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READY FOR ANYTHING

CRUDE BY RAIL • THE SAFETY RECORD IS IMPROVING BUT ACCIDENTS CAN STILL HAPPEN ON THE RAILS. EMERGENCY RESPONSE KITS PROVIDE A MUCH NEEDED SAFETY NET, SAYS TROY SCARROW*

CITING A FORECAST from the US Federal Highway Administration (FHA), the Association of American Railroads (AAR) reported in October 2020 that total railroad freight shipments in the US will rise from 18.6bn tonnes in 2018 to an estimated 24.1bn tonnes by 2040, an increase of 30 per cent. A good portion of this growth is being driven by the historically high levels of oil and natural gas that is being produced and transported in the US, creating a need for more shipping of crude oil by rail.

Since crude oil and natural gas are considered hazardous materials, there are

now approximately 3.1bn tonnes of hazardous materials – which also commonly include chlorine, anhydrous ammonia, ethylene oxide and sulphur dioxide – transported by long-haul rail in the US each year. Despite this growth in long-haul rail transport, railroads remain one of the safest ways to transport both hazardous and non-hazardous materials.

According to the US Federal Railway Administration's (FRA) 2018 rail safety data, the overall rates for train accidents, equipment-caused accidents, track-caused accidents, derailments and employee

injuries, per million train miles travelled, have declined by as much as 26 per cent since 2009, depending on the category. More specifically, between 2008 and 2018, the hazardous material (hazmat) accident rate fell by 48 per cent and, in 2018, more than 99.999 per cent of rail hazmat shipments reached their destination without a release caused by an incident.

These heartening statistics are much more than a happy coincidence. They are the manifestation of the railroad industry making a strong commitment to ensuring that its infrastructure and rolling stock are up to date and in top working order, that all regulations regarding hazmat hauling are steadfastly observed and that its employees are properly trained.

ACCIDENTS WILL HAPPEN

The railroad industry has a goal of one day becoming accident-free. If this operational nirvana is ever to be achieved, railroad operators must be familiar with the risks inherent in the handling of hazardous materials – and the ways that they can lessen the chances that an incident involving the release of hazardous materials will occur.

There are three primary potential risks every time a train laden with hazardous materials pulls away from the depot:

- **Accident:** Accidents are the hardest thing for railway operators to protect against since their rate of occurrence can be capricious and they are often caused by external factors that are entirely out of the operator's control. These can range from an automobile or truck that has stopped illegally on the tracks to a tree that may have fallen across the tracks during a passing storm.
- **Mechanical Failure:** This category encompasses all leaks and other releases from malfunctioning or improperly secured pressurised railcar pressure-relief devices, valves, couplings, hoses, fittings and tank shells.
- **Operator Error:** Human beings are fallible creatures that are susceptible – no matter



their level of conscientiousness or training – to making mistakes. So, all railroad technicians must take every precaution necessary to ensure that every coupling is attached properly and every valve is closed properly before, during and after every railcar loading or unloading.

A FRIEND TO FIRST RESPONDERS

Despite the next-generation design and operation of railcars and their ancillary components, the high-level training that rail personnel receive, the attention paid to guaranteeing that the railway infrastructure is in good working order and stricter regulations governing the transport of hazardous materials, the next hazmat release incident is always looming. To ensure that the sometimes inevitable doesn't become the next catastrophic, headline-generating hazmat release incident, manufacturers of railcar equipment have developed Emergency Response Kits (ERKs) that are marketed to fire departments, emergency response contractors and railway dangerous goods officers, or any other organisations that employ first responders who are tasked with responding to railroad accidents or non-accidental releases (NARs).

One of the companies that has taken the lead in the development of ERKs is Midland Manufacturing, based in Skokie, Illinois. Its B-240/B-243 Emergency Response Kit has been developed to give emergency responders three easy-to-use cover assemblies and a carrying case that contains all of the tools and parts needed to quickly and safely cap hazmat leaks emanating from the top of pressurised



railcars in the event of an accident or NAR incident.

A typical ERK consists of a toolbox containing a broad range of tools and replacement parts; cover cans of five different sizes that are used to cap a leaking valve or fitting, along with corresponding gaskets; and a bridge that is used to secure a cover can to the railcar's manway cover plate. Knowing the importance of the ERK's components being able to perform reliably in high-leverage situations, all of the tools are highly engineered and designed to be durable no matter the pressures, product flows and general abuse they are subject to during a hazmat release incident.

Like any product, the user of an ERK is only as proficient in its use as the level of training they receive. With that in mind, the providers of ERKs offer training classes and videos that are formatted to make the user capable of performing confidently during the most dangerous release incidents.

In fact, it is recommended that all first responders practice using the components in the ERK at least twice a year and, if possible, train with an actual hazmat railcar as a way to better familiarise themselves with the railcar's components and where things can go wrong. The ultimate goal is for first responders to feel as comfortable as possible with the ERK and its components and capabilities long before they ever have to use it.

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ALTHOUGH RAIL TRANSPORT IS VERY SAFE, IT IS BEST TO BE PREPARED. MIDLAND MANUFACTURING IS PLAYING ITS PART WITH ITS EMERGENCY RESPONSE KITS