

## **New erection concept for Liebherr LR 1600/2 crawler crane using the LTR 1220 as counterweight**

- Greater economy due to less ballast being transported
- Less ballast handling during the erection process
- Enhanced safety in wind farms

**Ehingen / Donau (Germany) October 2014 – Liebherr has developed an innovative concept for erecting LR 1600/2 crawler cranes with long wind power boom systems efficiently and safely. Using the mass of an LTR 1220 telescopic crawler crane as the counterweight significantly reduces the amount of ballast that has to be transported and eliminates ballast handling on site.**

The new process was particularly developed for use in the wind power industry. A large counterweight is required on the crane for the erection of long boom systems whilst the derrick ballast can be completely removed or reduced to just a few ballast plates for the actual hoist. The innovative erection concept from Liebherr makes it possible for the first time to use the weight of an auxiliary crane as derrick ballast during the erection process. This eliminates the need to transport and handle the ballast plates since they are now redundant. An auxiliary crane is generally available on the site anyway to complete setting and light hoisting work.

### **More efficient for wind turbine jobs**

The new concept was unveiled in August by Liebherr-Werk Ehingen GmbH. More than 60 customers who have an LR 1600/2 in their fleet or work in the wind power industry were guests in Ehingen for this purpose. An SL10DFB main boom system with a main boom measuring 153 metres in length and a 12 metre fixed jib was used as a standard, practical example. With the conventional procedure full ballast with 350 tonnes of derrick ballast would be required to erect this system. This is then reduced to 70 tonnes of ballast for hoisting the standard wind turbine components. The ballast plates must then be re-attached for the full ballast of 350 tonnes so that the boom can be lowered again.

Using the new method the time-consuming ballast handling and transport of 280 tonnes of ballast is no longer required since overall only 70 tonnes of ballast plates are required for use as suspended ballast. During the erection and lowering of the boom system, an additionally LTR 1220 telescopic crawler crane was used as a counterweight, attached to the telescopic boom using an adapter. The crane and ballast plate are attached to the derrick jib using a cross beam with strap loops. After the erection process the telescopic crawler crane is detached again. The remaining 70 tonnes of derrick ballast can now be used to hoist the load, for example a machine housing.

The hook block on the LTR 1220 remains reeved during the erection process. This means that the telescopic crawler crane can quickly be used again afterwards for handling components of the wind turbines or other work.

To highlight the practicality of the new concept, a hoist was made at the production plant in Ehingen with a load of 71 tonnes with a radius of 24 metres. The assembly of a wind turbine with a 150 metre tower was simulated using these main data. The new concept was greeted with a great deal of interest on the part of the invited customers. The event was also used to inform the guests about the new, more powerful boom systems for the LR 1600/2, such as the SL10 and SL13.

### **Enhanced safety in wind farms**

In addition to great economy, the new method for erection and lowering the boom also provides a major increase in safety. Using the conventional procedure the additional ballast plates for the erection process are often removed at the first wind turbine whilst the crane is moved from turbine to turbine for the hoisting work. If a strong wind comes up suddenly the LTR 1220, acting as "mobile derrick ballast", can be used to lower the boom quickly and safely whatever its location.

### **Suitable for all long wind turbine systems**

The new erection concept from Liebherr can be used for all long boom systems up to a length of 156 metres with a 12 metre fixed jib. This applies both to the new SL10 and SL13 systems and also to the existing SL4 system.

**Caption**

liebherr-LR-1600\_2-LTR-1220\_erecting.jpg:

Using the LTR 1220 as derrick ballast for erecting tall wind power systems on the LR 1600/2

liebherr-LR-1600\_2-LTR-1220\_adapter.jpg:

The LTR 1220 becomes the counterweight using an adapter on the telescopic boom

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