On the road again...

UK access and general rental company Smiths Hire purchased Sterling GP beavertail bodies

Whether you are supplying a 500 tonne transformer, crawler crane, self-propelled boom or a small electric scissor, transporting the equipment to and from its point of use safely and efficiently is an important element in the customer satisfaction equation, and a major element in the contract package. Getting it wrong can have disastrous consequences. We take a brief look at some of the more recent developments for transporting small and large equipment.

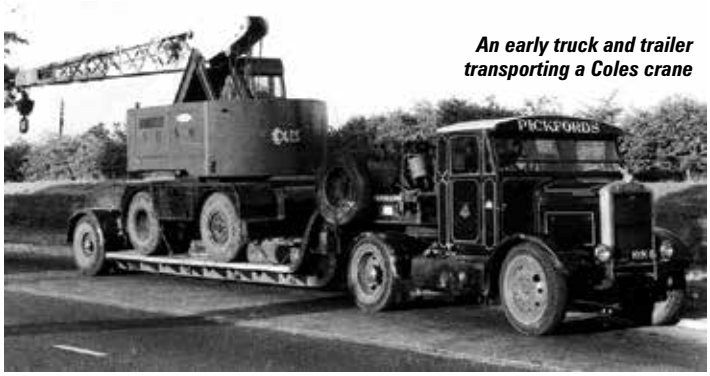
In the early days the equipment sector tended to use trailers that were designed for other purposes. In the 1950s and 1960s for example there was a surfeit of ex-military equipment including tank transporters and special trailers for moving aircraft such as the Queen Mary lattice frame trailers that were popular with the UK crane rental industry.

Things have obviously moved on and in the past 10 to 20 years trailer and truck bed manufacturers have increasingly tailored their products to the specific markets. Nowhere is this more evident than in the access rental market where manufacturers have designed or adapted their products to carry more equipment in a much safer manner. Aerial lift manufacturers have also helped in this aspect by designing machines that are lighter and more compact so that either more equipment can be carried on a single trailer or moved with a smaller truck or even a two axle trailer. The benefits include lower delivery costs, while helping reduce the impact on the environment. The current 'hot topic' relating to powered access is focused on the risks with deliveries and collections while loading and unloading at all times of the day and night.

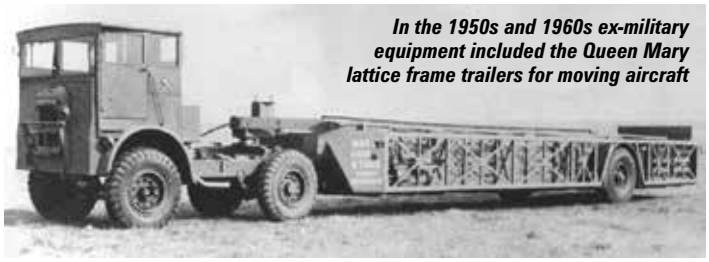
"Without a doubt the highest level of risk relating to powered access is the loading and unloading of equipment," says James Dundas, UK transport and property manager at Nationwide Platforms. "Understandably a lot of attention is given to risks associated with using powered access at height - entrapment, falls from the platform, electrocution etc - but what is often overlooked are the numerous risks associated with loading and unloading a machine on site."

The Goldhofer STZ-P9 with maximum axle spacing

A 12 tonne beavertail with side protection



An early truck and trailer transporting a Coles crane



In the 1950s and 1960s ex-military equipment included the Queen Mary lattice frame trailers for moving aircraft

Importantly, loading and unloading on the public highway does not discharge an end user from their obligations just because it is not on their site or facility. In fact it significantly increases the risks as the environment is less controlled with the addition of vulnerable road users and traffic. Not only can the consequences of overlooking these risks be severe, but they can also be fatal. It is therefore crucial that risks around the safe delivery and collection of equipment are included within any risk assessment.

In the UK voluntary schemes for fleet operators such as FORS - the Fleet Operator Recognition Scheme - and CLOCS - Construction Logistics and Community Safety are now becoming mandatory when working in cities such as London, along with complying with emissions standards.

FORS is a voluntary scheme aimed at raising the quality level within fleet operations and accreditation comes in three levels - Bronze, Silver and Gold. Its purpose is to encourage operators to review their operation by defining basic requirements in four key areas - management, vehicles, drivers and operations.

One of the first UK rental companies to gain the FORS Gold status was AFI, progressing from Silver after carrying out substantial improvements in areas such as fuel usage, CO2 output, performance measurement and staff training. Initiatives for its vehicle fleet included telemetry systems to monitor driver performance, a Careful Drivers Incentive scheme and a Fuel Efficiency Incentive scheme for drivers of its commercial delivery vehicles.

Under the Careful Drivers scheme drivers receive a bonus related to careful driving. The Fuel Efficiency scheme scores driver performance on a weekly basis from A (excellent) through to G (very poor) based on the key areas of acceleration, cruise control, engine idle, green band

Nationwide Platforms demonstrates loading and unloading at a recent event


A pull-out walkway

driving, harsh braking, over-revving and over-speed. The company has also invested in its delivery fleet to ensure vehicles conform to the latest European standards on emissions. They are also fitted with a range of safety, fuel saving and emission reducing devices.

The features on newer trailers, vans and trucks are now very sophisticated. For example Sterling GP's beavertail body includes safety innovations including composite 'gridlock' non-slip decking and swing out handrail systems with aluminium walkway panels giving drivers safe access to and along the deck when loading. The trucks also feature deck lights as well as LED beacons and work lights to light both the surrounding area around the truck and the loading deck when light is poor. Protecting other road users - particularly cyclists and pedestrians - means features such as additional mirrors, perimeter cameras, left turn audible alarms and side guards.

Edge protection from bodybuilders such as Shawtrack include single and double sided pull-out walkways, single and twin strap systems where the protection is secured to the bed with fixed posts removed for wider loads. Swing out edge protection as well as fixed edge, dropsides as well as grab handles and ladder access increase safety when working on or around the truck or trailer.

Delivery challenges

What is often not appreciated are the challenges of delivering equipment to site. Drivers are often just given a postcode with little to no thought about restrictions on the route or the amount of space on or near the site for unloading and loading - the time when most accidents occur. If these aspects are considered in advance so that the right vehicle is selected for the job, it can make all the difference in terms of efficiency and safety.

In a worst-case example, a spider crane or lift is driven onto a closed side flatbed truck - chosen to save money and keep it clean - via a loading ramp and all seems well until it arrives at the delivery address to find that there is no ramp! This usually results in attempts to 'cobble' a solution together to get it off the truck, all too often resulting in serious injury of death when it goes wrong.

Thought should also be given to which way round equipment is loaded, so that unloading on site, where conditions are less controlled is made easier. This is the most dangerous part of the whole process. The UK's HSE has a page dedicated to this subject with a multitude of points to help avoid problems www.hse.gov.uk/workplacetransport/factsheets/loading.htm


Loading and unloading equipment is one of the most dangerous aspects of using equipment

Last year Nationwide Platforms brought its equipment delivery service back in-house after having outsourced it to Wincanton Transport. Although no reason was given it would appear the complex challenges of delivering equipment to site proved far more challenging than either company expected. Delivering rental equipment is far more complicated than carrying boxed items. A rental company delivers a wide range of equipment to an incredibly varied customer base, requiring a variety of different delivery vehicles to be efficient. Using a large low loader to deliver a single push around platform to a residential address for example will just not work. Equipment must be delivered to the right place and on time, handing it over in a safe and professional manner, including familiarisation and then collecting the machine on time and invoicing correctly.

Equipment manufacturers have also given the problem some thought. Spider lift manufacturers, such as Ommelift, Dinolift, Leguan and others have designed outriggers with enough lift and width to lift them with clear space underneath to allow a truck or a trailer to be reversed underneath. While Teupen has gone a step further and designed a truck specifically modified to carry its mid-range 20 to 23 metre spider lifts and CMC introducer an outrigger extension for what it calls Auto Loading.

Since taking the transport back in-house Nationwide has ordered about 150 new transport items including four axle delivery trucks and heavy-duty low loaders. The trucks include Sterling GP and Wheelbase Engineering beavertail truck bodies on 32 tonne 8x2 DAF CF400 rigid chassis. The Wheelbase Engineering low loaders feature revised winch systems to provide in-line coverage across the width of the vehicle and gridlock flooring, they are used to transport larger equipment such as 135ft Genie Z-135 boom lifts, MEC Titan 60s and the 27 metre Holland Lift M250 scissor lift.

The new additions are fully FORS and CLOCS compliant and the company says it is one of the first to fit rear facing cameras on the loading bays to improve safety and compliance.

The long term shift towards lower or zero emissions is forcing vehicle manufacturers to focus on alternatives. While the fully electric, driverless truck is being tested it will be many years before it sees regular use, and given the unloading and hand over duties of rental it is hard to see how this will work in the sectors we cover. In the mean time companies are moving towards cleaner, low noise alternatives.

Getting the right transport is a major part of the customer satisfaction equation


The Teupen Leo 21GT with specifically designed 3.5 tonne GVW transport

ALE to revolutionise route surveys

ALE's new Route Survey Tool

UK-based international heavy lift and transport company ALE launched three new products earlier this month including the revolutionary Route Survey Tool, a 600 tonne capacity AL600 girder frame trailer and a 1,000 tonne TLG1000 telescopic gantry lift system.

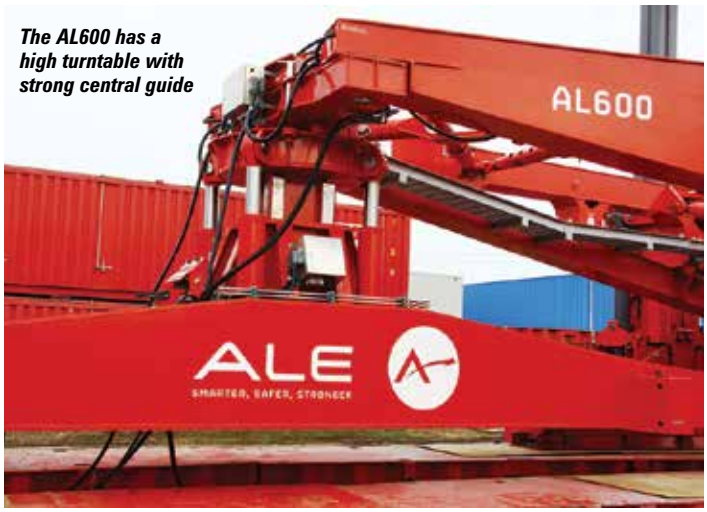
The new Route Survey Tool is a computerised system that automatically logs all details of a given route on digital maps, while driving at up to 80kph. The system takes measurements, photographs, video footage and accompanying software then generates drawings and plans for more in-depth analysis and use with large transporters.

Packaged in a box the size of a small suitcase, the unit is mounted to the roof of a car or van using four large heavy-duty suction pads with a single wire to the dashboard where it interfaces with a laptop. The system has a scanning range of 100 metres radius from the vehicle, with an accuracy of 20mm at the maximum distance. The system can also sense and measure changes in the road camber or indentations in the route to within one degree.

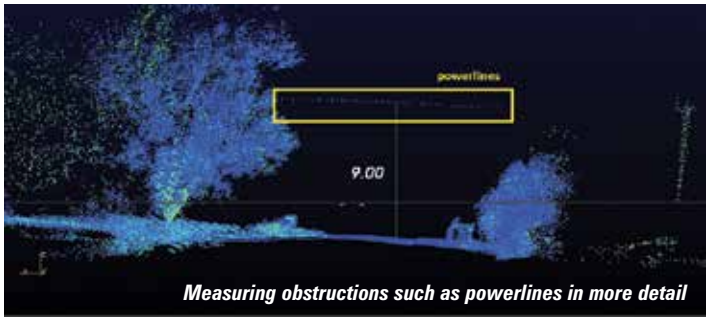
A separate Driver Assist tool on a transporter integrates the survey information with the transporter's systems, highlighting and instructing drivers of the challenges of the route ahead, particularly valuable during complex parts of the route.

R&D manager Harrie Smetsers said: "Route surveys have been integral to heavy transportation projects and engineering services for years. Current systems, which are manually logged, are often susceptible to human errors and can be time consuming. We wanted to design a solution that was not only safer, more accurate and reliable, but one that could also cover longer distances and was a quicker alternative. A manual route survey may take up to six weeks, this can be done overnight and is more accurate. The Route Survey Tool represents a revolutionary and easy way to carry out reliable route surveys in a quick and safe manner, and is the only system on the market that conducts a consistent and precise route survey without the need to manually enter information or step outside of the vehicle."

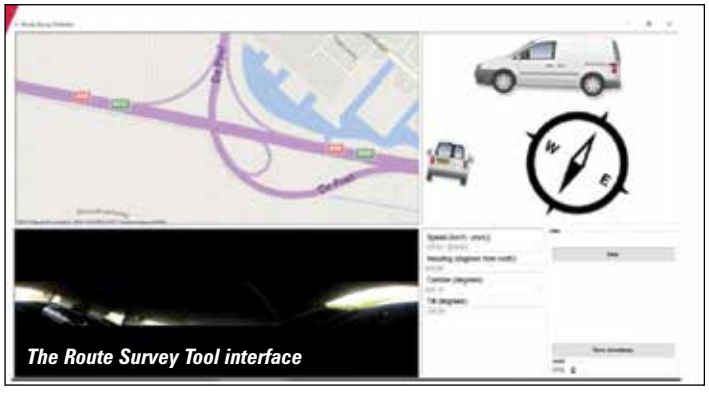
The AL600 will operate with between 32 and 40 axle lines



The AL600 has a high turntable with strong central guide



Measuring obstructions such as powerlines in more detail


The Route Survey Tool interface

The first unit has been fully tested and is currently being used on a project in Indonesia. The second unit looks set to be deployed in the UK.

AL600 girder frame

The new AL600 is the largest girder frame trailer from ALE, capable of carrying 100 tonnes more than its smaller brother, the AL500. The modular design of its neck, 15 metre main beam and seven metre load spreaders, allows it to be driven in various configurations depending on the type of load such as steam turbines, generators and transformers. The girder frame will typically be used with two 16 axle

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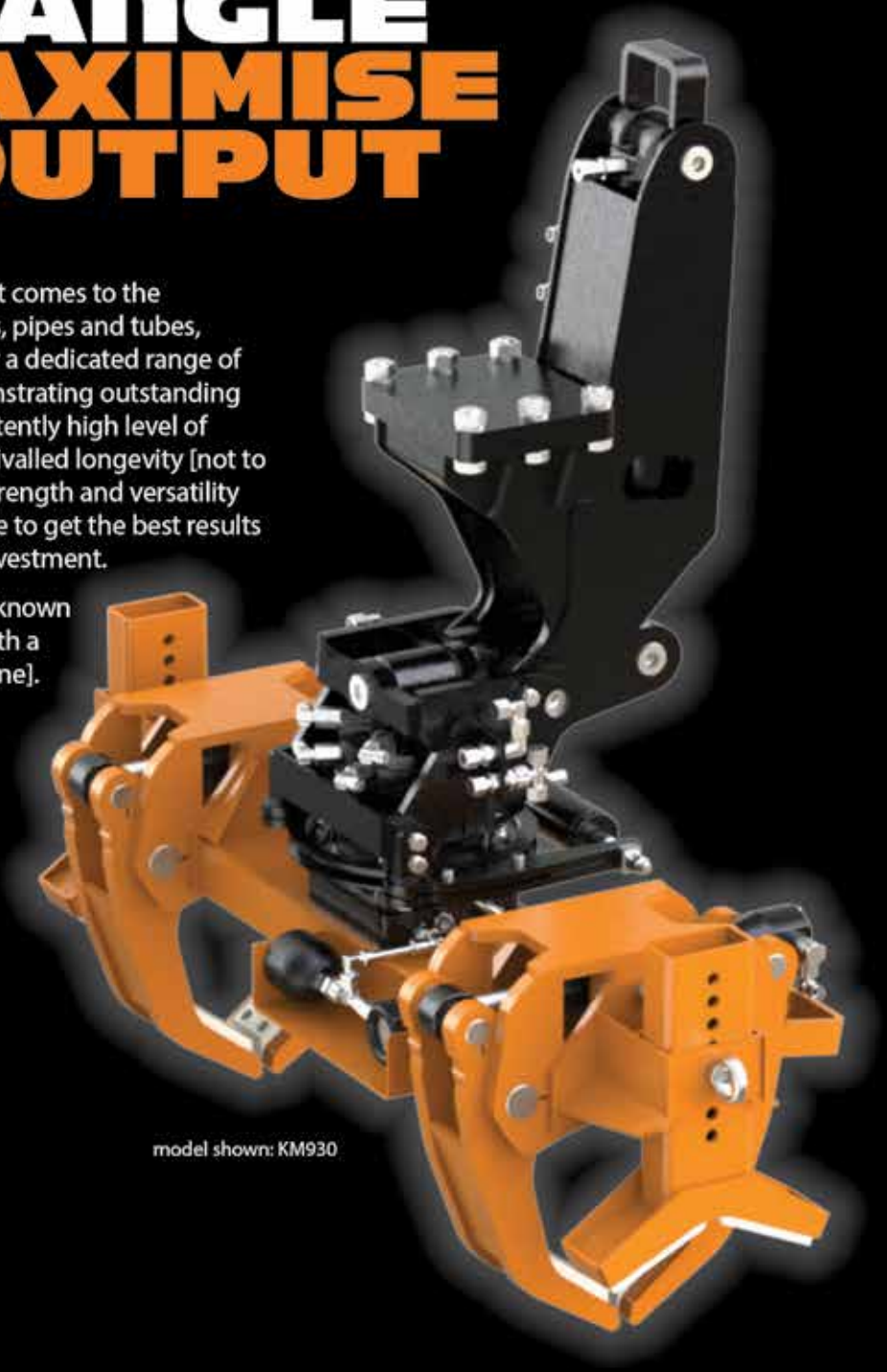

model shown: KM930

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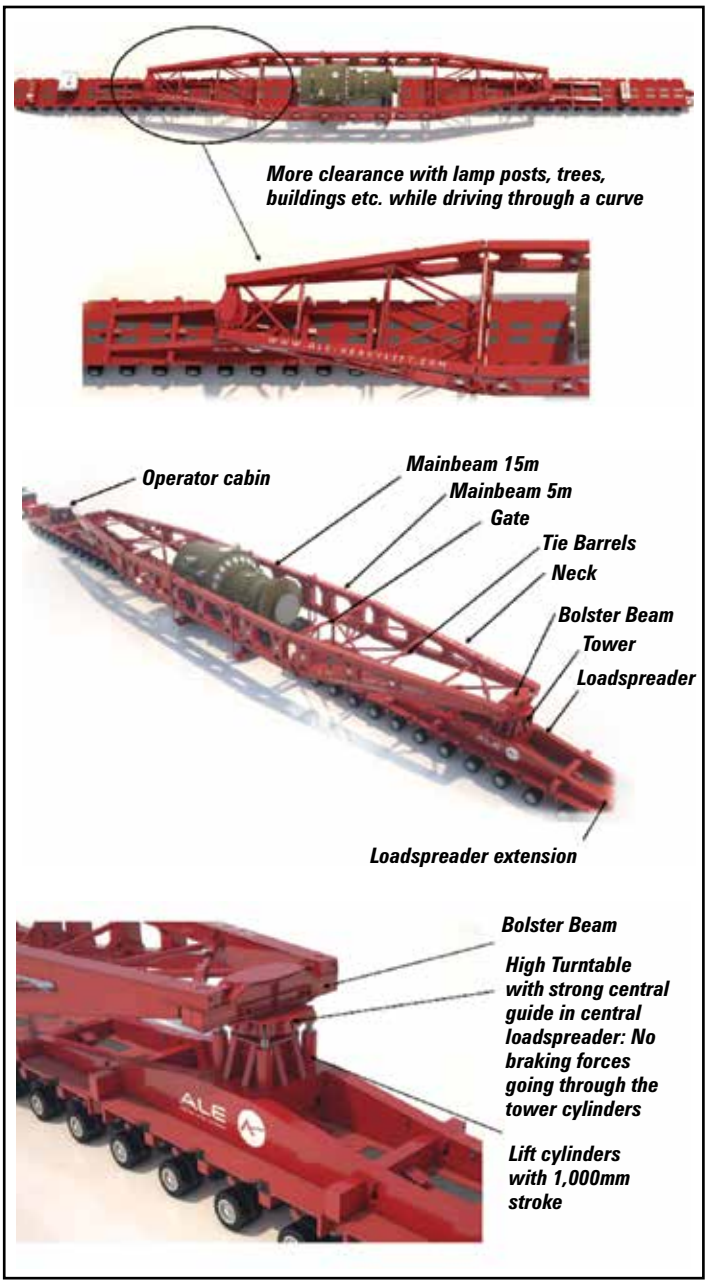
AL600 head and tapered sides

line transporters although in its first project it will be used with two 20 axle line units in order to reduce maximum axle loads to 14 tonnes.

One of the main features of the AL600 is its neck design which is tapered in both planes, eliminating corner snag points, allowing the transporter to clear tighter bends without needing to remove as much street furniture and other obstacles. It also features the latest control systems for steering, height adjustment, camera systems and shock logging - all operated from the high-tech control cab at the rear.



"We wanted to build a transport solution that suited our requirement to transport heavy loads that could be utilised with our current trailer fleet, whilst maintaining safety and low axle loadings," explained ALE technical director Ronald Hoefmans. "standard equipment manufacturers couldn't fulfil our needs so we made the decision to design our own. The AL600 has been designed with strength and operational capabilities like no other frame in the industry."

The first AL600 has been built and tested at ALE's R&D facility in Breda, The Netherlands and will be shipped to its inaugural project in Chile.

1,000 tonne gantry lift system

ALE has also designed an all-new high-specification telescopic gantry system in-house, in order to give it an edge with challenging lift and shift applications. The TLG1000 Telescopic Lift Gantry has an unrestricted 1,000 tonne lift capacity on four towers. It features a variable track width that extends from the standard 915mm to an extra-wide 1.75 metres, for greater stability where space allows. The four section towers are designed to safely take three times the side loading required in the current standards, and compared to 'off the shelf' gantry towers currently in production. The towers also maintain their maximum capacity to full height, allowing the 1,000 tonnes to be raised to 12 metres. Safety features include a mechanical lock system and numerous monitoring systems which measure ground settlement and any movement of the tower, in addition to the regular data, such as telescope sequencing and load distribution etc.

"We wanted a lifting solution with a high capacity without compromising on stability," said Hoefmans. "This gantry has been designed to take substantially more horizontal loading than the standard systems currently on the market. Furthermore, it is not only stronger, but the capacity remains the same throughout all three telescopic stages of the lifting process."

The 1,000 tonne capacity TLG1000 gantry lift system