off and this was not noticed by the controllers due to a lack of a warning system. It is difficult to say whether the controllers could have prevented the incident at this point had they been aware of this fact, but it is a good example of how safety needs to be seriously considered at all levels in an organisation. The acoustic alarms had been removed following vociferous complaints from the controllers. Indeed, alarms which go on and off all the time are a distraction. Instead of dealing with the underlying reason as to why alarms go on and off all the time, the organisation had decided to switch them off – problem solved.

A RECOMMENDATION:
There are a large number of direct and contributory factors based on which many recommendations could be suggested, but there is one recommendation which will probably be beneficial to all concerned. I cannot say that the actions taken by all those involved are uncommon or unrealistic. On the contrary, it is in our nature to stay positive for as long as possible while dealing with non-standard issues and sometimes improvising in order to find a solution. Most of us are selected for our abilities to do so. However, we need to be aware that regardless of how creative we are, we must ensure that all possible outcomes are "covered" and if necessary that additional safety buffers are embedded in all our actions. We need to be able to recognise a situation where a change of plan has to be executed in order to ensure safety. It is also human nature not to believe a warning from a safety net when we think we have full control of what is going on. However, ignoring it is usually the worst decision we can make. Regular human factors training as part of refresher or continuation training would increase awareness and help everybody involved to perform safer in the future. I hope it will also help Brent understand how it is nobody's fault that his impressive two years' hard work on the Trabant 601 was in vain.

CASE STUDY COMMENT 2
CAPT. ED POOLEY

The type of task-completion pressure which the Captain of an aeroplane conducting an ad hoc flight like this one might be vulnerable to is rather different to that of the Captain of a repetitively-scheduled airline sector...

Meeting whatever nominal schedule which has been planned not infrequently becomes a get-there-as-soon-as-possible task. This story is a classic case of that scenario – and although a low speed collision with a particularly frangible stationary object is not a normal outcome, the rate of 'near misses' generated by this sort of flying is certainly much higher than for airline operations overseen by the same safety regulator.

Probably the main reason is that more tactical decision making is routinely required – especially when running late as in this case. "Can do" makes reputations everywhere if it is accompanied by no (obvious) loss of operational safety. And, perhaps surprisingly, good weather as prevailed here also tends to figure in the history of poor pilot judgement.

So, we start with a rushed departure which provides the context for subsequent judgements. The first decision to delay speed reduction in response to 'pressure' from the passengers sets the scene. Then the unexpected TCAS RA spoils the plan and there is insufficient recognition of its consequences in terms of vectoring to the ILS by both the pilots and the controller. The aircraft establishes on the localiser but continues above the glideslope and without reducing speed yet all but a relatively small number of large transport aeroplane types should expect to be at 160 knots by an Outer Marker position. And anyway, even in the absence of prescribed operator procedures, all aeroplanes should be fully established on an ILS approach by that point. Going down whilst slowing down is not always easy.

Loss of the glideslope signal on a nice day should not in itself worsen the situation. And neither should the absence of the PAPI in those circumstances. Any professional pilot should be able to recognise the normal visual runway perspective, if necessary adjusting for runway width. However – and it would probably have happened anyway – the attempt to regain a normal approach path resulted in a rate of descent which was sufficient to trigger a "hard" EGPWS 'PULL UP' Warning. Although we are not told at what height over terrain the hard warning occurred at, since no prior EGPWS "Sink Rate" Caution is mentioned, this hard warning must have resulted from a pretty sharp pitch down. So even with the runway in sight and maybe without a prescribed Operator procedure to automatically initiate a maximum rate of climb recovery, such a response on the first warning seems likely to have been the obvious

one. That the Captain delayed his intervention until there had been three of them is indicative of "can do" without the essential 'no loss of normal safety standards' caveat.

Then follows the idea that a quick circle to land on the other direction of the runway to take what was almost certainly the maximum permitted tailwind component rather than flying the normal go around straight ahead before joining the visual circuit back to runway 22 was a good one. Rather unusually this plan was also "notified" to ATC as an intention rather than requested, adding to the rush for the First Officer making a relatively unfamiliar manoeuvre. And with increased operational risk given that a 10 knot spot wind speed is always likely to mask variation within non-reportable limits. Even without that risk, there seems to have been no active confirmation that a 10 knot tailwind would still provide the landing distance required.

Intentionally landing before the touchdown zone implies a certain nervousness about the available landing distance too – clearly well founded! At least the pilots steered clear of the localiser aerial – not all of them are yet as frangible as a Trabant and even frangible ones are designed to avoid damage to the aeroplane hitting them not to the installation itself.

We can conclude without much difficulty that most of what happened was about poor piloting and, more specifically, poor Captaincy. But ATC had a secondary role. The controller appears to have vectored the arriving aeroplane into conflict with traffic under their control and then failed to adjust the track miles to compensate for the effect of the RA. And he also accepted the pilot 'go around' intention – although he may have had little choice in the matter if the manoeuvre was already in progress.

ATC management can be criticised for allowing cleaners into an operational environment rather than waiting until it was non operational – or providing enhanced cleaner training for the 'always-open' case. And for the airport operator, perhaps even staff vehicles should not be permitted to park within what sounds like the runway protected area....

A RECOMMENDATION

Difficult to choose – but clearly it is the way the aircraft was operated which was the main cause of the eventual outcome. So I will go for an independent review of the standard operating procedures of the aeroplane operator – or, depending on the relative maturity of the safety regulator responsible for granting the Aircraft Operating Certificate or its equivalent, an allocation of oversight resources and methods which reflects assessed operational risk rather than just the conventional pre-announced inspections at fixed intervals.

CAPTAIN ED **POOLEY**

is an Air Operations Safety Adviser with over 30 years experience as an airline pilot including significant periods as a Check/Training Captain and as an Accident/Incident Investigator. He was Head of Safety Oversight for a large short haul airline operation for over 10 years where his team was responsible for independent monitoring of all aspects of operational safety.