

Cranes & Lifting Equipment



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VISION IS OUR MISSION – CRANE CAMERA VIEWING SOLUTIONS



Orlaco represented in Australasia by LSM Technologies, is the world leader in Camera Viewing Solutions for all Heavy Industries.

LSM Technologies are a national member of the **Crane Industry Council of Australia (CICA)** and are leading specialists in the design, configuration, installation and commissioning of the industrial strength viewing systems.

One industry that is now showing a significant demand in Australia is the **Crane Industry**, where there is a focus on increased **Safety + Damage Control + Productivity**.

LSM Technologies Orlaco Camera Viewing Solutions for Cranes are unique and are designed to resolve (Tower, Crawler, Mobile, etc) Crane Operator Visibility issues according to ISO5006 / EN13000 for:

- Lower Deck (Travel, Manoeuvring – both ON and Off Road).
- Upper Deck (Winch / Load Views).
- Load View ("Blind Lifts" – Hoist Rope / Hook).

For example, the advantages of a LSM Technologies / Orlaco Camera **Load View Solution** includes:

- **Safety:** No more "blind lifts" with a view of what is happening behind, on top of buildings, obstacles, view of the details close / around the hook, through the auto-focus, 216 x Zoom Camera.
- **Damage Control:** A view of and around the hook will allow greater manoeuvrability and avoid damage to Load, Equipment and Obstacles.
- **Greater Efficiency / Productivity:** improved manoeuvrability, increased load cycles leads to saving of time, operator needs less help from others, working at night and in poor light conditions is excellent due to the "night vision" feature of the camera system.

So let's review a few examples / testimonials in using LSM Technologies / Orlaco Camera Viewing Solutions for Cranes:

AN AUSTRALIAN CASE STUDY EXAMPLE

LSM Technologies recently designed and installed an Orlaco **Load View Camera System** on a **Tower Luffing Crane** as their customer wanted to ascertain if a hoist line camera (Load View) would give clear vision to the Crane Operator whilst completing "blind" lifts.

The **Orlaco Load View System** consisted primarily of:

- **Load View Camera:** Heavy Duty, 216 Zoom, IP69K, Day / Night Vision, etc
- **10" LCD High Bright Monitor and Bracketing.**
- **Heavy Duty Video Cabling.**

Initially there were concerns displayed by the Crane Operators regarding the Camera installation but it should be noted that a very dramatic change of attitude was exhibited soon after the evaluation was started.

Several Tower Crane license holders tested the Load View Camera System since commissioning in April 2010 and were asked what they thought regarding its benefits.



Operator #1: Arthur

- Tower crane experience: **28 years.**
- Certificate / Licenses: CT, DG.
- **Comments:** "The camera is terrific, it's an excellent addition to the crane."

Operator #2: Frank

- Tower crane experience: **30 years.**
- Certificate / Licenses: CT, DG, RI.
- **Comments:** "The camera is fantastic. Brilliant clear vision, the zoom function is an asset. The night vision function is also unbelievably clear, even though the night vision is seen in black & white, you can still see everything under the hoist. I like how simple the monitor functions are, it makes switching between functions quick and easy."

Operator #3: Dave

- Tower crane experience: **15 years.**
- Certificate / Licenses: CT, DG, RI.
- **Comments:** "The camera is very helpful and adds to efficiency. It really helps to get the loads central while the dogman or rigger is slinging the load hence increasing productivity."

The overall perspective of the Orlaco Load View Camera Solution was more than positive. All parties involved, including other stakeholders like **Dogmen, Riggers** and other **ground based** personnel also provided very affirmative feedback.

The **biggest surprise** was the change from the initial resistance turning into an **astounding** acceptance and **excitement** of the technology.

Another testimonial from the thousands of users of **LSM Technologies / Orlaco Camera Viewing Solutions** and proven enhancement in: **Safety + Damage Control + Productivity**.



A EUROPEAN CASE STUDY EXAMPLE

Dura Vermeer is one of Orlaco's many customers who operate **twenty three (23) Tower Cranes**. Three (3) cranes already had Orlaco camera / monitor systems and the other twenty (20) have just recently been fitted with the same equipment.

Jan van der Bijl and Willem Boere from Dura Vermeer state:

"The zoom-in range is excellent and the auto-loading contact is ideal for the machine operators. The machine operators will no longer work without it; that much we've learnt from experience."

Dura Vermeer is involved in construction, infrastructure, engineering and services and **Jan van der Bijl** (Tower Cranes) and **Willem Boere** (Service and Maintenance) are happy to explain their choice of vision solution in more detail.

"Good visibility for the machine operator is becoming increasingly important," says Boere. *"Planning is becoming tighter, production speeds are increasing and the loads are getting heavier, and that makes safety more important than ever. The machine operator for the tower crane is responsible for safe lifting, so he wants good visibility of the load and the lifting site."*

Improved visibility, control, safety, productivity... and much more!

If the machine operator has to rely on what he can see from the Tower crane, then this does not guarantee good visibility. Lifting increasingly has to be carried out behind objects, for example buildings under construction, which means the load is outside the machine operator's field of vision.

"The level of expertise of the banksmen also varies greatly," comments Van der Bijl. *"The machine operator has to work with different banksmen more and more often, so communication has to be spot on. If the machine operator can zoom in, he can get a better view of the banksman, the lifting site and the load itself, and he also has more control over the load while he is moving it."*

These are all good reasons to fit twenty tower cranes with a zoom camera, and why Orlaco Viewing Solutions was chosen once again.



A clear Operator view at night.

Test Run	Test Run 1	Test Run 2	Average
Test Runs without ORLACO Load View System	4 min 2 sec	4 min 0 sec	4 min 1 sec
Test Runs with ORLACO Load View System	3 min 27 sec	2 min 52 sec	3 min 10 sec

"The cameras from Orlaco have an excellent zoom-in range and the auto-loading contact is ideal for the machine operators. All they have to do in the evening is put the trolley in the starting position to charge the battery for the camera, instead of having to connect and disconnect cables," says Boere.

The zoom cameras from Orlaco promise great things for the machine operators of the Tower Cranes. They make the work easier, more comfortable, safer and better from an ergonomic perspective. *"The machine operators will no longer work without it,"* says Van der Bijl. *"That much we've learnt from experience."*

SAFER – INCREASED PRODUCTIVITY

The use of an Orlaco Load View Camera Solution has proven to **increase efficiency** of Cranes by **at least 22%**. This was shown from an **extensive test** that was recently completed by **ORLACO** in collaboration with a large Construction Company **"Ballast Nedam Materieelbeheer"**.

Furthermore it was proven that the installation of a **Load View Camera Solution** on a Crane Boom not only **speeds up** the operation of the Crane but also makes the Crane operation much **safer** and **easier**.

A test was completed using a **POTAIN H30 / 30C Tower Crane** with a **60 meter jib** and a height under the **Hook of 21 meters**.

A **Porta Cabin** was placed in front of the **Crane Cabin** so as to block the Operator's view and so simulate **"blind lifting"**.

Test Procedure:

- An Orlaco Load View Camera Solution was mounted in the Cabin of the Crane. The Camera Systems consisted of a **Zoom Camera** mounted on the **Tower Crane Trolley** with the images viewed via a **10" LCD Monitor** in the **Cabin**.
- The following test was performed with the assistance of an experienced Crane Operator who was instructed to place a Concrete Pouring Vessel into 3 different space locations.
- All 3 drop points were out of the direct sight of the Crane Operator with the same lifting sequence repeated several times.
- During **some** of these test runs, the Operator used the Orlaco **Load View Camera System** showing the image coming from the Zoom Camera mounted on the Trolley pointed at the Crane Hook / Load.

- During **other** test runs the Operator operated the Crane as usual (**without the Load View System**) using Radio instructions from a Banksman close to the load – **Blind Lift**.
- Weather conditions during the test were fairly good. A wind of force 1 to 2 was present.
- During both test runs all other variables (Operator / Crane, etc) remained the same.
- The total time to complete the full sequence of each test run was recorded.



Test Results / Conclusions:

- If the average results of both sequences are compared the conclusion can be drawn that the pure influence of the Load View Viewing Solution increased **efficiency / productivity** of the Crane by **22%**.
- In addition, a significantly more **precise positioning** of the load was observed using the Load View Camera System.
- It could be expected that with **stronger winds** and with **higher Cranes** that the impact of the Load View Camera System could be **considerably higher**.

See the **ORLACO Viewing Solutions** section of www.lsmtechnologies.com.au