

GA1317

Posted on 02.09.2022 by Steve Forward

Category: [General Aviation](#)

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Report TitleMag Switch found selected to 'BOTH' with key removed

Initial Report

I was asked to park the club training aircraft, a C152, in the hangar for the night and I needed to rotate the propellor by hand in order to attach the towbar to the nose gear leg. Before touching the propeller I checked the mag switch, (a key operated multi-position barrel switch) and saw the key removed. It didn't look quite right however, and on closer inspection I could see that the ignition barrel switch was in the BOTH position, with the key removed, meaning the mags were no longer earthed, but LIVE. I inserted the key, which the barrel accepted, and rotated the switch to OFF. The fault was not immediately repeatable, in that I could not remove the key with the switch selected to BOTH. Observations were reported to the club. Lesson learnt: not to trust the key removed as a positive indication of mags off.

The flying club has investigated, has taken a written statement from all individuals involved, and has disseminated the information about the event to all club members as an immediate awareness measure. The switch in question has been investigated and the fault has been reproduced [see photograph]. As such, it is intended that the switch will be changed. The fault occurred when the key was inserted upside down, and there is anecdotal evidence that this has been seen with this type of switch in the past. I have subsequently filed an MOR, the switch has been replaced, and internal club reporting rules amended to capture events such as this.

Comment

This is a great example of why there is a need to follow standard safety procedures, which, as individuals, we add to based on personal experience. It was a really good spot to notice the lock looked unusual, and excellent that further investigation was actioned. The reporter filed an MOR to the UK CAA, and CHIRP thought it prudent to inform the Manufacturer to widen knowledge of the possible dangers involved with this 'motor car design' from the last century. Ultimately, this incident had very serious safety implications and well done to the reporter for trusting their instincts to make sure that they verified the actual condition of the switch rather than just relying on the fact that the key was removed. The issue of worn keys and mag switches is not a new one, many older aircraft suffer from this problem but the reporter had done the right thing in raising the issue with

the club concerned, and they had done the right thing in having the switch replaced. Although worn switches may well be common, they should not simply be accepted as such because dangerous situations like that reported could have serious consequences. The main lesson is to physically check the position of mag switches and not rely on the key being absent to assume the mag switch is off. Finally, the old adage of 'always treat a propeller as live' is still pertinent, and we commend the reporter for their rigorous approach to their checks.

Key Issues

Dirty Dozen Human Factors

The following 'Dirty Dozen' Human Factors elements were a key part of the CHIRP discussions about this report and are intended to provide food for thought when considering aspects that might be pertinent in similar circumstances.

Awareness – inputs not assimilated or sought (magneto switch not at off when key removed)

Deviation – normalisation of divergence from formal procedures or taking short-cuts (removal of key without selecting magnetos to 'off')

normalisation_of_deviation Deviation

loss_of_awareness Awareness



