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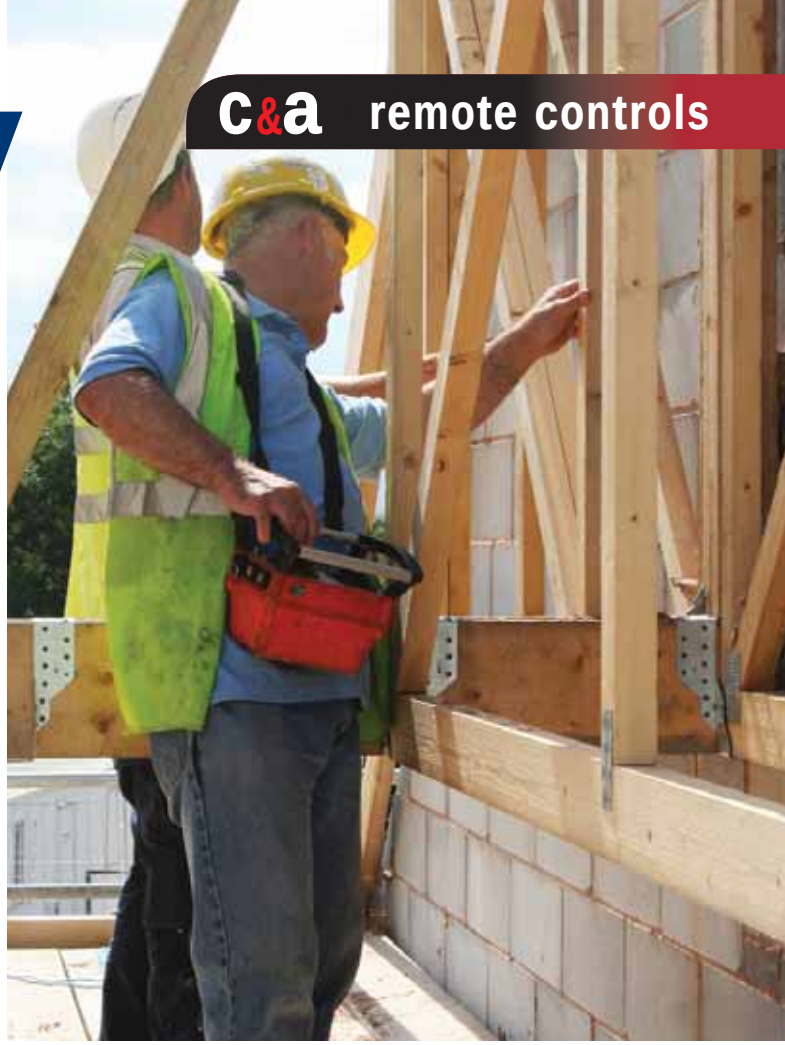

While remote controls on mobile lifting equipment have been around for more than 50 years, their popularity has only really gathered pace over the past decade and now looks like becoming a standard feature on some types of equipment.

Remote controllers are getting smaller

Looking solely at the equipment we regularly cover remotes are now mainstream options or even standard equipment on loader cranes, spider cranes and spider type aerial lifts, while being a necessity on self-erecting tower cranes. However in addition to these products where they are now becoming the norm, rather than the exception, they are increasingly being specified on All Terrain cranes and even crawler cranes particularly for setting up and duties such as counterweight installation.

As their take-up gathers pace and volumes become significant, two things have occurred. One - the cost has come down, encouraging manufacturers to add them as standard equipment at least on the higher specification models in their ranges and two - remote control manufacturers are putting more effort into development, adding numerous user-focused features that make them more practical while helping to maintain average unit pricing levels.

One aspect that has helped encourage remote control usage is the advent of reliable, secure wireless radio remote controls. In some cases these radio remotes are being replaced by Bluetooth controllers although for most users how the signal moves between the controller and the machine is not important. What really matters is that the remote control works every time and is easy to use. In recent years much of the development went into making the remotes more compact, more ergonomic and easier to use however the latest developments appear to focus on information displays on the controller and data transfer.

Before we look at some of the latest developments from the main manufacturers the widespread use of remotes does in some areas create other issues regarding safe operation and the need for separate signallers etc. As such it is worth running thought how remotes are used on each type of product.

Loader cranes

Remotes are now becoming a standard feature and only a small minority of operators would consider buying a new crane without a built-in wireless remote. It is both more efficient and safer and few if any would argue the contrary. A remote controller allows the operator to rig/hook up his own loads and then stay with the load for perfect placement - no need for a separate slinger or signaller. This can be particularly handy when placing loads outside the normal line of vision. The only counter argument in cases such as this, mostly restricted to larger loader cranes - is that the crane itself is left unattended for passers-by to interfere with it, or should the crane began to tip due to subsidence the operator could be unaware. To counter this it can be said that the better systems do have security - although this will not stop a smart Alec who presses the emergency stop button - but that is always a risk. As being unaware of subsidence, the fact that the operator is close to the boom tip, he will in fact see a magnified version of any movement - albeit dulled by boom flex. Whether he is then in a position to do anything about it depends on the individual case. He might be able to respond more quickly and drop the load? This should be the subject of a risk assessment carried out before starting the lift.

While wireless or Bluetooth is the future, umbilical cord controls are still popular for counterweight removal etc..

Radio remote controls are now almost standard on loader cranes and have a massive impact on safety and efficiency

Handling glass is ideal for remote control usage

Spider type lifts and cranes

The main use for remote controls on track type spider lifts is largely to replace or replicate the lower controls. The major and highly significant benefit is to be able to stand well clear of the machine while it is being travelled. Narrow aisle spider lifts or spider cranes, particularly those with 600 to 800mm overall widths are notoriously unstable when travelling on uneven ground or traversing a side slope. Moving too fast and then turning too sharply, or hitting a kerb or other obstacle can easily tip a unit onto its side. If the operator is using the lower controls the chance is that the machine weighing a tonne or two will fall on him causing serious injury or even, as in one recent case, trap him under the machine. The other risk is when loading onto a trailer or truck. As the unit is driven up the ramp the operator is best to stand not only well clear, but in a position where he has the best view. Finally as these machines are designed to gain access to the tightest of areas, they are often tracked down alleyways which they just fit. In such cases the operator may well want to stand at one end or the other to gain the best view.

All Terrain Cranes

Still a fairly recent addition, remotes are now gathering pace and are likely to become a standard feature in the years to come. At the moment they are largely used for an increasingly wide range of set-up tasks. Liebherr has been a pioneer in this area with its Bluetooth system. The remotes can be used to set up the outriggers, ideal for a one-man crane where the operator can finesse his mats and cribbing from one location. They are also used to operate the counterweight installation and to unhook the main block from the tie down as well as help when installing a boom extension. All of which helps make the operator more efficient at the same time as being safer. Interestingly Liebherr was possibly the first company to include a remote control, albeit a wandering lead remote, on a mobile crane? Back in the early 1960s its AUK mobile tower cranes were all equipped with remotes.

Liebherr's Bluetooth remote system is leading the way for setting up mobile cranes.

Crawler cranes

Remotes are a little less common but becoming popular on larger models to help with the assembly of counterweights and tracks etc. They are also now being used for travelling a large rigged crane. A recent example of the benefits of such a method were highlighted when a German company saved its Liebherr LTR1200 from tipping over - the operator was travelling the crane from the remote, allowing him to keep a very close eye on the ground deformation as the crane moved, he is likely to have gained precious seconds by spotting subsidence and then be in a position to take action immediately rather than having to climb down from the cab, assess the situation and then climb back aboard.

Self-erecting tower cranes.

While self-erectors come standard with remote controls with just about a 100 percent take up, this was the only area where we picked up any real dissension. The main thrust of the argument was that an operator on the ground will never have as good a view of the lift as one in a cab above. This is of course debateable in a long jibbed tower crane where the operator can be 60 or 70 metres back from the hook, while an operator on the ground with a remote can be right alongside the load. The argument goes that the practice of using an operator on the ground with a remote control and having him be the slinger/signaller as well as the operator is more of a cost saving exercise than anything else.

Operating with a remote allows the operator to often gain the very best view and be close to the placing of the load.

However the arguments we heard were more to do with the use of self-erecting cranes to replace top slewing luffers than the pros and cons of remote controls. One person we spoke with said that too many

Using a remote to drive this crane may have saved it tipping?

self-erectors were being used as cheap luffers on restricted sites with the jibs being folded every night due to over-sailing risks. The problem with this of course is that few self-erecting cranes are designed to have their jibs folded and then unfolded every day. But that's another story - another issue.

Many consider that a good operator using a good quality remote controller is by far the safest solution. He can rig his own load to his satisfaction along the lines of the best old-time crane operators who would climb out of the cab and give a rigged tricky load the 'once over' before starting the lift. As the lift progresses the operator can follow it and does not need to worry about any communication slip ups that can occur between a banksman and him. If a banksman is on site then he can always follow the load from another view point adding to the safety aspect.

What's happening on the technical front?

Having set the scene what are the latest developments from the leading producers? While dozens of manufacturers of remote controls are out there, when it comes to cranes and aerial lifts the list tends to be relatively short with the following companies dominating: Autec, HBC Radiomatic, Hetronic, Scanreco, Teleradio, Tecsis, Ikusi and Imet.

Current developments largely revolve around the size of the controller, the addition of good sized information screens and data exchange between machine and controller. With the rapid development of smart phone technology it is now possible to envisage a remote controller not so much larger than a smart phone with a clear informational read out and touch screen controls, replacing push button controllers while forming a central role on large crane controllers. A number of significant developments are in the pipeline which make this more of a reality, however an even more intuitive system may the way to go? HBC Radiomatic is preparing to launch what sounds like a Wii-style remote controller for cranes. The company says that it will unveil the new product called the Radiomatic Pilot at CeMat in Hanover. Depending on how much the operator inclines the transmitter, the speed of the crane function will adjust accordingly. Peter Pfanz, HBC sales manager for Germany says: "We are entering a whole new dimension of intuitive, motion sensitive control of crane functions, but at this point we do not wish to go into more detail."

Radiomatic is also launching its Xcellent design concept that offers completely new possibilities for the design of transmitter housings, even for small volume production runs. If overhead cranes are your area of interest, the new micron 7 will be of interest with its integrated colour LCD. The display allows for clearly structured feedback information such as load weight or workload as well as error notifications and warnings.

Haptic technology

Fellow German manufacturer Hetronic is working on adopting Haptic technology - currently used on many touch screen smart phones - to create virtual controls with real 'feel' which can help improve accuracy and efficiency. Haptic technology can also be applied to the joystick and other controls on a transmitter and are said to be almost infinitely adjustable, allowing a regular user, such as a loader crane operator, to customise the feel of the controls to suit his preference. Another new concept that Hetronic is working on is a simple, practical biometric technology that can be programmed to eliminate any non-authorised users, while not delaying or causing problems for approved users, even if their hands are wet or dirty etc…

Autec is also launching new products at Hanover, and will show its new A8 - a compact-size, ergonomic handset for Industrial Lifting applications with fail-safe stop and UMFS functions (protection against unintended movements from standstill). A8 radio remote controls work at different RF power levels, so that it is easier to work with several radio remote controls in the same working area. The system scans the frequency band at start up and starts working on a free frequency and hops to a different frequency if interference occurs. Combined or single control of different hoists/trolleys is made possible through a "Function" key.

The Autec A8

All of the main remote control companies will be showing off their latest developments at CeMat so if this is an area that interests you it is well worth a visit just for that. However this year there are also other attractions for Cranes & Access readers…

HBC Radiomatic has some real innovation in the pipline.