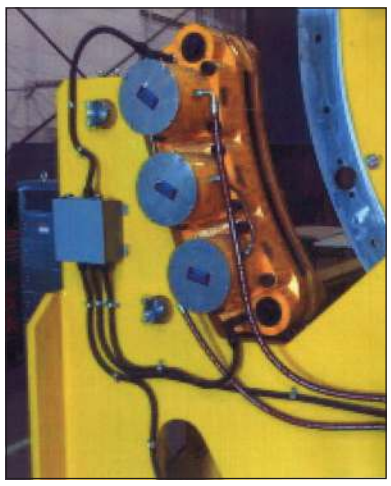

Kor-Pak recently installed spring set/hydraulic release caliper disc brakes on an STS crane

nuisance. Typically the short rail has to be replaced every 5-6 years. The cost of a new short rail is relatively low, but the crane has to be out of action for about a week (scaffolding, doing the replacement work, removing the scaffolding).

The new short rail comprises a "flexible web," with a high quality synthetic rubber formulation permanently vulcanised to the steel parts. The rail head is the same steel grade as the wheel.

Gantrex has agreements with undisclosed operators in Europe and the US to test the new rail. At this juncture, it reckons that the rail will last twice as long as a conventional short rail, but will not make any claims until the test installations can be inspected and analysed.

In another development, Gantrex has come up with an answer for shock load damage to ground handling equipment when they pass over an open rail trench. Sometimes, operators fill the gaps with asphalt, but this interferes with rail inspection and maintenance.

RailLok Trench Infill is described as an easily removed material that is resilient enough to sustain heavy wheel loads of ground handling equipment over repeated cycles. The material is made up of recycled rubber grades bonded with polyurethane. Field tests have been carried out for more than 18 months in a busy terminal, reportedly without problems.

New buffers

At TOC CSC Europe in London in June, UK-based Oleo International launched a new low energy absorption buffer range. The Type 1 range has been designed specially to bring the same reliability and efficiency advantages of gas hydraulics to lower energy applications. The range has both 50mm and 100mm stroke options, is claimed to be competitive for any application requiring up to 4 kJ of energy absorption and will be compatible for multiple mounting requirements. It has been engineered to be sold at a competitive price and is a stock product that can be sent out to customers at the short notice they require, says Oleo.

Oleo also used TOC CSC Europe to announce the introduction of the Type 21/250 and 21/300 products into its Type 21 range as low cost options, adding to what is already a popular range of industrial buffers. And it demonstrated its new Industrial Buffer Simulation Software, a tool to give customers such as crane builders more information and control in specifying a buffer for an application and estimating the dynamic performance of the buffer when in service.

Like Oleo's 1D Rail Simulation software, this application is claimed to provide in-depth assessments of energy absorption applications to help ensure the protection of valuable machinery, structures and products. Marketing manager Sandy Andringa said: "The new buffers complement our existing range and mean that we are can provide an industrial buffer for any type of energy capacity."

New spreader cable

Ariston Cavi is testing a new spreader reeling cable with a number of terminal operators in Italy and elsewhere. "We have two types of product for this application, one with a rubber jacket and one with a polyurethane jacket that we extrude ourselves," explains the company's sales engineer, Nicola Mori, referring to the Ursus VS SL cable and Ursus PUR HF cable respectively.

Both jackets have excellent mechanical properties, in terms of tensile load capacity, abrasion resistance, oil resistance, etc. For very demanding applications, in terms of lift height, hoist speed and acceleration, Ariston Cavi recommends PUR HF. It is less dense than rubber, but has twice the tensile load of the VS SL.

What Ariston is testing is an improved insulation material that also contributes more to the mechanical characteristics of the cable. In intensive STS crane operations, spreader cable may have to be changed every year, depending on duty cycles, speeds, lift height, and so on. The tests will go on for six months, after which Ariston Cavi will remove them for examination. "This is the best way to be sure we have the right products," said Mori.

Rolling on

Tsubaki Kabelschlepp has introduced a new energy chain using rollers. The roller supported chain (RSC) entails much lower friction than a gliding solution and the push/pull forces are estimated to be 90% lower for a given chain size, length and operating speeds.

With the RSC, the upper trough does not glide on the bottom trough, but runs on rollers mounted on ball bearings at the side of the carrier, which permits very long travel lengths requiring substantially less driving power.

A feature of the RSC is that the rollers can be easily removed when they are worn without interfering with the links in any way, with easy access from both sides. For maintenance purposes, the wear part roller(s) can be replaced individually. The rollers are easily accessible through cutouts in the channel and modular side panels. This saves time during maintenance and service.

The RSC is a low noise and low vibration chain, due to the PU roller surface, the use of ball bearings and other factors. The rollers run on the guide rail and do not contact other rollers. Kabelschlepp is confident that the RSC will open new opportunities in the harbour crane industry, particularly trolley and perhaps also long travel in some cases.

New brakes

Finally, Kor-Pak, a US distributor of braking systems and other industrial products, has provided an example of the bespoke engineering solutions it can supply to crane operators. It recently installed spring-set hydraulically released caliper disc brakes on a container crane in the southern United States, which was originally designed with no emergency brakes acting on the low speed side of the hoist. Kor-pak was contracted to install emergency brakes after a shaft failure in the drive system caused a dropped load.

Together with Johnson Industries, Kor-Pak designed a retrofit system using four Johnson "floating" caliper disc units running off one power pack. Space around the drum pillow block was minimal and using multiple brakes enabled the system to be designed with a small disc, mounted to an extended drum shaft. The direct acting floating caliper disc brakes have a short stroke and "self adjust" as the pads wear. The brakes are activated by an over speed encoder at the end of the shaft that monitors the drum RPM. ❑