



Neutral Citation Number: [2022] EWHC 1190 (Admlty)

Case No: AD-2020-000165

**IN THE HIGH COURT OF JUSTICE**  
**QUEEN'S BENCH DIVISION**  
**ADMIRALTY COURT**

Royal Courts of Justice  
Strand, London, WC2A 2LL

Date: 20/05/2022

**Before :**

**SIR NIGEL TEARE sitting as a Judge of the High Court**  
**with Rear Admiral David Snelson and Captain Stephen Gobbi,**  
**Elder Brethren of Trinity House, sitting as Nautical Assessors**

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**Between :**

(1) WILFORCE LLC  
(2) AWILCO LNG AS  
(The Owners and Demise Charterers of the  
LNG Tanker "WILFORCE")

**Claimants**

- and -

(1) RATU SHIPPING CO.SA  
(2) SEA QUEEN SHIPPING CORPORATION  
(The Owners and Demise Charterers of the  
MV "WESTERN MOSCOW")

**Defendants**

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**Nigel Jacobs QC and Andrew Carruth (instructed by Stann Law Limited) for the Claimant**  
**Vasanti Selvaratnam QC (instructed by HFW) for the Defendant**

Hearing dates: 29-31 March 2022 (and written submissions on the advice of the Assessors  
received between 6 and 13 May 2022)

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**Approved Judgment**

**I direct that no official shorthand note shall be taken of this Judgment and that copies  
of this version as handed down may be treated as authentic.**

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**SIR NIGEL TEARE SITTING AS A JUDGE OF THE HIGH COURT**

**This judgment was handed down by the judge remotely by circulation to the parties' representatives by email and release to The National Archives. The date and time for hand-down is deemed to be Friday 20 May 2022 at 10:30 am.**

**Sir Nigel Teare :**

1. On 31 May 2019 a collision occurred in a “Precautionary Area” of the Singapore Straits Traffic Separation Scheme between the WILFORCE, a double hulled LNG carrier in ballast, and the WESTERN MOSCOW, a bulk carrier on her maiden laden voyage. The combined claims for the damage caused by the collision are said to be in the region of £14 million.
2. WILFORCE was 290m. in length, 44m. in beam, of 102,315 grt, 30,696 nrt and 87,750 dwt, had been built in Korea in 2013 and was registered in Oslo, Norway. She was powered by 4 diesel electric Wartsila engines which drive a fixed pitch 5 blade right hand propeller and were capable of producing a sea speed of over 20 knots. She was equipped with all navigational devices including ARPA, ECDIS and AIS. At the time of the collision she was leaving Singapore, where she had been undergoing repairs, en route for Indonesia and was drawing about 9.5m. fore and aft. She had dropped her pilot at 2312 on 30 May 2019.
3. WESTERN MOSCOW was 179.90m. in length, 30m. in beam, of 25,189 grt, 12,869 nrt and 35,350 dwt, had been built in China in 2019 and was registered in the Philippines. She was powered by a single Qingdao Haixi Marine Diesel Turbo main engine which drove a single 4 blade fixed pitch right had propeller and was capable of producing a sea speed of 13.4 knots. She was equipped with all navigational aids including ARPA, ECDIS and AIS. At the time of the collision she was leaving Singapore, where she had been bunkering, en route for Sri Lanka and the Netherlands and was drawing 8.72m. forward and 10.18m aft. She had dropped her pilot at about 0136 on 31 May 2019.
4. Both vessels had Voyage Data Recorders and information from the VDRs was sensibly exchanged in September 2020 before the commencement of proceedings. The parties have agreed a reconstruction of the vessels’ navigation leading to collision from which a schedule of courses, speeds and other navigational data has been created. There were also agreed transcripts of the conversations and VHF messages heard on the bridges of both vessels. In the light of the agreed reconstruction, the resulting schedule and the agreed audio transcription it was not necessary for oral evidence from those on the bridge of each vessel to be given, though written statements were in evidence. In addition to the electronic data recording the vessels’ navigation there was CCTV footage of the collision from the bow of WILFORCE. This (black and white) footage was of some assistance in assessing the extent to which the navigational lights of WESTERN MOSCOW had been obscured by additional lights exhibited by that vessel.
5. Navigation in the Singapore Straits is subject, not only to the Collision Regulations, but also to local rules. By Notice no.20 of 2006 the Maritime and Port Authority of Singapore reminded vessels to observe the “Rules for Vessels Navigating Through The Straits of Malacca and Singapore”.
6. General Provision 4 of those rules provided that “Vessels shall take into account the precautionary areas where crossing traffic may be encountered and be in a maximum state of manoeuvring readiness in these areas.”
7. Rule 8 provided that “All vessels navigating in the routing system of the Straits of Malacca and Singapore shall maintain at all times a safe speed consistent with safe

navigation, shall proceed with caution, and shall be in a maximum state of manoeuvring readiness.”

8. Rule 9 provided that “Vessels which are fitted with VHF radio communication are to participate in the ship reporting system adopted by the Organization.” In the Singapore Straits there was a Vessel Traffic Information Scheme (“VTIS”) pursuant to which vessels provided information to the VTIS and the VTIS provided information to vessels.
9. WILFORCE was leaving Singapore by proceeding eastwards in the traffic separation scheme. In doing so she would of necessity transit a Precautionary Area which is an area where vessels might be found crossing from north to south or south to north. WESTERN MOSCOW was leaving Singapore intending to proceed westwards in the traffic separation scheme. She was planning to enter the westbound lane at the western end of the Precautionary Area. However, she decided to enter the Precautionary Area at its eastern end and to proceed south across the Precautionary Area in order to keep clear of a tug and tow, PROFIT VENTURE, which was proceeding southwards across the Precautionary Area.
10. With that very brief introduction as to how the vessels found themselves in the Precautionary Area it is necessary to explain the characteristics of a Precautionary Area, this being the first occasion on which the Admiralty Court has had to consider responsibility for a collision in a Precautionary Area.
11. The IMO Resolution of 1985 on Ships’ Routing defined a Precautionary Area as an “area within defined limits where ships must navigate with particular caution and within which the direction of traffic flow may be recommended.” A Precautionary Area may be placed at a “junction with crossing traffic. The traffic lanes are terminated short of the point where traffic is expected to cross and replaced by a precautionary area within which the recommended directions of traffic flow are indicated.” The symbols for the recommended direction of traffic flow within the Precautionary Area are dashed outline arrows. “Arrows printed on charts in connection with routeing systems merely indicate the general direction of established or recommended traffic flow: ships need not set their course strictly along the arrows.”
12. It appears from the Pilot Book for 2006 which was in evidence that Precautionary Areas were introduced into the traffic separation scheme in the Singapore Straits prior to 2006. However, as the following paragraphs of this judgment make clear, the position was put on a firm footing in 2012 and 2013.
13. In SN.1/Circ.317 dated 4 December 2012 the IMO adopted a number of routing measures, one of which was for “vessels crossing the traffic separation scheme and precautionary areas in the Singapore Strait during hours of darkness.” The “recommendatory measure” for vessels crossing the traffic separation scheme and precautionary areas in the Singapore Strait included the following. At night vessels were to display three all-round green lights in a vertical line when crossing the precautionary area. This was to be done “in ample time” so that other vessels could note the intention to cross the precautionary area. “When traffic conditions are favourable [vessels should] make a large alteration of course, if necessary, so as to be readily apparent to other vessels in the vicinity observing visually or by radar and cross the traffic lane on a heading as nearly as practicable at right angles to the general direction of traffic flow.” (Strictly speaking, the traffic lane ends where the Precautionary Area

begins. But this measure was issued with regard to vessels which intended to cross the traffic lanes or precautionary areas.)

14. In 2013 the Maritime and Port Authority of Singapore issued Port Marine Circular No.4 which promulgated the measures to be taken by vessels crossing the Traffic Separation Scheme and Precautionary Areas in the Straits of Singapore. Vessels intending to cross the TSS and precautionary areas were recommended to comply with the procedures in Annex 1 which repeated the recommendatory measures from the 2012 IMO document.
15. Admiralty Chart no. 4041 shows the Precautionary Area with which the present case is concerned south east of Sentosa in the Singapore Strait. It is marked by a triangle with an exclamation mark inside, as recommended by the IMO. The recommended symbols for indicating the traffic flow indicate that when crossing north to south vessels are to use the western part of the Area and when crossing south to north vessels are to use the eastern part of the Area. The symbols also show that vessels are to navigate in an anti-clockwise direction. The dashed outline arrow indicating the general direction of recommended traffic flow for vessels proceeding from south to north indicates 336 degrees (that is, at about right angles to the traffic going eastwards).
16. Both vessels were using electronic charts. The electronic charts did not use the recommended symbols to show the direction of traffic flow within the Precautionary Area. Instead, a broken circle with an arrow indicating an anti-clockwise direction was used. However, the Assessors have advised that by clicking on that symbol the symbols used on the Admiralty chart can probably be revealed. Neither counsel suggested that that understanding was incorrect.
17. The available electronic data enables the navigation of the vessels to be described from C-25. I have attached to this judgment a plot entitled “Long Range Plot” which illustrates the vessels’ navigation. The agreed reconstruction shows that, as WILFORCE was proceeding eastwards in the eastbound traffic lane at about C-13, WESTERN MOSCOW crossed ahead of her from port to starboard, at a distance of about 3.5 miles, as she crossed the Precautionary Area in a south-going direction. WESTERN MOSCOW continued southwards until about C-10 when she turned to port in an easterly direction. At this time there was no risk of a collision between WILFORCE and WESTERN MOSCOW. It follows that the events from C-25 until C-10 are part of the history leading up to the collision but not effective causes of it. They may provide context and illustrate alleged deficiencies in the standard of the vessels’ navigation but what really matters is the navigation of the vessels immediately before a risk of collision arose and the actions which each vessel took or did not take to avoid collision. I have well in mind Lord Sumner’s observation in *The Peter Benoit* (1915) 13 Asp. MLC 203 at p.208 about matters which are only “introductory” or “antecedents” even though “they preceded the collision by but a short time”.
18. I shall therefore summarise the vessels’ navigation from about C-10. I attach to this judgment a copy of the agreed reconstruction which shows the navigation of WILFORCE from just before C-10 and is entitled “Close Range Plot”.

#### The navigation of WILFORCE

19. I shall first note that WILFORCE had, at about C-14, observed WESTERN MOSCOW by radar at a distance of about 4 miles. This was evidenced and illustrated by

WESTERN MOSCOW having been acquired as a radar target at that time. There was evidence from the master of WILFORCE that the lights of WESTERN MOSCOW were seen by eye shortly after this observation by radar. Although there does not appear to be any support for this evidence in the audio record I accept that evidence.

20. At C-10 WILFORCE was in the eastbound lane making good a course of about 60 degrees and a speed over the ground of 15.7 knots with her engines at full ahead. (This was between the full ahead sea speed of 20 knots at 83 rpm and full ahead manoeuvring of 11.8 knots at 50 rpm.) She was in the course of altering her course a little to port so as to put a tug and tow, PROFIT VENTURE, dead ahead of her. PROFIT VENTURE was crossing the Precautionary Area from north to south and as she crossed ahead of WILFORCE her bearing would open, allowing WILFORCE to follow the aft end of the tow around to starboard.
21. At C-9 WILFORCE was making good a course of about 57 degrees and continued with her engines at full ahead.
22. At C-8 she was making a good a course of about 56.6 degrees and continued with her engines at full ahead.
23. At C-7 she was making good a course of about 57 degrees and continued with her engines at full ahead.
24. At about this time the Singapore VTIS said to WILFORCE:

“Why don’t you answer me eh? Information to you, starboard bow. We have this bulk carrier, WESTERN MOSCOW, turning back to the westbound traffic lane. Keep a sharp lookout. Also near to you. You have tug boat towing PROFIT VENTURE, heading southbound.”
25. At the same time the CPA alarm on WILFORCE flashed on the radar in respect of WESTERN MOSCOW. The alarm had been set for a CPA of 5 cables. However, neither at this time nor later did the master cause the radar to state navigational information in respect of WESTERN MOSCOW.
26. At this time WESTERN MOSCOW was bearing 74.3 degrees from WILFORCE at a distance of 2.1 miles. The master and second officer discussed WESTERN MOSCOW, probably by reference to their radar, and the second officer noted that “it’s going to turn again to westbound”.
27. At about C-6.25 the CPA alarm on WILFORCE flashed on the radar in respect of WESTERN MOSCOW.
28. At C-6 WILFORCE was making good a course of about 57 degrees and continued with her engines at full ahead. WESTERN MOSCOW continued to bear 74.3 degrees from WILFORCE but was now distant 1.9 miles, so that the vessels were now closing with no appreciable change of bearing.
29. At about the same time the master of WILFORCE said to the second officer and helmsman:

“Okay, we can now go to starboard now.....and follow this. 60 please.”

30. That was probably a reference to following PROFIT VENTURE and her tow.
31. The master also said:  
“Collision course with this one.”
32. That was probably a reference to WILFORCE and WESTERN MOSCOW being on crossing courses. On ECDIS the CPA of WESTERN MOSCOW was predicted to be 0.3 of a cable.
33. At C-5.75 and at C-5 the CPA alarm on WILFORCE flashed on the radar in respect of WESTERN MOSCOW.
34. At C-5 WILFORCE was making good a course of 56.9 degrees and continued with her engines at full ahead. The master asked the second officer:  
“What is now ?”
35. The second officer replied:  
“Ah distance now is, oh yeah, 1.6.”
36. That is probably a reference to WESTERN MOSCOW being distant 1.6 miles. The agreed schedule shows her at this time to be still bearing 74.2 degrees and distant 1.7 miles.
37. The master said:  
“We have to probably slow down. But there’s not long time to slow down. Just now 9 revs.”
38. At C-4.5, C-4.25 and C-4 the CPA alarm on WILFORCE flashed on the radar in respect of WESTERN MOSCOW.
39. At C-4 WILFORCE was making good a course of 59.2 degrees. Her engines were still at full ahead but her engine revolutions had been reduced from 69 to 61 rpm. (This reduction might have been what the master was referring to when he said “Just now 9 revs”.) WESTERN MOSCOW continued to bear 74.2 degrees from WILFORCE. The distance between the vessels was now 1.4 miles.
40. At this time VTIS again spoke to WILFORCE:  
“WILFORCE, take early action eh. Keep lookout. You’ve this WESTERN MOSCOW. Starboard bow, going to the westbound traffic lane.”
41. The master replied:  
“But I cannot stop ship now. I cannot slow down now. . It’s going now very quick. I am very close to him now and, I’ve this towing system here. I cannot...I am slowing down....but it’s crazy.”

42. The master ordered 65 degrees. This was probably to continue following the stern of PROFIT VENTURE and possibly, as the master said in his statement, to allow more room for WESTERN MOSCOW.
43. At C-3 WILFORCE was making good a course of 59.9 degrees and with her engines at 59 rpm was still at full ahead and was making good a speed of 15.4 knots. The bearing of WESTERN MOSCOW was 74 degrees and so had not appreciably changed and was now distant about 1.1 miles.
44. At about this time the master of WILFORCE heard WESTERN MOSCOW advise VTIS that WESTERN MOSCOW would pass WILFORCE port to port. The second officer advised that that would mean going to starboard to which the master replied “I know, I know”. Very shortly afterwards WESTERN MOSCOW informed WILFORCE by VHF that “we will pass port to port”. The master of WILFORCE replied that that they would pass port to port and added:

“We will try to alter now to starboard as much as we can.”
45. At about C-2.5 the master ordered 70 degrees to be steered and then 80 degrees to be steered.
46. At C-2 WILFORCE was making good a course of 61.9 degrees and her speed was 14.8 knots with her engines at 51 rpm but still full ahead.
47. At about C-2 the second officer advised the master that WESTERN MOSCOW was turning to port and either he or the master asked WILFORCE by VHF why he was turning to port. At the same time the master ordered starboard 20 and advised WESTERN MOSCOW by VHF to turn to starboard. At this time PROFIT VENTURE was on the starboard beam of WILFORCE and the master thought WILFORCE must have cleared the aft end of the tow.
48. At C-1 WILFORCE was heading 85 degrees and making good a course of 70.1 degrees. Her speed was 13.9 knots with her engines at 46.4 rpm and her bridge telegraph now at half ahead.
49. At C-1 the master advised WESTERN MOSCOW:

“We are going to crash. Go to starboard now.”
50. After C-1 the master ordered hard starboard and at C-0.5 her engines were put to full astern.
51. At collision WILFORCE was heading 113 degrees and making a good a course of 85.2 degrees. Her speed was 11.7 knots with her engines on full astern. The port bow of WESTERN MOSCOW struck the port side of WILFORCE at an angle of about 50 degrees leading aft on WILFORCE. (The heading of WILFORCE at collision was 113 and the heading of WESTERN MOSCOW at collision was 243.)
52. After collision the master of WILFORCE said on the bridge that “we f.....d up.”. But he also blamed WESTERN MOSCOW. “They did not turn”.

53. At C-10 WESTERN MOSCOW was in the southern section of the Precautionary Area making good a course of 128 degrees and with her engines at half ahead was proceeding at a speed of 8.3 knots. Shortly before this VTIS had asked her whether she was eastbound or westbound. Although the audio transcript does not record an answer the master of WESTERN MOSCOW has said in his witness statement that he replied that he was westbound. This is more likely than not to be true because the transcript records VTIS shortly afterwards informing other vessels that WESTERN MOSCOW was westbound.
54. At C-9 WESTERN MOSCOW was making good a course of 79 degrees and a speed of 5.6 knots.
55. At C-8 WESTERN MOSCOW was making good a course of 52 degrees and a speed of 5.4 knots.
56. At C-7 WESTERN MOSCOW was making good a course of 34 degrees and a speed of 5.7 knots.
57. Thus, as is apparent from her course and the reconstruction, WESTERN MOSCOW, having approached the southern end of the Precautionary Area, had turned from a south easterly course onto a north easterly course.
58. At C-6 WESTERN MOSCOW was making good a course of 15.5 degrees and a speed of 5.8 knots. Between C-7 and C-6 the helm order had been port 10 and then port 20. Thus the rate of turn to port increased from 18.2 degrees per minute to 36.9 degrees per minute.
59. It is the case of WESTERN MOSCOW, supported by her master, that WILFORCE was first observed by radar at about C-6. This is also supported by the VDR screen shot of her radar for C-6 which shows that WILFORCE was a target. I therefore accept that she was observed by radar at this time but, although the radar recorded details of her navigation, the CPA alarm was off. By this time the bearing of WILFORCE from WESTERN MOSCOW had been constant since C-7.
60. The master and second officer of WESTERN MOSCOW said in their witness statements that they observed WILFORCE at about C-6. However, Part 1 of the Collision Statement of Case filed by WESTERN MOSCOW said that the visual sighting was made “shortly after” the radar observation when WILFORCE was said to have been seen at a distance of around 1.2 miles. The agreed schedule of navigational data shows that the distance between the vessels was 1.2 miles at about C-3.5. In the circumstances I am unable to accept the evidence of the master and second officer of WESTERN MOSCOW that they observed WILFORCE at about the same time as the radar observation. It is unclear when WILFORCE was first seen. There is no cogent evidence of when that first observation was made.
61. At C-5 WESTERN MOSCOW was making good a course of 340 degrees and a speed of 4.9 knots.
62. At C-4 WESTERN MOSCOW was making good a course of 315 degrees and a speed of about 4.9 knots though her engines were now at full ahead.



63. At C-3 WESTERN MOSCOW was making good a course of 298 degrees and speed of 5.5 knots. Between C-5.75 and C-3.5 her helm had been amidships. The rate of turn to port fell from 36.9 degrees per minute to 12 degrees per minute.
64. Thus between C-7 and C-3 WESTERN MOSCOW had been altering to port from a north easterly course to a west north westerly course (but at a variable rate of turn dependent upon the port helm order). As is apparent from my account of the navigation of WILFORCE the bearing of the vessels remained constant whilst the vessels closed on each other.
65. At this time, C-3, VTIS spoke to WESTERN MOSCOW by VHF:  
“Information to you, you have this tanker, the WILFORCE, on your portside doing a very good speed going eastbound.”
66. WESTERN MOSCOW immediately replied:  
“Yes sir. Er we will pass port to port with WILFORCE.”
67. VTIS requested that WESTERN MOSCOW call WILFORCE and she did so, informing her that the vessels would pass port to port.
68. At C-3.5 the master ordered 10 degrees of port helm and then at C-2.5 15 degrees of port helm before ordering the helm amidships at C-2.25. Thus WESTERN MOSCOW continued to turn to port. The rate of turn to port increased from 12 degrees per minute at C-3.5 to 28.9 degrees per minute at C.2.25.
69. At C-2 WESTERN MOSCOW was making good a course of 277 degrees at a speed of 5.9 knots. The rate of turn to port, under amidships helm, was falling to 8.3 degrees per minute.
70. Just after C-2 WILFORCE asked WESTERN MOSCOW:  
“Why are you turning to port ?”
71. Immediately afterwards the master of WESTERN MOSCOW ordered hard port helm. Just 4 seconds later he ordered hard starboard helm. Her heading continued to turn to port.
72. At C-1.25 hard port was ordered but at C-1 hard starboard was again ordered. Her heading continued to turn to port but the rate of turn was 10.6 degrees per minute.
73. At C-1 WESTERN MOSCOW was making good a course of 257 degrees at a speed of 6.1 knots. Her helm was put hard starboard and so the rate of turn to port fell. Thereafter her engines were stopped.
74. At collision WESTERN MOSCOW was making good a course of 243 degrees at a speed of 5.7 knots. At collision she had stopped turning to port and her heading had just begun to alter to starboard.

Faults of WESTERN MOSCOW

75. Counsel for WILFORCE submitted that WESTERN MOSCOW was at fault in several respects. Indeed it was said that WESTERN MOSCOW was 100% to blame for the collision.

Navigation between C-25 and C-10

76. It was alleged that WESTERN MOSCOW’s navigation was at fault between C-25 and C-10 by reason of her decision to enter the Precautionary Area and by reason of proceeding southwards within the Precautionary Area on the western side of it rather than on the eastern side of it. It was said that if WESTERN MOSCOW had altered course to starboard so as to pass under the stern of PROFIT VENTURE and her tow she would not have needed to enter the Precautionary Area and could have joined the westbound lane in accordance with Rule 10(b) at as small an angle as practicable. However, I do not regard the events prior to C-10 as causative of the collision between WILFORCE and WESTERN MOSCOW. As I have noted earlier in this judgment WESTERN MOSCOW crossed ahead of WILFORCE at a safe distance at about C-13 so that there was no risk of a collision.

Lookout

77. Counsel for WILFORCE submitted that there was a poor lookout on board WESTERN MOSCOW.
78. I have found that WILFORCE was first seen by radar at about C-6 but that there is no clear evidence as to when the lights of WILFORCE were first seen. Although the radar echo of WILFORCE was seen no CPA alarm was set. The audio record contains no evidence of any discussion on the bridge of WESTERN MOSCOW concerning WILFORCE before C-3. However, the witness statement of the master of WESTERN MOSCOW gives the impression that the master was listening diligently to the conversation between VTIS and WILFORCE at about C-6 when WILFORCE was warned about WESTERN MOSCOW and to the conversation at about C-4 when WILFORCE said that she was unable to take action because she was going “very quickly.” If he was listening diligently to these conversations it is surprising that he makes no contribution to the discussion. Moreover, the master also recounts seeing the lights of WILFORCE at about the same time as seeing her echo. For the reasons already given, I am unable to accept that evidence. The master also said that a CPA of zero with regard to WILFORCE was “reported” to him a little before C-3. Although the audio transcript notes a report of “ship A” at “0.02” I was told that that was not WILFORCE. Neither of these statements gives confidence in the accuracy of the master’s witness statement.
79. The master states that having received the report of a zero CPA he “came to port in order to open the CPA with WILFORCE”. That would suggest an intention to pass starboard to starboard. The master is correct in saying that he came to port but that he did so in the knowledge that WILFORCE was on his port bow is surprising.
80. The fact that WESTERN MOSCOW was permitted to make a large alteration to port from C-7 to C-3 with the effect that the bearing of WILFORCE from WESTERN MOSCOW remained constant without any comment from the vessel’s master (there is none on the audio transcript) suggests a poor lookout. It is difficult to suggest any other explanation.

81. At about C-3 VTIS informed WESTERN MOSCOW that WILFORCE was on her port side and WESTERN MOSCOW replied that she would pass port to port with WILFORCE. However, the master continued to order port helm. At about C-2 the master of WILFORCE asked WESTERN MOSCOW why she was turning to port. The master ordered hard port before ordering hard starboard. The audio transcript then evidences the officer of the watch saying that the vessels were to pass starboard to starboard. This is also suggested by the master’s report to the Singapore Port Authority (“plan to pass the vessel WILFORCE starboard to starboard”). If that was the plan it may explain why hard starboard helm was not immediately applied.
82. However, it is more likely than not that the failure to apply starboard helm at C-3 was caused by a poor lookout on the bridge of WESTERN MOSCOW. The delay in applying hard starboard helm, coupled with orders of hard port being corrected to hard starboard in the last 2 minutes before collision, suggest confusion caused by poor lookout. Counsel for WESTERN MOSCOW said that the explanation was likely to have been panic in the agony of the moment. But, looking at the evidence as a whole, I consider it more likely than not that the cause of WESTERN MOSCOW’s failure to apply hard starboard helm at C-3 or C-2.5 was poor lookout.
83. All of these matters persuade me that, although the radar echo of WILFORCE was observed at about C-6, the presence of WILFORCE was not appreciated or heeded until about C-3. There was therefore a very poor lookout at a time when WESTERN MOSCOW was in the Precautionary Area and ought to have been navigating with particular care.

#### The course of WESTERN MOSCOW after C-7

84. It was alleged that since WESTERN MOSCOW intended to join the westbound lane good seamanship required her either to join the eastbound lane and proceed eastwards until it was safe to turn to port and join the westbound lane or, in accordance with the arrow on the chart, to cross the Precautionary Area from south to north on a north north westerly heading and then join the westbound lane. She failed to take either course and instead proceeded to turn to port onto a westerly heading within the south section of the Precautionary Area.
85. Since this raises a matter of good seamanship I decided to ask the Assessors the following question:

At C-7 when (i) WESTERN MOSCOW was in the southern part of the Precautionary Area, making good a course of 34 degrees and a speed of 5.7 knots with her engines at half ahead, and was intending to join the westbound lane, (ii) WILFORCE was in the eastbound lane distant about 2 miles and (iii) QUEEN OF NETHERLANDS was in the westbound lane at a distance of more than 2 miles, what course or courses ought WESTERN MOSCOW to have followed as a matter of good seamanship in order to join the westbound lane ?
86. I received the following answer:

As a matter of good seamanship, WESTERN MOSCOW should have continued her turn to port until reaching a course of approximately 350 degrees upon which she should have steadied. Then, at an appropriate time, when approaching the

separation line between the eastbound and westbound lanes, WESTERN MOSCOW should have altered course to port to join the westbound traffic lane at as shallow an angle as possible. Her speed and readiness to manoeuvre were not at issue. She should have informed VTIS of her intentions in order to ensure westbound vessels were aware of the intent. This would be in compliance with the requirements of Collision Regulations 10(b)(iii) and Singapore VTIS instructions promulgated in IMO Circular SN.1 Circ 317 dated 4<sup>th</sup> December 2012.

87. The Assessors noted that “in crossing the Precautionary Area WESTERN MOSCOW was recommended to cross the traffic lane on a heading as near as practicable at right angles to the general direction of flow.” The Assessors’ advice that WESTERN MOSCOW ought to have steadied on a course of 350 degrees also reflects the arrow on the chart indicating that vessels crossing the Precautionary Area from the south should do so on a course of about 336 degrees. (The 1985 IMO Resolution provided that “the arrows printed on charts in connection with routing systems merely indicate the general direction of established or recommended traffic flow: ships need not set their course strictly along the arrows.”). In advising that WESTERN MOSCOW ought thereafter to have altered course to port to join the westbound lane at as shallow an angle as possible, the Assessors were reflecting Rule 10(b)(iii) of the Collision Regulations which requires a vessel when joining a traffic lane to do so “at as small an angle to the general direction of traffic flow as practicable.”
88. It was the case of WESTERN MOSCOW that as from C-7 the crossing rules applied with WILFORCE as the give-way vessel. This was not accepted by WILFORCE. On the assumption that they did apply WESTERN MOSCOW was the stand-on vessel and was obliged to keep her course and speed. I shall consider later in this judgment whether the crossing rules applied as from C-7 and, if so, whether the duty of WESTERN MOSCOW as the stand-on vessel required any different action from that required of her as a matter of good seamanship. For the moment I shall assume the crossing rules do not apply.
89. I accept the advice of the Assessors. Instead of adopting the course advised by the Assessors WESTERN MOSCOW continued to turn to port so that she found herself heading in a westerly direction in that part of the Precautionary Area where there might be vessels proceeding in an easterly direction. WESTERN MOSCOW failed to adopt a north north westerly course as indicated by the arrow on the chart and as recommended by the IMO and the MPA.
90. As already indicated I consider that the reason WESTERN MOSCOW continued to turn to port at this time was the result of a poor lookout.

#### VHF and failure to pass port to port

91. Counsel for WILFORCE also said that it was wrong for WESTERN MOSCOW to have sought to have concluded an agreement by VHF but, having concluded an agreement for a port to port passing, it was wrong not to have given effect to that agreement by altering course to starboard.
92. Both vessels were navigating in an area covered by a VTIS service. The VHF agreement came about because VTIS had requested WESTERN MOSCOW to call WILFORCE in order to tell her what WESTERN MOSCOW proposed to do. In those circumstances

it is difficult to criticise WESTERN MOSCOW for doing that which VTIS suggested. The discussion as to the use of VHF in *The Mineral Dampier* [2001] 2 Lloyd’s Reports 419 at paragraphs 36-40 concerns the use of VHF in the open sea. The vessels were not in the open sea but in an area covered by a VTIS service. I would not therefore criticise the use of VHF in this case. In any event in circumstances where WILFORCE was proceeding eastwards in the Precautionary Area and WESTERN MOSCOW was intending to join the westbound lane it was to be expected that the vessels would pass port to port as WESTERN MOSCOW advised WILFORCE by VHF that she proposed to do.

93. However, WESTERN MOSCOW failed to alter course to starboard. That was necessary in order to enable the vessels to pass port to port. Plot 5 prepared by those advising WILFORCE illustrates that if WESTERN MOSCOW had applied hard starboard helm at C-2.5 collision would have been avoided, albeit with a passing distance of about a cable. Had hard starboard helm been applied a little earlier at C-3 the passing distance would have been approaching 2 cables. In my judgment WESTERN MOSCOW was at fault in failing to apply hard starboard helm in order to pass WILFORCE port to port. Instead, she continued to turn to port and only applied hard starboard helm at C-1.5 for 16 seconds before finally applying hard starboard helm at C-1. That was too late. Her heading only commenced to turn to starboard just before collision.

#### Lights

94. WESTERN MOSCOW also failed to exhibit the three all-round green lights recommended when navigating in the Precautionary Area. However, since WILFORCE was aware at all material times that WESTERN MOSCOW was navigating in the Precautionary Area this fault was not causative.
95. In addition to her masthead and side navigation lights WESTERN MOSCOW also exhibited working lights on the forecastle and a narrow beam searchlight directed downwards towards the deck on each bridge wing. It was said that these made it more difficult for other vessels to observe the navigational lights, in particular, to observe changes in the aspect of the masthead lights. The CCTV footage from the bow of WILFORCE tended to support this submission but it was difficult to be confident when viewing the “glare” of the lights in the black and white footage. In the circumstances it was agreed that advice should be sought from the Assessors.
96. I therefore put the following question to the Assessors.
- WESTERN MOSCOW was exhibiting, in addition to her masthead and side navigation lights, a limited number of forward facing working lights on the forecastle and a narrow beam searchlight directed downwards towards the deck on each bridge wing. Would the exhibiting of such additional lights have impaired the visibility or distinctive character of the navigation lights or interfered with the keeping of a proper lookout within the meaning of Rule 20(b) of the Collision Regulations?
97. I received the following answer.

The deck illumination of the WESTERN MOSCOW would have impaired the visibility of the navigation lights displayed by the vessel when underway. In a close quarters situation visual observation is of primary importance and radar and AIS observations are less helpful in determining course and aspect. The unimpaired appreciation of the changing aspect of navigation lights (particularly at night) is essential if other vessels are to meet their obligations under the Collision Regulations Rule 5 and Rule 7 (d) (ii).

98. I accept that advice. Rule 20(b) of the Collision Regulations provides that no other lights shall be exhibited other than the navigation lights prescribed by the Rules save those which do not impair the visibility of the navigation lights. In the light of the Assessors' advice it must follow that Rule 20(b) was breached by WESTERN MOSCOW. Whether that fault was causative depends upon whether the master of WILFORCE was likely to have taken any different action from that which he in fact took had the deck lights not impaired the visibility of WESTERN MOSCOW's navigation lights. I do not consider that he would have done so because he was aware of the risk of collision at C-6. The fault was therefore not causative.

#### Sound signals

99. Finally, it was submitted that WESTERN MOSCOW failed to sound the appropriate signals indicating that she was continuing to turn to port. There is no dispute that the appropriate signals (two short blasts) were not sounded. That was a breach of Rule 34 of the Collision Regulations but whether the breach was causative of the collision again depends on whether the master of WILFORCE was likely to have taken any different action from that which he in fact took had two short blasts been sounded. I do not consider that he would have done so because he and the second officer appreciated that WESTERN MOSCOW was still turning to port. The fault was therefore not causative.

#### The faults of WILFORCE

##### Speed

100. Counsel for WESTERN MOSCOW criticised the speed of WILFORCE from C-25. WILFORCE's engines were at full ahead on 69 rpm and making a good speed over the ground of over 15 knots. According to her master full sea speed was about 20 knots on rpm of 83.7. Full speed (manoeuvring) was 11.8 knots at 50 rpm and half ahead was 8.7 knots at 37 rpm. Rule 8 of the local regulations provided that vessels should be at the “maximum state of manoeuvring readiness”. Consistently with that local rule her passage plan provided for a speed of 12 knots. Her master has explained in his statement that he increased speed to about 15.5 knots because the traffic situation was “light”. He said that the rpm of about 68 was within the engine speed control program which was “designed to safely increase or decrease engine speed efficiently within set parameters and to avoid potential overload”. However, the local rule required the “maximum state of manoeuvring readiness” which was full speed manoeuvring at 50 rpm. WILFORCE was accordingly in breach of the local rule. Nevertheless, from C-25 to C-7 there was no risk of collision with WESTERN MOSCOW and so her speed before then, although unsafe, was not yet causative of the collision. But being at an unsafe speed before C-7 meant that if and when engine action was required of her after C-7 she would be inhibited in her ability to reduce speed. If that contributed to the collision, or to the damage caused by the collision, then her unsafe speed prior to C-7 would be causative.

## Lookout

101. Counsel for WESTERN MOSCOW also criticised the lookout on WILFORCE. I have already made findings as to when she observed WESTERN MOSCOW by radar and sight. WILFORCE had, at about C-14, observed WESTERN MOSCOW by radar at a distance of about 4 miles and the lights of WESTERN MOSCOW were seen by eye shortly after this. This cannot be criticised notwithstanding that it appears to be the case that, in breach of the vessel’s standing orders, there was no dedicated lookout on the bridge. The criticism made was not that these observations ought to have been made earlier but that WESTERN MOSCOW was not kept under observation. That criticism is supported by the fact that the master did not cause the radar to provide details of the navigation of WESTERN MOSCOW.
102. From about C-10 to C-7 the course being made good by WESTERN MOSCOW turned from easterly to north easterly. The master said in his witness statement that “at about 0150”, that is at about C-7–C-8, he observed WESTERN MOSCOW continue turning to port though he could not distinguish her navigational lights as they appeared to be obscured by deck/working lights. WESTERN MOSCOW was indeed turning to port and she was exhibiting deck lights in addition to her navigational lights. This suggests that the master was keeping a good visual lookout. I therefore accept what he has said in his statement. It is however surprising that he did not “interrogate” his radar for details of WESTERN MOSCOW’s navigation. To that extent he failed to keep a good lookout. However, he had observed that she was continuing to turn to port and that is also what he would have learnt from the radar.
103. For 40 seconds before about C-7 VTIS made 5 attempts to contact WILFORCE by VHF. At C-7 WILFORCE responded. It was suggested that this evidenced a poor audio lookout. However, the audio transcript suggests that the master was pre-occupied by another vessel, probably PROFIT VENTURE; “this is crazy”. There was a discussion between the master and second officer about the difficulty of making observations at night. Whilst I think that the master ought to have responded to VTIS earlier than he did, the delay in doing so is unlikely to have made any difference to subsequent events.
104. At C-7 VTIS advised the master that WESTERN MOSCOW was turning back to the westbound lane and to keep a sharp lookout. The audio transcript suggests that the second officer pointed out WESTERN MOSCOW on the radar (“...this one?”). At C-6 the cursor was placed over WESTERN MOSCOW on ECDIS showing her bearing and distance and, from C-5.75, her heading and course were displayed. At about this time the master said “collision course with this one”. That was, I think, a reference to WESTERN MOSCOW (and neither counsel disagreed). That being so, it suggests that the master had made an accurate assessment of the position, for WESTERN MOSCOW had been, as the agreed schedule of navigational data shows, on a constant bearing and closing since about C-7.
105. It is unlikely that a risk of collision could have been detected any earlier than this which indicates a good lookout. Thus, whilst there are criticisms to be made of the lookout, none appears to have been causative.

## The crossing rule

106. Counsel for WESTERN MOSCOW submitted that from C-7 the vessels were crossing with a risk of collision and that WILFORCE was the give-way vessel. It is remarkable that in the first collision case after the decision of the Supreme Court in *Evergreen Marine (UK) Ltd. v Nautical Challenge Ltd.* [2021] 1 Lloyd’s Reports 299, [2021] UKSC 6 that decision falls to be applied and it is ironic that counsel who argued valiantly for the requirement of a “steady course” before the Supreme Court now relies upon that decision to say that it is not necessary to enquire whether WESTERN MOSCOW, whilst continually turning to port from C-7, was on a steady course. It is now sufficient that from C-7 the bearing of the vessels from each other were constant thereby indicating that the vessels were crossing with a risk of collision. The submission that the crossing rules applied, following the decision of the Supreme Court, gives rise to the question what “course” WESTERN MOSCOW was to “keep” as the stand-on vessel.
107. Counsel for WILFORCE submitted that the crossing rule did not apply because it was only WESTERN MOSCOW’s fault in continually porting, rather than proceeding across the Precautionary Area in a north westerly direction, that brought about the crossing situation. It was said to be well-established that a vessel is not entitled to invoke the crossing rule when she herself has created the crossing situation. Reliance was placed on *The Spyros* [1953] 1 Lloyd’s Law Reports 501 at p.509 per Lord Merriman, *The Tojo Maru* [1968] 1 Lloyd’s Law Reports 365 at p.377 per Willmer LJ, *The Forest Pioneer* [2007] EWHC 84 (Comm) at paragraph 39 per David Steel J. and *Nautical Challenge v Evergreen Marine (UK) Ltd.* [2017] EWHC 453 (Admlty) at paragraph 66 per Teare J.
108. In response counsel for WESTERN MOSCOW submitted that the approach adopted in those cases could not survive the reasoning of the Supreme Court in *Evergreen Marine (UK) Ltd. v Nautical Challenge Ltd.* and in any event there was Court of Appeal authority for the proposition that the crossing rule applies irrespective of the fault of the other vessel; see *The Century Dawn* [1996] 1 Lloyd’s Law Reports 125 at p. 132 per Hirst LJ.
109. The starting point in this debate must be that in circumstances where the bearing of one vessel from the other remained constant from C-7 the vessels were crossing so as to involve risk of collision with WILFORCE having WESTERN MOSCOW on her starboard side. There is thus a powerful case that WILFORCE was obliged, pursuant to the crossing rules, to keep out of the way of WESTERN MOSCOW; see *Evergreen Marine (UK) Ltd. v Nautical Challenge Ltd.* in the Supreme Court at paragraph 57.
110. It is next necessary to examine the authorities on which reliance was placed by counsel for WILFORCE to see for what proposition they stand for and why.
111. The earliest authority is *The Spyros* [1953] 1 Lloyd’s Law Reports 501. That case concerned a collision off the mouth of the river Elbe. *Rebecka E* was on a course of 244 degrees with *Spyros* on her starboard side showing her green light. *Spyros* was in the course of picking up a pilot on a heading of 75 degrees. Although *Rebecka E* was in sight she was not observed by *Spyros*. *Spyros* then altered course to 100 degrees with engines at full speed ahead. As a result she now showed her red light to *Rebecka E*. Because of a poor lookout on *Rebecka E* the red light was not immediately seen. When it was seen hard starboard helm was ordered but, because her engine room was unattended, she did not take her way off.



112. Lord Merriman said that the alteration of course by *Spyros* with her engines at full ahead created “the dangerous situation of red to green, when much too close to the other vessel”. Lord Merriman stated at p. 509 as follows:

“In my opinion, in those circumstances the *Spyros* is not entitled to invoke the crossing rule when she herself creates the situation, in which it would theoretically apply, by her own negligent action.”

113. Lord Merriman apportioned liability two-thirds to *Spyros* and one-third to *Rebecka E*.

114. The reasoning of Lord Merriman is shortly expressed. The language used (“not entitled to invoke the crossing rule”) suggests that the crossing rule did not apply or at least that *Spyros* was not entitled to invoke it. If that is what he meant it did not have the consequence that *Rebecka E* was not obliged to take action. Having a red light on her starboard side, hard starboard helm was “the right action to take” (see p.508). She ought also to have taken off way. These are the steps which would be expected of a give-way vessel under the crossing rule. Thus if the crossing rule did not apply those steps must have been required as a matter of good seamanship.

115. The next case to consider is *The Tojo Maru* [1968] 1 Lloyd’s Law Reports 365 which concerned a collision in the Persian Gulf. The two vessels were approaching each other “green to red” (see p.376). Willmer LJ concluded that the “principal cause of the collision was bad lookout on the part of both vessels” (see p.377). Willmer LJ then considered the consequences of his findings with regard to the vessel’s courses, at p.377:

“My finding involved that for an appreciable length of time ..... the *Fina Italia* was approaching the *Tojo Maru* with the *Tojo Maru*’s red light on her starboard bow. That put her under a duty to obey the crossing rules, which she failed to do. But I do think that that is the beginning and end of the matter, for I think it is necessary to look also at the conduct of the *Tojo Maru* and consider whether she was justified as a matter of seamanship in setting the course which she did. It seems to me that no vessel is entitled, in face of another vessel seen to be approaching, to put herself deliberately on a crossing course in the position of a stand-on vessel so as to force that other vessel to keep out of her way. I should certainly regard it as wrong to adopt any such manoeuvre at a late moment when the vessels are within a short range of each other.”

116. Willmer LJ therefore found both vessels at fault with regard to the courses they steered. *Tojo Maru* was at fault for putting herself on a crossing course in the position of the stand on vessel and *Fina Italia* was at fault for “sticking to her course instead of giving way as she ought to have done” (see p.378). Those faults were the result of poor lookout and in the result Willmer LJ could not establish different degrees of fault and so liability was apportioned 50:50 (see p.378).

117. It is plain that Willmer LJ regarded the crossing rule as applying notwithstanding the fault of *Tojo Maru* in putting herself on a crossing course in the position of the stand-on vessel. Thus the passage “no vessel is entitled, in face of another vessel seen to be approaching, to put herself deliberately on a crossing course in the position of a stand-on vessel so as to force that other vessel to keep out of her way” was not intended to

mean that the crossing rule did not apply. Rather, Willmer J. was identifying the reason why *Tojo Maru*'s course was at fault.

118. The third case is *The Forest Pioneer* [2007] EWHC 84 (Comm) which concerned a collision off Gibraltar. *Bulk Atalanta* was to bunker in Gibraltar and was picking up her pilot. *Forest Pioneer* was outbound from Gibraltar.
119. Shortly after C-9 *Forest Pioneer* had steadied on a course of 210 degrees with her engines at half ahead. The echo of *Bulk Atalanta* was observed at a distance of 1.7 miles bearing 175 degrees. The vessels were on a collision course, with *Bulk Atalanta* on the port bow of *Forest Pioneer*. Before *Forest Pioneer* had steadied on this course *Bulk Atalanta* had been distant about 2 miles bearing about 15 degrees on the starboard bow of *Forest Pioneer*.
120. At about C-6, with her engines stopped, *Bulk Atalanta* saw the red light of *Forest Pioneer* fine on her starboard bow at a distance of 3-4 cables. She put her helm hard to starboard and her engines at dead slow ahead. At C-4 her engines were put to half astern and at C-3 to full astern.
121. Thus from about C-9 the vessels were crossing so as to involve risk of collision. David Steel J. was  

“quite unable to accept that the situation attracted the application of the crossing rules.”
122. He said that  

“the alteration to 210 degrees was made without any heed to (or even awareness of) *Bulk Atalanta*. The consequence was to place the vessels on collision courses.”
123. David Steel J. noted “something of a parallel” with the *Tojo Maru*. He quoted part of the passage from the judgment of Willmer LJ which I have set out above. He accepted the advice of his Assessors that the change of course was grossly misjudged because it “transformed a situation of comparative safety into one of imminent risk of collision” (see paragraphs 39-40).
124. *Bulk Atalanta* was found to have had an inadequate lookout. However, she was not at fault for failing to starboard because such action would have been foolhardy having regard to the presence of the pilot boat. She ought however to have taken off more way from C-5.
125. Liability was apportioned 85% to *Forest Pioneer* and 15% to *Bulk Atalanta*.
126. It seems clear that David Steel J. regarded the fact that *Forest Pioneer* had caused the vessels to be on crossing courses as a reason for not applying the crossing rules. I would make the following comment. Although David Steel J. quoted from the judgment of Willmer LJ in *The Tojo Maru* he did not note that Willmer LJ had found that the crossing rules applied, notwithstanding the fault of *Tojo Maru* in bringing about the crossing situation.
127. The fourth case relied on was my own judgment in *Nautical Challenge Ltd v Evergreen Marine UK Ltd*. [2017] 1 Lloyd's Reports 666, [2017] EWHC 453. At paragraph 66 I

noted that “the authorities show that a vessel cannot claim the benefit of Rule 15 of the Collision Regulations when the vessel brings about the crossing situation by her own fault”. I referred to *The Spyros* and *The Forest Pioneer*. However, I then concluded that the facts of the case did not justify the application of that principle. There was, so far as I can recall, no discussion as to the validity of the supposed principle.

128. Before considering the effect, if any, of the reasoning of the Supreme Court in *Evergreen Marine (UK) Ltd. v Nautical Challenge Ltd.* I should mention the case of *The Century Dawn* [1996] 1 Lloyd’s Reports 125 on which counsel for WESTERN MOSCOW relied. This case concerned a collision in the eastbound lane of the traffic separation scheme of the Singapore Straits. *Asian Energy* was westbound and *Century Dawn* was eastbound. Both vessels were guilty of a poor lookout.
129. *Century Dawn* altered course from 120 to 110 degrees at C-15 and then to 100 degrees at C-10 with the result that she crossed the westbound lane diagonally and not at a right angle (as required by Rule 10 of the Collision Regulations). *Asian Energy* altered course at about C-10 from 260 degrees to 247 degrees which carried her into the eastbound lane. From this time the vessels were crossing so as to involve risk of collision. At first instance Clarke J. had held that *century dawn* was the stand-on vessel and in breach of her duty had increased her speed (see p.130). It was the duty of *Asian Energy* as the give-way vessel to take early and substantial action to keep out of the way of *Century Dawn* but she failed to do so (see p.131). Clarke J. apportioned 60% liability to *Asian Energy* and 40% liability to *Century Dawn*.
130. On appeal counsel for *Asian Energy* submitted that *Century Dawn* was not entitled under the Regulations to pray in aid the status of a stand-on vessel. This was on the basis that “it was entirely the fault of *Century Dawn* that the situation of danger was created by crossing the westbound lane at a wrong angle”. However, counsel did not (ultimately) submit that *Asian Energy* was not obliged to keep out of *Century Dawn*’s way (see p.132). Reliance was placed on *The Tojo Maru*. Hirst LJ held that this submission was misconceived. He said that “r.15 applies irrespective of the fault of the other vessel as was held by Mr. Justice Sheen in *The Achilles* [1985] 2 Lloyd’s Reports 338 at p.342 in a passage which we expressly approve.” Hirst LJ distinguished *The Tojo Maru* on its facts “since unlike the present case she sought to force the other vessel out of her way.”
131. I do not consider, with respect, that the last point is quite right. Willmer LJ said that “no vessel is entitled, in face of another vessel seen to be approaching, to put herself deliberately on a crossing course in the position of a stand-on vessel so as to force that other vessel to keep out of her way.”. Thus the point was not that *Tojo Maru* sought to force the other vessel out of her way but that *Tojo Maru* was not entitled to put herself on a crossing course thereby forcing the other vessel to keep out of the way of *Tojo Maru*. That error, if error it be, perhaps does not matter because the submission made by counsel appeared to disregard the finding of the trial judge that the alteration of course by *Asian Energy* at least contributed to the fact that the vessels were crossing. Further, Willmer LJ in *The Tojo Maru* used the point relied on by counsel, not to show that the crossing rule did not apply, but that *Tojo Maru*’s course alteration was not in accordance with good seamanship, that it was a fault.
132. It is true that in *The Achilles* [1985] 2 Lloyd’s Reports 338 at p,342 Sheen J. emphasised that the crossing rules applied to vessels navigating in a traffic separation

scheme. But in that case “it was apparent from the outset that .....the ships approached [the position of the collision] with *Cinderalla* on the starboard bow of *Achilleus*. Thus *Achilleus* was the ship which was directed by the rule to keep put of the way of *Cinderalla*.” It does not appear to have been a case where a crossing situation was caused by the fault of the vessel which claimed the status of the stand-on vessel.

133. Thus there have only been, in reality, three cases which have addressed the crossing rule in circumstances where the crossing situation was created by the putative stand-on vessel a short time before the collision. Of those, *The Forest Pioneer* and *The Spyros* were cases where the Admiralty Court held that the crossing rule did not apply and *The Tojo Maru* was a case where the Admiralty Court held that the crossing rule did apply but that the stand-on vessel was at fault for creating the crossing situation and apportioned liability on that basis.
134. It is, I think, helpful to reflect upon the type of situation which gives rise to this problem. Normally, the crossing rule applies in circumstances where, for some time before the collision, the vessels are crossing so as to involve risk of collision. In such a case the give-way vessel, by failing to give way, will typically be held to have created the close quarters situation and thereby to be more to blame for the resulting collision; see *Nautical Challenge Ltd. v Evergreen Marine Ltd. (No.2)* [2022] EWHC 206 (Admlty) at paragraphs 136 and 176. But in other cases the vessels may be on courses which will enable them to pass safely port to port or starboard to starboard but then at a late stage one vessel alters course such that the vessels are now crossing so as to involve risk of collision with the vessel which altered course now in the position of the putative stand-on vessel. How is the court to approach that set of circumstances?
135. One could say, as David Steel J. and Lord Merriman in effect said in *The Forest Pioneer* and *The Spyros*, that the crossing rule was not intended to apply in such circumstances. Leaving aside the question whether that solution is permitted by the scheme of the Collision Regulations, there is sense in that conclusion.
136. One could also say that the crossing rule applies, because the vessels are now crossing so as to involve risk of collision, but that the circumstances in which the crossing situation came about are relevant to apportionment of liability. Unlike in the typical crossing case, the give-way vessel did not create the close quarters situation and was left with little time to react to the dangerous situation brought about by the stand-on vessel. In such a case the stand-on vessel which created the close-quarters situation might well be held to be very much at fault in terms of causative potency and blameworthiness. Thus the 85:15 apportionment of liability in *The Forest Pioneer* or the two-thirds:one third apportionment of liability in *The Spyros* could equally have been justified on the basis that the crossing rule applied, as was the 50:50 apportionment of fault in *The Tojo Maru*.
137. These reflections suggest that ultimately it may not matter whether one holds that the crossing rule applies or does not apply. In both events the putative give-way vessel will have to respond either to the duty of that vessel under the crossing rule to keep out of the way of the other vessel or to the duty pursuant to good seamanship to take such action as will best avoid collision. However, the point has been taken in the present case and the court is asked to say whether the solution adopted in *The Forest Pioneer* and in *The Spyros* is permitted by the scheme of the Collision Regulations.

138. When the crossing rule applies the give-way vessel is obliged to take early and substantial action to keep out of the way of the other and the stand-on vessel is obliged to keep her course and speed. Rule 17(a)(ii) provides that the latter may take action to avoid collision when it is apparent that the other vessel is not taking appropriate action to keep out of the way and Rule 17(b) provides that she shall take such action as will best aid to avoid collision when collision cannot be avoided by the action of the give-way vessel alone. By contrast, when the vessels are set to pass safely port to port or starboard to starboard and one vessel, when close to the other, chooses to alter course such that the other vessel is on her port side and the two vessels are now crossing with a clear risk of collision it could fairly be said that those are not the circumstances in which the Regulations envisaged the crossing rule to apply. For example, it would make no sense for the putative stand-on vessel to maintain her course and speed rather than to take such action as would best aid to avoid collision. In such circumstances it could be said that the crossing rule was not intended to apply. *The Spyros* and *The Forest Pioneer* may be examples of those circumstances.
139. However, in *Evergreen Marine (UK) Ltd. v Nautical Challenge Ltd.* the Supreme Court emphasised that the crossing rules should not lightly be treated as inapplicable. On the contrary they should be applied unless there is some necessity to do otherwise; see paragraph 68. Further, Rule 15 does not provide that the crossing rules do not apply where one vessel creates the crossing situation by her own voluntary alteration of course; cf paragraph 83(i) where the Supreme Court observed that the Rule 15 made no provision for either vessel to be on a steady course. These considerations suggest that if two vessels are crossing so as to involve risk of collision the crossing rules apply unless, pursuant to rule 2(b), a departure from the rules meets “the stern test” of necessity to avoid immediate danger; see paragraph 67. This was not the test applied in either *The Spyros* or *The Forest Pioneer*. At the same time it must be stressed, as counsel for WILFORCE did, that the Supreme Court was not considering the application of the crossing rules in a case where the crossing situation had been brought about by the fault of the putative stand-on vessel.
140. I have found this to be a difficult issue to resolve. On the one hand two experienced Admiralty Judges have held that though the circumstances are such that the crossing rules “theoretically” apply, the putative stand-on vessel is “not entitled” to claim the status of the stand-on vessel when it has created the crossing situation by its own fault. On the other hand the reasoning of the Supreme Court, albeit in a case which did consider this particular issue, suggests that the court should only allow a departure from the crossing rule to avoid immediate danger.
141. In the end, although I have been asked to say whether or not the crossing rules applied from C-7, I think I should only answer that difficult question if the action required of WILFORCE as a matter of good seamanship is different from the action required pursuant to the crossing rule. I have therefore, with the agreement of counsel, asked the following questions of the Assessors:
- “1. At C-6 when (i) WILFORCE was in the eastbound lane making good a course of 57 degrees and a speed of 15.8 knots with her engines at full ahead at an engine speed of 69 rpm, (ii) PROFIT VENTURE and her tow were ahead or the starboard bow of WILFORCE at a distance of about 1.2 miles crossing, or having crossed, from port to starboard, (iii) WESTERN MOSCOW was in the Precautionary Area on the starboard bow of WILFORCE distant about 1.9 miles, (iv) VTIS had

informed WILFORCE that WESTERN MOSCOW was turning back to the westbound lane, (v) the bearing of WESTERN MOSCOW from WILFORCE had not appreciably changed from C-7 and (vi) the CPA alarm for WESTERN MOSCOW had flashed intermittently red and green, what, if any, helm or engine action ought to have been taken by WILFORCE as a matter of good seamanship and when ?

2. If the Court holds that at C-7 WILFORCE and WESTERN MOSCOW were crossing so as to involve risk of collision, with WILFORCE being the give-way vessel pursuant to Rules 15 and 16 of the Collision Regulations,

- i) When ought WILFORCE to have appreciated that the bearing of WESTERN MOSCOW from WILFORCE was not appreciably changing;
- ii) What early and substantial helm or engine action to keep out of the way of WESTERN MOSCOW ought to have been taken by WILFORCE as the give-way vessel; and,
- iii) What was the latest time at which such early and substantial action ought to have been taken?”

142. I received the following answers from the Assessors:

1. As a matter of good seamanship WILFORCE should have taken early and substantial action at C-5 by reducing speed and turning to starboard once clear of the isolated danger mark Batu Berhanti on her starboard beam. She should have pointed her ships head at the stern of the tug and tow PROFIT VENTURE, keeping it fine to starboard. If there was doubt, WILFORCE could have enquired about the length of tow to VTIS. However, WILFORCE’S ability to take early and substantial action in terms of speed reduction was impaired as she was not proceeding at full manoeuvring speed iaw:

- a) Rule 8 of the Singapore Port Marine Circular 20 of 2006 where she should have been ‘in a maximum state of manoeuvring readiness’.
- b) Rule 6(a) (iii) of the Collision Regulations.
- c) The Passage Plan of the vessel which gave 12 knots for the complete Singapore Strait passage. This speed was the approximate Full Ahead Manoeuvring speed of the vessel.

2 (i) Between C-7 and C-5

2 (ii) At C -5 (as per answer above), reducing speed with an increasing swing to starboard as permitted by the relative position of PROFIT VENTURE.

2 (iii) At C- 5

143. In circumstances where the master of WILFORCE appreciated at C-6 that the vessels were on a collision course and where WESTERN MOSCOW was on the starboard bow

of WILFORCE I accept the advice that as a matter of good seamanship WILFORCE ought to have reduced speed by C-5. She did not do so. Instead, she continued making good a speed of 15.8 knots until C-4. The master began to reduce the rpm at C-4.5 but since the vessel had not been proceeding in “a maximum state of manoeuvring readiness” her ability to take off way rapidly was, as the Assessors have advised, impaired. Indeed, the audio record shows that the master knew that he should be slowing down and also appreciated that there was insufficient time in which to do so. He is recorded as having said at C-5 “there’s not long time to slow down” and at C-4 “I cannot stop ship now. I cannot slow down now”. By C-2.5 she was still making over 15 knots. It was not until C-1.5 that the bridge telegraph was put to half ahead at which time she was still making good a speed of 14.5 knots. Thus her failure to reduce speed promptly was caused by her unsafe speed before C-7.

144. Counsel for WILFORCE submitted, by way of comment upon the Assessors’ Answers, that WILFORCE’s speed prior to C-7 was not unsafe and/or causatively safe. He relied upon (i) the circumstance that the vessel’s propulsion system was diesel electric (which he said provided a more instantaneous reduction of speed than a conventional fuel only based system) and so was ready for immediate manoeuvre and (ii) the circumstance that she was operating between full ahead manoeuvring and full ahead sea speed and concluded that WILFORCE was able to reduce speed quickly as was required in an emergency. However, the audio record does not suggest that that was the master’s view at the time. At C-5 he recognised that he should be slowing down but appreciated that there was not enough time in which to do so. The inference is inescapable that had WILFORCE been in a maximum state of manoeuvring readiness by being at full ahead manoeuvring revolutions of about 50 (and thereby making about 12 knots as required by the passage plan) she would have been able to reduce speed more quickly.
145. The Assessors also advised that WILFORCE ought to have turned to starboard as permitted by PROFIT VENTURE. I accept that advice. However, the question is whether WILFORCE turned to starboard as much as she could having regard to the presence of the tug and tow.
146. After the hearing I was provided with two plots (166A and 167A) which illustrated a reduction of speed at C-7 and at C-4. In each case WILFORCE is also shown as applying starboard helm between C-3 and C-2 when it was safe to do so. On this basis WILFORCE and WESTERN MOSCOW would have passed port to port, in the one plot at a distance of over 2 cables and in the other at under 1.5 cables.
147. I have found that WILFORCE ought to have reduced speed by C-5 which is later than the first plot assumes and earlier than the second plot assumes. However, it seems more likely than not that had a reduction of speed by C-5 been modelled and WILFORCE shown as having turned to starboard between C-3 and C-2, the plot would have shown that there would have been no collision, with a passing distance of between 1.5 and 2 cables. This would obviously have been a close quarters miss because the length of WILFORCE was about 1.5 cables.
148. It was at C-3 to C-2 that WESTERN MOSCOW advised that the vessels would pass port to port and the master of WILFORCE said “we will try to alter now to starboard as much as we can”. Between C-2.5 and collision the heading of WILFORCE was turned from 63 degrees to 113 degrees and her course over the ground was altered from 61 degrees to 85 degrees. In plot 166A WILFORCE is shown as steady on a course

of 110 degrees and in plot 167A she is shown as steadying on a course of 125 degrees. Thus WILFORCE did not turn as far to starboard as has been plotted. Yet the audio record shows that from C-6 the master of WILFORCE was seeking to go to starboard (see the entry for 1752.08) but was constrained by the tug and tow (see the entry at 1753.38). At C-2.5 he informed WESTERN MOSCOW that he would try to “alter now to starboard as much as we can.” At about C-1.5 he ordered starboard 20. This was when the master considered that WILFORCE had passed the aft end of the tow. These entries in the audio record corroborate the master’s evidence that he was altering to starboard as much as he thought he could do so safely and that his ability to do so was constrained by the presence of the tug and tow. Given his recognition that he could not slow down one would have expected him to turn to starboard as much as he could; and that is what the audio record suggests he did. I therefore consider it more likely than not that WILFORCE turned to starboard as much as she reasonably could having regard to the constraint represented by the tug and tow.

149. Counsel for WILFORCE submitted that WILFORCE did not know what WESTERN MOSCOW was to do and could not know what action would be beneficial. This submission was developed in counsel’s comments on the Assessors’ Answers where it was said that there were problems with both suggested actions and it was concluded that the suggested course of action would not have been clear to WILFORCE. However, the master knew at C-6 that there was a risk of collision and appreciated that he had to slow down. Taking off way was indeed the obvious step. In circumstances where WILFORCE was eastbound and WESTERN MOSCOW was planning to join the westbound lane it was appropriate that they pass port to port and WILFORCE sought to do so. I am therefore unable to accept counsel’s submission that the master of WILFORCE could not know what action would be beneficial. I therefore accept the advice of the Assessors that WILFORCE ought to have reduced speed by C-5 and then altered course to starboard when the position of PROFIT VENTURE and her tow permitted such action. Her ability to reduce speed was impaired by her own fault but her ability to turn to starboard was impeded by the presence of the tug and tow.
150. Counsel for WESTERN MOSCOW submitted (in a reply to WILFORCE’s comments upon the advice of the Assessors) that WILFORCE’s reluctance to make a bolder alteration of course to starboard prevented her from utilising the safe waters that were available. The question however is why the master did not make a bolder alteration than he did. The reason was that, as he explained in his statement and I accept, there was no light at the stern of the tow and so it was very difficult to determine where the aft end of the tow was. He allowed WESTERN MOSCOW as much sea room as he thought safe. Once PROFIT VENTURE was on his starboard beam he assumed it was safe to alter further to starboard and ordered starboard helm of 20 degrees. In the circumstances I do not consider that WILFORCE was at fault for not making a bolder alteration to starboard than he did. Counsel for WESTERN MOSCOW submitted that reliance on radar would have assisted. The master had acquired PROFIT VENTURE as a target from about C-15. He made no reference to being able to observe the tow by radar or at any rate with the clarity which he required. Given his concern as to the location of the aft end of the tow I have concluded that radar did not give him the assistance he required in judging when it was safe to turn (and reference to the radar stills does not suggest that an echo of the end of the tow could be clearly discerned.) The Assessors said that the master could have enquired of VTIS as to the length of the tow. But even if he had done so and received an answer it is likely that he would have still wished to have seen



a light at the after end of the tow before making a bolder alteration to starboard than he in fact did.

151. It is clear from the Assessors’ advice that if the crossing rule applied from C-7 the action required of WILFORCE as the give-way vessel was the same as that which was required if the crossing rule did not apply. She would have been obliged to reduce speed by C-5 (which she failed to do) and to turn to starboard when the tug and tow permitted (which she did). That indicates that it is unnecessary for me to have to resolve the issue as to whether the crossing rule applied.
152. But what of WESTERN MOSCOW ? Would the action required of her as the stand-on vessel have been different if the crossing rule applied ? Her duty was to keep her course. What did her duty to keep her course require ? Was she required to keep the heading she was on when the crossing rule applied (which she did not) ? Was she required to keep the course being made good when the crossing rule applied (which she did not) ? Was she obliged to keep altering course to port (which she did but is an unlikely form of keeping her course) ? Or was she obliged, given the important local recommendation to cross the Precautionary Area in the direction of the arrow shown on the chart (or, as it is put in the 2013 Circular dealing with the Precautionary Area to “cross the traffic lane on a heading as nearly as practicable at right angles to the general direction of traffic flow”) on a north north westerly heading. In the light of the decision of Supreme Court in *Evergreen Marine (UK) Ltd. v Nautical Challenge Ltd.* this is probably a matter of law. But I was asked to put the question to the Assessors. I therefore asked the following question:

If the Court holds that at C-7 WILFORCE and WESTERN MOSCOW were crossing so as to involve risk of collision, with WESTERN MOSCOW being the stand-on vessel pursuant to Rule 17 of the Collision Regulations, what course or courses ought WESTERN MOSCOW to have followed pursuant to Rule 17(a) (i) in order to join the westbound lane?

153. I received the following answer:

At C-7 WESTERN MOSCOW’s ships head was approximately 034 in a port turn and in accordance with Rule 17(a) (i) she should have maintained that course and speed until risk of collision was past and clear. However, as a matter of good seamanship it would have been prudent to continue the turn and steady up on a course of approximately 350 and increase speed. This would have given rise to a bearing change between the two vessels, and complied with VTIS instructions, Rule 10 of the Collision Regulations (as noted in the answer to Q1) and also Rule 17 a. (i).

154. The first sentence of this answer notes that at C-7 the vessel’s head was “approximately 034 in a port turn” and contemplates that she should have maintained “that course”. However, the Assessors did not consider that a port turn should have been continued. As a matter of good seamanship WESTERN MOSCOW ought to have steadied on a course of 350 degrees, which is the same answer which they gave to the first question about WESTERN MOSCOW and reflects the recommendation as to navigation in the Precautionary Area. Following the guidance of the Supreme Court in *Evergreen Marine (UK) Ltd. v Nautical Challenge Ltd.*, it can be said that the duty to keep her course, in circumstances where she is recommended to proceed across the Precautionary Area in

the direction of the arrow on the chart, is to be “moulded for the purpose of permitting compliance with the other rule”; see paragraph 69 of the judgment of the Supreme Court. “Keeping her course and speed includes doing so in compliance with any other applicable rule”; see paragraph 140 of the Supreme Court. Thus the Assessors’ advice is arguably in accordance with the guidance given by the Supreme Court.

155. Counsel for WESTERN MOSCOW submitted that the Supreme Court’s reference to “moulding” of the duty to keep her course applied only where there was another rule and not where there was only a recommendation. Counsel also submitted (in her comments upon the Assessors’ Answers) that the requirements of good seamanship do not displace the requirements of the rules; see paragraphs 66-67 of the judgment of the Supreme Court in *Evergreen Marine (UK) Ltd. v Nautical Challenge Ltd.*
156. I accept that the Supreme Court was dealing with the requirements of another rule in the Collision Regulations and that in some cases the Supreme Court’s approach may not be appropriate to a mere recommendation. However, the recommendations for navigation in a Precautionary Areas stem from an IMO Resolution and are, it seems to me, of such importance that they are, for this purpose, analogous to a rule. I would therefore accept that the Supreme Court’s approach to the “moulding” of the duty to maintain course applies, in this case, to the important recommendation derived from an IMO Resolution as to how vessels should cross a Precautionary Area. That, in my judgment, is much to be preferred to the submission of counsel for WESTERN MOSCOW (made in her final written submission) that WESTERN MOSCOW’s duty as the stand-on vessel required her to “maintain her port turn”. As I indicated above this is an unlikely form of “keeping her course”. It is better described as “keeping altering her course”.
157. If that is wrong then the fact that WESTERN MOSCOW is navigating in a Precautionary Area is a “special circumstance” within the meaning of rule 2(b) which justifies a departure from the crossing rule to avoid immediate danger.
158. That being so, there is in reality no difference between the course which WESTERN MOSCOW ought to have steered had the crossing rules not applied and the course which she ought to have steered had the crossing rules applied.
159. In these circumstances I remain of the view that I need not answer the difficult question of whether the crossing rules applied or not. It is unnecessary to answer the question on the facts of this case. It is preferable to answer it when its resolution actually matters.

#### Apportionment of liability

160. I have considered the approach of the court to apportionment of liability in two previous decisions; see *Nordlake v Sea Eagle* [2015] EWHC 3605 (Admlty) at paragraphs 148-151 and *Nautical Challenge Ltd. v Evergreen Maritime (UK) Ltd.* (No.2) [2022] EWHC 206 (Admlty) at paragraphs 132-141. There is no need to discuss the relevant principles any further, though I do of course have them in mind.

#### Causative potency

161. Before C-7 there was no risk of collision. The risk of collision was brought about by the poor lookout of WESTERN MOSCOW. By reason of not heeding the approach of

WILFORCE, WESTERN MOSCOW from C-7 continued to turn to port towards WILFORCE and in consequence the two vessels remained on bearings which did not appreciably change. WESTERN MOSCOW ought to have settled on a course of 350 degrees (as advised by the Assessors) and thereby crossed ahead of WILFORCE at a distance of about 1 mile. (A plot provided by the WILFORCE interests models WESTERN MOSCOW adopting a course of 335 degrees and shows her crossing ahead at a distance of about a mile. A course of 350 degrees would increase the distance a little.)

162. WESTERN MOSCOW’s poor lookout had a further consequence. At C-3 to C-2 those on her bridge were confused as to the appropriate action to take even though they had agreed to pass port to port. As a result WESTERN MOSCOW delayed in applying hard starboard helm and the vessel continued to turn to port, thereby failing to avoid collision.
163. WILFORCE appreciated the risk of collision by C-6 and ought to have reduced her speed substantially by C-5. However, by reason of the fact that WILFORCE was not proceeding at manoeuvring revolutions she was inhibited in her ability to reduce speed. Her master appreciated this. He is recorded as having said at C-5 “there’s not long time to slow down” and at C-4 “I cannot stop ship now. I cannot slow down now”. Although he ordered a reduction in rpm from 69 at C-4.5 he was not able to put the bridge telegraph to half ahead until C-1.5 when the rpm were 48 and the vessel’s speed was still 14.5 knots.
164. WILFORCE continued at over 15 knots until C-2.5, thereby reducing the space available for effective use of starboard helm when the tug and tow permitted such action. The damage caused by the collision was a product of the forces generated by the speeds of both vessels. The speed of WESTERN MOSCOW was not criticised but WILFORCE had failed to reduce speed substantially at C-5 and as a result was still making 11.7 knots at collision. That excessive speed must have significantly contributed to the damage caused by the collision, notwithstanding that it was the port bow of WESTERN MOSCOW which struck the portside of WILFORCE.
165. An assessment of the relative causative potency of each vessel requires the court to take into account the vessels’ respective contributions both to the fact that the collision occurred and to the damage caused by the collision. I have sought to make that assessment on the basis of the circumstances of this case. In my judgment the causative potency of WESTERN MOSCOW was greater than that of WILFORCE.

#### Blameworthiness

166. The lookout on board WESTERN MOSCOW was very poor. Given that WESTERN MOSCOW was navigating within the southern part of the Precautionary Area and intent on joining the westbound traffic lane this poor lookout was particularly blameworthy. Her faults of continuing to turn to port and failing to order hard starboard at C-3 were the result of her poor lookout.
167. The failure of WILFORCE to reduce speed substantially at C-5 was the result, not of a poor lookout, but of WILFORCE’s failure to comply with the local rule which required her to be in a state of “maximum manoeuvring readiness”. Her passage plan provided for her to proceed at 12 knots which was consistent with full ahead manoeuvring

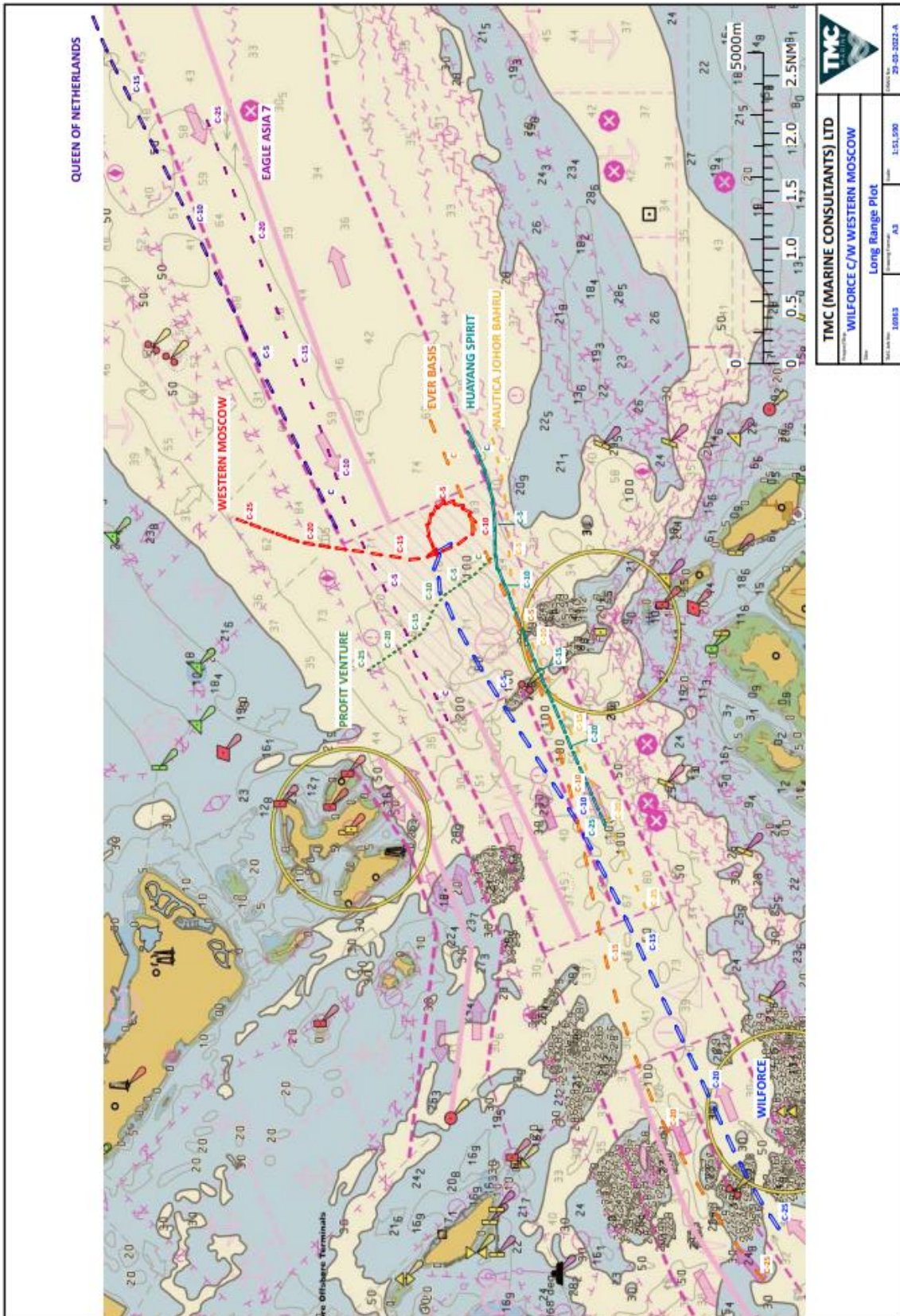
revolutions. Instead of her rpm being 50 her rpm was 69. Her speed on her approach to the Precautionary Area was unsafe and as a result she was unable to reduce speed substantially when the actions of WESTERN MOSCOW created a risk of collision. This breach of Rule 6 of the Collision Regulations and of local rule 8 was particularly blameworthy because WILFORCE was approaching the Precautionary Area.

168. So each vessel breached an important obligation, the one to keep a good lookout and the other to proceed at a safe speed. WESTERN MOSCOW was within the Precautionary Area and WILFORCE was approaching the Precautionary Area. There was no excuse or mitigation for either fault. Those observations suggest that in relative terms the blameworthiness of each vessel was about the same. However, whilst one has to be careful not to double count the element of causative potency, WESTERN MOSCOW's poor lookout was especially striking because she was turning to port onto a westerly heading in the southern half of the Precautionary Area towards a vessel proceeding easterly in the southern half of the Precautionary Area where eastbound vessels would be expected. By contrast WILFORCE appreciated the risk of collision at C-6 because she was keeping a good lookout. Her fault lay in her reaction to the risk of collision created by WESTERN MOSCOW, although her ability to react was limited by her own prior fault. I consider that the blameworthiness of WESTERN MOSCOW was greater than that of WILFORCE.

#### Apportionment

169. Counsel for WILFORCE submitted that WESTERN MOSCOW should bear 100% liability for the damage caused by the collision. This was unrealistic because it failed to give any effect to the unsafe speed of WILFORCE. Counsel for WESTERN MOSCOW submitted that the preponderance of blame lay with WILFORCE so that WILFORCE should bear more than 50% liability for the collision. This was optimistic given the seriousness of WESTERN MOSCOW's fault. In my judgment, and for the reasons I have given when discussing causative potency and blameworthiness, the preponderance of blame lay with WESTERN MOSCOW.
170. In apportioning liability it is helpful to ask how many more times at fault one vessel was than the other. To say that WESTERN MOSCOW's fault was twice that of WILFORCE would, in my judgment, under-estimate the relative fault of WESTERN MOSCOW. To say that WESTERN MOSCOW's fault was four times that of WILFORCE would, I think, underestimate the relative fault of WILFORCE. I consider that WESTERN MOSCOW's fault was three times the fault of WILFORCE. I therefore apportion liability 75% to WESTERN MOSCOW and 25% to WILFORCE.

### TMC – Long Range Plot



**TMC – Short Range Plot**

