

Clued^{up}

GA Update

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TOWBARS





PAINT IT RED — OR YELLOW

Apologies to the Rolling Stones, but black doesn't really cut it when it comes to towbars

“I was looking out over the taxiway when I saw one of my aircraft heading out with its towbar still attached,” the flying club owner said. “I went back in and phoned the tower to try stop it taking off but I was just too late.” Fortunately, in this case the tower saw the towbar fall off on the runway so no real harm was done, though there was of course an interesting ‘discussion’ when the pilot eventually returned to the flying club.

But that's not always the case — take this incident at Southend Airport which you might recall was classed as ‘serious’ by the AAIB. On this occasion a Cessna 210 took off with its towbar still in place and, as with the flying club's event, the towbar fell off onto the runway and that's when problems started.

The towbar remained on the runway for some 30 minutes during which time

another aircraft landed, another took off and an ops vehicle completed a routine runway wildlife inspection before an Embraer 145 ran over the errant towbar during its landing roll.

The Embraer's commander spotted ‘an object’ some eight to ten metres ahead as he braked, so he applied slight left rudder and felt a light bump through the rudder pedals. Later checks fortunately showed no damage. He recalled that the object had been very difficult to see against the dark asphalt runway and he only spotted it because part of the dark-coloured towbar was lying across the white centreline markings.

While this was going on, the pilot of the Cessna was thinking back about a slight tendency he'd noticed for the aircraft to track to the left while taxiing out and it occurred to him that he couldn't positively

remember removing and stowing the towbar. He knew it wasn't still attached because the landing gear had retracted normally, so he called Farnborough Radar and asked for a message to be passed to Southend. He continued the flight, landing without incident, and a quick check of the nose wheel didn't reveal any damage.

If you're wondering how no-one noticed a towbar on a fairly busy airport's runway for half-an-hour, here's an extract from the AAIB report which sheds some light on why.

‘The towbar was not seen on the runway by two other aircraft that used the runway nor by a fire officer conducting an inspection. It is not known exactly which part of the runway the two aircraft used, so it is possible they did not pass the towbar. Alternatively, their attention may have been on flying their aircraft. The inspection was initially intended



Spot the black one...

to be a wildlife inspection, so it is possible that the driver's attention was focused towards the sky rather than the runway surface. However, the towbar was painted in dark colours so it did not stand out against the runway surface. The towbar might have been seen sooner if it had reflective or other high visibility markings.'

ATC also reported that it couldn't see the towbar from the tower due to its size, shape and colour and the evening sun made it harder to see objects on the runway.

The key to all this, of course, is 'the towbar was painted in dark colours so it did not stand out against the runway surface.'

Take a look inside most hangars and you'll see a rainbow selection of towbar colours, the question, perhaps, is why?

Of course some people understandably want to have kit that matches their aircraft, or to set their towbar apart from others so that it's instantly recognisable, or maybe it's simply always been like that. But here's a thought; if you fly from a predominantly asphalt airfield do you really want a black towbar, or suppose you fly from a grass one, do you really want a green towbar? Suppose someone inadvertently leaves one in their tie-down slot and an aircraft taxis over it...

In its incident analysis the AAIB said: 'It is important that any equipment that could be left on a manoeuvring area is highly visible. The IATA (International Air Transport Association) Airport Handling Manual



Even in use black is hard to differentiate

provides recommendations for ground handling equipment to ensure it is clearly visible. However, these are not widely applied across general aviation ground equipment. Making ground equipment more visible would reduce the likelihood of it being left attached to the aircraft and increase the chance of it being seen quickly if it is left on a runway or manoeuvring area.

Most commercial ground handling equipment is yellow and there's a good reason why. In recent years studies of human colour visual sensitivity has led to changes in the idea of using red to make things stand out. While it works well as a hazard colour in daylight, its position in the colour wavelength means that as



light fades the eye's ability to decipher it decreases and at night red can almost appear black to the eye. In essence, red loses its ability to provide a contrast as light fades.

Without going too deeply into rods and cones inside the eye and how they differentiate colours, the eye is much more sensitive to yellow-green's position in the



A random selection of colours from one hangar



Nice, neat and obvious

◀ wavelength spectrum, particularly in low light and at night, which is why police cars and ambulances now sport healthy doses of it, and even traditionally red fire engines now sport broad patches of yellow.

So, what colour to choose for a towbar? It's not quite black and white... White works well on dark asphalt, but not necessarily on concrete, whereas black or blue as we know aren't so good on the former but stand out well on the latter, and neither is brilliant on grass; it might seem a bit basic, but bright yellow, red and orange do suit many airfields as a stand-out colour and are a good choice for a towbar.

Using more than one colour, or something like black and yellow 'hazard' tape, doesn't work well either because more than one colour can break up the shape, effectively camouflaging the item rather than making it stand out if it's lying around.

As a footnote, while we were taking pictures to go with this article we sought the permission of an owner to photograph their equipment, and when we explained why they said "hmm, perhaps I'll get the spray can out".

If you'd like to read the full report you'll find it [here](#). ■

DISTRACTION — IT'S STRESSFUL

Taxying or even taking off with a towbar attached is probably a little more common than you might expect. If you're wondering 'How can someone do that?' the answer is most likely to be due to distraction and/or stress, the latter being one of the contributing factors in the Southend incident.

The unfortunate pilot had been involved in a traffic incident on the way to the airfield and this probably played a key part in why he forgot to remove the towbar; stress from events unrelated to flying can cause significant distraction.

The pilot reflected that he was distracted by the earlier traffic incident and it was "on his mind" while completing the pre-flight checks. In his report he said that "the towbar is a small stowable unit that does not extend outwards much more than the tip of the spinner, but it is quite obvious and I cannot believe that I missed it". He also left two of his bags behind at the airport which also suggests he was distracted.

Most people suffer stressful or traumatic events from time to time which can be distracting and difficult to put out of mind, and if they happen shortly before flying it might be tempting to continue with a planned flight without realising the effect such an event can have on mental performance.

The *Skyway Code* highlights the importance of assessing fitness to fly, including stress before any flight. If in doubt, the Code suggests using 'IM SAFE' to check that you really are good to go:

- **ILLNESS**
Are you suffering from any?
- **MEDICATION**
Are you taking any?
- **STRESS**
Are you suffering from any?
- **ALCOHOL**
When did you last drink?
- **FATIGUE**
Are you well rested?
- **EATING**
Have you eaten recently?