

The Belt System

Simple Development – great Impact

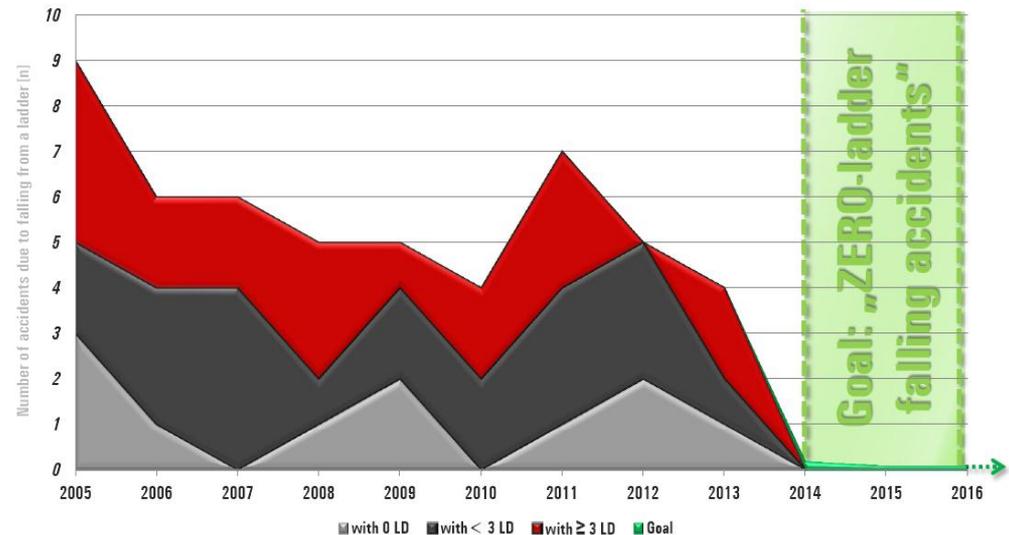
2015 IPLOCA Health & Safety Award – Summary (Presentation)

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■ The Case:

- The pipeline construction – one of STREICHER’s core competences – is characterized by a high hazard potential in the HSE sector compared to stationary construction sites.
- An internal analysis of the accident causes revealed, that up to **23 %** of all work-related accidents in the last 10 years at STREICHER pipeline construction sites can be led back to accidents caused by falling and almost 50 % of them are caused by ladder accidents.
- We discovered, about 78 % of all falling accidents occur with fall heights between 1 to 3 meters. The average lost time per injured employee in the last 10 years was **15.6 working days!**
- Typical injuries: fracture on foot, knee, leg, pelvis, arm or hand and multiple injuries like bruises or sprains.



- *Analysis of accident statistics in terms of ladder accidents (Dec. 13)*

- **Finding out the problem & first measures:**

- Based on interviews with site managers and other site personnel we discovered, that a large part of all falling accidents at STREICHER's pipeline construction happen during the welding, coating and insulation works on big pipes, which often are performed by utilizing ladders.
- As a result alternative work or safety equipments were comprehensively tested in terms of a possible use on pipeline construction sites (e.g. like mobile scaffolds, mobile elevating work platforms, etc.). The result was, that all viewed options were unsuitable for pipeline construction!



- For this reason the top management initiated a development team with the goal to evolve an optimally suitable and safe work procedure during welding, coating and insulation works on big pipes.
- The development should prevent the overturning, slipping, sinking in of the ladder as well as other hazards and should ensure a flexible repositioning (vertical & horizontal), a major application range, an easy reachability of the pipe and the fast descending in case of hazardous situations!

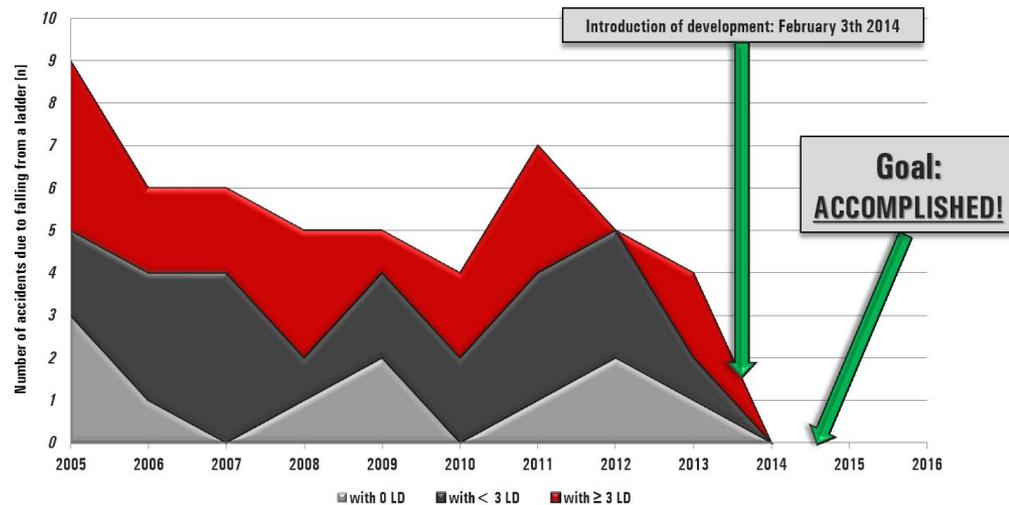
- **The development: *The Belt System***
 - **Suggested solution:** Combination of modified lashing strap and safety lanyard to ensure a **safe connection between ladder and pipeline.**
 - Attaching the safety lanyard with snap hooks into the rings of the lashing strap ensures flexible positioning in horizontal direction. The ratchet furthermore enables a fast loosening and tightening of the lashing strap, which allows a quick vertical repositioning.
 - By securing the ladder with the pipeline this system is independent from surface character.
 - Because of the innovation of this sophisticated safety system all essential requirements have been fulfilled.



- The prototype: Modified lashing strap and safety lanyard

Summary and Outlook:

- Promptly after the introduction of the system the number of accidents caused by fallings decreased significantly. The number of fallings caused by overturning, slipping or sinking in of the ladder fell to zero (state: May 5th 2015)! The belt system doesn't hinder the effectiveness and/or efficiency although providing the high safety.



Effect of the developed safety system on the internal accident statistics

- Thanks to the fast decision made by the top management, to start an „in-house“-development and not saving development costs to find the best possible and safest solution, STREICHER Group now owns this innovative und cost-efficient safety system.
- This initially very simple-seeming development meets all requirements which are needed for all work steps and ensures a very high level of safety as well.
- Longterm figures aren't available yet, however we can claim with no doubt that this system permanently will decrease the number of falling accidents significantly - the current number of falling accidents proves that unambiguously. And - as a result of this - also the enormous lost working costs, which can be avoided in future.