

# STOP THAT

Retrofit automated braking systems can prevent a vehicle rolling away, or do away with avoidable slow-speed incidents. By Kevin Swallow

Witnessing a vehicle rolling away from a driver is frightening. In a split second, the observer contemplates the risk of injury and damage it will cause. Thankfully, no harm came of the incident that the author saw first-hand, thanks to a robustly-built wall. In this case, the driver had stopped the truck on a slope, but did not apply the handbrake.

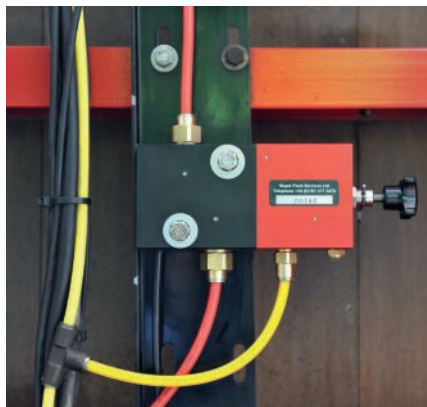
Best practice recommends that drivers couple or disconnect trailers on flat ground. HSE research (see links below) has determined that not putting the handbrake on is the main cause of vehicle runaways.

So, what measures can be taken to tackle this problem? There are a range of solutions, of varying technological sophistication, depending on how much responsibility one assigns to the driver for rollaway safety.

At one extreme are those that remove the driver entirely. At the Argos depot at Eurocentral next to Bellshill, Glasgow, lorry drivers collecting or delivering goods must disconnect the air line between tractor unit and trailer, place a cap on the end of the trailer's connection, and hand over their keys to warehouse staff until they are ready to depart. A belt and braces solution.



Near the opposite extreme is the view of Richard Barrett, managing director of Nottingham safety system supplier Pownall Fleet Safety. He argues that safety systems need to first and foremost help drivers, through an audible warning system, if they leave the cab without putting the handbrake on. He says: "We see [automatic stop systems] very much as an aid for drivers, and not something that allows them to abstain from their responsibilities."



A different perspective again comes from Stephen Moir, formerly Flogas Britain fleet engineer, and now Ward Recycling fleet manager. He says: "Any vehicle safety technology that removes the need for driver interaction is valuable, and it adds in an extra level of protection that any business would benefit from. To autonomously stop the potential for a vehicle rollaway is a game-changer; for anyone operating vehicles this should be a consideration. It isn't enough to believe you don't have a problem."

Moir, who was named IRTE Fleet Engineer of the Year in 2018, installed Vision Techniques' BrakeSafe system to the Flogas fleet. Should a driver forget to apply the brake and get out of the vehicle, the system would automatically take control to stop the vehicle and eliminate a vehicle rollaway.

In fact, it is only recently that trucks have been able to offer more than just audible warnings for drivers who leave the cab without applying the handbrake.

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The breakthrough has been the introduction of electronically operated handbraking systems.

What is believed to be the first automated park brake was Renault Trucks’ 2016 Anti-RAPB. It was a British-led initiative that adapted software from the OEM’s Lyon HQ to retrofit a fleet of retail vehicles. Mike Stringer, Renault’s product engineer, says that the project’s success led to Renault Trucks offering it across Europe.

Later this year, Ohio-based Bendix – represented in the UK by Knorr-Bremse – will launch its Intellipark electronic parking brake control system. Fred Andersky, director of customer solutions, says it prevents rollaway and runaway crashes by automatically setting the brakes if the driver exits the vehicle while it is not parked and the handbrake is not applied. Designed for air-braked vehicles, it uses interlocks installed in the seat, seatbelt or cab door that trigger a valve to put the brakes on.

Other systems tap into trailers’ air brakes. For example, Maple Fleet Services’ SafeLoader product features a pneumatic valve specially installed into the vehicle’s emergency brake line. Before loading or unloading operations begin, warehouse or loading bay staff use a bespoke key that fits into the valve to apply the vehicle’s brakes, preventing it from moving. That system puts control of the vehicle in the hands of the people working in the trailer, says marketing manager Paul Nunn.

The SafeConnect system, also from Maple (pictured, p15) operates in a similar way: permanently applying the trailer braking system throughout the coupling process. Adds Nunn: “Often when a driver connects the red air line from the truck to the trailer, it releases the trailer brakes. That is when a potential rollaway might occur. We fit a valve underneath the trailer by the fifth wheel and it intercepts the red air line.”


Of course, before the trailer makes it

to a loading bay, the truck must reverse it safely into position. Operators looking to reduce rear-end damage might consider Haldex’s EB+ Soft Docking 2, which dates back to 2011. A second generation was launched in 2015. Once the truck is in reverse gear, an ECU wired into the electric braking system uses ultrasound sensors to monitor the distance to the bay, automatically braking the truck in stages.

**REVERSING OPTIONS**

There are options, too, for automated stopping when the driver (who remains in the cab) is reversing. The Banksman Auto Braking Reversing Radar from Vision Techniques has been retrofitted to vehicles operated by New Forest Council in Hampshire. It uses microwave radar to recognise objects. Anything untoward and the driver is warned; if the danger is ignored, the brake is automatically applied, using a valve, to prevent a collision.

New Forest Council transport manager John Steed says: “The majority of our insurance claims were issues due to reverse collisions. Since installing the auto braking system on our vehicles, we haven’t had a single reversing accident with our trucks.”

In other news, ISS (Innovative Safety Systems) fitted its reversing radar product to the fleet of trucks belonging to infrastructure company FM Conway late last year. Sales director Oliver Hoadley recalls: “They commissioned ISS to develop a bespoke auto-stop reverse radar system. Using sensor technology, the system automatically applies the vehicle’s brakes when an object comes within four metres of the vehicle, coming to a complete and controlled stop.” 

**FURTHER INFORMATION**

*Coupling safety research – HSE (2015): [www.is.gd/redozu](http://www.is.gd/redozu)  
Renault Anti-RAPD: [www.is.gd/nikira](http://www.is.gd/nikira)*

**FIFTH WHEEL SAFETY**

British Gypsum has worked with accessory engineering company The Vehicle Group to develop a sensor that automatically stops a tractor if its fifth wheel fails to engage the semi-trailer kingpin, preventing the risk of a semi-trailer becoming detached and falling to the ground.

The UK construction product supplier, whose drivers perform 700,000 couplings and uncouplings per year, states that the CoupleSafe system detects misconnections such as when the pin is behind the fifth wheel jaws, on top of the jaws, or not fully engaged. In those cases, the system activates the vehicle’s hazard lights, sounds audible warning messages in the cab, and displays a warning message on the dashboard. It also prevents the vehicle from pulling away.

In that case, the driver must get out of the cab to check, and reset, the system. An inbuilt data recorder keeps a record of all of the event information.

Kirk Ennis, distribution improvement manager (pictured below), says: “Systems are on the market that can indicate if coupling has been successful or not, using a red or green light. However there is still great risk there, as it relies on the driver seeing the light and taking action, it doesn’t prevent the vehicle from moving away. CoupleSafe removes the risk of an unplanned uncouple occurring, as it removes the risk of human error.”

The device is soon to be licensed for general sale.

