

The need for speed



by Poul Woodall, *Director Environment and Sustainability, DFDS Group*

Those of you who have followed for the past couple of years the discussion on greenhouse gas (GHG) emissions from shipping have no doubt come across the widely used claim that “a 75% reduction in GHG emissions is achievable by known technologies.” This statement is being repeated over and over again by lawmakers, NGOs, and other good people who wish to appear knowledgeable about this topic. It has unfortunately also crept into various official publications coming from the International Maritime Organization (IMO) and the EU.

Now, I just love to trace things back to their origins, and read the small print. So, what is the birthplace of this statement? Well, it comes from the IMO’s *Second GHG Study*, published back in 2009, which bases its findings on activities during the period ending in 2007. We are therefore 10 years back in time, in an era hardly anyone remembers anymore.

So, what did this study actually say? “A significant potential for reduction of GHG through technical and operational measures has been identified. Together, if implemented, these measures could increase efficiency and reduce the emissions rate by 25% to 75% below the current levels. Many of these measures appear to be cost-effective, although non-financial barriers may discourage their implementation, as discussed in chapter 5.” This statement is qualified a bit later in the report by a table (Tab. 1).

A small but very important qualifier is located in a footnote, which reads: “Reductions at this level would require reductions in operational speed.” It is also noticeable that the reduction levels are

not referred to in absolute terms, but in a tonne-mile denomination. It is not surprising that this conclusion is reached in this study, when you note the paper dates back to before the financial crisis – a time when any oceangoing container vessel designed for less than 24 knots was considered totally inadequate to serve customer needs.

The concerning issue is that, even today, many still believe the 75% efficiency statement to be realistic. As if nothing has happened in the past 10 years! And, on this basis, some are calling for a global speed reduction programme to be imposed upon the sea shipping business.

Tab. 1. Assessment of potential reductions of CO₂ emissions from shipping by using known technology and practices

	Saving of CO ₂ /tonne-mile	Combined	Combined
DESIGN (New ships)			
Concept, speed and capability	2% to 50% ¹		
Hull and superstructure	2% to 20%		
Power and propulsion systems	5% to 15%	10% to 50%	
Low-carbon fuels	5% to 15% ²		
Renewable energy	1% to 10%		25% to 75%
Exhaust gas CO ₂ reduction	0%		
OPERATION (All ships)			
Fleet management, logistics & incentives	5% to 50%		
Voyage optimization	1% to 10%	10% to 50%	
Energy management	1% to 10%		

¹ Reductions at this level would require reductions of operational speed

² CO₂ equivalent, based on the use of LNG
Source: IMO’s *Second GHG Study* (2009)



World, we have a problem

The company I work for has been monitoring fuel consumption on a “per mile” basis for the past decade. On a like for like basis, the figure has come down by 17% during this period. This has been achieved without any significant speed reduction programme. It simply would not work for our type of business.

So, why do we want to discuss ship speeds? Well, the planet has a global warming problem, which is becoming worse with each and every day that passes by. Shipping actors, like everybody else, need to find ways to contribute to a genuine reduction in CO₂, but not on a per tonne-mile basis or the like. This needs to be done in absolute terms. The 800 million tonnes or so of carbon dioxide we emit annually needs to come down – and it needs to come down relatively fast. Otherwise, the problem will “solve” itself, crippling our civilisation.

This is where a compulsory speed reduction programme gets on the agenda. In the short- to medium-term, it seems there are no alternatives that will achieve anything even close to the potential for a speed reduction scheme. Two concepts appear to be discussed for a possible maritime speed reduction programme. First, an overall top speed limit. Second, a gradual reduction by mandating an X percentage reduction vs. the last period’s average speed of the vessel. Of course, neither of these will work.

A shot right on target or in the foot?

There are many supporters of a global speed reduction initiative, including some NGOs, but I have yet to see a document suggesting a practical implementation guide for such a system. We need to move from a holistic view to ground level practicalities, if wide ranging support for a speed reduction is to be secured.

Why am I so adamant about this? Well, try to imagine the UN wanting to implement a global speed limit for cars. My guess is that most people would immediately argue this cannot be done and be able to provide a number of reasons for this. So, why should it work for ships?

The counter argument is that during the times of high oil prices and less economic growth, ships *did* slow down and emission levels were reduced. The key difference between then and now is that in the past the driver was cost – not GHG emissions. The same medicine does not necessarily work for two different illnesses.

In addition to the arguments you would use against a global speed limit for cars, the maritime context provides some additional scenarios. Most ships serve flows of goods and passengers all around the world. If you reduce the speed, you either need larger or more units to supply the same service. There is a limit to size in most cases, which means you need to supply more vessels. Sure, two 40,000 dwt bulkers doing 12 knots each would burn less than one vessel doing 24 knots. The issue is not always as clear-cut, however (think e.g. about ship manning). Moreover, there is still a significant movement of passengers via ferries, and for them time is often a consideration. How much would be lost to road and air transport if journey times were significantly increased? Such a switch would definitely not benefit the GHG emission levels.



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Solution(s)

We need to approach a global speed reduction scheme with intellect. A viable system will be difficult to device, but that does not mean we should not try. Forced speed reduction may be *part of the solution*, but there are other issues one might consider as well. A lot of these are technical in nature, but a few are more structural to the industry.

The first that comes to mind is port waiting times. The time spent at anchorage, when a ship is waiting for a free berth or canal passage, could be converted into slow steaming. A plane will not take off from an airport unless it has a confirmed landing slot. Imagine the impact if we could mirror this system for ships. Yes, something can happen to planes and ships while underway, a new slot could be allocated in such a situation.

Shipping goes back a long time and so does the way we manage it. The split responsibilities of the vessel owner and the charterer are fundamental and historically established. The norm in many contracts is that the charterer pays for the use of the vessel and, in addition to that, for the fuel. Could you imagine taking a taxi to go to the airport and, upon arrival, being told: “That will be 100 euros, plus a fuel surcharge of 25”? Yet, if you transport something by ship, that is often what you get. The fact that there is no clear and continuous ownership of vessel fuel cost makes optimizing in this area very difficult. Sorting out this responsibility would be the second item to be considered.

No shipping, no problem!

So, there are many topics for the industry still to address. Speed reduction is just one of them, and, in my view, perhaps not at the top of the agenda. That GHG emissions need to come down and figuring out how to eventually make the near-zero option real is not up for discussion. We must achieve that. The question is: what is the best way?

In fact, coming back to my origin tracking, “A 75% reduction in GHG emissions is achievable by known technologies” is of course an untrue statement. The figure should be 100% – one can just stop sailing! But who would agree to that. ■