

Light-weighting, size reduction and moves to improve safety have been driving developments with truck-mounted loader cranes. Steve Banner reports

# LOAD

Two fatalities involving lorry loader radio remote controls have prompted ALLMI (the Association of Lorry Loader Manufacturers and Importers) to launch a campaign to raise awareness of the issue and promote their correct and safe use. "Remote controls can bring considerable benefits and represent the right way for the industry to go, but they can also create some significant potential hazards," warns ALLMI technical director Alan Johnson.

He believes that the fatalities may have occurred as a result of the loader operator failing to isolate the remote while either attaching or detaching the load. "If you are not using the remote, then you must ensure that the isolator button is depressed," confirms Hiab national sales manager Alastair Evans.



Right: Cargotec remote-operated truck crane  
Centre: stabiliser extensions ensure safe lifting

The need to do so is at the heart of ALLMI's campaign. It emphasises that all operators using loader remotes should be retrained periodically as part of basic lorry loader training. ALLMI has also produced a web-based video entitled 'Safe Use of Remote Controls'. "Too many users make the mistake of assuming that you can play a remote like an accordion," insists Johnson. "What you need to do is stand still while you are using it and isolate it when you are not." He also welcomes the use of a 'sleep' facility on some remotes. "What this means is that, if none of the levers have been used for, say, a minute, then it puts itself to sleep and cannot be used until reset," he explains.

Already popular, remotes may become more so, due to increased pressure on loader manufacturers to reduce the weight of their products in the wake of the higher unladen weights associated with Euro 6. As a consequence, it is probable that the only levers fitted on the crane will be those required in an emergency, suggests Evans. "They will not be the main means of operating the crane," he asserts. "The remote will."

For the same weight-saving reason, operators are



being encouraged to specify cranes with smaller capacities – 11t/m (tonne/metre), say, rather than 12t/m – where practical. "Customers can save up to 200kg. And moving to a smaller crane means that they save money, too," observes Evans.

Reducing weight was one of the priorities when HMF developed its 30t/m HMF 3220-K. The weight of the crane in relation to its load moment has been cut to 102kg per t/m. "We have also reduced the crane's length," states R&D manager Gudmund Braendgaard. "It takes up barely more than a metre on a truck chassis."

## Regulatory regime

What about legislation? Two sets of regulations stand out: the Machinery Directive (2006/42/EC) and LOLER (the Lifting Operations and Lifting Equipment Regulations 1998). The former dictates that all loader cranes with a net lifting moment of 4t/m or above, or a rated capacity of 1,000kg or more, must be equipped with stability monitoring. The directive came into force in December 2009, although a protracted European wrangle meant that the loader standard –

# LUGGER



counteract ground slopes in excess of 5 degrees.

As for LOLER, the requirement is that loader cranes be thoroughly examined at least once a year by a competent person. That's not instead of, but as well as regular servicing, in line with manufacturer requirements – which they are attempting to make easier. Palfinger's PK 23002 SH, for example, features a maintenance-free extension system that uses synthetic material on the sliding sections.

## New developments

Meanwhile, loader manufacturers are continuing to develop their products – with, in Hiab's case, a line-up of 17–19t/m cranes. "They feature controls that are a little more advanced than before," comments Evans. "They also come with a boom system, which can operate faster. That is probably more important to continental hauliers, though. While British fleets on brick-and-block work typically use no more than two extensions, the Europeans may use four or five."

But for many new developments, the accent is once again on operational safety. For example, HMF's



Left: one of Fassi's rear-mounted loaders on a flatbed truck with tag axle

EN12999 – was not implemented until 2010.

"Such systems, which are designed not to be overridden, enable the crane to identify where it is mounted on the vehicle, whether it is sitting on, say, a 4x2 or a 6x2 chassis, and what the axle loadings should be," explains Evans. Having taken all this into account, along with the load being lifted, they determine whether the stabilisers should be deployed and, if so, how far.

"The most sophisticated units we fit calculate extensions to the nearest millimetre," he continues. "If the stabilisers are only extended half way, then the crane may be limited to 50% of its rated capacity." But, if the stabilisers are not used, the crane may be de-rated to just 20%, he adds. In fact, it may only be capable of being swung out of the way while a load is being fork-lifted on to a truck.

Fassi's FSC-S package is a good example of the stability controls now available. This unit incorporates encoders to monitor the position of the outriggers, along with an inclination sensor that takes into account the extent to which the truck's payload is acting as a counterweight. It can also be used to

TX range, unveiled in 2011 as a prototype, is equipped with a device called HDL. This allows the crane's load capacity to be increased by 10% while simultaneously cutting its operating speed.

Then again, Palfinger's PK 10002 SH loader crane – launched at the 2012 IAA show – and its PK 12502 SH stable-mate (with lifting moments of 9.4t/m and 11.4 t/m respectively) both feature Soft Stop. An electronic limit position damper, it gently brakes the crane's movements before the mechanical end-stop is reached. Both cranes also feature a reverse-linkage knuckle-boom, which can be angled upwards by 15 degrees, making it easier to manoeuvre the crane, particularly in confined spaces.

Those restricted spaces may be in environmentally-sensitive urban areas. At the huge Bauma construction equipment show, in Munich, Germany, last April, Palfinger introduced what it describes as a hybrid system for loader cranes. Simply put, it involves plugging a pump, used to power the crane, into the local electricity grid. The voltage required is 400V at 50Hz. This cuts emissions and reduces noise, too. 