becker marine systems

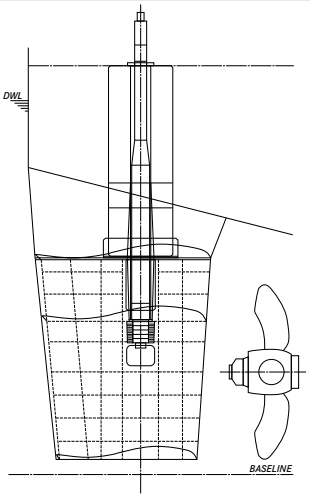
News from Becker's R&D

Shuttle Tankers

Becker's solutions for high manoeuvrability requirements

Shuttle tankers have a high requirement for manoeuvrability, especially at slow and zero speed, while the tanker operates in DP mode. The main part of a shuttle tanker's operating time is at slow speed, zero speed and DP mode. For these kinds of operations it is essential for shuttle tankers to have appropriately designed and dimensioned manoeuvring equipment.

One very important component in this respect is the rudder which can have major influence on the shuttle tanker's manoeuvrability. The dimensioning figures of rudders for shuttle tankers are different from conventional rudder layouts. The rudder needs to deliver optimum performance at slow speed, zero speed and transit mode.



Becker's Schilling® KSR (King Support Rudder) meets the demands for highly efficient manoeuvrability of shuttle tankers

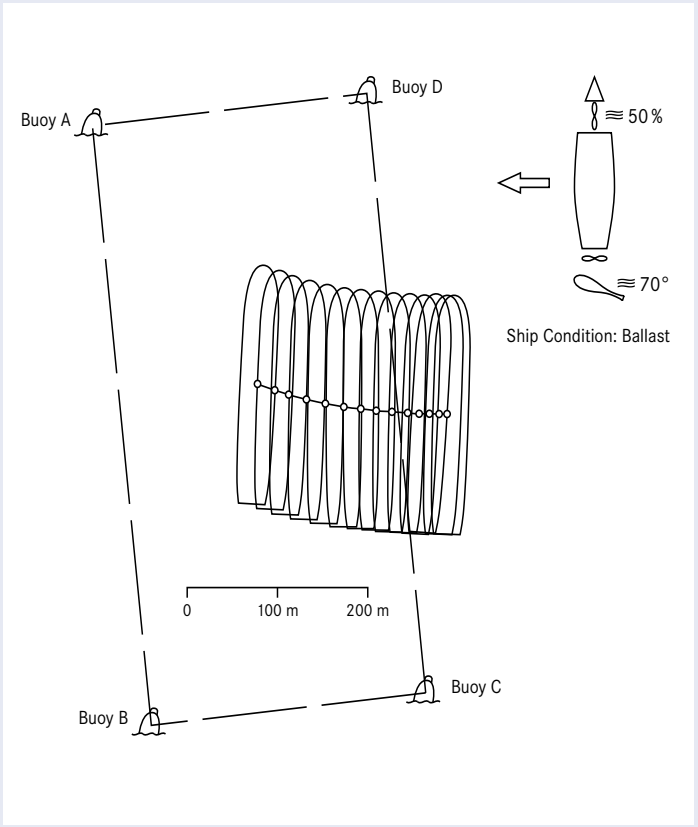
Becker provides the perfect solutions

Shuttle tankers require high lift rudders, such as a Schilling® KSR or FKSR rudders. Becker Marine Systems' KSR (King Support Rudder) system is the key to providing full spade rudders of unlimited size for large vessels such as shuttle tankers.

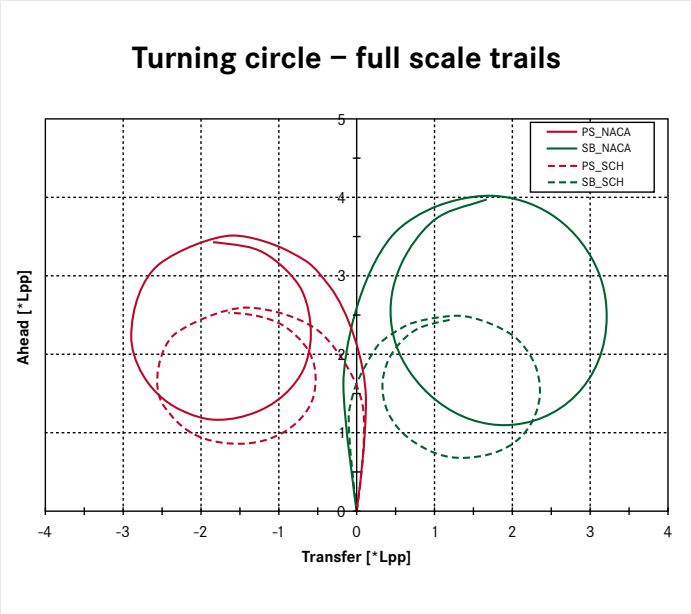
The sophisticated and well-proven KSR System, which can be combined with flap type rudders, Schilling® profiled rudders or conventional shaped rudder profiles was invented by Becker Marine Systems decades ago and is being permanently optimised.
This invention has made Becker Marine Systems the technology leader in high lift rudders for shuttle tankers.
Aframax shuttle tankers have an average rudder area of 50 m^2 to 55 m^2 and Suezmax shuttle tankers' rudder sizes range between 65 m^2 and 70 m^2. It is recommended to have a steering gear which is capable of turning up to 65° or 70°.

The sophisicated Becker spade rudder design ensures that the propeller thrust is transferred into a size force component, enabling the ship to run manoeuvres such as crabbing or turning on the spot by using bow thrusters and the prime mover with the rudder only.

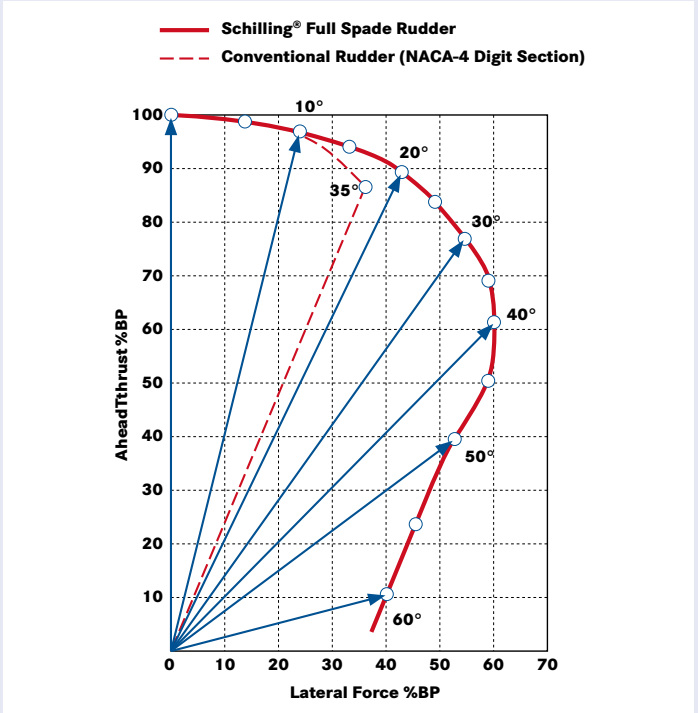
In combination with the BIMS (Becker Intelligent Monitoring Systems), newly developed by Becker Marine Sytems, the efficiency of the rudder and the propeller for slow and zero speed manoeuvres is increased and improved.
Specifically for DP operations, Becker Marine Systems is cooperating with Kongsberg Maritime AS.



Becker rudder designs make complicated manoeuvres such as crabbing or turning on the spot possible



Becker's rudder solutions give shuttle tankers a superb manoeuvrability



Vector diagram (bollard pull condition): Schilling® Full Spade Rudder and conventional rudders behind open propeller