Riga Universal Terminal quadruples productivity of Biomass loading

Loading bulk with RAM Revolver reduces pollution and material loss

The first RAM Revolver product to be sold in Europe has quadrupled biomass productivity for Riga Universal Terminal. Lars Fricke, Sales & Marketing, and Tomas Sylvén, Sales Agent – Ukraine & Scandinavia, RAM Spreaders give WPD a detailed overview of the revolutionary system for containerised bulk handling…

With growth in environmental awareness and increasing demand for renewable energy sources, growth in Biomass exports have increased. As a result Riga Universal Terminal (RUT) began handling biomass pellets and wood chips, but have been looking for innovative ways to cope with the demand while still being cost competitive for their clients. After extensive research, RUT's management were steered towards a system called Containerised Bulk Handling (CBH). This particular system allows the commodity to be directly loaded into containers and tipped into the ships hold with rotating spreader RAM Revolver attached to a Liebherr mobile harbour crane.

RUT's expansion

Riga Universal Terminal, located just outside the beautiful city centre of Riga in Latvia was formed in 2001 and rapidly developed to become one of the top terminals in the Port of Riga. The company handles more than 3 million tonnes of cargo per year. In 2013 international operator Portek Group from Singapore took note of this success and acquired RUT. The innovative management team has grown the business from traditional sources, adding different kinds of cargo. The multipurpose port can handle containers,

breakbulk, timber and various types of bulk materials. Due to a rising demand of renewable energy sources, a few years ago RUT started handling sunflower pellets, wood pellets and wood chips. Being biomass products, wood pellets and chips are quickly becoming a valuable commodity and are in high demand as a reliable and renewable energy source. The increasing demand meant that RUT had to look at more efficient high capacity loading systems to continue growth.

CBH - a good option

When considering the different options available, RUT had thought about buying a new material handler in the region of EUR1.3 million as well as the possibility of having to sell one of their existing Liebherr mobile harbour cranes in order to buy a bigger and much more expensive crane. "This would have meant a huge investment without getting a meaningful profit in return," said Ricky Yong, CEO of RUT. With the support of their Liebherr service partner Alfis Ltd and the sales agency Intersafe Marine AB, RUT soon got the recommendation for the RAM Revolver. Containerised Bulk Handling with the revolver allows for high capacity loading of up to 45 tonnes per cycle. Utilising the existing Liebherr MHC and the skilled operators; RUT projected 30 cycles per hour. This meant that for a small investment the RUT could increase loading rates making the terminal more profitable with higher annual tonnage for a small investment in crane attachment.

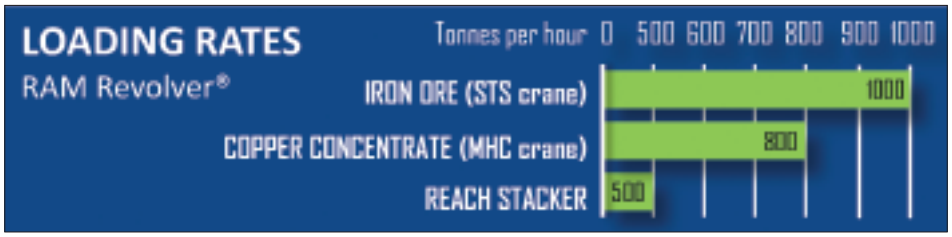
Operation

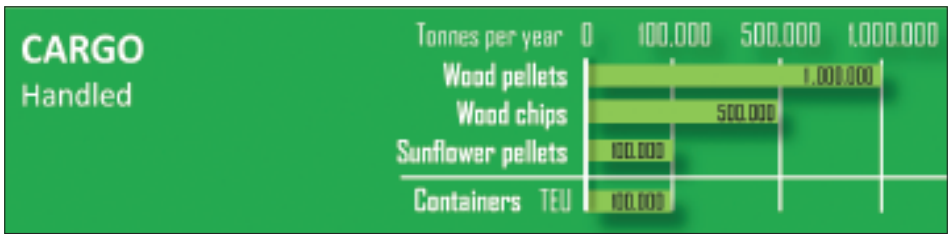
The RAM Revolver and purpose built high capacity containers were delivered in January and they made a difference straight away. While loading vessels with wood chips, RUT compared the work of a material handler with the work of a RAM Revolver by measuring the time it takes to load the vessels with each machine. They found out that the material handler had a maximum

capacity of handling 200 tonnes/hour, while the RAM Revolver reached of 800 tonnes/hour on the first usage which can only increase.

Facts about RAM Revolver

Loading bulk with RAM Revolver is revolutionary because of the reduction in material loss and pollution. The system uses containers which can be enclosed with a lid to stop any material loss. Secondly the system adds little energy to material when tipping gently at the bottom of the hatch where there is very little dust generated. RUT is very proud and happy of being able to operate with this innovative kind of machinery; and are looking forward to welcoming guests from other ports and companies to show them the fast and easy operation of their new RAM Revolver. Even though the RAM Revolver is widely used in bulk handling in Australia and South America, the one in Riga is now the very first of its kind working in Europe.





"Being the first Revolver in Europe, the CBH system is world's best practice for environment; and we can see in Riga that it increases productivity as well."
Cameron Hay, Chief Sales Officer, RAM Spreaders

"That's a production productivity increase of 100%! Such a result we would have never expected. We are very satisfied!"
Kaspars Buris, Technical Support Manager, RUT

Terminal operators face biomass challenge

Biomass is one of the fastest growing bulk shipping sectors, driven mainly by wood pellets coming in to Europe to replace some of the coal used by power stations. As a fuel it is combustible; and the same can also be said for animal feed, grain, sugar and other organic material. The question is: how many people are aware there is a high risk of explosion and fire associated with many dry cargoes? Catastrophic fires and explosions have occurred in the past during transfer and storage. The majority of ports have a high level of recognition in this area and employ the relevant training and precautions to avoid such incidents. However, what do the operators entering into the sector need to consider? And with so many types of biomass products what should they assess before investing in new handling and storage facilities? Well, the challenges facing bulk operators looking to make the transition from coal to biomass were addressed at the Association of Bulk Terminal Operators' inaugural conference recently. "Biomass is not one material," said Professor Mike Bradley, Director of the Wolfson Centre, urging delegates at the conference to carefully evaluate the various types of biomass products before investing in new handling and storage facilities. "Different biomass products have different requirements," he said, explaining that biomass products can be made up of anything from organic residues, food waste, sewage, straw, cereal and olive stones to chipped wood, wet leaves and paper. "The key is to understand the properties of the particular range of materials involved since no one handling system can deal with all types of biomass." Going on to highlight some of the challenges faced by operators looking to adapt their terminals for biomass, he advised operators to keep a close eye on their quality control and safety procedures. Biomass dust, he said, is a particular challenge. "Dust has caught more people out in biomass handling," he said. "It's more mobile, it's lighter and will stay suspended for longer." He said there is a danger that if not dealt with appropriately, it could result in terminal workers inhaling the dust and contracting "farmer's lung", the accumulation of mould spores in the lungs. Bradley also said the accumulation of biomass dust can increase the fire and explosion risks, particularly as some biomass cargoes are self-heating. "If you can write your name in the dust, you have an accident waiting to happen." The storage of biomass products, specifically wood pellets, was a key point raised by TBA's Dr Mi-Rong (Kimberly) Wu. She explained that biomass volume, rather than weight, has to be taken into account when considering silos and storage facilities. Due to its bulk density, more volume of solid biomass needs to be stored compared to coal and this would require about 1.3 times more land to accommodate the higher volumes. Wu also said that solid biomass is sensitive towards degradation and should not be stored for more than three months. "For solid biomass products, temperature and emissions must be constantly monitored." Summing up her presentation, she said: "For solid biomass handling, the volumetric performance should be the main benchmark rather than tonnage performance. For operators considering a transition from coal to biomass, adjustments in terms of handling processes and storage requirement are necessary, along with in-depth investigations into logistics and material characteristics."