

GA1345

Posted on 18.08.2023 by Steve Forward

Category: [General Aviation](#)

Report Title PA28R Undercarriage Woes

Initial Report

I was a PPL scheduled on a flying school aircraft that I know well for a recreational flight to maintain currency. This was the first flight for the aircraft after coming out of maintenance. I was, fortunately, unaccompanied. The plan was for 3 visual circuits then a departure to the south for an IFR RNAV re-join.

Take off and turn to downwind was uneventful and I commenced downwind checks. On turning base leg I checked for 3 greens and was surprised to see nil. I turned final and requested a low pass from Tower. Tower informed that they could see undercarriage down but professionally reminded me that "down" and "locked" were not the same. Another aircraft confirmed this visually. I requested and was granted transit to the south to "sort myself out" and shifted frequency as instructed from Tower to Radar.

I retrieved the checklist "emergency gear down" and recalled from memory my retractable undercarriage conversion training. Accordingly, I checked the circuit breakers, deployed the emergency landing gear selector and yawed the aircraft from side to side. From the way the aircraft handled I actually had less confidence that the gear was down and locked using the emergency gear down control than when utilising the usual switch gear.

The aircraft felt as she always did so I moved the gear lever to the "down" position and watched the "gear transitioning" light go out and the 3x "gear safe lights" not go on. I even tapped them hopefully. I then felt that I had done what I should have done and it was what it was.

I called radar (who were providing a BASIC LARS) and informed them that I wished to declare an emergency. I was instructed to hold whilst conversations were held and then instructed to squawk 7700 and join via a left base. I performed a 2nd low pass across Tower (whose visual confirmation was as before), and re-joined the circuit that I had to myself by now, to land. The sight of the airport fire service at full deployment managed, if possible, to raise my focus further. Having said that I really believed that I had an indicator problem, not an undercarriage problem, she was flying like a PA28R with the wheels down.

So I reviewed and discarded the "Wheels up on landing check list". The touchdown was the gentlest I could manage and all was good. I was given the option of hard parking, which I took – I wasn't that

interested in pushing my luck. I shut down the aircraft, took a deep breath in and out and telephoned the flying school. After expressions of support, I was asked if I had checked the panel light switch. I was at this stage on my own and so I rotated the panel switch upwards to max – no change to landing gear lights. Phew, what sort of idiot would you feel if you had declared an emergency because a light switch was at the incorrect setting? At this stage one of the FIs joined me, and turned the panel switch downwards, past a click point, and on came the gear safe lights. I can now tell you how that idiot feels. I then, in a quite fruity and unrestrained manner, expressed my thoughts that it would be a good idea if this manoeuvre of checking panel lights was on the check list. We then looked at the gear RETRACTION check list, which mentions this very point. I had only reviewed the gear lowering check list. As I write (the next day) this doesn't seem as gormless as it did when I walked back to the flying school

Feeling a little fragile (and gormless) I was much reassured by the supportive attitude of the Head of Training and miscellaneous FIs that were in the office. I took much comfort from the approach of "yes, you could have done something different, but from what you knew at the time, your actions were reasonable". I will leave agreement or otherwise with that sentiment to readers. I also spoke to an old university friend, who is an immensely experienced professional pilot, who reminded me that there are two sorts of pilots, those that have made mistakes and those that are going to.

Somebody built PA28Rs with the ability to make landing lights so dim they cannot be seen. Who would have thought this? It is in fact a well-known "gotcha". The reason I had not come across this before was that I had not boarded the aircraft left in this condition before. But this was the first flight after maintenance...be aware that the aircraft (lights/GPS etc) may well not be as you expect. I am sure that somebody at some time, perhaps during night flying, has probably pointed out to me this quirk of the aircraft but, at the time, in the air, I was under pressure and unable to access this knowledge.

Comment

The PA28R undercarriage indication quirk where they are effectively extinguished with the panel lights at anything other than off is a trap that many others have probably fallen into. Why they designed it in such a manner is a mystery, but it's clearly something that deserves to be publicised widely (both to ATC and pilots) – you don't know what you don't know and it shouldn't be one of those things that only comes to light when old-and-bold pilots pass on the information in circumstances like those reported. Similarly, the fact that the local emergency undercarriage lowering checklist doesn't mention the light switch seems to be a serious omission. The picture of the POH shows that Piper are aware of the issue and have given guidance (my highlighting) but it may be that this has not translated into local checklists.

3.27 EMERGENCY LANDING GEAR EXTENSION

Prior to initiating the emergency extension procedure check to insure that the master switch is ON and that the circuit breakers have not opened. If it is daytime the panel lights should be turned OFF. Check the landing gear indicators for faulty bulbs.

NOTE

Refer to paragraph 4.39 for differences when emergency extension procedure is performed for training purposes.

If the landing gear does not check down and locked, reduce the airspeed below 87 KIAS. Move the landing gear selector switch to the DOWN position. If the gear has failed to lock down on aircraft equipped with the backup gear extender, raise the emergency gear lever to the OVERRIDE ENGAGED position.

If gear has still failed to lock down, move and *hold* the emergency lever down to the EMERGENCY DOWN position.

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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.

Pressure – focusing on the immediate emergency to the detriment of thinking clearly

Knowledge – information not available in the checklist

Communication – the Piper warning information was not contained in the emergency landing gear extension checklist

pressurePressure

lack_of_knowledgeKnowledge

poor_communicationCommunication



