

## **RR1085 – Exploring the human and physical factors associated with telescopic handler overturning risks**

A combination of machine instability and various human factors elements are important precipitating factors in telescopic handler overturn incidents. Industry guidance makes a number of assumptions about the impact of operator “knowledge gaps”, however the link between operator knowledge gaps and overturn risk is, at present, hypothetical and remains empirically untested.

This study was done to identify:

- the full range of human factors issues that might potentially contribute to telescopic handler overturn incidents;
- the human factors issues that appear to be most important in terms of overturn risk and
- key operator knowledge gaps that could increase the probability of an operator overturning a machine.

The research indicates that a machine is more likely to overturn when its boom is raised and /or extended. Overturn incidents are also strongly related to lateral (in contrast to longitudinal) instability. As some operators were not aware of the overturn risk related to lateral instability, this implies the possibility of a knowledge gap among operators. Weaknesses in training and site management/supervision are also likely to increase overturn risk. The installation of lateral instability warning technology could reduce overturn risks by warning operators of dangerous situations before a critical threshold is reached.

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## **RR1084 – Forklift truck reverse sensor systems assessment**

Counterbalance forklift trucks (FLTs) are widely used in a variety of industry sectors for material handling. Incidents involving FLTs are typically vehicle/pedestrian, vehicle/vehicle, or vehicle/structure collisions. Of these, vehicle/pedestrian incidents have the most potential for reportable injury and around 500 incidents a year involving moving FLTs are reported to HSE.

Measures to improve or augment the operator's field of vision can include: mirrors and CCTV systems (which rely on the operator's observations) and sensor systems (including ultrasonic, radar, and Radio Frequency Identification (RFID)), similar to those commonly fitted to passenger vehicles; or simply improving the driver's operating position.

This report describes work undertaken to assess the active sensor systems (ultrasonic and radar) commonly used to reduce the risk of collisions. The systems tested appeared to provide a useful function in mitigating the risk of collision by stopping the truck when an obstruction was detected. However, certain configurations produced blind spots in the detection zones that could allow a pedestrian to approach the truck without being detected. The sensors also needed to be mounted to give an appropriate detection zone without producing a large number of false detections.

Companies should establish the conditions under which they will be operating an FLT and select a system that best fits their particular operating environment. Consideration should be given in the first instance to the practicability of removing pedestrians from the working area, although it is acknowledged that this is not always possible.

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## **Press release: Clay company pays heavy price for toxic discharge**

The case was brought by the Environment Agency.

The offence occurred in July 2013 after staff at Rocks Dryers, a site operated by Imerys near Bugle, St Austell, flushed a hazardous substance called 'Jayfloc 85' out of a redundant storage tank and into drains where it entered a series of settlement lagoons before discharging into Rocks Stream, a tributary of the Par River.

Imerys failed to carry out a risk assessment despite Jayfloc85 being classified by its manufacturer as 'hazardous' and 'harmful to aquatic life'. Guidance on its use clearly states this chemical should not be allowed to enter 'drains/surface waters/ground waters'.

The company has an Environment Agency permit to discharge into the Rocks Stream from a single discharge point. Liquids entering the settlement lagoons undergo a basic treatment. China clay solids held in suspension settle out of the liquid and accumulate in the bottom of the lagoons. Sodium carbonate is then used to adjust the pH before the effluent is discharged. The system is not designed to treat toxic chemical pollutants such as Jayfloc85.

On the day of the offence, the chemical, which is used in the processing of china clay, was flushed out of the storage tank and into the site's effluent system and settlement lagoons via drains.

Imerys did not believe the chemical would harm the environment as it claimed the volume released was relatively small (estimated at 474 litres) and once in the settlement lagoons, it would have been heavily diluted.

The company failed to check the manufacturer's data sheet about the harm Jayfloc85 can cause if it escapes into streams, lakes and rivers. The chemical should have been removed from the site and either used elsewhere or taken to a permitted site for safe disposal.

The Par River, downstream of the discharge point, flows into Par Beach, a designated bathing water popular with holidaymakers.

Chris Barnes, for the Environment Agency, said:

This case demonstrates how important it is for site operators to have effective training and management systems in place to prevent the discharge of toxic chemicals into the environment. Clearly, this wasn't the case at Rocks Dryers where Imerys failed to properly assess the risks of emptying a hazardous substance into the site's drainage system. Had it done so, the company would have soon realised the disposal of hazardous chemical in this way is illegal.

At an earlier hearing Imerys Minerals Limited pleaded guilty to, on around 25 July 2013, discharging poisonous, noxious or polluting matter into inland freshwaters including the Rocks Stream, Rosevean Stream and Par River in contravention of Regulation 12(1)(b) of the Environmental Permitting Regulations 2010.

Appearing before Truro Crown Court on 20 January 2017, the company was fined £75,000 and ordered to pay £25,000 costs.

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## **RR1083 – Risks to respiratory health in the grain industry**

A detailed literature search was carried out to summarise evidence about respiratory disease caused by exposure to grain dust. Long term epidemiological studies examining the risk for respiratory disease in grain workers were undertaken in Canada and the USA from the 1970s to the late 1990s. Smaller studies were undertaken in the UK and Europe but mostly

focussed on respiratory disease in arable and livestock farmers.

The conclusion of this review is that the damaging effects of grain dust on the respiratory tract are accumulative and occur at high concentrations of exposure. Acute responses also occur and include declines in lung function as well as irritation and inflammation of the airways. There is less evidence that grain dust exposure causes occupational asthma despite the dusts containing allergens. This may be due to a 'healthy worker' effect with those already having, or developing, asthma leaving employment earlier than others. There is stronger evidence that the long term effects of exposure include emphysema, chronic obstructive pulmonary disease and interstitial fibrosis of the lung. The risk of developing extrinsic allergic alveolitis has reduced through preventing damp conditions in stored grain.

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## **Today's report from the NAO should serve as a wake-up call to ministers – Wayne David**

**Wayne**

**David MP, Labour's Shadow Minister for the Armed Forces and Defence**

**Procurement**, responding

to the National Audit Office's report on the MoD Equipment Plan, said:

"Today's

report from the National Audit Office should serve as a wake-up call to ministers. The warning signs have been there for a long time but it is becoming

increasingly clear that the Government is in danger of losing control of the defence budget.

"Ministers

ought to have clearly defined priorities and should ensure that, in these uncertain times, Britain's defence expenditure should not be the subject of ill

thought-out public expenditure cuts. The defence budget has been slashed since

2010 and the Government is only meeting the 2 per cent of GDP commitment through creative accounting.

"The

Government should meet this commitment properly. Ministers also need to respond

urgently to the concerns raised by the NAO. And they should confirm when the long-overdue National Shipbuilding Strategy will be published.

“Only

Labour can deliver a serious, joined-up Defence Industrial Strategy, as we did

in Government. Our approach would safeguard Britain’s industrial base, secure high quality jobs throughout the supply chain, and protect our national sovereignty, while achieving value for money.”