

Fully LOADED

While technical developments are slow to gain ascendancy among lorry loader and crane builders, electronic intelligence is improving safety and flexibility. Toby Clark reports

Today's loaders can massively increase vehicle flexibility, dealing with a wider variety of loads in more locations than ever before. But just as important is the operator: even with today's automated stability and positioning systems, he or she needs training and experience.

Loaders cover a wide range of capacities: Fassi, for example, classifies its cranes in the 1 tonne-metre to 12 tonne-metre (1–12tm) range as 'light duty', 13–36tm as 'medium duty' and 38–195tm as 'heavy duty'.

The heaviest loaders encroach on crane truck territory. But manual handling regulations mean that lighter-duty models are also viable. Penny Hydraulics, for instance, offers the PH50 for mounting on small chassis-cabs or all-terrain vehicles, with a capacity of just 0.5tm (500kg at 980mm), but weighing as little as 74kg.

There is fierce competition in the 50tm class, with the major manufacturers launching cranes that still fit on six-wheelers. Hiab has the X-HiPro 558, which the firm says, at 49.6tm has "20% more lifting power than other cranes of equivalent size". Meanwhile, Fassi offers the F545RA xe-dynamic, with capacity up to 52.8tm. It's not easy to compare like with like – there are myriad options of outreach, and winch and jib attachments – but each weighs around 5 tonnes, plus another tonne for the stabilisers, leaving a decent load capacity on a 26-tonner.

One operator with wide experience is Daniel Forrest, owner of Shepperton-



based Forrest Industrial. He has just removed a vandalised fountain from Regent's Park using the 27tm Fassi on his 6x4 Scania drawbar.

SAFE HANDLING

"Everything is about safety," says Forrest. "You can't cut corners; you have to play it by the book." Arriving at a site, the first task is checking for overhead lines, structures and trees, then checking the ground is hard and stable.

Positioning is also vital. "First you check for reach, then slew round to make sure you've got a clear area to work in. Operating it is so much about experience, and knowing what your crane is capable of," says Forrest. "One day you

could be in a factory with a low roof, and the next lifting something really delicate."

That said, technically, there has been little change in the mechanical design of loaders in recent years, although high-strength steels have improved power-to-weight ratios. That said, while most manufacturers use a single-beam design for all but the largest models, Cormach is unusual in using a twin-beam design even in its smaller cranes.

Meanwhile, Effer's V-Stab and XV-Stab stabiliser systems are designed to give shorter trucks excellent stability and capacity without having to mount stabilisers ahead of the cab, or drastically modifying the bodywork. Its jacks are mounted on diagonally-splayed arms fore

LOADED REGULATIONS

Understandably, lorry loaders are highly regulated. Fleet engineers may well be familiar with LOLER [Lifting Operations and Lifting Equipment Regulations] and PUWER [Provision and Use of Work Equipment Regulations]. However, cranes and loaders also come under Machinery Directive 2006/42/EC, which covers safety, even for chain slings and lifting eyelets.

Fleet engineers might want to bear in mind the HSE's guidance on 'Who has responsibilities under the Machinery Directive'. It states: 'Users who make machinery for their own use also have the manufacturers' responsibilities for CE marking and compliance with the Supply of Machinery (Safety) Regulations'.

LOLER defines the concept of an 'appointed person', who has overall control of each lifting operation to ensure safety. The trade body for loaders is ALLMI (Association of Lorry Loader Manufacturers and Importers), which publishes a 'Best Practice Guide for the Safe Use of Lorry Loaders', produced with the CPA (Construction Plant-Hire Association). Its guide explains how to categorise lifting jobs.

ALLMI offers courses for appointed persons as well as for operators and slinger/signallers. It also runs training in LOLER. Additionally, ALLMI provides accreditation for trainers, and offers a training DVD, while Fassi has an online training scheme with generic content.

Tracie Sherratt is managing director of Central Hydraulic Loaders, and says training should involve a full course "from a known source, as well as product familiarisation". CHL supplies 70–100 PM Cranes and Atlas loader-equipped trucks each year, and builds a specific subframe for each. Note that Whole Vehicle Type Approval does not affect crane installation, aside from masses and dimensions.

Sherratt emphasises regular inspection and maintenance "starting with the operator's daily inspection, annual inspection and tests to be carried out by a competent person. And, at four years and eight years, full inspection and test". Daniel Forrest, of Forrest Industrial, says daily inspection involves checking "for visible defects, that there are no leaks, everything is shut up and is where it should be. I also check the hook for damage, and that it's free-moving".

Sherratt makes the point that electronics can fail – particularly during the winter – and problems might come from hydraulics. However, he adds that loaders rarely go wrong.

and aft, and each pair is connected by a substantial subframe. Effer says the front-mounted V-Stab set-up increases the maximum-weight working area by 35% compared to traditional front stabilisers.

The biggest recent development has been in electronic stability controls. Typical is Fassi Stability Control, introduced more than five years ago. This system verifies position of the outriggers and inclination of the crane axis. It also takes into account vehicle weight, including ballast. Latest models can include winches, jibs and manual extensions in their calculations.

Fassi's ADC (automatic dynamic control) uses inclination and load sensors to maximise the speed at which the crane moves, "allowing only controlled movements and minimising the structural stress on the crane and the frame/subframe". Similarly, Hiab offers VSLPlus, which uses the position of the stabilisers and overall truck weight to determine maximum safe capacity, and BDA (boom deployment assistant) to monitor the angle and position of the boom.

Other functions being added include Fassi's GAS (grab automatic shake),



which unloads the grab smoothly while compensating for load on the other hydraulics. Remote controls are even being offered on the smallest cranes, such as Hiab's T-HIDUO 013, a 1.2tm unit for chassis-cab LCVs.

It's worth remembering also that cranes can be used for working at height, via hanging man-baskets or self-levelling platforms. Effer reckons its Pro.Dec (progressive deceleration) system makes this more comfortable. Hydraulic shock absorbers cancel oscillations and eliminate bumps. **TE**

