

Floating transfer terminal

Marine Selfunloaders
Spencer Gulf



MacGregor transfer terminal

Floating offshore transfer terminal, *Spencer Gulf*, for optimising cargo transloading from port to ocean-going vessels outside Whyalla, South Australia.

In May 2005, MacGregor was awarded the contract for the supply of MacGregor bulk materials handling system for one floating offshore transfer barge (FOTB), *Spencer Gulf*, and two 10,500 dwt self-unloading barges (SUB), *Barngarla* and *Middleback*. The two self-unloading barges have an unloading capacity of 5,000 t/h each. All three barges were built at Chinese shipyards in Shanghai. This terminal is intended for the transfer of iron ore from the port to cape-sized vessels out in the open sea. Early in 2007, they were taken into operation by CSL International for service in Whyalla in South Australia.

Fast and efficient transloading of iron ore

The floating offshore transfer terminal *Spencer Gulf* is towed out in the open sea and moored alongside an arriving cape-sized vessel. At the same time the first self-unloading barge is loaded with iron ore in port and then shuttled to the transfer terminal out in the open sea.

Special features:

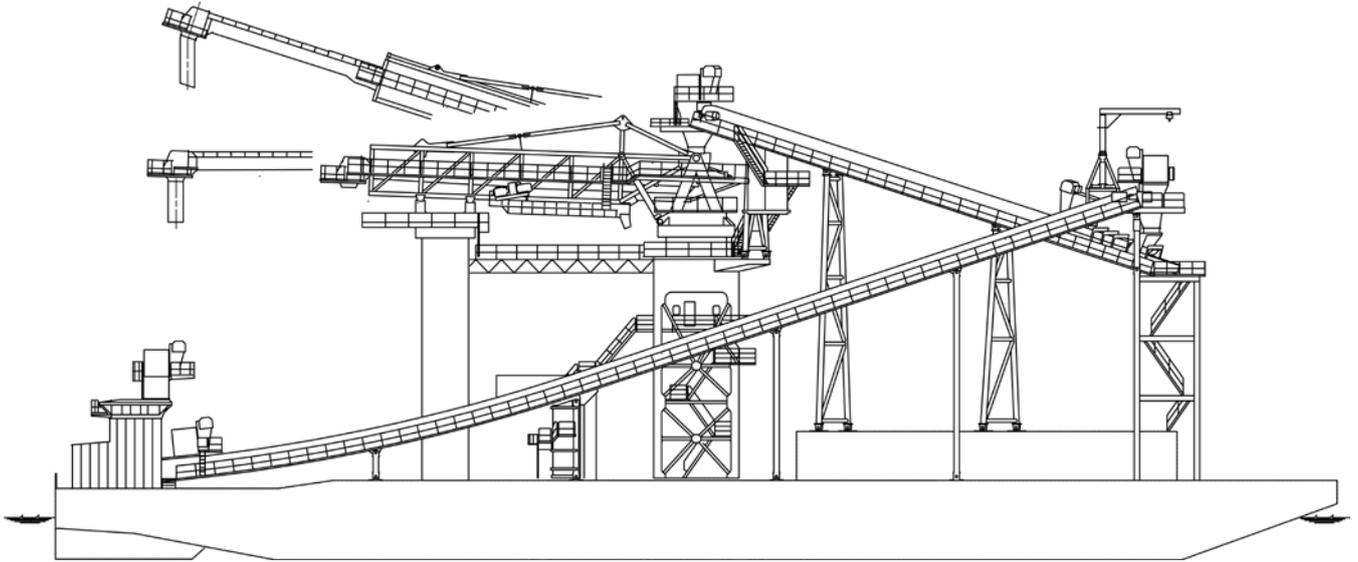
- High unloading rate at 5,000 t/h
- Flexibility - no shore-based unloading systems required
- Environmentally-friendly operation
- Fully automatic control of the conveyor systems
- Video camera supervision of the transloading systems on the barges

Upon arrival, the shuttle barge is moored to the transfer terminal and the cargo is transferred from the barge, via its conveyor systems, to the transfer terminal and then loaded onto the cape-sized vessel at a capacity of 5,000 t/h. With two altering selfunloading shuttle barges, one loading ashore while the other is unloading offshore, a very efficient transfer of the material from shore to the cape-sized vessel is achieved.

Environmental protection

Special attention was given to meet the strict Australian regulations for environmentally responsible handling of cargo between the shuttle barges and the floating offshore transfer terminal. To lower dust emission during offshore operation the conveyor systems and the shuttle boom are totally enclosed. The boom is also equipped with dust collectors. To further reduce dust during transloading spray water nozzles are installed in the discharge chutes between conveyors and in unloading points.





Operation of the transfer barge (FOTB) *Spencer Gulf*

The *Spencer Gulf* is a flat top barge. The cargo is transferred from the shuttle barges into the deck hopper of the transfer terminal. From there the cargo is conveyed onto two inclined belt conveyors reaching a slewing and hoisting boom conveyor midships for loading into the various cargo holds of the cape-sized vessel.

The operation and control of the transferring procedure from the shuttle barge, via the transfer terminal and further into the holds of the cape-sized vessel is remotely controlled from the control room located on the *Spencer Gulf*.

Principle dimensions of the (FOTB)

| | |
|---------|-------|
| Length | 96.0m |
| Width | 27.6m |
| Depth | 6.0m |
| Draught | 3.2m |

Design conditions

| | |
|------------------------------------|-----------------------------------------|
| Cargo | Iron ore |
| Unloading capacity | 5,000 t/h or 2,500 m ³ /h |
| Length of telescopic boom conveyor | 39m |



Operation of shuttle barges (SUB)

Barnagarla and Middleback

The two shuttle barges are of flat top type, each equipped with a large deck hopper which is loaded from the ship loader located ashore. Unloading is provided by gravity flow of the material when the hydraulically operated Basket Gates are opened in the bottom and feeding to the longitudinal belt conveyor.

From the longitudinal belt conveyor the cargo is fed to a slewing and hoisting boom conveyor for transfer to the receiving hopper located on *Spencer Gulf*.

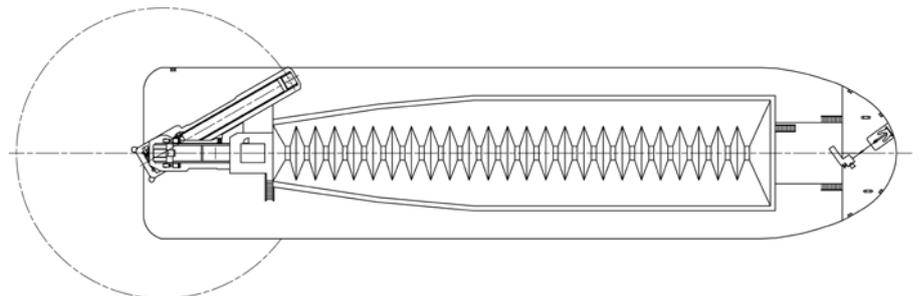
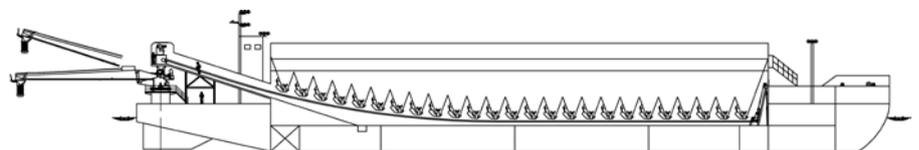
The entire conveyor system is remotely controlled either from the control room on the self-unloading barges or on the offshore transfer terminal.

Barge dimensions

| | |
|-------------|------------|
| Dead weight | 10,000 dwt |
| Length | 117.0m |
| Width | 27.0m |
| Depth | 7.7m |
| Draught | 5.8m |

Design conditions

| | |
|--------------------|--------------------------------------|
| Cargo | Iron ore |
| Unloading capacity | 5,000 t/h or 2,500 m ³ /h |



MacGregor shapes the offshore and marine industries by offering world-leading engineering solutions and services with a strong portfolio of MacGregor, Hatlapa, Porsgrunn, Pusnes and Triplex brands.

MacGregor is part of Cargotec (Nasdaq Helsinki: CGCBV).

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