

 Lifting Global TradeSM

APM TERMINALS



APM TERMINALS TANGIER

Innovation

White light

Crane operator chair

Truck positioning system

Remote control device

Automotive Terminal Tractor - ATT

Predictive maintenance

Infrared thermography

Ultrasound

Wire rope inspection device

Total Productive Maintenance - TPM

Process Excellence - PEX

Contents



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Before



After



- The annual cost savings per crane are 71% (€16,236);
- The investment is paid back in 1 ½ years;
- The energy savings per crane are 32.685 kWh per year;
- The total reduction in CO₂ output per crane is 107 tons per year



Crane operator chair

Truck positioning system



- This design reduces overall stress, including, as a consequence, reduction of the lower back lumbar load.
- The highly ergonomic position of all the controls enables the crane operator to monitor the work in the best possible way, considerably contributing to the overall performance and productivity.



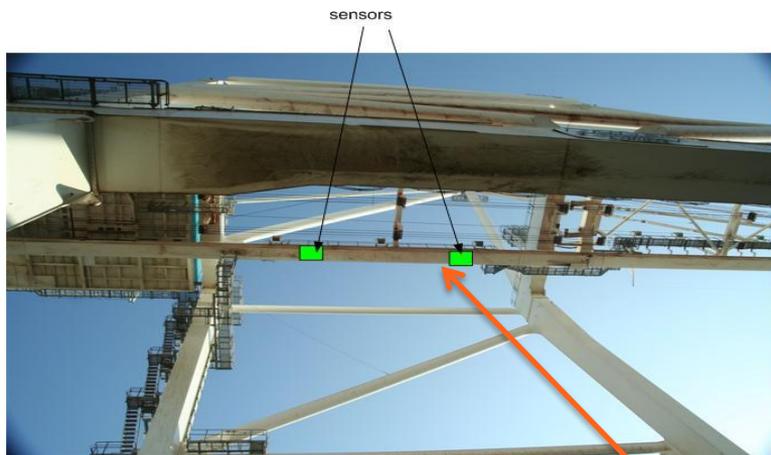
Innovation

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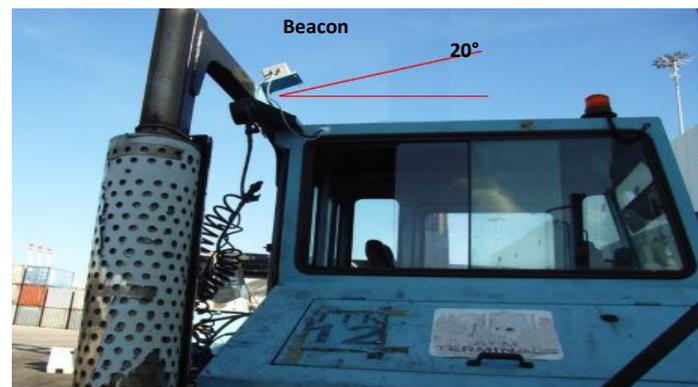
Remote control device



Sensor



Traffic light





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To operate the crane without operator , with different speeds (low , medium , high)

Advantages :

- Safe workplace : direct contact with the working place
- Reduce labor cost for maintenance





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TEMPERATURES	
OIL :	<input type="checkbox"/> °C
WATER :	<input type="checkbox"/> °C
AIR :	<input type="checkbox"/> °C
TEMP ENAB TRAVEL <input type="checkbox"/> Ok	



Predictive maintenance

Infrared thermography

Ultrasound

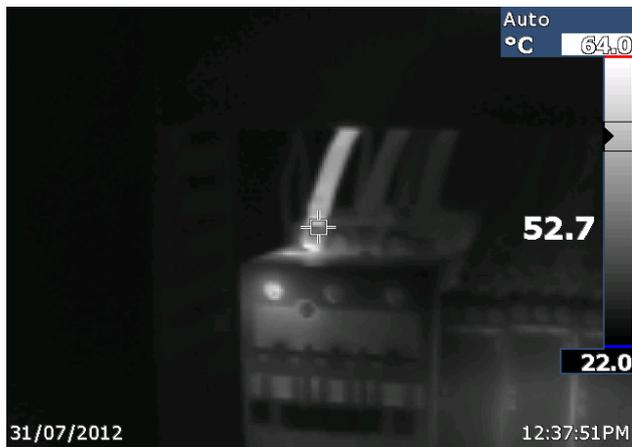
Infrared Thermography is the technique of using an infrared camera to test the thermal patterns which can then show the current condition of a device or composition of a material .

Advantages :

- offers cost savings over routine
- to allow convenient scheduling of corrective maintenance
- to prevent unexpected equipment failures or unplanned stop



Fluke Ti25





Ultrasound is the technique of using an Airborne ultra sound device to detect friction and turbulent flow on electrical , Mechanical and Hydraulic system .

Advantages :

- Decrease the maintenance cost
- Increase equipments reliability
- Improve customer satisfaction





Predictive maintenance

Infrared thermography

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Wire rope inspection device

Total Productive Maintenance - TPM



TCK non destructive and qualitative portable wire rope tester is a wire rope quantitative , positioning and intelligent inspection with various advanced technologies which help to detect and identify defect type , location and quantity.





Background

Total

Productive

Maintenance

Goals

- 1 **Zero BAD**
 - 0 Breakdowns
 - 0 Accidents
 - 0 Damages
- 2 **High equipment OEE**
- 3 **Engaged workforce**





Within Process Excellence we make use of the Lean Six Sigma (LSS) toolkit

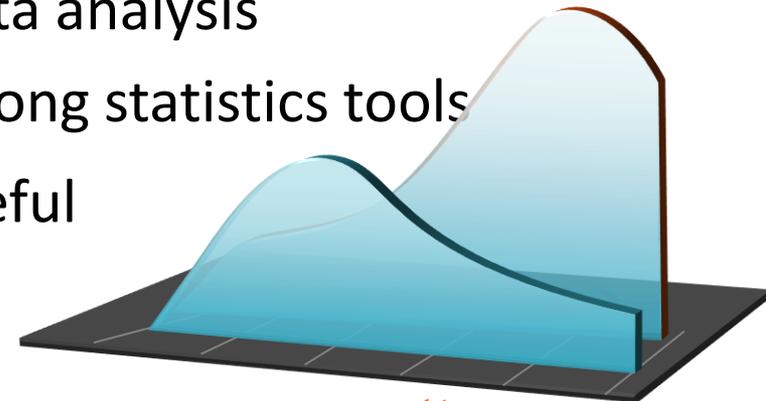
Strengths of Lean:

- Focus on eliminate waste
- Gemba Kaizen approach
- TPM principles
- Strong basic tools

Strengths of Six Sigma:

- Zero defects
- Focus on reduce variation
- D-M-A-I-C approach
- Data analysis
- Strong statistics tools

PEX makes use of all LSS tools when useful





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