

# CASE STUDY

# WHERE NO ONE ELSE COULD

## THE APPLICATION

ASCO, an organisation with global expertise in the area of oil and gas materials and equipment management wanted to monitor cranes loads in their supply base locations around the world.

Load Monitoring Systems (LMS), a specialist in load monitoring systems, took on the project and developed a custom load link system. They used LMS manufactured Load Cells, Mantracourt's T24 wireless telemetry instrumentation and strain gauges by industry-leading manufacturer Micro-Measurements for the job.

ASCO's sites offer extreme weather conditions. The application was a test for the reliability of all components in the system. It was installed over four years ago and continues to prove its quality to date with faultless service.

## KEY BENEFITS

- ▶ Load data reviewed wirelessly from tablets anywhere in the harbour.
- ▶ Accurate measurements under a wide range of temperatures made possible by Micro-Measurements strain gauges.
- ▶ Robust system that functions faultlessly under severe weather conditions.
- ▶ No cabling required on cranes. Load links are powered by batteries, which only need to be replaced in six-month intervals during routine maintenance.
- ▶ High signal integrity allows transfer of load data even with obstructions.



# THE PROJECT: ENABLING VISIBILITY OF LOADS ON HARBOUR CRANES

## THE APPLICATION

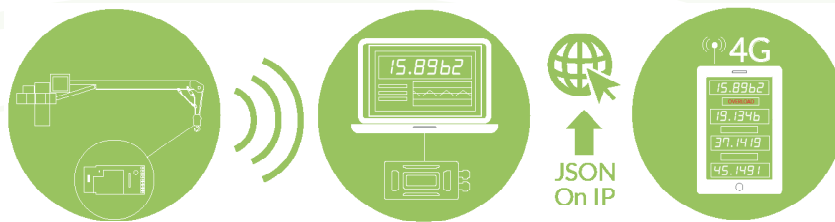
ASCO operate cranes in supply bases across the world, from Hammerfest in Norway to Darwin in Australia.

Load Monitoring Systems (LMS) used Mantracourt's T24 wireless strain transmission module and Micro-Measurements strain gauges on their manufactured Load Cells to meet the requirements. The system has proved its quality by overcoming the challenges of the application, something the previous generation of solutions couldn't achieve.

## THE SOLUTION

The system, designed, manufactured and assembled by LMS, picked up the signal from T24 transmission modules in load links and pushed it to the web as shown in the diagram below.

This allowed for readings to be monitored using any cellular enabled device by accessing a dedicated web address. Overload warnings were in place as well, which simplified monitoring.



## THE CHALLENGE

The nature of the application meant that large distances had to be covered reliably by the system. Signal integrity had to be sufficient for the system to continue functioning at times when the line of sight between the load links and the receivers was obstructed by the body of the ships.

Furthermore, the application required that the data from the readings is easily visible from anywhere on the base - not just the control room. This way, supervisors would be able to monitor weights as they coordinate loading operations.

The JSON input, provided by Mantracourt's T24LOG100 web server, is an ideal way of monitoring device readings in applications with lower levels of complexity.

A link with visual interface is automatically generated by the software. JSON packages containing the key information around a reading are also available to feed customised web interfaces.

The web view can be made accessible either from the same network only, or forwarded to the internet, as was the case with Load Monitoring Systems' project.



Example of ASCO Base locations



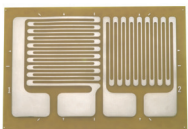
# THE RESULTS: ENABLING VISIBILITY OF LOADS ON HARBOUR CRANES

## THE RESULTS

The T24 technology has successfully proved itself in the face of the challenges offered by the application.

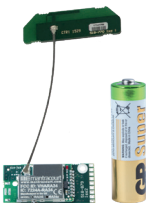
The first of ASCO's systems has now been in service for over four years. The pilot project was, furthermore, replicated in an additional three locations of the company.

## PRODUCTS USED



### MICRO-MEASUREMENTS STRAIN GAUGE

Model: N2A-06-S054Y-350  
Bonded with M-Bond AE-15



### T24-SA

2.4 GHz OEM strain  
transmission module with  
external PCB antenna



### LOAD MONITORING SYSTEMS

Wireless tension load link  
6.5 te - 500 te capacity



### T24-HS-LMS

Wireless portable display  
Receives wireless load data



### T24-LOG100

Android Tablet  
Real time load data on 4G & WiFi



### T24-BSi

Base station with USB,  
RS485 & RS232 output



### T24-AR

Wireless range extended

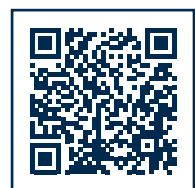


**COMING SOON**

## FOR PROJECTS THAT REQUIRE ADDITIONAL LEVEL OF ANALYSIS AND AUTOMATION

- Historic data storage
- Message and email alerts for data events
- User-friendly mobile compatible web system.
- Easily customisable data presentation with wide range of visualisations.

[CLICK HERE OR  
SCAN QR CODE  
FOR ADDITIONAL  
INFORMATION](#)



*"The installation of Load Monitoring Systems (LMS) load cells and Mantracourt T24 technology across our operations has helped us to accurately monitor weights whilst feeding live information back into our operational systems. The interface with our Integrated Logistics Management System (iLMS), has provided us with increased efficiencies and enhanced planning capabilities. The measurements have been accurate and reliable, even in challenging conditions."*

**Greg Skinner, Project Manager**