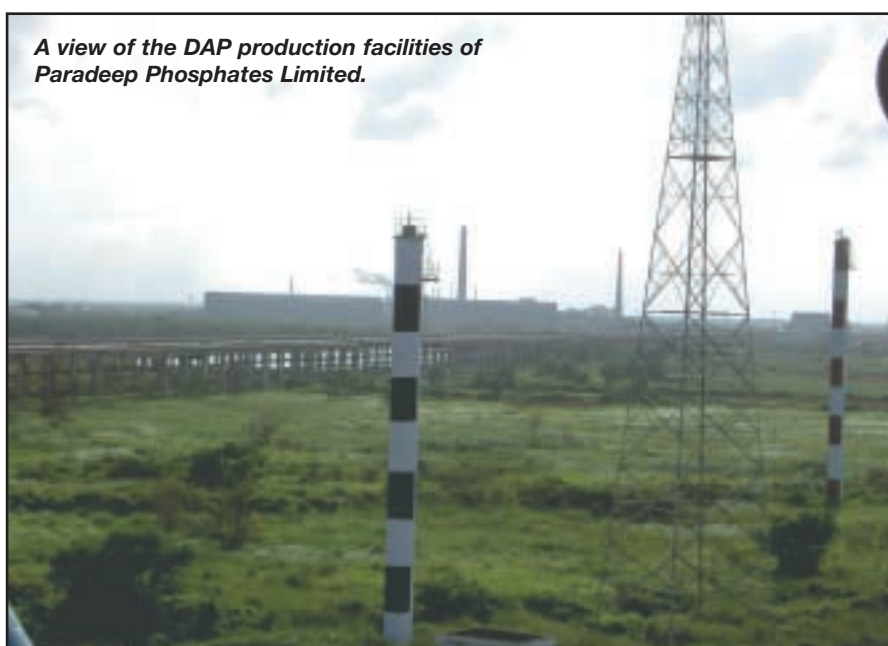


Superior performance through Swedish technology

by Anders Paulsson, Sales Manager, MacGREGOR Bulk AB, Sweden.



A view of the DAP production facilities of Paradeep Phosphates Limited.

MacGREGOR Bulk - formerly known as BMH Marine - specialises in providing engineering solutions, equipment and after-sales services worldwide for a broad range of dry bulk material handling and processing applications. Its scope of services and supply includes: plant and terminal design; ship unloaders/loaders; self-unloading/loading systems for dry bulk carriers; mechanical and pneumatic conveying systems, as well as storage systems. The company has been active in the dry bulk-handling sector since 1949 and employs some 150 people. Its customers can be found in more than 55 countries worldwide.

TAILOR-MADE SYSTEMS

MacGREGOR Bulk's history of ship unloaders starts in 1974, when the Siwertell inlet feeder for a vertical screw was invented, patented and tested by Swedish inventors Olle Siwersson and Gunnar Tell. At an early stage, the screw's potential for a ship unloading application was recognised and the Siwertell ship unloader was born, along with the

company AB Siwertell. The name later became BMH Marine, until July 2006, when the

business was acquired by the Finnish Cargotec Corporation - listed on the Helsinki Stock Exchange - and became a division of the MacGREGOR Group. It was then given its current name: MacGREGOR Bulk.

There are seven main dry bulk-handling applications within the company: ship unloaders, mobile ship unloaders, ship loaders, self-unloaders, supply vessel equipment, conveying systems and terminal systems. To provide customers with long-term professional service, it also has an extensive after-sales team of experts that provide efficient and high-quality support. A unique element of MacGREGOR Bulk is that, although its systems are standardised, they can be widely altered according to a clients' needs.

DUST-FREE LOADING AND UNLOADING

Siwertell ship loaders are based on screw, aero-slide or belt conveying technologies and offer capacities of up to 3,000 tonnes/hour while loading post-panamax ships. They are



Before the installation of the new ship unloader, PPL experienced problems with the efficiency of discharging fertilizer raw materials, particularly sulphur.

FEATURE NEW PPL SHIP UNLOADER

Work on the new Siwertell ship unloader progressed swiftly.



suitable for a range of dry bulk materials such as alumina, cement, fertilizers, grain, coal, agribulk, sulphur and other dry bulk commodities.

The ship unloaders are based on unique screw conveyor technology with a totally-enclosed conveying line for environmentally-friendly operation, and offer capacities of up to 2,500 tph for ships of up to 200,000 dwt. They are supplied in rail-mounted, port-mobile, road-mobile, stationary, and ship-based versions. More than 270 Siwertell screw-type unloaders have been selected by customers throughout the world since its conception in 1974.

Dedicated for grain and agribulk handling is the new-generation pneumatic ship unloader model, PortMaster. It is available in various sizes with capacities of up to 550 tph for ships of up to 130,000 dwt.

UNLOADING FERTILIZER: A GROWING INDIAN INDUSTRY

Indian-based Paradeep Phosphates Limited (PPL) is a premier fertilizer business in the state

of Orissa. The company, which is a part of the K K Birla Group and the OCP Group of Morocco, is a major manufacturer of phosphatic fertilizers and ranks as Asia's second largest producer of di-ammonium phosphate (DAP).

PPL has grown substantially in the last few years, which has required increased unloading capacity. Historically, it faced two major issues: the unloading of sulphur was not efficient enough, and the operation was unacceptable from an environmental point of view.

In 2004, PPL therefore decided to invest in a new ship unloader. Initially, it considered an ordinary grab-type unloader, as it was well known to them and the most common type of unloader in India. However, the company realized that it would not meet its efficiency requirements and certainly not those of India's Central Pollution Control Board, which sets the country's national environmental standards.

A CONTRACT-WINNING COMBINATION

After careful evaluation and after having seen

continuous enclosed unloading in locations such as Fremantle in Australia, PPL changed its mind and decided to opt for a continuous screw-type unloader instead. MacGREGOR Bulk (formerly BMH Marine) was awarded the



Part of the Siwertell Sulphur Safety System



FEATURE NEW PPL SHIP UNLOADER



The new ship unloader in action.

order and the contract was signed in July 2004. MacGREGOR Bulk won this contract mainly because it is able to offer highly efficient and environmentally-friendly systems. The project's success was, to a great extent, the result of joint forces: Engineering Systems based in Bangalore, as the local front runner, and Sweden's MacGREGOR Bulk as the equipment supplier with overall responsibility for the contract.

The system was delivered in 10 months and was erected by local contractors under the supervision of MacGREGOR Bulk. Installation and commissioning work took place on PPL's existing jetty and had to be done without disturbing its daily operations.

THE PREFERRED SYSTEM: A SIWERTELL UNLOADER

PPL decided to install a Siwertell ST 640-D unloader, equipped with a Siwertell Sulphur Safety System (4S), which minimises explosion risk. If an explosion occurs, the devices ensure that no damage is caused. The 4S system consists of water spraying nozzles, explosion-relief hatches, spark and fire detectors, as well as a fire-extinguishing system.

The new unloader came into operation at the beginning of 2006 and soon after that, a performance test was carried out. During the test, sulphur was unloaded; a capacity of 1,820

tph was achieved. This was well beyond the guaranteed figure of 1,600 tph.

Mr. Malik, PPL's Vice President of Operations, expressed great satisfaction with the performance of the Siwertell unloader and the service support from MacGREGOR Bulk.

STATUS TODAY

Between 22 January 2006 and 1 February 2007, PPL's Siwertell unloader has successfully unloaded 1.167 million tonnes of fertilizer raw materials as follows: 15 vessels containing 853,100 tonnes of rock phosphate in total, six vessels containing 193,800 tonnes of sulphur in total, and 5 vessels containing a total of 121,000 tonnes of MOP.

PAY BACK & A WELL-PREPARED FUTURE

The Siwertell unloader has significantly increased PPL's unloading capacity and has also made it possible for it to handle sulphur in an environmentally-friendly way.

At a recent meeting Mr. Malik and Dr. Mohanty, PPL's Senior Manager of Operations, confirmed that PPL was very satisfied with its decision to buy the Siwertell unloader.

They also confirmed that the investment for the unloader would be paid back before the end of 2008 as expected.

General lay-out and main data

Type: Siwertell ST640-D

Materials/capacity:

* Sulphur/1,600 tph

* Phosphate rock/1,300 tph

* MOP/1,000 tph

Max ship size: 60,000 dwt.

Total weight: 690 tonnes

Paradeep Phosphate is now well-prepared to meet the future with a forecasted increase in production and a related import increase of base materials, as well as an ability to meet India's more stringent environmental rules and regulations. ■

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