



EUROPEAN
RENTAL
ASSOCIATION

Technical Committee

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Please react on Twitter, @era_rental



- 1. New Mission statement & Committee goals**
- 2. Current topics of the Committee**
- 3. Review face-to-face meetings in 2017 / 2018**
- 4. Workshop**

Making it safer, easier, cost effective and sustainable for the rental industry by working together with equipment stakeholders on:

1. The key drivers of the total cost of ownership (damages, accidents, maintenance, parts management etc.)
2. Standardization wherever possible (telematics, decals, tie down points, instruction manuals, etc.)
3. Framework of training (skill level, e-learning, etc.)
4. New legislations impact on rental industry
5. Big data (connectivity, telematics, IoT, etc.)



Telematic standards

- Which data is already available per OEM
- How to summarise the different data / information sent by the OEM's into one platform of a rental company

Predictive Maintenance / Preventive Maintenance in general

Predictive Maintenance, is the intelligent combination of modern sensors and real time data analysis which forecasts the event of damage through the analyses of current and historical data by means of algorithms and Big Data.

Preventive maintenance refers to regular, routine maintenance to help keep equipment up and running, preventing any unplanned downtime and expensive costs from unanticipated equipment failure.

Predictive Maintenance for the construction machine industry

- Usage of measuring and manufacturing data of machines and assets for the derivation of servicing information
- Critical operating parameters serve as a decisive support to determine the perfect time for maintenance and to record operating conditions
- It is supposed to prevent imminent machine failures and determine the time for the exchange of spare parts

Aim:

- proactive service and minimization of downtimes/failures
- disturbances can be predicted, before effects or failures occur

Preventive Maintenance / Interval increases

- careful planning and scheduling of maintenance on equipment before there is an actual failure
- keeping accurate records of past inspections and servicing reports

Aim:

- Prolonged life and improved liability of company equipment
- Less unplanned downtime caused by equipment failure
- Less unnecessary maintenance and inspections
- Fewer expensive repairs caused by unexpected equipment failure

Maintenance Training

- **1st Level Maintenance:** Simple actions required for the operation and carried out on easily accessible parts, in a safe way, using support equipment built in the item.
- **2nd Level Maintenance:** actions requiring simple procedures and / or easy-to-use support equipment (built in the item or external)
- **3rd Level Maintenance:** operations requiring complex procedures and / or complex to use or to implement portable support equipment
- **4th Level Maintenance:** actions implying the know-how of a technique/technology and / or the application of specialized support equipment

Maintenance Training

Framework of Quick Guides

1. General description of the equipment

- 1.1 Picture / illustration
- 1.2 Manufacturer / type
- 1.3 Specific technical information (related to safe use)
 - Kw, V, A, dimension / weight, fuel, blade / wheel size etc.
 - Capacity – reach / working range
- 1.4 Tie down points / lifting points (illustration)
- 1.5 Storage (if applicable)
- 1.6 Range of intended uses – and foreseeable misuses (for construction equipment)
 - Accessories and interchangeable tools / equipment
 - Fixing elements and cartridges
 - Operating in wet condition, explosive areas etc.

2. Safety rules and risk assessment

- 2.1 Operator
 - Correct personal protective equipment
 - Pictograms for vibrations, noise, exhaust, dust
- 2.2 Surrounding
 - Type of soil
 - Distance from power lines
 - Wind speed
 - Magnetic field
 - Potentially explosive environment
 - Lack of proper ventilation
- 2.3 Machines
 - Overtum risk
 - Maximum ground tilt
 - Risk of falling
 - Risk of collision
 - Risk of working on damage machine

Maintenance Training

3. Daily Maintenance and Inspection before and after use

- 3.1 Daily maintenance
 - Engine oil level
 - Cooling liquid level
 - Fuel level
 - Gear box oil level
 - Tyres pressure
- 3.2 Inspection

4. How to operate the machine (Illustrations)

- 4.1 Start and ergonomics
- 4.2 Stop
- 4.3 Errors and operations of emergency
 - Rescue operations
 - Lowering, emergency control
 - Error

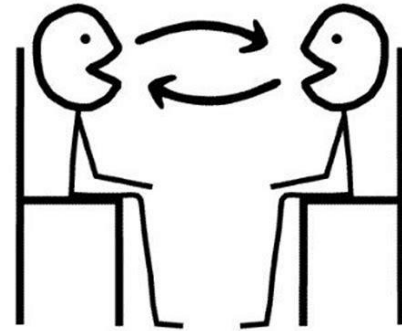
5. Machines specific operational handling (when applicable)

- 5.1 Emergency stop check
- 5.2 Emergency lowering function check
- 5.3 Stabilizers check
- 5.4 Lower control panel
- 5.5 Upper control panel
- 5.6 Drive function check
- 5.7 Raising and lowering function check
- 5.8 Brake control
- 5.9 Speed limit control
- 5.10 Tilt sensor check
- 5.11 Driving function check
- 5.12 Operating accessories fi; quick couplers / hammers

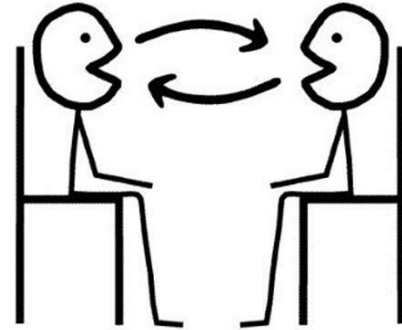


Innovative solutions for the rental industry

- Open question to each OEM to present future developments in relation to technical extensions for the rental industry
- Discussion of topics addressed by the rental companies



- Positive feedback from the OEM's
- Increase of the quality of the meetings on both sides
- Timeline with 1 ½ hours per meeting is well accepted
- Again positive results on the technical Committee works in relation to
 - tie down / lifting points
 - quick guides
 - telematic data
 - machine service ability



Next Face to Face meetings planned on 24th of October 2018 in Konz

Split between Construction machines / AWP's

Next topics for the Committee:

- Tie down and lifting points / quick guides
- Maintenance and predictive maintenance
- Telematics solutions
- Technical training and education
- Quality of PDI / PDI issues
- Innovation

Definition:

“A meeting at which a group of people engage in intensive discussion and activity on a particular subject or project.”





Advantages:

- full involvement of participants
- high interactivity
- hands on learning, problem solving and development of creative solutions
- practically useful ideas for the Technical Committee
- skill development including communication, team work, accepting others' views and presentation



- Time:** 50 minutes for brain storming and wrap up
30 minutes for presentations by the group speakers
- Speaker:** One person per table
- Task:** Answering one question per table
- Objective:** Raise issues of importance for the rental business, on which the Technical Committee could work in the future



Workshop on the following topics:

- What will be the rental equipment needs of our customers in the future?
- Big Data: How will the owner of the equipment (contractors, rental companies) get support from the OEMs for the supply and management of Big Data?

Co-Moderators:

Julien Launay

Avesco

Glenn Verburg

Riwal