

II. Summary

A bulk loading crane (or ship loader) is a device that fills a ship (barge or vessel) with bulk. The device consists of a conveyor belt that transports the bulk across the bridge and the boom to the farthest point of the ship loader, the head of the boom. At this point it will drop through a chute into the ship. The ship loader will move its filling position in order to trim the ship and make sure the ship will not break or tip over. This repositioning can be done in various ways: stationary or travelling, linear or radial.

The ship loader needs to fulfill its purpose: loading the required amount of bulk into the required size ship in the required amount of time. To reach all these requirements, some characteristics have to be chosen during the developing process. The most important characteristics are 'year of production', 'capacity', 'ship size', 'outreach' and 'belt width'.

In this literature assignment the characteristics are being used to answer the following question:

"Is there a significant noticeable trend in the development of bulk loading cranes?"

To conclude on this question, research has been done to find as many characteristics of as many ship loaders as possible. These characteristics are compared to each other using graphs. The result of these graphs can be summarized in the following (most important) conclusions:

1. Ship loaders are looked at as being simple.
2. Most ship loaders are operated by hand because of safety reasons.
3. The average capacity of ship loaders does increase, but the maximum capacity does not.
4. When the capacity increases, the variation of the maximum ship size increases.
5. When the capacity increases, the outreach increases as well.
6. When the capacity increases, the belt width increases as well.
7. Both ship size and outreach have various values in each time period.

The overall conclusion is:

When choosing a ship loader, the only target is that it will be able to perform its task. The customer can specify this task by only giving the needed capacity and ship size. The other detailed characteristics are chosen by the designer of the ship loader and not by the customer. The choice of which ship loader to buy will be an economical one. The cheapest one will do, as long as it will be able to handle the required capacity and ship size.