

best placed Control

Remote controls have been around for years but it has been the relatively recent addition of reliable radio remote controls that has started to revolutionise the operation of cranes and other equipment.

Remote controls have been used on cranes for many years, however until relatively recently, they were hard wired via a thick trailing lead from the crane. While allowing an operator to control the crane from the ground or at a distance they restricted movement and the cables were prone to damage.

Wireless, radio remote control is now transforming the operation of smaller cranes, and other equipment. As the cost continues to fall, at the same time as features and reliability improves, the day when they are fitted as standard to cranes and even some lifts, is fast approaching.

Radio remote controls allow the crane to be operated from the very best vantage point, with the operator staying close to the load. In many situations they allow him to be his own slinger-signalman. This is particularly true with loader cranes, where the diver/operator offloads his truck single handedly.

While such use of remote controls can, it is argued, create a dangerous situation, it generally improves safety, accuracy and most certainly efficiency. It allows, for example, a tower crane operator to, not only select a location that provides the very best visibility, but he can also move with the lift as it progresses. It can eliminate a banks man, as the operator stays in direct close range contact with the Riggers/Slingers.



The new HBC Radiomatic FSE includes a receiver that can be easily plugged into a cranes control system.

Essentially it can eliminate one of the most dangerous and time wasting aspects of lifting, that of communication at a distance between operator and riggers or lift supervisor.

The latest radio remotes offer all the features of the machines principal control point, including exceptionally smooth proportional controls and detailed information readouts. So if they are so fantastic, why are they not yet fitted as standard to all such equipment? The reason is of course the oldest in the book, the cost.

In spite of this the take up of remote control options in some countries is now running at over 90 percent on equipment such as loader cranes. In regions such as Scandinavia, where labour costs are high and safety is paramount, most loader and self erecting tower cranes are delivered with them. A number of manufacturers are also beginning to include a simple remote control system as standard. At the SAIE show in Bologna last October, Amco Veba, the loader crane producer, announced that it was including the one hand pistol type controller that it has developed with Hetronic, as standard across its product line.

The new controller uses a one handed pistol grip design, with toggle switches for each function; a trigger acts as both the dead-man switch and the proportional speed control. One nice feature is the inclusion of the outriggers on the remote. Giving the operator the ability to arrange his outrigger mats without having to go back and forth to the truck controls and is bound to encourage a better job.

Hetronic developed this handy remote controller with Amco-Veba and Ferrari for one hand operation.



Hiab's new XS drive compact controller

The movers and the shakers

The key producers of radio remote controllers are located in Germany, Sweden, Italy and Spain, with companies such as Hetronic, HBC Radiomatic, Teleradio, Autec, Iksu and Scanreco.

Some crane manufacturers work closely with these producers to develop customised controllers that interface with their new cranes, in order to include the maximum range of features and benefits. The incorporation of remote control manufacturers in the product development process, not only helps improve functionality, but will inevitably help bring the costs down, speeding the day when they become standard equipment.



RLL producer Loadwise, teamed up with Hetronic to offer a compact indicator for remote control boxes

The largest loader crane manufacturers are now placing more emphasis on their radio remote control systems in their sales brochures and clearly dedicating more product development resources to it. Hiab is currently in the process of replacing its HiDrive 4000 remote control system, with its recently launched XSDrive remote control unit, on all of its XS HiDuo series cranes. The new system offers up to 24 fully proportional functions in the single compact control box.

Palfinger recently launched its new Paltronic 50 remote control system in partnership with both Scanreco and Hetronic offering its customers a choice of two mutually compatible

radio remote control products. Most producers aim to offer the buyer a choice of remote control systems from the top three producers, in order to meet the demands of some large fleet owners, some of whom have preferred remote control suppliers.

Large, small push button of Proportional?

The types of remote radio remote controls now on offer for lifting equipment tend to fall into the following types:

1. The push button - stick type controllers which are suited to overhead and top slewing tower cranes.
2. The one hand pistol grip devices that are ideal for smaller loader and mini cranes.
3. The compact chest type control box with shoulder strap, that feature single axis paddle levers, these are currently the most widely used form of remote on cranes.
4. The larger full function control boxes that include several full sized multi axis joysticks and a larger display screen, these are well suited to mobile and crawler cranes.

HBC Radiomatic, has introduced the FSE524, which it says offers a fully specified system at a keen price.



Information needed

The greatest influence affecting remote controllers of all types is the increasing requirement from users to provide information feedback and readouts to the operator. Until now a red/amber/green indicator on the crane with warning alarm has been acceptable in most markets.



: A perfect example of an operator carrying out a precision lift, placing a well head cap single-handedly thanks to a modern remote controller

The UK's British Standards for tower and mobile cranes insists that the operator has a display of the working radius with maximum capacity permitted along with the maximum radius allowed for the load actually on the hook. With the best will in the world, a traffic light system on the crane does not meet this requirement, which will soon apply throughout Europe.

The most sophisticated remote controllers already feature a good sized screen which provides the same level of information as the crane cab displays, including full Rated Load



Here is another perfect application for remote controls, the operator (foreground) has moved to a point where he has a good view of the lift. (Shame the same safety considerations were not applied to the access!).

Indication along with supplementary information such as wind speeds etc...

The challenge now is to add this level of information to the smaller systems. To this end, Load indicator producer,

Loadwise International Ltd, recently teamed up with Hetronic to offer a compact indicator that can be fitted to Hetronic's shoulder strap remote control boxes.



Palfinger introduced its Paltronic 50 at the end of last year.

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Remote control chest pack for industrial and building lifting machinery.

The universally popular JC range of Penny+Giles joysticks provide industrial system designers the opportunity to develop remote, transportable control solutions for cranes, materials handling and agricultural applications without compromising safety and performance. The new JC120 is ideal for use in severe environments, and where ergonomics and system integrity are paramount. Compact and low profile, this innovative, fingertip control instrument provides smooth, precise operation in one axis, with only 80% of the width of previous models and comes in a choice of two lever heights.



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An Autec remote control system is used on this Merlo telehandler to operate all functions including travel

Frequency hopping

Another concern with radio remote controls has been interference and reliability, most modern systems feature FHSS (Frequency Hopping Spread Spectrum), allowing the system to automatically select a free band within the frequency spectrum and then hop between up to 50 different frequencies a second, thus avoiding the risk of interference.

In addition a vast number of unique digital codes with constant digital monitoring, allows remote controlled machines to work alongside each other without the risk of cross machine interference.

Some sensitive work areas, such as the grounds of hospitals, do not permit the use of radio remote controls. In such situations the operator can of course simply use the cranes main controls, or a number of manufacturers offer the option to plug in a cable and convert the radio remote to a cable remote. Modern Can-Bus systems allow as few as three wires to be used, allowing a small diameter, flexible cable to be used.

Customise on site

The latest controllers are also designed to make it easy for the machines owner or operator to customise the controls at will

For example crane motions can be switched between levers, so that they match a configuration that an operator is familiar with, or to standardise different machines across a fleet. Ramp up and ramp down values as well as maximum speeds for a given function, can be modified to give fast reaction times for repetitive duties or slower acceleration and deceleration values to smooth out jolts from less skilled operators. Another attractive feature on the new Palfinger controller is the ability to temporarily add two handed operation to any selected function, thus preventing inadvertent operation of critical functions.

With all this additional sophistication creeping in, it is easy to forget that driving the cost down, so that more cranes are equipped with remote controls, is likely to have a far greater impact on safety, than adding more



These top slewers are fitted with HBC's new FSE remote controls, ideal for many of the lower lever lifts.

features. Fortunately the rapid adoption of CAN-Bus technology is making it easier and less expensive to provide many of these features, together with excellent reliability.

Your #1 Partner in Radio Remote Control Systems!



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