FACT SHEET - Bulk exports using "Rotating Container Unloading Technology"

What is "Rotating Container Unloading Technology***"?***

Rotating container unloading technology is a technology which allows containerised iron ore to be unloaded into bulk ships using existing portainer cranes, as is currently in use at Fremantle Container Terminal. Purpose built containers are lifted into a ships hold and rotated to unload product using a container rotating device. There are currently two devices on the Australian market trade marked Rotainer and Revolver.

The Containers are purpose built bulk product containers fitted with lids that are capable of being rotated for unloading. Lids are removed prior to the container being rotated.

The containers are standard container size in length but half the normal height being 6060mm long and 1800mm high with a capacity of 20.8 cubic metres. The containers are designed for a maximum gross weight of 38 tonnes and a net load of 35 tonnes.

The rotating device is attached to a portainer with standard equipment. Portainers with rotating devices fitted are able to lift the purpose built containers and lower the container deep into the cargo hold of a ship and then rotates the container until all the material inside the container has been emptied into the hold.

The empty container is then returned to the upright position and returned to the wharf where it can be loaded onto a rail car and sent for reloading.

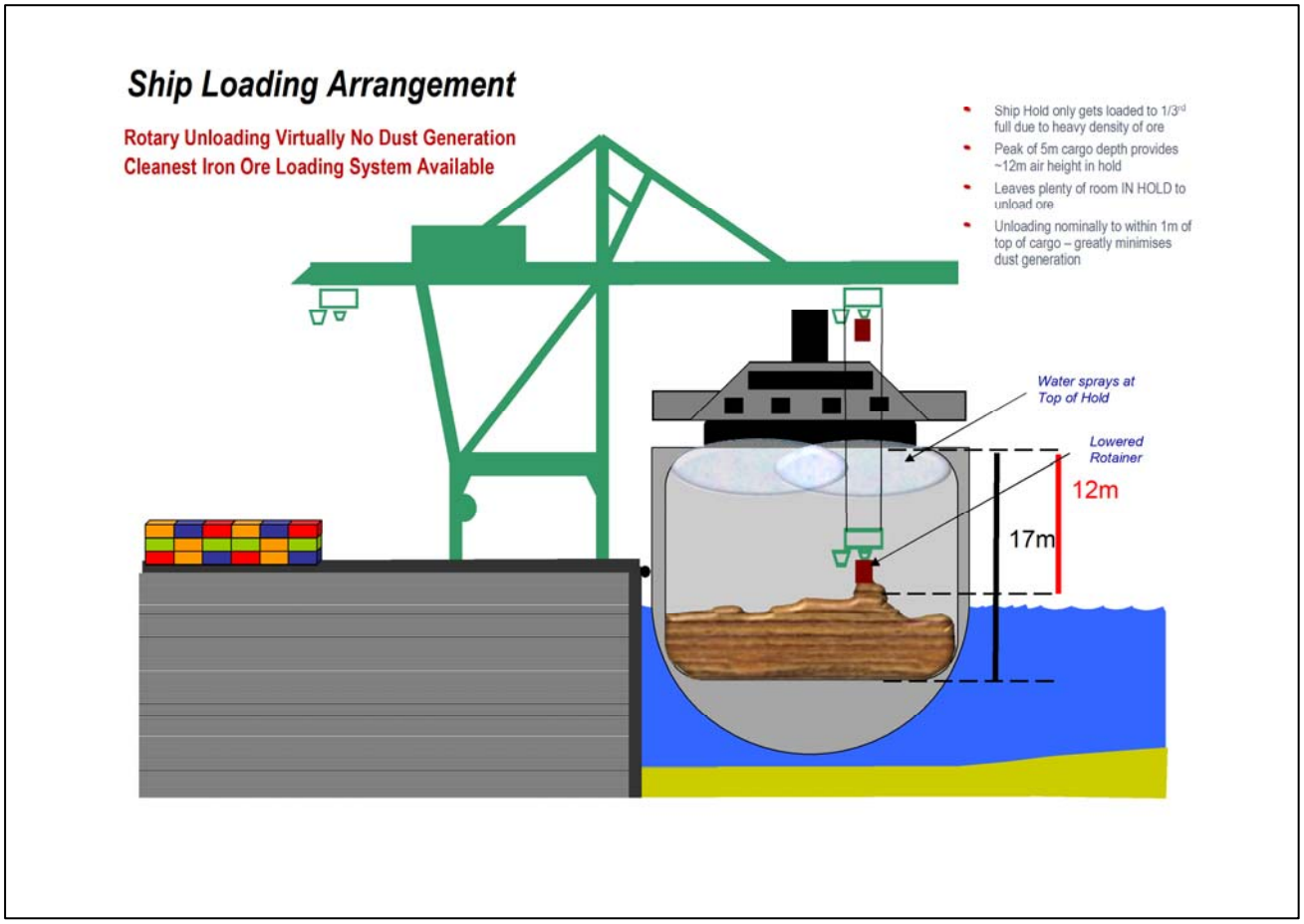
Where is Rotating Container Unloading Technology being used in Australia?

The technology is currently being used by Flinders Ports at Port Adelaide to load magnetite ore and concentrates from IMX Resources' Cairn Hill Project in South Australia. This system has had no issues with respect to dust, noise or any other issues since operations commenced in December 2010.

What advantages does the technology offer?

The technology allows an exporter to load iron ore directly at the mine site and transport it to port in a covered container that can be stored at the loading point before being loaded directly to a ship. The containers can be lidded; as opposed to being open in wagons as is standard practice in other transported iron ore operations. Furthermore because the container is emptied deep inside the ship's hold, dust generation during container tipping is virtually eliminated.

The purpose built containers can be loaded and unloaded directly from a train and stored, just like normal shipping containers, until time for ship loading. This allows iron ore to be transported and stockpiled at a port ready for shipment throughout the year.



How can dust emissions be further reduced?

Dust emissions are be further reduced by employing proven dust capture, control and suppression technology, in conjunction with the rotating container unloading technology..

The most common form of dust suppression technology involves capturing airborne dust particles using banks of nozzle jets spraying a fog of tiny water droplets at the top of the ship's hold as the ore is loaded onto the ship.

Rotating container unloading technology provides a quick and practical solution for the loading of bulk commodities in container ports and has been proven to be environmentally acceptable. The

ore is an inert product that will be transported by rail in closed containers before storage and then unloaded into Supramax vessels via a virtual dust free operation. This style of operation already exists at the port of Adelaide where iron ore has been successfully shipped since December 2010.

Rotating container unloading technology provides a potentially practical solution to the export of iron ore in a State heavily dependent upon limited infrastructure. The operation has been proven to be best practice utilising new technology which for all intents and purposes occurs as a standard containerised operation.
