

The Red Queen – what Lewis Carroll taught us about vessel efficiency

A common misconception is that being efficient means achieving a task in the shortest possible time, writes *Andreas Glud, Group Segment Manager, Marine, Dry Dock, Hempel A/S*. While in an ideal scenario this may well be true, in the global movement of dry cargo by sea, the concept of efficiency is about much more than just speed.

In his well-known tale, *Through the Looking-Glass, and What Alice Found There*, English writer Lewis Carroll describes the Red Queen's ability to move across a chessboard with great speed and agility, but only because she has the correct conditions to do so. Alice, the main character, starts the game as a pawn and must cross the board encountering different challenges which allow her to



transform and ultimately gain the same conditions that the Red Queen enjoys.

Overcoming challenges to gain more favourable conditions is something that shipowners and operators also face. Whilst charterers often expect the vessels they hire to sail the seas with 'Red Queen' capabilities, more often there are challenges that hinder these ships and cause them to be inefficient in a number of ways, such as bio-fouling.

Bio-fouling is when organisms such as algae and barnacles attach themselves to a vessel's hull. This creates drag meaning more fuel is needed to move the vessel, increasing fuel costs and CO₂ emissions. This is an inefficient use of energy and power and less friendly to the environment.

Recognizing this challenge, Hempel, the worldwide paints and coatings manufacturer, set about developing an advanced fouling defence coating which

would keep a ship's hull clean and smooth, reducing friction and streamlining a vessel's movement through water. The result was the award-winning Hempaguard.

In one coat, Hempaguard combines low surface friction silicone with efficient fouling prevention biocides through Hempel's unique patented Actiguard technology. Since its inception in 2013, Hempaguard has now over 900 full vessel applications, delivering a 6% fuel saving compared with best-in-class antifoulings.

In addition to overcoming the challenges of achieving efficiency posed by bio-fouling, Hempel is at the forefront of efficiency initiatives on an industry level and was integral in the development of the International Organization for Standardization (ISO) 19030. This standard defines the methods for determining changes in hull and propeller performance in addition to calculating basic indicators to provide industry standard measures for propeller efficiency.

Building on this foundation Hempel now offers hull-monitoring services to deliver in-depth analysis of data. This enables ship owners and operators to measure and assess hull and propeller performance data, benchmarking the

performance of a vessel, even against its new-build condition, offering more dynamic solutions to maximize fleet efficiency.

Whilst antifouling coating solutions such as Hempaguard, or industry standards such as ISO 19030 independently do not offer Red Queen shipping conditions, they are both vital factors in the operational and technical mix to maximizing vessel efficiency. The right combination, and by appreciating the importance of each factor, brings ship owners one step closer to optimum operational efficiency.

