UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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| In the Matter of the Complaint<br><br>of<br><br>ENERGETIC TANK, INC.,<br>as Owner of the M/V ALNIC MC,<br>for Exoneration from or Limitation of Liability | : | No. 18-cv-1359 (PAC) (RWL)<br><br>**OPINION & ORDER** |

Before dawn on August 21, 2017, two large ships collided in the west-bound lane of the traffic separation scheme of the Singapore Strait. The U.S.S. JOHN S. MCCAIN, a 9,000-ton Navy guided-missile destroyer, had been cruising alongside the M/V ALNIC, a 39,000-ton oil tanker. In a matter of minutes, MCCAIN overtook the ALNIC and turned suddenly to her left—directly in front of the lumbering tanker. ALNIC's bow pierced the broadside of the destroyer, flooding compartments with seawater and fuel within seconds. Ten Navy sailors were killed and dozens more were injured. Both vessels also sustained significant damage.

This admiralty case resolves the civil liability resulting from that collision.[1] The owner of ALNIC, Energetic Tank, Inc. ("Petitioner"), contends MCCAIN was 100% at fault for the collision. The United States concedes MCCAIN bears some fault but argues ALNIC played a role in the collision as well.

[1] As a collision action concerning two vessels, this case arises under the Court's civil admiralty and maritime jurisdiction pursuant to 28 U.S.C. § 1333. Venue is proper in this District under Rule F(9) of the Supplemental Rules for Admiralty or Maritime Claims of the Federal Rules of Civil Procedure. Rule F(9) permits venue in "any district" if, at the time of filing, the vessel at issue had not been attached or arrested in any district, the vessel was not within any district, and no suit against the vessel's owner had been commenced in any district.

The Petitioner began this case by filing a complaint seeking exoneration from—or alternatively, limitation of—liability for the collision. *See* ECF No. 1. The Court then ordered any claimants to file claims arising from the collision. *See* ECF No. 4. Forty-two claims were filed against the Petitioner. All but one of the Claimants are Navy sailors or their representatives (the "Sailor-Claimants"). Ten Sailor-Claimants filed wrongful death claims; the other thirty-one filed personal injury claims. *See* ECF No. 85-1 (schedule of claims). The final Claimant is the United States, which seeks to recover for damage to MCCAIN. *See* ECF No. 34. The Petitioner has counterclaimed against the United States,[2] alleging damage to ALNIC and seeking contribution and indemnity for any claims brought by the Sailor-Claimants. *See* ECF No. 40.

The Court split this case into two trial phases. *See* ECF No. 240. In Phase I, the Court apportions liability for the collision between the Petitioner and the United States and calculates the two parties' respective damages. Assuming, in Phase I, that the Petitioner is found at least partially liable for the crash, in Phase II the Court will then adjudicate the personal injury and wrongful death claims by the Sailor-Claimants against the Petitioner.

Phase I was tried as a bench trial over five days in November 2021. This Opinion provides the Court's findings of fact and conclusions of law from that Phase I trial. In sum, both vessels

[2] The United States has waived its sovereign immunity against Petitioner's counterclaim. Two federal admiralty statutes waive sovereign immunity in certain collision cases: The Suits in Admiralty Act, 46 U.S.C. § 30901 *et seq.*, and the Public Vessels Act, 46 U.S.C. § 31101 *et seq.* The two statutes overlap significantly, but where their terms conflict, the Public Vessels Act controls. *See United States v. United Continental Tuna Corp.*, 425 U.S. 164, 181 (1976). The Public Vessels Act waives the United States' immunity for "damages caused by a public vessel," including a Navy vessel like MCCAIN. 46 U.S.C. § 31102. Thus, a private party sued by the United States for damages caused by that party's vessel may file a counterclaim or claim a setoff against the United States for damages arising out of the same collision. *See id.* The same liability rules that apply to private parties also govern claims against the United States. *See id.* § 30907(a).

were responsible for the collision: the Court apportions 80% of fault to MCCAIN and 20% of fault to ALNIC, and declines to limit the Petitioner's liability.

## FINDINGS OF FACT [3]

### I. The U.S.S. JOHN S. MCCAIN

#### A. MCCAIN's Background

1. The U.S.S. JOHN S. MCCAIN is a U.S. Navy Arleigh Burke class missile destroyer commissioned in 1994. She is 505 feet long and carries a gross tonnage of approximately 9,000 tons. Around 300 sailors serve aboard MCCAIN. *See* Ex. 438 (the "Navy Report") at US0033414.

2. At all relevant times, MCCAIN served as part of the Navy's 7th Fleet, with a home port in Japan. At the time of the collision, MCCAIN was in the middle of a six-month deployment in the Western Pacific. *See* Navy Report at US0033414, US0033416.

3. As a Navy destroyer, MCCAIN has heightened speed and maneuverability compared to non-military vessels. She is powered by four gas turbine engines which drive two controllable-pitch (and reversable-pitch) propellers. The Commander of MCCAIN at the time of the collision, Alfredo Sanchez, testified at trial that these features allow the destroyer to turn or stop very quickly. MCCAIN's maneuverability was especially superlative when compared to ALNIC's; analogizing to automobiles on a highway, Commander Sanchez likened his destroyer to a "Lexus" car and ALNIC to a "semi" truck. *See* Trial Tr. (Sanchez) at 209:20-210:24.

#### B. MCCAIN's Control System

4. MCCAIN's steering and thrust were controlled through her Integrated Bridge and Navigation System ("IBNS"). At the time of the collision, the IBNS was a new feature for

[3] The Court's findings of fact are governed by the preponderance of the evidence standard. *See Mahramas v. Am. Exp. Isbrandtsen Lines, Inc.*, 475 F.2d 165, 168 (2d Cir. 1973).

MCCAIN, having been installed about one year prior. *See* Trial Tr. (Sanchez) at 153:5-17; Ex. 4034 (Becker 30(b)(6) Dep. Tr.) at 13:16-21. MCCAIN's Chief Engineer explained that the IBNS console, "at first glance, looks nothing like a traditional steering console," with a touchscreen containing "extensive functions, drop down menus, and hosts of configurations." Ex. 299 at US0033030. In short, the IBNS "changed the entire concept of the steering system" away from the traditional steering wheel. *Id.*

5. The IBNS relied on a touchscreen to monitor and control, among other things, the thrust (i.e., speed or acceleration of the ship) and steering (i.e., direction of the ship). Both thrust and steering factored into the collision.

6. As to *thrust*: on the right side of the IBNS touchscreen, the operator could control the thrust or transfer control for each propeller to another station on the destroyer. *See* Ex. 86 (image of IBNS touchscreen); Ex. 4034 (Becker 30(b)(6) Dep. Tr.) at 54:2-14; Ex. 4036 (Irvin Dep. Tr.) at 62:11-63:1; *see also generally* Ex. 91 (procedures for transferring thrust control).

7. The IBNS had a button to "gang" the propellers together (i.e., changes to one propeller's speed would automatically apply to the other propeller too). Conversely, the operator could "un-gang" the propellers, mismatch the thrust, and thereby turn MCCAIN quickly. *See* Trial Tr. (Sanchez) at 208:9-20; *id.* (Hight) at 496:11-23.

8. Having transitioned to the new IBNS touchscreen, MCCAIN lacked a physical thrust lever. That meant an operator needed to look at the IBNS touchscreen to see whether thrust was ganged or un-ganged. *See* Trial Tr. (Sanchez) at 214:2-215:4.

9. The IBNS had another button called "All Stop," which would stop the engines and propeller thrust immediately—regardless of whether thrust was ganged or un-ganged. *See* Ex. 4034 (Becker 30(b)(6) Dep. Tr.) at 59:20-25, 63:19-64:15.

10. As to *steering*: using an IBNS touchscreen, an operator would digitally move the position of the rudders to steer the destroyer. There was also a manual steering wheel located between the helm and lee helm stations, as well as one located at aft steering—a separate station near the stern of the vessel. *See* Ex. 84 at US0006969, US0006975.

11. An operator could also transfer steering control to another station. MCCAIN could be steered from multiple stations on the bridge, including the helm and lee helm. But steering could also be controlled from a location not on the bridge: aft steering, located in the stern of the destroyer. *See* Trial Tr. (Sanchez) at 153:22-154:4, 154:25-155:2; Ex. 84 at US0006966, US0006973. Ordinarily, the station with control of steering would need to grant consent on the IBNS touchscreen to send control to another station. However, when the ship was in "backup manual" mode, another station could unilaterally seize control of steering without consent. *See* Trial Tr. (Sanchez) at 191:7-21, 192:8-193:6.

12. The IBNS touchscreen displayed a considerable amount of steering information. For example, on the left side of the screen, the operator could see which station had control of steering and which mode of steering the ship was in. In the middle of the touchscreen, the operator could see the angles at which the rudders were positioned. *See* Trial Tr. (Sanchez) at 207:20-208:8; Ex. 86; Ex. 4034 (Becker 30(b)(6) Dep. Tr.) at 46:5-23.

13. Like the All Stop button for thrust, MCCAIN had an emergency button for steering. Pressing this "Emergency Override to Manual" button, commonly known as the "Big Red Button," would immediately take control of steering from any other station on MCCAIN. *See* Trial Tr. (Mitchell) at 682:17-683:10; Ex. 82 at US0017941; Ex. 84 at US0007043. Unlike the All Stop button for thrust, the Big Red Button for steering was not located on the IBNS touchscreen; rather, it was physically located on a station itself. There was a Big Red Button between the helm and

lee helm stations, where an operator at either station could press it, as well as one on the aft steering station. *See* Trial Tr. (Sanchez) at 186:1-15; Ex. 84 at US0006969, US0006975.[4]

14. In the event of a loss of steering, the crew had written instructions within arm's reach, printed in a small red binder hanging on the station, next to the Big Red Button. Crewmembers were trained to memorize the basic instructions from the red binder. *See* Trial Tr. (Sanchez) at 184:22-185:12, 187:6-18; *id.* (Irvin) at 677:22-678:4; *id.* (Mitchell) at 695:18-696:2.

15. Per those instructions, should MCCAIN lose steering, the operator at the helm or lee helm station was supposed to press the Big Red Button immediately—right after reporting the loss of steering to officers on the bridge, and without awaiting any additional command in response. *See* Trial Tr. (Sanchez) at 185:19-186:3; *id.* (Irvin) at 678:5-9; Ex. 88 at 3.

**C. MCCAIN's Collision-Avoidance Equipment**

16. For safety vis-à-vis other ships, MCCAIN had an Automatic Identification System ("AIS"), which could exchange certain information with surrounding ships. AIS information could include a vessel's name, position, course, speed, and navigational status. *See* Ex. 3043 (Hanna Dep. Tr.) at 97:6-98:11.

17. Commercial vessels are required to constantly transmit AIS data, but a military vessel like MCCAIN could configure her AIS to receive data from other vessels while declining to transmit her own data. *See* Trial Tr. (Sanchez) at 165:24-166:1; *id.* (Putty) at 415:18-25. Nevertheless, under Navy guidelines, MCCAIN had the "prerogative and responsibility to use active AIS as a tool for safety of ship." Ex. 447 at US0064860; *see also* Trial Tr. (Sanchez) at 166:2-22; Ex. 4025 (United States' admissions) at ¶ 61.

[4] These types of redundancies—where multiple stations on the destroyer could carry out the same orders—were especially intended for combat situations where a casualty in one area of the warship would not necessarily render her inoperable.

18. On the morning of the collision, Commander Sanchez had the AIS set to receive-only mode, meaning MCCAIN was not transmitting any navigational data to nearby commercial vessels like ALNIC. *See* Trial Tr. (Sanchez) at 166:6-168:25.

19. Another collision-avoidance feature on MCCAIN was her lighting system. Displaying different configurations of external lights and colors allows a vessel to signal its status to nearby ships. For example, vessels may find themselves "not under command," meaning they are unable to maneuver normally and are at risk of crashing into other vessels. A vessel that is not under command is supposed to energize "red-over-red" lights on her masthead while turning off other lights. Those red-over-red lights let nearby observers know the vessel is not under command. *See* Trial Tr. (Sanchez) at 217:16-218:2 ("[R]ed-over-red, the captain is dead. That's what the little pneumonic is to learn it. Because it includes the captain is dead with the idea that, hey, the vessel is not under command."). To energize MCCAIN's red-over-red lights, a crewmember had to turn a switch on the bridge, while also being sure to turn off the normal white masthead lights. *See* Trial Tr. (Fields) at 111:17-112:1; *id.* (Hanna) at 667:2-4; *id.* (Woolson) at 710:12-20; Ex. 120 (photo of light control panel); Ex. 277 (photo of switch for red-over-red lights).

**D. The COLREGS**

20. This obligation to energize "red-over-red" when not under command is one of many duties imposed upon both MCCAIN and ALNIC under the universal maritime "rules of the road" known as the COLREGS. Also called the International Regulations for Preventing Collisions at Sea, the COLREGS provided core statutory duties applicable to both ships in this case.

21. For example, as relevant to this case, the COLREGS govern (1) how ships must act when overtaking (or being overtaken by) another ship; (2) when, and how, ships are allowed and/or required to react as the risk of collision with another ship increases; (3) general staffing guidelines

for ships, including the need for a dedicated lookout; etc. The COLREGS are discussed in detail later in this Opinion.

**E. MCCAIN's Recorded Data**

22. MCCAIN's computers continuously recorded electronic data including steering and thrust orders and responses, vessel track information, and video of the IBNS touchscreen in aft steering. *See generally* Ex. 93 (steering control log); Ex. 94 (thrust control log); Ex. 97 (video from aft steering).

**F. MCCAIN's Crew and Their Training**

23. MCCAIN had "watch bills" that assigned crew depending on the destroyer's needs. On the morning of the collision, MCCAIN was staffed on a "Modified Navigation Detail," used when the destroyer was "in proximity of water too shallow to safely navigate as occurs when entering ports." Navy Report at US0033416. Under this watch bill, MCCAIN's bridge would have a larger—and more experienced—crew than under a typical watch bill. *See* Trial Tr. (Fields) at 118:16-119:6; *id.* (Sanchez) at 170:23-25, 171:15-172:16.

24. An even higher watch bill existed for the most complicated situations, such as entering a narrow channel into port, called "Sea and Anchor Detail." This watch bill called for additional specialized personnel to help navigate the destroyer. For example, when Sea and Anchor Detail was ordered, the Helmsman would be replaced by a more experienced Master Helmsman, and the Helm Safety Officer and Lee Helmsman positions—both unstaffed for lower details—would be staffed to assist with steering and thrust. *See* Trial Tr. (Sanchez) at 181:16-22; Ex. 44 (watch bill for typical conditions); Ex. 102 (watch bill for Sea and Anchor Detail).

25. Although she was navigating a crowded separation scheme, MCCAIN had not set the Sea and Anchor Detail before the collision. This was a deliberate choice. Commander Sanchez

explained at trial he decided not to schedule the transition to Sea and Anchor Detail when MCCAIN entered the Singapore Strait—despite his officers' recommendation to do so—because he believed the shift in personnel could disrupt operations. Because Commander Sanchez believed that navigating the initial entrance to the Singapore Strait was more precarious than transiting in the Strait afterwards, he reasoned it was worth delaying personnel changeover until after the destroyer had cleared the Strait's entrance. Accordingly, he scheduled Sea and Anchor Detail for 6:00, after MCCAIN would have entered the Strait, but before she was expected to arrive in Singapore. *See* Trial Tr. (Sanchez) at 172:17-174:1; Ex. 136 (Sanchez Court-Martial Stipulation) at ¶ 11.

26. In layperson's terms, then, MCCAIN's watch bill was set to an intermediate readiness when the collision occurred. The bridge was at a heightened state of readiness, but it could have been more fully staffed with more experienced crewmembers—and indeed was scheduled to be so staffed less than an hour later.

27. At the time of the collision, MCCAIN had fifteen crewmembers on the bridge. *See* Ex. 77 (diagram of positions on bridge). Commander Sanchez had overall command that morning.[5] Yet despite the large staff, MCCAIN's bridge crew "lacked a basic level of knowledge on the steering control system, in particular the transfer of steering and thrust control between stations." Navy Report at US0033430.

[5] Sanchez's rank of "Commander" thus overlapped with his descriptive role as "captain" or "master" or MCCAIN that morning. Under Navy regulations, Sanchez was "charged with the absolute responsibility for the safety, well-being, and efficiency of the ship and crew." Ex. 442; *see* Ex. 128-E ("In all situations, commanding officers retain the responsibility of safe navigation of their vessel.").

28. Seaman Dakota Bordeaux was at the helm. The Helmsman was responsible for implementing steering commands by using the IBNS touchscreen or the steering wheel. *See* Ex. 3034 (Bordeaux Dep. Tr.) at 50:5-11, 84:24-85:7.

29. Standing next to the Helmsman was the Lee Helmsman: Boatswain's Mate of the Watch Dontrius Mitchell. The Lee Helmsman was responsible for implementing thrust commands on the IBNS touchscreen. Normally, the Helmsman would control both steering and thrust, but responsibility for thrust could be delegated to the Lee Helmsman so that each person could focus on one task at a time. *See* Ex. 58 at US0015695; Ex. 3046 (Mitchell Dep. Tr.) at 80:25-81:19. The morning of the collision was the first time that Lee Helmsman Mitchell had ever stood watch at that position. *See* Trial Tr. (Mitchell) at 682:8-14.

30. Other crewmembers on the bridge were expected to have familiarity with possible problems at the helm and lee helm. For example, a third person, the Officer on Deck, was expected to know how to respond to a loss of steering or thrust control. *See* Ex. 56 at US0006839, US0006853, US0006862. However, Navy procedures did not require a Helmsman or Lee Helmsman to demonstrate they knew how to transfer steering or thrust control between certain stations. *See* Ex. 73 at 265–87. In fact, Lee Helmsman Mitchell testified that the morning of the collision was his "first experience actually being on the steering control console when the thrust control was transferred from helm to lee helm." Trial Tr. (Mitchell) at 690:19-23.

31. Furthermore, MCCAIN's crew had no specific training for the new IBNS touchscreen. *See* Ex. 4035 (Butler Dep. Tr.) at 78:2-14. And any on-the-job IBNS training that crewmembers did receive was scant. The destroyer's Chief Engineer explained that, given its many differences from a traditional steering console, learning the new IBNS touchscreen through on-duty experience alone would be "un-realistic." Ex. 299 at US0033030; *see also* Ex. 377 at

US0026058–59 (characterizing the IBNS touchscreen as "not as intuitive as prior steering and thrust control systems").

32. The IBNS was itself imperfect. At the time of the collision, MCCAIN had unaddressed casualty reports concerning major IBNS crashes—some of them still outstanding since the system's installation a year earlier. *See* Trial Tr. (Sanchez) at 155:11-160:10; Exs. 383–84, 443–44, 446, 464–65. The crew had apparently lost confidence in the IBNS. Just weeks before the collision, Commander Sanchez sent an email to Navy technicians back in the United States, expressing frustration that the IBNS was "unstable, albeit safe to navigate, and the multiple cascading node crashes are a distraction to the safe operation of the Ship." Ex. 385 at US0056598. A technician was due in Singapore to help repair the IBNS as soon as the destroyer arrived. *See* Trial Tr. (Sanchez) at 159:5-12.

33. Commander Sanchez's preferred "work around" for IBNS glitches was to switch the destroyer over to backup manual mode—a system setting which affected steering control in ways that neither he nor his crew understood. In backup manual mode, the Helmsman would steer the rudders using only the wheel, without any assistance by the IBNS. *See* Ex. 4034 (Becker 30(b)(6) Dep. Tr.) at 39:11-16. MCCAIN was in backup manual mode on the morning of the collision. *See* Trial Tr. (Sanchez) at 191:7-192:4, 194:21-195:12.

34. MCCAIN's crew also did not understand how to use the Big Red Button for steering. Several crewmembers had never used the Big Red Button, even in controlled situations. *See* Trial Tr. (Gillian) at 644:17-645:3; *id.* (Mitchell) at 684:1-5, 685:1-3. Crucially, there was a "common misconception" among MCCAIN's crew—including Commander Sanchez himself—that the Big Red Button would *send* steering control to aft steering. *See* Trial Tr. (Sanchez) at

193:9-24; *id.* (Irvin) at 676:11-23; *id.* (Mitchell) at 683:2-14. The Big Red Button actually did the exact opposite: the crewmember pressing the Button would *take* control of steering.

35. All told, unfamiliarity about MCCAIN's steering and thrust procedures meant that the destroyer was at risk of making serious navigational mistakes due to human error on the bridge.

## II. The M/V ALNIC

### A. ALNIC's Background

36. The M/V ALNIC is a Liberian-flagged oil and chemical tanker. *See* Ex. 4007. ALNIC is about 600 feet long and was loaded with pyrolysis fuel oil at the time of the collision, giving her a total displacement of about 39,000 metric tons. *See* Ex. 4004 at Energetic 001069. ALNIC had 24 crewmembers aboard on the morning of the collision. *See* Ex. 4002 (crew list).

37. ALNIC was owned by the Petitioner, Energetic Tank, and managed by Stealth Maritime Corporation S.A. ("Stealth"), a company based in Greece. *See* Ex. 4007. Stealth took over management of the tanker in April 2017, about four months before the collision. *See* Ex. 3045 (Zisimos Dep. Tr.) at 12:18-13:3.

38. As a loaded oil tanker, ALNIC was not nearly as maneuverable as a destroyer like MCCAIN. She relied on a single diesel engine, a single fixed-pitch propeller, and a single rudder mounted behind the propeller. *See* Ex. 865 (ALNIC sea trial data) at Energetic 014770–71; Ex. 4008 at Energetic 015129 (diagram of components).

39. Stopping ALNIC took significant time. Sea Trial data demonstrated ALNIC took around 7 minutes—and 1.35 nautical miles—to go from full speed ahead to full stop. It would also take about that much time to slow by "crash astern" (full reverse) rather than by crash stop. *See* Ex. 865 at Energetic 014779–82; Ex. 4046 (annotated crash stop graph).

**B. ALNIC's Control System**

40. ALNIC's control system was far less complicated than MCCAIN's. The tanker was steered from a helm console—located in the center of the bridge—with a physical steering wheel. *See* Ex. 3031 (Ambrocio Dep. Tr.) at 44:16-45:6.

41. ALNIC had two steering modes: (1) manual (also called "hand") steering using the wheel, or (2) autopilot. When the tanker was on autopilot, it would maintain a set course until the course was physically adjusted. To switch between manual and autopilot, the operator simply flipped a switch on the helm console. *See* Trial Tr. (Ambrocio) at 638:8-11; Ex. 345 (photo of ALNIC's helm, with switch circled in red).

42. ALNIC's propeller speed was just as simple to handle: a crewmember could control it from the bridge using a single lever. *See* Ex. 4005 (photo of thrust lever).

**C. ALNIC's Collision-Avoidance Equipment**

43. ALNIC had two radars: an X-band and S-band radar. Either radar allowed an operator to designate another vessel, like MCCAIN, as a target to receive AIS data and to track over time. *See* Ex. 3047 (Nolasco Dep. Tr.) at 166:12-17. The antenna on ALNIC's radars rotated every 2.5 seconds, generating red-colored trails of surrounding vessels after each sweep. Those radar trails provided a visual picture of other vessels' course and speed, which were indicated by the direction and length of the trail. The longer the red trail, the faster a nearby vessel was traveling. *See* Trial Tr. (Putty) at 358:8-359:19, 396:9-397:17; *id.* (Hight) at 487:5-10.

44. Both radars also had automatic radar plotting aids ("ARPA"). ARPA supplements radar by electronically plotting possible collisions, a task that mariners have traditionally done by hand. *See* Trial Tr. (Hight) at 479:19-480:25. Ultimately, ARPA helps a crew to predict how

much time and distance it will take until two vessels collide—or come dangerously close to one another. *See* Ex. 3047 (Nolasco Dep. Tr.) at 166:18-167:12.

45. Despite its advantages, ARPA still took 50 seconds to complete a calculation. This is because ARPA continually gathers historical data to update its calculations and project a dynamic vector for future course and speed. Consequently, ARPA is less accurate with respect to "unsteady targets," i.e., ships not following a steady course. *See* Trial Tr. (Hight) at 481:1-17.

46. One final feature on ALNIC was her Electronic Chart Display and Information System ("ECDIS"). The ECDIS gathered data from radar and ARPA, as well as satellite GPS inputs. It then cross-referenced those inputs with electronic charts to help the crew navigate. It also displayed possible collision paths with other ships. The ECDIS could be accessed from a display unit between the radar consoles and a second display unit on the chart table. *See* Ex. 3049 (Torculas Dep. Tr.) at 51:2-52:6, 141:25-142:12, 170:14-20.

47. To summarize the collision-avoidance equipment on ALNIC: the crew used radar to track other vessels in real-time, ARPA to calculate possible collisions over 50 seconds, and ECDIS to navigate the ship and display ARPA calculations.

**D. ALNIC's Recorded Data**

48. Adding to the barrage of acronyms, ALNIC used a Voyage Data Recorder ("VDR" or "black box"). The parties analogized the VDR to the so-called black box on an airplane: it logged data from the ship's instruments, as well as audio from the bridge, for later review. The parties do not dispute the accuracy of the black box recordings, or the stipulations thereof. *See* Trial Tr. (Putty) at 320:16-18.

49. Of the various ALNIC equipment in this case, the black box recorded images from the X-band radar; logs of speed, rudder angles, and engine RPMs; and the use of autopilot or

manual steering. It also recorded audio from ALNIC's bridge. The only data the black box did *not* record was from the S-band radar. *See* Trial Tr. (Putty) at 352:19-353:14; Ex. 3038 (Chelios Dep. Tr.) at 58:14-59:20, 59:24-60:24; Ex. 4021 (stipulated transcript of ALNIC bridge audio).

50. The black box recorded snapshots from the X-band radar every 15 seconds, capturing the same radar images that the tanker's crew would on the morning of the collision. *See* Ex. 4019 (ALNIC radar replay with overlay of bridge audio); *see also* Trial Tr. (Putty) at 324:24-325:3; *id.* (Hight) at 486:21-24, 487:11-18; Ex. 3038 (Chelios Dep. Tr.) at 61:14-25. The black box data played a major role in reconstructing the collision.

**E. ALNIC's Crew and Training**

51. Stealth policy required ALNIC's crew to comply with the company's Safety Management System,[6] which comprised a set of rules and procedures to ensure vessel safety. *See* Ex. 3012 at Response No. 63; Ex. 3047 (Nolasco Dep. Tr.) at 33:19-34:2. For instance, the Safety Management System instructed ALNIC to be in manual steering mode—rather than autopilot—while in the Singapore Strait. *See* Ex. 9B at Energetic 004174.

52. The Safety Management System also set forth standardized watch bills, called "Bridge Manning Levels," for Stealth ships like ALNIC. These were analogous to MCCAIN's tiered staffing levels. ALNIC had three Bridge Manning Levels. When the tanker was transiting in certain dangerous or high-traffic locations, including the Singapore Strait, she was required to be at Bridge Manning Level III. *See* Ex. 9B (excerpts of Safety Management System manual) at Energetic 004174.

[6] Stealth called their Safety Management System the "General Management System;" the two terms, and their respective acronyms "SMS" and "GMS," were used interchangeably at trial.

53. Bridge Manning Level III was ALNIC's highest level of readiness. The bridge would be staffed with five people: three licensed officers and two unlicensed crewmembers. *See* Ex. 9B at Energetic 004174. One of the officers was required to be a dedicated "anti-collision" officer, whose only responsibility was to operate the radar and ARPA. *See id.* at Energetic 004176. And one of the unlicensed crewmembers was required to be a dedicated lookout with no steering duties. *See id.* at Energetic 004167; Ex. 28 (ALNIC master's standing orders).

54. ALNIC departed for Singapore from Taiwan two days before the collision. Prior to departing Taiwan, the crew created a voyage plan. Despite the requirements of the Safety Management System, the voyage plan revealed the crew did not intend to be at Bridge Manning Level III while in the Singapore Strait. Instead, the Bridge Manning Level was pre-set at Level II, meaning the bridge would not have as large a crew as Stealth required. *See* Ex. 11 (voyage plan). The Captain of ALNIC approved this voyage plan days before entering the Singapore Strait. *See* Ex. 3047 (Nolasco Dep. Tr.) at 112:14-113:2, 114:5-23, 308:13-25.

55. There were only four people on ALNIC's bridge at the time of the collision: the Captain, Chief Officer, Second Officer, and an unlicensed Able-Bodied Seaman, or "AB." *See* Ex. 3031 (Ambrocio Dep. Tr.) at 20:19-22:11; Ex. 3038 (Chelios Dep. Tr.) at 49:8-14; Ex. 3049 (Torculas Dep. Tr.) at 188:14-23. A fifth, unlicensed crewmember—an Ordinary Seaman, or "OS"—was supposed to be on the bridge too, but had gone off duty earlier that morning.

56. The Captain (also called the Master) of ALNIC was Ritchie Nolasco. He had commanded the tanker since April 2017, when Stealth had assumed management of the vessel. *See* Ex. 3003 at Response No. 9. Captain Nolasco had command of all aspects of ALNIC's operation, including ordering the course and speed, supervising the safe navigation of the vessel, and ensuring compliance with safety rules. *See* Ex. 9A at Energetic 004154–55 (navigational

responsibilities generally), *id.* at Energetic 004174–77 (responsibilities under specific watch conditions); Ex. 4024 at Energetic 003704–16 (outlining the captain's broad authority).

57. The Chief Officer (also called the Chief Mate) was Lemuel De Gracia. At the time of the collision, he served as Officer of the Watch and was responsible for navigation and collision avoidance. *See* Ex. 9A at Energetic 004155, 004175, 004181; Ex. 4024 at Energetic 003683–86 (Chief Officer's responsibilities). However, because he never testified in this case, the specific actions that Chief Officer De Gracia took during the collision remain largely unknown.

58. The Second Officer on ALNIC was Philip Torculas. Many of the Second Officer's duties pertained to navigation, including maintaining charts and navigational records, laying track lines to chart the vessel's course, devising a passage plan, and operating navigational equipment such as AIS. *See* Trial Tr. (Torculas) at 60:24-61:8; Ex. 3049 (Torculas Dep. Tr.) at 70:15-17, 126:11-14, 165:16-19; Ex. 4024 at Energetic 003689–90 (Second Officer's responsibilities).

59. Although Second Officer Torculas was technically on the bridge during the collision,[7] he was not assisting the crew. Instead, he was in the chart room—a curtained-off, illuminated part of the bridge—checking paper charts to ensure they were accurate before ALNIC entered Singapore. *See* Trial Tr. (Torculas) at 60:6-18. Accordingly, he would be unable to help avoid a collision (for example, by operating anti-collision equipment or serving as a lookout) unless he was called out of the chart room. In fact, he testified that he stepped out of the chart room just moments before the collision occurred. *See* Ex. 3049 (Torculas Dep. Tr.) at 192:3-17.

60. The AB on ALNIC was Mark Anthony Jandayan Ambrocio. As relevant here, an AB could serve in two roles. He could serve as a helmsman and steer the tanker. He could also

[7] Second Officer Torculas's rest log recorded him as having gone off duty earlier that morning. *See* Ex. 3049 (Torculas Dep. Tr.) at 62:10-65:19. However, he subsequently testified that he remained on duty during the collision. *See* Trial Tr. (Torculas) at 59:12-22.

serve as a lookout and watch for potential hazards by looking through the bridge windows and walking out on the external bridge wings. During the collision, AB Ambrocio supposedly performed both roles at once. *See* Trial Tr. (Ambrocio) at 621:1-10, 622:14-21, 627:23-628:4, 641:19-642:18; Ex. 9A at Energetic 004177 (responsibilities of helmsman and lookout).

61. Staffed in this manner—with only three people functionally on watch—ALNIC was two crewmembers short of Bridge Manning Level III on the morning of the collision. Those two missing crewmembers were the dedicated anti-collision officer and the unlicensed lookout.

**F. ALNIC's Pre-Collision Audit by Stealth**

62. In May 2017, one month after it took over management of the vessel, Stealth began a routine audit of ALNIC. The Stealth Marine Superintendent sent to complete the audit was Captain Dretakis Zisimos, who had flown from Greece to meet the vessel in Singapore. *See* Ex. 549 (email re: Zisimos). A primary goal of his audit was to appraise the ALNIC crew's training. *See* Ex. 3045 (Zisimos Dep. Tr.) at 18:16-24, 145:20-146:4.

63. As it happened, the Stealth Marine Superintendent arrived on ALNIC while it was traveling in the same part of the Singapore Strait where the collision later occurred. *See* Ex. 3045 (Zisimos Dep. Tr.) at 37:18-23. At that time, ALNIC was staffed at Bridge Manning Level I, the watch level with the fewest crewmembers. *See* Ex. 10B (bridge log excerpts from May 2017).

64. In his videotaped deposition, played at trial, the Stealth Marine Superintendent claimed to have addressed the Bridge Manning Level problem "immediately with Captain Nolasco," and instructed ALNIC's crew to use Bridge Manning Level III while in the Singapore Strait, per the Safety Management System instructions. Ex. 3045 (Zisimos Dep. Tr.) at 74:8-76:22, 159:9-19. But ALNIC's crew denied ever receiving instruction on the correct use of Bridge Manning Level III, insisting they would have followed such procedures if they had been so

instructed. *See* Trial Tr. (Torculas) at 75:24-76:25, 77:23-78:4; Ex. 3047 (Nolasco Dep. Tr.) at 340:16-341:9.

65. Regardless, it is undisputed that ALNIC's crew continued to understaff the bridge while the tanker came back through the Singapore Strait on her return trip, even though the Stealth Marine Superintendent was still onboard. *See* Trial Tr. (Putty) at 344:8-345:1-6. That voyage—with Stealth's representative on hand to witness the crew use the wrong Bridge Manning Level—was ALNIC's final transit of the Singapore Strait before the collision. *See id.* at 345:15-24.

66. Beyond his real-time observations of ALNIC's safety noncompliance, the Stealth Marine Superintendent also reviewed logs and voyage plans, provided by Captain Nolasco, showing three previous Singapore Strait transits at the wrong Bridge Manning Level (set as II, rather than III). *See* Ex. 3010 at Response Nos. 49–50; Ex. 3045 (Zisimos Dep. Tr.) at 107:5-11; Ex. 3047 (Nolasco Dep. Tr.) at 73:17-19, 195:24-196:3.

67. Even the tanker's permanent navigational charts for the Singapore Strait had the wrong Bridge Manning Level (again set at II, rather than III). *See* Ex. 6 (British Admiralty Chart 2403); Ex. 7 (British Admiralty Chart 3831); Ex. 327 (photo of Chart 3831); Ex. 3010 at Response No. 48. The Stealth Marine Superintendent would have reviewed those charts as part of his audit. *See* Ex. 3038 (Chelios Dep Tr.) at 128:8-15.

68. Back in Greece, the Marine Superintendent informed Stealth executives about the audit. He told the Safety Manager and Crewing Manager that ALNIC was using the wrong Bridge Manning Level in the Singapore Strait. *See* Ex. 3045 (Zisimos Dep. Tr.) at 104:2-20. He recommended Stealth send someone to provide ALNIC's crew with remedial training on staffing the bridge properly. *See id.* at 49:21-50:2. Although this meeting happened over two months

before the collision, Stealth did not implement the recommended training. *See* Ex. 3003 at Response No. 1.

69. Despite his own apparent concerns, the Stealth Marine Superintendent completed an ISM[8] audit checklist, where he falsely confirmed he had "ensure[d] adequacy of bridge manning levels against actual navigational conditions." Ex. 19 (audit checklist). He later testified he had falsified this audit report because he did not want to flag any problems for third parties, such as external auditors or regulators, who could view the report. *See* Ex. 3045 (Zisimos Dep. Tr.) at 94:10-12, 99:3-7, 100:17-102:24.

70. Beyond the bridge staffing issue, the Stealth Marine Superintendent had more general concerns about safety aboard ALNIC. *See* Ex. 3045 (Zisimos Dep. Tr.) at 182:18-23. He testified that of the 70 or more Stealth vessels he had ever audited, ALNIC had performed either worst or second worst. *Id.* at 178:23-180:3. He graded the officers who were subsequently on the bridge during the collision (Captain Nolasco, Chief Mate De Gracia, and Second Mate Torculas) poorly, awarding each a score of 2 out of 5 when it came to implementing the Safety Management System. *See* Ex. 552 (ALNIC crew appraisal report). He further noted that Stealth should consider Second Mate Torculas "as a danger at some times" because of his lack of navigational skills. *Id.* at Energetic 012890.

71. The Marine Superintendent likewise reported these more general concerns to Stealth. *See* Ex. 24 (ALNIC audit report). Upon his return to Greece, the Marine Superintendent told Stealth's Safety Manager and Crewing Manager that ALNIC's officers needed additional

[8] Also known as the International Safety Management Code, part of the International Convention for the Safety of Life at Sea. The ISM Code provides rules for safe vessel management and operation.

training on the Safety Management System. Ex. 3045 (Zisimos Dep. Tr.) at 45:11-46:3; 46:7-47:12. Additional training did not occur before the collision.

## III. The Collision

72. The rich trove of data from both vessels played an important role at trial. It helped to reassemble, second-by-second, exactly how the collision happened. For example, the Court heard audio from ALNIC's bridge (recorded by the black box), reviewed engine and deck logs, and observed videos of the radar and other navigational displays. Consequently, the Court describes the collision in granular detail, while nevertheless bearing in mind these events took place over the span of just a few hectic minutes.

### A. The Morning of the Collision

73. Early in the morning on August 21, 2017, MCCAIN and ALNIC were each bound for Singapore. Both vessels were heading west in the Singapore Strait's Traffic Separation Scheme—essentially a navigational "highway" with lanes for ships traveling in different directions. *See* Trial Tr. (Sanchez) at 202:19-203:3. The Singapore Strait is part of one of the busiest shipping lanes in the entire world. *See* Navy Report at US0033416.

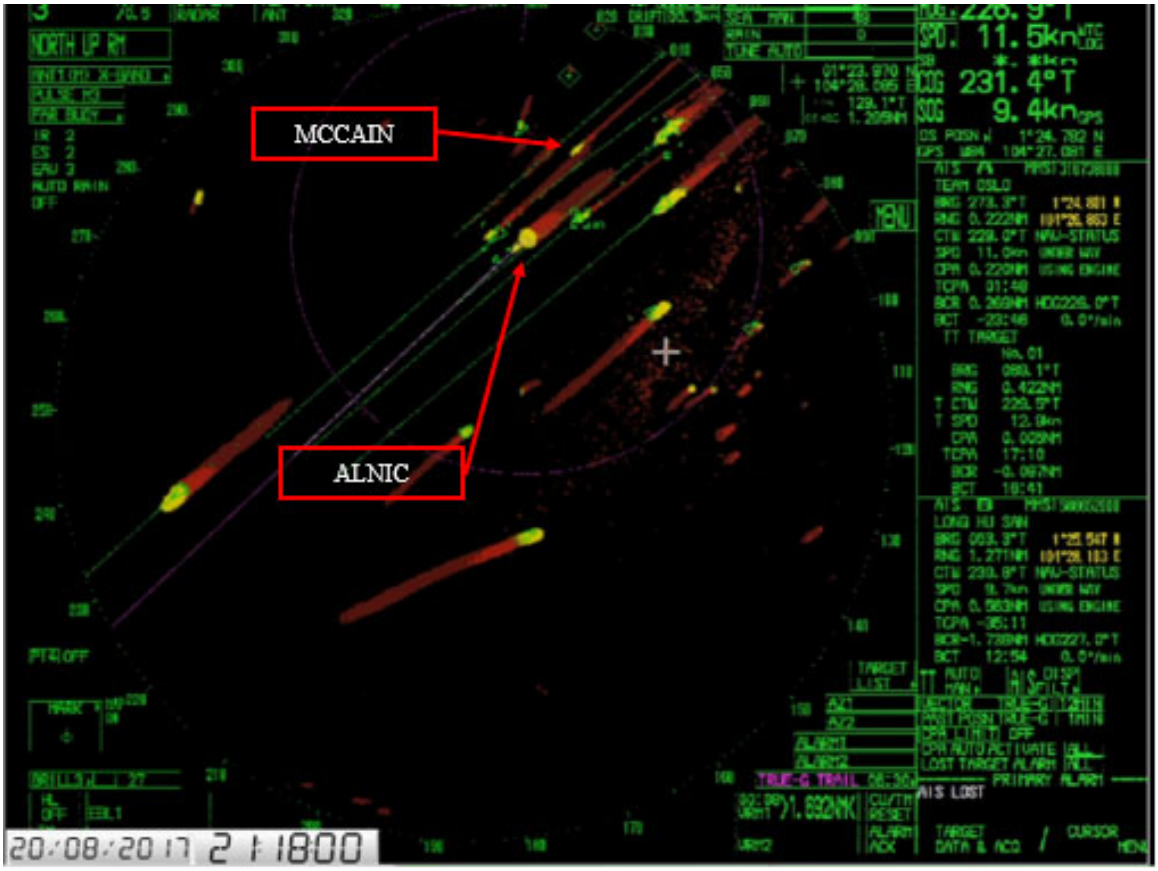
74. The seas were calm and the weather was clear, but there was no visible moon in the pre-dawn sky. Sunrise would not occur for several more hours, at 6:58 local time. *See* Trial Tr. (Putty) at 362:22-363:6; *id.* (Hight) at 485:23-486:6; *id.* (Hanna) at 665:6-14; Navy Report at US0033416; Ex. 4044 (Woods Dep. Tr.) at 81:13-16.

75. MCCAIN was moving quickly relative to nearby vessels. *See* Ex. 94 (thrust control log) at 3. She had increased her speed to 20 knots because of concerns about falling behind her intended schedule. *See* Trial Tr. (Piscitelli) at 700:3-8; Ex. 115 (MCCAIN deck log) at US0017556; Ex. 3043 (Hanna Dep. Tr.) at 185:6-186:7, 251:5-20.

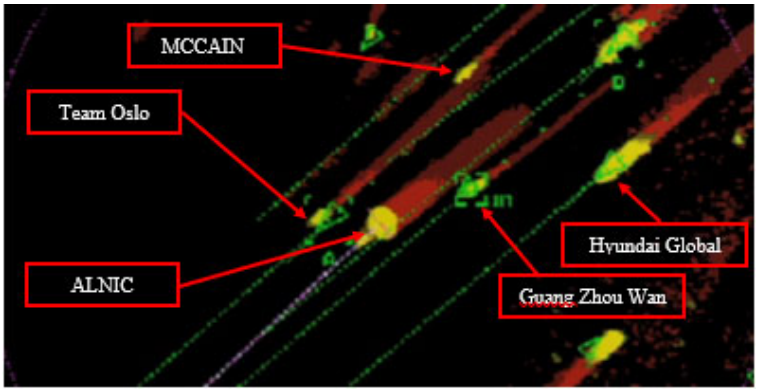
76. ALNIC, at 9.6 knots, was making about half of MCCAIN's speed. *See* Trial Tr. (Putty) at 358:25-359:10; Ex. 4029 (ALNIC ECDIS video).

77. ALNIC was surrounded by vessels heading in the same direction as her. There were three fellow large commercial vessels, all moving slightly faster than ALNIC. The Team Oslo had just passed in front of ALNIC on the starboard side. The Guang Zhou Wan and Hyundai Global were behind ALNIC on the port side. MCCAIN was initially far behind this cluster of vessels but was approaching quickly on ALNIC's starboard side—as evidenced by her long red radar trail. *See* Trial Tr. (Putty) at 359:2-10, 429:13-23.

78. At 5:18:00 that morning, ALNIC's X-band radar displayed the following image,[9] with ALNIC represented by the large yellow circle at the center of the faint purple circle:




The same radar image zoomed in:




[9] These screenshots are taken from Exhibit 4019, ALNIC's black box recording, which captured images of the X-band radar approximately every 15 seconds. The Court has added red boxes identifying MCCAIN, ALNIC, and certain other ships.

**B. MCCAIN Lost Steering and Began to Veer Towards ALNIC**

79. At approximately 5:20:30 (3 minutes, 28 seconds until collision), Commander Sanchez ordered MCCAIN's thrust control to be transferred from the helm to the lee helm. *See* Ex. 94 (thrust control log) at 4; Navy Report at US0033435. Commander Sanchez explained that he wanted to delegate thrust control so that the Helmsman, who was "reaching . . . task saturation," could focus on steering, particularly given MCCAIN's proximity to nearby vessels. *See* Trial Tr. (Sanchez) at 202:3-203:15.

80. Critically, however, the thrusts were un-ganged, so only the *port* thrust was transferred to the Lee Helmsman. The *starboard* thrust would not be transferred until minutes later. *See* Trial Tr. (Gillian) at 660:25-662:17 (testifying that he only transferred control for one propeller shaft); Ex. 94 (thrust control log) at 4. No one realized the thrusts were un-ganged.

81. Almost simultaneously with the thrust transfer, MCCAIN lost control of steering. At 5:20:39 (3 minutes, 19 seconds until collision), from an apparently unknown cause, MCCAIN's Helmsman reported that he had lost the ability to manually steer the destroyer using the wheel. The IBNS touchscreen showed that the rudders were amidships (pointed straight ahead). Nevertheless, because the Helmsman had been steering slightly to right rudder to maintain a straight course, MCCAIN began to drift to port—towards ALNIC. *See* Navy Report at US0033418.

82. At approximately 5:21:00 (2 minutes, 58 seconds until collision), the Helmsman announced a "loss of steering" to the bridge. *See* Ex. 115 (MCCAIN deck log) at US0017556; Ex. 3034 (Bordeaux Dep. Tr.) at 95:8-24. Over the next several minutes, MCCAIN's crew did not know which station, if any, had control of steering. At least one person—the Lee Helmsman—

did not even check to see if his station had steering control, because in his own words, "no one knew the lee helm could steer." Trial Tr. (Mitchell) at 691:3-10.

83. In reality, operators at different stations (including the helm and aft Steering) were repeatedly pressing the Big Red Button—thereby snatching steering control *away* from other stations—under the mistaken belief that the Button would *send* control to aft steering. *See* Trial Tr. (Irvin) at 675:21-676:14; Ex. 439 at US0033445; Ex. 4025 at ¶ 76. As a result, control of steering ping-ponged around the ship, with none of the crew understanding where it was at any given time, or how to get it back. This misunderstanding about steering created "confusion" on the bridge that persisted until mere moments before the collision. *See* Trial Tr. (Sanchez) at 142:11-143:4; *id.* (Gillian) at 664:3-6.

84. Meanwhile on ALNIC, Captain Nolasco entered the bridge from the starboard wing at 5:21:07 (2 minutes, 51 seconds until collision) after observing MCCAIN nearby with his own eyes. *See* Trial Tr. (Putty) at 320:16-25. ALNIC's AB also observed MCCAIN through his binoculars several moments later, at 5:21:19, and is heard on the black box exclaiming: "Warship, I see a warship." *See* Trial Tr. (Ambrocio) at 642:2-4; Ex. 4021 (ALNIC black box transcript).

### C. MCCAIN Energized Red-Over-Red Lights, but ALNIC Did Not Slow or Turn

85. At 5:21:23 (2 minutes, 35 seconds until collision), MCCAIN announced over her internal and external microphones: "Loss of steering in the pilot house, loss of steering in the pilot house. Man aft steering." Trial Tr. (Gillian) at 662:18-24; Ex. 4021 (ALNIC black box transcript). That announcement was picked up across the water on ALNIC's bridge-wing microphones, but it is unclear whether the tanker's crew heard the announcement from inside the bridge.

86. Commander Sanchez also ordered the "not under command" lights to be energized, calling out: "Quartermaster, red-over-red." Trial Tr. (Sanchez) at 135:4-9. At approximately 5:21:25 (2 minutes, 33 seconds until collision), the Court finds that order was carried out properly,

and MCCAIN's red-over-red lights began to warn nearby vessels that she was not under command. Multiple sailors on MCCAIN verified the red-over-red lights by going out on the bridge wings and looking up themselves. *See* Trial Tr. (Fields) at 112:17-113:8; *id.* (Coley) at 443:21-24; Ex. 3030 (Ahsanov Dep Tr.) at 216:6-13. One officer specifically recalled the incident because he tripped on the doorframe as he stepped onto the bridge wing. *See* Trial Tr. (Hanna) at 434:6-10. And although MCCAIN's deck log only noted "red over red lighted" at 05:34 (after the collision),[10] the sailor who logged that entry testified credibly that he did so to record an announcement that the red-over-red lights were already energized. *See id.* (Coley) at 446:12-447:1.

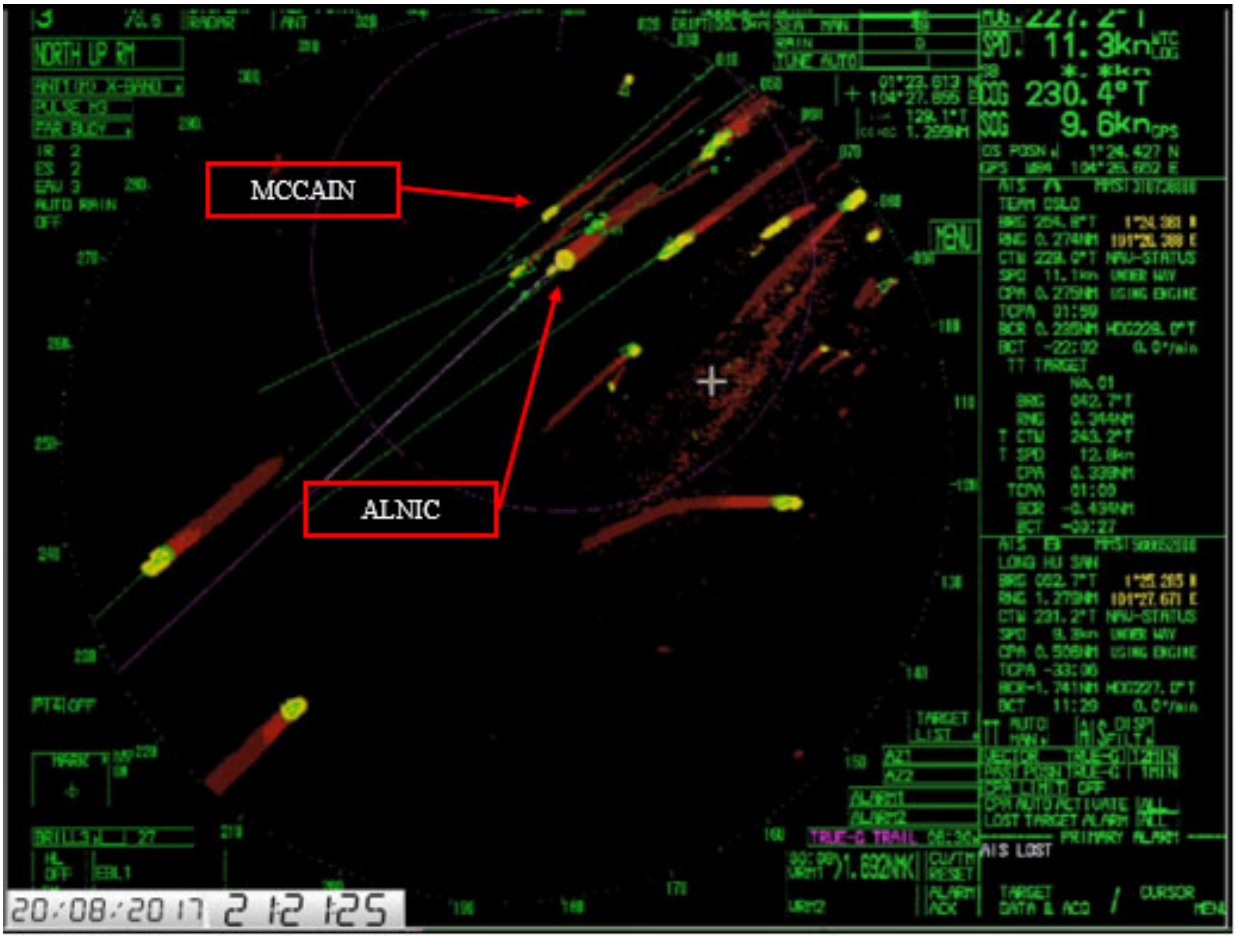
87. By contrast, the testimony by ALNIC's crew that they never observed red-over-red lights on MCCAIN is not credible. One crewmember from the tanker—OS Secang—told investigators he saw regular light configurations, rather than the red-over-red lights, which would have suggested that MCCAIN was operating normally. But that would be impossible, because OS Secang was lying about being on ALNIC's bridge in the first place. *See* discussion *infra* ¶ 122. And Captain Nolasco confirmed to Singapore authorities that he had seen the red-over-red lights, which he knew meant MCCAIN was not under command. *See* Ex. 3047 (Nolasco Dep. Tr.) at 264:4-265:7. It was only at his deposition that he backtracked, instead claiming he had seen red *sidelights* on MCCAIN, but failing to explain why the Singapore authorities would have misrepresented his prior statements. *See id.* at 266:20-268-21. The Petitioner's own expert

[10] Unlike ALNIC's logs, *see* discussion *infra* ¶¶ 122–124, there is no suggestion that MCCAIN's logs were altered after the collision. To the contrary, Chief Petty Officer Fields credibly testified that, as quartermaster, he locked the deck log in a filing cabinet as soon as the sheet was "finished." Trial Tr. (Fields) at 115:16-116:11. He refused a superior officer's request to review the logs after the destroyer arrived in Singapore the morning of the crash, explaining that "everything" had become evidence at that point. *Id.* at 116:12-117:4. Chief Petty Officer Fields and Lieutenant Hanna provided the original, unaltered logs to investigators in a signed, sealed, and timestamped envelope. *See id.* at 117:9-118:1.

testified he had "no reason to doubt" ALNIC's crew saw the red-over-red lights. Trial Tr. (Hight) at 547:20-548:1. He remarked it was "basically understood that they saw the lights. I mean, the lights were lit; they were watching MCCAIN; there is commentary on the [black box], not a lot, but I don't think [Captain Nolasco] was the type who talked a lot. So the fact that [ALNIC's crewmembers] weren't screaming 'red-over-red' is irrelevant" *Id.*

88. MCCAIN's red-over-red lights would have been clearly visible to an observer on ALNIC from the moment they were energized. By that point, the two vessels were less than half of a nautical mile away from one another. Although two out of the six task bulbs may have failed to illuminate that morning, *see* Ex. 365 at US0056491, later tests found the visibility of four bulbs versus six bulbs would be largely indistinguishable to an onlooker a half nautical mile away. *See* Trial Tr. (Murphy) at 294:22-297:18 (confirming visibility of four bulbs up to and beyond three nautical miles).

89. By the time MCCAIN's red-over-red lights were energized, she had pulled even with ALNIC's starboard beam. ALNIC's X-band radar displayed the following:




90. About 30 seconds later, at 5:21:52 (2 minutes, 6 seconds until collision), MCCAIN's veering had become visible on ALNIC's X-band radar. *See* Trial Tr. (Putty) at 324:16-19; *id.* (Hight) at 528:3-8; Ex. 3038 (Chelios Dep. Tr.) at 91:18-93:11. It is not clear who—if anyone—was monitoring ALNIC's X-band radar that morning. But around the same time, at 5:21:54 (2 minutes, 4 seconds until collision), Captain Nolasco began a 50-second ARPA calculation on the other S-band radar to estimate a possible collision with the veering MCCAIN. *See* Trial Tr. (Putty) at 328:20-329:17, 391:13-17; *id.* (Hight) at 527:18-21; Ex. 3047 (Nolasco) at 164:11-14; 256:25-257:9.

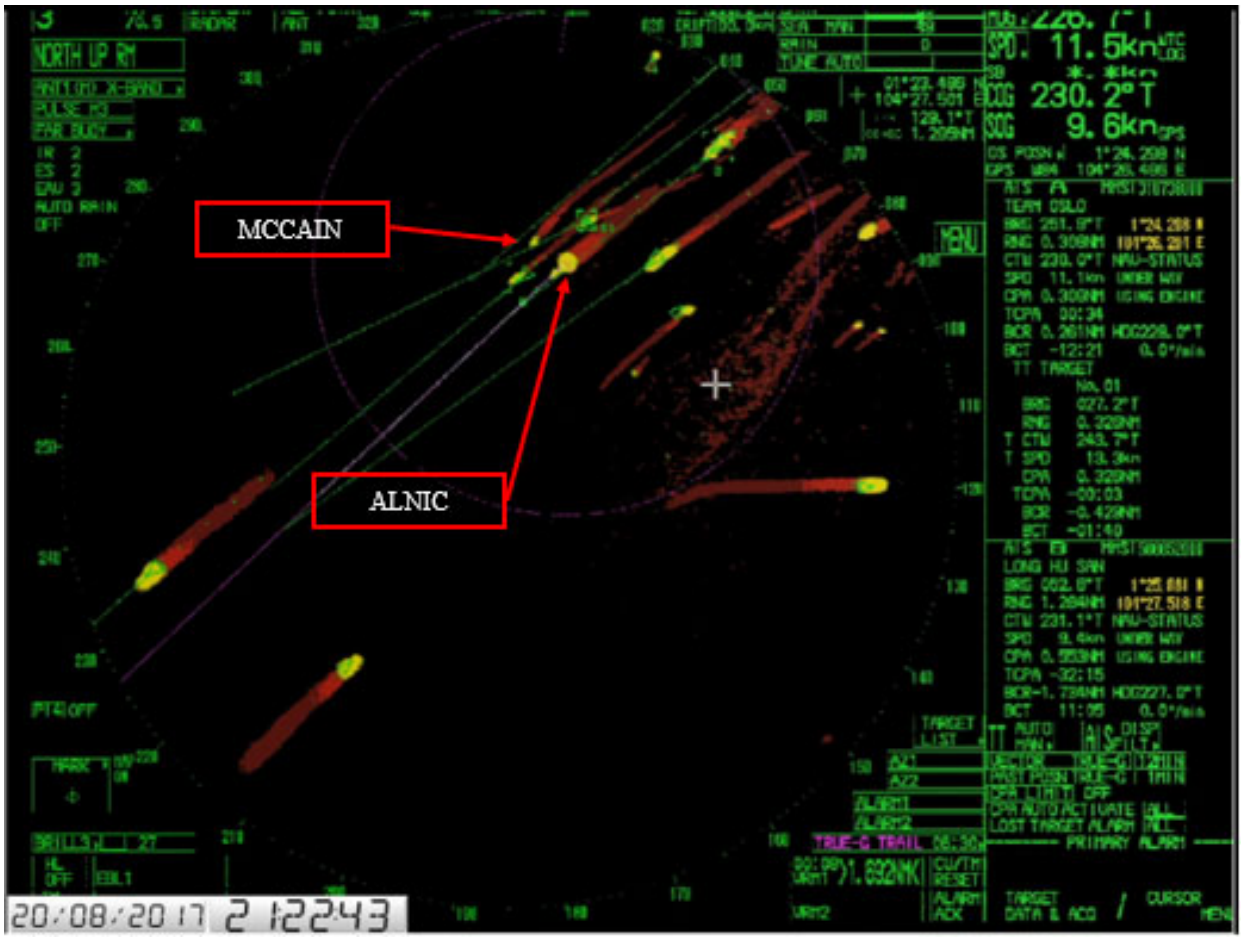
91. It was also around this time, at 5:22:00 (1 minute, 58 seconds before the collision), that ALNIC's crew logged they had stopped the engines. That entry was false. *See infra* ¶¶ 122–124. Despite Captain Nolasco's identification of MCCAIN as a possible collision target, he did not order ALNIC to slow until just 12 seconds before the collision. *See infra* ¶ 101. At no point prior to the collision did he order ALNIC to stop its engines or switch to manual steering.

92. At approximately 5:22:06 (1 minute, 52 seconds until collision),[11] Commander Sanchez gave an order to reduce MCCAIN's speed to roughly 10 knots to buy time to assess the steering confusion. *See* Trial Tr. (Sanchez) at 140:25-141:13. The Lee Helmsman began to slow the thrust on the IBNS touchscreen (the only way to do so, as the helm/lee helm lacked physical thrust controls). *See id.* at 214:2-215:24. However, because he did not realize the thrust was un-ganged on the touchscreen, the Lee Helmsman—believing he was reducing both thrusts—reduced only the *port* thrust. *See id.* at 211:3-22. Because of the unwittingly mismatched thrust, MCCAIN began to veer harder to port. *See* Navy Report at US0033418. The destroyer's logs recorded that her heading rotated about 25 degrees into ALNIC's path over the next minute. *See* Ex. 4013 at 3 (in "Heading Column," beginning at 5:22:09, logging a change in MCCAIN's heading from 215.0 degrees to 189.6 degrees).

93. At 5:22:43 (1 minute, 15 seconds until collision), the tanker completed its 50-second ARPA calculation to project a possible collision with the destroyer. *See* Trial Tr. (Putty)

[11] Pointing to MCCAIN's thrust control log, the Petitioner contends this slowing happened 13 seconds later, at 5:22:20—which would imply MCCAIN's turn to port was even more sudden. *See* ECF No. 381 (Proposed Findings of Fact) at ¶ 245 (citing Ex. 94). But the log that the Petitioner relies on only recorded RPM entries every 15 seconds, and 5:22:20 was the final second before a new RPM entry began—meaning that choosing the last second within that timeframe was arbitrary. Instead, the Court credits the aft steering video of the IBNS touchscreen, which, although grainy, depicts how the port thrust changed precisely at 5:22:06. *See* Ex. 97.

at 334:21-335:1. A collision alarm[12] began to blare on the bridge—but was silenced by the crew fifteen seconds later. *See* Ex. 4019 at T-21:22:43 (ALNIC bridge audio). At the time the collision alarm began, ALNIC's X-band radar displayed the following:




94. On MCCAIN, the situation was getting worse. At 5:22:45 (1 minute, 13 seconds until collision), Commander Sanchez ordered MCCAIN to slow again, to 5 knots. But because

[12] The parties disputed whether this alarm indicated a collision would in fact occur, or merely that the ships would come dangerously close to one another. The Petitioner argued the alarm originated from the ECDIS, which had showed the closest point of approach of 0.27 nautical miles—close, but not an imminent collision. *See* Trial Tr. (Putty) at 375:9-17; Ex. 4030. After all, the ECDIS displayed a "dangerous target" visual at the same time the alarm sounded. But the Claimants' shipboard operations expert persuasively explained, based on his long experience with the ECDIS technology, that this alarm derived from radar itself—indicating an imminent actual collision, not just a close call. *See id.* at 394:3-21, 411:3-15.

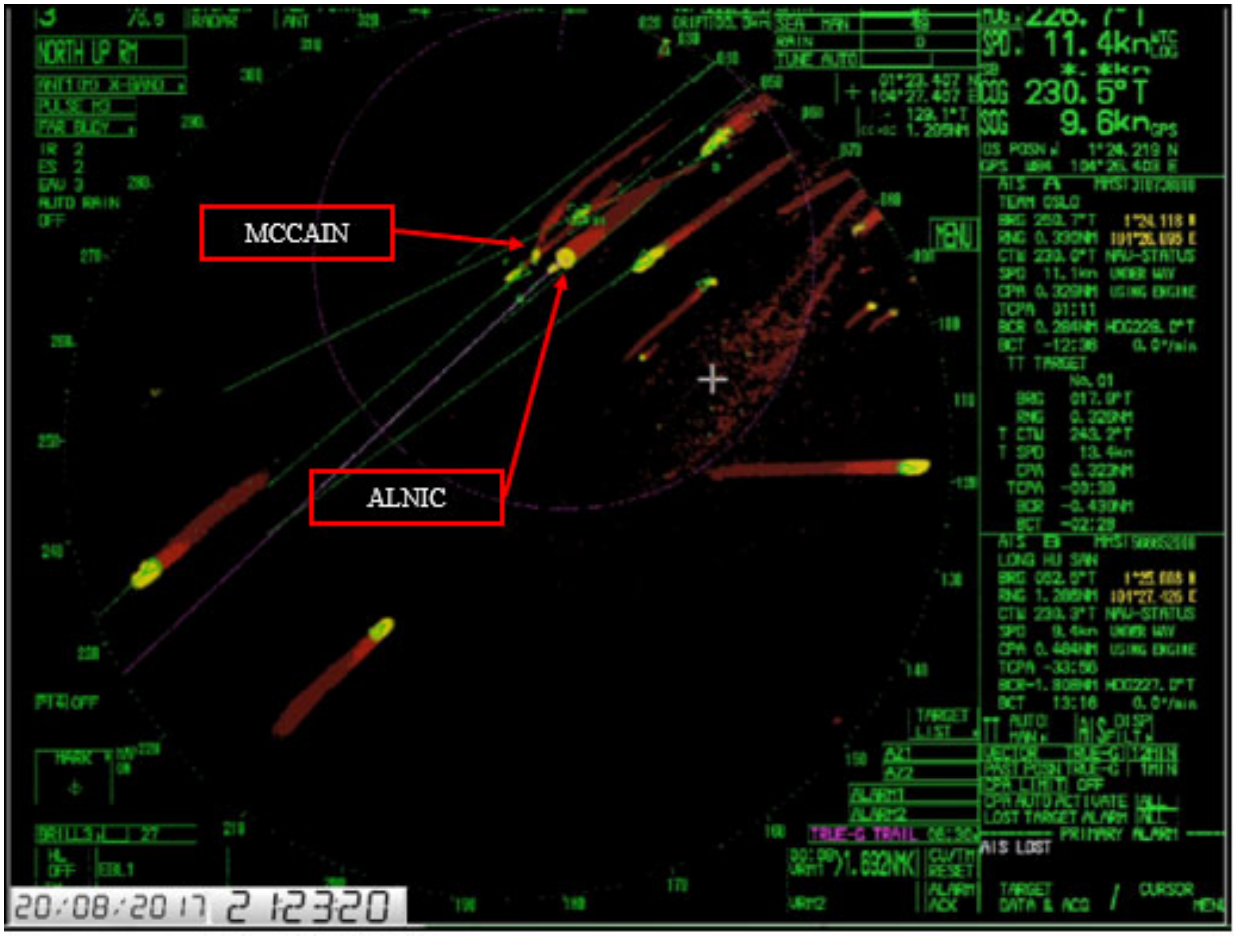
nobody had noticed the thrust was *still* un-ganged, the Lee Helmsman merely reduced the port thrust again, leading to an even greater thrust mismatch and causing MCCAIN to veer *even more sharply* towards ALNIC. *See* Trial Tr. (Sanchez) at 142:11-143:12; Navy Report at US0033436.

95. Back on ALNIC, a few seconds after deactivating her collision alarm, at 5:23:02 (55 seconds until collision), someone on ALNIC's bridge observed that MCCAIN appeared to be trying to pass between ALNIC and Team Oslo, remarking, "he [MCCAIN] pass so good in the middle? I guess he can pass that one." Ex. 4021 (ALNIC black box transcript) (punctuation altered).[13] Upon reflection, 9 seconds later, the same unidentified observer stated he thought the maneuver was "OK." *Id.*

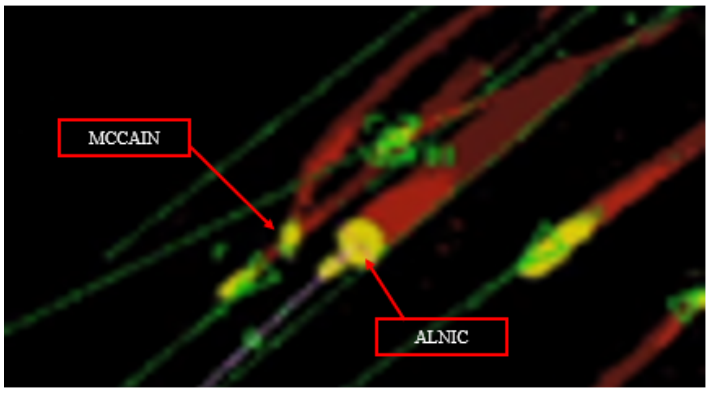
96. However, after 4 more seconds at 5:23:17, he then changed his mind and said MCCAIN was doing a "wrong maneuver." Ex. 4021 (ALNIC black box transcript). At this critical moment, ALNIC still did not change her course or speed.

[13] Some of the dialogue from the Exhibit 4021 transcript was not spoken in English. This remark about "pass so good in the middle," for instance, is translated from Tagalog. The parties have stipulated to the accuracy of this transcript and all translations. *See* Trial Tr. (Putty) at 419:22-25.

97. By 5:23:20 (38 seconds until collision), the change in MCCAIN's course was glaringly apparent from her red radar trail. *See* Trial Tr. (Putty) at 360:2-13, 413:8-14.




The same radar image zoomed in:




And because the radar sweeps provided a much better real-time visual (updated every 2.5 seconds) than these screenshots (updated every 15 seconds), a user on ALNIC would have observed the arc

of MCCAIN's turn more quickly than these screenshots suggest. *See* Trial Tr. (Hight) at 486:21-24, 487:5-18.

**D. Moments Before Collision**

98. At 5:23:27 (31 seconds until collision), the crew in aft steering finally secured control of MCCAIN's steering. *See* Navy Report at US0033437 (noting "[t]his was the fifth transfer of steering and the second time the aft steering unit had gained control in the previous two minutes"). However, the crew in aft steering did not realize the rudders still had a "hard left" order on the IBNS touchscreen when steering was regained, so for the next several seconds, MCCAIN veered *even harder* towards ALNIC as the rudders reset. *See* Trial Tr. (Sanchez) at 235:6-236:22. By this point, MCCAIN was almost directly in front of ALNIC's bow.

99. At long last, at 5:23:44 (14 seconds until collision), MCCAIN began turning to starboard to try and straighten her path. Commander Sanchez, apparently recognizing a collision with ALNIC was now inevitable, explained that he wanted to reduce the collision angle between the vessels rather than submit to a "T-bone" collision. Commander Sanchez testified a lesser angle of collision would "distribute that impact point through" MCCAIN's plating. He believed ALNIC would try to do the same. *See* Trial Tr. (Sanchez) at 146:17-147:7.

100. She did not. In fact, ALNIC never altered her course before the collision occurred. AB Ambrocio testified he was standing at the steering wheel awaiting Captain Nolasco's order to switch from autopilot to manual steering, because Ambrocio was not authorized to do so himself. But Captain Nolasco never gave that order until well after the collision. *See* Trial Tr. (Ambrocio) at 631:9-23, 620:14-633:8, 633:14-634:23.

101. At the same moment MCCAIN began turning away, ALNIC made her first and only pre-collision adjustment—slowing her engines from 92 RPM to 73 RPM. Captain Nolasco

did so by moving the engine control lever from full ahead to half ahead. *See* Trial Tr. (Hight) at 543:16-544:4; Ex. 3047 (Nolasco Dep. Tr.) at 154:19-155:17. Yet slowing the engine for 13 seconds did not reduce ALNIC's speed by any appreciable measure before the vessels collided. *See* Trial Tr. (Putty) at 317:5-8.

102. At no point did either vessel sound a danger signal (typically five short blasts) or attempt to contact one another via radio. *See* Trial Tr. (Sanchez) at 221:5-11; Navy Report at US0033431; Ex. 3012 at Response No. 64; Ex. 4025 at Response No. 101.

**E. The Collision and Subsequent Sweeping of ALNIC's Bow**

103. At 5:23:58, the two ships collided. *See* Navy Report at US0033437. ALNIC's V-shaped bulbous bow crashed into the port-side of MCCAIN at a diagonal angle of around 48.5 degrees, piercing the hull of the destroyer and embedding into several crew compartments.

104. The vessels remained entangled for 66 seconds before finally pulling apart. *See* Trial Tr. (Wilske) at 612:5-9.

105. During those 66 seconds, the damage to MCCAIN worsened. ALNIC's engines were still churning forward at 73 RPM, propelling her bow deeper into MCCAIN. ALNIC was also still on autopilot. As a result, her computerized navigation system, perceiving that she had been knocked off her programmed trajectory, attempted to correct her course without realizing the collision with MCCAIN made that course correction impossible—and would instead cause her to steer across MCCAIN's hull. *See* Trial Tr. (Putty) at 341:16-25.

106. These combined actions—the engine's continued propulsion and the autopilot's attempted steering corrections—caused the angle of collision to open from 48.5 degrees to 94.6 degrees before the vessels finally separated. Thus, over the course of those 66 post-collision seconds, ALNIC's bow arced over 45 degrees, from fore to aft, within MCCAIN's hull. *See* Trial

Tr. (Wilske) at 612:18-613:19; *see also* Ex. 911 (MCCAIN damage report) at US0240034–36. That sweeping movement aggravated what was originally a smaller gash created by ALNIC's bow. *See* Trial Tr. (Ryan) at 450:2-20; Ex. 921 (photo of hole in MCCAIN's hull).

107. Testimony from sailors aboard MCCAIN supports the finding that ALNIC's sweeping movement was particularly damaging. One officer described how equipment racks were thrown from fore to aft—perpendicular to the direction of the initial impact—suggesting they had been pushed there over time. *See* Trial Tr. (Ling) at 256:19-257:9, 258:6-259:10.

108. ALNIC's bow inflicted damage at a height spanning three of MCCAIN's decks. *See* Navy Report at US0033419, US0033429; Ex. 911 at US0240000. In particular, Berthing Number 3, Berthing Number 5, and a fuel tank below Berthing 5 all suffered major damage. A ruptured fire main and fuel line caused water and fuel to flood into Berthing 3. Berthing 5, which was located below the waterline, flooded completely, drowning ten sailors. *See* Navy Report at US0033422–27; Ex. 911 at US0240000.

109. In the moments after the collision, MCCAIN immediately sounded general quarters and worked to separate herself while ALNIC continued to charge into the side of MCCAIN. The destroyer positioned her rudders to the right in an attempt to free herself from ALNIC's bulbous bow. *See* Trial Tr. (Sanchez) at 237:14-22. The crew coordinated urgent damage control and rescue efforts. *See* Trial Tr. (Ling) at 254:8-255-21. After pulling one sailor to safety, Warrant Officer Patat and Petty Officer Black managed to use a T-wrench to seal the hatch leading down to the rapidly flooding Berthing 5—just seconds before the swirling mixture of seawater and fuel

was set to overtake the top of the scuttle and overwhelm the upper platform, potentially on its way up to Berthing 3 and the main deck. *See* Trial Tr. (Patat) at 274:5-15, 278:7-281:22.[14]

110. Over on ALNIC, at 5:24:40 (42 seconds after collision), Captain Nolasco finally gave an "all stop" order. *See* Ex. 15B (bell book addendum) at Energetic 000802; Ex. 13C (log book addendum). In their deposition testimony presented at trial, ALNIC's crew offered no explanation for this delay. *See* Ex. 3047 (Nolasco Dep. Tr.) at 23:14-24:13, 145:12-23, 147:5-10, 152:19-156:13, 162:15-24; *see also* Trial Tr. (Hight) at 543:16-544:4 ("I think that [Captain Nolasco] thought that the engines were stopped. . . . I believe he went to half a head approximately 15 seconds before the collision. I mean, I can't believe that he didn't mean to grab it and go all the way.").

111. After another 20 seconds, at approximately 5:25:00 (1 minute, 2 seconds after collision), ALNIC at last turned off her autopilot and switched to manual steering. *See* Ex. 13C. ALNIC's crew offered no explanation for this delay either. *See* Ex. 3047 (Nolasco Dep. Tr.) at 136:1-140:22, 186:4-19, 188:20-189:4, 228:15-229-16; Ex. 3049 (Torculas Dep. Tr.) at 20:4-21:2, 21:22-22:10; *see also* Trial Tr. (Hight) at 543:2-15 ("I think at that point there were more things on [Captain Nolasco's] mind than the fact that the ship was in autopilot. . . . I think it's oversight.").

## IV. Analyzing the Collision

### A. The Expert Simulations of ALNIC's Actions

112. Both sides engaged experts to model ALNIC's performance characteristics to model whether, and if so at what time, the tanker could have acted to avoid the collision. *See* Ex.

[14] MCCAIN remained afloat and eventually reached the port in Singapore. *See* Trial Tr. (Sanchez) at 241:7-17.

Ex. 3001O (simulation video based on the Claimants' model); Ex. 3001P (video recreation of view from ALNIC's bridge based on the Claimants' model); Ex. 4028 (simulation tool based on Petitioner's model). The experts' models were based primarily on ALNIC's Sea Trial testing data, with adjustments to account for the conditions found at the time of the collision, such as vessel draft, wind, and current. *See, e.g.*, Trial Tr. (Murphy) at 294:3-16, 301:9-308:6; *id.* (Putty) at 316:12-19; *id.* (Wilske) at 567:3-579:13. Relying on these models, the experts gave different opinions on when, and how, ALNIC had her last chance to avoid colliding into MCCAIN.

113. One option for ALNIC was to stop her engines and allow MCCAIN to cross safely in front of the tanker's bow. The experts opined as to the precise moment a stop engine order[15] would have slowed ALNIC enough for that option to work. The Petitioner's experts concluded that ALNIC needed to initiate a crash stop order at least 1 minute and 40 seconds before the actual collision to avoid MCCAIN. *See* Trial Tr. (Hight) at 495:18-22; *see also id.* (Wilske) at 587:5-13; Ex. 4028. The Claimants' expert countered that ALNIC needed 13 fewer seconds to crash stop order to avoid a collision. *See* Trial Tr. (Putty) at 333:15-19. In sum, the experts agreed that a crash stop was possible; they only disagreed about those 13 seconds.

114. A second option for ALNIC was to turn to starboard, toward MCCAIN, and just miss the destroyer's stern. The Petitioner's experts concluded the last chance to do so would have around 60 seconds before the collision. *See* Trial Tr. (Hight) at 500:13-21; *id.* (Wilske) at 591:13-18; *cf.* Ex. 4028 (simulation tool showing a miss at 59 seconds). The Claimants' expert, by contrast, said ALNIC had slightly more time to turn to starboard, with her last chance being 52

[15] A full reverse order would have been no different than a stop engine order. Because of the length of time required to reverse ALNIC's engines, both orders would result in identical slowing for the first several minutes—by which point the collision had already occurred. *See supra* ¶ 39; Trial Tr. (Putty) at 355:13-356:1.

seconds before the collision. *See* Trial Tr. (Putty) at 338:13-21; Ex. 3001O. So the experts, again, agreed that a starboard turn was viable; they only disagreed about 8 seconds.

115. A third option was to turn to port, away from MCCAIN. The Petitioner's simulation calculated that ALNIC's last chance to avoid collision by turning hard to port would have been 50 seconds before the collision. *See* Ex. 3060 (screenshot of simulation with hard port turn); *see also* Trial Tr. (Wilske) at 614:2-615:11. Further, one of the Petitioner's experts agreed at trial that ALNIC could have potentially avoided penetration by the bulbous bow by turning hard to port 39 seconds before the collision. *See* Trial Tr. (Wilske) at 600:19-23, 610:22-611:8. The Claimants' expert did not opine on ALNIC's last chance to turn to port but agreed the maneuver was viable. *See* Trial Tr. (Putty) at 339:2-8 (declining to provide a precise timeframe because, in his view, a prudent mariner "would have maneuvered long before" the last chance to do so).

116. In essence, the experts agreed much more than they disagreed. They agreed that when MCCAIN energized her red-over-red lights—2 minutes and 33 seconds before the collision—ALNIC still had well over a minute to avoid the destroyer by turning. They also agreed that even within a minute of the collision, ALNIC still had time to mitigate the force of impact by slowing and/or turning to port for a glancing blow, rather than maintaining course and speed.

**B. The Court's Findings on ALNIC's Maneuvering Options**

117. Looking to the experts' analyses—which are substantially in agreement about the feasibility of each potential maneuver—the Court determines how ALNIC could have tried to avoid or mitigate the collision.

118. Although ALNIC could have avoided the collision by stopping her engines alone, her window of time to do so was undoubtedly short. At 1 minute and 27 seconds before the collision (assuming the Claimants' theory that ALNIC required less time to stop), MCCAIN's

course had only shifted about 22 degrees towards ALNIC. *See* Ex. 4013. The destroyer was only slightly forward of ALNIC's beam—essentially driving side-by-side in the neighboring lane on the highway. At that moment, reasonable mariners could have disagreed whether MCCAIN would collide with ALNIC, especially because MCCAIN had not yet started to turn faster and faster on account of additional thrust and rudder problems. *See* Trial Tr. (Putty) at 361:4-9.

119. But ALNIC enjoyed less drastic options than stopping outright. She had enough time after the risk of a crash should have been apparent to avoid—or at least significantly mitigate—the collision through a combination of slowing and turning. Unlike a crash stop (which would have required a minute-and-a-half to slow enough to allow MCCAIN to pass safely in front), the Petitioner's own experts concluded the tanker needed less than a minute to turn to avoid the destroyer. And within a minute of the collision, the danger to ALNIC should have been obvious: the red-over-red lights had been flashing for over a minute, the collision alarm had sounded (and been silenced), and MCCAIN's radar tail was curling more and more by the second.

120. An evasive maneuver was not only possible; it was entirely feasible. Captain Putty, an expert on shipboard operations, explained how ALNIC could have turned safely to avoid MCCAIN before returning to her original course—much like swerving to avoid a dangerous object on a highway. The Petitioner's expert persuasively testified that even heavy-laden shipping vessels like ALNIC commonly make such evasive maneuvers. *See* Trial Tr. (Putty) at 423:8-425:13 (noting there is a lot of flotsam and jetsam "floating in the water these days, whether containers fall over the side of ships, whether buoys break loose and are floating out in open water, whether there is fishing nets . . . . There is a tremendous number of things that you would have to evade. Even whales you would evade, and you would do the same type of maneuver.").

121. Even after it become too late to avoid MCCAIN entirely, ALNIC still could have employed some combination of these actions to mitigate the collision up to the final seconds before impact. The direct T-bone force of the collision unquestionably created far more physical damage than would a glancing blow—especially if ALNIC had begun to slow earlier. Likewise, turning ALNIC to port would have brought her parallel to MCCAIN and reduced the angle of impact. And because ALNIC would have had to switch to hand steering in order to turn, the sweeping damage done by her bulbous bow would have been reduced because the disengaged autopilot would not have attempted to correct her course after the two ships had collided.

## V. After the Collision

### A. ALNIC's False Logs

122. As post-collision investigations began, ALNIC's crew made false logs or statements to cover up their pre-crash decisions. Those lies included, among others:

- *First*, that there was a fifth member of ALNIC's crew serving as the lookout when, in fact, there was not. That crewmember was supposed to be OS Secang, who was falsely logged as having been scheduled for the 04:00-08:00 watch. Captain Nolasco, Chief Officer De Gracia, and Secang himself all told investigators from multiple countries that Secang had been on the bridge earlier that morning but had retired to his cabin because he was not feeling well—when, in fact, he had never been on the bridge at all. *See* Trial Tr. (Torculas) at 53:12-54:17; Ex. 543 (Secang's written statement); Ex. 3083 (Chelios Dep. Tr.) at 50:24-51:5, 80:20-83:18. Captain Nolasco repeated this falsehood during his deposition for this case. *See* Ex. 3047 (Nolasco Dep. Tr.) at 132:14-16, 134:11-135:13.

- *Second*, that ALNIC was at Bridge Manning Level II before the collision, when it was really at Bridge Manning Level I because of the missing crewmembers. In truth, Second Officer Torculas had been in the curtained-off chart room, while OS Secang had left the bridge entirely. *See* Ex. 3047 (Nolasco Dep. Tr.) at 129:8-17.
- *Third*, that the crew had stopped the engine before the collision at 05:22, when in fact it was only put to half ahead at 05:23:44 and was not stopped until about 05:24:30. This false entry was squeezed between two regular lines in the deck log. *See* Ex. 13B; Ex. 3047 (Nolasco Dep. Tr.) at 145:12-23.
- *Fourth*, that steering was switched from autopilot to manual steering several hours before the collision, at 03:00, when it actually remained on autopilot until after the collision. *See* Trial Tr. (Torculas) at 51:16-52:19; Ex. 3049 (Torculas Dep. Tr.) at 20:4-22, 31:2-20.

123. Several of these false entries were repeated in other ALNIC logs. The bell book repeated the false entries regarding Bridge Manning Level II and the use of manual steering. *See* Trial Tr. (Torculas) at 55:24-57:13, 56:18-20; Ex. 15; Ex. 3047 (Nolasco Dep. Tr.) at 187:15-189:15 (describing corrections in addendum to bell book). And the engine logbook repeated the lie about stopping the engine before the collision. *See* Ex. 3083 (Chelios Dep. Tr.) at 41:19-42:21.

124. Eventually, these falsehoods were exposed by examining data from the black box and by deposing Second Officer Torculas. *See* Ex. 3049 (Torculas Dep. Tr.) at 17:2-18:9, 18:18-19:8, 20:4-21:2, 31:2-31:20. By the time of trial, the Petitioner had fully admitted the falsity of the entries made by ALNIC's crew. *See, e.g.*, Ex. 13C (log book addendum); Ex. 15B (bell book addendum); Ex. 3005 at Response Nos. 5, 7.

### B. Investigations by Authorities

125. Several governmental bodies investigated the collision, including the U.S. Navy itself. With the caveat that it was "not concerned about the mistakes made by ALNIC," the Navy identified three faults aboard MCCAIN, *see* Navy Report at US0033415:

- "Loss of situational awareness in response to mistakes in the operation of the JOHN S. MCCAIN's steering and propulsion system, while in the presence of a high density of maritime traffic;"
- "Failure to follow the International Nautical Rules of the Road, a system of rules to govern the maneuvering of vessels when risk of collision is present;" and
- "Watchstanders operating the JOHN S. MCCAIN's steering and propulsion systems had insufficient proficiency and knowledge of the systems."

126. The Navy also disciplined twenty members of MCCAIN's crew after the collision. Commander Sanchez was court-martialed and found guilty of dereliction of duty. He has since retired from the Navy. *See* Trial Tr. (Sanchez) at 148:1-11; Ex. 136 (Sanchez court martial stipulation). Other senior-ranking officers were disciplined for failing to ensure proper training of the crew. *See, e.g.*, Ex. 297 (Chief Petty Officer Butler); Ex. 4015 (Executive Officer Jessie Sanchez). Both the Helmsman and Lee Helmsman were found to have been derelict in their duties as well. *See* Ex. 4022 at US0032012–13, US0032020–21, US0032698–700, US0032706–07.

## CONCLUSIONS OF LAW

## VI. Applicable Law for Apportionment of Liability

### A. Singapore Law Applies

127. The Court has determined that Singapore law applies to substantive matters of liability in this case. *See* ECF No. 247; *reconsideration denied*, ECF No. 267. Singapore courts

follow the doctrine of stare decisis and consider admiralty precedent from common law countries like the United Kingdom and United States as persuasive authority. *See* Goh Yihan & Paul Tan, *An Empirical Study on the Development of Singapore Law*, 23 SING. ACAD. OF L. J. 176, 177, 209–10 (2011).

128. Aside from case law, Singapore has enacted legislation that applies to collisions, including the Maritime Conventions Act 1911 (Chapter IA3, 2020 Revised ed.) and the Merchant Shipping (Prevention of Collisions at Sea) Regulations (Chapter 179, Rg. 10, 1990 Revised ed.).

**B. The Elements of Negligence**

129. The elements of negligence under Singapore law are substantially the same as those under United States admiralty law: "Typically, claimants have to establish breach of duty (that a vessel owes a duty of care to other vessels is well-established) that caused or contributed to the collision and damage." *The Dream Star* [2018] 4 SLR 473 at [47]; *cf.* Schoenbaum, ADMIRALTY & MARITIME LAW § 5:4 (6th ed.) ("Schoenbaum") (prima facie elements of negligence under United States admiralty law are duty, breach, causation, and damages).

130. To gauge a vessel's duty of care, Singapore courts look to "the exercise of 'good seamanship' which is tantamount to the exercise of reasonable skill or care expected of a competent/prudent seaman to prevent the vessel from doing injury." *The Dream Star* at [47]; *The Mount Apo and Hanjin Ras Laffan* [2019] 4 SLR 909 at [97]. This "good seamanship" standard is informed by international safety conventions. *See The Dream Star* at [47]; *The Mount Apo* at [97]. The relevant safety convention here[16] is the COLREGS, a series of navigational "rules of

[16] The Claimants argue ALNIC also violated another safety convention: the ISM Code. The ISM Code requires most non-military vessels to implement a Safety Management System like the one Stealth implemented on ALNIC. Without complying with the ISM Code, ALNIC could not legally embark on an international voyage under the law of its flag state. *See* Liberian Maritime Regulation 2.35. The Petitioner has admitted it was required under the ISM Code to ensure ALNIC

the road" designed to help vessels avoid collisions by acting predictability. Schoenbaum at § 14:3; *see generally* Ex. 591 (compilation of the COLREGS). Both Singapore and the United States have codified the COLREGS as law. *See* Merchant Shipping (Prevention of Collisions at Sea) Regulations at § 3; 33 U.S.C. § 1602.

131. The COLREGS "are not mere prudential regulations or guidelines; they are binding enactments that must be adhered to closely." Schoenbaum at § 14:3. Importantly, however, breach of these rules does not create negligence liability per se. Instead, a vessel is only liable for a violation of the COLREGS if that violation *caused* the collision. *See The Dream Star* at [49], [125]; *The Mount Apo* at [95].

**C. Apportioning Liability: Comparative Fault**

132. Singapore's Maritime Conventions Act 1911 provides that where two vessels in a collision are both at fault, liability is divided in proportion to the degree of those faults. *See* Maritime Conventions Act 1911 § 1(1). The Court apportions liability equally only if "it is not possible to establish different degrees of fault." *Id.*

133. Under Singapore precedent, the Court compares each vessel's faults qualitatively, not quantitatively, by analyzing the degree to which each vessel's mistakes caused the collision (and the

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adhered to the vessel's own Safety Management System. *See* Ex. 3012 at Response Nos. 60–62; *see also* Ex. 3045 (Zisimos Dep. Tr.) at 24:3-10.

Nonetheless, it is not clear whether the ISM Code imposes independent legal duties or is merely evidence of custom. *See, e.g.*, *Matzkow v. United New York Sandy Hook Pilots Ass'n*, No. 18 Civ. 2200 (RER), 2022 WL 79725, at *8–9 (E.D.N.Y. Jan. 7, 2022); *Holzhauer v. Golden Gate Bridge, Highway & Transportation Dist.*, No. 13 Civ. 02862 (JST), 2015 WL 12976923, at *3 (N.D. Cal. June 11, 2015); *Johnson v. Horizon Lines, LLC*, 520 F. Supp. 2d 524, 533 (S.D.N.Y. 2007). The Court need not answer this question—or discuss the ISM Code at all—because ALNIC's violations of the ISM Code largely repeated its violations of the COLREGS. For instance, failing to post a lookout violated COLREGS Rule 5 while simultaneously violating the Safety Management System under the ISM Code.

resulting damage), as well as the degree to which each vessel was culpable for those mistakes. *See, e.g.*, *The Dream Star* at [49], [127]; *The Mount Apo* at [95]. Singapore has also ratified the Brussels Convention of 1910, which imposes a similar framework. *See* ECF No. 247 at 13. Under the Brussels Convention, courts consider both "the relative culpability of each vessel and the relative extent to which the culpability of each caused the collision." *Otal Invs. Ltd. v. M.V. Clary*, 494 F.3d 40, 63 (2d Cir. 2007) ("*Otal II*").[17]

134. There is no formula for apportioning liability; the Court simply makes a "broad commonsensical assessment." *The Mount Apo* at [207]. Ultimately, "allocation of liability for damages, requiring consideration of matters not readily amenable to precise analysis, does not oblige an admiralty judge to do more than provide ultimate percentages of allocation, accompanied only by sufficient explanation to provide a reviewing court with some general understanding of the basis for the decision." *Otal II*, 494 F.3d at 63. Accordingly, the Court allocates fault between MCCAIN and ALNIC on a percentage basis.

135. The Court finds that MCCAIN is primarily—80%—at fault for creating a scenario where collision between the vessels was either inevitable, or all-but inevitable. However, ALNIC bears significant blame—20%—for its failure to take any meaningful action to minimize the carnage caused by the collision. The Court explains this apportionment next.

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[17] Some of the Sailor-Claimants contend the Court should apply the American liability rule from *The Pennsylvania*, 86 U.S. 125 (1874). The *Pennsylvania* rule imposes a presumption, akin to negligence per se, where a vessel that violated a statutory duty like the COLREGS must prove that violation could not have reasonably contributed to the collision. *See Otal II*, 494 F.3d at 50. "This is an imposing burden" for a vessel to meet. *Id.* at 51.

However, for Singapore and other adopting nations, the Brussels Convention expressly abolished presumptions of fault like the *Pennsylvania* rule. The Second Circuit has held the presumption from the *Pennsylvania*—as a substantive, not procedural, rule—falls away when a court applies the law of a Brussels Convention jurisdiction like Singapore. *See id.* at 50–51. Although U.S. maritime law is persuasive in this case, the Court will not incorporate a substantive presumption that Singapore has abolished.

## VII. MCCAIN's Liability

136. The Court apportions 80% of liability for the collision to MCCAIN.

137. The United States contends ALNIC was 70% at fault for the collision, which would make MCCAIN only 30% at fault. *See* ECF No. 361 (Proposed Findings of Fact) at ¶ 96. But there is no question MCCAIN created the situation of danger in the Singapore Strait. *See The Mount Apo* at [207] ("The fault of a ship that creates a situation of difficulty or danger is generally greater than that of the ship that fails to react properly to such a situation after it has been created."); *see also The Dream Star* at [126] (similar). No reasonable mariner would have expected MCCAIN to veer sharply off-course in one of the busiest waterways in the world—all because of unforced errors on the bridge.

### A. MCCAIN Failed to Adequately Train and Staff Her Crew

138. The longstanding lack of training for MCCAIN's crew sparked the confusion on her bridge and fueled the mistakes leading up to the collision. That even senior officers failed to have (let alone implement) proper understanding of the IBNS, steering, and thrust procedures enhances MCCAIN's culpability and was a proximate cause of the collision. *See The Tian E Zuo* [2019] 4 SLR 475 at [34], [164] (discussing the overlap between general incompetency and negligence in particular circumstances); *Hercules Carriers, Inc. v. Florida*, 768 F.2d 1558, 1573 (11th Cir. 1985) (failure to properly train crewmember was a proximate cause of collision); *In re Bridge Const. Servs. of Fla., Inc.*, 39 F. Supp. 3d 373, 392 (S.D.N.Y. 2014) (incompetent crew could render a vessel unseaworthy). After all, with over a dozen people on MCCAIN's bridge, multiple senior officers were available that morning to intervene and restore steering or thrust even if their subordinates did not. If all else failed, printed step-by-step instructions were in a red binder hanging right off the helm.

139. The IBNS was new, glitchy, and unwieldy, complicating MCCAIN's ability to navigate. For example, without a manual thrust control, the crew was entirely dependent on the subtleties of an intricate touchscreen to understand how the destroyer was functioning. That touchscreen displayed, among other things, the All Stop button, the station currently in control of steering, and an indicator for whether thrust was ganged—all tools that could have kept MCCAIN from turning into ALNIC's path.

140. Further, persistent IBNS technical snafus (long unaddressed by Navy leadership) forced MCCAIN's crew to repurpose a system setting they did not understand. The lack of understanding about how the Big Red Button worked when in backup manual mode—which sent steering back and forth between stations five times over just two minutes—prolonged MCCAIN's hunt to regain steering control.

141. Commander Sanchez's failure to set "Sea and Anchor" Detail before entering the Singapore Strait also contributed to the crew errors aboard MCCAIN. *See* Navy Report at US0033430 (concluding that "it is unlikely that a collision would have occurred" if Sea and Anchor detail had been set earlier that morning). That heightened detail would have included additional, and more experienced, crewmembers on the bridge. The on-duty Lee Helmsman had never stood watch at that position before, and his colleagues on the bridge were little more seasoned than he was. There is little doubt this lack of experience contributed to the thrust mismatch, the failure to press the All Stop button, and the inability to recover steering or thrust control by attributing to external forces problems that MCCAIN's crew could have easily resolved *at any time* prior to the collision. *See Complaint of Am. Exp. Lines, Inc.*, 620 F. Supp. 490, 499 (S.D.N.Y. 1985) (vessel 60% liable where, "after the loss of steering," the crew had over four minutes to act before the collision, which was "sufficient time to prevent the collision by taking

remedial actions"). These crew failures, in turn, led to the violation of multiple COLREGS and created a situation of danger for ALNIC—and for MCCAIN's own crew.

**B. MCCAIN Failed to Navigate Safely**

142. The parties agree that MCCAIN was overtaking ALNIC before the collision. As the overtaking (or "give way") vessel under the COLREGS, the destroyer had a duty to keep clear of ALNIC and pass at a safe distance. *See* COLREGS Rules 8, 13(a), 16. By turning directly into the tanker's path without warning, MCCAIN breached that duty.

143. Energizing red-over-red lights did not immunize MCCAIN from liability for her failure to steer safely. While nearby ships must avoid a vessel which is not under command,[18] the converse is also true: a vessel that is not under command still has a duty to keep out of the way of any ships she overtakes under COLREGS Rule 13(a). *See* Allen & Allen, FARWELL'S RULES OF THE NAUTICAL ROAD 332, 418 (9th ed. 2020). The United States does not dispute MCCAIN bore this continued duty to keep out of the way of ALNIC. *See* ECF No. 361 (Proposed Conclusions of Law) at ¶ 5.

144. MCCAIN's crew acted negligently by deciding not to stop outright after they had lost control of steering. Despite his awareness of severe problems on the bridge, Commander Sanchez ordered the destroyer to continue forward at around 10 knots—still faster than many nearby vessels, including ALNIC, that were only fractions of a nautical mile away. In doing so, MCCAIN violated COLREGS Rule 6, which required her to "at all times proceed at a safe speed so that she can take proper and effective action to avoid a collision and be stopped within a distance appropriate to the prevailing circumstances and conditions." Once Commander Sanchez believed he had lost control

[18] COLREGS Rule 18, "Responsibilities Between Vessels," provides in relevant part: "*Except where Rules 9, 10 and 13 otherwise require*, a power-driven vessel underway shall keep out of the way of a vessel not under command." *See* Ex. 591 at 24 (cleaned up) (emphasis added).

of MCCAIN for any significant period of time, the reasonable course of action was to stop and allow other ships to maneuver around the destroyer, rather than to continue forward on an unknown course across one of the most heavily-trafficked waterways in the world.[19] *See Complaint of Flota Mercante Grancolombiana, S.A.*, 440 F. Supp. 704, 714 (S.D.N.Y. 1977) ("[M]ost damning of all, [the master] failed to exercise prudent navigation by not signaling stop on the engines as soon as he realized that the vessel was out of command.") (citing *The New York*, 175 U.S. 187, 207 (1899)).

145. MCCAIN's failure to steer properly set her on a collision course with ALNIC. Both vessels were traveling in a straight line before MCCAIN veered suddenly off-course, which violated the rules of the road on a waterway just as it would on a laned highway. *See* COLREGS Rule 8(d) ("Action taken to avoid a collision with another vessel shall be such as to result in passing at a safe distance."); Rule 16 ("Every vessel which is directed to keep out of the way of another vessel shall, so far as possible, take early and substantial action to keep well clear."). Proper use of the Big Red Button would have restored steering control and avoided the collision entirely. Indeed, *misuse* of the Big Red Button exacerbated MCCAIN's erratic course—when aft steering finally took control, they neglected to check their steering wheel, which had been turned all the way towards ALNIC. The self-inflicted failure to control MCCAIN's course was the antithesis of "good seamanship" to avoid a collision. COLREGS Rule 8(a).

146. MCCAIN's mismatched thrust made that veering worse. Her crew failed to observe the un-ganged thrust on the IBNS touchscreen. Had they realized the thrust was mismatched, they

[19] Commander Sanchez's explanation for his decision not to stop the engines outright—that he was aware that there were ships approaching MCCAIN from some distance behind, and that he was loathe to exacerbate what he believed to be a rudder failure—are by no means illogical. *See* Trial Tr. (Sanchez) at 219:10-220:3. Nonetheless, the Court finds that a reasonable mariner would have deemed these risks the lesser of two evils and chosen to stop, rather than slow, the ship, and thereby avoid careening across traffic.

could have immediately matched the thrust and straightened the destroyer's course. Instead, the crew mismatched the thrust *further*, which only increased her turn rate into ALNIC's path. COLREGS Rule 8(b) provides that "a succession of small alterations of course and/or speed should be avoided" so that nearby vessels are aware of the turn. But the increasing errors on MCCAIN led to an increased turn rate, thereby shortening the window of time for ALNIC to react. *See Maritime & Mercantile Int'l L.L.C. v. United States*, No. 02 Civ. 1446 (KMK), 2007 WL 690094, at *29 (S.D.N.Y. Feb. 28, 2007).

147. Like with steering, MCCAIN could have easily avoided a collision using her thrust. The crew had at least three minutes to press the All Stop button, which was available in plain sight on the IBNS touchscreen. MCCAIN's ability to stop, although not instantaneous, was quite impressive, as she boasted reversible propellers that Commander Sanchez likened to "opening two parachutes" behind the destroyer. Trial Tr. (Sanchez) at 209:20-23. The crew had several minutes to stop the destroyer and assess the loss of steering problem. They failed to do so.

148. The improper use of steering and thrust was entirely preventable, violated the COLREGS, and was the primary cause of the collision. *See Tokio Marine & Fire Ins. Co., Ltd. v. M/V FLORA*, 235 F.3d 963, 970–71 (5th Cir. 2001) (affirming apportionment of 80% of fault to vessel that suddenly turned to port into another's path "at close distance"); *Complaint of Seiriki Kisen Kaisha*, 629 F. Supp. 1374, 1381–82 (S.D.N.Y. 1986) (apportioning majority of fault to give-way vessel that made an "inexplicable last minute course alteration").

149. Moreover, MCCAIN failed to transmit crucial AIS data about her course and speed. That data would have helped ALNIC confirm that MCCAIN had lost control of steering and better predict the destroyer's trajectory. To be sure, the tanker would not normally expect to receive AIS data from a military vessel, *see* Trial Tr. (Putty) at 415:18-25, and the lack of AIS data does not

excuse ALNIC's failure to use traditional means of visual observation, *see Evergreen Marine (UK) Ltd. v. Nautical Challenge Ltd.* [2021] UKSC 6, [71]–[73]. Nonetheless, Navy guidelines required the destroyer to broadcast AIS data for safety; MCCAIN's decision not to take this prudent step was reflective of her larger failure to exhaust every option to avoid colliding with ALNIC.

150. Ultimately, the Court agrees with the Navy's own conclusions regarding MCCAIN's shortcomings:

> Many of the decisions made that led to this incident were the result of poor judgment and decision making of the Commanding Officer. That said, no single person bears full responsibility for this incident. The crew was unprepared for the situation in which they found themselves through a lack of preparation, ineffective command and control and deficiencies in training and preparations for navigation.

Navy Report at US0033430. MCCAIN's failures causing the collision were systemic, and the Court apportions her the majority of liability.

## VIII. ALNIC's Liability

151. The Court apportions the remaining 20% of liability for the collision to ALNIC, who bore significant faults of her own. Although it finds ALNIC significantly less responsible for the collision than MCCAIN, the Court nonetheless devotes significant time and space to its analysis of ALNIC's faults because—unlike the United States—Petitioner has disclaimed any liability for the crash whatsoever.

### A. ALNIC Failed to Properly Staff Her Bridge and Assess the Collision Risk

152. ALNIC's initial negligence stemmed from the understaffing of her bridge in the heavily trafficked Singapore Strait. In doing so, she violated COLREGS Rule 5 (failure to post a lookout) and Rule 7 (failure to appraise the risk of collision situation as MCCAIN approached).

153. COLREGS Rule 5 provides: "Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing

circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision."

154. ALNIC's Safety Management System required five crewmembers on the bridge while in the Singapore Strait, including both an anti-collision officer and a dedicated lookout. Neither person was on ALNIC's bridge the morning of the collision.[20] It is true AB Ambrocio had been given some lookout duties the morning of the collision, and he was heard over the black box stating he had seen MCCAIN from the bridge. But AB Ambrocio also needed to steer at the helm. His split responsibilities meant there was effectively no lookout on the tanker under COLREGS Rule 5. *See Elenson v. SS FORTALEZA*, No. 90 Civ. 0437 (RWS), 1991 WL 254571, at *6 (S.D.N.Y. Nov. 21, 1991) ("It is axiomatic that 'an inefficient lookout is equivalent to none.' . . . [O]ne who is assigned the duties of helmsman is not a proper person to act as a lookout.") (quoting *Interstate Towing Co. v. Stissi*, 717 F.2d 752, 755 (2d Cir. 1983)); *Grancolombiana*, 440 F. Supp. at 714 (lookouts must have no other duties to perform).

155. Instead, if the fifth crewmember, OS Secang, had been on the bridge—as his handwritten statement falsely claimed—he would have served as the lookout. His job would have been to identify dangers from nearby vessels to fill the gaps in observation left by equipment such as radar and ARPA. *See* COLREGS Rule 7(a) ("Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist."); *id.* Rule 7(c) ("Assumptions shall not be made on

[20] The Petitioner's shipboard operations expert testified that, in his experience, it would be typical to have the captain, the mate on watch, and a lookout (three crewmembers) on the bridge while transiting the Singapore Strait. *See* Trial Tr. (Hight) at 553:2-8. To the extent this custom would set a standard of care despite Stealth's own rules about having five crewmembers, the Court finds this testimony unpersuasive. And given AB Ambrocio's split responsibilities, ALNIC did not even have a dedicated lookout on watch, as the expert's purported custom would require.

the basis of scanty information, especially scanty radar information."). With OS Secang nowhere to be found, ALNIC's bridge was ill-equipped to respond to a sudden turn by MCCAIN.

156. Understaffing ALNIC's bridge was a proximate cause of the collision. *See The Dream Star* at [130]. The Petitioner's arguments to the contrary are not persuasive. For example, the Petitioner maintains that even a fully staffed bridge would not have had time to respond to MCCAIN's sudden turn. *See* Trial Tr. (Petitioner's Opening Statement) at 31:13-32:4. After all, Captain Nolasco had selected MCCAIN as a target on ARPA minutes before the collision, and both he and AB Ambrocio were heard discussing the destroyer on the black box. However, it is "self-evident" that more crewmembers on ALNIC's bridge would allow for better real-time observation of MCCAIN, both visually out the window and on radar. *Afran Transp. Co. v. The Bergchief*, 170 F. Supp. 893, 900 (S.D.N.Y. 1959), *aff'd*, 274 F.2d 469 (1960); *see also The Koscierzyna* [1996] 2 Lloyd's Rep. 124, 129 (overtaken vessel was 15% at fault for not continuously watching another vessel that crashed into its stern); *The Iran Torab* [1988] 2 Lloyd's Rep. 38, 43 ("If such a look-out had been kept it would soon have become apparent that the distance between the two ships was being reduced."); *Complaint of G & G Shipping Co., Ltd. of Anguilla*, 767 F. Supp. 398, 408 (D.P.R. 1991) (rejecting argument that "another pair of eyes" on the bridge would not have helped prevent a collision when the dedicated lookout was absent). With better focus on MCCAIN's erratic course, ALNIC could have slowed earlier as the destroyer approached. And the earlier ALNIC managed to slow, the less damage she would cause.

157. Several examples help illustrate the consequences of the missing anti-collision officer and lookout. For one, if AB Ambrocio had been able to focus solely on manual steering, rather than splitting his attention towards looking out for other vessels, ALNIC's ability to maneuver would have improved. There would have been no need to rely on autopilot, and the tanker could have executed

the swerving maneuver that Captain Putty testified was feasible. The risk of ignoring steering was precisely why Bridge Manning Level III required the helmsman and lookout to be separate, dedicated roles. *See* Ex. 9B at 21 (requiring that a "lookout having no other duties must be posted" in the Singapore Strait), *id.* at 28 (requiring "Manual Steering" while at Bridge Manning Level III), *id.* at 31 ("Helmsmen shall have no other duties when assigned to the helm.").

158. Another example: minutes before the collision, MCCAIN announced "loss of steering" over her external microphones. Even if the Petitioner is correct that no one from inside ALNIC's bridge heard that announcement, a proper lookout who was monitoring the wings outside the bridge might have. *See Maritime & Mercantile*, 2007 WL 690094, at *21 ("[W]hile it may be that a lookout might not have *seen* the YUKON in the fogged-in channel any better on the bow than from the wheelhouse, he at least might have *heard* the YUKON's horn better from the bow.") (emphasis in original) (citations omitted). And it would have been especially prudent to post a lookout outside of the bridge given the pre-dawn darkness and the stem-to-stern traffic in the Strait. *See id.*; *see also The Ottawa*, 70 U.S. 268, 273 (1865) (the bridge "in the night time, especially if it is very dark, and the view is obstructed, is not the proper place" for a lookout); *Arabian Am. Oil Co. v. Hellenic Lines, Ltd.*, 633 F. Supp. 659, 668 (S.D.N.Y. 1986) ("In the widely-known hazardous circumstances under which the [cargo ship] was navigating . . . failure to post a lookout on the bow was imprudent and negligent."). MCCAIN's announcement about loss of steering, made over two-and-a-half minutes before the collision, would have been yet another warning sign for ALNIC to take early action. But with an understaffed bridge, that warning went unheeded.

**B. ALNIC Failed to Take Any Action to Avoid the Collision**

159. The failure to properly staff the bridge compounded ALNIC's second negligent act: her failure to slow or turn away from MCCAIN. Taking no action to avoid the collision violated COLREGS Rule 17.

160. COLREGS Rule 17 provides three tiers of instructions to avoid a collision for an overtaken (or stand-on) vessel like ALNIC. The rule provides in relevant part:

> (a) (i) Where one of two vessels is to keep out of the way the other shall keep her course and speed.
>
> (ii) The latter vessel may however take action to avoid collision by her maneuver alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules.
>
> (b) When, from any cause, the vessel required to keep her course and speed finds herself so close that collision cannot be avoided by the action of the give-way vessel alone, she shall take such action as will best aid to avoid collision.

Note the use of the permissive "may" in Rule 17(a)(ii) versus the mandatory "shall" in Rule 17(b).

161. Reading these subrules together, ALNIC had a baseline duty under Rule 17(a)(i) to maintain course and speed as MCCAIN passed by. That way, ALNIC would remain predictable to vessels attempting to maneuver around it. But Rule 17(a)(ii) gave ALNIC latitude to maneuver once it became apparent that MCCAIN was "not taking appropriate action" under the COLREGS—for instance, by heading towards ALNIC at close quarters. And finally, once ALNIC found "herself so close that collision" could not be avoided by MCCAIN alone, Rule 17(b) required ALNIC to "take such action as will best aid to avoid collision."

162. Using this three-tier framework, the Court must determine at what time(s) ALNIC's ability to maneuver became permissive under Rule 17(a)(ii), and then mandatory under Rule 17(b).

163. The Court concludes ALNIC was free to maneuver under Rule 17(a)(ii) once MCCAIN's red-over-red lights were energized at 5:21:25. That visible signal gave clear warning to a prudent mariner that MCCAIN had lost control and would be unable to avoid ALNIC.[21] And ALNIC had plenty of time—2 minutes and 33 seconds at that point—to slow or turn.

164. At some point in those next 2 minutes and 33 seconds, a prudent mariner on ALNIC would have slowed. Again, slowing under Rule 17(a)(ii) is permissive. But Rule 17(a)(ii) is compounded by Rules 2 and 8. Rule 2(b) allows a vessel to "make a departure from" the COLREGS "as necessary to avoid an immediate danger." Rule 2(b) thus provides "an inherent flexibility to meet particular dangers and special circumstances," even for overtaken vessels which are expected to remain predictable. *Evergreen Marine* at [67]. Likewise, Rule 8(a) requires that actions to avoid collision be "made in ample time and with due regard to the observance of good seamanship." Thus, the Court concludes Rule 17(a)(ii) gave ALNIC more flexibility to begin precautionary maneuvers—always with an eye towards the polestar of good seamanship—than the Petitioner contends. *See id.* at [61]–[62].

165. Furthermore, to buy time when a collision risk is unclear, COLREGS Rule 8(e) requires a vessel like ALNIC to "slacken her speed or take all way off by stopping or reversing her means of propulsion." After all, since navigational rules like the COLREGS "are designed to prevent the risk of collision as well as collision itself, it is not necessary for a collision to be

[21] The Petitioner argues MCCAIN was never actually "not under command" under COLREGS Rule 3(f) because her crew could have pressed a button to regain control of steering at any time. But even assuming MCCAIN energized her red-over-red lights when she should not have, that would not detract from ALNIC's imprudent response to those lights. *See The Djerada* [1976] 2 Lloyd's Rep. 40, 44 ("[T]he rule is express that the condition of hoisting the [not under command] black shapes is the fact and not the opinion of the fact."); *The "Samco Europe" and "MSC Prestige"* [2011] 2 Lloyd's Rep. 579, 585 (the duty to navigate around a nearby vessel is judged from an objective, not subjective, standpoint). Any reasonable mariner would have reacted with extreme caution to a fast-approaching destroyer broadcasting that it was not under command.

imminent or even probable before the obligation imposed by them accrues." *Ocean Marine Ltd. v. U.S. Lines Co.*, 300 F.2d 496, 499 (2d Cir. 1962) (footnote omitted). With less than half of a nautical mile between the tanker and the destroyer, a risk of collision should have been assumed. *Cf. In re Nat'l Shipping Co. of Saudi Arabia*, 147 F. Supp. 2d 425, 437 (E.D. Va. 2000) (risk of collision existed between two vessels 4.5 miles apart).

166. The Court "recognizes that hindsight is 20/20" and cannot fault ALNIC for refusing to slow the instant that Rule 17(a)(ii) kicked in. *Maritime & Mercantile*, 2007 WL 690094, at *27; *see also The Aracelio Iglesias* [1968] 2 Lloyd's Rep. 7, 13 (similar admonition under British admiralty law). But even affording ALNIC reasonable latitude, it is undisputed she took virtually no action—merely slowing a few RPMs, seconds before impact—during her two-and-a-half-minute window of opportunity. *See Complaint of Potomac Transp. Inc.*, 741 F. Supp. 395, 403 (S.D.N.Y. 1989) (Rule 8(e) required vessel to slacken speed after radar plotting confirmed a collision risk); *aff'd in relevant part*, 909 F.2d 42 (2d Cir. 1990). Instead, by barreling ahead at the same speed, ALNIC "forfeited valuable time and sea space" that she could have used to avoid the collision. *Maritime & Mercantile*, 2007 WL 690094, at *27.

167. Whatever the grey area under Rule 17(a)(ii), the Court concludes Rule 17(b) *required* ALNIC to act by 5:23:17. That was the moment when a member of ALNIC's crew determined MCCAIN was doing the "wrong maneuver." By that point—41 seconds before the collision—it should have been clear to everyone that MCCAIN could no longer avoid the collision by her actions alone. The warning signs had piled up: MCCAIN's red-over-red lights had been visible for almost a minute, her radar trail had continuously curved to the point where the turn into ALNIC's path was obvious, *see* radar image *supra* ¶ 97, the collision alarm had sounded (and been silenced), and ALNIC's crew were themselves aware that something "wrong" was happening. With MCCAIN's

broadside seconds away from being dead ahead, ALNIC needed to take action to avoid the collision. *See, e.g.*, *Crowley Marine Servs., Inc. v. Maritrans, Inc.*, 530 F.3d 1169, 1177 (9th Cir. 2008); *Nat'l Shipping Co. of Saudi Arabia*, 147 F. Supp. 2d at 440.

168. As the Court found above, ALNIC certainly could have done something in those 41 seconds. A combination of slowing and turning the tanker would have meaningfully mitigated the collision by reducing the force of impact and avoiding a T-bone.[22] *See supra* ¶¶ 119–121; *Matter of Hellenic Lines, Ltd.*, No. 81-529-N, 1982 WL 579, at *12 (E.D. Va. Nov. 17, 1982) (turning to port in final minute before collision was reasonable because alternative was to strike "hard at a right angle" and cause greater damage). Instead, ALNIC dallied in autopilot and failed to take any action at all; that choice was negligent. *See The New York*, 175 U.S. at 207.

169. Rule 17(b) still required ALNIC to react even if a collision was inevitable within those 41 seconds. Experts on both sides agreed on a vessel's duty to mitigate damage from a collision. *See* Trial Tr. (Putty) at 339:19-25 ("I think you would probably have to try to make a hard port maneuver and hope that you just maintain some sort of a glancing blow."); *id.* (Hight) at 500:4-7 ("If you know there is going to be a collision . . . you are bound by the rules to do something, something."). To excuse ALNIC's failure to take any action before the collision would allow overtaken vessels to steam, with absolute impunity, into other vessels. *Cf. Crowley Marine*, 530 F.3d at 1177. The COLREGS cannot be wielded in that way.

[22] One group of Sailor-Claimants argues that ALNIC's failure to slow or turn was especially damaging because it caused her to hit Berthing 5, where sailors were sleeping, as opposed to an area where sailors were not located. *See* ECF No. 364 at 1–2. The Court refuses to speculate about the better—or worse—locations that ALNIC could have hit. From the tanker's perspective, it would not have been clear what areas on the destroyer were deadly to hit and which were not. For example, if ALNIC had hit an area with explosive munitions, it is possible that the damage to both vessels (and the loss of life) would have been even greater. But the Court does agree, as witnesses for both sides testified, that a general glancing blow would have reduced the damage to MCCAIN.

### C. ALNIC Failed to Take Any Meaningful Action After the Collision

170. ALNIC's most inexcusable fault, though, was her failure to do anything to mitigate the damage after colliding with MCCAIN. Again, COLREGS Rule 17(b) requires vessels to mitigate collisions, not just avoid them. *See* Trial Tr. (Putty) at 339:9-13 ("[Y]ou have to take action to prevent extreme damage to both vessels and potential loss of life."). Yet ALNIC negligently left her engines running for 42 seconds after the collision and left her autopilot on for over a minute.

171. These two oversights substantially worsened the collision. Combined with the engine propulsion, expert testimony demonstrated how the autopilot steering caused ALNIC to sweep her bow over 45 degrees through MCCAIN's Berthing 3 and 5 for over a minute. This additional contact between the vessels increased the damage to MCCAIN and the potential loss of life in the berthing areas as sailors remained trapped in flooding compartments.

172. ALNIC's post-collision failures contrast starkly with the urgent—and in some cases, heroic—efforts made aboard MCCAIN in the immediate aftermath of the crash. While ALNIC was still in autopilot, propelling herself into MCCAIN, the destroyer's crew attempted to separate the two ships, call off-duty sailors to action, and begin damage control and rescue efforts. From Commander Sanchez's efforts to expediently steward the destroyer to port, to Warrant Officer Patat and Petty Officer Brown's resourceful sealing of the hatch, the MCCAIN crew's post-collision actions almost certainly saved lives and prevented further damage to both ships.

173. The Petitioner did not muster much of an explanation for ALNIC's post-collision inaction. The Petitioner's shipboard operations expert opined that Captain Nolasco left the engine running because he thought he had already stopped it (which would itself be a blunder). *See* Trial Tr. (Hight) at 543:16-544:4. Similarly, the expert considered leaving the autopilot on after the collision an "oversight," and insisted there would be "more important things on [Captain Nolasco's] mind than

the fact that the ship was in autopilot." *Id.* at 543:2-15. Whatever those other thoughts on Captain Nolasco's mind, they were not identified at trial, and it is difficult to see how any would be more important than preventing ALNIC from gashing further into, and across, MCCAIN. *See The Mount Apo* at [212] (finding "inexplicable" a captain's failure to stop the engine for almost three minutes until he was reminded to do so by a crewmember).

**D. ALNIC's False Logs and Statements Enhanced its Fault**

174. To the extent the Court is wary of judging ALNIC too harshly for decisions made *in extremis*,[23] the crew's subsequent coverup confirms the apportionment of ALNIC's fault. Those false logs and statements "impede[d] civil and criminal investigations into the cause of the collision" and threatened the integrity of this litigation, especially given admiralty law's heavy reliance on the accuracy of logbooks. *Otal II*, 494 F.3d at 58.

175. To be sure, the creation of false logs had no causative effect on a collision that had already taken place. And the Petitioner has long since admitted the falsities, lessening their poisonous effect on the evidence presented at trial (much of which was undisputed).[24] *See* ECF No. 221 at n.4. But "although the alterations of the logbooks obviously did not 'cause' the collision, the fact of the alterations has relevance to the ultimate allocation of liability for damages." *Otal II*, 494 F.3d at 58 (cleaned up). The Second Circuit has been forceful in sanctioning this type of bad faith:

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[23] The term *in extremis* describes "a vessel put in sudden peril through no fault of her own," whose crew must confront "a hard choice between competing courses [that must] be immediately made." Schoenbaum at § 14:3 (footnotes omitted). Decisions made by a crew *in extremis* are afforded extra latitude in hindsight. *See, e.g.*, *The Frosta* [1973] 2 Lloyd's Rep 348, 356; *Cuba Distilling Co v. Grace Line, Inc.*, 143 F.2d 499, 499 (2d Cir. 1944).

[24] The Court has, however, given weight to the false logs when finding that MCCAIN properly energized her red-over-red lights. *See supra* ¶ 87. This was one of the few evidentiary questions that were disputed at trial, because the black box did not record the view from ALNIC's bridge. *See* Trial Tr. (Putty) at 350:7-9. If ALNIC's crew had no qualms about falsifying so many other records, the Court imagines they had no difficulty lying about what lights they saw over on MCCAIN either.

> Our admiralty jurisprudence is especially sensitive to the unexplained alteration of logbooks. Where a logbook is altered, we "cannot avoid the conclusion that it had been dressed up to excuse the ship's faults." Such alterations should give rise to a presumption the logbook contained entries adverse to the vessel's contentions at trial. The inference "goes much further than merely to discredit the document itself; it is positive evidence upon the very issue" of liability.

*Id.* (quoting *The Glasgow Maru*, 102 F.2d 450, 453 (2d Cir. 1939) (Learned Hand, J.)).

176. Thus, the false statements are positive evidence of the ALNIC crew's consciousness of guilt. Those logs underscore the culpability of the crew by suggesting they knew the proper standard of care for navigating the Singapore Strait after all. By claiming they had posted an extra lookout, never relied on autopilot, and slowed the vessel minutes before the collision, ALNIC's crew spotlighted the exact errors they had committed. For example, as Captain Nolasco later confessed, the crew claimed to have stopped the engine two minutes before the collision because they believed stopping could have prevented the collision and would have been consistent with the COLREGS. *See* Ex. 3047 (Nolasco Dep. Tr.) at 155:18-156:25, 162:4-24. These alterations bolster the conclusion that ALNIC's crew "dressed up" the logs to "excuse the ship's faults." *Otal II*, 494 F.3d at 58.

## IX. Limitation of Petitioner's Liability

177. Even though the Petitioner faces liability for 20% of the collision, it could still limit that liability. Recall that as the owner of ALNIC, the Petitioner began this case by petitioning to limit or exonerate its liability under the Limitation of Liability Act, 46 U.S.C. § 30501 *et seq*. "The animating premise of the" Limitation of Liability Act "is that the owner of a vessel is generally an absentee who entrusts the vessel to the command of a captain whom the owner has limited ability to supervise or control once the vessel is on the sea." *Bensch v. Est. of Umar*, 2 F.4th 70, 73 (2d Cir. 2021). Pursuant to the statute, "[i]nstead of being vicariously liable for the full extent of any injuries caused by the negligence of the captain or crew employed to operate the ship, the owner's

liability is limited to the value of the ship," and pending freight, "unless the owner himself had 'privity or knowledge' of the negligent acts." *In re City of New York*, 522 F.3d 279, 283 (2d Cir. 2008); 46 U.S.C. § 30505(a). "The Act thus protects the owner of a vessel from unlimited vicarious liability for damages caused by the negligence of his captain or crew." *Tandon v. Captain's Cove Marina of Bridgeport, Inc.*, 752 F.3d 239, 244 (2d Cir. 2014). The Court applies this federal law of the forum, rather than Singapore law, for the limitation of liability analysis. *See The Titanic*, 233 U.S. 718, 731–33 (1914).

178. Here, the Petitioner could potentially limit its liability to the value of ALNIC and her freight, which the parties have stipulated is $16,768,480. If liability were limited, the Claimants would only be able to recover *pro rata* from that limitation fund. *See* 46 U.S.C. § 30507. But on the other hand, if the Petitioner had "privity or knowledge," its liability "for the full extent" of any damages will be unlimited. *City of New York*, 522 F.3d at 283; 46 U.S.C. § 30505(b).

**A. Limiting Liability: The Two-Step Framework**

179. The Court's analysis under the Limitation of Liability Act proceeds in two steps. *See Otal Invs. Ltd. v. M/V CLARY*, 673 F.3d 108, 115 (2d Cir. 2012) ("*Otal IV*").

180. At step one, a claimant must prove negligence by the vessel whose owner seeks to limit liability. "If there was no fault or negligence for the shipowner to be 'privy' to or have 'knowledge' of within the meaning of the statute, there is no liability to be limited, and the owner would then be entitled to exoneration." *In re Complaint of Messina*, 574 F.3d 119, 126–27 (2d Cir. 2009) (cleaned up). The Claimants have met their burden at step one; as discussed above, the Court has allocated 20% of the liability for the collision to ALNIC. Thus, the Petitioner's attempt to limit its liability hinges on step two.

181. At step two, the burden shifts to the owner to prove it lacked privity or knowledge of the negligence aboard its vessel. Where the owner is a corporation like the Petitioner here, privity or knowledge includes that of a "managing agent, officer, or supervising employee" of the vessel. *Otal IV*, 673 F.3d at 115 (quotation marks and citations omitted); *see also Nat'l Shipping Co. of Saudi Arabia*, 147 F. Supp. 2d at 444 n.8 ("The term 'shipowner,' as used in the statute, has been construed to include a ship management company responsible for the operation of the vessel.") (citing *In re Chesapeake Shipping, Inc.*, 803 F. Supp. 872, 874–75 (S.D.N.Y. 1992)). Thus, because Stealth had been delegated managing responsibility for ALNIC, the Court looks to Stealth's privity or knowledge as a proxy for the Petitioner. *See Cont'l Oil Co. v. Bonanza Corp.*, 706 F.2d 1365, 1376–77 (5th Cir. 1983) (collecting cases where privity or knowledge was imputed from agent to owner, when owner had delegated "so much autonomy in the management of the vessel" to the agent).

182. "Privity or knowledge can be actual or constructive," and is present where "the exercise of reasonable diligence could have prevented the commission of the act." *Otal IV*, 673 F.3d at 115 (quotation marks and citations omitted). Thus, the key question for limiting liability "is not what the corporation's officers and managers actually knew, but what they objectively ought to have known." *In re Moran Towing Corp.*, 984 F. Supp. 2d 150, 180 (S.D.N.Y. 2013) (quoting *In re Patton-Tully Transp. Co.*, 797 F.2d 206, 211 (5th Cir. 1986)).

183. Courts typically find an owner cannot limit its liability when it fails to implement or monitor established safety procedures. *See* Schoenbaum at § 15:8. "If an injury occurs as a result of a shipowner's failure to use 'due and proper care to provide a competent crew,' that negligence is necessarily 'within the owner's privity.'" *Moran Towing*, 984 F. Supp. 2d at 180 (quoting *Messina*, 574 F.3d at 127). "Where human error . . . is involved, it is exceedingly rare to

grant exoneration." Schoenbaum at § 15:8 (citing *Matter of Oil Spill by Amoco Cadiz*, 954 F.2d 1279 (7th Cir. 1992)).

**B. The Petitioner Has Not Met Its Burden to Limit its Liability**

184. The Petitioner has failed to prove that it (or its managing agent, Stealth) lacked privity or knowledge of ALNIC's negligence. Quite the opposite: the Petitioner's privity or knowledge was established through well-documented concerns about the risky behavior aboard ALNIC.

185. Stealth knew about ALNIC's deficient staffing practices. Both times that Captain Zisimos, the Stealth Marine Superintendent, was aboard the tanker for an inspection in the Singapore Strait, the bridge was understaffed. *See Complaint of Delphinus Maritima, S.A.*, 523 F. Supp. 583, 594 (S.D.N.Y. 1981) (finding "actual notice" where owner's representative observed an understaffing problem but took no action while "on board to protect the owner's interest"). He also reviewed—or should have reviewed—the logs and charts confirming ALNIC's crew had routinely understaffed the bridge in the past as well. *See Waterman S. S. Corp. v. Gay Cottons*, 414 F.2d 724, 739 (9th Cir. 1969) (shipowner "cannot close its eyes to what prudent inspection would disclose," including with navigational charts). As the auditor responsible for ensuring ALNIC operated safely, the Marine Superintendent's knowledge is imputed to Stealth, and by extension, to the Petitioner. *See Otal IV*, 673 F.3d at 115; *Cont'l Oil*, 706 F.2d at 1376–77.

186. That information was relayed up the corporate chain. After completing his inspection, the Marine Superintendent warned higher-ups at Stealth, including the Safety Manager and Crewing Manager, about understaffing and other issues he had uncovered during his audit, including his more general concerns about the crew's ability to navigate safely. Moreover, the Marine Superintendent falsified a safety audit to avoid scrutiny by third parties. This false audit is further evidence that Stealth knew that ALNIC's carelessness could lead to trouble, or at the

very least, that it had delegated responsibility to a feckless superintendent—the "negation of good management." *The Lady Gwendolen*, [1965] P. 294, 346.

187. Based on the wealth of information concerning ALNIC's deficiencies, the Court concludes the Petitioner had actual privity and actual knowledge of the tanker's safety problems. The Petitioner, through Stealth, had two months to implement the Marine Superintendent's recommendation to send someone to conduct remedial training for the tanker's crew. Absent that training, the Petitioner should have foreseen the crew would continue to violate the COLREGS by failing to post a lookout or use hand steering. *See In re Otal Invs. Ltd.*, No. 03 Civ. 4304 (HB), 2013 WL 6645438, at *8 (S.D.N.Y. Dec. 17, 2013) (declining to limit liability where "reasonable measures to discover the improper lookout practice were available but not taken" by the shipowner).

188. The Petitioner nonetheless declined to implement remedial measures prior to the collision voyage. Instead, it allowed ALNIC—one of the worst vessels the Stealth Marine Superintendent had ever audited—to again travel through one of the busiest shipping lanes in the world. On that ground, the Petitioner will not be limited in its liability for ALNIC's negligent acts. *See, e.g.*, *Potomac Transp.*, 909 F.2d at 46 (no limitation of liability where shipowner failed to ensure watch compliance, and therefore failed to "ensure that the vessel was being operated in a manner consistent with statutory rules and reasonable judgment"); *Hercules Carriers*, 768 F.2d at 1576–77 (no limitation of liability where shipowner either (1) made no effort to train crew in safe operation of vessel or (2) authorized the crew to ignore regulations and safety manuals).

189. Privity or knowledge is further bolstered in the context of the Sailor-Claimants' claims. For personal injury or wrongful death claimants, the Limitation of Liability Act broadens exposure by imputing the privity or knowledge of the vessel's captain "at or before the beginning

of each voyage" to the owner. 46 U.S.C. § 30506(e).[25] Here, Captain Nolasco clearly planned to understaff ALNIC's bridge on the morning of the collision. He adopted the voyage plan submitted by his navigator prior to commencement of the voyage from Taiwan, and that plan called for navigating the Singapore Strait at Bridge Manning Level II rather than III as required. The Captain's voyage plan provides an additional reason why liability will not be limited.

190. Despite the knowledge of these agents and employees, the Petitioner argues that a shipowner can still limit its liability when a collision results from instantaneous problems that the far-away owner had no reason to anticipate. *See Hellenic Lines, Ltd. v. Prudential Lines, Inc.*, 813 F.2d 634, 638–39 (4th Cir. 1987). To the extent the Petitioner rehashes the argument that ALNIC would not have reacted any differently during the collision even if she had been fully staffed, the Court has rejected that argument in the fault analysis, *supra* ¶ 156. And in any event, the Petitioner failed to correct the understaffed bridge for months before the collision, which undermines any suggestion that ALNIC's mistakes were only made *in extremis*. *See Interstate Towing*, 717 F.2d at 755 (if the shipowner, "by prior action or inaction set into motion a chain of circumstances which may be a contributing cause even though not the immediate or proximate cause of a casualty, the right to limitation is properly denied"). The evidence is clear that the Petitioner had privity or knowledge of the problems aboard ALNIC that contributed to the collision. Accordingly, its petition to limit its liability is denied.

[25] This special provision does not apply to "tank vessels," 46 U.S.C. § 30506(a), and as an oil tanker, ALNIC would seem to fall squarely within that definition. However, the Second Circuit has concluded the term "tank vessels" does not include ocean-going vessels like ALNIC. *See Petition of The A. C. Dodge, Inc.*, 282 F.2d 86, 89 (2d Cir. 1960). The Second Circuit looked to the legislative history of the Limitation of Liability Act to conclude that "tank vessels" only includes harbor or river-type vessels. *Id.*; *see also Matter of Talbott Big Foot, Inc.*, 854 F.2d 758, 761 (5th Cir. 1988); *Petition of Panama Transp. Co.*, 73 F. Supp. 716, 717 (S.D.N.Y. 1947).

## X. Damages

191. The Petitioner and the United States have stipulated to the damages their vessels sustained from the collision, excluding interest. *See* ECF No. 310-1. The United States suffered $185,000,000 in damages to MCCAIN, whose repairs took 450 days. The Petitioner suffered $442,445 in damages to ALNIC, whose repair period is unknown.

192. As with liability, the Court has held that Singapore law governs the calculation of damages in this case. *See* ECF No. 247 at 1. Under Singapore law, the Court awards damages in proportion to each party's allocation of liability. *See supra* ¶ 132. Those damages are then offset. *See The Dream Star* at [134]. Accordingly, the United States shall recover 20% of its $185,000,000 in damages and the Petitioner shall recover 80% of its $442,445 in damages, with those damages offset.

193. The Court acknowledges the counterintuitive reality that the United States shall recover the greater amount in damages despite bearing most of the responsibility for the collision. That reality arises out of "the peculiar nature of the vessel struck—a fragile [destroyer] of the United States Navy." *Nat'l Shipping Co. of Saudi Arabia v. United States*, 95 F. Supp. 2d 482, 495–96 (E.D. Va. 2000). But while providing a larger award to the more culpable party might appear "somewhat inequitable," that inequity "is illusory, because the relative fault of the parties has already been taken into consideration" when apportioning liability. *Id.* (quoting *City of Milwaukee v. Cement Division, Nat. Gypsum Co.*, 515 U.S. 189, 198 (1995)).

## XI. Pre-Judgment Interest

194. Because pre-judgment interest presents a question of substantive law, the Court again looks to Singapore law. *See Schwimmer v. Allstate Ins. Co.*, 176 F.3d 648, 650 (2d Cir. 1999). Although Singapore courts have discretion in awarding interest, they typically do so at a

rate of 5.33% per annum. *See* Chief Justice of Singapore, Practice Dir. No. 1 (2007); ECF No. 323-2 (Kuek Report) ¶¶ 165–68.

195. The parties dispute the proper date(s) to begin calculating pre-judgment interest. Singapore courts generally view the starting date as either the date losses are accrued, or the date proceedings are commenced. *See Friis v. Casetech Trading Pte Ltd* [2000] 2 SLR(R) 511. Between these two starting dates, the Court of Appeal of Singapore has instructed that courts should presumptively look to the date losses are accrued. *See id*. at [48]–[49].

196. For the United States, the Court selects the midpoint of MCCAIN's stipulated 450-day repair period (April 3, 2018) as the date losses were accrued. That midpoint date accounts for the fact that the United States' damages were incurred on a rolling basis. *See* Trial Tr. (Overbaugh) at 458:1-6. Accordingly, the United States' claim for pre-judgment shall run at a rate of 5.33% per annum from April 3, 2018 to the date of this Opinion.

197. The Petitioner's pre-judgment interest began to run on a different date. Unlike the United States, the Petitioner did not put on a case about its own pre-judgment interest, so the Court does not know the length of ALNIC's repair period or when exactly the Petitioner's losses accrued. The Court thus looks to the alternative starting date under Singapore law: the date when Petitioner commenced these proceedings (February 15, 2018). The Petitioner's claim for pre-judgment interest shall run at a rate of 5.33% per annum from February 15, 2018 to the date of this Opinion.

## XII. Phase II of Proceedings

198. Having concluded that the Petitioner shall not be exonerated from liability, the wrongful death and personal injury claims by the Sailor-Claimants against the Petitioner shall proceed in Phase II.

199. The Court reserves decision on two issues that were not relevant to the Phase I trial. First, the Court reserves decision on whether the Petitioner may seek contribution and/or indemnity from the United States in Phase II. The Court accordingly retains jurisdiction over the United States as a party until that issue is resolved. Second, the Court reserves decision on whether the Sailor-Claimants have a right to a jury trial in Phase II.

## CONCLUSION

200. The Court **DENIES** Petitioner Energetic Tank's petition for limitation of liability.

201. The Court **DENIES** the Petitioner's petition for exoneration and **APPORTIONS** 80% of fault to the United States (for MCCAIN) and 20% of fault to the Petitioner (for ALNIC). Accordingly, the Court finds the Petitioner liable to the United States in the amount of $37,000,000 (20% of MCCAIN's stipulated damages of $185,000,000), minus $353,956 (80% of ALNIC's stipulated damages amount of $442,445). Net payment on principal damages is to be made by the Petitioner to the United States for $36,646,044.

202. Pre-judgment interest on the United States' principal damages of $37,000,000 from the mid-point of repair (April 3, 2018) until the date of this Opinion is $8,293,626. Pre-judgment interest on the Petitioner's principal damages of $353,956 from the date of writ (February 15, 2018) until the date of this Opinion is $81,769. Net payment on pre-judgement interest is to be made by the Petitioner to the United States for $7,939,670.

203. Any objections to the Court's calculations of damages and pre-judgment interest shall be made by July 15, 2022. If no objections are filed, the Petitioner shall pay to the United States the sum of the net totals for principal damages and pre-judgment interest, $44,585,714, plus post-judgment interest.

204. Trial shall proceed to the Phase II claims by the personal injury and wrongful death Claimants in accordance with further orders to be issued by the Court.

Dated: New York, New York
June 15, 2022

SO ORDERED

Paul A Crotty

HONORABLE PAUL A. CROTTY
United States District Judge