Maintaining high standards

IBJ recently visited UK-based global leader in bespoke dry bulk loading chutes, Cleveland Cascades and discovered that following a period of growth the company is looking to maintain its strong performance

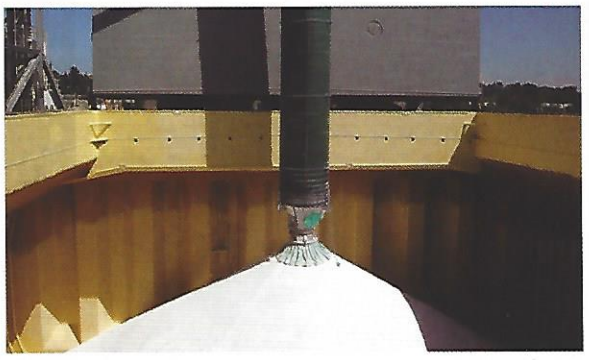
Visiting Cleveland Cascades' manufacturing unit in the North East of England, IBJ was welcomed by a team of people who not only have pride in their recent market success, but also the company's product range and level of customer service. The facility is dedicated to the design and production of a full range of bulk loading chutes and covering an area of 4,700²m (50,000ft²), includes manufacturing and assembly workshops, secure outside storage space, and offices for engineering and support functions.

The company is best known for the Cascade controlled flow technology chute, which uses a series of inclined cones, inside a retractable cover, to control dust pollution at source, while at the same time minimising both material degradation and stockpile segregation. This technology has established the company as a leading global force in ship and silo loading chutes.

"Following a dip in 2013/14, we were up in 2015 despite a challenging year for the global dry bulk market and we are still enjoying strong growth," said Managing Director Matthew Barnard. "Our sales in Europe and North America held up well in 2015, but it was sales to the Middle East and South America which moved ahead very well. Our traditional strength in Cascade Chutes in to ship and silo loading grew nicely, but it is great to see sales of our conventional style free fall chutes move ahead after investment in new product development in recent years".

"Our chutes handle every type of bulk material and we have globally established products and business, so our aim now is to maintain our high standards. As well as experiencing recent growth, we have built up a large population of systems with around 650 chutes working in bulk handling facilities worldwide. We have regular spares orders and are now starting to receive our first replacement orders," said Barnard. "In 2004 we had nine staff and we now have around 40, with the majority being in production and engineering."

The company's experience and expertise in Cascade chutes has been transferred to Conventional Free Fall chutes in recent years. The investment has enabled the launch of both Free Fall Cone and Tube Chutes. The Cone system utilises a series of vertical cones suspended from chains or strops, allowing the material to fall vertically to the pile. The Tube System uses of a series of telescoping concentric tubes which remains rigid and is ideally suited to applications which require trimming spouts or jet slinger devices. The Free Fall Chutes have applications in tanker loading, vehicle loading as well as ship and silo loading.



QUALITY SERVICE AND SUPPORT

Cleveland Cascades has developed a worldwide reputation for quality, well-engineered, robust, high performance chutes, backed up by excellent customer service and lifetime product support. On a tour of the factory, the high level of customer service was highlighted to IBJ, "We manufacture the majority of the product here, so the end user knows we have control over quality and that leads to respect from our customers. No two chutes are exactly the same", continued Barnard, "The strength of the company is based on our ability to offer a bespoke engineered solution to meet the exact requirements of each application, rather than a list of standard chute models to choose from."

The company prides itself on a strong product support package throughout the lifetime of the product, wherever in the world the chute is installed. Factory trained engineers are experienced in installing chutes in dry bulk applications across the globe from Europe to the Middle East, in North or South America or from Africa to Asia and Australia. Manuals are detailed and comprehensive to give operators the information they need to maintain the product and maximise its operational safety and efficiency. Original spare parts are offered either from stock, or can be made to order in the production facility. All parts are available but especially electrical components and other important replacement items, such as strops, shrouds and cones.

Based on a comprehensive list of key performance criteria, Cleveland Cascades offer a design to suit precisely the material being handled and the site where the chute will work. Offers take into consideration the interface with existing loading systems along with the electrical specification and other requirements in situ.

The core design is built from a number of different elements, which are proven in demanding applications around the world. The core design can be further upgraded by choosing from a wide range of options, to achieve the specification which ideally suits the application.

This business model has strong appeal to a wide range of companies in the global dry bulk industry from end users such as ports and quarries to major engineering groups who integrate the Cleveland Cascade chute in to their fully integrated conveyor systems.

GRAINS TO NEWCASTLE

An example of the company's success this year is how Cleveland Cascades and Siwertell have combined forces to provide the optimum grain loading solution for the Port of Newcastle, Australia. Siwertell, the Swedish specialist in dry bulk handling systems, designed a telescoping shuttle boom conveyor which needed a loading chute to effectively control dust emissions and minimise material degradation. Having worked together on many projects together, Siwertell, part of the Cargotech group, is familiar with Cleveland Cascades specialist expertise in this field.

The Cascade system of inclined cones limits the material flow velocity to a controlled speed. The shape of the cone holds the grain to prevent particulate separation and minimises material degradation. The significantly reduced product velocity creates a "mass flow" of material moving as a single mass through the chute, onto the stockpile, practically eliminating dust at source.

The system supplied to the Port of Newcastle, Australia has a capacity of 2,800m³/hr, through a 31m long chute. It has auto raise-lower capability and is fitted with a fixed head chute and upper deflector in order to interface with the Siwertell shuttle boom conveyer.

To effectively handle grain, the GRP cones are lined with UHMW PE liner and electrical components which come in to contact with the material, are certified to ATEX zone 21 standard. Two interchangeable options were supplied for the outlet. A standard skirted arrangement and a trimmer spout, which extends to 1.5m from the chute and helps ensure maximum utilisation of the ships hold space ■

THE CASCADE CONCEPT

Utilising an innovative system of inclined cones, the Cascade system controls the descent of dry bulk material through the chute which largely eliminates dust emissions at source and minimises both product segregation and product degradation.

When material is allowed to free fall uncontrolled, it accelerates, and as the velocity increases dust particles within the material separate and are ejected by the fast moving air-stream created.

Ship loading represents a major challenge since the material must be delivered to the vessel's hold from a boom conveyor, often at heights of 20m or more above the hold floor, generating high material velocity and extreme dust hazard.

The Cascade solution overcomes this problem by directing the material flow down a series of inclined cones, which limits the flow velocity to a controlled speed. The shape of the cone holds the dry bulk in such a way that prevents particulate separation and minimises material degradation. The significantly reduced product velocity creates a "mass flow", a stream of material moving as a single mass through the chute and onto a stockpile with minimised segregation.

By using this technology, dust generation is practically eliminated at source, without the need for expensive, energy-intensive and high maintenance, dust extraction and filtration systems. The Cascade system has been tested by external bodies to reduce dust emission levels to as low as 5mg/m³ ■