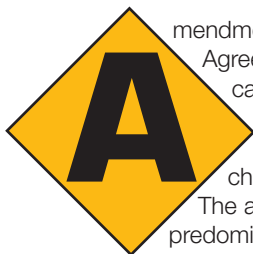


Chemical

With more substances being qualified as dangerous goods, some operators may not know the implications of what they are transporting. Meanwhile, others are investing in more efficient, flexible and cleaner vehicles, says John Challen



Amendments since 2007 to the European Agreement concerning the international carriage of dangerous goods by road (ADR) have had a major impact on the handling of such goods and also changed the list of substances affected. The amendments in ADR 2007 revolved predominantly around transport security. It became obligatory for drivers who were carrying ADR loads to carry photographic identification and also to have watched a government-funded training DVD on the subject.

ADR 2009, which came into force in January 2009, took things one step farther, with all dangerous goods having to be transported with written instructions relating to their carriage, via a TREM (transport emergency) card. The new regulations advised that all dangerous goods should be covered by one set of instructions. Prior to this, each category was covered under nine different UN numbers. Designed to assist with clarification, however, many believe that the instructions are now too broad, given the sheer range of substances covered by ADR.

Further changes related to tunnel codes, which are now classified from A to E, from least to most restrictive. The objective behind that change was to make it easier for operators to plan journeys. Nine tunnels are applicable to the scheme in the UK, with a mix of C, D and E ratings.

The most restrictive tunnels in the list include four in London – Limehouse, Rotherhithe, Blackwall and East India Dock Road.

So what do these new ADR regulations mean for operators and the transportation network? According to Ali Karim, who, in 2004, set up the Hazchem



Network (which helps 40 operators in the delivery and distribution of ADR-registered chemicals from its base in

Rugby), the changes have been very welcome.

Former head of UK operations at Linde Gas, Karim says he couldn't believe that, in the 1980s, some haulage companies had no-one on their books who knew anything about chemicals. "All they needed was a carriage of dangerous goods certificate from the FTA," he recalls.

Today, the Hazchem Network is responsible for delivering 1,000 pallets a day, according to Karim. It also works with other pallet networks, covering chemicals and security. The driving force behind the network was to prevent the dog-legs that were forming in distribution, where operators were running empty loads, having completed their scheduled deliveries.

Classification upgrade

Karim believes that this goal has been achieved and certainly operators such as John K Phillips are impressed. "The operation is done on a postcode basis and, if I can't deliver goods locally, it is very easy to deliver to other operators [who will do the job]," says Darren Meadows, general manager at the haulier.

Recent reports suggest a flurry of activity within the network, in terms of membership numbers. "We've had a staggering amount of growth," states Karim. One of the reasons, he believes, is the changes to the classification of dangerous goods (Table 1). "With more chemical information available, there are a lot of chemicals now being reclassified as Class 9," he explains.



reactions

There are also a lot more products that fall under the ADR banner, essentially because they can cause an environmental hazard. Karim cites some lubricating oils and various polymer suspensions. "They may not be flammable or toxic, but, if they get into the water supply, they affect the water's BOD (biological oxygen demand) and COD (chemical oxygen demand)," he warns.

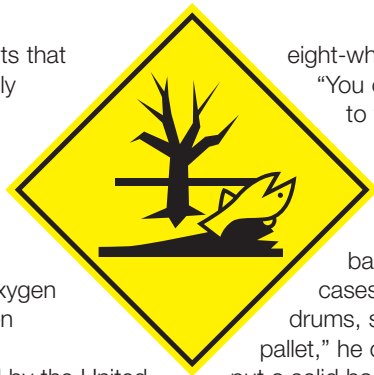
The main UN numbers (assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods) for environmentally hazardous substances are 3082 (liquid) and 3077 (solid). Some substances that have been carried ADR-free for years now do fall under ADR, so drivers will be required to undergo more training. Karim explains this requirement as: "If a driver has an IBC (inter bulk container) of formaldehyde, for example, that spills, he or she needs to know what to do in the event of what would be a dangerous incident."

Risks of non-compliance

Graham Doughty from transport consultancy TMC Assist says his organisation has been contacted by people in the industry regarding ADR regulations, but normally only when it is too late and the authorities have caught up with them. "People that fall foul [of the regulations] are typically smaller operators moving nondescript materials," he says.

Cost is the determining factor in a number of cases of non-compliance, according to Doughty, who cites one unnamed operator that has a business in the construction industry and deals with large amounts of asbestos waste removal. "The company has one of the best health and safety procedures when dealing with [asbestos waste] from a construction site," he says. "But, when it goes from rubble to lorries and then to the building site, there are no systems and procedures for dealing with the asbestos."

The main reason, again, is cost, says Doughty, who also reveals that this organisation doesn't have gantries at its premises – required to ensure that its



eight-wheeled tippers are loaded correctly.

"You can't make them spend the money to train the drivers or provide the equipment," he admits.

Despite the new regulations, Karim says he, too, has noticed that consignors have been cutting back on costs. "We've had a lot of cases where nails have pierced through drums, spilling corrosive liquids all over the pallet," he comments. "Good consignors will put a solid backing board at the bottom of the pallet to cover over the gaps, but pallet presentation is not the most important element." More and more, says Karim, the onus is being placed on hauliers to keep their TREM cards and training up to date and documented.

Operator investments

Meanwhile, in bulk tanker transport, concerns about ADR are less about possible contamination, and more about overall efficiency of vehicle fleets, in terms of the vehicles themselves, as well as the journeys they make.

Like Karim's Hazchem network, companies such as Total Lubricants are keen to limit the amount of time their tankers run empty and to ensure better route planning. To help meet this objective, Total



Changes put to the test

While the changes that came into effect with the introduction of ADR 2009 made no difference to the maintenance issues relating to ADR vehicles, the tank testing specifications are more of a problem, and an unknown one at that.

Presently, there are two certifications of inspection or testing: Schedule 2 (old tanks) and ADR. Schedule 2 requires that all dangerous substance tanks have a periodic examination, in accordance with a suitable written scheme. ADR tank certification applies to tanks that are manufactured after 10 May 2004.

"The requirement eventually will be for all tanks to be tested to ADR," says Peter Harris, UK operations manager for petroleum special products at MAN. "The (old tanks) Written scheme will then no longer apply. However, these talks have been ongoing for 18 months, and we are still waiting for final drafts."

The concern with such an overhaul, says Harris, is that engineers may be testing older tanks (some more than 15 years old), when they don't know the weld history, or the build history, of the tanks.

"[The new certification] means we will be testing the tank at a higher spec than Schedule 2, often with limited knowledge – and a lot of operators will move away from old tanks," he asserts.

has upgraded its complete fleet of six tanker tractor units to MAN TGX440s, each working with a tanker developed with engineering assistance from Wincanton. The MAN units themselves have been upgraded, thanks to some re-mapping of the engine management system, while a number of safety and environmental

Table 1: ADR substances by class

| | |
|------------|--|
| 1 | Explosive substance or article |
| 2 | Gases |
| 3 | Flammable liquids |
| 4.1 | Flammable solids, self-reactive and desensitised explosive |
| 4.2 | Substances liable to spontaneously combust |
| 4.3 | Substances which, in contact with water, emit flammable gases |
| 5.1 | Oxidising substances |
| 5.2 | Oxidising peroxides |
| 6.1 | Toxic substances |
| 6.2 | Infectious substances |
| 7 | Radioactive material |
| 8 | Corrosive substances |
| 9 | Miscellaneous dangerous substances and articles, including environmentally hazardous/marine pollutants |


improvements have also been made.

"Previously, we've had tankers with eight compartments, but, for the new models, we have increased that to ten," explains Stephen McGarvie, lubricants general manager, Total UK. "The rationale behind this change is to allow us to deliver to more customers with fewer trips, and to reduce the overall number of miles travelled." While he doesn't have a specific figure for the reduction in mileage, McGarvie believes the company can "knock 10 to 15% from our carbon footprint".

The tankers' pumping and metering systems are also now integrated, and a key attribute is having three different pump systems for each tank. "This configuration is important from a waste generation point of view, because, if we are carrying three different types of oils (engine, hydraulic and gear oils), we can reduce contamination, which means we don't have to flush, so we can reduce waste [water and oil]," explains Marc Smith, supply chain manager at Total Lubricants.

"The other fundamental difference is that we use digitised metering, which gives accurate quantity measurement, as well as the ability to port information back to the base." Smith says this allows the company to keep a close eye on which products and how much each tanker is carrying. "It gives us immediate visibility, so we can make instant changes for best use of the vehicles."

Smith also insists that the tanker investment is paying large efficiency dividends, too. "We have changed our delivery strategy slightly to make best use of the vehicles," he explains. "We were typically using seven or eight tanks at a time, but now we can do exactly the same amount of work, with a greater range and grade exposure at the same time." And he adds that, should demand require it, three tankers from the previous fleet remain on standby to take up any slack.

With greater scrutiny surrounding the environment, don't be surprised if the current trend of biennial revisions to ADR continues in 2011, with more substances covered, and extra training and legislation to burden drivers and operators. There is no doubt that tankers and pallets will be developed to meet these demands and, as a result, operators will enjoy another step-change in efficiency. 



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