE

Report Text: After an uneventful VFR flight to Scotland via an intermediate stop in NE England, the return flight to the same intermediate stop was made along the coast, in relatively poor conditions with a cloud-base of 800-1,000 ft. The approach was made in rain with a 400-500ft cloud-base. The TAFs (Terminal Aerodrome Forecasts) were, however, showing better weather to the south; this was confirmed by phone calls to my destination and an en route regional airport.

After re-fuelling and waiting for an improvement in the weather, the second flight commenced in the early afternoon with a 1,000 ft cloud-base and no rain. The coast was again followed south whilst maintaining R/T contact with AAA (en route regional airport) radar. The weather conditions then deteriorated with a 400-500ft cloud-base and rain. Contact was made with BBB (second regional airport) and then lost. The coastline was followed in IMC with the help of a GPS moving map. South of BBB contact could still not be re-established so a PAN call was made to D&D (Distress & Diversion Cell). Contact was immediately established with D&D and a heading of 210deg was given with a request to climb to provide a better transponder signal. At 2,000 ft the cloud top was reached and the flight continued 'VMC on top'. The cloud then started to break to allow visual contact with the ground and a descent was made to 1,500 ft. D&D passed contact onto CCC radar (neighbouring regional airport) who continued to provide a Flight Information Service up to my descent and the approach into my planned destination.

Conclusions:

- This was a potentially fatal situation to be avoided in the future.
- Do not rely on weather forecasts.

- Turn back whilst there is still time.
- D&D should have been called for help earlier.

Thank God for D&D – very calm, helpful and re-assuring.

CHIRP Comment: A significant number of fatal GA accidents occur as a result of a pilot attempting to continue in weather conditions that are outside of his/her experience and/or capabilities. As the reporter has concluded, this incident could have had a much more serious outcome and the lessons that he learned are worth emphasising.

1. Don't rely on only Terminal Aerodrome Forecasts (TAFs); whenever possible obtain information on the likely en-route weather in the form of an Area Forecast. Also, don't forget that forecasts are based on the possibility that the actual weather may be up to 25% worse, visibility 500m less and/or cloudbase 500ft lower than that forecast. If any doubt exists, obtain actual weather information, whenever possible, and consider delaying/cancelling your flight.
2. Before take-off, determine your own en route weather limits and prepare a contingency plan for turning back or diverting, if unsuitable weather is encountered.
3. Don't be tempted to press on or attempt to climb above the weather if either you or your aircraft are not appropriately qualified. Execute your contingency plan before actually encountering bad weather.
4. If you do need assistance, D & D on 121.5 MHz is there to assist you. Don't be reluctant to call.

WRONG AIRFIELD!

Report Text: The flight was to Blackbushe. Conditions were very good with excellent visibility. We had planned our arrival via the OCK VOR. The EPM NDB was also tuned in and that passed by on our right hand side, just before we passed over the VOR and Wisley (disused airfield).

I called Farnborough for flight information stating that our destination was Blackbushe. I was asked to squawk, given a FIS and asked to report when Blackbushe was in sight.

Overhead the VOR I gave a slight course correction to put us on track to Blackbushe. Very soon afterwards, we saw an airfield directly in front and called Farnborough to request frequency change to Blackbushe. This was approved.

On calling Blackbushe with our intentions to land we were informed that it was strictly PPR. This we had already realised, but only after getting airborne. The controller agreed that, "on this occasion, he would let us land". We reported field in sight and were asked to join on a left base for runway 25.

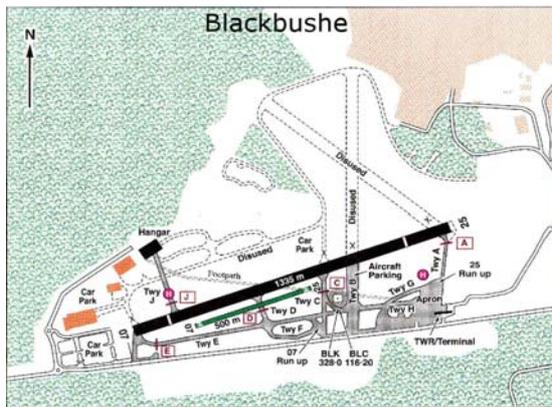
We positioned the aircraft to do just that and called when established left base. We were asked to call final. When established on a final approach we did indeed call "final". The reply was to land at our discretion.

We landed the aircraft. Only then did Blackbushe ATC ask us where we were. It was quickly established that

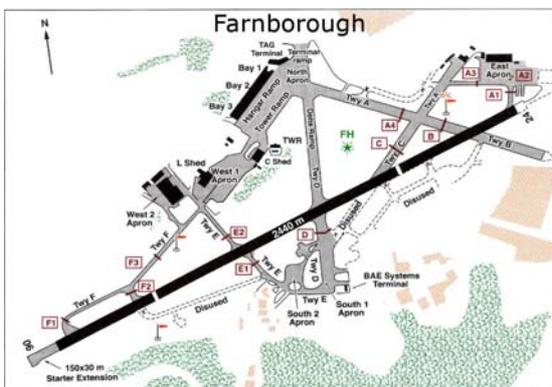
we had landed at Farnborough and we were asked to call them.

This was undoubtedly a 'human factors' incident. Both my colleague and I were in no doubt that the airfield we were looking at was Blackbushe. They both have very similar runway orientation. Also, we were expecting to see the airfield quite soon after passing over the VOR. All the clues that we were looking for fitted and therefore we did not question where we were. If there had been any doubt at all, we would have acted on it.

CHIRP Comment: The reporter is not the first to make this error. As can be seen from the two airfield diagrams, reproduced by courtesy of Pooley's Flight Equipment, the two airfields do have some similarities but also some significant differences.



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Errors such as this often result from a well-known Human Factors condition known as 'confirmation bias' in which all of the information confirming the pilot's initial perception that the airfield ahead was Blackbushe was accepted, whilst other information available, such as the lead-in features, the large corporate jet facility on the Northwest corner of Farnborough, the prominent new control tower and the additional disused runways, was mentally rejected.

The condition of 'confirmation bias' often arises as a result of uncertainty, a higher than normal level of stress or the presence of conflicting information. The best method of protecting yourself against making such an error is by thorough pre-flight planning; this should include the planned use of en route and destination navigation aids, appropriate visual fixes and a detailed review of the destination, alternate airfields and major features. This would have identified the requirement for

a PPR notification by telephone prior to departure, the close proximity of Farnborough to the intended destination, the major lead-in features (M3/railway) and the key differences in the airfield layouts and surrounding areas.

GEAR PROBLEM

Report Text: Having carried out three uneventful approaches and go-arounds with three greens indicated on each approach, whilst downwind for a fourth approach, U/C DOWN was selected but this time the nose wheel green did not illuminate. My son, a PPL in the right hand seat, recycled the U/C using both the normal select lever and the emergency lever a number of times without success, whilst I concentrated on flying the aircraft.

We decided to leave the circuit and climb to 3,000' overhead where further recycles using both systems, together with sudden changes of altitude and lower speed still failed to give us the third green.

As our airfield was unmanned, a call to Cambridge approach was made explaining our situation, with a request for a diversion to Cambridge. This was promptly agreed initially with a fly past their Tower at 400' for a visual inspection of the nose wheel. They confirmed that the wheel was down but could not confirm whether it was locked, or not.

We were then cleared to climb and join the circuit R/H 05 grass with the airfield fire service in attendance. The grass runway was selected to minimise damage to the aircraft and avoid blocking the main hard runway to other traffic. Whilst in the circuit my son continued to recycle the U/C, and agreed the procedure for stopping the engine, switching off the master switch and turning off the fuel.

Just prior to turning onto final approach one more recycle was made, this time the nose-wheel indicator came on, we now had three greens. The tower was advised and we were cleared to land. A slow, nose high, touch down was made and the engine, master switch, fuel actions taken. As our speed rapidly decayed the nose wheel lowered, made contact with the runway and proved to be down and locked.

Following a thorough inspection of the U/C it was agreed that we return to our base taking off on the main hard 05 runway and leaving the U/C in the DOWN position. The tower suggested we advise them of our safe arrival, this we did, confirming our arrival both by radio and telephone.

The engineering investigation revealed that the nose-wheel overcentre locking mechanism was not consistently operating the DOWN microswitch to provide a correct 'green' indication.

Finally I must commend Cambridge ATC and Fire Service for their help and cooperation in this matter.

CHIRP Comment: The reporter and his son handled this difficult situation in an exemplary manner, by considering the available options, forming a plan and using all available resources to ensure the best possible outcome. Also, as noted, ATC and the airfield fire service each played a significant part.

AN EXPENSIVE DISTRACTION!

Report Text: Distraction was the problem. The star role was taken by an aircraft entering and blocking the runway, despite my "Very Short Finals" call when I was 500 metres out configured for landing 5 knots above the stall, and then proceeding to take off and muck the situation up even more.

Frazzled and fuming I completed the overshoot and flew a further circuit. I was in the flare when my instincts alerted me that something was not quite right. The sound like a football rattle from the front end and bits of flying propeller were also useful clues!

At full throttle my little VLA climbed away like a good 'un ... or at least a fairly good 'un. I completed a low circuit inside the airfield; notified ATC of my intentions and landed on one of the grass runways. (It says a lot for the modern PFA Permit VLA's - Not many aeroplanes will do that with about a third of the propeller missing!).

So what did I learn?

1. From now on I'll lower the undercarriage and put the prop into full fine EARLY - either descending Dead Side or before and not touch them again for anything. I will still do the full Downwind Checks of course and check again on Final but I won't touch the gear and propeller. I then only have to deal with a simple fixed gear/fixed propeller aircraft in the circuit. Professional pilots carry out the pre-landing checks on their complex aircraft as a matter of course downwind, but spare-time amateur pilots like me do not have their level of skill, currency and experience, so I need to keep things as simple as possible.
2. If things get hectic and I have to make a go-around or do anything unusual I'll leave the undercarriage and propeller alone. There's little difference in performance below 90 knots whether the gear is up or down.
3. I'll Get a Grip - When something irregular happens, aircraft on the runway etc., I'm going to say to myself, "Look, this is out of the ordinary, so let's get everything together - go through all the checks again and then we can make a proper job of landing this aircraft."
4. Get Out of the Circuit - If I'm frazzled and fuming (like I was) I won't even try to continue the circuit to landing; I'll leave the circuit, fly the aircraft around a bit, settle down and then come back into the circuit all calm and collected.

It was nobody's fault but mine; I'm not putting any blame on the other pilot because of the plain and simple fact that Landing Checks are the sole responsibility of the Pilot-in-Command and I can't blame anyone else if I forget one.

I haven't spoken to the other pilot because there's no point - He's hardly likely to admit any fault and even less likely to contribute towards the £4,000+ it cost me for a replacement propeller, engine shock loading checks and airframe inspection.

Despite taking full responsibility, I feel all pilots should be aware that poor airmanship and plain bad manners can put an increased work load on other pilots and might contribute towards an occurrence.

A final footnote, I noticed that the other pilot's aircraft is now for sale - so perhaps I'm not the only one who learned something.

CHIRP Comment: What would you have done and how would you have reacted in a similar situation?

AN ELECTRIFYING FAILURE

Report Text: After an uneventful cross-country flight to renew my weightshift microlight permit I was descending to circuit height prior to making my radio call to rejoin when I heard a loud bang from behind me.

No power was lost and I checked the T's & P's to make sure the engine was normal. I looked over my shoulder to check for prop damage or a bird strike to one of the wheel struts. No engine vibration was noticeable or prop vibrations, so I made a low powered decent to the strip, joined the circuit and landed and taxied back to the hangar.

After dismounting, I had a good look around the engine and could find no damage, but upon further investigation I found that a smoothing capacitor had blown apart and deposited a large amount of coiled paper and foil into the cooling fan area. No other damage was present.

On further investigation of the problem I found that the voltage regulator (VR) was over voltage and that an auxiliary battery in the cockpit had swollen about 30%! On reflection I had had to replace two 1.5A intercom fuses over the past month and put it down to a surge problem.

I later rewired the electrics, tinned all my connections and gave the whole wiring loom a good look over (I am a qualified airframe fitter). To conclude, the VR had lost an earth path due to a loose securing bolt in the terminal box which had caused the radio interference smoothing capacitor to blow and the battery to fail. I was lucky that the battery had not exploded or caught fire and that I was able to make an uneventful landing.

As I had bought the aircraft second-hand, I should have asked the owner if he had noticed anything unusual prior to purchase. The aircraft log book showed a good record, but obviously the electrics had not had a good inspection.

My recommendation is that pilots should get an independent inspection of an aircraft prior to or after purchasing second hand aircraft. A permit inspection does not go deep enough in my opinion. Cabling and circuits should be tested for resistance and over voltage conditions with the appropriate equipment

CHIRP Comment: The electrical configuration described in this report is typical of that of many weight-shift microlight aircraft. Corrosion of components can occur as a result of being exposed to the elements and thus all electrical components should be checked regularly.

As noted by the reporter, a valid Permit inspection, like a motor vehicle MOT certificate, should not be used as the sole basis for a purchase decision. If you are considering the purchase of any second-hand aircraft, it is wise to obtain an independent second opinion of its condition at the time of sale by an appropriately experienced person.