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world of rope

Dear readers of our newsletter,

In this edition you will find interesting information on different aspects of our rope business, from which you as CASAR clients will ultimately benefit.
One is the current Major MSA Certification through the DNV-GL (Det Norske Veritas-Germanischer Lloyd) for the preparation of LA4 certificates, while the other describes internal improvements during setup of our rope closers in order to improve the efficiency and quality of our products. Both are accompanied by further investment in our plants. We are confident that with this we can also deliver first-class products to our clients at an impressive price/performance ratio in the future.
I hope you enjoy our newsletter,

Yours sincerely,
Andreas Schmeiss
VP Global Cranes

Andreas Schmeiss
WireCo WorldGroup
VP Global Cranes

SMED workshop at CASAR

A SMED workshop at CASAR took place in mid-January. The aim of the 11-member cross-sectoral team was to deal with the long setup time caused by the machine's construction type on the longest tubular strander. The team had the task of reducing the setup time through the use of suitable organisational and personnel measures. Generally, 25-strand filler braids and 26 to 31-strand Warrington-seale braids are produced on this tubular strander. The machine is frequently prepared and many spools are also prepared again and again during production.

In order to define a target, a statistical evaluation was first carried out over the last 12 months in order to record the current situation. On the basis of this analysis, the setup processes carried out most frequently were selected.

The following targets were agreed:
- Reduction of machine downtime by 30 %
- Reduction of spool change time by 50 %

After clarification of the general condition for opening the workshop by Mr Heims and Mr Tudela, a complete setup process was carried out according to the procedure which applied up to this point in time. This was attended by the entire team and additionally recorded on video. In this the machine operator's procedure took place in the foreground, each movement and journey was precisely followed and recorded. All journeys made by the machine operator were recorded with a spaghetti diagram. The entirety of the setup process was determined and each one of the 72 process steps was documented. Subsequently, the team classified each individual step into the categories "internal" and "external". Process steps which were considered avoidable by the team were eliminated.

The following maxim applies:
- External: this process can be executed if the machine is running
- Internal: this process must be executed if the machine is at a standstill

Thus the team's task was to arrange the existing process steps chronologically so that internal work contents could become external ones. Through the transformation of an internal process step into an external one, the machine's downtime can be reduced. This change in the process steps can arise

from optimisations in the sequence, an additional member of setup staff, modified tool or through changes to the machine itself.

Sustainable standardised procedures contribute significantly to the success of the project. The creation of checklists is also a part of this. With these checklists both the machine operator and the setup assistant know who can safely and efficiently complete which jobs at which point in time. In this, the setup assistant also completes the external process steps or he prepares the machine in parallel with the machine operator. The setup assistant's tasks are, e. g.:

- Rolling spools to machine position
- Monitoring and confirming strand diameter
- Preparation of the necessary tools and lifting equipment on the machine

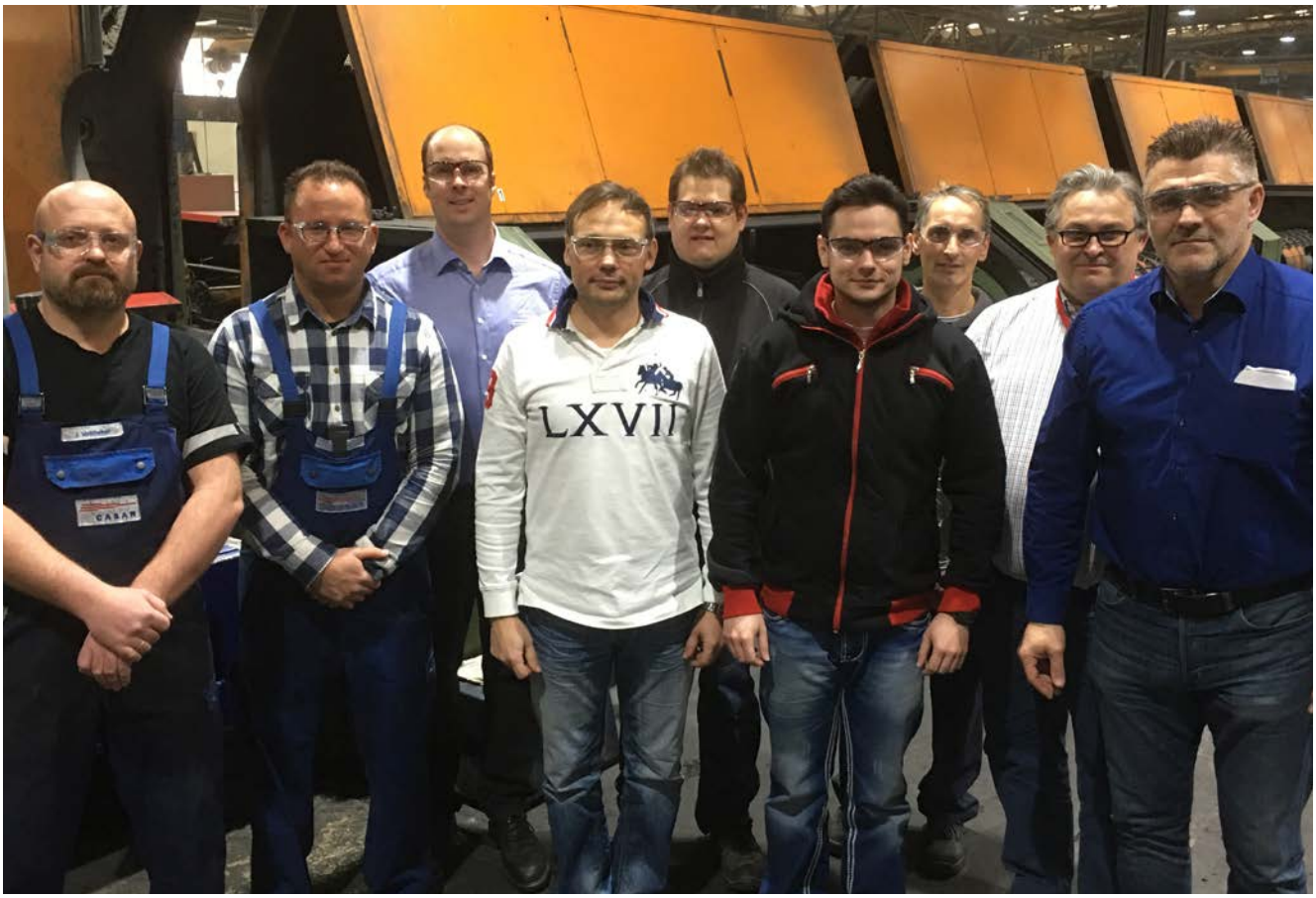
It is ensured through the exiting lock-out-tagout strategy that only work which poses no danger for those working on the machine is completed.

The result of the week-long workshops is a setup process which consists of only 35 internal process steps. 11 work processes were eliminated and 9 were shifted from internal to external. This leads to a total time saving of 35%. Unfortunately, the target of a 50% reduction in time for a spool change was not reached, but it was nonetheless possible to implement a reduction of 40%. This new setup process with setup assistant was documented on video just like the first process. To conclude the workshop, the participants reviewed the last few days and recorded their thoughts in a "lessons learned" document. Thus the potential for improvement in the process is already documented.

In order to ensure the sustainability of this project, affected machine operators from the other shifts were informed about the results and instructed by Mr Pisani. Only in this way will the sustainable optimisations be effective. The next SMED workshop is already planned for a 32-spool tubular strander.

WHAT IS SMED, WHAT DOES IT STAND FOR?

The expression SMED stands for the English term "Single Minute Exchange of Die". The aim of this process is to reduce the downtime of a production machine or finishing line. The term setup time includes the complete time which elapses from the last goods item of the old production batch to the first goods item of the new production batch. Therefore the term "exchange of die" is essentially somewhat contradictory since all steps are meant by this, also including, for example, the preparation of new materials or the parameterisation of the machine. Above all, SMED is widespread in the automotive industry.



The 11-member team from left to right: Johann Weisbeker (Production), Sandro Pisani (Project coordinator), Markus Stieren (Management), Oliver Graf (Scheduling), Sven Hoffmann (Maintenance), Mirko Stegner (Finance), Vincenzo Nardi (Production), Gerhard Lang (Development) and Francisco Tudela (Production management). Jörg Heims and Todd Pearson were absent.

CASAR as one of the first rope manufacturers certified according to DNV-GL

You cannot imagine ropes with a LA4 manufacturer's certificate from Germanischer Lloyd (GL) not being on ship, offshore and in port areas, and CASAR has been successfully supplying its products with the relevant certificates for many years. Through the acquisition of GL last year by certification company Det Norske Veritas (DNV) as well as through the claims of AJAX (the umbrella organization of the audit companies), we at CASAR have decided to address the maximum possible solution in line with a reliable handling of the certificate issuance for DNV-GL approval certificates.

During 2017, the possibility for all manufacturers to provide themselves with a DNV/GL certificate for in-house checked ropes which has been available up to now has essentially expired. From DNV-GL there are now 3 possibilities for receiving a certificate for an ordered rope:

Variant 1:
Complete inspection (strand/production/tensile test) in the factory by an external examiner.

Variant 2:
Personal responsibility for test documentation for strand/production, tensile test by DNV/GL customer. The name for this is: "Minor MSA" (MSA: Manufacturing Survey Arrangement).

Variant 3:
The entire test is performed by the manufacturer, the results are sent to DNV/GL who then issue the certificate. This is called a "Major MSA".

CASAR has therefore decided to implement the "Major MSA" certification for the good of our customers. We thereby want to ensure that the fastest possible processing time is guaranteed and we can minimise certification costs as much as possible. Among rope manufacturers we are one of the first companies able to implement such processing.

For our customers, this new certification means improved safety, since in addition to the careful inspection at CASAR, an independent examination of the test documents and documentation is carried out by DNV-GL, who then also issue the corresponding acceptance certificate. In order to be able to respond promptly to customer requirements, we have already begun to implement a pre-certification of whole production lengths to speed up the production process of individual certificates.

WireCo Worldgroup at the Conexpo 2017

Fortunately, not only was the sun shining from the bright Nevada sky, but exhibitors and visitors were also all smiles on the largest Construction Machine Trade Fair, CONEXPO-CON/AGG in Las Vegas. The economic upturn in the US and many other areas around the world led to multiple large business transactions during the show. Traditionally, the major crane manufacturers and related companies had their machines positioned at the "Gold Lot". This year, the component manufacturers had the possibility to display their products in a very large tent, also in this area, in order to gather related businesses in one location. WireCo were present with their World famous brands: UNION, CASAR,LANKHORST ROPES and OLIVEIRA – Not only to introduce new cutting edge developments and major product improvements, but also to answer the technical questions the show team received.

There are more details on those new and improved products as follows:

- **Our brand-new synthetic hoist rope Lanko© Lift S**

The bright yellow rope, made by Lankhorst Ropes, consists of 12 braided outer strands made of the high-tech material Dyneema. The properties of these special fibres result in a breaking strength equal to a steel rope of the same thickness. The construction of the rope core is specially designed to achieve the required resistance to transverse pressures.

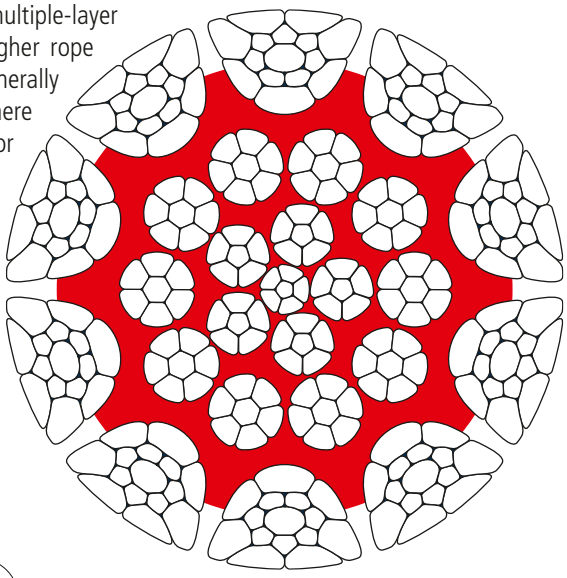
Laboratory tests have produced excellent results for breaking strength and projected service life based on the reversed bending cycles completed during testing. An additional noteworthy feature is the special coating treatment applied to the fibres to reduce interior friction and increase UV resistance. Further laboratory testing and initial trials using crane equipment are in the planning phase.

Many of the visitors at last year's Bauma expo in Germany picked up the rope to feel its quality and they were suitably impressed by its extremely low weight and great flexibility. Not only do these characteristics make the handling of the product so much easier during installation and hook block changes, they are also suitable for higher payloads, especially with higher lifting heights and longer jib lengths. The low maintenance requirements are a further advantage that is immediately realizable, since synthetic ropes of this type are corrosion-proof and require no further lubrication.

Our projections indicate that despite the slightly higher price of the Lanko©Lift S in comparison to conventional steel ropes, operators will benefit overall in terms of cost savings and other improvements. The entire crane industry is following these developments with significant interest and an industry-wide initiative is now getting under way to develop new industry norms for the calculation and establishment of appropriate discard criteria for synthetic ropes. FEM has been working on guidance papers for safe use of synthetic hoisting ropes in crane applications since October of last year. These meetings to establish these guidelines are ongoing and WireCo has been a participant and contributor from day one.

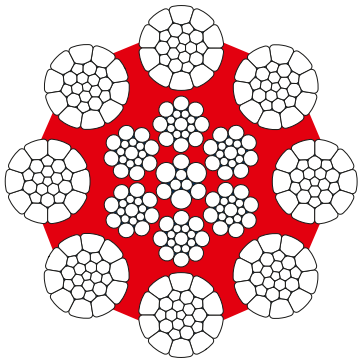
- **Strong, stronger, strongest: CASAR Superfit**

When it comes to maximum breaking strength, CASAR offers a wide range of specialised constructions. Our rope specialists are now working on a logical extension to our 10-strand CASAR Superplast 10 Mix product, a hammered version that combines the great reversed bending characteristics of this construction with even higher breaking strength and an extremely smooth rope surface. The product features of the CASAR Superfit include excellent spooling performance on multiple-layer drums and it also enables higher rope tensile forces. This rope generally finds use in applications where high-payload luffing ropes for mast and jib adjustments on crawler cranes and large mobile cranes are required, as well as for specialised spooling and indoor crane requirements and in general, in all applications where a special rope with a high breaking load is required.



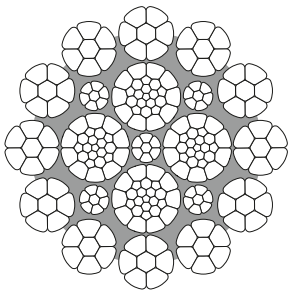
- **New and improved CASAR Turboplast**

There is still room for improvement in our perennial best sellers. Applying the principle of continuous improvement to the materials used and our production processes has enabled us to increase breaking strength as indicated in numerous table values and also to lengthen rope service life in our Turboplast product.

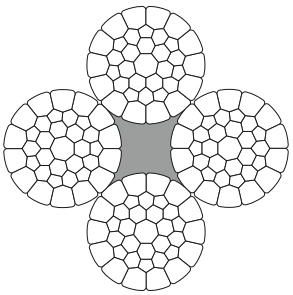


- **New developments to our OLIVEIRA rope range**

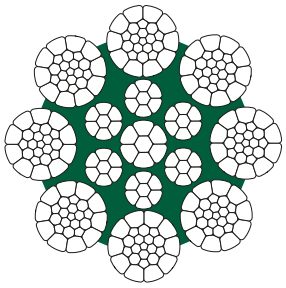
The OLIVEIRA DC 4 K 4-strand compacted hoisting rope is a new addition to our catalogue. The main applications for this rope are ship and deck cranes. The OLIVEIRA TC 12 K rope has been developed specifically for tower cranes. Designed with specifications ideally suited for small to medium-sized cranes and with an attractive price point, this rope has met with a lot of interest among many of our customers. We have also upgraded the OLIVEIRA HD 8 K PPI product. The new and improved version features a higher breaking load.



OLIVEIRA TC 12 K



OLIVEIRA DC 4 K



OLIVEIRA HD 8 K PPI

NEXT ISSUE WILL BE PUBLISHED IN

JULY 2017

PLANNED TOPICS:

- GELMERBAHN SWITZERLAND
- ZIP LINE KROATIA
- ITC LONDON / INTERALPIN INNSBRUCK

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