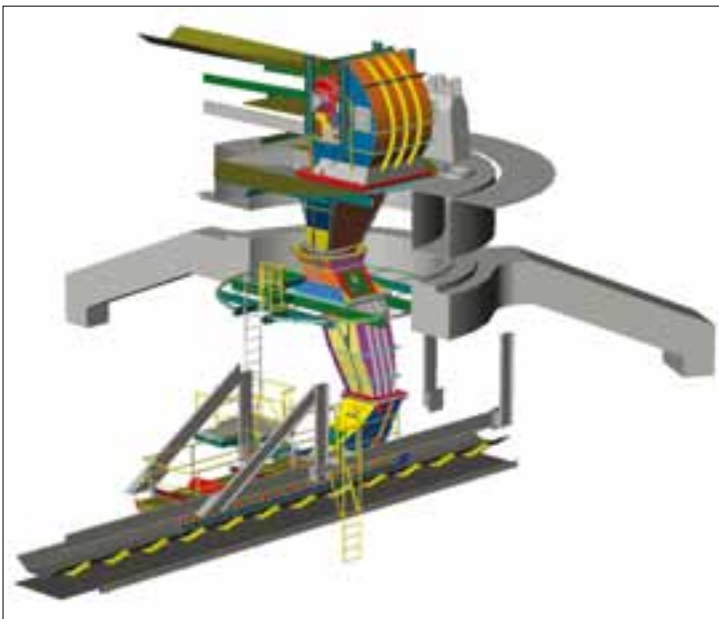


Over 20 years of conveyor transfer chute excellence

Tasman-Warajay has carved out a formidable reputation in the conveyor transfer chute sector with its innovative Controlled Flow Material Transfer System (CFMSTS) technology. In this article ABHR speaks to Tasman-Warajay's managing director Bernie Halpin, himself a former customer of Tasman-Warajay.

Tasman-Warajay, based in Gladstone in Queensland, was formed in 1993 when Tasman Engineers and Warajay joined forces to create an integrated design and manufacturing company producing materials handling equipment, with a specialization in transfer chutes.

Tasman Engineers pioneered the CFMSTS technology in 1985. The latter minimises energy loss in conveyor transfer chutes by guiding material in a controlled way from the head pulley of the incoming conveyor to the receiving belt.



Typical bucketwheel reclaimer centre chute transfer loading directly onto yard conveyor without the need for a travelling load table.

Since 1993, Tasman-Warajay has invested heavily in continually developing and maintaining this technology to suit customer specific applications and requirements. CFMSTS conveyor transfer chutes are supplied world wide to mines and port facilities where bulk material handling is the core function.

In 2003 Tasman-Warajay was purchased by FLEXCO, a one hundred year old manufacturing company whose corporate vision is "to become the leader in maximising belt conveyor productivity for our customers worldwide through superior service and innovation." The purchase provided another step towards FLEXCO achieving its vision, and has given Tasman-Warajay the financial backing and security to take on larger projects.

According to managing director Bernie Halpin, Tasman-Warajay is technology driven, and its skill in CFMSTS technology application has resulted in products which, in many cases, are situation specific and have been developed to solve particular materials handling application problems.

"We can offer our clients a 'one stop shop' for the design, supply, manufacture and installation of conveyor transfer chutes," said Mr Halpin.

Tasman-Warajay works with major engineering and project management firms to form part of the solution to major plant upgrades and expansion projects. The firm's 50-plus team of experienced people includes designers, drafters, skilled tradespeople and experienced project managers.

"Our team provides our clients with high quality and reliable equipment," explained Mr Halpin. "We have successfully designed and supplied chutes into the United States, Canada and Indonesia, demonstrating that distance from our design and manufacturing base in Gladstone is no limitation to servicing our customers no matter where they are in the world.

"A number of companies claim 'to do the same' as Tasman-Warajay in terms of soft loading transfer chutes. However, a large proportion of our work in recent years has come from the need to replace problematic transfers designed by others. As a result of the good performance of our systems, which are the result of our 20+ years of development and experience, we are seen by some of our clients as part of their risk management strategy in major plant upgrades."

CFMSTS was developed to meet a need to load 55m beam width ships with a shiploader designed for 42m beam width ships.

Tasman's pioneering work was developed in conjunction with Gladstone Ports Corporation (GPC) at the RG Tanna Coal Terminal during 1985. The economical solution basically involved a new highly actuated loading chute and a material flow path which minimised energy loss through the transfer by providing a more

Bernie Halpin purchased his first chute from Tasman-Warajay in the mid 1990's ... "I remember arguing about the price for months before proceeding, but it paid for itself within months in reduced downtime and spillage," he said.

direct and efficient path for the material to reach the seaward regions of larger ships.

"This type of innovation remains a hallmark of Tasman-Warajay's approach to problem solving materials handling challenges," said Mr Halpin.

From this beginning, there has been an ongoing research and development and improvement process in place at Tasman-Warajay



Soft loading – note the low impact angle of the coal stream landing on the belt.



Coal stream discharging the spoon chute in the direction of belt travel at close to belt speed, minimising belt wear and spillage.



RG Tanna Coal Terminal Shiploader – first application of CFMSTS®.

which allows the firm to design chutes between conveyors where it is able to accurately predict the behaviour of a range of materials flowing through quite complex paths, all the time keeping the material under control.

“By keeping the material under control we are able to place the material softly, uniformly and in the direction of travel on the receiving conveyor,” said Mr Halpin.

Tasman-Warajay has a successful track record in difficult transfer situations, particularly on reclaimers. “These are always problematic transfers because of set out limitations, but with the application of our CFMSTS technology the material not only reliably gets through the complex path inside the machine, but it is loaded directly onto the associated yard conveyor doing away with the need for moving load tables,” said Mr Halpin. The soft loading achieved with CFMSTS does not require the installation of additional idlers.

Tasman-Warajay has demonstrated the benefits of its CFMSTS technology in field applications. By getting the material loaded onto the belt at close to belt speed and direction of travel, the system has reduced belt cover wear.

One of GPC’s two identical shiploaders had its tripper to boom transfer chute replaced with a CFMSTS transfer. After 60 million tonnes through the CFMSTS transfer the belt cover wear rates between the two shiploaders were compared and it was independently determined that the wear rate for the CFMSTS transfer was 3.6 times less than that of the conventional transfer.

Because CFMSTS chutes minimise energy loss through a transfer, and impact angles within the chute are designed to time proven limits, the technology is able to achieve extended wear life. By way of example, the ICP to 7AP transfer at a major coal terminal was replaced after nine years of operation because of a plant upgrade. The spoon chute was returned to Tasman-Warajay for testing and a tile wear of less than 1 mm on average was recorded.

No record of chute maintenance could be provided from the site’s maintenance management system and from the appearance of the chute no maintenance had been performed. The site advised that approximately 130 million tonnes had been transferred by this chute during the nine years of use.

Elsewhere, a Tasman-Warajay client requested data on noise generated by CFMSTS transfer chutes as this was an operational concern. A NATA registered company conducted tests on an overhead tripper transfer at GPC. The tripper transfer was selected because it did not have an associated drive which would add to any noise generated by the chute itself. The noise levels adjacent to the chute were measured with the transfer running empty and at 6,000 tph. An average noise increase of 2.1dB(A) was recorded with a maximum increase of 2.4dB(A).

“Because of our 20+ years of experience, and our continually increasing investment in research and development, we believe our capability in coal transfer chutes design and manufacture is unsurpassed,” said Mr Halpin. “A fundamental element of the success of the product is the fact that we make what we design, ensuring the subtle features in the design are implemented in manufacture.”

Tasman-Warajay is now applying its experience and CFMSTS technology to handling other bulk materials. The belt cover wear improvements can be immediately transferred, but the primary issue with handling other bulk materials is determining the best wear liners for other bulk materials, and the firm is involved with R&D programmes to achieve this.

While CFMSTS cannot be applied in every application, there are major benefits to be won in most applications. Bernie Halpin purchased his first chute from Tasman-Warajay in the mid 1990’s when he was responsible for mechanical maintenance at a large Bowen Basin wash plant. “I remember arguing about the price for months before proceeding, but it paid for itself within months in reduced downtime and spillage,” he said.

Tasman-Warajay designed and supplied the chutes that turned a concept produced by ASPEC and MHO into reality for the third shipping stream at RG Tanna Terminal.

“We are proud to have been associated with this project that won ASPEC and MHO the Transport and Conveying Technology category at the 2007 Bulk Handling Awards,” concluded Mr Halpin.

“When an apples for apples comparison is made to include the cost of design, project management, the superior quality of manufacture, and resultant saving in maintenance costs and downtime, we believe that the CFMSTS chutes are value for money. It is sometimes difficult for a new customer to appreciate the benefits but as over 90% of our turnover comes from existing clients it demonstrates that the performance and quality of our chutes is improving their productivity.”

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