

Speed, deviation and charterparty performance

What charterers should know

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Performing speed and navigating distance can be affected by several obvious factors like sea state, stoppages and technical issues, deviations, and hull growth. However, there are a number of less obvious situations that can also give rise to conflicts and even disputes. These include different measuring scales, extreme weather causing structural or stability dangerous situations, clustered traffic, search and rescue, piracy. This article deals with the complexity of the latter and what charterers should take into consideration before engaging in a dispute against owners.

Speed and cost of transportation in a time charter

The table below shows the impact of a reduction of speed on the cost of transportation compared to a similar change in other factors such as freight rates, bunker prices or deviation (increased distance). The cost of transportation is calculated for selected parameters with a negative variation of 10% in each case:

VOYAGE 1 PORT ST LAWRENCE TO 3 PORTS WEST AFRICA ON A 53K DWT SUPRAMAX

	Fixed	+10% Hire Rate	+10% Bunk Price	+10% Distance	+10% Port Days	-10% Speed
\$ Hire	15000	16500				
\$ Bunker	670 / 715		737 / 786			
Distance	6176			6794		
Port Days	11				12.1	
Speed	14					12.6
\$ Per Ton	39.07	40.67	40.52	41.10	39.64	41.34

The impact of the reduction of speed on the cost of transportation is greater than that of the other factors or components. For this reason, it is important that charterers understand the circumstances that may make a reduction in speed a prudent operational decision – and even a prudent commercial one.

Sea state scale

If water laminar friction and wave-making cause resistance to the ships motion, breaking waves and spray add to that resistance, hence the importance of the sea state when considering speed.

The article [Why Douglas Sea State 3 Should be Eliminated from Good Weather Clauses](#) (Nikos Mazarakis, 2019) examines the implications of using the century-old scale for wind generated wave

height in the charterparty, in combination with a weather criterion using the more modern measurement of Significant Wave Height, which combines wind, wave and swell and is the square root of the first moment of wave spectrum, roughly the mean wave height of the one third highest waves (Davis and Bevan 2013).

Mazarakis comments that this is confusing, as Sea State 3 in the Douglas scale (using wave and swell height alone) is 1.25 m, while weather routers set the benchmark for Douglas Sea State 3 at a Significant Wave Height of 2.0 m. He believes that this may lead to different arbitration decisions in similar cases.

Indeed, the wording may vary even between charter parties. In two NYPE CP (dated Nov 2019 and March 2018 respectively) the rider clauses read:

... Good weather conditions which to be defined as max Beaufort scale 4 and Douglas sea state 3 (max significant wave height 1.25M) and no adverse / favourable currents or negative influence of swell for the entire period.

And

... Good weather condition basis 24 consecutive hours (from noon to noon) no adverse current, no negative influence of swell, Beaufort scale 4, Douglas sea state 3, defined as combined wave and swell height up to 1.25 metres.

The mismatch between the clause in the CP and the weather criterion could lead to conflicts between owners and charterers when arguing the application of the CP to specific cases. While permanent changes to CP clauses are made by organisations like BIMCO, in the absence of a removal of the reference to the Douglas scale, it would help both parties to discuss during fixing which concept will apply throughout the voyage, to enter the agreement in the recap, or if discussed post-fixing, to issue an addendum. and to instruct the Master to report accordingly.

Slamming shocks and vibrations

Sea state can affect not only speed, but also steering, stability and structural integrity

If wave breaking adds to the resistance or drag, head seas will cause slamming shocks and pounding with risk of structural and machinery damage from vibrations. To prevent such damage, the staff may reduce RPM, which will affect the speed even further, change course or both. From personal experience, in 1999, while crossing the Taiwan Strait during a typhoon, the time charterers argued about the reduction of speed down from 13 knots to 2.5 knots as we sailed in legs to avoid the head seas and the RPM had to be reduced. In a very recent case (Feb 2020) a chartered vessel bound for West Africa had to make a U-turn in the English Channel. When the Master was asked about this decision, he explained that the vessel was unable to keep the heading on her previous course, and any oblique course (legs) would put her abeam of seas, both legitimate reasons for the U-turn.

Intact stability failure models

There are certain special cases related to stability in which speed is part of the problem. Although rare, they are well documented.

The Rahola stability criterion or righting lever curve criterion (1939) which was used for most of the 20th century did not explain every accident model and in 2008 a new Intact Stability (IS) code added the combined dynamic effect of waves and wind in inclining the vessel (severe wind and rolling criterion or weather criterion).

By the time the IS code entered into force after years of preparation it became obvious that the new criterion couldn't explain every accident model either, and some failure modes were identified. The IMO is presently working on a second generation of Intact Stability criteria. Two of these are related to speed:

PURE LOSS OF STABILITY: If the ship sails at a speed close to that of the wave, and the crest of the latter remains at or close to the midship, which results in the minimum water plane area and hence a loss in righting lever, the ship could capsize due to the loss of static balance (Andrei et al, 2015). This would obviously occur if the seas are following or quartering seas and the length of the ship is similar to the length of the wave.

PARAMETRIC ROLL: If the ship sails with a course and speed such that it is alternating between wave crest amidships and through at ends (as in pure loss of stability) and wave crest at ends and through amidships, the values of the righting lever will alternate from large to small. When the large values occur, the increased stability will cause faster rolling, followed by smaller values of the righting lever. The result is extreme motion.

These models occur in heavy seas, which already justify the reduction of speed. The problem is that as the solution is to change speed and course for as long as the wave direction and height remain unchanged, the vessel might need to deviate from the initial route much more than it would normally do in a heavy weather situation. Also, the parametric roll could be conducive to extreme damages to the ship and cargo. The *APL China* sustained damages of about \$50 million in 1998 (Grinnaert, 2017), although it was following a weather route at the time. It is important that charterers are aware that deviations of these kind may be necessary - including deviations from the weather route.

Clustered fishing traffic

Certain areas in the world are routes or access to main ports or link to waterways and accordingly very congested. It is well understood by all parties in the maritime adventure that in such areas the vessel will have to reduce speed and/or manoeuvre to avoid collision. It is also indicated in the charterparty.

In one of the charterparties mentioned above (NYPE dated March 2018), rider clauses add:

- Always excluding periods during which reductions of speed for safety, reduced visibility, steaming and or manoeuvring in congested waters / straits, in/out ports etc. positive current shall not be used in diminishing vessel performance.

The Convention on the International Regulations for Preventing Collisions at Sea COLREG 1972, Part B defines steering and sailing obligations. Rule 6 Safe Speed reads:

- Every vessel shall at all times proceed at safe speed so that she can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions.

Reduction of speed is not the only possible action. Alteration of course, which may lead to small deviation from the set course, is also prescribed:

- Rule 8 Actions to avoid collision, item b reads:
 - Any alteration of course and/or speed to avoid collision shall, if the circumstances of the case admit, be large enough to be readily apparent to another vessel observing visually or by radar.

There are zones of commercial ship traffic where the Colregs are well understood and followed, some of them with established traffic separation schemes. The hazard here is the density of traffic in a limited space, possibly including crossing traffic, like the English channel with its ferries between Dover and Calais.

Then there are areas of the world with large amounts of small fishing boats, which do not respect any rule, and where collisions can easily occur. Examples include the East China Sea, Yellow Sea and Yangtze River. In these areas, unplanned manoeuvres, speed reductions and deviations can occur with higher than usual frequency. Also, in areas where trawling is common, ships may have to manoeuvre and deviate from their course in order to avoid trawl nets being caught by the propeller, especially when coastal sailing between nearby ports. Again, it is worth making sure that charterers are aware of this possibility.

Search and rescue

Clause 16 of CP NYPE form states:

- The vessel shall have the liberty to sail with or without pilots, to tow and to be towed, to assist vessels in distress and to deviate for the purpose of saving life and property.

This clause legitimises and sanctions not only the right but also the responsibility of the Master to provide assistance to those in peril, and the vessel therefore remains on hire (UK Defence Club, bulletin July 2015).

The United Nations Convention on the Law Of the Sea (UNCLOS 1982), article 98(1) provides that:

- Every state shall require the master of the ship flying its flag, in so far as he can do so without serious danger to the ship, the crew or the passengers:
 - a) To render assistance to any person found at sea in danger or being lost
 - b) To proceed with all possible speed to the rescue of persons in distress, if informed of their need of assistance, in so far, such action may be reasonable expected of him.

The SOLAS convention in its Chapter V, regulation 33.1 stipulates:

- The master of a ship at sea which is in a position to be able to provide assistance on receiving information from any source that persons are in distress at sea, is bound to proceed with all speed to their assistance, if possible informing them or the search and rescue service that the ship is doing so.

The obvious case is the rescue of a vessel in distress but with the refugee crisis becoming more severe in different parts of the world, a search and rescue operation might involve a small raft or craft with a limited number of people, which the nearest coastal state might refuse entry (*MV Roachbank* in 1979, and more recent cases. Rescue related liabilities and costs are uncertain, and cases where charterers claimed off-hire for the duration of the rescue and deviation were rejected by the court (Kilpatrick 2017).

The recent incident in Italy with the vessel *Sea-Watch 3* and Capt. Carole Rackete where both the vessel and the captain were arrested after bringing in refugees rescued at sea is one example of conflict between vessel and port state. Even more significant is the case of the *Maersk Etienne*, which responded to a request from Malta to rescue a boat in distress with migrants from Libya, only to be denied entry by the very same government. The vessel ultimately spent 38 days stranded at sea before the 27 refugees were transferred to a NGO vessel and disembarked, indicating that the clashing of the rules under SOLAS and UNCLOS with the laws of the coastal state can and cause even more delays or voyage interruptions.

Piracy

The above topics mainly entail the reduction of speed and might lead to deviation, which also has a negative effect on CP performance. Piracy, however, is mostly an issue of deviation. Here, I will refer to the latest focus of the maritime community's attention on piracy: West

Africa and the Gulf of Guinea (GoG).

There is a high-risk area (HRA) extending from Lomé in Togo, to the border of Nigeria and Cameroon which vessels should avoid. Vessels transiting and calling these ports should take out extra insurance and a voluntary reporting area has been established by the Maritime Domain Awareness for Trade, MDAT (GoG) which provides military expertise and guidance.

Charterparties include clauses addressing piracy or excluding certain ports or areas affected by piracy. A recent example (NYPE dated September 2019) Rider clause 36, Trading exclusions:

- 1 Excluded ... Nigeria, Cameroun, DRC. ...
- 2 When trading to West African ports, Charterers to provide armed guards during port stays in these countries to protect the vessel, her crew and her cargo.

Note that in some of these countries it is forbidden to have armed guards on board within port limits.

A number of ports in West Africa require the vessel to enter port limits to tender NOR, and to be in close proximity when called for berthing in order not to lose their place in the line up. Owners are likely to prefer the vessel to stay adrift outside the HRA, from which it might take over five hours to reach the port limits or pilot station. This could be a source of discussion and conflict, and is worth negotiating in advance.

For the sake of cooperation, charterers might accept not only deviations around the HRA, but also sailing at a greater distance than usual from the coastline when proceeding between ports in west Africa, even outside the HRA. Some owners, if sailing between ports on either side of the HRA (example Tema or Takoradi and Douala), might

accept a shortcut across the south west corner of the HRA. The level of flexibility of each party depends largely on the situation at the time. As the situation becomes more aggravated, owners are likely to press for more stringent clauses such as those published by INTERTANKO and BIMCO.

During the execution of the charter, when discussing with Masters the amount of deviation, anchoring near the port limit, etc. it would be worthwhile for charterers to consider the following:

- 1 Anchored ships are exposed to being easily accessed by pirates.
- 2 Charterers have little chance of recovering the time lost during piracy seizure as off-hire, as per court cases like the *MV Saldanha* (2010), especially if the port has a previous history of piracy, hence may be considered 'not safe'.
- 3 Other expenses like demurrage might not be recoverable either, as per court cases like the *Triton Lark* (2012). Some defences like **force majeure** are not recognised under English law in case of piracy. Even in other jurisdictions, it will have to be expressly stated in the CP that **force majeure** applies. Some others may not apply if provisions have been made for possible piracy (extra insurance, armed guards, etc.)
- 4 Even with sufficient charter clauses, boarding and kidnapping by pirates is also undesirable for charterers, as owners might decline to fix their vessels with charterers with a record of putting their crews and vessels at risk.

While charterers may and should reject **unreasonable** deviations or delays from Masters, in the matter of piracy any analysis should consider that it is the life of those on board that is on the line. Further, failing to provide support with local agents and authorities is not only insensitive, but also unprofessional. 🌊