Allied Vehicles

Mr. David Rdley.
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Wiltshire & Swindon Coroner's Office.
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Glasgow,
16/10/2026

Dear Mr. Ridley.

Allied Vehicles Ltd Response to Section 28 report on Frank Lawrence

I write m response to your letter of the 20th of July this year and Section 28 report, addressed to our Managing Director/Head of Safety, regarding the death of Mr. Frank Lawrence. I look after regulatory affairs at Allied and have been asked to reply to you on this matter. We are constantly trying to improve the quality of life for wheelchair users seeking greater mobility and we are grateful that your report has provided an opportunity to do so.

Before I outline the actions we intend to take as a result of your and PC [redacted] findings. I note that Paragraph 7 of the report asks for a response to the report. I would like to submit comments and observations on a number of paragraphs in PC [redacted] report, as I believe these might be helpful, although not all of them relate directly to us and the actions we need to take. I am not sure whether this is permissible, but offer them in the general spirit of a desire to prevent a recurrence, to the greatest extent possible. I hope this is acceptable? Throughout. I have use the same paragraph numbenng as in the report. My comments are as follows:

Comments

Paragraph 5.2.3.12 - 1note that for this particular care home, certain residents have mental health conditions and their behaviour can become challenging. I can appreciate that in such cases, a care home worker might not wish to travel in close proximity to such a patient, but had this been the case. I agree with PC [redacted] that this particular event would most likely have been avoided. The vehicle concerned, was fitted with three seats in the first row - a driver's seat and a double front passenger seat. As such, the seat backrests formed a continuous barrier across the full width of the vehicle, affording the front seat occupants at least a degree of protection, but also preventing them from effectively monitonng (or quickly reaching) any of the passengers without stopping the vehicle and opening doors * itself, potentially dangerous if a passenger is mobile and has behaviouralissues, particularly if the vehicle is in close proximity to other traffic when stopped and the doors opened. At the very least, perhaps an inexpensive

additional driving mirror (of the sort used by driving instructors) might have provided [redacted] with a better view of the passengers in transit?

Paragraph 5.2.3.14 - As Mr. Lawrence was noticed 'fiddbng with something around his waist" and in Paragraph 6.4.3. [redacted] statement recorded that Mr. Lawrence's seat belt was undipped, I would like to draw attention to the availability of various "seat belt buckle guards' or "seat belt buckle safety covers" that are inexpensive and readily available from various online vendors. An internet search for either of those terms should yield plenty of suppliers. They are marketed specifically for children and disabled people with behavioural problems. Once fitted over the seat belt buckle release button, a separate key (or suitable object) needs to be inserted to release the belt. Such a device might provide a degree of safety for the other vehicle occupants too, in the case of passengers with challenging behaviour. The use of such devices is controversial, both from an equality perspective and from a compliance perspective, and each case would have to be considered carefully on its own merits, but in certain situations, they can be a valuable aid. How well this would work in a care home application, were different people are likely to be transported in the same seating position, using the same seat belt buckle guard, would also need careful consideration.

Paragraph 5.2.4.9 * There seems to have been some confusion as to where to attach the front wheelchair tie*down hooks on Mr. Lawrence's wheelchair. If a wheelchair manufacturer designates a wheelchair as "transportable" (i.e. suitable for use as a seat in a motor vehicle), it will comply with international standard ISO 7176-19. This requires the wheelchair manufacturer to apply a "karabiner" symbol: % to the chair at each tie-down securement point. Looking at the photos in the report, this appears to have been done on Mr. Lawrence's wheelchair. Some wheelchair manufacturers might choose to exceed the minimum obligation by painting the attachment points a different colour but the actual requirement is only for the symbol.

Paragraphs 5.2.4.11, 5.2.4.12. 5.2.5.8 and 5.2.5.9 • there seem to have been multiple opportunities for [redacted] to travel on one of the fold-out seats in Row 3. behind the wheelchair position, each of which she declined. I note the challenges associated with passengers who have behavioural issues, but it does seem that other witnesses found this unusual and regarded it as standard procedure for one carer to travel in the passenger compartment. I have to assume that within the care home, the workers are also in close proximity to the same residents with behavioural issues and are expected to deal with such situations and have been trained to do so? Even if she had not prevented the removal of the front tie-downs, the mere presence of the deployed seat behind the wheelchair (the seats fold to allow the wheelchair in and out), is, in my opinion, very likely to have prevented the chair form tipping over backwards to the extent that a head injury could occur.

Paragraph 5.2.5.6 - [redacted] statement that Frank's wheelchair did not have fixing loops for the rear tie-downs is puzzling. If the wheelchair in the report photo: "JJB/01-WIL 0009" was the actual wheelchair concerned (and Paragraph 5.3.3.8 implies that it was), the orange tie-down attachment hooks are plainly visible in the photo?

Paragraph 5.3.3.4 • Allied Vehicles Ltd loaned a vehicle of the same model for the reconstruction work. This paragraph mentions that the S Hooks fitted to the vehicle involved in the incident were thicker than those on the vehicle loaned for the reconstruction and that the thicker ones did not fit into the orange tie-down attachment points on the rear of the wheelchair. Notwithstanding that there appears to be an inconsistency with Penny's statement (that there were no hooks), there is another puzzling observation. As previously mentioned, wheelchairs designated as "transportable" are. under the requirements of ISO 7176-19. required to have suitably strong tie-down attachment points, marked with the karabmer symbol. The size of these attachment points is prescribed in that standard. In addition, there is another international standard * ISO 10542- 1. for wheelchair tie-downs and occupant restraints. This specifies requirements intended to ensure that the hooks (or other end fittings) on *any* complaint wheelchair tie-down, should be capable of engaging with *any* tie-down attachment point on an ISO 7176-19 compliant wheelchair. Lastly. I should also explain that wheelchair tie-downs from this supplier, are available for wheelchairs weighing up to 85 kg. wheelchairs weighing up to 150kg. and wheelchairs weighing up to 200 kg. It is therefore quite possible that this vehicle was fitted with 85kg rear tie-downs and that the vehicle we loaned for the reconstruction was fitted with either 150 or 200 kg tie-downs - which do have larger hooks. However, *all* of them, being ISO 10542-1 compliant, should engage with *all* ISO 7176-19 compliant wheelchairs.

Paragraph 5.3.3.9 - It is correct that the User Guide for the vehicle does not specifically instruct the user to apply the wheelchair's brakes. This is an issue we intend to address in future user guides, (see below for more details).

Paragraphs 5.3.3.15 - 5.3.3.22 - I am indebted to PC [redacted] for these findings. This is the first instance of a wheelchair user removing (or potentially having removed) their own front tie-downs whilst being driven, that I have been made aware of. On reading the report. I set up a similar vehicle and attempted to reproduce PC [redacted] findings. Using a manual wheelchair (not of the same design as the one in this incident, but sufficiently similar and with an effective brake on each rear wheel). I tried the following situations, using a spring balance to get a rough idea of the numerical value of the effort that had to be exerted on each front tie-down hook to allow its removal from the wheelchair. In each case. I used front tie-downs wrth 4 metres of webbing on them and left about 770mm between the slot in the front tie-down retractor and the point where the webbing bore against the inside of the loop of the steel hook to which it was sewn. The rear tie-downs were 85kg Q*Straint QRT Deluxe models of the type fitted to the vehicle involved m the reconstruction, as a 'worst case*", these being the 'weakest' rear tie-downs.

My findings were as follows:

Test 1. The occupied wheelchair (1 10 kg occupant in order to impose a good degree of grip between the rear tyres and the vehicle floor) was positioned at the bottom of the ramp and the front tie-downs locked using the switch in the vehicle. The wheelchair was pushed up the ramp and into its travelling position with no attempt to tension the front tie-downs. The wheelchair handbrake was applied and the rear tie-downs, tensioned by hand using the knobs on the sides, according to the user guide supplied with the vehicle. Using the spring balance. 1.5 kg of effort

(approximately 15 Newtons of force) was required to pull the left hand tie-down hook off the chair, and 1.35 kg to pull the right hand one off.

Test 2. As with Test 1, (having pulled the front tie-downs out to the bottom of the ramp, so they had been pulled fully out of their retractors between each test). Switched off electrical power to the front retractors and gently tugged the wheelchair backwards three times to remove some slack from the front tie-downs, then applied the wheelchair handbrake and tensioned the rear tie-downs by hand. Using the spring balance. I recorded 6.8 kg to pull the left hand tie-down hook off the chair. 7.0 kg to pull the right hand one off.

Test 3. Pushed the wheelchair back to the same place, (having put the front tie-downs on at the bottom of the ramp, so they had been pulled fully out of their retractors between each test). Removed power to the retractors and gently tugged the wheelchair backwards three times, tensioned the rear tie-downs by hand *without applying the wheelchair handbrake,* and then applied it after the rear tie-downs were tensioned. Using the spring balance. 28 kg of effort was required to pull the left hand tie-down hook off the chair. 30 kg to pull the nght hand one off.

I believe these test results align very well with PC [redacted] observations, and add some approximate numerical values to the effort required to unhook the front tie-downs. In the case of Test 1. these forces made it relatively easy for an adult male with reasonable strength, dexterity and mobility to reach down and unhook the front tie-downs. The higher values in test 2. represented significant effort, but it was still possible. In test 3. it was. in practical terms, all but impossible to unhook the front tie-downs.

Discussion

The front tie-downs are deliberately long, so as to reach the end of the ramp, allowing them to be attached to the wheelchair before ascending the ramp. This is a safety measure, intended to prevent the wheelchair rolling back down the ramp, should the assistant lose their footing. However, when the wheelchair is in position, this does result in a large number of turns of webbing rolled on to the retractor. Even though locked, it is possible to cause the turns of webbing to slide over one another when the hook is pulled. As a result, we changed the text in the user guides to include an instruction to roll the wheelchair backwards and forwards against the front tie-downs before attaching the rear tie-downs. This change was rolled-out for different models as their user guides came up for review, and this particular model (the Independence) incorporated the new wording from February 2024.

We have devoted a great deal of thought to the issue of releasing the wheelchair handbrake poor to tightening the rear wheelchair tie-downs. PC [redacted] investigation, (and our own subsequent experiments) suggest a significant improvement in wheelchair security by doing so. However, the process needs to be carefully managed. If the vehicle is parked on a downhill slope, for example, releasing the wheelchair brakes before fitting the rear tie-downs would result in the wheelchair rolling forward, with the potential to injure the wheelchair occupant's

feet. Powered wheelchairs, as a safety feature, tend to lock their motor drives as they come to a standstill or power is removed. It would therefore be necessary to disengage the motor drives manually before tensioning the rear tie-downs and then re-engage them. This is not always easy in the confined space within a wheelchair accessible vehicle and we need to bear in mind that often, outside of the professional care home or taxi setting, the carers accompanying and securing the wheelchair users, are often themselves of reduced mobility, strength and dexterity.

There is some argument for transporting any wheelchair with the brakes off and the motor drives (if powered), disengaged. This allows the chair to move slightly, in transit, and as it does so. the tie-down ratchets will automatically take up any remaining slack. However, many wheelchair users find this movement, early in the journey, very disconcerting, particularly under cornenng where the front of the wheelchair might move sideways a little on its castors. For this reason, coupled with the difficulty in accessing the levers, knobs or pedals, (each powered wheelchair is different) once inside the vehicle, we have stopped short of amending the instructions to require motor disengagement on powered wheelchairs. Instead, an instruction to drive the wheelchair backwards a few times under its own power, against the front tie-downs to take up the slack, will be inserted. This. I feel, will achieve much the same effect as tensioning the rear tie-downs with the handbrake released on a manual wheelchair.

Historically, wheelchair tie-down and wheelchair accessible vehicle manufacturers have had to tread a fine line between providing sufficient information to ensure the wheelchair user travels safely, whilst at the same time, not over-facing the user with so much information that it discourages correct use of the equipment. As niche vehicles, covering low annual mileages, adverse incidents are rare and the data is often poorly-collated by accident investigators. However, it is (anecdotally) the case that the vast majority of adverse incidents involving wheelchair tie-down and occupant restraint equipment, arise from misuse - or no use at all. Hence the desire to keep instructions for an inherently complicated process, to an absolute minimum. As it is. (I attach a current User Guide *for* the same model), there is already significantly more information in it than was the case for this 2019 vehicle.

Paragraph 6.3.2 - as noted earlier, (see comments on Paragraph 5.3.3.4). I cannot understand this, as all wheelchair tie-downs compliant with ISO 10542-1 should be capable of attaching to the tie-down attachment points of a wheelchair that complies with ISO 7176-19.

Paragraph 6.4.3 - as mentioned in Paragraph 5.2.3.14. it might be helpful for care homes dealing with passengers with behavioural / cognitive issues, to consider a buckle cover.

Paragraph 6.5.3 - I feel that the front straps, if disconnected from the wheelchair, would not have trailed on the floor, but would have retracted into their housings under the action of their return spnngs. Obviously, if the hook caught on something before that happened, then there would have been webbing on the floor, albeit under a gentle tension. I note that there was an e-mail from our customer care manager to a PC [redacted] sent on the 12r of January this year, pointing out the same thing. In correct working order, the front tie-downs should be capable of retracting all their webbing, unassisted. This is also noted by PC [redacted] in Paragraph 6.5.6.

Proposed actions

In Section 7 of your Regulation 28 report, you ask us to set out details of any action taken, or proposed to be taken as a result of this incident and to put a timetable on doing so. Clearly, we are extremely keen to ensure that the chances of such an incident happening again in the future are reduced to the greatest extent practicable. I can therefore confirm that we do intend to take action as a result of this report. I would like to offer the following actions:

1. Re-wording of the text in the user guides to instruct the user to roll the wheelchair backwards against the locked front tie-downs once in position so as to take up the slack in the webbing within the retractor. This con be seen in Paragraph F on Page 7 of the attached current user guide for that vehicle model. This action has already been carried out for all our current models and should already go a long way towards ensuring that such an event is less likely to happen again.

2. Notwithstanding the arguments against doing so. set out in the Discussion section above, and following discussions with the wheelchair tie-down equipment manufacturer, we have decided to amend all the user guides to introduce an extra step in the wheelchair securement process for manual wheelchairs. We intend to insert an additional instruction to apply the wheelchair brakes after taking the slack out of the front tie-downs, fit the rear tie-downs. then release the brakes and tension the rear tie-downs, and then apply the brakes again. For powered chairs, we intend to instruct the user to drive the wheelchair backwards against the locked front tie-downs a few times under its own power, to achieve the same effect.

3. Our wheelchair tie-down equipment manufacturer has agreed to re-word the user instructions supplied with all the tie-down equipment they manufacture.

4. In conjunction with the wider wheelchair accessible vehicle industry, our tie-down equipment manufacturer has committed to making a similar amendment to their own user instructions supplied with the tie-down equipment in the case of manual wheelchairs, and to make some instructional videos to be circulated online, showing how best to install a variety of wheelchairs in a typical wheelchair accessible vehicle. As yet. we still need to decide on the best way to draw attention to these videos. The idea of QR codes within the vehicle that can be scanned by a mobile device has been mooted, but this idea needs further work, as a significant percentage of our vehicle users are elderly or might struggle to access online content.

5. We also intend to re-train all our field sales staff and mobile technicians in the revised instructions, as all our retail sales of wheelchair accessible vehicles comply with Part 2 of the UK standard. PAS 2012 : 2025. This sets out requirements for the retail of WAVs and already includes a requirement to demonstrate the correct use of the wheelchair tie-down and occupant restraint equipment to the end user, both when demonstrating a vehicle for a prospective sale and again on the handover of the vehicle following a successful sale.

Timescale

Finally, you ask for a timescale for completion of these proposals. Work has already been compOleted on Action 1 for all our products. Work has started on Actions 2. 3 and 4. We intend to roll the revised user guides out as stocks of existing ones require replacement. Work on Action 5 is expected to start early in the New Year as the revised user guides start to arrive. We hope to have all actions completed within 12 months of the date of this letter.

I hope the above measures and timescale will be acceptable to you?

Yours faithfully.

[redacted]

[redacted]
Reguatory Affairs Engineer.
Allied Vehicles Ltd.