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Above: Germany-based crane producer Demag introduced the option of an extra “modular” axle on its mobile cranes, such as this AC 100, to create lower axle weights, and to allow transportation with increased counterweight.

Ask most hands-on people in the UK crane industry about ‘tag-axles’ and trailing booms, and most will immediately tell you that they are banned! Plain, simple and categorically..... banned! C&A reports.

# Tag match

**PLAIN AND** simple that is, until you probe a little further and ask the question why? Delve further still and try to determine some definitions and relevant regulations to explain the ban, and the whole situation becomes astonishingly foggy, no matter who you talk to. Even the UK’s Department for Transport failed to pin-point where it is written, in legislation terms, that tag-axles and trailing-booms are banned.

It seems, however, that a trailing boom configuration has for years been classified as just a plain old trailer, and at least since 1932, when STGO (Special Types General Order) rules started, trailers have not been allowed behind a crane. Why? Well, it boils down to the fact that cranes have always been classified as special machines, the main functions of which are exercised off-highway and so are not subject to goods vehicle regulations. These include tough MOT tests and inspection regimes, high vehicle excise tax and the use of white (taxed) diesel.

In order to maintain tight controls on this category, and to prevent loopholes that might allow some smart Alec to start delivering goods with a trailer on the back of a crane, anything that resembled the transporting of goods was prohibited, and risked the loss of all the above mentioned privileges. A trailer clearly carries goods does it not? Banned!

A trailing boom does not carry goods, although counterweight and hook blocks are often placed on the “dolly”. Aha, the thin end of the wedge one might say. But it seems to be the case today

that no trailers, no matter what you call them, are allowed. In spite of the current categoric statement on trailing booms, they have been allowed in the past. For instance, the Gottwald AMK 200-103 had a four-axle trailing boom dolly, while the Coles LH 1000 featured a two-axle dolly or trailer.

## LOST IN TRANSLATION

Tag axles on the other hand are much more of a mystery? The Department for Transport has no definition or category for such things. The nearest they could find when asked by C&A was suspended or retractable axles, which since January 2002 have not been permitted unless they are automatic.

Now, while a retractable axle might seem a far cry from a tag-axle, it is in fact much closer than you might think. In countries where tag axles are widely used, they are defined as an extra axle attached to the rear of a crane, which transfers weight from the main axles. In order to do this, it must be retractable and suspended, usually via a hydraulic cylinder fitted with a gas accumulator. It adjusts itself on the road to maintain its share of the crane’s overall load. Some steer on a vertical pivot to avoid tyre scrub, and when reversing they are usually raised to avoid damage.

Once on site, the tag-axle is often removed, returning the crane to its normal dimensions. In this respect, a traditional tag-axle clearly comes under the ‘retractable axle’ rules, and should therefore be permitted as long as it is automatic.

The confusion, however, may come down to the centre pivot design and the way that the axle trails the main crane when in transit. It is very much like a little trailer. Perhaps a keen-eyed civil servant could see the day when a wide-boy operator would add a big trailer to the crane and declare that it was in fact just a big tag axle. Who knows?

So, why all this interest in tag-axles you may well be asking? Well, last year Germany-based crane producer Demag introduced the option of an extra “modular” axle on its mobile cranes to create lower axle weights, and to allow transportation with increased counterweight. “Foul play,” cried some, “that’s just a tag axle!”

Given our findings above, even if it was a tag axle, this would not be a problem as long as it was automatic. But, by all the definitions and expert opinions that we have come across in our investigations, Demag’s modular axle is clearly not one of the aforementioned, unmentionable, axle-types. With a four-point connection to the crane’s chassis, and linked into the crane’s suspension, steering and braking systems, it is very much a regular axle. Now what about those trailing boom dollies? *See page 33.* **C&A**

**Below: It seems that a trailing boom configuration has for years been classified as just a plain old trailer, and at least since 1932, when STGO rules started, trailers have not been allowed to be towed behind a crane.**





Liebherr states that all of its cranes can be configured to travel with loads of 12.5 tonnes per axle, including this new 400 tonne capacity LTM 1400/1.

# Heavy Movers

## UK road travel for big cranes after 2004....What's the reality?

**THERE SEEMS** to be some confusion and uncertainty in the air over STGO (Special Types General Order) 2003, which will govern the movement of most cranes on UK roads, following a transition period, that will come to an end on December 1, 2004.

Unlike many new regulations or rulings, this one will effectively be retrospective and apply to all cranes no matter how long in the tooth they are. Confusion surrounding various aspects of the rules is not helped by the fact that two key specialists at the Department for Transport departed in 2003, just as the STGO 2003 regulations were implemented.

The STGO rules initially came into being in 1932, allowing 'exceptional' loads, as well as cranes under construction and use regulations, to be driven on the UK's public roads despite their excessive widths, lengths and gross vehicle weights, and loads of up to 20 tonnes per axle. Crane companies today are also obliged to comply with speed restrictions and provide prior notification for planned transport routes under the rules.

The previous regulations, STGO 1979 were, however, very grey indeed. Generally, large cranes have been technically limited to a 12 miles per hour speed limit, except on motorways where 30

miles per hour was allowed, or rather enforced. In practice, local authorities and police have not applied the rules, and often penalised drivers for the congestion it causes, which has created difficulties in that drivers could be stopped and prosecuted for either going too fast or too slow.

A further problem concerned a crane's VIN plate. Each plate is usually stamped according to the minimum axle weights achievable, which invariably complies with the European standard of 12 tonnes per axle.

Manufacturers haven't had a problem in the past with permitting cranes to travel with a greater load than 12 tonnes, as long as road regulations allowed it. Over the year's however, UK crane hirers have been known to fall foul of the law, despite working within STGO rules, after having notified and obtained approval from the relevant authorities for

a routing etc, only to be flashed-down by the police, weighed-in and walloped with a prosecution because the weight-per-axle shown on the VIN plate has been exceeded and thus, the vehicle overloaded.

The Construction Plant-hire Association (CPA) has now advised its members to remove the vehicles' VIN plates on instruction from its legal advisors, who say that at the present time mobile cranes are not legally required to sport them.

Under the new STGO 2003 rules, all cranes will be placed into four categories, which depending on tyre size and axle weights, will govern their permitted maximum travel speed.

The first category, Category A, will be for those units that will effectively meet normal road vehicle rules, and be required to meet the following criteria in full road travel format;

► 35

NO OF AXLES	MIN DISTANCE BETWEEN FIRST AND LAST AXLE	MAX GVW
1	3 METRES	20,000 KILOGRAMS
2	5 METRES	30,000 KILOGRAMS
3	6 METRES	36,000 KILOGRAMS



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Category B will apply to cranes carrying a weight of up to 12.5 tonnes per axle, while Category C for cranes up to 16.5 tonnes per axle. Cranes with axle loads carrying a weight in excess of 16.5 tonnes per axle will be classified as engineering plant.

Generally, it will be much more difficult, except for the one-off movements of special loads, for a vehicle to travel on the public highway with axle loads in excess of 16.5 tonnes. If weight reduction is not possible, then the crane will travel as a unit of 'engineering plant' as before and restricted to a maximum speed of 12 miles per hour on 'A' roads, and 30 miles on motorways. The idea is that now this is more worthwhile, the engineering plant ruling will be rigorously applied.

Taking this into account, it does not seem unlikely that local authorities will block the movement of cranes travelling as engineering plant during the day time. Cranes will now fall into three main categories as below.

CATEGORY	MOTORWAY	DUAL-CARRIAGEWAY	OTHER ROADS
A (-12.5 TONNES PER AXLE)	60 MILES PER HOUR	50 MILES PER HOUR	40 MILES PER HOUR
B (12.5 TONNES PER AXLE)	50 MILES PER HOUR	45 MILES PER HOUR	40 MILES PER HOUR
C (16.5 TONNES PER AXLE)	40 MILES PER HOUR	35 MILES PER HOUR	30 MILES PER HOUR

### MORE WORK FOR MANUFACTURERS

By December this year, all cranes will need to be fitted with a special STGO plate (the second plate), which will contain the GVW, the weight per axle, the machine's classification, either A, B or C, and the maximum speed that the weakest component can handle at the given axle weight - generally thought to be the tyres.

For cranes supplied in recent years,

manufacturers generally have this information on hand and can calculate the data for older models. Every crane will need to be weighed in its normal travelling configuration or, in the case of a unit with multiple configurations, the configuration that is most likely to cause problems with the regulations.

Crane manufacturers will be expected to provide the plates and assist hire companies (it is believed) in fitting them, although no manufacturer is yet in a position to confirm this. The CPA is planning to meet with major manufacturers to discuss a combined industry standard on the plates and manufacturer contact points to simplify the process for its members.

So what does this mean for the larger telescopic cranes already a part of many UK hire company fleets? Well, the units that will be most affected will be the 500 tonne plus telescopic cranes where stripping to 16.5 tonnes will require some sacrifices. This means that the manufacturers that are most likely to be affected

are Liebherr and Demag. The latter company is quite clear that its units can all travel relatively intact at under 16.5 tonnes.

On the other hand, Liebherr's 500 tonne capacity LTM 1500, for instance, will pose a challenge when fitted with its 84 metre main boom option. The company claims, however, that the boom can be converted to 55 metres within half an hour, allowing the unit to travel easily within the

new rules, but requiring a back-up truck to deliver the additional sections when needed.

Liebherr states that all of its cranes can be configured to travel with loads of 12.5 tonnes per axle, and that the only question is, *how much counterweight or ancillary equipment, such as its 'Y' guy boom support system, will be able to travel on the crane?*

With most big lifts these days requiring some form of additional transport anyway, for counterweight for instance, the company does not see the new rules being a major problem in themselves. The problem will lie, however, in how the authorities interpret the rules in practice.

It is often the case that a local authority would prefer fewer heavier vehicles or back-up trucks on its main arteries in order to ease congestion. And some bridge authorities are not entirely happy with the new rulings, although they still have the ability to route such cranes away from sensitive bridges. Apart from referencing the STGO revision, there is no change in the crane movement notification requirements.

So, at the end of the day, the new rules do not change much at all and existing working practices will largely continue. The rules should, however, make life easier and clearer for crane hirers and owners, once the new plates are fitted. While a lot of focus and concern has been on the largest cranes, it may well be the smaller ones that are ultimately most affected. If new models can meet either Category A criteria, or more likely B, with a full compliment of equipment they will be able to move around faster and more easily compared to other, heavier cranes. Focus too will be on components. Where a tyre is the limiting factor for a crane's axle weight or speed, pressure will be on the two big manufacturers to develop new products with improved characteristics.

For the meantime, remember that December 1 is less than nine months away, and every crane must be fitted with the STGO plates by then! For more on this subject go to [www.vertikal.net](http://www.vertikal.net).



## Up she rises



VT SHIPBUILDING recently called on the support of Ainscough Crane Hire's Southampton depot to hoist the world's tallest mast onto the privately owned 740 tonne Mirabella V sailing yacht. Ainscough supplied a 500 tonne Liebherr which was operated at a 26 metres radius, fitted with 47 metres of 'Y' guyed main boom and a 49 metre luffing fly jib to lift the 90 metre tall mast, weighing in at 40 tonnes. In

addition, a 300 tonne Demag was supplied with a 49.4 metre main boom which was used for tailing the mast, while a 160 tonne Liebherr was fitted with 60 metres of main boom, plus a 12 metre fly jib to remove the lifting tackle from the mast at a height of 65 metres.

Ainscough had previously supplied two, 100 tonne Liebherrs to load the 15 tonne bare mast on to a barge at Portsmouth before sailing it to Southampton Docks, and also supplied a 500 tonne crane to lift the 60 tonne hydraulic fin into the hull of Mirabella.

The lift co-ordinator and Ainscough's Southampton Depot Manager, Bob Barnes, commented: "The height of the hook was the main issue, this is the tallest structure to be lifted by a crane in this country. We have lifted 900 to 1000 tonnes before but this is different. The contract took a huge amount of planning and preparation but did go well due to the excellent teamwork between ourselves and all parties concerned. We are delighted that we have been involved with such a large and

interesting project."

\*Ainscough recently took delivery of five, 50 tonne capacity Grove GMK3050 all-terrain cranes. Grove's popular 50 tonner features a 38 metre, 5-section boom, which with jib extensions, gives lift heights of up to 52 metres.

Commenting on the purchase, Ainscough chairman and managing director, Martin Ainscough said: "We are very pleased with the new Grove machines, all of which are based at our southern region operations and are proving to be very much in demand."





# A family affair



From left to right, NMT directors, Nick, Mark and Tim Ambridge, stand in front of the company's new Demag AC200-1 and articulated trailer unit.

NMT Plant Hire of Bedford in the UK enters its 29th year in business this year, and the company is confident that a recent ongoing investment span will take the company well into the next 29. C&A caught up with joint-director Tim Ambridge.

More than a quarter of a century has passed since Mark Ambridge, with a little help from father, Richard, founded NMT with just a few small rollers and dozers. Today, with the addition of brothers Nick and Tim, hire desk operator and technical director respectively, the company now operates a fleet of 20 mobile cranes ranging from 25 to 300 tonnes, shortly to be increased to 400 tonnes.

Last year, NMT spent over UK£3 million in new craneage, which bought the company a 200 tonne Terex-Demag AC200-1, a 60 tonne capacity AC 60 City Class, and a 35 tonne capacity AC 35.

"The latest addition to the fleet is the 200 tonne Terex/Demag AC200 with a main boom of 68 metres and a 33 metre extension jib," says Tim Ambridge, joint-director of NMT. "We selected Terex-Demag over the other manufacturers because of their innovative features on the cranes, such as three outrigger positions, the longer booms on the larger cranes and the compactness and manoeuvrability of the city class cranes.

"We have a large number of regular and high profile clients with whom we have built up a good working relationship, and who expect to see modern cranes arrive on site," he continues. "The latest purchase means that we can offer a wider range of crane sizes, but still maintain the relative compactness of the machines."

The company has spent in excess of £4 million with Terex-Demag during the last four years, which in addition to the above mentioned cranes, has bought the firm an 80 tonne AC 80-1, two 50 tonne AC 50-1s and a

40 tonne AC 40. "We also bought a 55 tonne Liebherr LTM 1055 last year," continues Ambridge. "The investment has put us in a very strong position within the crane industry.

"We have also expanded our fleet of transport vehicles, adding two lorry loaders fitted with 36 and 47 tonne/metre capacity knuckle boom cranes, two articulated units and a five-axle, rear-wheel steer trailer capable of carrying 100 tonnes."

The company's offices were also recently the subject of a major refurbishment, which saw the installation of the latest CAD & Crane Hire software. "I can foresee an exciting future for our company," says Ambridge. "With the ever increasing number of contract lifts performed, the industry is becoming a much safer environment, and with the introduction of the CPCS card for Appointed Persons, things can only get better. We believe that the future of

crane hire is in modern equipment, better qualified personnel and the education and training of our customers. I think that as a family run business the personal touch gives us an edge over our larger competitors.

"Rental rates have increased in the last couple of years which is good. However, like most crane hirers, we believe that rates should be a lot higher considering the massive investments we make."

C&A



NMT recently put its new Demag AC200-1 to the test when it was used to lift a number of air conditioning units onto a roof in central London for Mechanical Movements. The crane fully utilised its 68 metre main boom with a 17 metre fly-jib set at 40 degrees.

## Nationwide places £5 million order with Liebherr

**NATIONWIDE CRANE** Services has placed an order for £5 million worth of mobile cranes with Liebherr Great Britain in what is the company's largest ever single crane purchase. The order

comprises an LTM 1030/2, a 55 tonne capacity LTM 1055/1, two 60 tonne capacity LTM 1060/2s, two 80 tonne capacity LTM 1080/1s, an LTM 1090/3 and an LTM 1250/1. Nationwide's second such unit. The company will also receive its third-equal flagship 500 tonne capacity LTM 1500, to be supplied with the "Y" boom support system and spacer options, which significantly increases the model's reach and lift capabilities.

C&A would also like to congratulate Nationwide Crane Services managing director, David Slack, who recently married wife Sue.

