Neutral Citation Number: [2026] EWHC 1685 (Comm)

Case No: CL-2024-000094

IN THE HIGH COURT OF JUSTICE
KING'S BENCH DIVISION
BUSINESS AND PROPERTY COURTS OF ENGLAND AND WALES
COMMERCIAL COURT

Royal Courts of Justice, Rolls Building
Fetter Lane, London, EC4A 1NL

Date: 6 July 2026

Before :

DAME CLARE MOULDER DBE
Sitting as a Judge of the High Court

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Between :

Nord Stream AG	**Claimant**
- and -	
(1) Lloyd's Insurance Company S.A **(on its own behalf and on behalf of all insurers subscribing to the Offshore Operating All Risks policy with unique market reference number B1526ENNMG1900542, the insurer subscribing to Offshore Operating All Risks policy with unique market reference number B1526ENNMG1900745, and all primary Section I Property Damage and Section II Terrorism insurers subscribing to the declaration with unique market reference B080114454J19 (as extended by endorsement) attaching to delegated underwriting contract numbers B080110351J19, B080110351J20, B080110351J21, and B080110351J22)** **(2) Arch Insurance (EU) DAC** **(on its own behalf and on behalf of all insurers subscribing to the excess Offshore Operating All Risks policy with unique market reference number B1526ENNMG1900177, and all excess Section I Property Damage and Section II Terrorism insurers subscribing to the declaration with unique market reference B080114454J19 (as extended by endorsement) attaching to delegated underwriting contract numbers B080110351J19, B080110351J20, B080110351J21, and B080110351J22)**	**Defendants**

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Paul Stanley KC, Alexander Macdonald, Ben Cartwright (instructed by **Herbert Smith Freehills Kramer LLP**) for the **Claimant**
Simon Salzedo KC, Alec Haydon KC, Michael Bolding, Chintan Chandrachud (instructed by **Clyde & Co LLP**) for the **Defendants**

Hearing dates: 16; 21 to 23; 28 to 30 April 2026; 5; 11 to 13; 19 to 21 May 2026

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Approved Judgment

This judgment was handed down remotely at 10am on 6th July 2026 by circulation to the parties or their representatives by e-mail and by release to the National Archives.

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Dame Clare Moulder DBE :

Introduction

1. The Claimant is the operator of two natural gas pipelines in the Baltic Sea ("NS1 Line 1" and "NS1 Line 2", together the "Pipelines").
2. The Defendants are insurance companies. The First Defendant is sued on its own behalf and as the representative of the other primary layer insurers. The Second Defendant is sued on its own behalf and as the representative of the other excess layer insurers.
3. On or about 26 September 2022, NS1 Line 1 and NS1 Line 2 were damaged by explosions at locations about 6.5 km apart (the "Explosions/Rupture Damage") and rendered inoperable.
4. NS1 Line 2 was also damaged in the form of an indentation (the "Dent") although the date of the damage is in dispute. The Defendants' case is that the Dent was caused by an explosion on or about 26 September 2022 as part of the same attack that caused the Explosions/Rupture Damage.
5. References in this judgment to the "Sabotage" or the "Attacks" are to the attacks that caused the Explosions/Rupture Damage and where the context admits, the attacks that are alleged to have caused the Dent. Similarly references in this judgment to the "Damage" are to the Rupture Damage and, where the context admits, the Dent.
6. The Defendants' case in essence is that any claim for the Damage is excluded under the express exclusions in the policies either as being occasioned by the war between Russia and Ukraine that began on or around 24 February 2022 (the "War") or caused by the act of a state or caused by the act of a state.

Background

7. There are two sets of pairs of pipelines that run from Russia through the Baltic Sea to Germany. NS1 Line 1 and NS1 Line 2 are owned by the Claimant, a Swiss Company, owned as to 51% by a Gazprom entity, and Nord Stream 2 ("NS 2"), Lines A and B are understood to be owned by Nord Stream 2 AG (a wholly-owned subsidiary of Gazprom). References in this judgment to the "pipelines" are to the Pipelines and to NS 2.
8. NS1 Line 2 is to the south/east of NS1 Line 1.
9. Construction of the Pipelines began in April 2010. NS1 Line 1 became operational in November 2011. NS1 Line 2 became operational in October 2012.
10. The pipeline is constructed of a series of sections of pipe welded together. Each section of pipe is approximately 12.2m in length. A "field weld" or "field joint" refers to the circumferential welds connecting one section of pipe to the next. Each section of pipe also has a longitudinal welded seam that runs the length of each section of pipe, which joins the edges of a steel plate that has been rolled into a cylindrical shape during the manufacturing process.
11. On 26 September 2022 at 02:03 (CEST), there were seismic signals detected in relation to NS 2 Line A southeast of Bornholm in the Exclusive Economic Zone ("EEZ") of Denmark.
12. On 26 September 2022 at 19:03 (CEST), seismic signals were registered from an area northeast of Bornholm. These corresponded to explosions on the Pipelines.
13. It is agreed between the experts that some type of directional (i.e. shaped) charge was used. The explosives were RDX based.

14. It is also common ground that the explosions rendered 3 out of the 4 pipelines (NS1 Line 1 and Line 2, and NS2 Line A) inoperable. It is also agreed that NS2 Line B was damaged (externally, at approximately KP1081 at around 02:03 (CEST) on 26 September 2022) but no leak occurred.
15. NS1 Line 1 ruptured in the Swedish EEZ. NS1 Line 2 ruptured in the Danish EEZ.
16. The experts also agree that the mechanical process which caused the damage to the ruptured pipelines was the initial piercing by an explosive charge and then the subsequent pipe whip which caused bending failure.
17. I also understood it to be accepted that, as set out in Mr Lumley's written report (referred to below):
    a) Immediately after the pipeline Explosions/Rupture incidents on 26 September 2022, the Swedish and Danish authorities established exclusion zones whilst they undertook their own survey and investigations and the Claimant was not granted access to these exclusion zones.
    b) Subsea inspections and damage assessment on behalf of the Claimant could only start in the Swedish sector from 29 October 2022 and in the Danish sector from 12 November 2022, but with continued limitations in the case of the Danish sector.
    c) The scope and findings of the Swedish and Danish subsea inspections and damage assessment have not been made available.
    d) Surveys were carried out. Survey data was analysed during the investigation by the German public prosecutor into the damage to the pipelines.
    e) The Dent was identified in the seabed disturbance survey on 30 October 2022 carried out by Svarog, a marine contractor, for the Claimant and visually inspected on 31 October 2022. The Dent was also identified in the German prosecutor's survey and report.
    f) Further inspection was carried out by Svarog on 2 November 2022 and waterjet pumping was carried out to more clearly analyse the Dent.

Hearing and expert evidence

18. The trial took place over 6 weeks and included expert evidence in the following disciplines:
    a. Geopolitics;
    b. Energy insurance market practice;
    c. Materials Science and Explosives Science;
    d. Subsea operations;
    e. Quantum of repair.
19. The parties decided in the course of the trial not to call the following experts in the field of Subsea operations and equipment: Mr Haynes for the Defendants and Cdr Thomas Reynolds for the Claimant.
20. As referred to below, Mr Sharp, an expert in energy insurance market practice, was not cross examined.

Geopolitics

21. The Court had evidence from two experts in geopolitics: Dr Donald and Dr Less.

Dr Dominick Donald

22. Dr Dominick Donald was instructed by the Defendants. Dr Donald is a senior adviser to a company, Herminius and according to his evidence is a geopolitical risk advisor with over twenty years' experience.

23. Dr Donald produced a report dated 8 December 2025 (as amended, "Donald 1") and a Supplemental Expert Report dated 24 February 2026 ("Donald 2").
24. In addition, there is a Joint Expert Memorandum dated 11 February 2026 of Dr Donald and Dr Less which was agreed before the two supplemental reports of the geopolitical experts.
25. In its written closings the Claimant submitted that Dr Donald sought to assist the Court. However, the Claimant submitted that the Court should take "*care*" before adopting the substance of his evidence. The Claimant questioned his experience submitting that his "*focus*" had not been on Russia or Ukraine and submitted that some of his views on "*critical points*", notably the concept of "*uravnilovka*" were "*not anchored in any verifiable sources*".
26. Whilst I accept that Dr Donald was not a specialist in Ukraine and Russia (or in the Nord Stream pipeline) in my view his evidence supports an inference that he has had broad experience over, at least, the past 10 years as a geopolitical analyst and advisor and both his oral and written evidence indicated that he had an in depth understanding of the geopolitical issues such that he could assist the Court. He explained (and I accept) that the confidential nature of his advisory work meant that he did not publish his advice or findings. I did not see any indication that his evidence was in any way anything other than researched and reasoned.
27. As to the concept of "*uravnilovka*", although the Claimant referred to it in this regard as a "*critical point*" it will be evident from the discussion below on "Causation" that the critical issue is not whether such a concept exists or is generally recognised but the motives of Russia assuming it to be a perpetrator, which can be established without needing to determine whether such a concept is recognised in abstract terms.
28. The Claimant also sought to criticise his "*idiosyncratic analytical prism*" which it submitted was not "*anchored in any verifiable sources*".
29. Dr Donald accepted in cross examination that:

    "…insofar as there's disagreement between you and Dr Less about what was the role of the war in all of this, for example, is not primarily a disagreement about the concrete facts; it's a disagreement about how one analyses those facts in a causal framework…".
30. However, Dr Donald rejected the proposition that was put to him that his approach was to treat it as:

    "*a logical question rather than a question which depends on specialist knowledge of how countries behave or what their interests are*".
31. Dr Donald's evidence was, as one might expect, that "…*it depends upon the understanding*" and the "*strong prism*" that he brought to the task which he said was probably different from that of Dr Less but derived from the experience that he had had and the work that he had done which meant that he had an "*understanding of how a whole range of different elements that create the picture we must grapple with when looking at geopolitics*."
32. I cannot see anything to fault in this evidence which in my view reflects the fact that both experts are expressing a view on the likely causes based on their experience, which for each expert will of course reflect their own personal career. The evidence of Dr Donald was, as referred to above, on its face supported by reference to verifiable sources, where available, and I have no reason to doubt the foundations underpinning his evidence or his expertise.

33. I do not see anything "*idiosyncratic*" in the approach of Dr Donald which would lead me to treat his evidence with "*care*" and in effect, reduce the weight which I give to his evidence.

Dr Timothy Less

34. Dr Timothy Less produced a report dated 31 December 2025 (as amended, "Less 1") and a Supplemental Expert Report ("Less 2") dated 24 February 2026.
35. Dr Less is a senior advisor for geopolitics at the Judge Business School at the University of Cambridge and has a background in diplomacy and international relations having been a member of the British diplomatic service for 10 years. He also works as an independent consultant providing expertise and analysis on Russian and Eastern European politics.
36. In their closing submissions the Defendants stated that they accepted that Dr Less was "*extremely well qualified to provide opinions on the geopolitical issues that the court needs to consider in this case*".
37. Whilst I do not doubt his qualifications, in my view the evidence of Dr Less was unsatisfactory in that he appeared at times to be seeking to support the Claimant's case by advancing arguments that in my view flew in the face of common sense and the inferences to be drawn from the known facts.
38. For example, in cross examination Dr Less was asked about his view that there were "*connections to the war*". It was put to Dr Less that:

    "*…one of the points Dr Donald makes is that if the war was not necessary as a cause of the attacks then Ukraine could have done the same thing in the 11 years before the outbreak of war…"*.
39. Rather than accept this proposition, Dr Less appeared to strain to construct an argument that the Sabotage "*might*" have taken place earlier (i.e. prior to the War and thus was not caused by the War) relying on an earlier sabotage in 2014 (on a different kind of target namely an above ground pipeline in Ukraine) and (some) evidence that the plan may have been conceived in 2014. Thus Dr Less seemed unwilling to accept what appeared in my view to be self-evident that even if the plan had been conceived earlier, the fact that the plan had not been implemented supported an inference that the War was an (indirect) cause of the Sabotage.
40. The relevant passage was as follows:

    "A. ...there were actually two incidents −− there were two bits of evidence which can bring to bear which suggests Ukraine would not have needed the fact of the war to perpetrate the attacks, and one was its actual attacks on the Russian gas transmission network which ran through Ukraine, I think, in April and June 2014, so there is an actual example of a Ukrainian attack on a pipeline transporting Russian gas to Europe, obviously in the absence of the February 2022 war, because it preceded it by eight years, and the second was the suggestion by Pancevski that as of 2014, the Ukrainians had an actual plan for destroying the Nord Stream pipeline which suggested, at a minimum, that they had the intention and the motive to attack it, and had actually gone so far as to develop a plan for doing so, again, in the absence of course of the February 2022 invasion. So, I mean, it is obviously a point of fact that the Ukrainians didn't attack the Nord Stream pipelines prior to 2022, but I think it's overly simplistic to suggest that it was impossible −− sorry, you can't preclude the scenario that Ukraine might have attacked the pipelines in the absence of the February 2022 invasion because of these two bits of evidence.

Q. Right, and just taking the second bit of evidence, that there might have been a plan in 2014. If there was a plan that was not executed all that time, doesn't that rather indicate that that was a contingent plan as to what one might do if the tensions did spiral to all −out war?
A. We don't really know enough about it to really draw any hard and fast conclusions, and of course, really it's just −− it's a reference made by Pancevski, and we don't have any more information than that. There was also an allusion to it actually in the podcast which came out over the weekend, and I think it's hard to go further than the conclusion that it demonstrated intention and motivation on the part of Ukraine to destroy the pipeline obviously eight years before the February 2022 invasion, in other words, in the absence of the war as we're calling it.
Q. I totally accept we don't know if this is even true. If it is true, then doesn't it demonstrate the exact opposite? It demonstrates the fact that even though the idea of attacking the pipeline had been conceived of, recorded on this hypothesis, it was not executed for eight years after that until there was a full −scale war?
A. Yes, as a point of fact, that's obviously true, but it doesn't preclude the possibility that the Ukrainians might have attacked the pipeline in the absence of the February 2022 invasion.
...
Q. But you're suggesting it's purely coincidental that this plan sits in somebody's drawer for eight years and then, when Russia invades it gets activated a few months later?
A. I wouldn't quite put it like that. And I'm not denying that the war formed the backdrop to the attacks on the pipeline. All I want to suggest is that it's maybe not quite as straightforward to say it's impossible, you entirely rule out the possibility that Ukraine might have attacked the pipelines in the absence of war, given evidence of intention and motivation dating back to 2014
....
Q. ...What I want to suggest to you is that Dr Donald's response is correct on this point on the attack on the other pipeline, namely that an attack: "The sabotage on an above−ground pipeline in Ukraine ... with [a] single explosive [charge] by unknown perpetrators is not a precedent for an attack on multiple locations on deep−water structures in international waters [which is] an operation of several orders of magnitude more complex." If we just stop there, you would agree that those are important distinctions between your supposed precedent and Nord Stream?
A. Yes, so he's drawing attention to the differences, but there are obviously points of commonality. I mean, we don't −− as a point of fact, we don't know who carried out the attack, but I think the likelihood is it will be an actor from Ukraine since it took place on the territory of Ukraine in 2014, and I think the −− it was also an attack on a Russian pipeline transporting gas to Europe, so I'm not saying it's a perfect analogy, and of course, every attack is sui generis in its specifics, so you're not going to find a perfect analogy, but I think it speaks to the point that Ukraine was −− had demonstrated the wherewithal to attack a pipeline, a Russian pipeline transporting gas to Europe in the absence of the February 2022 invasion." [emphasis added]

41. I also note in the above passage the reference by Dr Less to "*the war as we're calling it"*. Throughout his evidence there are examples where Dr Less appeared in my view to avoid acknowledging the likely impact of the War. Thus in Less 1 he characterised the motives of potential Ukrainian substate actors as:

"... a desire to strike a blow at Russia in the context of Ukraine's goal of consolidating its national sovereignty."

42. This was in my view an artificial formulation which strained to avoid reference to the "context" of defending its national sovereignty "*in the light of the invasion and all −out war*", a context which Dr Less accepted in cross examination.

43. A further example of this was evident in the following passage of evidence in cross examination, also in relation to the motives of a substate actor, where again Dr Less sought to characterise motives by reference to "*a desire to establish Ukraine's national sovereignty*" without acknowledging the real impact of the War, describing it as "*not ... critical to that analysis*":

"A. ...in answer to your question about what the motives of this alleged substate actor might have been, and according to Pancevski's account, the motive was to attack the Russian economy and destroy the money flows, yes.
Q. Yes, and obviously underlying that was the hope that by destroying the money flows they would make it harder for Russia to keep occupying parts of Ukraine and keep fighting the war?
A. And underlying that was a desire to establish Ukraine's national sovereignty, which I think −− I think that was the ultimate goal of any Ukrainian actor involved in the war and, according to Pancevski's account, the attacks on the Nord Stream pipelines as well.
Q. Yes, I see, so those are the steps. You've got the ways in which damaging the pipeline might hurt Russia including economic, the hope that that would make it harder for Russia to win the war against Ukraine, and then underlying that you say the hope that if they can expel Russia from Ukraine, they can establish Ukraine's ultimate sovereignty?
A. Yes, although the war may not be critical to that analysis. Ultimately, I mean, this is the argument I put forward in my first report, is that the ultimate motivation of an actor from Ukraine was to make a reality of Ukraine's independence. That's what the war was about to the extent that Russia was opposed to Ukrainian independence and wanted to draw it back into the Russian sphere of influence…
Q. ...when you said the war wasn't critical to the analysis, because on what you're saying, the principal threat to Ukraine's sovereignty was the fact that Russia had invaded it. That was why it needed establishing, wasn't it?
A. Sure. So what I was really drawing attention to at that point was the feeling, at least as it's reported by Pancevski, at that point the battle is now really won, you know, I'm just trying −− I'm relating to you how Pancevski describes the motives of the perpetrators: "... the battle is now really won, we can put down the machine guns and devote ourselves to the real business." And how I understand that is the "real business" was this sort of long−term, enduring goal of establishing Ukraine's independence, you know, which began before the war, and, as I understand this statement here, would outlive the war as well.
...
Q. ... So I'm suggesting to you that it's inconceivable that without the war a Ukrainian would say: well, in order to establish Ukrainian sovereignty, we should just launch an attack on Russia by destroying the Nord Stream pipelines. It's just inconceivable, isn't it?
A. Not to the extent that the pipelines were one of the sources of Russian power which was constraining Ukraine from establishing its independence...the pipelines

> *constituted leverage over Germany, leverage over Ukraine and were a constraining factor in Ukraine's ultimate goal which was to establish its independence.*
> *Q. You would be barking mad to do it, though, in circumstances where you weren't currently at war. As I think you heard Mr Stanley put it earlier to Dr Donald, you don't prod the bear, but, if the bear is already attacking you, then you'll fight it with every weapon you've got?*
> *A. Yes, I 'm sure that's right. I hesitate only to the extent that I don't think that's inconsistent with what I 'm saying now."* [emphasis added]

44. The passages above give some indication of the nature of the answers provided by Dr Less in cross examination. Viewed in totality I formed the view that in his evidence Dr Less was seeking to minimise the connection between the War and the Sabotage and thus I infer to assist the Claimant's case. This affects the weight that I place on his evidence.

Energy insurance market practice

Mr David Sharp

45. Mr Sharp instructed for the Defendants prepared a report as an expert in energy insurance market practice and a joint report as referred to below. He was not cross examined on the basis that the Claimant took the position that it accepted his evidence but was of the view that it was not relevant.

Mr Simon Boxall

46. Mr Boxall gave evidence as an expert in energy insurance market practice. Mr Boxall who is now retired spent 40 years as an insurance broker, latterly focussing on the energy sector. He was instructed by the Claimant.
47. Mr Boxall produced a report dated 7 November 2025 and there was then a joint report of Mr Boxall and Mr Sharp dated 13 January 2026. Mr Boxall was cross examined.

Materials Science and Explosives Science

Dr Andrew Pettitt

48. According to his report Dr Andew Pettitt, at the outset of his career was employed for 10 years in the Oil and Gas sector by Schlumberger and since 2000, he has operated as a specialist and consultant on explosives engineering matters.
49. Dr Pettitt produced a report dated 4 November 2025 (as amended, "Pettitt 1") and a supplemental report dated 18 February 2026 (as amended, "Pettitt 2").
50. He also produced with the other experts in this field a Joint Memorandum dated 23 January 2026.
51. As discussed below, the Claimant criticised Dr Pettitt (and Mr Jones) for relying on the modelling carried out by Wood Group plc ("Wood") for the Claimant in its Damage Assessment Report. In its written closings the Claimant submitted that Dr Pettitt adopted the Wood analysis "*because it suited the Defendants' case*".
52. However as Dr Pettitt explained in cross examination, he was not "*an FEA expert*" and took the results as they were presented in the Wood reports.
53. Further I note his explanation that he:

> *"… adopted the Wood data as this is the −− these are the numbers that have been adopted throughout the whole process, including taking through to the operator for remedial actions… I have made the assumption that experts within the organisation that commissioned and carried out the work were experts in their field."*

54. What Dr Pettitt failed to state expressly is the fact that Wood were the engineering consultants engaged by the Claimant.
55. For these reasons I find the actions of Dr Pettitt with regard to the modelling entirely reasonable in the circumstances and I reject as entirely without foundation the proposition advanced for the Claimant (in substance) that he did so because he was partisan.

Professor Sam Rigby

56. Professor Sam Rigby is a professor of Blast Protection Engineering. He was instructed by the Claimant.
57. Professor Rigby produced a report dated 28 November 2025 (as amended "Rigby 1") and a supplemental report dated 17 February 2026 ("Rigby 2")
58. He also produced with Dr Pettitt, Mr Jones and Mr Lumley a joint report dated 23 January 2026.
59. The Defendants acknowledged that Professor Rigby is an expert in the field of explosives science. I accept the submission for the Clamant that he gave detailed and thoughtful evidence about matters relating to his expertise. I note however that he accepted the limitations of his evidence (e.g. when providing a range for the likely size of the explosive charge and when it related to matters outside his expertise such as anchors) and where relevant those limitations are referred to below.

Mr Peter Lumley

60. Mr Peter Lumley was instructed by the Claimant. He described his specialist field as process and mechanical engineering expertise in pipelines in the oil and gas industry. Mr Lumley is a chartered engineer.
61. Mr Lumley's report was dated 1 December 2025 (as amended, "Lumley 1"). He also participated in the production of a joint report dated 23 January 2026 and produced a supplemental report dated 17 February 2026 (as amended, "Lumley 2).
62. The Claimant submitted in closing that Mr Lumley:
    a. Gave thoughtful and considered answers; and
    b. Made clear the bounds of his expertise.
63. Unfortunately, I cannot agree with that assessment.
64. As to the first point, in cross examination there were occasions where Mr Lumley in my view gave answers which appeared to be speculative with no evidential basis and when considered cumulatively, I am left with the impression that Mr Lumley was seeking to defend the Claimant's position by speculation where necessary. For example, Mr Lumley was asked in cross examination about an anchor drag as a possible explanation of the Dent, initially resisting the proposition that an anchor drag would cause a visible disturbance to the seabed suggesting a "*bouncing anchor*". It is unclear how even a bouncing anchor would not cause a visible disturbance and Mr Lumley ultimately accepted that there was no scar and anchor drag was not a "*credible cause*":

    "Q. Okay. Now, a dragged anchor would obviously cause a disturbance to the seabed; yes?
    A. Most likely, yes.
    Q. Yes.
    A. Not for certain.
    Q. Really?
    A. It might be bouncing along the seabed.
    Q. A dragged anchor might be bouncing?
    A. Well, it's being dragged, as it −− you can see −− that sort of movement.

Q. So that would leave what you might call footprints instead of a scar?
A. Yes.
...
Q. Okay. So if there was an anchor drag, it would have left a visible scar, wouldn't it?
A. Yes, there would be a scar of some kind, yes.

Q. And there is no such scar?
A. No.
Q. Right. So we can eliminate an anchor drag as a credible cause, can't we?
A. Yes."

65. A further example was in relation to the splayed rebars at the location of the Dent (discussed in detail below), where Mr Lumley sought to explain the evidence of what could be seen on the images by reference to an explanation that an anchor may have tangled with the rebar:

"*A. I modelled the damage to the pipework, not the damage to the rebars.*
Q. Right. So it is not set out in your report what kind of object could have caused this kind of damage to the rebar and the internal covering, is it?
A. No.
Q. No. And you are now ad−libbing and saying that the same kind of anchor set out in your report might have caused that kind of damage; correct?
A. I 'm not ad−libbing, I'm giving you my professional opinion as a mechanical engineer on an aspect that, when we looked at it, was not part of our remit.
...
Q. And how does a very large anchor of the size you've just said possibly get underneath the rebar and then pull it out? How could that happen?
A. Well, basically, the rebar is a mesh, and it's −− the mesh is either broken from the impact or something has tangled it. One or the other parts of the rebar or the anchor picked it up on recovery.
Q. The anchor is a very large object, isn't it?
A. Yes.
Q. And the space between the rebar and the pipe is a very small space, if there's any space at all, isn't it?
A. Yes.
Q. So how does the anchor get entangled with it?
A. The space is about 4 inches between the rebar and the actual diameter of the pipe before the dent occurred.
Q. Right. And is there any part of the anchor which is less than 4 inches?
A. Well, it could −− we've looked at a number of anchors in my report. We don't know what anchor did it, but I 'm just saying that is a possibility.
Q. And I'm suggesting to you −− and I think you've given the evidence you can on this −− that it's actually not a realistic possibility at all given the damage?
A. I disagree with you. I 've just explained that there's at least a 4−inch gap."

66. Mr Lumley said he had not addressed the aspect of the tangled rebar in his reports. However I note that he had addressed "*whether the Dent could have been caused by an anchor lifting process (raising), during which an anchor could be hooked onto the pipeline*" and in Lumley 1 he had "*discarded the possibility of anchor raising causing the Dent.*" He thus appeared to be putting forward an explanation in cross examination to support his "alternative" proposition that the splayed rebars were not caused by an explosion which in substance he had ruled out. Even if it could be said

that he had not previously addressed this issue directly, he had not modelled the issue and his answers in cross examination were not supported by any evidence.

67. Further the following exchange does not in my view support an impression of a witness who was giving "*thoughtful and considered answers*", the question being put three times and Mr Lumley rejecting the proposition twice before finally accepting it on the third occasion:

"Q. Right. So both the bands from the field weld joint and the rebar are splayed outwards from the pipe; yes?
A. I agree.
Q. That feature is consistent with explosive damage; correct?
A. I disagree. There's no basis for what caused the rebar or the band to lift up.
Q. At the moment I'm asking about consistency. That feature is consistent with explosive damage; is that correct?
A. No, I disagree. There's no basis to say what caused it to lift up.
Q. No, I'm not asking you at the moment to say what caused it, Mr Lumley. Please answer the question specifically. That feature is consistent with explosive damage; yes or no?
A. I 'm sorry, yes, I agree with you, yes."[emphasis added]

68. As discussed above, Mr Lumley's evidence generally gives rise to a concern that he was seeking to support the Claimant's position and thus I approach his evidence with some caution.

69. As to the second point, in my view the bounds of his expertise were not clear:
    a. Mr Lumley did not make it clear in his first report that the modelling was done by others.
    b. It became clear in cross examination that although he expressed an opinion on the likelihood of the various events, he relied on a member of his team in relation to the explosives.

70. As to the modelling, Mr Lumley clarified in Lumley 2 that he had not undertaken the modelling but that it was carried out by a third party, Thomas Johnson at StressTech Engineering Ltd. In cross examination Mr Lumley said in relation to the work of Mr Johnson:

"I provided all the data. I identified what I wanted to do, and analysed the results, and then made further runs on the basis of what I found from the first runs."

71. However it is difficult for the Court to determine what weight it should give to the modelling when Mr Johnson's qualifications were not before the Court nor was Mr Johnson and Mr Lumley described his work with Mr Johnson as "*interactive*".

72. The Claimant submitted that "*he had identified that he had received assistance from colleagues*". Mr Lumley in Lumley 1 said:

"I have been assisted in the preparation of this report by Mr Graham Sellers, retired Royal Navy Lieutenant Commander, forensic engineer, with an MSc in explosives and ordnance engineering; Dr Jan Graham, senior materials and welding expert; and Mr Rodney Gilmour, senior process engineering expert, all at Manderstam International Group. I have satisfied myself as to the accuracy of their work and the opinions and conclusions in this report are all my own."

73. However Mr Lumley did not make clear the "*bounds of his expertise*" until it was put to him in cross examination:

"*Q. Are you suggesting that you have expertise in explosives and ordnance engineering?*
A. No, I don't.
Q. You don't. So it is right, isn't it, that some of this assistance has been because your expertise does not extend to all the matters in your report?
A. Yes, in respect of that, yes.
Q. Right. And how can her Ladyship identify the parts of the report that actually go beyond your own personal expertise?
A. Mr Sellers on the explosives is appendix 5.
Q. Right. So you say appendix 5, Mr Sellers?
A. He did the background work for identifying the possible explosive devices.
Q. Right, okay, so appendix 5 ––
A. It was done in the knowledge that there was also another expert on our side who was doing the explosive work.
Q. Yes. And did he write appendix 5 or did you?
A. Both. He drafted it, and I reviewed it, edited it and included it." [emphasis added]

74. Given that Mr Lumley acknowledged in this evidence that he did not have expertise in explosives engineering, it is difficult to accept the statement that his opinions and conclusions in his report "*are all my own.*" In the passage above he suggested that Mr Sellers did "*the background work*" but Mr Lumley acknowledged that in fact Mr Sellers "*helped*" with drafting a substantive part of the report in particular Section 7 of Lumley 1 which addresses whether the Dent could have been caused by an explosive event and the types of explosive events.
75. In relation to the evidence on the issue of the mechanics of an explosion in relation to the Dent, Mr Lumley accepted (above) that this is not his area of expertise and as set out above, relied on the "*help*" of Mr Sellers and deferred to the expertise of Professor Rigby as "*another expert on our side who was doing the explosive work*." Further, Mr Lumley did not model the projectile from an explosive.
76. In light of the matters referred to above, I therefore do not propose to give weight to Mr Lumley's views on the mechanics of an explosion as I cannot be satisfied that it is reliable or comprehensive and I look to the expertise and evidence of Professor Rigby on the mechanics of an explosion.

Subsea operations and equipment

Mr Hefin Jones

77. Mr Jones described himself as an "*above and below water advanced demolitions specialist, with over 35 years of operational and strategic experience across military, security, and commercial sectors.*

During my 26-year career with UK Special Forces within a Specialist Military Unit (SMU), I specialized in land and maritime demolitions of key national infrastructure, planning and conducting maritime demolitions, counter-sabotage and counter- terrorism and explosive method of entry operations, and conducting combat diving operations in high-threat maritime environments."
78. Mr Jones prepared an expert report dated 31st October 2025 ("Jones 1") and a Supplemental Expert Report dated 18 February 2026 (as amended, "Jones 2").
79. Mr Jones was also party to the joint memorandum with Mr Lumley, Dr Pettit and Professor Rigby dated 23 January 2026
80. Mr Jones clearly had much operational experience of using explosives and analysing explosions/acts of sabotage within the military.

81. However at points in his reports he had used technical scientific language in relation to the mechanism of explosions and the likely cause of the Dent which on cross examination did not withstand scrutiny. Since he did not and could not approach this task in the same way that Professor Rigby, as an academic, did and could, where his evidence is at odds with the evidence of Professor Rigby, I prefer the evidence of Professor Rigby.
82. Nevertheless in other areas where his opinions were borne out of relevant knowledge/operational experience, I give commensurate weight to his evidence.

Quantum expert evidence

Mr Philip Cooper

83. Mr Philip Cooper was instructed by the Claimant in relation to issues on quantum and methodology of repair.
84. Mr Cooper produced a first report dated 28 November 2025. Mr Cooper's experience is in mechanical, civil/structural and engineering software industries over the last 26 years primarily in upstream oil and gas and CCS. His amended supplemental report is dated 9 April 2026.

Mr Nigel Danhash

85. Mr Nigel Danhash was instructed by the Defendants. Mr Danhash describes himself as having over 40 years' worldwide offshore oil and gas industry experience (subsea, topsides and marine), working for tier one Installation Contractors and oil and gas Operators.
86. Mr Danhash produced a first report dated 23 December 2025, an amended supplementary report dated 9 April 2026, and a supplementary report of 9 May 2026.
87. There are also two joint memoranda produced by the quantum experts dated 30 January 2026 and 5 May 2026.

Witness of fact

Mr Reichert

88. Mr Felix Reichert is Head of Procurement at the Claimant. He was cross examined as to matters of quantum.

Confidentiality

89. The German Federal Public Prosecutor General (the "German Public Prosecutor") initiated an investigation into the explosions on the pipelines on 26 September 2022. The German Public Prosecutor previously provided a set of documents to the Claimant from its investigation file, which have been disclosed in the proceedings in the English Commercial Court.
90. Due to the sensitivity of the disclosed documents in light of the ongoing investigation in Germany, it was agreed between the Claimant and the Defendants, and ordered by the Court, that the disclosed documents would be subject to confidentiality protections before and up to trial. These protections meant that the disclosed documents, and any other documents referring to them, could only be shared with people who had agreed to court-ordered confidentiality undertakings.
91. The Court ordered that the disclosed documents would not be filed on the public court file and, as such, would not be available to members of the public or press and any references to the disclosed documents in other documents, such as expert reports, could be redacted before such documents were filed on the public court file.
92. S. 353d (3) of the German Criminal Code ("s. 353d (3)") states:

"*Whoever*
3. publicly communicates verbatim all or essential parts of the bill of indictment or other official documents in criminal proceedings, regulatory fines proceedings or disciplinary proceedings before they have been addressed in a public hearing or before the proceedings have been concluded incurs a penalty of imprisonment for a term not exceeding one year or a fine." [emphasis added]

93. In light of the expert evidence as to German law (Report of Professor Dr Tido Park dated 30 March 2026) as to the meaning, effect, and operation in practice of s.353d(3) the parties agreed that they would not read out verbatim all or essential parts of any disclosed documents in open court.
94. However the expert evidence was that:

"S. 353d (3) also does not prohibit summaries, paraphrases or reports in indirect speech. A mere summary of the content of official documents does not constitute an offence, provided that it does not contain any verbatim quotations of essential parts…".

95. In my view the Court is able to set out its reasoning for the findings below without the necessity to reproduce verbatim extracts from the disclosed documents. Accordingly to respect the German statutory provision and its aim to protect the conduct of court proceedings in Germany, which the Court understands are ongoing, no verbatim extracts have been included in this judgment.

The Policies

96. By a policy of insurance (the "Munich Re Primary Policy"), as extended by endorsement, the First Defendant (and the relevant insurers it represents) agreed for their respective proportions to insure the Claimant in respect of the Pipelines (among other things) for the period from 1 November 2019 to 31 October 2023.
97. By a policy of insurance (as extended by endorsement) (the "CV Starr Primary Policy") Starr Europe Insurance Limited (represented in these proceedings by the First Defendant) agreed to insure the Claimant on a full follow basis of the Munich Re Primary Policy.
98. By a declaration (as extended by endorsement) attaching to certain delegated underwriting contracts numbers (the "WTW Policy") the First Defendant (and the relevant insurers it represents) agreed for their respective proportions to insure the Pipelines on the terms of the Munich Re Primary Policy.
99. The terms of the policies are set out in the Munich Re Primary Policy. The two other first layer policies follow that and thus references in this judgment to the terms of the "Policies" are as set out in the Munich Re Primary Policy. The Policies have a sheet of "Policy Declarations" followed by a set of "General Conditions" and then three sections: Section 1 is headed "Property Damage" and then sets out "Terms and Conditions" followed by a section headed "Exclusions" and an Extension headed "Machinery Breakdown"; Section II is headed "Terrorism" and Section III "Third Party Liabilities".

The Defendants' case

100. The Defendants' case is that the Explosions/Rupture Damage and the Dent are excluded by Exclusion 2.i. of Section I of the Policies.

Exclusion 2.i

101. Exclusion 2.i in Section I of the Primary Policies provides:

"*2. The following clauses i. and ii. are only to apply to property on land and/or installed at the offshore location, but they shall not be construed to exclude physical loss or physical damage caused by mines, bombs, torpedoes, missiles or other weaponry remaining from previous hostilities or military exercises.*
i. Notwithstanding anything to the contrary contained herein, this section does not cover loss or damage directly or indirectly occasioned by, happening through, or in consequence of war (whether war be declared or not), invasion, acts of foreign enemies, hostilities, civil war, rebellion, revolution, insurrection, military or usurped power or confiscation or nationalisation or requisition or destruction of or damage to property by or under the order of any government or public or local authority except as otherwise provided in Section I of the Policy." [emphasis added]

102. The Defendants' primary case is that the Damage is excluded as being directly or indirectly occasioned by or a consequence of the war between Russia and Ukraine.
103. Following a change set out in their supplemental opening submissions, the Defendants no longer pursue a case that the Damage is excluded by reason of it being "*under the order of any government*" but do assert in the alternative, that the Damage is excluded as being damage that was occasioned "*by*" a government.
104. It was common ground that the Defendants bear the burden of proof of establishing that the exception under Exclusion 2.i applies in this case.
105. The Defendants do not rely on the exclusion in subparagraph 2.ii (the "terrorism exclusion") of Section I and the Claimant accepted that if the Defendants can show that there is an exclusion in Section I then the Claimant will not be entitled to recover under Section II.

The structure of the Policies

106. In these proceedings the Claimant accepted in its written openings that the Institute Clauses for Builders Risks ("ICBR") (clause 21) exclude cover for war risks but seeks to rely on Clause 2.1 of the Institute War Clauses Builders' Risks ("IWCBR") as providing cover for the Damage. It is common ground that Clause 2.1 of the IWCBR covers loss or damage to the subject matter insured caused by "*war civil war revolution rebellion insurrection, or civil strife arising therefrom, or any hostile act by or against a belligerent power*".
107. It was submitted for the Defendants that:
    a. the ICBR do not apply to property that is not under construction; and
    b. the IWCBR do not apply to fixed property.

Institute Clauses for Builders' Risks and Institute War Clauses Builders' Risks

108. It was common ground that the Policies, by clause 3 of Section I, incorporated the ICBR and the IWCBR.
109. At the end of clause 3 of Section 1 it reads:

> *"The phrase "the property insured hereunder" shall be substituted for the word "vessel" as used in the Incorporated Clauses, where the context of Section 1 of the Policy allows".*

110. There are therefore two separate sets of incorporated terms, the ICBR and the IWCBR. On the Claimant's case for war risks cover, it is not enough to show that the ICBR apply but it also needs to show that the IWCBR war risks clause applies.
111. The ICBR on its face makes it clear that it is only dealing with property under construction. Under "*Subject of Insurance*" the ICBR has provision for the hull and/or machinery to be specified under various subsections.

112. Thus Section IA has a subheading for "*Hull and machinery etc under construction at the yard or other premises of the Builders*."
It then provides that:

"*The subject−matter of this subsection A is covered whilst at Builders' Yard and at Builders' premises ...and whilst in transit between such locations*."
Section IB covers "*Machinery etc ... whilst under construction by Sub−Contractors*."
Section II covers "*Machinery etc insured hereon from delivery to Builders"*
"The subject matter of this Section II is covered whilst at Builders' Yard and at Builders premises' elsewhere within the port or place of construction at which the Builders' Yard is situated and whilst in transit between such locations." [emphasis added]

113. Clause 1 of the IWCBR states in bold typeface as follows:

"*This insurance shall not attach to the subject-matter insured until the Vessel is launched and then shall attach only to such part of the subject-matter as is built into or is in or on the Vessel at the time of the launch. The insurance against the said risks shall attach to the remainder of the subject-matter insured only as it is placed in or on the Vessel subsequent to the launch*". [emphasis added]

114. On the face of the document therefore the provisions of the IWCBR apply only to floating assets.

115. The Claimant's argument (in its written opening) rests on the basis that the "Institute Clauses" take precedence over Exclusion 2.i because "*the scheme*" the parties have chosen is to use the "Institute Clauses" as the means of providing the primary insuring clause. The Claimant submitted that if the Institute Clauses are the means of providing the primary insuring clauses in Section 1, then when a loss comes within the cover positively granted by the Institute Clauses, Exclusion 2.i does not apply.

116. An insuring clause "*defines the damage to which the insurer's primary obligation attaches, which it promises will not occu*r": Popplewell LJ in *Sky UK Ltd v Riverstone Managing Agency Ltd* [2024] EWCA Civ 1567; [2024] 2 CLC 906 at [48].

117. The Defendants accepted in their written opening that there is no "*express*" insuring clause in Section I. It was submitted for the Defendants in oral opening that the words of the policy including the name of the policy and the declaration saying it is an "all risks" policy, are sufficient to oblige insurers to indemnify on an "all risks" basis, and as such it was a "*non−question*".

118. The Defendants in their written openings submitted that it is not necessary for an insurance policy to have an express insuring clause if in context it is clear what cover has been agreed. The Defendants referred "*by analogy*" to *C A Blackwell (Contracts) Ltd v Gerling General Ins Co* [2007] 1 Lloyd's Rep. IR 511. However I do not find that analogy of assistance. That was a case where there was an insuring clause and the question was the extent of the cover. In that regard the judge agreed that the policy heading could assist in resolving any ambiguity.

119. The Defendants submitted in the alternative that Section 1 of the Policies must include an implied term that it provides cover on an all risks basis for physical damage to insured property within the period of insurance; the term was necessary for business efficacy or so obvious that it goes without saying: *Marks and Spencer Plc v BNP Paribas* [2009] 1 AC 1101 at [25].

120. This approach was endorsed more recently in *Union of Shop, Distributive and Allied Workers and others v Tesco Stores Ltd* [2025] I.C.R. 107 by Lord Burrows and Lady Simler at [35] as follows:

"35 This justification for the strict constraint applied to the implication of terms by fact was approved by the Supreme Court in Marks and Spencer plc v BNP Paribas Securities Services Trust Co (Jersey) Ltd [2016] AC 742, where, at paras 15 to 31, Lord Neuberger PSC authoritatively restated the long established and consistent learning on this question. It is unnecessary to rehearse the principles that govern when a court may properly imply a term by fact into a contract. They are not in dispute. It is sufficient for our purposes simply to reiterate that, to imply a term by fact, the term must be necessary for business efficacy or the term must be so obvious that it goes without saying; it must be capable of clear expression; and it must not contradict any express term of the contract…". [emphasis added]

121. The Claimant submitted that the insuring clause was incorporated through the incorporation of the ICBR which included a "*conventional*" insuring clause. The Claimant therefore submitted that there was no need to imply a term as it was neither necessary nor consistent with the terms of the Policy wording.

122. The ICBR does include an insuring clause (at 5.1), which is expressly modified by the incorporating terms of Section I, clause 3, to read:

"*SUBJECT ALWAYS TO ITS TERMS, CONDITIONS AND EXCLUSIONS this insurance covers all risks of physical loss of or physical damage to the subject matter insured during the period of the insurance*."

123. The Claimant acknowledged in its written opening that it would be an "*unconventional way of going about defining the basic obligation in an insurance policy*" and that "*one would not normally expect the ICBR to cover an offshore pipeline*" but submitted that this appeared to be the technique adopted.

124. However in my view there is nothing to suggest that this was the "*scheme*" that the parties chose to provide the primary insuring clause.

125. In its closing submissions the Claimant submitted that:

"*…the absence of any insuring clause in Section 1 would be surprising*"

126. However, as the Defendants acknowledged in their written closings this may have been an oversight.

127. Following on from its submission that it would be surprising not to have an insuring clause in Section I, the Claimant submitted that:

"Neither the incorporation of the Institute Clauses for Builders Risk, nor an 'implied' insuring clause is a natural or ordinary way of identifying the coverage. Instead, the better view is that in this case, where the only things really resembling an insuring clause are to be found in (expressly modified) Institute Clauses, the insuring clause is found there...".

128. This seems to be a shift from the position taken in the Claimant's written openings where at paragraph 58 the Claimant submitted that its construction (that Institute Clauses effectively take precedence over Exclusion 2.i)

"—has the virtue of giving proper effect to the scheme that the parties have actually adopted in choosing the Institute Clauses as the means of providing the primary insuring clauses in Section I"

129. Thus the Claimant's argument in closing seemed to be that the Court has a choice between an implied insuring clause and taking the clause in the ICBR but that the

insuring clause in the ICBR should be taken as identifying the coverage as this is the only thing resembling an insuring clause.

130. The Claimant in its closing submissions does not appear to argue that a term could not be implied but submit that "*the better view*" is that the insuring clause is found in the ICBR.

131. I do not accept the submission for the Claimant that to imply a term would not be "*consistent with the terms of the Policy wording*". An implied term for all risks cover would not contradict any express term of the Policies and would be consistent with the description of the type of policy in the Policy Declarations as an "Offshore Operating All Risks Insurance".

132. If the Claimant was right that the insuring clause for the Policies was to be found in the ICBR, it would not be "*necessary for business efficacy*" to imply a term. However for the Court to conclude that the ICBR was intended to prevail over the rest of the terms of the Policies would mean that the Court should disregard the fact that the ICBR on its face is limited to property under construction and the Claimant's approach would mean that the Court should interpret the ICBR not only by making the express change of "*vessel*" to "*property insured*" which is provided for in Clause 3 of Section 1 but should go further and disregard all other references in the ICBR to construction.

133. In its written openings the Claimant sought to justify the amendments that would be required to the ICBR on the basis that the section of the ICBR headed "*Subject of Insurance*" which contains the terms '*under Construction*' and '*property which has been 'deliver[ed] to Owners'*:

a. "*as a matter of logic*" does not apply at all and can be disregarded as "*standard terms which have been incorporated into the Policies"*; or
b. does not apply to the Pipelines, for the reason that the subject of insurance is provided for elsewhere in the Policies and that terms ought not to be considered in isolation from the overall structure and purpose of the Policies.

134. The Claimant submitted that:

"*specifically added words will generally prevail over the printed words in Clause 3 of the Primary Policies: see Colinvaux at ¶3-073*":

135. *Colinvaux's Law of Insurance* at paragraph 3-073 states that:

"Specifically added words will generally prevail over printed words. Insurance policies are most commonly standard form documents. In some cases, however the standard form will be found inappropriate to the needs of the case and written or typed amendments will be made. The danger in this practice is that the amendments may introduce inconsistencies into the policy. In such a situation the court in pursuance of its objective of giving effect to the intentions of the parties will generally allow the amendments to prevail over the standard form clauses…".

136. The passage relied on by the Claimant in *Colinvaux* does not assist the Claimant unless it can show that there are inconsistencies AND the court would be giving effect to the intention of the parties. It is not clear in this case that the provisions in the section headed "*Subject of Insurance*" in the ICBR are inconsistent given that the provisions relating to construction could relate to repairs.

137. Further it begs the question as to whether the Court would be giving effect to the intention of the parties. Had it been the intention of the parties to incorporate the ICBR such that they would extend beyond property under construction, one would have expected more comprehensive amendments than merely a generic change at

the end of Clause 3 of Section 1 to all the various incorporated terms substituting "*the property insured hereunder*" for the word "*vessel*".

138. In oral closing submissions Mr Stanley KC submitted that:

"The phrase "the property insured hereunder" is substituted for the word "vessel", and it must follow from that that one makes appropriate adjustments…".

139. However absent a case in mistake or rectification (as discussed below) it is unclear on what basis the Court would be entitled to make "*appropriate adjustments*" or that it is clear what those "*adjustments*" would be.

140. The Claimant in its written opening advanced, in support of its proposition, an argument which appeared to be that because the provisions incorporating other standard terms in Section 3b of the Policies dealing with property in storage and in transit were more comprehensive i.e. specifying that they would continue until midnight of the day of offloading and there was no such provision in Section 3a incorporating the ICBR and IWCBR, "*there was no difficulty in accommodating the elements of [those forms] that are not germane to the cover of an operating offshore pipeline*". In my view this attempt to reason backwards from the absence of provisions dealing with the construction limitations of the ICBR and IWCBR should be rejected. The question is not whether the parties could have made clear that the limitations in the ICBR and IWCBR do not apply but how the contracts that have been written should be interpreted.

141. Similarly in relation to the IWCBR insofar as it can be said that its provisions are inconsistent with the Policies as being confined to floating assets, it is unclear on what basis the Court would rewrite the terms or what the "*appropriate adjustments*" would be.

142. As to the second submission for the Claimant, there is no inconsistency if there are items to be repaired, to treat these items as a subset of the subject of the insurance.

143. In the Claimant's oral closing submissions in response to the argument that the terms of the institute clauses refer only to property under construction, Mr Stanley submitted that:

"… I think you could say the parties must have agreed to treat this property as being property under construction because they were agreeing to insure all of this property, that's what they said, on policies which were designed for property under construction, even though they knew that it wasn't property under construction, and they can't then turn round and say: aha, you don't have coverage because it turns out your pipeline wasn't being constructed. That was something everyone knew from the very beginning." [emphasis added]

144. It is common ground that there is coverage under the Policies and on the Defendants' case coverage is not dependent on extending the provisions of the ICBR terms. Given that the Defendants accept that there is either express cover by reason of the Declarations or implied cover, it is not therefore the case that the Defendants assert that there is no coverage because the ICBR terms do not apply to property that is not under construction.

145. Further to the extent that the Claimant's submission advances an argument based on knowledge that the policies were designed for property under construction and thus the parties knew that the method to insure the Pipeline was via the ICBR, Mr Salzedo KC submitted that:

"…assumes the very point in issue, because the court is seeking to infer the parties' intentions from the contract they made in its context".

146. There is nothing in the background factual context that the Claimant has identified which supports the submission that the parties knew that the method to insure the property was via the ICBR or that they agreed to extend the ICBR terms which would otherwise have been confined to construction to the Policies.
147. The Claimant submitted in oral closings that in deciding how one is to interpret what has been agreed, the "*important background fact*" was the parties knew the property was operating and insured.
148. However whilst this is relevant to interpretation and the construction of the Policy, it does not allow the Court to rewrite the Policy. I bear in mind the words of Lord Burrows JSC in *Providence Building Services v Hexagon Housing Association* [2026] 1 W.L.R. 538:

> *"22 In Arnold v Britton [2015] AC 1619, the Supreme Court clarified that the words used by the parties are of primary importance so that one must be careful to avoid placing too much weight on business common sense (or purpose) at the expense of the words used; and one must be astute not to rewrite the contract so as to protect one of the parties from having entered into a bad bargain*."

149. The Defendants submitted in their written closings that any reasonable parties to the Policy (with the professional advice they would reasonably obtain) would understand the background, as Mr Boxall explained, that the incorporation of the ICBR was an aspect of the Policy continuing to be based on the WELCAR construction form, and thus containing provisions which might not be needed once construction had ceased.
150. Mr Boxall explained in his written evidence that the WELCAR wording is "*first and foremost a construction form*" but that in some instances, insureds elect to remain on a construction form after the asset has commenced operations for a limited period of time.
151. In cross examination Mr Boxall agreed that the point that the ICBR are incorporated, was "*simply an aspect of the cover continuing on the WELCAR form*".
152. Mr Stanley submitted that:

> *"…if you asked the question did the parties intend to limit this policy to property which is under construction, the answer is obviously not, and if they seemed to have said so, that must just be a mistake in not making that clear because there's no actual debate."* [emphasis added]

153. Whilst I accept that the parties did not intend to limit the Policies to property which is under construction, it does not follow that the parties intended that the ICBR clauses should apply without limit. If the insuring clause is impliedly contained in the Policies without needing to have recourse to the ICBR, the Policies operate without the need to rely on the ICBR. There is therefore in my view no mistake in the sense of having limited the Policy generally to property under construction.
154. Even if the ICBR did contain the insuring clause for the Policy, in my view it does not follow that the ICBR terms in general should take precedence over any other terms of the Policy and that, in order to make the ICBR terms applicable generally, Section I and Section II of the ICBR terms should simply be disregarded.
155. No case in mistake or rectification was pleaded. However for the Court to correct a manifest error "*it should be clear that something has gone wrong with the language and … it should be clear what a reasonable person would have understood the parties to have meant*": *Chartbrook v Persimmon Homes* [2009] 1 A.C. 1101 at [25]. That test is not satisfied here.

156. In oral closings Mr Stanley appeared to advance a variation on the mistake argument and submitted that:

> "*To that extent, [the Defendants] attempt to say: well, the complete answer to this is, look, there's a reference in the clause to property under construction and this wasn't property under construction, can't take anywhere, you have to construe that on the assumption that the parties were making a contract, since that's clearly what they thought they were doing, and that would be -- involve accepting that they were treating the pipeline as covered even though they knew it wasn't under construction*." [emphasis added]

157. Again this submission seems to imply that the entire Policy was limited to property under construction by reason of the incorporation of the ICBR, which in my view it was not, and/or that the ICBR terms take precedence over the remaining terms of the Policies which, as discussed above, in my view they do not.
158. Accordingly in my view there is no need to fall back on any estoppel or similar argument in order to give effect to the intention of the parties that there should be cover for property which is not under construction.
159. I cannot see any merit in the arguments based on mistake or estoppel but should the Claimant seek to pursue either argument, I note that no case in mistake, rectification or estoppel was pleaded or advanced at trial before being mentioned in oral closing submissions and the evidence at trial was not directed to meet such a case.
160. In its submissions the Claimant largely fails to distinguish between the ICBR and the IWCBR relying on its argument that the insuring clause is to be found in the ICBR (and not in the main body of the Policies) in order to override both the language of the ICBR but also by extension to override the language of the IWCBR.
161. Thus in its written submissions the Claimant uses the generic expression "the Institute Clauses" which fails to distinguish between the two sets of incorporated terms:

> *"The first reading—that Institute Clauses effectively take precedence over Exclusion 2.i—has the virtue of giving proper effect to the scheme that the parties have actually adopted in choosing the Institute Clauses as the means of providing the primary insuring clauses in Section I. If it is correct, then where a loss comes within the cover positively granted by the Institute Clauses, Exclusion 2.i does not apply…"* [emphasis added]

162. The Claimant submitted in opening that "*there is no basis to suggest that the IWCBR are somehow inapplicable*".
163. However, in order to make the IWCBR "*applicable*" to the Pipelines either the Court has to disregard entirely the limitation to floating assets or the Court has to accept the "*construction*" advanced by the Claimant that the Pipelines were "*launched*" once they were installed offshore.
164. In my view the Claimant's approach does not involve the construction of the language used. The approach of the Claimant would not be construing the words used in context but inviting the Court to rewrite the contract and either strike out passages referring to launch or to deem the clauses to mean something other than their natural meaning such that, as the Claimant submitted, "*the Pipelines were "launched" once they were installed offshore"*.

Market practice

165. In my view the evidence of the experts as to the market practice supports the interpretation for which the Defendants contend.

166. The Defendants referred the Court to *Crema v Cenkos Securities* [2010] EWCA Civ 1444 at [42]-[43]**.** From that case I note that Aikens LJ said:

> *"It seems to me that it must follow that, in either case, a court will be entitled to receive independent expert evidence of what "market practice" is if that is relevant background knowledge for the purposes of interpreting the terms of the contract, both explicit and implicit."* [emphasis added]

167. The experts, Mr Boxall and Mr Sharp, agreed that there was a general market practice or understanding in the energy insurance market in 2019 for cover for war risks to be confined to floating assets (and excluded in respect of fixed installations).

168. However in cross examination Mr Boxall stated:

> "*…there is no reason why such a thing could not be negotiated*".

169. Mr Boxall also expressed the view in cross examination that the market practice was "*weak*":

> *"In this case, I think this is a weak practice, and it helped, I think, to show that in fact the assured's own policy does not adhere to, in my humble opinion of market practice, in many ways in any event."*

170. In his report he said that:

> "*It is also important to note that the Claimant's insurance coverage is not 'standard'. To the contrary there are several aspects of its cover which I consider to be atypical and significantly different from what I would regard as a standard market cover for an operational subsea pipeline asset. These aspects are:*
> *(a) the absence of a full insuring clause or scope of insurance clause(s) in the main Policy wording;*
> *(b) the policy being an operational policy but written on an amended WELCAR form (WELCAR being the standard offshore construction policy form);*
> *(c) the inclusion of the Institute Clauses for Builders Risks in an operational policy;*
> *(d) the amended General Condition 9 dealing with 'Deliberate Damage';*
> *(e) the inclusion of a Machinery Breakdown extension; and*
> *(f) the wording of the Terrorism cover buy-back.*
> *18. In these respects, the coverage agreed between the Claimant and its insurers in 2019 was so unusual that in my opinion it is neither appropriate nor reasonable to draw any guidance or utility from any general market practice or understanding. The reality is that the Claimant's highly bespoke policy operates on its own terms. I cannot think of a suitable comparator wording in my years in the market*." [emphasis added]

171. I do not accept that other features of the Policies are relevant to the question of whether there was a general market practice in 2019 concerning coverage for war risks. I therefore do not accept that the agreed conclusion that there was a general practice that war risks were excluded (as stated in the joint memorandum) can be affected by any other features of the policy and I therefore reject the evidence of Mr Boxall that the practice can be said to be "*weak*" by reason of the other features of the policy that Mr Boxall identified in Section 8 of his report.

172. I accept the submission for the Defendant that:

> "*The question is not what could theoretically have been negotiated but what terms have, in fact, been agreed bearing in mind that the negotiations were conducted against the background of the market practice described above*."

173. In circumstances where the Claimant is inviting the Court to deem clauses in the IWCBR to mean something other than their natural meaning it seems to me it is relevant background knowledge that market practice was for war risks to be confined to floating assets.

Conclusion on ICBR and IWCBR

174. It is unclear precisely how the Claimant extends its argument on the primacy of the insuring clause in the ICBR to the IWCBR. Even assuming some link, for the reasons discussed above, there is in my view no basis to rewrite the terms of the IWCBR to remove the concept of the IWCBR applying to floating property or to conclude that an amended version of the IWCBR would take precedence over the remaining terms of the Policy.
175. For the reasons discussed above I find that:
    a. the ICBR was not the means of providing the primary insuring clause in Section 1;
    b. the ICBR, as incorporated into the Policies, is limited to property under construction or repair;
    c. the IWCBR, as incorporated into the Policies, is limited to floating assets; and
    d. the Damage to the Pipelines does not fall within the scope of the cover granted by the IWCBR.

Construction of Exclusion 2.i

176. In light of my findings above in relation to the ICBR and the IWBCR, the following issues of construction remain for determination in respect of Exclusion 2.i. of Section I of the Policies:
    a. Are there two separate heads of exception in 2.i such that in this case, the exclusion will apply if either
        i. the limb for war damage (the "War Exclusion"); or
        ii. the limb for damage "*by or under the order of a government*" (the "Government Act/Order Exclusion") is met?
    b. Do the words "*except as otherwise provided in Section 1 of the Policy*" have the effect that Exclusion 2.i is overridden by General Condition 9 ("GC9"). Is GC9 limited to pollution? Does General Condition 4 affect the answer?
    c. What causal link is required by the words "*directly or indirectly occasioned by, happening through, or in consequence of…*"?

Are there two separate heads of exception in Exclusion 2.i?

177. The Claimant submitted the clause is "*obviously a war exclusion not a political risk exclusion and war exclusion combined".*
178. The Claimant submitted that damage "*by or under the order of any government*" only applies to damage which is "*occasioned by, happening through or in consequence of*" war and that is a "*monolithic list*" of perils.
179. However that is a selective analysis of the list. It is difficult to read it as a "*monolithic list*" if one considers damage "*in consequence of…civil war, rebellion, revolution* [or] *insurrection*" with damage to property "*by or under the order of any government*". Damage in consequence of civil war, rebellion, revolution or insurrection may well not be by or under the order of any government.
180. The Claimant further submitted that the "*final words of the Exclusion, commencing "confiscation"*", take their meaning from the earlier matters enumerated in the clause so that the words are to be understood as applying to confiscation,

nationalisation, requisition, destruction or damage which is in consequence of war. The Claimant relied on the canons of construction of '*ejusdem generis'* (i.e. the words used denote things of the same genus) and '*noscitur a sociis'* (i.e. each word takes its meaning from the words with which it is linked or surrounded).

181. In this submission the Claimant appears to accept that the second half of the Exclusion from "*confiscation*" onwards is dealing with a different set of events but seeks to limit them by reference to what has gone before.

182. However in *Financial Conduct Authority v Arch Insurance (UK) Ltd and others* [2020] EWHC 2448 (Comm) at [70] the Court stated that:

> *"The principle of noscitur a sociis is, however, one which only operates if there can be said to be a common characteristic of the surrounding words, and it is a principle which must in any event give way if the particular words, or other features of the contract so dictate*."

183. The Defendants submitted that whilst each of the terms "*confiscation, nationalisation and requisition*" involve, at least to some degree, deprivation of possession or title to property, none of them necessarily involves any physical damage to or destruction of property. Similarly, damage to or destruction of property may occur without any deprivation of possession or title to property. Thus, there is no necessary overlap between these terms and the occasioning of damage or destruction.

184. I accept that submission and there is in my view no scope for the application of "*noscitur a sociis".*

185. I have already indicated that there is a distinction between for example, rebellion and revolution in the first half of the Exclusion and confiscation and nationalisation in the second half, the latter being acts of government whereas the former are not, and the principle *ejusdem generis* does not in my view apply.

186. The Defendants submitted that Exclusion 2.i should be read as divided into two sections as follows:

> *"Notwithstanding anything to the contrary contained herein, this section does not cover*
> *loss or damage directly or indirectly occasioned by, happening through, or in consequence of war (whether war be declared or not), invasion, acts of foreign enemies, hostilities, civil war, rebellion, revolution, insurrection, military or usurped power or*
> *confiscation or nationalisation or requisition or destruction of or damage to property by or under the order of any government or public or local authority except as otherwise provided in Section I of the Policy."*

187. In support of this construction the Defendants relied on:
    a. the syntax (the use of commas in the first section followed by the use of "or");
    b. the fact that damage resulting from acts by the state would not necessarily be the cause in "*rebellion, revolution, insurrection"*;
    c. that "*destruction of or damage to property*" would be superfluous if it was merely part of a single exclusion.

188. The Claimant submitted in its written openings that:
"*...there are any number of places where the clause might stop and start again and no particular reason why the clause should be read as containing a 'break' where the Defendants say it does*".

189. However as referred to above, in invoking the principle of *ejusdem generis* the Claimant appears to acknowledge an obvious break before the terms "*confiscation…*" onwards.
190. By contrast reading the clause as being divided into two halves as the Defendants suggest, is also consistent with the natural meaning of *"confiscation or nationalisation or requisition or destruction of or damage to property by or under the order of any government"* in that *"confiscation or nationalisation or requisition"* all relate to acts of a state.
191. I also accept the Defendants' submission that the words "*damage to property*" before the words "*by or under the order of any government*" would be superfluous if the Claimant's interpretation were to be preferred. The exclusion in the first half refers to "*loss or damage directly or indirectly occasioned by, happening through, or in consequence of war" and* thus the subsequent words *"damage to property by or under the order of any government or public or local authority"* add nothing to the broad formulation in the first half if the Exclusion is read as a single exclusion.
192. The Court should strive to reach a construction which does not find language superfluous. This is consistent with the approach of Calver J in *Hamilton Corporate Member Ltd v Afghan Global Insurance Ltd* [2024] EWHC 1426 (Comm):

    "…Obviously the court should seek to give meaning to all parts of the clause rather than adopting a construction which renders a large part of the clause otiose….".
193. Further the Defendants' construction addresses what the Claimant submitted was the ambiguity between the opening words "*Notwithstanding anything to the contrary contained herein*" and the closing words "*except as otherwise provided in Section I of the Policy".*
194. The Defendants' construction gives effect to all the words because recognising the division in the Exclusion means the words "*except as otherwise provided in Section I of the Policy*" apply only to the government perils in the second half of the clause and (as discussed further below) the proviso can be given meaning as a reference to GC9.

Conclusion on the two separate heads

195. For the reasons set out above I find that:
    a. there are two separate heads of exception in Exclusion 2.i such that in this case, Exclusion 2.i will apply if, on the facts, either
        i. the War Exclusion or
        ii. the Government Act/Order Exclusion

        is met.
    b. the proviso "… *except as otherwise provided in Section I of the Policy"* qualifies only the second limb of Exclusion 2.i.

General Condition 9

196. The Defendant's position is that GC9 is limited to pollution.
197. GC9 provided as follows:

> "9. DELIBERATE DAMAGE
> *Subject to the terms, conditions and Limits of Liability of this Policy, all Sections of this insurance cover physical loss of or physical damage to the property insured or liability or cost or expense (as applicable to each respective Section or Sub-section) directly caused by any act or order of any governmental or regulatory authority acting under*

the powers vested in them to prevent or mitigate pollution hazard, or threat thereof, resulting directly from damages to the property insured for which the Insurers are liable under this Policy.
Coverage provided by the above paragraph shall also extend to cover any other loss, damage, liability, cost or expense caused or inflicted by order of any governmental or regulatory body or agency." [emphasis added]

Submissions

198. The Claimant submitted that:

> *"Three points are clear. First, General Condition 9 is regarded as providing coverage ('all Sections of this insurance cover'; 'Coverage provided by the above paragraph'). Second, that cover is then extended by the second part ('…shall also extend to …'). Third, it is extended to 'any' other damage that is caused or inflicted by order of any governmental body (etc.), without limitation."* [emphasis added]

199. The Defendants submitted that:
    a. the second paragraph cannot be read in isolation from the first paragraph. The second paragraph states that it is extending the coverage of the first paragraph and it extends the coverage provided by the first paragraph to, inter alia, loss or damage indirectly caused by governmental measures taken for the purpose of mitigating pollution.
    b. GC9 falls to be construed in a factual matrix that includes the market practice and understanding of which Mr Boxall gave evidence in his report, and that Mr Boxall confirmed that such cover would be very non-standard.
    c. if the Claimant was right that the second paragraph should be read literally without any limitations, as simply covering any loss and so on caused or inflicted by order of any governmental or regulatory body or agency, then the first paragraph of GC9 would be redundant.
    d. There would be a conflict with the express terms of the second limb of the Exclusion (even though the Defendants accepted in their oral closings that it would not "*completely obliterate*" it).

200. The Claimant submitted that:
    a. the Defendants' interpretation fails to give effect to the "*express words*" of the paragraph which say nothing about "*indirect loss*" or pollution hazard.
    b. If the parties had intended to make that minor extension to the scope of the first paragraph, they would simply have added '*or indirect*' after '*direct*' in the first paragraph.

Discussion

201. The Court's task is to "*ascertain the meaning of the words used by applying an objective and contextual approach*": *Providence Building Services Ltd v Hexagon Housing Association Ltd* [2026] 1 W.L.R. 538 at [23]:
"*In Wood v Capita Insurance Services Ltd [2017] AC 1173, Lord Hodge JSC, with whom the other Supreme Court Justices agreed, pointed out, at para 12, that contractual interpretation "involves an iterative process by which each suggested interpretation is checked against the provisions of the contract and its commercial consequences are investigated...."*.

202. The first paragraph is clearly and expressly concerned with damage "*directly caused by any act or order of any governmental or regulatory authority … to prevent or mitigate pollution hazard, or threat thereof*". [emphasis added]

203. The Claimant in its submission focused on the word "*any*" in the phrase "*any other damage*" in the second paragraph but ignores the significance of the word "*other*". The second paragraph clearly overlaps with the first unless "*other*" is given some meaning:

"…*any other loss, damage, liability, cost or expense caused or inflicted by order of any governmental or regulatory body or agency*" [emphasis added]

204. In my view GC9 has to be considered as a whole and the meaning of "*other*" damage "*caused or inflicted by order*" in the second paragraph is to be contrasted with damage which is "*directly caused by any act or order…*".
205. The Claimant submitted in oral closing that "*it is difficult to see how loss, damage, liability, cost or expense would be inflicted by order of a government and not be a direct loss*".
206. In my view the Claimant ignores the potential distinction between "*damage directly caused by act or order*" and damage "*caused or inflicted by order*" identified in *Aercap Ireland Ltd v AIG Europe SA* [2024] EWHC 1430 (Comm). At [566] Butcher J stated that:
"*the better interpretation is that 'by' serves the purpose of capturing cases in which the government brings about deprivation of property, in one of the ways specified in the clause, by direct agency; while 'under the order of' the government refers to what may or may not be a longer chain of causation in which the efficient cause is an order of the government*".
207. The interpretation that "*other*" is intended to supplement the cover in the first paragraph rather than replace it gives meaning to the words at the start of the second paragraph "*Coverage provided by the above paragraph shall also extend…".* [emphasis added]. Thus the second paragraph extends to damage both "*caused*" and "*inflicted*" but limits it to "*damage… caused or inflicted by an order*" rather than extending to both "*an act*" or "*order*" of a governmental or regulatory authority.
208. The alternative interpretation that "*other*" means in effect "*all damage caused or inflicted by [government] order*" without limiting it to pollution would not give any substance to that phrase at the start of the second paragraph ("*Coverage provided by the above paragraph shall also extend*…") and would have the result that the second paragraph would not only overlap with the first paragraph but would make the limitation in the first paragraph for damage caused by order "*to prevent or mitigate pollution hazard*" redundant.
209. The Court should give effect to the whole of a clause if it is possible to do so: see Calver J in *Hamilton Corporate Member Ltd v Afghan Global Insurance* set out above.
210. As to the consequences of the rival interpretations, it is difficult in the context of "*all risks*" cover to see the purpose of GC9 if the second paragraph extends to "*any damage caused or inflicted by order of any governmental …body or agency"* without limitation.
211. By contrast on the Defendants' construction GC9 is needed because that all-risks cover is cut down by Exclusion 2.i and the proviso referring in effect to GC9 provides a very limited and specific cover for damage caused by governmental measures in the context of pollution mitigation.
212. For these reasons in my view the correct interpretation of GC9 is that it is limited to pollution hazard.

General Condition 4

213. General Condition 4 provides that:

"In the event of any conflict of interpretation between these General Conditions and the specific insuring conditions (including special clauses) contained in the individual Sections of this Policy, then the broadest possible interpretation to the benefit of the Insured shall always prevail …".

214. The Claimant submitted that the concluding words of Exclusion 2.i ("*except as otherwise provided in Section 1 of the Policy*") mean that the exclusion is subject to GC 9 which does "*otherwise provide*" and insofar as there is conflict it should be resolved in favour of coverage by reason of General Condition 4.

215. In my view for the reasons set out above there is no conflict of interpretation between GC9 (limited to pollution hazard) and Exclusion 2.i. Exclusion 2.i is broader than GC9 but contains a carve out for GC9 by reason of the concluding phrase in Exclusion 2.i *"…except as otherwise provided in Section I of the Policy".*

"directly or indirectly occasioned by, happening through, or in consequence of war"

Submissions

216. As the Claimant submitted, the question of whether the Damage falls within the War Exclusion depends on reaching a factual conclusion, but also upon understanding what sort of connection—in the context of the Policies—is meant by "*directly or indirectly occasioned by, happening through, or in consequence of war*".

217. It is common ground that the conflict between Russia and Ukraine that began on or around 24 February 2022 (the "War") satisfies the definition of 'war' under the Policies.

218. The Claimant submitted in oral openings that to succeed on the War Exclusion the Defendants had to show that war was an "*effective cause*" of the damage. It was further submitted that the Claimant accepted that the connection need not be a direct connection, but it needed to be a causal connection and it needed to be a causal connection of "*real significance*".

219. The Defendants submitted in oral closings that it was common ground that the words in the Exclusion connote a "*loose causal connection, certainly looser than proximate cause or efficient cause*" and referred to a passage in *Butler & Merkin's Reinsurance Law* (at B-0451) for the proposition that the only question for the court is whether or not a war risk "*has in any way contributed to the loss*". Mr Salzedo clarified in his oral closings that the focus of his submission was not on "*loose*" but that it was a formulation which attempted to set a broad causal test.

The relevant case law

220. As I noted in the course of oral submissions the issue in my view is where to draw the line. The Claimant referred to Mustill J stated in *Spinney's (1948) Ltd v Royal Insurance Ltd* [1980] 1 Lloyd's Rep 406, 441–42:

"*Plainly, there must be some limit on the application of the clause, for the chain of causation recedes infinitely into the past. The draftsman must have intended to stop somewhere: and that place must be the point at which an event ceases to be a cause of the loss and becomes merely an item of history. The draftsman has not explained how that point is to be identified nor indeed do I believe that words can be found to do so. It is eventually a matter of instinct- but an instinct guided by the fact that this is a policy which …expressly insures against violent acts. In essence, the task is to assess whether the particular act of violence simply takes place against the background of a "warlike" state of affairs, or whether it has itself (even if in a rather remote way) a warlike aspect of its own*." [emphasis added]

221. The Claimant stressed the final sentence of that passage from the judgment of Mustill J:

"*In essence, the task is to assess whether the particular act of violence simply takes place against the background of a "warlike" state of affairs, or whether it has itself (even if in a rather remote way) a warlike aspect of its own*."

222. However I do not read that judgment as imposing a requirement in this case that the Sabotage must have a "*war like*" aspect. On the facts of that case the judge was concerned with the looting of business premises where the relevant insurance policy had an exclusion for loss or damage "*occasioned by or through or in consequence directly or indirectly of any of the following occurrences: …civil commotion assuming the proportions of or amounting to a popular rising…".*

223. On the issue of causation Mustill J said:

"…The plaintiffs have to face the assertion that the turbulence and collapse of public order attendant upon the civil commotion permitted and indeed even encouraged the acts of looting and vandalism of which the incidents at Spinney's were examples. Unless rebutted, this would in my view be sufficient to establish that the loss was occasioned indirectly (if not directly) by, through or in consequence of the civil commotion…".

224. It is clear in my view that the indirect nature of the application of the causal test applied can be seen in the reasoning of Mustill J that the loss was occasioned by the civil commotion by reason of the collapse of public order which was part of the civil commotion which in turn permitted the acts of looting and vandalism including the damage to the insured premises.

225. The Claimant also relied on *Coxe v Employers' Liability Assurance Corporation Ltd* [1916] 2 KB 629 in which a policy excluded death "*directly or indirectly caused by, arising from or traceable to war"*.

226. The facts were that during the First World War a soldier was accidentally killed by a train, in the course of his military duty, walking alongside the rails of the railway for the purpose of visiting guards and sentries posted at various points along the line. The general public had no right to walk along the line at the place where the accident happened, and in normal times the place would have been illuminated by lights from an adjacent signal-box, but those lights had been obscured in compliance with regulations relating to the war. An arbitrator found that the death was traceable to war within the meaning of the condition.

227. The Claimant submitted that:

"*The war had placed the soldier in a 'position of special danger'; it was on this basis that the indirect cause wording applied*."

228. The Defendants submitted that there is nothing in *Coxe* that suggests that special danger is a legal test but rather it was the way in which in that particular case the indirect causation was characterised and established.

229. In my view the Defendants are correct. On the particular facts the judge was determining whether the arbitrator could reasonably find that the particular circumstances meant that his death was covered or was too remote from the war. Even though the reasoning of the judge referred to the soldier being placed in a position of being "*specially exposed*" to danger by the war, the only legal question was whether the war was so remote from the death that it could not be said that the death was indirectly caused by the war.

230. Scrutton J said:

"But a line must be drawn somewhere. For instance, the birth of Captain Ewing, even though it may be said to have led in the chain of causation to his being in the position in which he was killed, could not be considered as causing his death; and if on the facts it was possible to hold, in accordance with the principles I have enunciated, that the clause was not applicable, I should have been able to find that his representatives had a claim. But I am unable to hold that any principle excludes, upon these facts, a possible finding by the arbitrator that war was the indirect cause of this accident. If war had merely placed Captain Ewing in a position not specially exposed to any danger, and in that position a particular incident not connected with war caused his death, I think that most probably in that case the matter would not come within the condition. For instance, suppose that, in connection with the war, the assured had gone to a military camp not in any way specially exposed to lightning, but where lightning had struck and killed him, I should be disposed to think that the war was so remote from the death that in that case it could not be said that the death was indirectly caused by the war. If, however, the war had placed the assured in a position specially exposed to danger, as for instance in a place where he was specially exposed to being struck by lightning—if such a place can be conceived—and he was there struck and killed by lightning, it appears to me to be a question of fact, not of construction, whether the death was indirectly caused by war. In the present case the arbitrator has found, as a fact, that the assured's death was indirectly traceable to war; and it is clear upon the facts that he was placed in a position of special danger— namely, he had to be about the railway line performing his military duties at night with the lights turned down, in consequence of war, and while doing his military duties in that position of special danger he was killed by reason of the special danger which prevails at that particular place and to which he was exposed by reason of his military duties. In those circumstances I am unable to hold that the arbitrator could not reasonably find, as a matter of fact, that the death was indirectly caused by war." [emphasis added]

231. The conclusion that there is no test of being placed in special danger is supported by the passage in *Butler & Merkin* referred to above, in which having set out an identical clause which excluded "*loss or damage directly or indirectly occasioned by happening through, or in consequence of, war…*" the authors stated that:

"*It will be noted that these clauses go further than merely excluding those losses proximately caused by war risks, but also prevent recovery where war has "directly or indirectly" caused the loss. Consequently, the ordinary rules as to proximate cause do not apply, and the only question for the court is whether or not a war risk has in any way contributed to the loss. The position may be illustrated by American Tobacco Co. v Guardian Assurance Co. The assured had insured tobacco warehouses in Smyrna under a fire policy, issued by the defendants, that excluded "loss or damage directly or indirectly proximately or remotely occasioned or contributed to by or in connection with or in consequence of … invasion [and other war risks] … or incendiarism directly connected therewith". Smyrna had been occupied by the Greek army in 1919, but in 1922 the Turks, under Kemal Ataturk, defeated the Greeks, who evacuated Smyrna, the Turks occupying it in September 1922 without meeting resistance. Martial law was proclaimed, but there was much looting and rioting in the city, and, three days after the occupation of Smyrna, a fire started in the Armenian quarter and a large part of the city — including the insured warehouses — was destroyed. The Court of Appeal held that, irrespective of evidence of incendiarism (which had been accepted by Rowlatt J. at first instance),*

the insurer was correct in denying liability, on the basis that the fire was the consequence of ill-feeling created by the Greek invasion. The court might not have been able to reach that conclusion had the exclusion clause removed liability only for losses directly attributable to war risks, as it is at least arguable that the fire was not, on the ordinary principles of proximate cause, a direct consequence of the invasion." [emphasis added]

232. In its written closings the Claimant dismissed *American Tobacco Co v Guardian Assurance Co* (1925) 22 Ll L Rep 37 on the basis that the question was whether loss caused by incendiarism was '*directly or indirectly connected*' with the state of events which caused martial law, and essentially a factual issue. The Claimant stated that the Court regarded the incendiarism to be the direct result of the state of events and referred to the judgment of Atkin LJ.
233. However the passage in *Butler & Merkin* was addressing not the evidence of incendiarism but the finding that the fire was the consequence of ill feeling created by the Greek invasion and thus indirectly caused by the invasion.
234. In his judgment Bankes LJ based his decision on the ground that:

"*The loss or damage of which the plaintiffs complain was proximately or remotely contributed to by or in connection with or in consequence of events or causes which determined the proclamation or maintenance of martial law or state of siege*"
and further that the events or causes which determined the proclamation or maintenance of martial law were:
"*…the re-occupation of Smyrna by the Turks under the circumstances which I have indicated including all the ill feeling, all the resentment, the fact of the population of Smyrna being what it was, the Armenian quarter being what it was, the houses being what they were, and so forth*."

235. Scrutton LJ in his judgment agreed that the fire was at any rate contributed to by incendiarism directly caused by the state of war. However he also considered the finding of the first instance judge that even if it was not incendiarism, the events or causes which determined the proclamation or maintenance of martial law contributed to this loss or damage. Scrutton LJ stated that he could not disturb that conclusion which the first instance judge had come to on the evidence:

"Now taking all those things together they seem to me to give abundant ground for holding that the fire which ultimately by the coalescence of these numerous fires becomes one big fire beyond the control of the fire brigade and sweeps the town of Smyrna nearly to the quay and destroys the property of the plaintiffs, <u>was contributed to by the state of disorder and war and racial hostilities and rioting and outrage which are found in the first four days after the occupation of Smyrna by the Turks</u>." [emphasis added]

236. The Claimant also relied on *Winicofsky v Army and Navy General Assurance Company* (1919) 35 Times LR 283. The facts of that case concerned an isolated case of burglary during an air raid which the Court held was not a "*loss occasioned by hostilities, or loot, sack or pillage in connexion therewith*." The judge held that the burglary was not a loss caused by hostilities even though the air raid which was an act of hostilities produced a state of affairs which made things easier for the burglars.
237. The Claimant submitted that:
"*perceived motives may be relevant to the analysis, and so too may the fact that the War created the opportunity for the Sabotage, but they will be secondary to what in fact caused the damage*".
The Claimant further submitted that:

"*While Winicofsky was not a case dealing with indirect causation, its conclusions are instructive: Bray J rejected the insurer's arguments and distinguished between the air raid as the surrounding circumstance or occasion; and the burglary as the actual operative cause of the loss. Although the air raid created conditions that made burglary easier, the loss itself was caused by ordinary criminal conduct rather than by hostilities*."

238. Given that *Winicofsky* was not dealing with indirect causation I do not accept the Claimant's submission that its conclusions are instructive in the application of the test in this case as to whether the damage has the necessary degree of connection to the War to be excluded.

239. Finally the Claimant relied on *Crowden v QBE Insurance (Europe) Ltd* [2017] EWHC 2597 (Comm) at [72]. The policy in that case contained an exclusion of any liability "*arising out of or relating directly or indirectly to the insolvency or bankruptcy of the insured or of any … business, firm or company with whom the insured has arranged directly or indirectly any … investments*".

240. At [70]-[71] the Deputy Judge said:

"70. *That said, it seems to me that the undeniable sense of these words is to emphasise that the causative effect of the relevant insolvency need not be as strong or efficient so as to constitute a proximate cause. I come to this conclusion for two principal reasons. First, the Insolvency Exclusion does not limit itself to a single causative link, e.g. 'caused by' (which is usually construed as requiring a proximate cause) or 'arising out of' (which has been variously construed as requiring a proximate cause or some lesser causative connection). Instead, the Insolvency Exclusion uses two differently expressed causative links, namely 'arising out of' and 'relating … to'. Indeed the latter descriptive link may be construed in some instances as requiring a mere connection or relation, by way of a common causal history, but that is not suggested in this case. If the intention had been to import a requirement of a proximate cause, the Insolvency Exclusion would not have used both of these expressions.*

71. Second, the use of the words 'directly or indirectly' plainly indicates that the causative link may be more remote than a proximate cause. There has been a sound effect of the specified excluded peril downwards from a proximate cause. In Coxe v Employers' Liability Assurance Corp Ltd [1916] 2 KB 629, Scrutton J said:

'the words which I find it impossible to escape from are "directly or indirectly." There does not appear to be any authority in which those words have been considered, and I find it impossible to reconcile them with the maxim causa proxima non remota spectatur. If it were contended that the result of the words is that the proximate cause, whether direct or indirect, is to be looked at, I should reply that that result does not appear to me to be consistent or intelligible. I am unable to understand what is an indirect proximate cause, and in my judgment the only possible effect which can be given to those words is that the maxim causa proxima non remota spectatur is excluded and that a more remote link in the chain of causation is contemplated than the proximate and immediate cause. But a line must be drawn somewhere …'". [emphasis added]

241. The Deputy Judge addressed where the line is to be drawn at [72]:

"I asked Mr Singla whether it was sufficient for the insolvency to be a mere cause or whether it needed to be a significant or strong cause, albeit not so significant or strong as to amount to a proximate cause. I had in mind the construction adopted in Beazley Underwriting Ltd v Travelers Companies Inc [2011] EWHC 1520 (Comm);

[2012] Ll Rep IR 78, at paragraphs 128-130, by Christopher Clarke J, who said that 'I am prepared to accept that "arising out of" ... does not dictate a proximate cause test and that a somewhat weaker causal connection is allowed ... That does not, however, determine what degree of causal connection is required ... In my judgment a relatively strong degree of causal connection is required'. Mr Singla submitted that the insolvency needed to be a mere cause, but it was insufficient if the insolvency was merely the historical context or background (relying on Cooke J's construction in ARC Capital Partners Ltd v Brit UW Ltd [2016] EWHC 141 (Comm); [2016] Ll Rep IR 253, at paragraph 27). It may be a matter of semantics, but, like Scrutton J, I think that a line must be drawn somewhere (see also Mustill J's comments in Spinney's (1948) Ltd v Royal Insurance Co Ltd [1980] 1 Ll Rep 406, 441). I consider that for the Insolvency Exclusion to apply, it must be specifically accountable as a cause of the claim, liability or loss: in this sense, it must be significant; it must stand out as a contributing factor, at least, to the claim, liability or loss." [emphasis added]

242. I do not read the word "*significant*" as implying any relative ordering of causes or that the cause needs to have a greater contribution than another. In my view the judge used the term "*significant*" in the sense that it must be "*noticeable*" or as he said "*specifically accountable*" as a cause of the loss. I do not read that judgment as imposing any higher causal connection.

Conclusion on legal test

243. The Claimant accepted that the test for the causal link in Exclusion 2.i was not the proximate cause. In my view it overstates the position to describe the test as being that war was an "*effective cause*" of the Damage as that seems close to a test of proximate cause.
244. I accept the submission for the Defendants that the phrase in issue is a "*very broad phrase*". There was no focus by counsel on the possible distinction between the three alternatives "*occasioned by*" "*happening through*" and "*in consequence of war*". However these separate formulations in my view emphasize the indirect nature of the link between the Damage and the War which will satisfy the broad causal test.
245. For the reasons discussed above, in my view the specific decisions on the facts in *Spinney's* and *Coxe* do not impose any further legal requirements or test of the kind suggested by the Claimant in order to determine whether on the facts there is a sufficient causal connection between the Damage and the War.
246. The Defendants accepted in their written submissions that it is sufficient if the Rupture Damage (and the Dent) have a "*significant*" causal link to a war and submitted that that test is satisfied on the facts. That leaves open the abstract question of what is "*significant*".
247. In my view the cause needs to be capable of being identified as a contributing factor, in that sense being a "*significant*" cause i.e. "*noticeable*" or "*specifically accountable*" but I do not accept that the test is that it needs to be a causal connection of "*real significance*" if the Claimant thereby seeks to distinguish between different causes and imply some higher degree of comparative causal contribution of the several causes.

Causation

248. The starting point is that the geopolitical experts are agreed that there are only three likely perpetrators for the Court to consider, namely the United States of America (the "US"), Russia and the government of Ukraine (or a sub state actor of Ukraine).

249. Further the Claimant accepted in oral closings that:
"[the Court] *can narrow down to the three or four possibilities, the evidence permits you to do that*".

250. In their joint report Dr Less and Dr Donald agreed that:

"*There are only three potential perpetrators: an actor from Russia, an actor from the US or an actor from Ukraine. If another state was involved, it played a subordinate role to one of these three actors and would not have perpetrated the attack(s) on its own. If the US were involved in support of another actor, then it would only have lent its assistance to a state, namely Ukraine. It is very unlikely the attack(s) was/were perpetrated by Germany or the 'Baltic Five'.*
It is possible that the attack(s) was/were carried out by, or involved, sub-state actors from Ukraine (but there is nothing to suggest the involvement of sub-state actors from any other country).
It is very unlikely that the attack(s) was/were perpetrated by a private company. Neither expert has identified any other possible perpetrator."

251. There is a difference between the experts as to which of those three states are the more likely perpetrator and the view of the experts also varies depending on the time at which the attack was conceived.

252. Dr Donald concluded that in his view Ukraine, if it were acting alone:

"…was a likely perpetrator if the operation were initiated over February to April; a less likely perpetrator between May and the end of August; and a less likely perpetrator in September."

253. By contrast in relation to Russia Dr Donald concluded that Russia:
"is the most likely potential perpetrator if the sabotage operation were initiated after 20 July."

254. In relation to the US, Dr Donald's view is that:

"…Its relative likelihood as perpetrator would depend upon when the plan to sabotage the Pipelines was initiated and the dates on which the various phases of such a plan were executed. It would therefore be a more likely perpetrator if the plan were initiated over February to April, and a less likely perpetrator if it were initiated in the period from May until 26 September."

255. The view of Dr Less, as set out in Less 2, was that:

"...an actor from Ukraine is the most likely of the potential perpetrators under discussion, relative to the others, due to Ukraine's multiple motives for wanting to attack the Pipelines and the significant circumstantial evidence pointing towards Ukrainian involvement in the Attacks, although I cannot say that this is more likely than not."

...
Russia is the least likely of the potential perpetrators under discussion, relative to the others. The demise of the Pipelines was contrary to Russia's fundamental geopolitical interests and there is significant circumstantial evidence pointing away from Russian involvement."

256. As to the possibility of a Ukrainian substate actor, in August 2024, the Wall Street Journal published an article by Bojan Pancevski suggesting that the attack on NS1 and NS2 had been carried out by a group of six soldiers and civilian Ukrainians who rented a yacht (the "Andromeda") and that the operation was overseen by General Valeriy Zaluzhnyi, the head of Ukraine's armed forces.

257. On 19 February 2025, Der Spiegel (a German newspaper) published an article that purported to confirm that the attack had been carried out by a group of Ukrainians using the Andromeda.

258. On 18 August 2025, the investigating judge of the Federal Court of Justice issued an arrest warrant against an individual "SK". SK was arrested in Italy on 21 August 2025 and subsequently extradited to Germany on 27 November 2025. On 10 December 2025 the German Federal Court published a judgment dismissing an appeal by SK against the arrest warrant. The judgment of that Court also referred to the Attacks being perpetrated by a group who used a sailing yacht, the Andromeda:

> *"According to the current status of the investigation, the following facts can be assumed to constitute strong suspicion of a crime:*
> *The accused travelled from Ukraine to Germany via Poland with a Ukrainian passport issued in the false name of S. K. but bearing his photograph. On 8 September 2022 at the latest, he boarded the ocean-going sailing yacht "Andromeda" in the port of Wiek on Rügen together with six accomplices – a ship's captain, an explosives expert and four deep- sea divers. This had previously been chartered by an intermediary for several weeks. The crew sailed the yacht to a sea area in the Baltic Sea near the Danish island of Bornholm. The accused and the other crew members then proceeded to the exclusive economic zones of Denmark and Sweden, northeast and southeast of Bornholm respectively, where they worked together to dive from the ship and attach four explosive devices with time fuses to three of the four lines of the "Nord Stream 1" and "Nord Stream 2" gas pipelines running along the seabed at a depth of approximately 70 to 80 metres…*
>
> *The accused, who was an officer in a special unit of the Ukrainian armed forces, was tasked with coordinating activities and leading the team. It is highly probable that he and his accomplices were acting on behalf of a foreign state…".*

259. More recently Mr Pancevski has published podcasts which set out more details of the account as he has reported it.

260. The Claimant submitted in its written closings that:

> "*The Andromeda theory, elaborated by Pancevski, involves a strange mixture of the sophisticated and the naïve. On the one hand, it posits Ukrainian military involvement and considerable sophistication. On the other hand it requires great clumsiness, with (it must be supposed) numerous witnesses to suspicious activities, and experts leaving a boat replete with forensic evidence of explosive handling*."

261. As set out below, it is accepted by the parties that in order to determine whether the War Exclusion applies, the Court does not have to determine which was the "*more likely*" perpetrator or whether it is satisfied that "*it is more likely than not*" that any of Ukraine, a sub state actor of Ukraine, Russia, and the United States carried out the Sabotage. I therefore include reference to the Andromeda accounts only as background to the analysis of whether the War Exclusion applies and insofar as it is relevant to the alternative case on Causation considered below, of the Damage being caused "*by or under the order of any government*".

"*directly or indirectly occasioned by, happening through, or in consequence of war*"

262. The question for the Court is whether, assuming for this purpose that each of the perpetrators carried out the Sabotage, the Court is satisfied that in each case, that perpetrator would have had the requisite causal connection to the War, the Defendants will have established that the War Exclusion in Exclusion 2.i applies.

Connection with the "War"

263. As a preliminary point, in closing submissions the Claimant advanced an argument that the geopolitics experts are not referring to the "war" as it is to be understood in Exclusion 2.i and that where the geopolitical experts understand it as a "*geopolitical event*", in the Exclusion it is to be interpreted by reference to the "actual events". The Claimant submitted that:

> *"…the geopolitics experts evidently understand the War as a geopolitical event: a thing done by Russia that shifted political alliances and (states') policies. But the (insurance) Policies do not, it is submitted, conceive 'war' in this way. Where Exclusion 2.i refers to 'war' and 'invasion', its focus is not on politics, but on actual events. That is clear from the terms of the clause as a whole, and from Spinney's case: Mustill J considered the meaning of 'war' and 'hostilities': whether an armed conflict can fit the definition of 'war' will generally involve consideration of two questions: '(1) Can it be said that the conflict was between opposing "sides"?' and '(2) What were the objectives of the "sides", and how did they set about pursuing them?' The term 'hostilities' was said to 'refer[] to acts or operations of war committed by belligerents; it presupposes an existing state of war' Neither of these is an abstract concept*." [emphasis added]

264. There is a broad definition in Exclusion 2.i of the "War like Perils": "*war (whether war be declared or not), invasion, acts of foreign enemies, hostilities, civil war, rebellion, revolution, insurrection, military or usurped power…".* There can in my view be no doubt that the war in Ukraine which began in February 2022 when Russia invaded Ukraine falls within the extended definition of *"war"*.

265. In any event the Claimant accepted in its written opening that the Ukraine war satisfied the definition of "war" in the Policies:

> "*In this skeleton, the term 'War' is used since it is common ground that the events from 24 February 2022 satisfy the definition of 'war' under the Policies*." [emphasis added]

266. I do not see that the discussion in *Spinney* detracts in any way from the (agreed) position that the war between Ukraine and Russia falls within the meaning of the phrase in Exclusion 2.i. Further in that case the decision of Mustill J was not that the acts in question were themselves part of the (civil) war but that the looting and vandalism was "*occasioned indirectly …by, through or in consequence of the civil commotion*". In that case Mustill J drew a distinction between the civil commotion and the acts of looting and vandalism:

> "*As regards civil commotions the position is in my opinion quite plain. I would if necessary have been prepared to hold that the events at the two shops and the Centre were themselves part of a continuous state of civil commotion. But there is no need to go as far as this. The plaintiffs have to face the assertion that the turbulence and collapse of public order attendant upon the civil commotion permitted and indeed even encouraged the acts of looting and vandalism of which the incidents at Spinney's were examples. Unless rebutted, this would in my view be sufficient to establish that the loss was occasioned indirectly (if not directly) by, through or in consequence of the civil commotion. This assertion appears to me justified on the facts, so far as they are known; but in any event I cannot see any basis upon which Spinney's could begin to rebut it*." [emphasis added]

267. As to the way in which the geopolitics experts approached this, in my view it is abundantly clear that in his reasoning Dr Donald had in mind the "*actual events*" which constitute the War.

268. For example, Dr Donald in Donald 1 identified the following reasons which support a conclusion that Ukraine was the likely perpetrator:

> *"…in 2022 Ukraine believed it was fighting for its survival; and a state facing extinction will take actions it would previously have ruled out. In this argument, Ukraine might in theory launch attacks on the economic or strategic interests of its allies (in this case, Germany), as well as its enemies, if this would further its own ends…"*

269. I agree that Dr Less, notably in his second report, sought to characterise the war as a political event referring somewhat obliquely to "*the post-February 2022 environment*". In Less 2 Dr Less stated:

> *"…assuming an actor from Ukraine was the perpetrator, Russia's full-scale invasion of February 2022 and the subsequent state of open warfare between Ukraine and Russia are best understood as a catalytic factor in the motive for an actor from Ukraine to attack the Pipelines, rather than the underlying cause of the Attacks…Certainly, the post-February 2022 environment presented an opportunity for a Ukrainian attack on the Pipelines but the motives – and allegedly the plans – to do so dated back long before February 2022.*
> *…The cause of the Attacks, assuming a Ukrainian actor was the perpetrator, was Ukraine's long-standing animus towards Russia, plus its economic interest in preserving its long-standing gas transit revenues, in the context of their decades-old geopolitical struggle and the post-February 2022 environment which presented an opportunity for an actor from Ukraine to perpetrate the Attacks."* [emphasis added]

270. However Dr Less is clear in his first report that he had in mind the "*actual events*" of the War namely the "*full-scale invasion*" by Russia: Dr Less stated in Less 1 that:

> *"…it is impossible to draw a straight line connecting the Attacks in September 2022 to Russia's full-scale invasion seven months earlier…".*

271. In cross examination Dr Less was asked (in relation to a section of Less 1 dealing with reasons for the US to attack the Pipelines) about a statement that its reasons included:

> *"...to signal to Russia that its crucial infrastructure was vulnerable if it continued to resist Ukraine's efforts to move Ukraine into the American sphere of influence…".*

272. It was put to Dr Less in cross examination that:

> *"... in 2022, Russia's resistance to those efforts primarily took the form of the full-scale invasion in which it sought to −−*
> Dr Less replied:
> *"A. Yes, I agree, that's uncontroversial, yes, I'll agree with that."*

273. Thus in my view whilst the experts addressed the effect of the War on political alliances and state policies, it can be inferred from their evidence that both experts also had in mind the actual events of the War in addressing the motives of the perpetrators. However as discussed above, in his evidence Dr Less appeared to be at pains to downplay the significance of the War and, where his evidence conflicts with Dr Donald I prefer the evidence of Dr Donald.

If Ukraine was the perpetrator

Expert evidence

274. In the joint memorandum Dr Less acknowledged the connection between the Sabotage and the War:

> *"I acknowledge that there were connections: February was a catalytic event which galvanised an already-existing downward trajectory in relations as Russia's invasion precipitated a full-scale war between the two. The attacks took place against the background of this war. However, it is too simple to argue that the attacks happened because of the war i.e. that they could not have happened without the fact of the war.*
> *In the hypothetical scenario that an actor from Ukraine perpetrated the attacks on the Pipelines, one of its motivations for doing so would have been a wish to strike a blow against Russia for its February 2022 invasion. The invasion increased the salience and urgency of various longer-term objectives relating to the Nord Stream pipelines. It is possible that an actor from Ukraine might have used the cover of war to carry out the attacks. Ukraine would have been encouraged by strengthening Western support which reduced the risks of an adverse reaction from the US; and cognisant of favourable developments in Germany's stance towards Ukraine after February 2022 and opposition to Nord Stream 2 by some within the German government ...".* [emphasis added]

275. However Dr Less was of the view in the joint memorandum that:
   a. The attacks were part of a cycle of conflict dating back decades.
   b. Of the multiple motives Ukraine had for carrying out the attacks, almost all pre-dated the war. The only one which did not is retaliation for the invasion.
   c. The pipelines were a non-military target in international waters, well outside the "*theatre of war*".
   d. Representatives of Ukraine's government have said the attacks did not stop the war, did not deter Russian aggression and did not affect the situation on the front line.

276. Dr Donald's view in the joint memorandum was:
> "*For Ukraine, severing the Pipelines would sever Russia's hold over Germany and the EU; it was engaged in a war for survival, so might be willing to attack the economic or strategic interests of an ally; and it had been engaged in a deniable campaign of sabotage against Russia since 24 February…*
> *In all cases Ukraine's motives would have been informed by and intimately connected with the war for survival initiated by Russia's invasion of 24 February 2022."*

Submissions

277. The Claimant submitted that:
   a. the Damage did not further either party's war aims.
   b. the Sabotage had its roots in Ukraine's much longer-term struggle for independence, and in the geopolitical leverage that the Pipelines afforded Russia since their construction.
   c. the Pipelines did not constitute military targets.
   d. The Pipelines were not within the field of the conflict between Russia and Ukraine.

"The Damage did not further either party's war aims"

278. In cross examination it was put to Dr Less:

"Q. *And if Ukraine or Ukrainians blew up the pipelines in September 2022, then that was part of their overall war effort, wasn't it?"*
Dr Less responded: "*Yes*."

279. It was submitted for the Claimant that:
"…Although in colloquial terms, as Dr Less agreed, it might be part of the 'overall war effort' … this point does not help the Court. During wartime many actions carried out by patriotic nationals of the relevant state are in keeping with that state's overall war effort, but it stretches concepts of causation too thin to regard that as a useful indication of causation."

280. I do not accept this characterisation of the evidence. Dr Less was not asked whether the attacks were "*in keeping*" or "*consistent with*" the Ukrainian war effort but whether they were "*part of the …war effort*". The evidence of Dr Less was that the attacks (if perpetrated by Ukraine or Ukrainians) constituted part of their war effort.

281. The Claimant in its oral closings appeared in effect to challenge this evidence of Dr Less. Mr Stanley asked rhetorically:
"*In what sense would destroying the pipeline have been part of the war effort? If it wouldn't have achieved anything in the war, if it wasn't going to achieve a propaganda victory, if it wasn't going to advance Ukraine's military interests, if it wasn't going to lead to a quicker victory for Ukraine, in what sense is it really part of the war effort in anything other than the most journalistic sense possible?"*

282. The answer was provided (at least in part) earlier in the Claimant's closing submissions when Mr Stanley said:
"*in the case of Ukraine you could at least say: well, in some sense this is property in which, although it's civilian property, it's used to export the enemy's gas, it's been used in the past to the enemy's advantage, and it's something in which Gazprom, which is going to be seen as being part of Russia, continues to have an interest"*.

283. Mr Stanley submitted that these factors were not sufficient. However what Mr Stanley omitted to refer to was the economic significance of the gas to the War, namely the evidence before the Court that the revenues from the Pipelines were viewed as helping to fund the War.

284. Mr Salzedo submitted in his oral Closings:
"Perhaps what's underlying all of that as well as some of what I've been talking about already, is actually money, it's the fact that Russia earns money from gas being transported through Nord Stream, which helps it to fund its war effort. … the background is sanctions attempting to cut off money, and that kind of thing. So money is all underlying that." [emphasis added]

285. In Donald 1 Dr Donald set out the events of September 2022 immediately prior to the Sabotage and he referred to the announcements by the G7 and the EU to impose a price cap for Russian oil and gas:

"…On 2 September the G7 confirmed their joint intention to impose a price cap on Russian oil to curb Moscow's hydrocarbons revenues. Later on 2 September Gazprom announced that it was shutting down Nord Stream 'indefinitely', supposedly due to a leak at Gazprom's Portovaya compressor station in Russia. This was then followed, later on 2 September, by EU Commission President Ursula von der Leyen suggesting that ' it is now time for a price cap on Russian pipeline gas to Europe'; however this was not yet a formal proposal. On 7 September Putin declared that 'We will not supply anything at all if it is contrary to our interests. No gas, no oil, no coal, no fuel oil, nothing.' If the West went ahead with capping Russian oil

and gas prices, it would 'freeze, freeze'. … Later that day-after Putin made his statement-von der Leyen formally proposed the gas price cap…".

286. In a footnote to his report Dr Donald made reference to the following article which makes clear the reason behind the proposal from the G7 and the EU to cap the Russian pipeline gas:

"The European Union's effort to slap a limit on the price of Russian pipeline gas drew a furious response from the Kremlin on Wednesday.
"We will not supply anything at all if it is contrary to our interests," Russian President Vladimir Putin said. "No gas, no oil, no coal, no fuel oil, nothing."
Putin's rage was directed at the EU, where European Commission President Ursula von der Leyen on Wednesday again called for a cap on the price of Russian gas, and at a recent G7 call to set limits on the price of Russia's oil exports. Both measures are aimed at undermining the Kremlin's financial ability to wage war in Ukraine.
"We must cut Russia's revenues which Putin uses to finance this atrocious war against Ukraine," von der Leyen said as part of a broader speech about ideas for the EU to rein in soaring energy prices that threaten the Continent's political and economic stability — a situation the Commission president blamed on both Russia and climate change…". [emphasis added]

"Roots in Ukraine's much longer-term struggle for independence"

287. Dr Less was also asked in cross examination about his evidence in the joint memorandum (set out above) that:

"The animus between Ukraine and Russia did not begin in February 2022. The attacks were part of a cycle of conflict dating back decades…".

288. Dr Less acknowledged that:

"*Q. Most outbreaks of violence between states have causes in animosity that can be traced back decades, centuries, even millennia in one or two cases, don't they?*
A. Yes, as a general statement, that is true.
Q. Yes, it's the nature of international conflict, isn't it?
A. Yes, they have political roots…".

289. In the joint memorandum Dr Less also said (as set out above) that one of the motives which did not predate the War was "*retaliation for the invasion*":

290. In cross examination Dr Less said:

"A. …When I think about animus, I'm thinking about the fundamental difference between Russia and Ukraine geopolitically, the question of Ukraine's ultimate orientation and its independence from Russia, and when I 'm thinking about motives, I'm thinking more specifically about issues such −− the issues created by the existence of the Nord Stream pipelines, leverage over Germany, Russian leverage over Ukraine, etc.
Q. Yes. So you've got these background motives that were there anyway, some motives were there without the invasion, that's your point?
A. Yes, most of them, most of them I'm suggesting.
Q. Yes, but even in those circumstances an invasion that then precipitates a full −scale war can be a triggering cause for the violence that follows, even if some of that violence is something that the other party might have wanted to do anyway?
A. Yes, and I've acknowledged that point in slightly different words in my report when I talk about war being a contributing factor in the scenario of which I think we're talking about that Ukraine carried out the attacks." [emphasis added]

291. The significance of the War was in effect accepted by Dr Less at the end of his cross examination when he sought to explain his view that the War was a "*catalytic factor*":

> *"A. Essentially, I'm taking issue with Dr Donald's idea that in February 2022 everything changed, and he then draws the inference from that which is that the attacks were a direct consequence of everything that changed in February 2022. I see events playing out in a continuum, going back, you know, quite a long way into history, if you really want to, and what I see is that the February 2022 invasion galvanised an underlying −− a set of underlying trends, in particular international relations, relations between Russia and Ukraine obviously, between the US and Russia, between Russia and Germany, but I also think −− I also use this word " catalytic " in the sense that it gives greater salience and urgency to the various motives which I think explain the attack on the pipelines which we've discussed at some length already.*
> *Q. Essentially it brings forward the attack from some unknown possible future date when it may or may not happen to 2022.*
> *A. Broadly I accept that but with the emphasis on the existence of these underlying factors which explain −− ultimately explain why I think the attacks took place."* [emphasis added]

292. By contrast Dr Donald was clear as to the effect of the War. In the Joint Memorandum he said:

> *"While the 'animus' between Ukraine and Russia referred to by Dr Less did indeed have a long history, it is not credible to argue that the most traumatic episode in Ukrainian-Russian relations – namely the unprovoked invasion of 24 February, which threatened the eradication of the Ukrainian state and national identity, and which had killed between 22,000 and 87,000 civilians in Mariupol alone by May 2022 – did not materially change how Ukraine saw Russia, and what it was prepared to do to defend itself."*

293. In my view whilst the Claimant is correct in its submission that *"the Sabotage had its roots in Ukraine's much longer-term struggle for independence",* viewed from the perspective of Ukraine, the evidence is that the War gave Ukraine a motive to retaliate and it no longer had a fear of escalating matters.

"Special danger"

294. Mr Stanley submitted in closing that:

> *"there was nothing specific in the war or its conduct that accentuated it or caused it to be particularly prominent or to present any kind of special danger in September 2022, not least because at that time, Nord Stream 2, which forms part of course of the same attacks, was not certificated and was not likely to be certificated and Nord Stream 1 was not being used because Russia had decided not to use it, and not being used because Germany had made other arrangements for obtaining gas."*

295. For the reasons set out above, I do not accept on the authorities that there is any requirement that as a matter of law, the pipelines should present any kind of *"special danger"*.

296. In any event the evidence is that there was something "*specific"* in the War and/or its conduct that meant that the Pipelines did have a significance (or were prominent) in the context of the War and/or its conduct and could be regarded a "danger" in the

sense of a threat, namely the revenues derived from the Pipelines were being used by Russia to finance the War.

297. As Dr Donald explained in his evidence, the passage of gas through NS1 had been paused but not necessarily permanently ceased in September 2022.

298. In Donald 1 Dr Donald referred to the fact that at the end of August 2022, the supply of gas through NS1 was suspended not permanently closed and was still operating. Thus as Dr Donald explained, at this stage Russia still had leverage which it could use to turn the supply of gas on or off at will:

> *"… On 30 August Gazprom announced it would suspend gas shipments through Nord Stream 1 on 31 August for three days, supposedly for maintenance reasons. At this point the pipeline was operating at about 20% capacity…*
> *"…The swiftness of Gazprom's response to the G7 price cap announcement on 2 September, and then Putin's own response on 7 September, also suggest that the Kremlin was reacting to both the G7 move and von der Leyen's support for a price cap, while his 7 September 'freeze, freeze' threat indicates that he intended to use any leverage he still possessed. <u>This leverage could take the form of continuing to turn the supply of gas on or off at will - even if this had so far failed to change German or wider EU policy</u>…".* [emphasis added]

299. Further in cross examination Dr Donald explained that Germany was still planning to retain the gas supply via Nord Stream until 2024:

> *"Q. In what sense was the Nord Stream pipeline lying unused under the Baltic and with the gas supply controlled anyway by Russia of any benefit to others?*
> *A. It was of benefit to Germany in the plans that Germany had established as a result of the Zeitenwende. So Germany planned to still retain gas supply via Nord Stream until 2024 and was still obtaining supply from Nord Stream up until the point at which Russia chose to close off the supply. So, therefore, if Russia were inclined to turn the taps on again, then Germany would continue to derive benefit from Nord Stream until 2024."*

300. It is not therefore accurate to say that NS1 was in effect of no continuing relevance because Germany had made other arrangements for obtaining gas.

Outside the "theatre of war"

301. In the joint report Dr Less stated that:

> *"The pipelines were a non-military target in international waters, well outside the theatre of war which brings into question the connection of the attacks to events on the battlefield…".*

302. However in his first report Dr Less acknowledged that the attacks would fit into the "*track record*" of alleged sabotage attacks outside the theatre of war:

> *"Following Russia's full-scale invasion of Ukraine in February 2022, Ukraine then began a campaign of sabotage against Russia, involving attacks on infrastructure, industrial assets and military assets, allegedly attempted to sabotage a section of the TurkStream gas pipeline and possibly planned an attack on the Druzhba oil pipeline. The Attacks, if perpetrated by an actor from Ukraine, would fit into this track record of alleged sabotage attacks as an expression of their animus against Russia outside the confines of the theatre of war."*

303. Dr Less clarified in cross examination that in referring to the "*theatre of war*", he was not referring to the location of the fighting but to the territories of Russia and Ukraine. I see no reason to place any particular weight on the fact that the Sabotage

took place outside the territories of the two combatants in determining whether there is a (sufficient) causal link between the Sabotage and the War, given the other links referred to above.

Discussion

304. In the joint memorandum Dr Less accepted that:
"In the hypothetical scenario that an actor from Ukraine perpetrated the attacks on the Pipelines, one of its motivations for doing so would have been a wish to strike a blow against Russia for its February 2022 invasion". [emphasis added]

305. Dr Less cross-referred to Less 1 and I note from that report the following passage:
"…Ukraine was furious with Russia for its invasion and subsequent substantial destruction of the country, which played upon the longstanding animus between the two, and was likely to have wanted revenge. In this respect, destruction of the Pipelines was an obvious means to achieve this - a massive Russian prestige project which symbolised Russian power over Germany and Europe, on which Russia had spent billions of dollars, but which was potentially vulnerable to attack by a smaller opponent." [emphasis added]

306. In Less 2 Dr Less appeared to backtrack somewhat. He stated:

"…Russia's full-scale invasion of February 2022 and the subsequent state of open warfare between Ukraine and Russia are best understood as a catalytic factor in the motive for an actor from Ukraine to attack the Pipelines, rather than the underlying cause of the Attacks …Certainly, the post-February 2022 environment presented an opportunity for a Ukrainian attack on the Pipelines but the motives – and allegedly the plans – to do so dated back long before February 2022.
…The cause of the Attacks, assuming a Ukrainian actor was the perpetrator, was Ukraine's long-standing animus towards Russia, plus its economic interest in preserving its long-standing gas transit revenues, in the context of their decades-old geopolitical struggle and the post-February 2022 environment which presented an opportunity for an actor from Ukraine to perpetrate the Attacks." [emphasis added]

307. In my view this evidence of Dr Less in his second report fails to set out the whole picture. Thus:
    a. as discussed above, the phrase the "*post-February 2022 environment"* downplays the reality of the invasion of Ukraine and the War.
    b. Ukraine's motives may have had their origins in the "*long-standing animus towards Russia"* but the War brought matters to a head both in the imperative of reducing the revenues which could be used by Russia to finance the War and in the desire to strike back against Russia for the invasion and as Dr Donald said (above), the killing of thousands of civilians. I do not accept that the approach of Ukraine once the War had started can be characterised as merely part of *"its struggle for national independence"* or as part of a *"decades-old geopolitical struggle".*
    c. I accept that Ukraine would benefit from revenues from gas transiting through Ukraine if the Pipelines were destroyed or damaged but notwithstanding "*its economic interest in preserving its long-standing gas transit revenues"* the evidence is clear that Ukraine would not have risked provoking Russia prior to the invasion.
    d. The plans for the Sabotage may have existed prior to the start of the War but in my view the consequence of the War went beyond merely "*presenting an opportunity*" but also removed the previous obstacle to such an operation

namely the fear of retaliation and as Dr Less acknowledged in Less 1 "*Ukraine … was likely to have wanted revenge*".

e. Further even if the plans "*dated back long before February 2022"*, Ukraine was reluctant in 2020, as it was put to Dr Donald by Mr Stanley in cross examination, to "*prod the bear*" given the reaction that it might provoke and did not do so whereas in 2022 "*the bear is already in action*".

308. The evidence of Dr Donald in Donald 2 was that after the invasion attitudes changed, including for Ukraine, and sabotage became a "*conceivable act*" and the fear of escalation was no longer present:

"*My view is that there is a significant connection between the attack and the war, and it is difficult to conceive of the sabotage having been undertaken without the invasion of 24 February 2022.*

The situation after 24 February 2022 was therefore in my opinion fundamentally different from the situation before it. Before the invasion states might have considered destroying the Pipelines but ultimately dismissed the idea, for fear that sabotage would escalate a crisis that they were trying to contain. Afterwards, however, the context had changed. Europe was in the midst of its largest war since 1945, and – as I have already noted – states were rethinking their attitudes towards the Pipelines. Sabotage would therefore have become a conceivable act.

…If Ukraine was responsible for the sabotage; and if those motives existed during the 11 years of the Pipelines' operation before 24 February 2022; why did Kyiv not attack the Pipelines over that time – particularly as it was engaged in open hostilities with Russia for over seven and a half of those 11 years. The principal reason is that Russia would have seen it as an escalatory act, particularly during the period of open hostilities (i.e. from April 2014 to February 2022), when Ukraine was trying to avoid giving Russia an excuse to escalate." [emphasis added]

Conclusion on Ukraine

309. Dr Less accepted two key propositions (as discussed in detail above):

a. *"if Ukraine or Ukrainians blew up the pipelines in September 2022, then that was part of their overall war effort";*

b. *"one of its motivations for doing so would have been a wish to strike a blow against Russia for its February 2022 invasion".*

310. Given that the Court is not here concerned with the "*proximate cause*" but whether the Attacks were "occasioned by" or "*in consequence of*" the War it is in my view highly relevant that this can be seen as "*part of the overall war effort*" and as a "*catalyst*". Further the economic significance of the Pipelines in relation to the War is set out above.

311. In my view the causal connection between the War and the Attacks is not severed by the evidence of Dr Less that:

"The animus between Ukraine and Russia did not begin in February 2022".

312. The War had the effect of bringing into play what Dr Less referred to as the "*emotional"* aspect of wishing to strike back at Russia as well as removing the restraint that is likely to have operated prior to the invasion.

313. Once the War had started in my view there was a strategic reason to attack the Pipelines as part of the War and the fact that this single incident did not stop the War or deter Russia does not sever the link between the War and the Sabotage. It is wrong in my view to conclude that there was no (sufficient) link to the War because the Attacks did not take place inside Ukraine (which is suggested to be the "*theatre of war*") or inside Russia or because it was not a "military" target.

314. I accept the evidence of Dr Donald on the links to the War which in my view is logical and supported by the facts:
"...in 2022 Ukraine believed it was fighting for its survival; and a state facing extinction will take actions it would previously have ruled out. In this argument, Ukraine might in theory launch attacks on the economic or strategic interests of its allies (in this case, Germany), as well as its enemies, if this would further its own ends..." [emphasis added]
315. In my view if Ukraine carried out the Sabotage, the War was a significant cause of its actions.

If Russia was the perpetrator

Geopolitical evidence

316. In Donald 1 Dr Donald set out the background events immediately prior to the Sabotage as he saw them from Russia's perspective. This evidence highlighted the threat by the G7 and the EU to impose a gas price cap and the public reaction of President Putin:

"In my view the events of 30 August-7 September 2022 gave President Putin a motive to attack the Pipelines. On 30 August Gazprom announced it would suspend gas shipments through Nord Stream 1 on 31 August for three days, supposedly for maintenance reasons. At this point the pipeline was operating at about 20% capacity. On 2 September the G7 confirmed their joint intention to impose a price cap on Russian oil to curb Moscow's hydrocarbons revenues. Later on 2 September Gazprom announced that it was shutting down Nord Stream 1 'indefinitely', supposedly due to a leak at Gazprom's Portovaya compressor station in Russia. This was then followed, later on 2 September, by EU Commission President Ursula von der Leyen suggesting that ' it is now time for a price cap on Russian pipeline gas to Europe'; however this was not yet a formal proposal. On 7 September Putin declared that 'We will not supply anything at all if it is contrary to our interests. No gas, no oil, no coal, no fuel oil, nothing.' If the West went ahead with capping Russian oil and gas prices, it would 'freeze, freeze'. (The so-called 'heating season' in Germany - when gas consumption would rise markedly due to the onset of colder weather- would generally begin in mid-September.) Later that day-after Putin made his statement-von der Leyen formally proposed the gas price cap. The Pipelines were sabotaged on 26 September." [emphasis added]

317. Dr Donald went on to set out what he saw as the motives for the Attacks if Russia was the perpetrator:

"5. 108…The swiftness of Gazprom's response to the G7 price cap announcement on 2 September, and then Putin's own response on 7 September, also suggest that the Kremlin was reacting to both the G7 move and von der Leyen's support for a price cap, while his 7 September 'freeze, freeze' threat indicates that he intended to use any leverage he still possessed. This leverage could take the form of continuing to turn the supply of gas on or off at will - even if this had so far failed to change German or wider EU policy. Alternatively, the leverage could reflect a concept called uravnilovka ... or 'levelling', which features in Russian decision-making. In essence it means that if one can no longer benefit from something one should destroy it to deny any benefit to others - even if doing so will inflict more damage on one than would be the case if one did nothing. In the case of Nord Stream, this would entail destroying the Pipelines to deny Germany (and the EU) the possibility of obtaining any Russian gas for good; to create

one last price spike in Europe's natural gas market; and to make Europe 'freeze, freeze' as the 'heating season' began." [emphasis added]

318. In this regard it was put to Dr Donald in cross examination:

> *"Q. So that effectively it would be Russia sending a very strong message to Germany that it meant business and, is this right, punishing Germany for its change of direction so far as Russia and Ukraine were concerned?*
> *A. Yes, that is implicit in the third component of the end of paragraph [5.108], the three components being, as you outlined, denying Germany in the EU the possibility of obtaining any Russian gas for good; the second element being to create one last price spike; and the third element the punitive, the implicitly punitive element, of making Europe "freeze, freeze".."* [emphasis added]

319. Dr Donald explained the benefit to Russia of destroying the Pipeline as to punish Germany and the EU and "*to demonstrate…a certain degree of seriousness*" as follows:

> *"Q. In what sense was the Nord Stream pipeline lying unused under the Baltic and with the gas supply controlled anyway by Russia of any benefit to others?*
> *A. It was of benefit to Germany in the plans that Germany had established as a result of the Zeitenwende. So Germany planned to still retain gas supply via Nord Stream until 2024 and was still obtaining supply from Nord Stream up until the point at which Russia chose to close off the supply. So, therefore, if Russia were inclined to turn the taps on again, then Germany would continue to derive benefit from Nord Stream until 2024.*
> *Q. But why can't Germany −− Russia, as you put it, just decide not to turn the taps on again? Why go any further and cause any damage to the pipeline itself?*
> *A. To punish Germany and to demonstrate perhaps a certain degree of seriousness.*
> *Q. Right. Can I then turn −− just assuming that to have been the case and if the purpose was to punish Germany −−*
> *A. And the European Union, I add.*
> *Q. And the European Union?*
> *A. Yes."* [emphasis added]

"A continuation in diplomatic terms of the gas war"

320. Mr Stanley submitted in his oral closings that:

> *"The answer [to the causal route by which the war led Russia to destroy the Nord Stream pipelines] seems to be there would have been two motivations to it, this is what Dr Donald says. One of them is that it would have been convenient for Russia to try to cause some kind of spike in the gas price immediately before winter, and that would have been aimed in particular at Germany and at German opposition to Russia and I suppose perhaps more generally at Europe, and it would have been a continuation in diplomatic terms of what Russia had been doing all the way through 2021 during which it had been waging, if you recall, the thing which was described as the gas war, which of course is not a war for the purposes of this insurance policy, whatever people call it. "War" means military fighting; it doesn't mean diplomatic jockeying."* [emphasis added]

321. In my view this submission does not accurately reflect the evidence of Dr Donald on this point which is set out above and I do not accept the inference which the Claimant sought to draw from the evidence. Dr Donald was clear that he accepted the motive would be to punish Germany *"for its change of direction so far as Russia and Ukraine were concerned"* and to punish the EU for its plan to impose a price

cap which (as the article referred to earlier made clear) was clearly linked to the War being intended to cut revenues used by Russia to finance the War. As discussed below, Germany's "*change in direction*" was as a result of the War.

322. Dr Less accepted in his first report that if Russia perpetrated the Sabotage, its motive may have been to "*coerce*" Germany into withdrawing their support for Ukraine. In Less 1 he said:

> *"If Russia perpetrated the Attacks, it may have been motivated by the goal of raising the price of gas, thereby causing hardship for the Europeans, and coercing them into withdrawing their support for Ukraine… Most recently, the majority state-owned Gazprom's suspension of gas supplies via Nord Stream 1 in August 2022 had raised the price of gas to an historic high and eroded German public support for the government's policy towards Russia and Ukraine, including its suspension of Nord Stream 2. Destroying the Pipelines might have made this pressure permanent in what would have amounted to an extreme version of this strategy of manipulating energy supplies for political ends.*
> *In this respect, Russia was open about its goal of using the Pipelines to put pressure on the Europeans to change policy through August and September 2022…".* [emphasis added]

"No direct or indirect advantage to Russia's position in the War"

323. Mr Stanley further submitted that Russia destroying the Pipelines would have had "*no direct or indirect advantage in the short term, or even the medium-term, to Russia's position in the actual war with Ukraine*".

324. However as set out above, Dr Less said that it would have been a measure to try and coerce the Europeans into withdrawing their support for Ukraine, which is an implicit reference in my view to the War.

325. Dr Less also suggested in his first report that in Russia's case an attack on the Pipelines "*would have sent a signal to the Europeans that Moscow had the willingness and capability to strike at critical infrastructure in Europe… if governments continued to support Ukraine…".* This reference to support for Ukraine again can only be understood in light of the support that European governments were providing to Ukraine (and as specially identified by Dr Less in the case of Germany and referred to below) as an implicit reference to the War.

326. In the Joint Memorandum Dr Donald said:

> "*Russia's motive would have been informed by and intimately connected with the war initiated by its invasion of Ukraine on 24 February 2022. The progress of this war, and the geopolitical and political developments linked to it, transformed the geopolitical and business context for the Pipelines."*

327. In cross examination Dr Donald was asked about this passage:

> *"Q. As I understand it, but tell me if this is wrong, what you're saying is really that the connection was that the war had led to the realignment of Germany's interests or Germany's solidarity with other European and Western countries, so the US and the UK and so forth?*
> *A. Yes.*
> *Q. That had led to attempts on the part of Russia to use the pipelines as leverage to stop that from happening?*
> *A. Yes.*
> *Q. But those had been unsuccessful?*
> *A. Yes.*

Q. And it's the recognition that those had been unsuccessful that forms the backdrop to the Russian decision that the pipelines no longer serve that useful strategic purpose?
A. Yes." [emphasis added]

328. In my view the reference to "*solidarity*" refers implicitly to the support by Germany for the War and confirms the connection between the War and the destruction of the Pipeline which would be present if Russia were the perpetrator.

329. Mr Stanley appeared to acknowledge this in his oral closings when he said that:

"The most one can say that it does is what my learned friend said this morning, is that it was the war which had changed Germany's stance towards Russia…"

330. However what this submission does not acknowledge is the consequences of Germany's change in stance which Dr Less described in his first report as follows:

"246. … three days after the invasion of Ukraine, Scholz announced a Zeitenwende (turning point) in German policy towards Russia in the Bundestag i.e. an intended end to the legacy of Ostpolitik. Among the tangible changes that followed were:
246.1 Further and more punitive sanctions on Russia: Germany supported multiple rounds of sanctions on Russia at the level of the EU and G7; a ban on transactions with the major Russian banks; the seizure of around €5.25 billion in liquid Russian assets present in Germany; restrictions on the export of dual-use goods; the banning of state-backed media outlets such as Sputnik and Russia Today; and phased restrictions on the import on coal and oil. At the national level, the government introduced a Sanctions Enforcement Act in May 2022.
246.2 Diplomatic Isolation of Russia: Germany supported efforts to isolate Russia diplomatically, including its suspension from the Council of Europe and the designation of numerous Russian diplomats as persona non grata.
246.3 Increased civilian support for Ukraine: Germany provided a €1 billion grant to help stabilise the Ukrainian government finances and was the main contributor to a €9 billion EU loan. Germany also played host to around a million refugees from Ukraine.
246.4 Increased military support for Ukraine: Starting from March, Germany provided Ukraine with heavy weaponry, initially for use in defence and later for offensive operations and provided training for Ukrainian military personnel in the operation and maintenance of these heavy weapons. Germany further promised to support Ukraine militarily 'for as long as necessary' to protect itself from Russia and offered Ukraine a security guarantee when the war ended.
246.5 An increased military presence in eastern Europe: Germany increased its troop presence in Lithuania and announced plans in June 2022 to station a 3,000-strong combat-ready brigade in the country…". [emphasis added]

331. Dr Less said that:

"If Russia perpetrated the Attacks, it may have been motivated by the goal of raising the price of gas, thereby causing hardship for the Europeans, and coercing them into withdrawing their support for Ukraine"

332. It can be inferred that if Russia were the perpetrator, it would have had a motive to "*coerce*" Germany into withdrawing the support which would encompass the tangible measures Germany had taken to support Ukraine in the War referred to above.

"Germany's stance changed before the War began"

333. Mr Stanley also submitted that:

> *"… Germany's stance towards Russia had changed even before the war began, and it doesn't make sense in circumstances where the very same thing, this gas war, had been carried on the whole of the previous year. So it's simply the continuation of politics, it's not military at all…".*

334. This submission is not borne out by the way the point was put to Dr Donald in cross examination which implicitly accepted that Germany's position changed as a result of the War. As referred to above, the question put by Mr Stanley to Dr Donald and which Dr Donald accepted was:

> *"…what you're saying is really that the connection was that the war had led to the realignment of Germany's interests or Germany's solidarity with other European and Western countries, so the US and the UK and so forth…".* [emphasis added]

335. Dr Less also made clear the interrelationship between the change in German policy and the War in Less 1:

> *"245. Russia's relationship with Germany deteriorated further still amidst a shift in Berlin's policy towards Moscow in February 2022. Two days before Russia's invasion of Ukraine on 24th February 2022, the new government, led by the Social Democratic Party under Scholz, announced a suspension of the certification process for Nord Stream 2, thereby rendering it legally inoperable…*
> *246. … three days after the invasion of Ukraine, Scholz announced a Zeitenwende (turning point) in German policy towards Russia in the Bundestag i.e. an intended end to the legacy of Ostpolitik…".* [emphasis added]

336. It was put to Dr Donald in cross examination that the "gas war" had been happening in the preceding years and the need to reduce dependence on Russian gas started before the War but Dr Donald was clear that the invasion "*crystallised thinking in Germany*" and that was the "*turning point*" (*Zeitenwende*):

> "*Q…it was likely, wasn't it, as a result of the gas war which had been happening in the preceding years that even before the invasion of Ukraine, the need for Germany to reduce its dependence on Russian gas must have been blindingly obvious?*
> *A. I think that cuts both ways, my Lady. On the one hand, if one is inclined to view the leverage that Russia exercised through gas as being bad for Germany, bad for Europe, then reducing that dependence would be a key objective. If, on the other hand, one's principal concern is the economy of Germany and minimal inflation, cheap energy for industry and so on, then one might actually feel that one needed to maintain supplies of Russian gas but perhaps in a context of increasing unhappiness with Russia, be a little more careful politically about how one achieved that, and, in my view, the invasion in essence crystallised thinking in Germany behind needing to end the relationship entirely. People who might have been equivocal before suddenly saw the logic of ending it completely, and that is the Zeitenwende that happened over that weekend after the invasion."* [emphasis added]

337. In light of the evidence it is clear that the submission for the Claimant that Germany's stance towards Russia was *"simply the continuation of politics"* is not borne out. There was a "*turning point*" in German policy which occurred three days after the invasion.

"No military purpose"

338. The Claimant submitted in its written closings that if Russia carried out the Sabotage it would be for political purposes and would have no direct or indirect military purpose:

> *"The objective of such a move* [i.e. sabotage by Russia] *would be political: to manipulate international opinion. In one sense, in the context of War, any sort of political action of this sort would, of course, be affected by it, and would in that sense be a 'contributing factor'. But it would have no direct or indirect military purpose; it would not be intended to affect events on the battlefield in any concrete way; and it would not be caused by the War save in the extremely diluted sense that the War formed the backdrop to all Russo–German political relationships in 2022."*

339. Mr Stanley submitted in his oral closings:

> *"...if one asks the question what part would the war have played in that decision* [by Russia to destroy the Pipelines], *the answer is none at all, except insofar as the attempts to use the Nord Stream pipeline in the course of 2022 had been unsuccessful. So the most you would say is the war had caused Russia to want to put pressure on Germany which was not a belligerent."*

340. In my view the measures which Germany had taken to support Ukraine in the War (referred to above) as part of the "*Zeitenwende*" show why Russia would have wanted to put pressure on Germany even though Germany was not a "*belligerent*" in the sense of a state that was fighting in the War in Ukraine. It was the War which had caused Russia to want to put pressure on Germany at this time and it is irrelevant to the causal link that Germany was not a direct participant in the War.

"a far-removed causal connection"

341. Mr Stanley submitted in his oral closing submissions that the destruction of the Pipelines would be a "*far removed causal connection*":

> "… [Attempts to use the Pipelines as leverage in 2022] *hadn't been successful, Germany had changed its gas supplies, so now Russia thinks the gas is no longer useful. It is an incredibly far-removed causal connection. Now one could not say it wasn't a contributing factor in that sense, but the war was a contributing factor to all international relations within Europe from 2022 onwards and one could say the same thing, therefore, about anything that Russia did vis-a-vis Germany, or Germany did vis-a-vis Russia during that period. If one asks oneself the question whether for the person buying an insurance policy which contains a war exclusion, anyone would think that that was actually a diplomatic relations exclusion, the answer is no.*" [emphasis added]

342. However Dr Donald in his evidence was clear about the causal connection with the War. Dr Donald was asked in cross examination:

> "*Why go any further and cause any damage to the pipeline itself?"*

343. Dr Donald's evidence was:

> *"A. To punish Germany and to demonstrate perhaps a certain degree of seriousness.*
> *Q. ...*
> *A. And the European Union, I add."* [emphasis added]

344. As to whether the War also had an effect on relations with other states, in my view it is irrelevant to the issue as to whether it had a causal effect on Russia's decision to destroy the Pipelines. Further for the Claimant to describe the War as a

"*contributing factor to all international relations*" is to focus on only one aspect of the significance of the War. The key issue for this Court is whether, if Russia were the perpetrator, there is a causal link (not a proximate cause) between the War and the destruction of the Pipelines and as discussed above, the evidence is that there is a clear link between the War, the change in Germany's stance and the desire to punish Germany for that change in stance or to coerce it into changing its stance.

345. The position is summarised in the evidence of Dr Donald in Donald 2:

"I consider that Russia had no motive to attack the Pipelines before 24 February 2022; they constituted its principal leverage over Germany and to a lesser extent the wider EU, and thus hampered attempts to deter Moscow from its campaign against Ukraine ... However, this leverage largely disappeared between late February and the time of the sabotage. The invasion prompted Germany to commit both to broadly dispense with Russian gas by mid-2024 ...and – as with other EU states – to refuse to allow Russia's action to be allowed to stand.... Moscow duly restricted the flow of gas through the Pipelines to get Germany to return to its pre-invasion dependence on Russian gas, and to revert to its previous permissiveness towards Russia ... However Berlin did not halt either its shift away from Russian gas, or its support for Ukraine. In my view the Pipelines had been devised as a means of geopolitical leverage ...; the war had caused the Pipelines to lose that leverage, and they no longer served their original purpose...".

346. Dr Less in turn was asked about this passage in cross examination:

"Q. ...Do you agree with Dr Donald that before 24 February 2022, Russia had no motive to attack the pipelines?
A. Yes, I think as a general statement I'll accept that, yes.
Q. Is that similar to saying you agree with it?
A. Well, what I mean is that in my report I identified some possible reasons why Russia might have attacked the pipelines, for example, to try to intimidate the Europeans into changing their position in relation to the war, to signal to the Europeans that their critical infrastructure was at risk, and I think those reasons apply more after February 2022 than beforehand.
Q. Yes. So you agree that before then Russia had no motive to attack the pipelines?
A. Sorry, had no motive?
Q. No motive before 24 February?
A. Yes, I'll basically accept that."

Contrary to Russia's interest

347. Dr Less in his written evidence referred to above, said that *"the demise of the Pipelines was contrary to Russia's fundamental geopolitical interests".*

348. However I note and accept the evidence of Dr Donald in Donald 2:

"5.3 It is important to note that states are perfectly capable of taking geopolitical decisions which objective geopolitical analysis would suggest would do damage to them or their interests that would outweigh any possible benefits."

349. Further as set out above, Dr Less accepted in his evidence in cross examination that the possible reasons would be to try to *"intimidate the Europeans into changing their position in relation to the war".* Thus in my view the destruction of the Pipelines would be in furtherance of Russia's geopolitical interests.

Conclusion on Russia

350. The Defendants in their written closings refer to Russia as "*an unlikely perpetrator*" and that "*destroying the Pipelines appears to make little sense for Russia*".
351. However the issue under consideration is not whether it is "*likely*" that Russia was the perpetrator, but on the assumption that Russia was the perpetrator, whether the Sabotage was within the scope of the War Exclusion.
352. Thus on that issue the evidence, as discussed above, is clear that if Russia was the perpetrator, the War would have been a significant cause: Russia is a direct participant in the War; it had no motive to attack the Pipelines before 24 February 2022 but after the invasion, it would have wanted to punish Germany for changing its stance and giving tangible support to Ukraine for the War and/or coerce it into reversing its position of support for Ukraine in the War.

If the US was the perpetrator

353. The Defendants submitted that if the Sabotage was carried out by the US the War would have been a significant reason for doing so:
    a. it transformed the relationship of the US with Ukraine in terms of support provided and Dr Less accepted that the US motives for attacking the Pipelines were significantly increased by the Russian invasion;
    b. Russia's invasion also removed potential counter-motives for a US attack on NS1 and NS2, such as the fear of Russian retaliation and an escalation of tensions in Europe.
354. In support of its submission that in substance, the connection with the War was too weak, the Claimant submitted in its written closings that:
    a. the US was "*never a belligerent in the War*"; and
    b. Its opposition to the Pipelines was "*long standing*" and would have been carried out for its own geopolitical and economic interests.
355. The Claimant accepted that the evidence of the geopolitical experts was that if the US carried out the Sabotage, the War removed what would previously have been a restraint on US action: whereas previously there would have been concern about escalating the position in Europe, that would have been reduced by Russia's actions in February 2022.
356. However the Claimant submitted that the War may have provided the US with "*cover or pretext to carry out*" the Sabotage, but with that cover or pretext provided, the US would be in a similar position to the burglars in *Winicofsky.*
357. The Claimant developed this submission in oral closings as follows:

> *"It's not the ongoing war even which is the reason why the US acts. It's the fact that it was reluctant to act in circumstances where doing so might have provoked an invasion from Russia, and now that Russia has invaded, that potential for provoking invasion has completely disappeared. There's no longer any reason to do that. In other words, the result, if one asks what part the war is playing in this, it's not the ongoing war at all; it's the fact of the invasion for a start. It's highly indirect. What it has done is alter the international diplomatic position to a point where the US is no longer going to stay its hand simply because Russia might invade because Russia has already invaded. And in our submission to describe that as the indirect consequence of a war, when it's an attack which is not carried out by one of the belligerents, it's carried out by somebody who is not involved in the war, who doesn't have, and it's not suggested by any of the experts that it would have had, even on the US side, any intention of influencing the course of the war, is going too far, and that's the reason why we draw the analogy which we accept is one only in fact; it's*

not one in law, because, Winicofsky was a proximate cause case, to Winicofsky, but it does at least tell you this: we are definitely not in the realm of proximate cause, we're in the realm of indirect cause and the indirection is extremely indirect on this occasion." [emphasis added]

The "ongoing war"

358. As set out above, the Claimant appeared in oral closings to try and draw a distinction between the "*ongoing war*" and the "*invasion*":

"...if one asks what part the war is playing in this, it's not the ongoing war at all; it's the fact of the invasion for a start…".

359. I cannot see how this submission has any relevance given the Claimant's opening position referred to above that:

"…it is common ground that the events from 24 February 2022 satisfy the definition of 'war' under the Policies."

360. Further the experts specifically address the impact of the commencement of the War in February 2022. For example, as set out above Dr Donald's evidence was that:

"The significant connection between the attack and the war, and the difficulty in conceiving of the sabotage having been undertaken without the invasion of 24 February 2022, also applies in my opinion to the two other likely suspects identified by Dr Less and me, namely Russia and the United States".

The War only provided "cover or pretext"

361. As to the Claimant's submission that the War only provided "*cover*" or a "*pretext*", the first point is that, as discussed above, *Winicofsky* was a case of direct causation so does not assist in the correct approach to indirect causation and is not instructive by analogy to assist in determining whether the causal link is too remote.

362. The second point is that the evidence of the experts that the War removed what would have been a restraint is not the same as evidence that the War was merely "*cover or pretext*". As is evident from the following passage from Dr Donald's evidence he saw a "*significant connection*" between the Sabotage and the War and referred to "*the difficulty in conceiving of the sabotage having been undertaken*" without the War.

363. In Donald 2 he said:

"In effect, in my opinion neither Ukraine nor a sub-state actor from Ukraine would have chosen to sabotage the Pipelines during the 11 years of operation before 24 February 2022, because doing so might have provoked a significant Russian military escalation. Once the invasion had started, neither Kyiv nor a Ukrainian sub-state group would have felt this concern; the invasion was the escalation they had hoped to avoid…

The significant connection between the attack and the war, and the difficulty in conceiving of the sabotage having been undertaken without the invasion of 24 February 2022, also applies in my opinion to the two other likely suspects identified by Dr Less and me, namely Russia and the United States (see the Joint Expert Memorandum, Item 7)…

I consider that the United States had a clear and abiding strategic interest in there being an end to the supply of Russian gas to Europe, and had been opposed to the Pipelines since their inception; that opposition grew as NS 2 neared completion (Donald 1, paragraph 5.85). However, in my opinion, like Ukraine, it would not have chosen to sabotage the Pipelines before 24 February 2022, because such a

move would have been seen as escalatory by Russia, and the US wanted to deter Russia, not provoke it (Donald 1, paragraph 5.88). However, after the invasion, and as with other liberal democracies (see paragraphs 3.3 and 3.4 above), the US perceived a clear threat to its national security and the rules-based order it supported, with the Pipelines being a tool in the hands of the state posing that threat. Managing that threat must therefore involve the Pipelines. For the US, therefore, the invasion would have caused sabotage of the Pipelines to be a conceivable act (see Joint Expert Memorandum, Item 29)." [emphasis added]

364. In cross examination Dr Donald agreed with the proposition that:

"… it's really the fact that Russia has now acted removes what would have previously have been a restraint on the US action because whereas previously there would have been concern about escalating the position in Europe, that would have been reduced by the fact that Russia had invaded?"

365. Dr Less also acknowledged that if the US did attack the Pipelines, it would have been a change in policy from prior to February 2022 that arose in consequence of the Russian invasion:

"Q. [In the joint memorandum] *...you're talking about the US, and you say: "Consistent with this, its policy prior to February 2022 had been to block Nord Stream 2 by means of sanctions rather than violence ... "*
And your reference to February 2022 is a reference to the date of the Russian invasion of Ukraine; correct?
A. Yes.
Q. So if it turns out that the US did attack the pipelines in September 2022, that would have been consequent upon a change of policy that arose in consequence of the Russian invasion?
A. Yes, in short that's what I was saying, but I'll add one other detail to that, which is that if you go with Seymour Hersh's argument that it was the Americans that did it, he suggested that the decision was made in November 2021.
Q. But even if some original decision was made in November 2021, the real decision to proceed would have been made well after February 2022, wouldn't it?
A. Well, to be accurate, there's no evidence for that, but it is possible." [emphasis added]

US was "not a belligerent in the War"

366. In his oral closings Mr Stanley submitted:

"…it's an attack which is not carried out by one of the belligerents, it's carried out by somebody who is not involved in the war, who doesn't have, and it's not suggested by any of the experts that it would have had, even on the US side, any intention of influencing the course of the war, is going too far…". [emphasis added]

367. As discussed above, the authorities do not suggest that for an indirect causal link to exist between the Attacks and the War, the perpetrator must have been one of the belligerents.

368. Further I infer from the evidence of the experts that the US would have had an intention to influence the course of the War.

369. Dr Donald's evidence was that the US, if it was the perpetrator, would have carried out the Attacks not for long standing reasons but because Russia was threatening the whole established global order by its invasion of Ukraine. Dr Donald said in cross examination:

"…what has changed as a result of the invasion is that Russia is threatening the whole global order. So the idea of old strategic rivalries and upsetnesses over the Cold War and the period after the Cold War, the idea of all of that just gets punted into the long grass. If the United States did this, it wasn't about some longstanding angst. If the United States did this, it was because Russia was threatening the whole established global order on which global order rested, global peace rested, and the United States' ability to influence the world as a whole and have that order maintained depended upon the system that Russia was deliberately destroying through its invasion." [emphasis added]

370. Dr Less in cross examination said:

"…it is fair to say that Russia's invasion of Ukraine constituted a threat to America and Germany and Eastern Europe".

371. Further in Less 1 Dr Less said that one of the reasons the US would attack the Pipelines was:

"To signal to Russia that its critical infrastructure was vulnerable if it continued to resist Ukraine's efforts to move Ukraine into the American sphere of influence ... ". [emphasis added]

372. In cross examination Dr Less agreed that this motivation was "*essentially threatening Russia about the consequences if it continue[d] the war*":

"Q. ... In 2022, Russia's resistance to Ukraine's efforts that you refer to primarily took the form of an all-out war in which Russia was seeking to conquer Ukraine?
A. Ukraine's efforts to establish its independence?
Q. What you refer to is " ... Ukraine's efforts to move Ukraine into the American sphere of influence ... "
...
Q. And what I'm suggesting to you is that in 2022, Russia's resistance to those efforts primarily took the form of the full-scale invasion in which it sought to –
A. Yes, I agree, that's uncontroversial, yes, I'll agree with that.
Q. Yes, right. So that motivation is essentially threatening Russia about the consequences if it continues the war; yes?
A. That's the idea, yes." [emphasis added]

The US would have carried out the Sabotage "for its own geopolitical and economic interests".

373. The Claimant submitted that if the US carried out the Sabotage, the US would have carried out the Sabotage "*for its own geopolitical and economic interests*".

374. In Less 1 Dr Less set out six reasons that the US had to attack the Pipelines. In summary these were:
    a. To strike a blow against Russia "*for its defiance of American strategic objectives, especially in Eastern Europe*";
    b. To prevent Russia from gaining political leverage over Germany or Ukraine;
    c. To uphold the unity of the Western alliance;
    d. To send a signal of reassurance to its Ukrainian ally;
    e. To inflict reputational damage on Russia with the aim of turning German public opinion; and
    f. "*...to signal to Russia that its crucial infrastructure was vulnerable if it continued to resist Ukraine's efforts to move Ukraine into the American sphere of influence*…".

375. What these reasons show is that although the US would have carried out the Sabotage "*for its own geopolitical and economic interests*", those reasons included interests which had a clear connection with the War.
376. Thus, as set out above, in relation to the sixth reason Dr Less agreed in cross examination that the motivation was to threaten Russia if it continued the War:

> *"Q. Yes, right. So that motivation is essentially threatening Russia about the consequences if it continues the war; yes?*
> *A. That's the idea, yes."*

377. As to "*defiance*" of American objectives (the first reason), whilst Dr Less would not be drawn as to whether the concern would have been "*significantly increased*" by the Russian invasion, Dr Less accepted in cross examination that "*the US found it an objectionable action*".

> *"Q. And by September 2022 that longstanding general mistrust and dislike had been significantly increased by Russia's invasion of Ukraine; correct?*
> *A. Well, again, significantly increased, it depends exactly what you mean by that, but clearly the US disapproved of the invasion and made its disapproval very clear.*
> *Q. The US saw it as an egregious challenge to the rules −based order, didn't it?*
> *A. I haven't got a direct quote which would support that, but I think the US found it an objectionable action for a number of different reasons which I set out in my report.*
> *A. Yes, I mean, I'm not fundamentally disputing that, I 'm just thinking about this in context, that there was a kind of prehistory to the invasion, you know, there was a −− what I've called the 2014 deployment and the 2022 invasion represented a kind of second stage in that escalation.*
> *Q. ... the full-scale invasion in 2022 was a significant escalation of all those factors?*
> *A. Okay, I'm not going to fundamentally dispute that.*
> *Q. No, are you going to dispute it in any way?*
> *A. I'll go with that."* [emphasis added]

378. The Claimant submitted that "*these general political and geopolitical factors*" do not, on a proper construction of the Policies, make the Sabotage the direct or indirect '*consequence*' of the War.
379. It is not entirely clear what factors the Claimant is here relying upon - it may have been, as referred to earlier in its written submissions, that the US opposition to the Pipelines was long standing and it opposed German reliance on Russian gas and had its own economic interests in supplying LNG.
380. As to the latter point of its own economic interests, I note the evidence of Dr Less:

> *"...my view is that the economic motives buttress the geopolitical motives, but the economic motives in isolation don't explain, couldn't explain, an American attack on the pipelines."*

381. Whilst I accept that there is evidence of longstanding opposition to the Pipelines by the US, there are other factors identified by Dr Less and as discussed above, which were linked to the War.
382. The Claimant submitted in its written closings that "*the most that could be said of the War*" is that it "*loosened in various ways restraints that might previously have inhibited the US".*
383. However that does not appear to accord with the more dynamic language of Dr Less when he was being asked about the second of his reasons when he referred to his view that the War was a "*catalytic factor*":

> *"Q. …And the concern about political leverage, would you accept that that would have been increased by the fact of the invasion and the war going on?*
> *A. Yes, I 've said in my report that I think the war was a catalytic factor which drove forward various underlying trends, and that is one of them." [emphasis added]*

Conclusion on the US

384. The Defendants in their written closings refer to the evidence of Dr Donald in cross examination that neither expert thinks that it is "*likely*" that the US carried out the Sabotage.
385. However if the US did carry out the Sabotage the causal link to the War is clear: as Dr Less accepted "*the full-scale invasion in 2022 was a significant escalation"* of earlier concerns and that the motivation of the US would have been *"essentially threatening Russia about the consequences if it continues the War"*. Even if the original decision was made prior to the War, as one of the journalistic sources suggests, on the evidence of Dr Donald (above) "*the invasion would have caused the sabotage of the pipelines to be a conceivable act"*.
386. Accordingly in my view if the US did carry out the Sabotage, the War would have been a "*significant*" cause of its actions.

If the perpetrator was a Ukrainian actor

387. The Claimant submitted that its points in relation to Ukraine as a perpetrator have "*greater force*" if the Sabotage was the result of a substate operation by Ukrainians.
388. I understand those points to be broadly:
    a. The Pipelines were not a military target;
    b. There was a longstanding animosity between Ukraine and Russia;
    c. It was in Ukraine's long term strategic interest that the Pipelines should not exist.
389. The Claimant accepted that it is "*reasonable to suppose*" that the War "*heightened patriotic hostility towards Russia*" but submitted that it cannot be regarded as "*transformative*". The Claimant further submitted that "*during wartime many actions carried out by patriotic nationals of the relevant state*" are "*in keeping with the state's overall war effort*" but that "*it stretches concepts of causation too thin*" to regard that as a "*useful indication of causation*".
390. I have already rejected above the arguments that the Sabotage was not linked to the War because a) the Pipelines were not a military target and b) there was a longstanding animosity between Ukraine and Russia.
391. In relation to the effect of the War, it is not necessary to show that it was "*transformative*" of attitudes amongst Ukrainians. In any event, as referred to above, Dr Less acknowledged:

> *"…Ukraine was furious with Russia for its invasion and subsequent substantial destruction of the country, which played upon the longstanding animus between the two, and was likely to have wanted revenge…".*

392. This motive would in my view apply equally to a substate actor. This was the evidence of Dr Donald:

> *"If … the ANDROMEDA plot in fact involved an ad hoc group of Ukrainian citizens with no state involvement, then the motive of that group was clearly geopolitical, and the same as that of the Ukrainian state. It is not credible to argue that Ukrainian citizens blowing up a strategic Russian asset, key to Russian efforts to isolate their country, during a war of national survival against Russia, were doing so for motives other than those of Ukraine…".* [emphasis added]

393. As to the submission that the act of a substate actor would merely be "*in keeping with the State's overall war effort*" the evidence discussed above demonstrates the link between the War and that revenues derived from the Pipelines were used to finance the War. I referred above to the evidence of Dr Less that according to Mr Pancevski's account, the motive of the sub state actor was to "*attack the Russian economy and destroy the money flows*". (Although Dr Less went on to describe the "*ultimate goal*" as a desire to establish Ukraine's national sovereignty and suggested that the war "*may not be critical to that analysis*" for the reasons discussed above I do not accept that evidence of Dr Less.)
394. Either of these motives in my view are sufficient to establish that were the perpetrator a sub state actor of Ukraine, the Damage would be "*directly or indirectly occasioned by, happening through, or in consequence of war*" within the meaning of Exclusion 2.i.

Conclusion on connection with the War

395. The Claimant submitted that the Defendants have not shown that the Damage had a "*sufficiently strong causal connection*" to the War; it was the "*background*" against which the Sabotage was carried out, but the Sabotage was not "occasioned by" it, did not happen "through" and was not "in consequence of" it.
396. It was submitted for the Claimant that whilst it accepted that there are likely to be "*connections of various sorts between the events which constituted the war and the events which constitute the sabotage*" because the commencement of the war had obviously shifted allegiances and policies and attitudes in Europe, those connections, as showing that the war was a cause of the sabotage was to make "*a very common causal mistake*".
397. I accept that there is a point at which the causal link becomes too remote. As stated by Mustill J in *Spinney's*:

> "*Plainly, there must be some limit on the application of the clause, for the chain of causation recedes infinitely into the past. The draftsman must have intended to stop somewhere: and that place must be the point at which an event ceases to be a cause of the loss and becomes merely an item of history*."

398. However as is also clear from *Spinney's,* and as in effect submitted for the Defendants, it is not the acts that constitute the war that have to directly cause the damage; they can indirectly cause the damage because the war permits or even encourages those acts.
399. The geopolitical experts agreed that:

> *"It is agreed that there were connections between the attack and the war and that the war was at least a contributing factor to the attack(s)."*

400. The view of Dr Donald is that*:*

> *"…<u>there is a significant connection between the attack and the war, and it is difficult to conceive of the sabotage having been undertaken without the invasion of 24 February 2022</u>.*
> *The situation after 24 February 2022 was therefore in my opinion fundamentally different from the situation before it. Before the invasion states might have considered destroying the Pipelines but ultimately dismissed the idea, for fear that sabotage would escalate a crisis that they were trying to contain. Afterwards, however, the context had changed. Europe was in the midst of its largest war since 1945, and – as I have already noted – states were rethinking their attitudes towards*

the Pipelines. Sabotage would therefore have become a conceivable act." [emphasis added]

401. The Claimant submitted that the experts disagree on the strength of the potential perpetrators' motives. However, as it is not necessary in order to determine this issue for the Court to determine which of the perpetrators is more likely to have carried out the Sabotage, that is not relevant.

402. The Claimant submitted that it is not just a question for the experts:

"Understanding what states do or might do may very well be informed by experts, but actually unravelling the causal connection between one event -- the explosions -- and another event -- the war -- is something which requires a holistic approach to all of the evidence against the background of the contract and what it means rather than simply a decision as to -- which is handed over to experts, as it were, to decide whether there is causation. In other words, it is more than just a question of geopolitics what the causal relationship, if any, was between the sabotage and the war. It's a question ultimately for [the Court]*, a holistic question, on the evidence as a whole and not simply an expert question*."

403. The role of the Court was explained in the following exchange between Mr Stanley and Dr Donald:

"*Q. Having considered that geopolitical question, questions about what the causal connection between any two events was, is one which is a matter of logic and common sense; do you disagree with that?*
A. And knowledge, so not exclusively logic and common sense; also knowledge.
Q. In what sense does one know about causes? I just want to understand what you're saying.
A. One knows not so much about causes but of the −− one knows about the information that might cause something to happen.
Q. Right. And having communicated one's knowledge of that information to someone else such as to [the Court]*, the conclusion about what the causal relationship is I think I'm suggesting to you, one that is not itself a geopolitical question. Are you disagreeing with me about that?*
A. No, I think that's correct."

404. The Court accepts, as did Mr Salzedo in his oral closings that there are gaps in the evidence and it is incomplete. However, evidence which tends to establish which of the possible perpetrators in fact carried out the attack and how it was carried out (rather than the question of why the attack would have been carried out by any perpetrator) is not necessary to determine whether there is a sufficient causal connection.

405. Further the fact that no one admitted responsibility for the Sabotage does not preclude a finding that the causal connection to the War is sufficient if the Court is satisfied that each of them would have had a sufficient causal connection since the parties are agreed that there are only four potential perpetrators. (I note that in terms of public statements, Russia, the US and Ukraine have all positively denied responsibility for the Sabotage).

406. In my view the Court can accept the evidence of the geopolitical experts on the question of the links between the War and the Sabotage to the extent it finds it persuasive and to determine whether it is persuasive the Court applies logic and common sense and weighs it against the known facts.

407. It is then for the Court to decide whether that causal relationship, on the evidence that it accepts, is sufficient to fall within the language of Exclusion 2.i.

408. In my view on the evidence before this Court and for the reasons discussed above, I find that if any of the possible perpetrators carried out the Sabotage, the War would have been a "significant" cause of their actions and thus the Damage was "*directly or indirectly occasioned by, happening through, or in consequence of war*" within the meaning of Exclusion 2.i.

The "likely" perpetrator of the Sabotage.

409. As explained above, it is unnecessary in order to determine whether the War Exclusion applies which was the "*more likely*" perpetrator of the Sabotage or whether the Court is satisfied that "*it is more likely than not*" that any of Ukraine, a sub state actor of Ukraine, Russia, and the US carried out the Sabotage.
410. This was a course which was accepted by the parties as open to the Court and in the circumstances (including the limitations of the factual evidence referred to elsewhere in this judgment), I do not propose to make any finding in this regard.

Was the Damage "by or under the order of any government"?

411. In the light of my findings above, this issue of whether the Damage was "*damage to property by or under the order of any government…*" within the meaning of Exclusion 2.i only falls to be determined in the alternative:
    a. If I were wrong in my conclusion that as a matter of construction, Exclusion 2i should be interpreted as divided into two limbs; or
    b. if I were right that as a matter of construction, Exclusion 2i should be interpreted as divided into two limbs but wrong in relation to any of the potential perpetrators on the factual conclusion of a sufficient causal link to the War which satisfied the War Exclusion.
412. The Claimant submitted in its written openings that:
"*If the Sabotage was perpetrated by Russia or the United States, there seems little doubt that it was a directly government-ordered act."*
413. In his oral closing submissions Mr Stanley submitted that:
"*in three of the possible four sub-cases,* [the Court] *can be satisfied that if the sabotage was done it must have been done by or under the order of the government and indeed by order of the government, and that would be -- if it was Russia, if it was the US, the experts agree; if it was Ukraine and it was done by a state actor, that must also be true*."
414. In relation to the possibility of a Ukrainian substate actor, the Claimant sought to draw a distinction between "*by order of a government*" and "*by order of a government agency*". Mr Stanley submitted that:
"…there does not appear to be any account that anyone has produced, although it is theoretically possible, of this being done without at least some involvement or knowledge by somebody within the chain of command, although not necessarily the government itself. So <u>if one was looking for "by order of a government" there might be an issue, but if one was looking for "by order of a government agency" there probably wouldn't be</u>." [emphasis added]
415. The language of Exclusion 2.i refers to damage to property "*by or under the order of any government*" which on its face suggest a distinction is to be drawn between "*by a government*" and "*under the order of a government*".
416. The Defendants referred to the judgment of Butcher J in *AerCap* in support of their submission that the language in Exclusion 2.i does not necessarily require the order of a government.

417. Butcher J said at [565] and [566] in relation to the language '*by or under the order of any government*':

> *"…The words in question have to be construed in the context of the Government Perils clause, which I think it is fair to say is a broad provision concerned with deprivation of rights of property and/or possession, and is not concerned with technicalities; hence the different ways in which there may be deprivation of such rights are widely drawn. Furthermore, some of those ways are likely to involve a form of order by the government, but others may not. By way of example, 'seizure' and 'detention' are concerned with the practicalities of what has happened, not with formalities as to whether the dispossession was under an order. The words 'by or under the order of any government' fall to be construed in light of this*." [emphasis added]

418. This reasoning is equally applicable to the language in this case where the provision is concerned not only with confiscation, nationalisation and requisition which is likely to involve a form of order by the government but also "*destruction of or damage to*" property which applying the approach of Butcher J, can be said to be concerned with the "*practicalities of what has happened, not with formalities as to whether [the damage or destruction] was under an order*".

419. Butcher J also noted that the contrary interpretation would render the word "*by*" redundant:

> *"566. Moreover, under the WR Camp's interpretation, the word 'by' would be effectively redundant, because a peril having occurred under the order of a government is not meaningfully different from a peril having occurred by the order of a government. I consider that the better interpretation is that 'by' serves the purpose of capturing cases in which the government brings about deprivation of property, in one of the ways specified in the clause, by direct agency; while 'under the order of' the government refers to what may or may not be a longer chain of causation in which the efficient cause is an order of the government."*

Again that reasoning is of equal force in this case.

420. The Defendants submitted that a state's military is "*an instrument and agency of its government*" and that damage caused directly by military forces is therefore damage caused "*by*" a government.

421. Mr Stanley in his oral closings submitted that:

> *"If one looks realistically at what happened under the sea, there was no government diving down from boats. There were inevitably people diving down from boats to place charges on the lines, and that must have been done, if it was done on behalf of a state, by order of a government agency, and, although my learned friend says that the man in the street would not understand the army as an agency of the government, that is, in my respectful submission, plainly not so. Anyone would understand the army as an agency of the government as they would also understand the CIA or the Russian secret service or anything of that sort."* [emphasis added]

422. Mr Stanley clarified at the end of the oral submissions:

> *"My submission was that it was not by a government but it was under the order of a government, and the reference and I talked about there being, if you remember, no government was under the sea, it was people under the sea."*

423. The Claimant's submissions in my view effectively denude the first alternative of "*by any government*" of any meaning. Clearly governments can only act through

people and any act "*by a government*" whether on land or under the sea would be carried out by people as agents of the government. (There is a separate argument in relation to acts carried out by "non state actors" where such acts would not be "*by*" a government but could be "*under the order of"* a government).

424. Mr Stanley appeared to seek to draw a distinction between the army and the "*government*": Mr Stanley submitted that:

> *"...there does not appear to be any account that anyone has produced, although it is theoretically possible, of this being done without at least some involvement or knowledge by somebody within the chain of command, although not necessarily the government itself."* [emphasis added]

425. It is unclear what Mr Stanley intends to encompass by the phrase "*the government itself*". There is no basis on the language of the Exclusion to limit the reference to "*government*" to the President (or similar) of a country or any other body within government.

426. Read in the context of the exclusion as a whole it is clear that it is intended to be a broad exclusion in referring both to "*by government*" and "*under the order of government*".

427. Mr Salzedo submitted that if it was done by substate actors:

> *"...it included serving Ukrainian military officers who were acting as part of the Ukrainian military so they were ultimately agents of the Ukrainian government itself...If it was done by the Ukrainian army, by soldiers who could not be said to be on a frolic completely of their own because on the hearsay evidence they would have been acting under the head of the armed forces, that is enough for "by a government"."*

428. Given that "*by a government*" can only be by acts of agents of the government and the broad formulation of the Exclusion, in my view the correct interpretation of "*by…any government*" is that it extends to acts by the army and in turn as the army is itself a body of individuals, members of the armed forces unless they were not acting on behalf of the State i.e. were acting "on a frolic of their own".

429. As both parties appeared to accept in their oral closings, if the Attacks were perpetrated by "*substate actors*" of Ukraine there is evidence in the form of journalist articles (referred to in Less 1) which suggests involvement (in the sense of knowledge and approval) of senior members of the Ukrainian army.

430. An article on 6 June 2023, published by the Washington Post stated that, in June 2022, "*a European intelligence service*" informed the CIA of a Ukrainian plan to attack NS1. This article was based on documents leaked by a member of the Massachusetts Air National Guard (Jack Teixeira) on Discord, an online platform. The article suggested that the attack was to be carried out by six members of Ukraine's special forces using false identities to rent a boat. The article suggested that the group involved in the attack "*were not rogue operatives*" but reported directly to General Valery Zaluzhniy, the Commander-in-Chief of the Ukrainian armed forces at the time. It stated that President Zelensky was not told about the operation.

431. A further article in the Washington Post on 11 November 2023 stated that the attack on NS1 and NS2 was directed by Roman Chervinsky, a colonel who had served in Ukraine's intelligence agency and its security service (the 'SBU'). The article said that the officer "*took orders from more senior Ukrainian officials, who ultimately reported to Gen. Valery Zaluzhniy*".

432. In August 2024, the Wall Street Journal published an article by Bojan Pancevski suggesting that the attack on NS1 and NS2 had been carried out by a group of six soldiers and civilian Ukrainians who rented a yacht (the 'Andromeda') and that the operation was overseen by General Valery Zaluzhniy, the head of Ukraine's armed forces who enlisted some of Ukraine's special operations officers to help coordinate the attack. Mr Pancevski's article stated that President Zelensky initially approved the plan but ordered it to be stopped after the CIA learned of it. The article stated that General Zaluzhniy "nonetheless forged ahead."
433. On 19 February 2025, Der Spiegel (a German newspaper) published an article that purported to confirm that the attack had been carried out by a group of Ukrainians using the 'Andromeda', and that the plan was directed by Colonel Chervinsky and approved by General Zaluzhniy. The Der Spiegel article suggested that the plan was not approved by President Zelensky, who is said not to have been informed of the operation.
434. In addition to the reporting by journalists, as referred to above, in a judgment dated 10 December 2025, the German Federal Court of Justice dismissed an appeal against an arrest warrant from a Ukrainian suspect linked to the Andromeda. The judgment states that it is "*highly probable*" that the suspect and his alleged accomplices were "*acting on behalf of a foreign state*" when they allegedly conducted the attack, but the court held that combatant immunity did not apply to "*covert acts of state sabotage*".
435. The Claimant submitted in its written closings that:

> "*The accounts of the Andromeda contain a variety of different (and mutually contradictory) suggestions of the extent of Ukrainian government or military involvement. None of them is an account of a military operation, as such. Some of them posit some degree of either awareness or involvement within the military; but some of them positively assert that the Ukrainian central government was 'kept in the dark' about what happened*."

436. In my view given that the accounts consistently refer to the involvement of various senior officers including the head of the Ukrainian army, it is not necessary in order to conclude that the Attacks were perpetrated "by the government" that it may not have been "*a military operation as such*" or that President Zelensky may have been "*kept in the dark*".
437. Mr Stanley submitted in oral closings that:

> "*...if you are looking at a Ukrainian substate actor, all of the evidence about the involvement or lack of involvement of government agencies is material which suffers from some of the flaws that I've identified."*

438. Whilst the journalistic sources are hearsay, it is notable that they all refer to the Attacks being authorised by or under the control of the head of the Ukrainian Army. I accept that the evidence which led to the German court making the statements referred to above are not before this Court and the German court was not making any final findings of fact. However the judgment is consistent with the journalistic sources that suggest that the operation was carried out with the knowledge, and at least implicit if not express approval, of the head of the Ukrainian army.
439. The Claimant appeared to accept that if the Attacks were perpetrated by a substate actor from Ukraine, the evidence that is available suggests that such an actor was not acting independently of the State. Mr Stanley submitted in his oral closings:

"…there does not appear to be any account that anyone has produced, although it is theoretically possible, of this being done without at least some involvement or knowledge by somebody within the chain of command…".

440. Mr Stanley also submitted in the context of his submissions on GC9 that:

"…even in relation to substate sabotage, all of the accounts, for whatever credit one can give them, suggest that this was being done in some way with the involvement of a Ukrainian government agency, if not the Ukrainian government itself."

441. In my view as discussed above the army should be regarded as part of "*government*" for this purpose. Whilst the evidence before this Court is not sufficient for this Court to express a view as to whether it is likely that substate actors from Ukraine carried out the Attacks, if it was perpetrated by substate actors from Ukraine, the evidence is such that the Court can conclude that it was likely that it was approved by the head of the Ukrainian army and that would in my view fall within the meaning of the phrase "*by…any government*".

Conclusion on whether the Damage was "by or under the order of any government"

442. Although the Claimant submitted that GC9 was satisfied in respect of the three potential State perpetrators by reason of the alternative "*by order of the government*", there is no direct evidence of such an order. However in my view it is clear on the evidence that in the case of each of the States, if any of them was the perpetrator, the Damage would have been "*damage to property by the government*". I do not therefore need to go further and make any finding in relation to the existence or otherwise of an order.

443. If it were necessary to determine the issue in relation to a Ukrainian substate actor, I would conclude that, if a substate actor of Ukraine was the perpetrator, for the reasons discussed above, it is likely that the Damage was caused "*by …. any government*" within the meaning of Exclusion 2.i.

GC9: Was the Damage inflicted "*by order of any governmental…body or agency*"?

444. This would only be relevant to the determination of the claim if:
   a. the War Exclusion was not satisfied on the facts in relation to any of the possible perpetrators such that the Defendants would be relying on the Government Order Exclusion in relation to that perpetrator and I was wrong that GC9 is limited to pollution; or
   b. I was wrong that the War Exclusion was a separate limb from the Government Order and I was wrong that GC9 is limited to pollution.

445. As set out above, the second paragraph of GC9 provided that:
"Coverage provided by the above paragraph shall also extend to cover any other loss, damage, liability, cost or expense caused or inflicted by order of any governmental or regulatory body or agency "

446. Mr Salzedo submitted that the Court:
"*… has heard no evidence and seen no document which evidences any order from any governmental or regulatory body or agency. My learned friends appear to be inviting your Ladyship to find such an order by some kind of inference, but we submit that's not permissible. The party who needs to establish such an order needs to identify it and identify the evidence that supports its existence…".*

447. Mr Salzedo further submitted that "*an army is not a governmental or regulatory body or agency as that phrase is used in GC9".*

448. Whilst on its face the language of "*governmental agency*" could be interpreted broadly, it would not in my view be the natural reading of the phrase "*governmental or regulatory body or agency*" to interpret this as extending to the army.
449. Further, even if the second paragraph is not limited to pollution damage, the meaning of the second paragraph has to be considered in context and in this regard the first paragraph refers to:

"…damage to the property insured … directly caused by any act or order of any governmental or regulatory authority acting under the powers vested in them to prevent or mitigate pollution hazard…".
450. Thus in my view even if (contrary to my finding above) the scope of the damage covered by the second paragraph is not limited to indirect damage linked to pollution, the first paragraph refers to damage caused by an act or order of a *"governmental or regulatory authority"* acting under specific powers. In my view this suggests that a narrow interpretation of the language in the second paragraph was intended, limiting it to the kind of body or agency that acts under specific regulatory powers rather than a general reference to any agency of government.
451. For all these reasons I find that, if I were wrong that the second paragraph of GC9 was limited to pollution, on its proper construction the second paragraph does not extend to damage by the army (or members of the army acting with the approval of the chain of command within the army) and if the perpetrator was a Ukrainian substate actor, the Damage did not fall within GC9.

The Dent

Introduction

452. The Claimant accepts that between 9 March 2021 (when NS 1 Line 2 was previously surveyed) and no later than 30 October 2022 (the date on which the Claimant discovered the damage), NS1 Line 2 sustained damage in the form of an indentation (the "Dent").
453. The issue for determination is whether (as the Defendants contend) the Dent was caused by an explosion on or about 26 September 2022 as part of the Sabotage that caused the Explosions/Rupture Damage.
454. The following facts are agreed:
    a. The Dent is at KP998.743 on the south side of the pipeline.
    b. It has a length of about 0.8m, a width of about 0.5m, and a depth of about 0.15m.
    c. The Dent is slightly elliptical and smooth with no evidence of gouges.
    d. The distance between NS1 Line 1 and the Dent on NS1 Line 2 is approximately 90 metres.
    e. NS1, Line 2 is at a depth of 76.9m at the location of the Dent.
    f. The Dent is located around 93m from the Rupture Damage to NS1 Line 1.

Expert scientific evidence

The type of cause for the dent; object or explosion?

455. The Claimant submitted in opening that there are two types of cause for the Dent that have been advanced: an impact from an object or damage from the gas bubble and/or shockwave created by an explosive.
456. Mr Lumley's position as set out in Lumley 1 was that he considered it:

"*...most likely that the Dent was caused by either anchor impact, most likely dropped but also potentially dragged... or less likely by a dropped section of pipeline…"*

457. Other mechanisms of damage by impact were considered by Mr Lumley but the Claimant accepted in its written opening that Mr Lumley concluded (in Lumley 1) that they either appear unlikely (collision with a subsea vessel) or not credible (impact from a pipe section or interaction with fishing gear). In light of this evidence I see no need to consider these other mechanisms of damage further.

Anchor drag

458. In its written closings the Claimant asserted, without giving a cross reference that:

"One of the most common causes, in practice, are impacts from dropped or dragged anchors"

459. I infer that this is intended to be a reference to the evidence of Mr Lumley. His evidence was that impact damage is a "common cause" of damage to subsea infrastructure and that impact damage is responsible for 30% of damage to subsea cables.

460. However it became clear in cross examination of Mr Lumley that the figure of 30% related to cables and not to pipelines.

461. In its written closings the Claimant does not appear to pursue Mr Lumley's theory in his reports of the Dent being caused from a dragged anchor. I assume that the Claimant accepts the evidence of Mr Lumley in cross examination that this can be eliminated as a credible cause:

"Q…if there was an anchor drag, it would have left a visible scar, wouldn't it?
A. Yes, there would be a scar of some kind, yes.
Q. And there is no such scar?
A. No.
Q. Right. So we can eliminate an anchor drag as a credible cause, can't we?
A. Yes."

Dropped anchor

462. As to the theory of the dropped anchor, the Claimant submitted in its written closings:

"It should be recognised that an anchor drop is a physically admissible cause of the Dent, although no finding is necessary on Nord Stream's case that it was so caused. In practice, anchor impact is one of the commonest causes of damage to pipelines, and numerous examples of the same were given by Mr Lumley: Lumley 1, ¶¶7.4.4–7.4.6"

463. The juxtaposition of these two submissions might lead to an inference that the Claimant was thus submitting that damage by anchor drop was not uncommon. However it is clear from Mr Lumley's evidence in cross examination that the examples that are there referred to in Lumley 1 (para 7.4.5) are examples of damage to pipelines by dragged anchors and not dropped anchors and he had not identified any example of an anchor drop actually having happened and caused damage to a pipeline.

464. The relevant passage in cross examination was as follows:

"Q. Now, in your report at 7.4.5, ... you set out numerous reported instances of anchors causing damage to pipelines; yes?
A. Yes.

Q. And in fact you've given I think it's five at 7.4.5 and then going on to the next page, and then there's one more at 7.4.6?
A. Yes.
Q. And do you agree, or do we need to go through them, that all of them are examples of anchor drags?
A. Yes, they're anchor drags, yes.
Q. So I think it's fair to say that you've not identified any example of an anchor drop actually having happened and caused damage to a pipeline?
A. Anchor drag, you see, not drop.
Q. No, the examples you've given are drags?
A. Yes." [emphasis added]

465. As to whether, as submitted by the Claimant, an anchor drop is a "*physically admissible cause*" of the Dent, no cross reference to the evidence is provided in the Claimant's submissions.

466. Rather I note the following passage from Mr Lumley's evidence in cross examination:

"Q. So what you've demonstrated is that even at your lower −− your original lower bound of the required energy, and even if the dent is at 10 o'clock and not 9 o'clock, a falling anchor could impart enough energy only if it was falling at least 20 degrees away from the vertical; yes?
A. Yes.
Q. Right. And I'm not aware there's anything in your reports suggesting that an anchor that's fallen 80 metres down would be travelling at any particular angle off the vertical. Is that fair?
A. Yes." [emphasis added]

467. Further Mr Lumley accepted in cross examination that an anchor drop would cause a crater and the only suggestion he could make which would fit the evidence of the actual crater was if the anchor hit at an angle but he could not say what size crater would be created.

"Q. But in fact on your scenario, on your understanding, it has to hit the seabed first to get to the dent…
A. Yes, yes.
Q. So it will hit the seabed, won't it?
A. It will hit the seabed, yes. It will create the crater, yes.
Q. It will create the crater, you say?
A. Yes.
Q. And the crater is 1.9 metres by 2.4 metres, yes?
A. Yes, it's not square, I mean, it's an odd shape, isn't it?
…
Q. So if one of these anchors did hit the seabed, it would leave a bigger seabed scar than the one that's actually there, wouldn't it −− the crater, sorry, I should call it a crater, not a scar to be less confusing.
A. On that basis, yes.
…
A. That assumes that it hits the seabed if you like, bang on. I mean, if it came at an angle or whatever that wouldn't be the case.
…
Q. …this is actually pure speculation on your part?
A. … the crater size, yes".

468. In its opening submissions the Claimant submitted (cross referring to paragraph 4.102 of Rigby 1) that Professor Rigby agreed that impact from an anchor is physically admissible and capable of having caused the Dent.

469. However Professor Rigby confirmed in cross examination that his evidence was as to his "*understanding*" and he was not claiming an expertise in anchors (or shipping practices):

> "*Q. ...And then you refer to a range of causes including at 4.102 an anchor, and you say you understand that an anchor could match the masses and speeds in that paragraph; yes?*
> *A. I do, yes.*
> *Q. And is this right, do you use the word "understand" because you're not claiming an expertise in anchors or shipping practices?*
> *A. That is correct, yes*."

470. Even if it is a "*physically admissible cause*" Mr Lumley accepted that even if "*possible*" it is an "*extremely unlikely cause*" given the angle that would be required and the actual crater that is visible:

> *"Q. Your modelling, I think we've seen, has demonstrated that an anchor falling on to the pipeline is an extremely unlikely cause of the dent, because it has to be travelling at a certain angle and then it has to make only the crater that we see?*
> *A. Yes, but it means it's still possible and, as we discussed with the Concorde example.*
> *Q. Right, and there is nothing in your modelling that excludes an explosion as a possible cause?*
> *A. Not within the modelling, no."* [emphasis added]

471. It was further submitted for the Claimant that:

> *"...Rather, an anchor is just as likely to damage one part of a pipeline as any other and would pulverise concrete and damage the rebar to the pipeline {Day7/8:9-15}. It is simply that these parts of the Pipelines received particular scrutiny after 26 September 2022 with the result that the specific damage was identified (to say nothing of the fact that there were numerous vessels around the Explosions Damage in the weeks following the Sabotage; see paragraph 127 below)."*

472. If the submission is literally that an anchor is as likely to damage one part of a pipeline as any other part that appears to be a submission the relevance of which is unclear.

473. The cross reference in the Claimant's submission is to the evidence of Mr Lumley in cross examination where he was being asked about the splaying of the rebars. The passage in context reads:

> *"A...if something had hit the pipeline, there was an outflow of reaction, so there's two things could have happened: if an object hit the pipe and the covering, the actual impact could have had a reaction and pushing the rebars apart, or alternatively on recovering the object it might have tangled with the rebar and pulled it up. That is also consistent.*
> *Q. None of your modelling sought to model that scenario, did it?*
> *A. No, it didn't"*

474. To the extent that the substance of the Claimant's submission is that the damage is just as "likely" to have resulted from an anchor as an explosion then one has to have regard to the other evidence on this issue: in cross examination Mr Lumley did not

disagree with the evidence firstly that the Dent location is not in a shipping channel and the ship traffic was "negligible" and secondly that a large vessel would normally use a dynamic positioning system to ensure it avoided pipelines. Further Mr Lumley accepted that he had no knowledge when he put forward his theory that (as Mr Jones explained in his evidence) ships (a) are not supposed to drop their anchors in an uncontrolled manner and (b) have an obligation to report the matter (a reportable maritime incident) if they did so over a pipeline.

475. Mr Jones evidence on this issue in Jones 2 (which I did not understand to be challenged) was as follows:

"2.6.6 Anchoring at sea is a controlled seamanship procedure governed by established maritime practice and safety guidance, including the Admiralty Manual of Seamanship and the ICS Bridge Procedures Guide. An anchor is not simply "dropped" at speed. Standard procedure requires a vessel to reduce speed to near zero relative to the seabed, assess depth and holding ground, and lower the anchor under controlled brake tension before paying out chain in a measured manner.
2.6.7. The purpose of this control is to prevent uncontrolled shock loading of the anchor gear, to avoid damage to the vessel, and to ensure predictable embedment of the anchor in the seabed. An uncontrolled high-speed release of an anchor capable of generating the kinetic energy necessary to shatter and pulverise reinforced concrete coating would constitute unsafe seamanship, risk severe damage to the vessel's windlass and chain system and be inconsistent with normal maritime operations. In addition, subsea infrastructure such as pipelines is charted and subject to anchoring restrictions. Deliberately or negligently deploying an anchor in a manner capable of striking and damaging a known gas pipeline would directly contradict established maritime safety practice. In my opinion, the energy and damage characteristics required to produce the Dent are inconsistent with the controlled procedures under which anchors are deployed in commercial or naval service.
2.6.8. Further, if a vessel had accidentally deployed or dragged an anchor in a manner sufficient to strike and damage a major subsea gas pipeline, such an occurrence would ordinarily constitute a reportable maritime incident. The Master of the vessel bears responsibility for recording and reporting significant navigational or equipment incidents under established maritime practice and the ISM Code (see Annex B). I am not aware of any evidence of such a report having been made." [emphasis added]

476. It is unclear what relevance is to be inferred from the reference in the Claimant's submission (above) to "*numerous vessels*" in the area in the weeks after the Sabotage given Mr Lumley's acceptance in cross examination that the Dent has to have occurred whilst the pipeline was pressurised i.e. on or prior to 26 September 2022.

"Q…One way is a pipe section being dropped from the salvage vessel after the explosion has occurred; yes?
A. Yes.
Q. And we already looked at the point that the Wood Group analysis indicates the dent must have been caused when the pipeline was still pressurised, and do you agree with that?
A. Yes, most likely.
Q. So it must have −− so that means the dent must have occurred at approximately or before 17.03 UTC on 26 September 2022. Do you agree?
A. Yes. I mean, I looked at the possibility of it being unpressurised.

Q. Right. Does that not effectively rule out a salvage vessel dropping a section of pipe?
A. Yes, it does, on that basis, yes." [emphasis added]

Impact from the charge

477. The Claimant submitted in its written opening that the third possible type of impact that could have caused the Dent was an impact from the "*jet*" created by a shaped charge.
478. The Claimant referred to the evidence of Mr. Jones in Jones 2 at paragraph 2.1.3 and of Professor Rigby in Rigby 1 at paragraph 4.103.
479. In Jones 2 Mr Jones said:

"*In my opinion the dent was caused by a 3D shaped charge designed to be in direct contact with the pipeline."*
480. Mr. Jones said that the "*charge of choice*" would be something similar to a Hayrick/Beehive shaped charge.
481. Mr. Jones continued:

"*The charge was originally placed at the 12:00 position, then knocked, dropped or fell off and landed into a position on the side of the pipeline. The charge was initiated and fired its explosive, now in a jet forming projectile against the pipeline, due [to] the new angle of the shape charge, the jet struck the concrete jacket obliquely and not the intended field weld location. The concrete jacket absorbed and dispersed a proportion of the jet energy, preventing full rupture of the pipe wall while producing localised high energy dent, followed by pulverised and shattered concrete and splayed steel reinforcement bars*". [emphasis added]
482. In cross examination Mr Jones said that the explanation was that the explosive fell onto the seabed and then exploded causing the concrete to shatter and it was the concrete which caused the dent:

"... if I can explain it, ...−−it didn't actually fire a slug; it fired a jet....The jet actually hit the concrete. The concrete then became the slug....And that pushed the dent into the concrete, fracturing the concrete at the same time."
483. The evidence of Professor Rigby in Rigby 1 was as follows:

"4.101 I would deem an impact event from an object with kinetic energy in the order of 0.4 MJ (400 kJ) as being physically admissible and capable of causing the observed Dent. It is beyond my expertise to comment on the likelihood of what was the cause of such an impact. There is a range of possible causes.
4.102 For example, a 10-tonne mass travelling at 32 kph, or a 20-tonne mass travelling at 22 kph will each have kinetic energy of 0.4 MJ (400 kJ). These scenarios reflect impact damage from a large object such as a ship's anchor which I understand could have a mass and velocity of this order.
4.103 Whilst I am discounting the Dent being caused by the direct effects of an explosion (i.e. gas bubble and/or pressure wave), I have considered whether there are circumstances in which the explosion of a shaped charge could lead to an impact from the projectile/slug from the shaped charge with energy that could be consistent with the 0.4 MJ (400 kJ) required to cause the Dent." [emphasis added]
484. Having set out the scientific principles on which he relied Professor Rigby then concluded that:

"4.108 The impact of the projectile/slug from a 5kg plastic explosive (RDX-based) shaped charge situated approximately 1 metre away from the pipeline would

therefore be another possible source of an impact with approximately 0.4 MJ (400 kJ) sufficient to cause the Dent.
4.109 Of course, for a shaped charge to be located 1 metre from the pipeline that would necessarily mean that the charge had detached from the pipeline and was located at the moment of detonation in such an orientation that the slug would hit the pipeline at an angle consistent with the Dent's geometry. I note that the Nord Stream 1 pipelines are embedded into the seabed (perhaps as much as 80- 85%) and, therefore, the area of the pipeline which has been dented would also have to have been above the seabed in order for this hypothesis to work. I cannot say for certain from the images of the Dent both pre-washout and after washout that it was. It is important to note, therefore, that this hypothesis of how the Dent could have been caused by a shaped charge depends on a combination of factors: the shaped charge falling 1 metre from the pipeline, being located at an orientation that the slug would hit the pipeline at the correct angle when it detonated, and that the area that was dented was above the seabed.
4.110 I am unable to express any view as to whether impact from, for example, a ship's anchor, a detached shaped charge or any other impact capable of imparting 0.4 MJ (400 kJ) of energy to the pipeline would be more or less likely." [emphasis added]

485. The points made above have to be read in light of his subsequent oral evidence. In particular, as to the size of the charge Professor Rigby performed a calculation to assess the volumetric strain energy required to create a shape materially the same as the Dent showing that the energy required to create the Dent was about 0.4 MJ. He accepted in his report that this calculation was subject to plus or minus 50%. He stated that "*any energy levels within +/- 50% of this value [was] close enough to be physically admissible whereas any value outside of this range is physically inadmissible*".

486. In cross examination Professor Rigby accepted that the energy required may have been greater than 0.4MJ and he accepted that a 5.2kg charge may have caused the Dent:

"*Q. So you're not really asking her Ladyship to take your 4.3 kilograms as a binding maximum, are you?*
A. Not binding in the sense that it is irrefutable. I believe that there is always some wiggle room on the numbers that I provide, but it's merely there to say that the size of the crater is consistent or more consistent with charge masses in the range of 2 to 5 kilograms than it is 14 to 27 kilograms.
Q. I see. And when you say 2 to 5 kilograms, would that include, for example, 5.2 kilograms of RDX even though that's slightly more than 5 kilos equivalent?
A. Yes, exactly, I would say that's a −− it's not a hard−edged range within reasonable engineering judgment outside of 2 to 5 kilograms I would consider to be represented by that value." [emphasis added]

487. As to the type of charge, in cross examination Professor Rigby said he believed the same type of charge was used at different locations, namely a linear cutting charge:

"*Q. ...At paragraph 2.32* [of Rigby 2]*, is this right, your view is that the attackers may well have used different charge types and numbers at different places; is that right?*
A. Different charge numbers at different locations, yes, but I believe the same charge type was used.

Q. When you say charge type, do you mean in the sense that it was linear, or do you mean much more specific than that?
A. In the sense that it was a linear cutting charge that was used." [emphasis added]

488. Professor Rigby's evidence was that a charge such as the Hayrick charge would be classified as a linear cutting charge:

"Q. And is this [Hayrick charge] *a directional charge with some linearity?*
A. Yes, I would believe that that would be classified as a linear cutting charge.
Q. And is it right that you consider that the subsea version of this is one type of charge that could have been used to create the observed rupture damage on the Nord Stream pipelines?
A. I do, yes.
Q. And I put it to you that it was directional. Can I just see if we have a common understanding of that. It's directional in the sense that when detonated, it releases a metal projectile in a particular direction, is that right?
A. Yes, that is correct, although under that description a conical-shaped charge could also be described as a directional explosive." [emphasis added]

489. The significance of a Hayrick charge to the evidence of Professor Rigby's theory of how an explosion could have caused the Dent is that on the evidence:
   a. it was a typical explosive that would be used as a demolition charge;
   b. it carries an explosive load of 5.3kg; and
   c. the Claimant accepted that such a charge "*would be ideal for creating the sort of unzipping effect that we see in the pipes in this case"*.

490. In cross examination Dr Pettitt gave details of a Hayrick charge as follows:
"Q. *And you describe [in Lumley 1at paragraph 4.3.39] [a Hayrick charge] as a charge which is widely used in −− a widely used surface demolition charge; yes?*
A. Yes, my Lady.
Q. And it's also available in marinised versions which are widely used in maritime demolition and decommissioning?
A. Charges of that nature are available –
...
Q. And ... it carries an explosive load of −− is it 5.3 kilograms, something like that?
A. That is correct, my Lady.
Q. And it can cut through up to 200 millimetres of steel?
A. That is correct.
Q. And something like that, do you agree, would be ideal for creating the sort of unzipping effect that we see in the pipes in this case?
A. This would be an ideal charge for the pipeline attacks that we have seen, my Lady." [emphasis added]

491. Professor Rigby confirmed in cross examination that a charge like the Hayrick "*would be ideal to cause the initiation of unzipping in a pipe.*"

492. As to the distinction between the jet (referred to by Mr Jones) and the "*slug*", the evidence of Professor Rigby was that the jet and the "*slug*" are not necessarily separate:

"A. ...The jet and the slug are not necessarily considered separate entities. It's a dynamically evolving process, and it depends on how far that projectile has travelled away from the shaped charge.
Q. Yes, I see. So −− all right. So I think it is right in your view that there is a jet consisting of metal particles and behind that is a slug which is more like a solid metal item; is that right?

A. My distinction, my Lady, would be more related to the shape of the projectile, so the jet is the leading component of the projectile that has a degree of sharpness to it, whereas the slug is a mass behind that is more blunt that hasn't yet formed into the jet and doesn't have as much penetrative capability, but again, depending on the proximity of the device to the structure, they may well be the same entity, they may well be part of the same coherent piece of metal."

493. Mr Lumley's view was that the energy required to produce the Dent was only 0.28MJ. However for the reasons discussed at the outset in relation to the evidence of Mr Lumley (including the matters concerning the modelling which was undertaken in this regard), I give no weight to the evidence of Mr Lumley as to the likelihood of an explosion causing the Dent and the energy required to produce it and prefer to rely on the evidence of Professor Rigby.

494. In its written closings the Claimant makes extensive submissions criticising Dr Pettitt and Mr Jones for not carrying out their own calculations or modelling to consider the explosive size or force to rupture the Pipelines or the force required to cause the Dent. As discussed above, in terms of the force required to cause the Dent Dr Pettitt adopted the analysis by Wood in its reports. The Claimant submitted in its written closings that Wood's figures are "*plainly wrong*". The criticisms by the Claimant of reliance by Dr Pettitt and Mr Jones on the Wood analysis are a little surprising in light of the fact that Wood were the engineering consultants engaged by Nord Stream.

495. In any event those criticisms of Dr Pettitt and Mr Jones do not in my view lead anywhere given the evidence of Professor Rigby which was before the Court and I do not therefore propose to discuss the detailed objections of the Claimant to the approach of Dr Pettitt. The key issue in my view is, as Mr Salzedo submitted in his oral closings, that:

"...once you get to any size that could have caused the ruptures, 5 kilograms or above, the charge size is no longer important to the issues for determination".

496. At the end of the cross examination of Professor Rigby, Mr Salzedo put a summary of his evidence to Professor Rigby as follows:

"Q. You have no objection to the suggestion that Hayrick hybrid charges could be the right type to create the rupture damage; that's right, isn't it?
A. That is correct, yes.
Q. And you've no objection to the idea that a charge size of just over 5 kilograms RDX could have been used for that purpose; that's right, isn't it?
A. That is correct, yes.
Q. And I think you accept that the estimate of the energy required to produce the dent is approximate, and indeed has a margin of error 50% either side; yes?
A. Yes, that is in my evidence, my Lady.
Q. Yes, and in fact, if you were asked to give a central estimate, it would be higher than your 400 kilojoules, wouldn't it?
A. Yes, it would be slightly higher, my Lady.
Q. And now we've looked at – and that implies that a charge of that kind of size, just over 5 kilograms, could have been even closer to the pipeline as we discussed earlier than the 1 metre in your report; yes? I think you suggested –
A. Yes, anything within 0.5 of a metre, my Lady, I would consider to not be admissible. Anything between 0.5 of a metre and 1 metre, maybe slightly larger than 1 metre I would consider to be admissible.

Q. And you do not suggest that her Ladyship can take the size of the crater as determining that a charge size to create the dent would have to be less than 5 kilograms RDX, you don't suggest that anymore, do you?
A. Close to 5 kilograms, my Lady. I don't suggest that it is in excess of 5 kilograms by a large margin.
Q. Right. And as far as the markings on the seabed are concerned, both the crater and the markings on the other side, do you accept that those are the kind of things that can be caused by explosions; yes?
A. The crater, yes, I agree that that could be caused by an explosion. The so−called touchdown markings on the other side I have reservations about, not least because I cannot guarantee that they are untampered with – not untampered with – unaffected by anything that happened beyond the event…".

497. Finally in cross examination, it was put to Professor Rigby:

"Q. Are you suggesting that there is any impossibility in the science in the idea that a 5-kilogram RDX charge exploded somewhere within 1 metre of the pipeline, causing the dent and also creating the crater?
A. No, I am not disputing that, my Lady, that matches the evidence that I have provided…".

498. Taking Professor Rigby's evidence in its totality the position is as follows:
    a. Professor Rigby (as discussed above in the section relating to a dropped anchor) was not expressing any expertise on anchors and thus paragraph 4.102 of Rigby 1 has to be read in light of that evidence.
    b. Professor Rigby discounts the Dent being caused by the direct effects of an explosion (i.e. gas bubble and/or pressure wave) which was the view taken by Dr Pettitt.
    c. In his opinion the impact of the projectile/slug from a plastic explosive (RDX-based) shaped charge such as a Hayrick charge of approximately 5kg situated between 0.5 of a metre and 1 metre away from the pipeline would be a possible source of an impact sufficient to cause the Dent.

Damage from the explosion/Gas bubble

499. Dr Pettitt's view was that the location of the Dent at 9 o'clock was consistent with an explanation that an explosive charge was dislodged or fell from the 12 o'clock position onto the seabed and subsequently detonated. Having fallen from the 12 o'clock position and subsequently detonated, in his opinion, the expanding and contracting bubble strikes the pipeline surface causing a shattering effect on the concrete sheath imparting further energy to deform the surface of the pipeline and create the Dent. He referred to this as a "*glancing blow*".
500. The Claimant relied on the evidence of Professor Rigby that this hypothesis of a gas bubble is in fact not possible in that the theoretical amount of energy required to cause the Dent from an explosive about 1 metre from the pipeline would give rise to a gas bubble and shockwave with a diameter of about two metres and would not cause the kind of focused localised damage that can be observed in the Dent .
501. Mr Salzedo submitted in oral closings that the gas bubble is "*another possible mechanism"* although the Defendants also submitted *that "the only point that matters is whether the Dent was caused by an explosion"*.
502. Given the evidence of Professor Rigby as to the mechanism which could have caused the Dent (above), in my view it is not necessary to resolve the issue of whether the gas bubble is "*another possible mechanism*". I do not therefore propose to address this theory in detail. However I note the evidence of Dr Pettit in cross

examination, set out below, and the doubt cast by Professor Rigby on the theory of the Dent being caused by the gas bubble.

503. Dr Pettitt's evidence was as follows:

> *"Q. I think your view is that what you're envisaging is that the bubble will strike a glancing blow to the pipe, no?*
> *A. I refer to a glancing blow in my report. My Lady, as the explosion takes place, a bubble will be generated and will oscillate towards and over the pipeline as it shrinks and expands.*
> *Q. And it's right, isn't it, it needs to be a glancing blow if Professor Rigby and Mr Lumley are right about the energy because, if more than a very tiny fraction of the energy of the explosion touched the pipe, we would be well past a dent and into actual rupture?*
> *A. Yes, I agree with that, my Lady.*
> *Q. Now, if you have the charge at seabed level, so around the 9 or 10 o'clock position, and the bubble impinging on the pipe at around the 9 or 10 o'clock position, that can't be a glancing blow, can it? It's striking at the normal angle?*
> *...*
> *A. My Lady, the bubble will migrate upwards, not horizontally.*
> *Q. So if the level of the seabed is at 9 or 10 o'clock and the bubble is migrating upwards, how is it going to manage to strike the pipe at 9 o'clock?*
> *A. The size of the bubble will move radially away from the event, migrating upwards and outwards.*
> *Q. Yes, but then –*
> *A. So it will impact on the surface as it strikes it.*
> *Q. But not at 9 o'clock, how could it do it?*
> *...*
> *A. The bubble. If I may correct myself, my Lady, the bubble as it migrates hits the seabed and then oscillates over the pipeline".* [emphasis added]

504. The evidence of Professor Rigby in cross examination was as follows:

> *"Q. And will [the gas bubble] also generally move towards a fixed boundary like the pipeline in the seabed?*
> *A. Possibly. It depends on the proximity to the seabed. I believe the coupling to a rigid obstacle will be a secondary effect, whereas the buoyancy and the rising will be the primary effect, so it will want to move upwards far more readily than it will want to move across to a rigid obstacle."*

505. Mr Salzedo submitted that it is sufficient for the Defendants' case that Professor Rigby and Mr Jones are in agreement that one of the things that could have caused the Dent is the projectile, in other words the jet and the slug which come out of the explosion when it was detonated.

506. In my view Mr Jones and Professor Rigby were not in agreement as to the mechanism by which the charge would have created the Dent. As referred to above Mr Jones suggested that the concrete caused the Dent. Whilst Mr Jones has considerable operational experience in the field of explosives, for the reasons discussed at the outset, I prefer the evidence of Professor Rigby on this issue.

The level of the Dent and the seabed

507. In its written closings the Claimant submitted that a "*convincing theory*" of how the Dent could have been caused by an explosion would need to explain and account for:

"… how a charge came to be in a position to strike the pipeline at the 9–10 o'clock position, taking into account the known facts about the seabed level adjacent to the pipeline."

508. In oral closing submissions Mr Stanley submitted that:

"*…there does remain the problem of when it falls off a line on to a seabed which is above the mid-point of the pipe, how does the charge then end up in a position that it strikes the pipe?"* [emphasis added]

509. Mr Stanley submitted that:

"… what [Professor Rigby] makes clear is that for the hypothesis to work, the area of the pipeline which has been dented would also have to have been above the seabed in order for the hypothesis to work and on the evidence it's not above the seabed. The evidence of the dent is that it's at the 9 or 10 o'clock position at a position where the seabed prior to the creation of the crater covered the pipe by 85%...".

510. Mr Stanley further submitted that:

"So Professor Rigby has explained the circumstances which need to prevail, but nobody has identified how those circumstances could have prevailed."

511. In his report Professor Rigby stated that:

"*The impact of the projectile/slug from a 5kg plastic explosive (RDX- based) shaped charge situated approximately 1 metre away from the pipeline would therefore be another possible source of an impact with approximately 0.4 MJ (400 kJ) sufficient to cause the dent*."

512. As set out above, in his report Professor Rigby went on to note that the possibility of the damage being caused by the projectile/slug depended on a combination of factors including that the area that was dented was "*above the seabed*".

513. There are two points to consider by reference to the evidence: the position of the Dent and the level of the seabed in relation to the Dent.

514. In its opening submissions the Claimant in a footnote said that:

"Whether the Dent is in fact at the 10 o'clock position, rather than the 9 o'clock position, is a matter of some controversy…"

515. However, the Claimant's expert, Mr Lumley, was of the view as set out both in his report and the Joint Memorandum that:

"…the recorded position of the Dent is at the 9 o'clock position in some documents, but in [the] *opinion* [of Mr Lumley] *the position of the Dent is in the 10 o'clock position."*

516. The Claimant's footnote in its opening submissions also referred to the contemporaneous survey reports which the Claimant submitted supported the Claimant's experts' position that the Dent was at the 10 o'clock position:

"*Svarog's field memo reporting on its close visual inspection distinguishes between the 'seabed disturbance' at 9 o'clock and the '[d]amage' at the 10 o'clock position see to the same effect the subsequent Svarog 'country report' dated 16 January 2023*".

517. In their closing submissions the Defendants submitted that:

"There is uncertainty as to whether the Dent is in the 9 or 10 o'clock position ... The Court does not need to resolve that issue. The relevant point to note is that the centre

of the Dent appears to be roughly at the same height as the level of the seabed prior to the Dent occurring: see Dr Pettitt's oral evidence...". [emphasis added]

518. As to the level of the seabed, the Claimant submitted in oral closings that the evidence is that the Dent is at "*the 9 or 10 o'clock position*" at a position where the seabed prior to the creation of the crater "*covered the pipe by 85%...*".

519. However that submission does not reflect the evidence. As referred to above the Dent according to the Claimant's evidence was in the 10 o'clock position. Pursuant to the design specifications the pipeline was supposed to be buried to 80% but Dr Pettitt's evidence in his second report is that inspection of ROV footage shows seabed coverage to the 10 o'clock level at the undisturbed areas surrounding the Dent.

520. This seems to be accepted by the Claimant in its cross examination of Dr Pettitt where Mr Stanley accepted that it was "*approximate*" but "*about right*" that the pipeline was buried to "*approximately the 10 o'clock level*" and Mr Stanley put it to Dr Pettitt that the Dent was "*more or less…level with the seabed*".

521. The relevant passage of the cross examination by Mr Stanley of Dr Pettitt was as follows:

"Q. Now, at that point what is roughly right −− and you've marked it on the left −hand side −− is that at this point the pipeline is buried to approximately the 10 o'clock level, and obviously it's only approximate, but that's about right. And on your view, the centre of the damage from the explosion on the dent is at around the 9 o'clock to 10 o'clock level?
A. Yes, that is correct.
Q. So more or less then level with the seabed?
A. Yes, that is correct." [emphasis added]

522. Thus Mr Stanley put to Dr Pettitt in cross examination that his theory of a glancing blow did not work because the charge was on the seabed and the bubble would have hit the pipe level at the same level:

"Q. I think your view is that what you're envisaging is that the bubble will strike a glancing blow to the pipe, no?
A. I refer to a glancing blow in my report.
...
Q. Now, if you have the charge at seabed level, so around the 9 or 10 o'clock position, and the bubble impinging on the pipe at around the 9 or 10 o'clock position, that can't be a glancing blow, can it? It's striking at the normal angle?
A. There will be a certain degree, my Lady, of damping by the silt clay sandy bottom of the seabed directing the bubble towards the pipeline as it oscillates and shrinks" [emphasis added]

523. This is consistent with the Claimant's submission in its written closings where it rejected Dr Pettitt's theory of a glancing blow on the basis that:

"*…since the Dent was at the 9–10 o'clock position, a 'glancing blow' was not possible; from the location where a charge would have been placed (on Dr Pettitt's theory), the relevant impact force would not be glancing—it would travel in a straight line into the pipeline*". [emphasis added]

524. As referred to above in its oral closing submissions, the Claimant appeared to depart from its previous position and submitted that:

"*The evidence of the dent is that it's at the 9 or 10 o'clock position at a position where the seabed prior to the creation of the crater covered the pipe by 85%...".*

525. In my view the Claimant's objection that (in effect) the level of the seabed was higher than the Dent is not made out on the evidence.

Conclusion on scientific evidence

526. In his oral closings Mr Stanley submitted that Professor Rigby's "scientific basis" did not answer the question whether "practically" it is a possibility. Mr Stanley said:

"we say that what Professor Rigby says is he sets out the scientific basis on which it could happen, but that doesn't answer the question whether practically, given the evidence about the dent and its position and the seabed, it's a real possibility, much less a probability, which is what it needs to be, obviously."

527. In my view Professor Rigby's evidence does set out a scientific basis on which the Dent could be caused by an explosion and the evidence does not suggest that the assumptions made by Professor Rigby (as modified and explained in cross examination) render his basis impossible. In my view the evidence does not suggest that the seabed was above the Dent such that the parameters identified by Professor Rigby could not be satisfied.

528. A final point was made by Mr Stanley after Mr Salzedo had made his oral Reply. Mr Stanley raised the issue that the Defendants' pleaded case is that the Dent was "*approximately at the 9 o'clock position*".

529. Mr Stanley did not expand on the perceived significance of this observation. As referred to above, the Claimant's own expert was of the view that the Dent was at 10 o'clock, Mr Stanley appeared to put his case on the basis to Dr Pettitt that the Dent was "*more or less level with the seabed*" and the Defendants did not challenge Mr Lumley on his opinion that the Dent was at 10 o'clock. The Claimant suffers no prejudice if the Defendants now take the position that the Dent was at the 10 o'clock position. If the Claimant wanted to raise an objection it could have done so at an earlier stage of the trial. In any event in my view any application to amend the pleadings sought even at this late stage would have succeeded given the lack of any prejudice to the Claimant.

Factual evidence

530. The Claimant submitted in its written closings that the evidence is "*sparse*":

"*As to the Dent, there is (only) a succession of videos and some heat map images taken about a month after the adjacent explosion on Line 1*."

531. However in addition to the expert evidence on the mechanism of the damage there is the factual evidence considered below.

Proximity to explosions

532. The Claimant accepted in its written closings that there is "*physical evidence*" which "*strongly supports the conclusion*" that the ruptures to NS1 Lines 1 and 2 and two ruptures to NS2 Line A were the result of "*deliberate explosions*".

533. Further it is agreed between the parties that:
    a. The distance between Line 1 and the Dent on Line 2 is approximately 90 metres.
    b. The Dent is located around 93m from the Rupture Damage to Line 1.

534. The cause of the Dent has to be examined in the context of its proximity to the Rupture Damage on Line 1 and the relative proximity (93m) has to be viewed against firstly, the overall length of the Pipelines (1,224km) and secondly, the relatively limited geographical scope and the known timeframe of the overall operation to

sabotage the Pipelines where it is accepted by the Claimant that the explosion damage to Lines 1 and 2 was caused very close in time and about 6.5 km apart.

535. It was submitted for the Defendants that if it was possible for an explosion to cause the Dent there is nothing improbable about the idea that it did so and the coincidence of something else coming into that exact point would be an extraordinary coincidence.

536. Whilst perhaps "*extraordinary coincidence*" puts the matter too highly, the coincidence of something else, given the possible explanations for the "something else" being "*not credible*" (anchor drag, fishing tackle) or "*highly unlikely*" (anchor drop) in the light of Mr Lumley's evidence discussed above, is a factor which the Court is entitled to take into account in determining whether it is likely that the Dent was caused by an explosion as part of the Explosions/Rupture Damage.

Physical evidence

537. The Claimant submitted in its written closings that there is no physical evidence showing what charges were used, when they were set, how they were detonated or who set them. Notwithstanding this submission, the Claimant accepted in its closing submissions that there is physical evidence which strongly supports the conclusion that the Ruptures were the result of deliberate explosions. By extension in my view it is therefore not fatal to the Defendants' case (that the Dent was also caused by a deliberate explosion as part of the Sabotage) that there is no direct physical evidence on these particular issues in relation to the Dent.

538. Moreover in relation to the Dent there is the following physical evidence to be considered:
    a. A welded field joint runs "very close" to the Dent;
    b. the craters/seabed disturbances;
    c. the "metal parts" that were recovered in the vicinity of the Dent;
    d. the splayed rebars;
    e. pulverised concrete.

Welded field joint

539. There seems to be a slight variation between the Statement of Agreed Facts and the Claimant's pleaded position. In its Re-Re-Amended Reply it is admitted by the Claimant that "*the Dent is located <u>at</u> a welded field joint on Line 2*" [emphasis added]. In closing oral submissions, the Claimant appeared to try and depart from their pleaded position asserting that the Dent was "*not actually at a weld joint*" although counsel accepted it was "*close to a weld joint*." Mr Stanley then submitted that it was as a result "*essentially neutral*".

540. The significance of the field joint is that in the Joint Memorandum of Dr Pettitt, Mr Jones, Mr Lumley and Professor Rigby, the experts agreed in relation to the Ruptures that the Explosives were placed at welded joints. Mr Jones said in Jones 1 that field joints are selected as targets for charge placement being the "*weakest point of a pipeline with no concrete protective coating*".

541. I do not accept the Claimant's submission that this evidence is "*neutral*". In my view even taking the agreed position that a welded field joint runs "*very close*" to the Dent, in the context of a 12m section of pipe, the location of the Dent is not only consistent with the theory of an explosion as part of the Sabotage but is positive support for the proposition that as part of the Sabotage, a charge was placed at the welded joint, as were the charges in relation to the Rupture Damage, but that in the case of the Dent the charge fell from its placed position.

The craters/seabed disturbances

542. As referred to above, there was a First Reaction Damage Survey report by Svarog in November 2022. That report included a graphic showing a crater or seabed disturbance setting out the dimensions as 2.4 x 1.9m to the south of the Dent.

543. In the First Reaction Survey - Data Review & Findings by the Wood Group Plc (the "Wood report") in January 2023 there is a sentence in a section dealing with the Dent which Professor Rigby interpreted as meaning that an ROV created the crater during the washout process. The Wood report stated:

"…The dent and crater (created by the ROV for closer inspection) can be clearly seen in Figure 3-15 below…"

544. However the literal interpretation of this sentence does not appear to be the intended meaning as the report then goes on to compare graphics from 2021 with 2022 with the following introduction:

"A comparison of the 2021 and 2022 data show trawl scars in the same area, therefore the damage to the pipeline was most likely from recent events as no damage was seen in 2021. Below Figure 3-16 shows Raster data created in ArcMap comparing the same area in 2021 and 2022…"

545. The report notes on the graphic for 2021 "*No crater in 2021 data*" and on the graphic for 2022 "*Crater South and features North in 2022 data*". This analysis would make no sense if it was comparing the absence of a crater in 2021 with a crater created by the ROV. Further, as submitted by the Defendants, there would have been no purpose in Svarog measuring the dimensions of the crater and including them in its Damage Survey report if Svarog had created the crater itself by its ROV.

546. I note that Professor Rigby said in his cross examination that he was not aware of any other evidence that suggested it had been created by the ROV and he was not taken to any evidence in re-examination which would suggest that it was caused by the ROV.

547. The Claimant submitted that it was a "*small disturbance*" at the Dent site to the south of Line 2. It is unclear what the Claimant is seeking to suggest by this observation. Professor Rigby in his report referred to viewing images and videos of the evidence of the Dent "pre-washout" and confirmed that "*there does appear to be a small disturbance on the Dent side of the Pipeline*."

548. The significance of the crater to the south of the Dent lies in the evidence of Professor Rigby in cross examination who agreed that the crater could be caused by an explosion:

"Q. … And as far as the markings on the seabed are concerned, both the crater and the markings on the other side, do you accept that those are the kind of things that can be caused by explosions; yes?
A. The crater, yes, I agree that that could be caused by an explosion. The so-called touchdown markings on the other side I have reservations about, not least because I cannot guarantee that they are untampered with -- not untampered with -- unaffected by anything that happened beyond the event." [emphasis added]

549. Earlier in his cross-examination Professor Rigby's evidence said:

"A. I believe the crater is -- or could be taken as clear evidence of an explosion, yes. I believe that the markings on the other side are -- to me they don't look as clear-cut as being caused by an explosion, and I didn't want to exclusively count an explosion as the cause, my Lady, because I have no background in other aspects of seabed disturbances, so I didn't see it in my position to rule out things that I was unaware of." [emphasis added]

550. Professor Rigby accepted in cross examination that a Hayrick charge could have an impact on the far side of the Dent but doubted why there would be two distinct markings:

"Q. … And so if a charge, like, say a 5.3-kilogram Hayrick was detonated about a metre away from the pipeline underwater, could the shock wave pass over the pipeline and have an impact on the seabed on the other side of the pipeline?
A. Yes, that is a possibility, yes.
Q. Might the impact of that shock wave leave marks on the seabed on the other side of the pipeline?
A. That is a possibility, yes, but the extent to which it would leave a lasting impression, I do not know."

551. Professor Rigby also said in relation to the seabed disturbance on the far side of the Dent:

"There is no physical explanation as to why the shock wave would separate and cause two distinct markings adjacent to one another with a ridge in the middle. If that were indeed touchdown markings from an explosive, it would just be a single disturbance radiating outwards."

552. Mr Lumley accepted in cross examination that the crater to the south and the seabed disturbances to the north were *"consistent with an explosion having happened"* although he suggested that from a video that he had viewed the small crater on the right was part of an earlier track.

553. In his oral Reply Mr Salzedo submitted that Mr Lumley's evidence that the small crater already existed should be discounted since the video he referred to during his cross examination had not been identified by the Claimant either in re-examination or in submissions.

554. I accept that submission for the Defendants and note that Mr Lumley accepted in cross examination that if he was wrong about the pre-existence of the seabed disturbance, the seabed disturbances on both sides "*form a pattern that is characteristic of an explosion having taken place near a pipeline*".

555. Professor Rigby did challenge the size of the crater relative to Mr Jones' theory that the mass of the explosives was 20-35 kg, but Professor Rigby accepted that it was not impossible that an explosion caused the Dent and the crater:

"Q. …Are you suggesting that there is any impossibility in the science in the idea that a 5-kilogram RDX charge exploded somewhere within 1 metre of the pipeline, causing the dent and also creating the crater?
A. No, I am not disputing that, my Lady, that matches the evidence that I have provided."

556. In my view the evidence of the experts as to the crater on the south side of the Dent supports a finding that the Dent was caused by an explosion, irrespective of the position in relation to the seabed disturbances to the north as to which the evidence leaves the issue open to doubt.

The "metal part"

557. There are two reports produced for the German federal prosecutor. One by Forster in June 2024 (the "Forster report") refers to exhibits found at the damage sites including two items 265 and 268. A second report (the "Schachel report") examined the exhibits for traces of explosives. The Schachel report described both these exhibits as being metal objects. The Schachel report detected RDX in its testing of exhibit 265.

558. The Claimant submitted in its written closings that no weight can be placed on these reports and their conclusions are inadmissible. The Claimant submitted that the Court would be being asked to reason from a forensic test "*unsupported by competent witness evidence with no evidence of where or when the item was found what it was how it was handled or of any test that would rule out contamination from other samples or the lab*."
559. However as physical evidence the Claimant appeared to accept that, as stated in the Forster report, samples with reference nos. 265 and 268 were found *"somewhere in the region of the Dent"*. The Claimant however submitted that it was "*not conclusive*" that because a piece of copper is "*somewhere near the Dent*" it came from the Dent and Mr Stanley submitted that "*it could easily have come from the explosive devices that were used to rupture line 1…*".
560. The Claimant relied on the evidence of Mr Lumley in cross examination:

"Yes, but I would say that a lot of debris from the dent -- from the ruptures on line 1 and line 2 over-splayed the dent area, so it's not conclusive that because a piece of copper is somewhere near the dent means that it came from the dent. It could easily have come from the explosive devices that were used to rupture line 1 and line 2 only 90 metres away and some of the debris went over the top of line 2 to the south of it as well."

561. I do not accept this evidence as anything other than conjecture. When assessing the likelihood of the causes of the Dent Mr Lumley did not mention these physical items in his reports, even though they were potentially significant, and failed to explain satisfactorily why he had not done so:

"A. …You are seeing debris from the pipeline, so you're asking -- in a position to actually understand what items of debris are, what are they, why have they come there. So that is within my area of expertise.
Q. Oh right. Okay, in that case, why have you not sought to address the contaminated copper in your reports?
A. I haven't.
…
A. … there's no reason why I haven't, perhaps I should have done...".

562. Mr Lumley also suggested in this section of his cross examination that it may have been historical ordnance. However a survey for unexploded ordnance had been carried out prior to construction of the Pipelines so this seems an unlikely explanation and Mr Lumley did not appear to have any evidence to support this theory.
563. In my view there is no scientific evidence which establishes that it is more likely that the metal came from the explosive devices used to rupture Line 1 which were 93 metres away.
564. I note the objections raised by the Claimant suggesting that there may have been contamination at some stage in the forensic testing. However there is no evidence which would suggest that there might have been contamination and absent any evidence to suggest this is an issue, there is no reason to suppose that a report prepared for the German criminal authorities would not have followed appropriate scientific procedures to ensure the sample was preserved correctly for use in the German criminal proceedings, what Dr Pettitt in cross examination termed "*normal police and forensic protocols*."
565. In his oral Reply Mr Salzedo submitted that he was not asking for a finding of fact that the copper was a part of the slug or that it was contaminated with explosives.

Rather his submission was that the Court should give that evidence some weight in the overall assessment of whether it is more likely than not that an explosion was the cause of the Dent, and, in that overall assessment, it is "*highly relevant*" that there is evidence that somebody found a piece of copper.

566. In my view (even if I were to disregard for this purpose the evidence suggesting the presence of RDX) the presence of metal fragments in the vicinity of the Dent is relevant evidence which supports the theory that the Dent was caused by an explosion as part of the Sabotage.

The splayed rebar

567. Mr Lumley agreed in cross examination that the images of the Dent taken by Svarog showed both the bands from the field weld joint and the rebar splayed outwards from the pipe. He also agreed that that feature is consistent with explosive damage.

568. However he also advanced an alternative theory that a weight that hit the pipe could have either tangled with the rebar and when they extracted it, pulled it up, or the reaction of the impact of the object hitting the pipeline splayed the rebar. His evidence was that the most probable item was an anchor.

569. Mr Stanley submitted in his oral closings that the splayed rebars are not "*indicative of an explosion*" and that "*any impact could have caused that*".

570. In my view for the reasons discussed above, Mr Lumley's theory of an anchor drop is not a likely explanation for the Dent. But even if it is a possible explanation, the theory advanced by Mr Lumley in relation to the damage to the rebar (that the anchor could have become tangled when it was extracted) appeared to be an attempt in cross examination to maintain his theory of the anchor irrespective of any evidence to support it.

571. I do not therefore accept Mr Lumley's explanation that the damage to the rebar is likely to have been caused by the anchor becoming tangled and Mr Lumley accepted that the splayed rebar are consistent with explosive damage. The damage to the rebar therefore supports the conclusion that the Dent was caused by an explosion.

Pulverized concrete

572. A further piece of physical evidence to consider is the damage to the concrete which was visible. Dr Pettitt's evidence was as follows:

> *"Q. And as far as the appearance of the concrete is concerned, that would be consistent with an explosive impact; correct?*
> *A. Yes... prior to the clean−up there was evidence of highly pulverised concrete at the base of the pipeline.*
> *Q. But it would be consistent with any other impact, wouldn't it, to concrete?*
> *A. With an explosive event, my Lady, typically, one would see highly pulverised material; with a mechanical impact, a slow velocity impact, it would be larger particles.*
> *Q. If it was a slow velocity impact it might be larger particles; if it was a higher velocity impact, it might be different. All it tells us, that broken concrete, is that the concrete has been broken; correct?*
> *A. It tells us an event has taken place and displaced the concrete from the pipeline body...".* [emphasis added]

573. Mr Lumley's evidence on this issue was as follows:

> *"Q. The presence of the pulverised concrete is consistent with an explosion, isn't it?*
> *A. It is one option, one possibility, yes.*

Q. Yes. And it is not consistent with an impact by a relatively slow−moving heavy object such as a dropped anchor, is it?
A. I disagree. Concrete is pulverised by an impact, and we're looking here at an impact. As to whether it's an explosion or an anchor, we can't −−
Q. And there's nothing in your reports about the extent to which concrete would be reduced to small pieces by an object like an anchor, is there?
A. No, there's no reference to the concrete.
Q. No. And is there any particular reason why this piece of the observed damage is one you've not considered in your reports?
A. Yes, because concrete doesn't give much −− we looked at the modelling of the pipe without concrete.
Q. You're aware, though, that the other experts in this case think that the fact that the concrete has been smashed into small pieces instead of broken into large pieces is indicative of an explosion. You're aware they think that, aren't you?
A. They think that, but there's no –
Q. So why haven't you considered it in your reports?
A. Sorry, as I say, there's no evidence to back up whether it should be granular concrete or large lumps, you know, that's just conjecture.
Q. My question for you is, given you were aware that that was their opinion, why haven't you considered it in your reports?
A. I didn't think it was relevant at the time". [emphasis added]

574. It was submitted for the Claimant in its written closings that an anchor would pulverise concrete. It was further submitted that "*the image is simply not clear—per Mr Lumley: 'there's no evidence to back up whether it should be granular concrete or large lumps'*"

575. I do not accept the Claimant's interpretation of Mr Lumley's evidence. As set out above Mr Lumley's statement that there was no evidence "*to back up whether it should be granular concrete or large lumps*" was not addressing the quality of the image but was in response to the question that the other experts thought that the small pieces that were visible were indicative of an explosion.

576. It appeared to be implicit in the question put to Dr Pettitt (above) by Mr Stanley for the Claimant that the concrete had been pulverised and the question was whether it was a high velocity impact:
"A. ... prior to the clean−up there was evidence of highly pulverised concrete at the base of the pipeline.
Q. But it would be consistent with any other impact, wouldn't it, to concrete?

A. With an explosive event, my Lady, typically, one would see highly pulverised material; with a mechanical impact, a slow velocity impact, it would be larger particles.
Q. If it was a slow velocity impact it might be larger particles; if it was a higher velocity impact, it might be different…".

577. In relation to whether pulverised concrete was consistent with an anchor drop, I note that if pulverised concrete would be produced by a high velocity impact, the evidence of Professor Rigby in Rigby 1 was that the impact from an anchor was *"the impact of a large relatively slow-moving object".*

578. Thus Dr Pettitt and Mr Lumley agree that the presence of the pulverised concrete is consistent with an explosion and the evidence of Professor Rigby is that the impact from an anchor would not be a high velocity impact.

579. The damage to the concrete is another piece of physical evidence that has to be explained and I take into account the evidence of the experts in this regard in assessing the likelihood that the Dent was caused by an explosion.

Damage to NS2 Line B

580. The statement of agreed facts prepared for trial includes the fact that NS2 Line B was damaged but no leak occurred.
581. In cross examination Mr Lumley was asked about the images included in his second report of the damage to Line B. He agreed that the images showed that the concrete was missing, but the rebar grid was still intact. He also agreed that the damage was about 1 metre from the field joint. However his view was that it was consistent with a "mechanical scraping" or impact at a slight angle. In his report he referred to his previous statement that impact damage is a "common cause" of damage to subsea infrastructure and the "most common cause of damage to subsea cables" is by impact damage including from dragged and dropped anchors. He said that the damage could be damage from a historic impact.
582. For the reasons discussed above I do not accept his evidence as to damage by a dragged or dropped anchor as likely in the circumstances.
583. Professor Rigby was of the view that the description of the damage in the Forster report to Line B was not visible in the images which he had. His view was that the appearance of the damage was quite different to that of the Dent and that the available evidence did not allow a conclusion with any confidence about the cause.
584. Whilst accepting that Professor Rigby was unable to form a conclusion on the evidence before him as to the cause, I give some weight to the fact that the damage to Line B was opposite the rupture on Line A and this was a case where damage was identified to another of the lines which did not result in a rupture. I cannot ignore the coincidence of this damage having been identified at this time.

Other circumstantial evidence

585. There were other matters of physical evidence which in oral closings Mr Salzedo described as "*evidential points which add some support to the explosion theory*".
586. In light of the evidence that was given in the course of the trial I propose to deal with only the following matters and very briefly as the evidence on each of them cast considerable doubt as to their significance such that it would not in my view be possible to place any real weight on them. These points were as follows:
    a. The "polished surface" / Scratch marks;
    b. The hook and string/rope;
    c. White/silver patch;
    d. The crater pattern in relation to the rupture on Line A of NS 2.

The polished surface/ scratch marks

587. Professor Rigby's evidence in his report was that the images of the Dent do not "*clearly show*" a polished surface nor a signature shiny patch as suggested by Dr Pettitt and Mr. Jones respectively.
588. Professor Rigby stated in his report that it could have been caused by the washout process itself since they were consistent with a jet of water dragging debris across the surface and ultimately buffing the surface to a shiny appearance. Professor Rigby's evidence in cross examination was as follows:

"Q. So you're not saying that a polished surface is inconsistent with an explosion; what you're saying is you do not believe there was a polished surface before the washout; is that right?
A. Yes, that is correct."

589. In cross examination Professor Rigby accepted that he could not give expert evidence on the force of the water jet used as to whether the polished effect was caused by a ROV.

590. The limited reliance by the Defendants (in their written closings) on this issue is the evidence of Professor Rigby that the marks cannot be explained by an anchor impact and it is not supportive of an inference that an explosion caused the Dent.

"*Q. …is this a fair summary, you agree that the radial scrape marks could have been caused by an impact with a projectile from a charge, but you think they could equally be caused by the washout process?*
A. Yes, that is correct.
Q. …Are you making the point [in your report] there that the scratch marks could not have been caused by something like an impact from an anchor?
A. Yes, if they are indeed scratch marks on the dent then they will have been caused by the hydrodynamic spreading, as I mentioned."

591. In cross examination Dr Pettitt was shown the videos taken at the time of the washout. He appeared to accept that the polished patches and scratches which can be seen were from the washing process by the ROV carried out after the Dent was discovered when work was carried out to survey the dent and high pressure washing carried out:

"A. The clean−up operation was exactly to expose what was on the pipeline, my Lady.
Q. What it also did −− and we've seen it with our own eyes −− is in various places it scratched and polished the pipe, as you'd expect; correct?
A. Correct, my Lady." [emphasis added]

The hook and string/rope

592. Mr Jones was asked in cross examination about the "*hook*". His evidence was:

"…I've pondered over it a number of times. I haven't −− you know, whether it was part of −− a mechanical part of the explosive system or whether it was part of a hook, you know, there is no definitive description to know what it actually is…"

593. Mr Jones agreed that there was *"no positive reason to think that it's got anything to do with any kind of explosive device"*.

594. Dr Pettitt was asked in cross examination about the hook and blue twine (or material) attached to it. It was put to him that the blue twine was part of the wrapping around the Pipeline. His evidence was:

"*Q. You might want to reserve judgment, but you certainly wouldn't want to say that it looked like this was part of the system for attaching an explosive; correct?*
A. I would maintain my answer, my Lady, that this potentially could be an attachment device.
Q. And it certainly looks very like the blue twine that we see in the picture …, doesn't it?
A. Yes, I would concede that point…".

595. This evidence was of limited if any significance as Dr Pettitt could not give expert evidence on this as he had not seen the photos before and was not familiar with the details of the manufacture in this regard.
596. Overall the evidence is inconclusive.

White patch on photos and video

597. Dr Pettitt suggested that a white patch which can be seen on photos and video could be a pool of molten aluminium which on the evidence is used in the manufacture of the pipe (aluminium collar).
598. Mr Jones was also of the view that this could be a pool from the aluminium on the pipe.
599. However the Defendants have offered no evidence which satisfactorily counters the evidence of Professor Rigby that (in essence) "*explosions do not melt metal, it's a misconception…*".

The crater pattern in relation to the rupture on NS2 Line A

600. Dr Pettitt's evidence in his supplemental report was that:

> *"4.7.26 Crucially, there is considerable corelation in size, appearance and position of the cratering demonstrated in Figures 26 and 54 of my Expert Report indicating that charges of similar (or the same) size were used. In both cases, the charge detonations did not result in catastrophic failure of the pipelines, but in a dent and comparatively minor leak damage. The presence of similar craters from bubble touch down at these locations would be a massive coincidence…"*

601. However his view that the crater was consistent with the size of the craters from the other explosions was not made out:

> *"Q. If we go back then please to … your reference to "considerable correlation in size, appearance and position", as far as the crater at the dent is concerned we agree that the −− it was of at most a radius of 2 metres; correct?*
> *A. Yes, my Lady.*
> *Q. And 20 centimetres deep; correct?*
> *A. Yes.*
> *Q. The crater at the site of the leak on Nord Stream 2 is 3.4 metres across; correct?*
> *A. Yes.*
> *Q. And deeper, isn't it?*
> *A. Yes, it is.*
> *Q. 1.2 metres deep; yes?*
> *A. Yes, my Lady.*
> *Q. So not just a bit deeper, but six times as deep?*
> *A. Yes, my Lady.*
> *Q. There isn't a considerable correlation, is there, in the size of the cratering?*
> *A. Perhaps not significant correlation, my Lady, but a correlation regardless*."

Gaps in the evidence

602. The Claimant submitted that there is no "*direct evidence*" from any person claiming or admitting responsibility for the Sabotage. The Claimant criticised the evidence implicating any individual and method variously as inadmissible, interlocutory, "*demonstrably wrong*" and multiple hearsay concluding this paragraph of its written submissions with the sentence that:

> *"At its lowest, this is a little problematic"*

603. The cross reference given by the Claimant is to an answer given by Dr Donald in cross examination. This answer related to the problem of placing weight on a particular journalistic source namely an article by a journalist, Seymour Hersh, published in February 2023 on Substack (an internet site). Dr Donald was not being asked about the evidence more generally. Given the evidence that is before the Court, in my view the absence of direct evidence as to who carried out the Sabotage or the method is not fatal to determining the cause of the Dent.
604. The Claimant submitted that there is no evidence of when the damage that led to the Dent occurred. Apparently in support of that submission, the Claimant cross referred to a statement by Dr Donald in cross examination that "*the want of hard substantive fact … tends to wash away much of what …otherwise −− might be seen as frivolous or unhelpful or sometimes insane."*
605. As is clear when the passage of Dr Donald's evidence is considered in context, it was a passage in which the geopolitical expert was being asked about the sources relating to the perpetrators of the attack. It was not, and given his area of expertise, could not be a broader comment on the physical evidence or the evidence in relation to the Dent:

    "Q. …If we go a stage further and we look at the specific attack on the Nord Stream pipelines in September 2022, we enter a realm in which we have a variety of more troublesome sources, do you agree, including things like anonymous sources, internet leaks, journalists, speculations and so forth?
    A. Yes, although I would stress that those sources were also available for everything before Nord Stream. It's simply that they are perhaps of more salience in the current case because of the want of hard substantive fact that tends to wash away much of what is otherwise −− might be seen as frivolous or unhelpful or sometimes insane."
606. As to the evidence of when the damage that led to the Dent occurred there is a broad timeframe in that the Claimant accepts that the damage in the form of the Dent was sustained in the period between 9 March 2021 (when NS1 Line 2 was previously surveyed) and no later than 30 October 2022 (the date on which the Claimant discovered the damage).
607. The Claimant submitted that there are "*important gaps*" in the evidence including a near total absence of evidence about what was happening at the site of the Dent between 26 September 2022 and 29 October 2022.
608. However so far as the Dent is concerned, and as referred to above, Mr Lumley accepted in cross examination that the Dent was likely to have occurred when Line 2 was still pressurised and thus on or before 26 September 2022.
609. Further insofar as the Claimant sought to bolster their case that there is limited available evidence and submitted that there is no "*detailed technical log*" of what was done in the washout process by the ROV, I accept the submission for the Defendants that the washout process was carried out by the Claimant's contractor and accordingly if there is any missing evidence, that should not be held against the Defendants.
610. More significantly in my view on the evidence (and as discussed above), the washout process did not affect the location of the Dent (close to a welded joint); its proximity to the Rupture Damage; the crater images which were taken before the washout process, the splayed rebars and the damaged concrete.
611. Insofar as the Claimant submitted that there is *"no evidence showing the condition of the Dent site before 22 October 2022"* this is inaccurate in that there was, as the Claimant accepted, a previous survey on 9 March 2021. Whilst this gives a period

of 18 months during which the Dent could have been caused, in evaluating the likelihood of it being caused prior to 26 September 2022 the Court takes into account that the conclusion that other possible causes are "*not credible*" (anchor drag, fishing tackle) or "*highly unlikely"* (anchor drop) apply not only as at 26 September 2022 but are equally valid, in my view, in the period from 9 March 2021 to 26 September 2022.

612. It was submitted for the Claimant that there is no seismic evidence associating the Dent with any explosive event. However the absence of seismic evidence is not of any relevance or assistance to the cause of the Dent as the seismic recordings were as a result of escaping gas following the ruptures of the Pipelines which clearly is not applicable to the Dent where no rupture occurred. The Claimant expressly accepted this proposition in its cross examination of Dr Pettitt when Mr Stanley put it to Dr Pettitt.
"*Q. And so the conclusion to be reached, which is the conclusion that is reached here and which I think you agree with, is that the seismic events are detecting not simply the explosive charges but they're detecting the subsequent explosive force of the pipelines rupturing following the charge?*
A. Yes, my Lady.
Q. And it follows, doesn't it, from that that these events are not detecting cases in which the pipelines did not rupture?
A. Yes, my Lady."

613. It was submitted for the Claimant in its written closings that the use of a single explosive charge at the Dent site is "*operationally inconsistent*". The Claimant referred to the evidence of Mr Jones in cross examination that there was no operational logic in having placed two charges on each of the NS1 Lines, placing only one charge on NS2, Line A, no charge on NS2, Line B, but an extra single charge in a different location on NS1 Line 2; that it would have made more sense to put two charges on NS 2.

614. However, the Claimant accepted that Mr Jones also said that when people get out into the real environment, they might do something other than what they had planned:

"A. *They may have planned to do it. What they want to do maybe in reality just didn't happen because the situation changed when they were on board*."
Mr Jones' evidence seems to reflect common sense and given his extensive operational experience, I accept it.

615. I therefore reject any suggestion that the fact that on the evidence a single charge at the Dent site would be sufficient to cause the Dent should tend to suggest that the Dent was not caused by an explosion.

The Popi M

616. In its written closings the Claimant drew the Court's attention to *Rhesa Shipping Co SA v Edmunds (The Popi M)* [1985] 1 WLR 948 in support of the proposition that:

"Courts do not ...subscribe to Sherlock Holmes's maxim ("when you have eliminated the impossible whatever remains however improbable must be the truth"): if the admissible evidence leaves a relevant possible conclusion improbable-less probable than not-then it is not proven".

617. It is important to separate the propositions: whether something is improbable and whether something which is not improbable, is more probable than not. Thus the

authorities referred to below establish that courts do not determine cases on the basis that when you have eliminated the impossible whatever remains however improbable must be the truth; but where there are competing explanations which are not improbable, it is permissible reasoning having eliminated all of the causes but one, to ask whether on the balance of probabilities that one cause was the cause of the event.

618. The Claimant further submitted that:

"…where the evidence is thin and incomplete the right conclusion may be that even the "most likely" of the explanations that seem plausible may well not satisfy the test of being more likely than not."

619. The Claimant's submissions rely in this respect by way of cross reference to the judgment of Lord Brandon. It is worth setting out his reasoning in detail which sets out the approach to be taken by the Court in the kind of case such as *The Popi M*:

"*In my view there are three reasons why it is inappropriate to apply the dictum of Mr. Sherlock Holmes, to which I have just referred, to the process of fact-finding which a judge of first instance has to perform at the conclusion of a case of the kind here concerned.*
The first reason is one which I have already sought to emphasise as being of great importance, namely, that the judge is not bound always to make a finding one way or the other with regard to the facts averred by the parties. He has open to him the third alternative of saying that the party on whom the burden of proof lies in relation to any averment made by him has failed to discharge that burden. No judge likes to decide cases on burden of proof if he can legitimately avoid having to do so. There are cases, however, in which, owing to the unsatisfactory state of the evidence or otherwise, deciding on the burden of proof is the only just course for him to take.
The second reason is that the dictum can only apply when all relevant facts are known, so that all possible explanations, except a single extremely improbable one, can properly be eliminated. That state of affairs does not exist in the present case: to take but one example, the ship sank in such deep water that a diver's examination of the nature of the aperture, which might well have thrown light on its cause, could not be carried out.
The third reason is that the legal concept of proof of a case on a balance of probabilities must be applied with common sense. It requires a judge of first instance, before he finds that a particular event occurred, to be satisfied on the evidence that it is more likely to have occurred than not. If such a judge concludes, on a whole series of cogent grounds, that the occurrence of an event is extremely improbable, a finding by him that it is nevertheless more likely to have occurred than not, does not accord with common sense. This is especially so when it is open to the judge to say simply that the evidence leaves him in doubt whether the event occurred or not, and that the party on whom the burden of proving that the event occurred lies has therefore failed to discharge such burden.
In my opinion Bingham J. adopted an erroneous approach to this case by regarding himself as compelled to choose between two theories, both of which he regarded as extremely improbable, or one of which he regarded as extremely improbable and the other of which he regarded as virtually impossible. He should have borne in mind, and considered carefully in his judgment, the third alternative which was open to him, namely, that the evidence left him in doubt as to the cause of the aperture in the ship's hull, and that, in these circumstances, the shipowners had failed to discharge the burden of proof which was on them.

... The shipowners failed to establish that the ship was seaworthy, and they only put forward an extremely improbable cause of her loss. In these circumstances the judge should have found that the true cause of the loss was in doubt, and that the shipowners had failed to discharge the burden of proof which was on them." [emphasis added]

620. Applying this to the facts of that case, Lord Brandon concluded that:

"Having regard to the way in which Bingham J. expressed the view that he was compelled to choose between the shipowners' submarine theory on the one hand and underwriters' wear and tear theory on the other, and having regard further to the fact that, when he neared the point of decision in his judgment, he did not discuss or consider the third possibility which was open to him, of simply finding the shipowners' case not proved, I am driven, reluctantly but inescapably, to the conclusion that on this occasion even Homer nodded.

...

In my opinion the only inference which could justifiably be drawn from the primary facts found by Bingham J. was that the true reason of the ship's loss was in doubt, and it follows that I consider that neither Bingham J. nor the Court of Appeal were justified in drawing the inference that there had been a loss by perils of the sea, whether in the form of collision with a submerged submarine or any other form."

621. It is clear from the judgment that in arriving at that conclusion on the facts, Lord Brandon was of the view that Bingham J was choosing between a theory that was "*extremely improbable*" and one which whilst "*not impossible*", any mechanism by which it could have operated was "*in doubt*":

"As regards the shipowners' submarine theory, Bingham J. stated in terms that he regarded it as extremely improbable, a view with which I think it unlikely that any of your Lordships will quarrel. As regards underwriters' wear and tear theory, it was contended by counsel for the shipowners that Bingham J. had ruled it out as impossible. The language used by him in different places is, however, ambivalent, and I think that it would be more accurate to say that he regarded the wear and tear theory not as impossible, but as one in respect of which any mechanism by which it could have operated was in doubt."

622. The application of *The Popi M* was considered in *Ide v ATB Sales Ltd* [2008] P.I.Q.R. P13. The issue before the Court of Appeal in *Ide* was set out by Thomas LJ at the start of his judgment:

"These two appeals were heard together because they raise an issue as to the approach the judge was entitled to take to the determination of proof of causation where alternative mechanisms of causation were put before the court. In each case the sole issue before the court was whether the respondent to the appeal who had suffered the damage could prove on a balance of probabilities that a defect had caused the damage sustained; each appellant contended that the judge had adopted a train of reasoning which the House of Lords made clear in The Popi M [1985] 1 W.L.R. 948 was impermissible."

623. Thomas LJ summarised the position before the first instance judge in *The Popi M* as containing *"what the trial judge described as a striking and novel feature of the expert evidence—all experts put forward explanations of the cause of the loss which were acknowledged to be highly improbable; each explanation was supported as the most likely explanation only because any other hypothesis was regarded as almost (if not altogether) impossible..."*. [emphasis added]

624. Thomas LJ set out the correct approach in the light of *The Popi M* at [4] of his judgment:

> *"…The Popi M was a very unusual case and as these two appeals demonstrate, the difficulties identified in that case will not normally arise. In the vast majority of cases where the judge has before him the issue of causation of a particular event, the parties will put before the judges two or more competing explanations as to how the event occurred, which though they may be uncommon, are not improbable. In such cases, it is, as was accepted before us by the appellants, a permissible and logical train of reasoning for a judge, having eliminated all of the causes of the loss but one, to ask himself whether, on the balance of probabilities, that one cause was the cause of the event. What is impermissible is for a judge to conclude in the case of a series of improbable causes that the least improbable or least unlikely is nonetheless the cause of the event; such cases are those where there may be very real uncertainty about the relevant factual background (as where a vessel was at the bottom of the sea) or the evidence might be highly unsatisfactory. In that type of case the process of elimination can result in arriving at the least improbable cause and not the probable cause."* [emphasis added]

625. Applying it to the facts of the first appeal in that case Thomas LJ said at [19]-[20]:

> *"This was a case where there were only two possible causes—either Mr Ide lost control and the handlebar fractured as suggested by Dr Chinn or it was defective. No other cause was suggested. Neither was improbable. This was not a case which raised the difficulties identified in The Popi M. Moreover as this was a claim under the Consumer Protection Act, it was, in my view, unnecessary to ascertain the cause of the defect. The issue was simply was the fall caused on the basis of Dr Chinn's theory or was there a defect.*
>
> *Dr Chinn's theory was rejected as most unlikely to be right. The judge had found that the bicycle had been regularly maintained and there was no suggestion of misuse or damage; the judge was entitled to infer, as the handlebar had failed in normal use for a bike of this type, that it was defective within the meaning of the Act. This was not a process of reasoning that led the judge to conclude that the defect was the cause because it was the least improbable of the two; once the other cause had been eliminated, all the evidence pointed to a defect in the handlebar. The judge was entitled to conclude that the defect was on the evidence the probable cause of the loss of control of the bike and the fall."*

626. As to the second appeal Thomas LJ said at [44]-[45]:

> *"…First of all it seems to me that the judge was correct in concluding that arson was "unlikely in the extreme". Given the factors set out by the judge, that was an inference that was open to him to make and he was entitled to eliminate this as a cause.*
>
> *Secondly, the judge was then left with the issue as to whether the cause had been the wiring or units in the garage or the electrics in the Lexus. No other alternative was put forward. Although both of these causes were uncommon, both could have been a cause; neither was improbable. The findings made by the judge simply do not support the contention advanced by the manufacturers that either of these causes was improbable. This was therefore not a Popi M case. It was therefore necessary to analyse as between the two which was the stronger probability."* [emphasis added]

Conclusion on the cause of the Dent

627. The Claimant submitted in its written closings that:

> *"The basis of the Defendants' case is that they can point to explosion damage in the vicinity of the Dent and then suppose that any other damage in that general area that in any conceivable way could be the result of an explosion probably is. But that rests on faulty reasoning. Explosion damage is an inherently unlikely cause of damage to a pipeline. The Dent does not closely resemble the known explosions—the truly striking thing about it, compared to them, is how relatively slight the damage to the pipe and the disturbance of the seabed is. There are massive unknowns and uncertainty. The correct conclusion is that although it is not impossible that the Dent is the result of a failed attack, it cannot be said that it is more likely than not that it was so caused. The correct conclusion is that its cause is unknown."*

628. Taking those points in turn, to the extent that they have not already been fully dealt with above:
    a. It is not "*any other damage in that general area*" but damage close to a welded field joint.
    b. Explosion damage is not an unlikely cause of the Dent in circumstances where it is known that the Sabotage took place and the close proximity to the Ruptures.
    c. The Dent "*resembles*" the known explosions in the sense that they were close to a welded field joint. Further on NS2 there were both ruptures (one of which was only partial) but also damage (to NS2 Line B) which fell short of a rupture. It is unclear what the Claimant implies by the term "*relatively slight*" damage but I infer that it refers to the fact that it was not ruptured. The fact that the Dent did not rupture the Pipeline cannot be said to be "striking" given the fact that NS2 Line B also suffered damage which did not rupture the pipeline at that location and that could also be described as "*relatively slight*" damage. (It is immaterial to this point that the damage to Line 2 was to the top of the pipe rather than the side).
    d. As to the "*slight*" disturbance of the seabed, the evidence of both the Claimant's experts nevertheless is that the disturbance to the south of the Pipeline is there and it was consistent with an explosion.

629. It was further submitted for the Claimant that:
> *"In short, the Defendants cannot satisfy the Court on the balance of probabilities on a case which depends on the wholesale abandonment of their own evidence, and partial approval of the evidence of Professor Rigby, which itself is not expressed on a 'more likely than not' basis. The exercise carried out by the Defendants' experts has not been one of objective analysis, but of credulous theory-building: a search simply for scraps of evidence in other people's work which might support the explosive theory. It completely lacks a coherent and scientifically rigorous account of how a charge, placed on the top of the pipeline, of a size consistent with what those experts regard as operationally plausible, would have produced the Dent."*
> [emphasis added]

630. I do not accept the submission for the Claimant, if that is the import of their submissions, that the Defendants needed to construct their own model:
> *"finding a reliable estimate of the force (or range of forces) required to produce the Dent without puncturing the pipe, considering the position that charge would need to be in to do that; explaining how a charge would have ended up on detonation at that position on detonation; and explaining how the resulting scenario is consistent*

with a coherent and plausible view of how a sabotage operation would be carried out."

631. The possibility of the impact from an explosive charge is in the opinion of Professor Rigby "*physically admissible and capable of causing the observed Dent*".

632. The evidence of Professor Rigby in cross examination was:

"Q. …Are you suggesting that there is any impossibility in the science in the idea that a 5-kilogram RDX charge exploded somewhere within 1 metre of the pipeline, causing the dent and also creating the crater?
A. No, I am not disputing that, my Lady, that matches the evidence that I have provided."

633. The evidence of Professor Rigby is both coherent and as far as the Court can discern, scientifically rigorous. It matters not that this evidence comes from the expert instructed by the Claimant since an expert owes a duty to the Court to give independent evidence which "*overrides any obligation to the person from whom experts have received instructions or by whom they are paid*" (CPR 35.3).

634. I note that Mr Lumley made no attempt to model an explosion even though that was one of the issues put to him.

635. As to how a charge would have ended up at that position on detonation, I note that in the Joint Memorandum Professor Rigby's view is that:

"…the dent could have been caused following the detonation of an explosive device that had fallen from its original position (i.e. from impact of the projectile/slug from a shaped charge)."

636. This accords with the views of Mr Jones and Dr Pettitt as set out in the Joint Memorandum which are that:

"…the dent was caused by an explosive charge laid and detonated as part of the same coordinated attack that caused the ruptures on the NS1 and NS2 pipelines, which likely fell from its original placement point at the 12 o'clock position on the pipeline and failed to rupture the pipeline."

637. As to the submission that the Defendants need to show how the resulting scenario is consistent with a "*coherent and plausible view of how a sabotage operation would be carried out*", the explanation of a single Hayrick charge is plausible in the light of the evidence of Mr Jones and Professor Rigby and consistent with the known Explosions/Rupture Damage.

638. In oral closings Mr Salzedo submitted:

"The question for the court is, we know there's a dent, at the location it's at, with the dimensions it has. Is it more likely than not that that was caused by an explosive charge?"

639. It is not for the expert in Explosives Science to opine on the factual question of whether an explosion as part of the Sabotage was "*more likely than not*" the cause of the Dent. Professor Rigby rightly acknowledged that:

"It is beyond my expertise to comment on the likelihood of what was the cause of such an impact."

640. It is for the Court to assess the totality of the evidence, both factual and scientific, to determine whether on the balance of probabilities the Dent was caused by an explosion as part of the same attack as the Rupture Damage.

641. In this case the Court is not in the position of Bingham J in *The Popi M* of choosing between *"two theories, both of which he regarded as extremely improbable, or one*

of which he regarded as extremely improbable and the other of which he regarded as virtually impossible". Rather this is a case where the starting point before the oral evidence was that there were before the Court *"two or more competing explanations as to how the event occurred, which though they may be uncommon, are not improbable."*

642. However in light of the evidence in cross examination of the possible causes put forward by Mr Lumley, Mr Lumley only advances the anchor drop which he accepted in cross examination as "*extremely unlikely*" for the reasons set out above. Having regard to the totality of the evidence in relation to the theory of an anchor drop I accept and adopt that assessment. In these circumstances, as stated by Thomas LJ, it is *"a permissible and logical train of reasoning for a judge, having eliminated all of the causes of the loss but one, to ask himself whether, on the balance of probabilities, that one cause was the cause of the event".*

643. In my view for all the reasons discussed above I find on the evidence that it is more likely than not that the Dent was caused by an explosion as part of the same attack that caused the Explosions/Rupture Damage.

Quantum

644. In light of my conclusions above on liability, I do not need to deal with quantum. I acknowledge the significant amount of work that went into the quantum issues and that the experts devoted a considerable amount of time both in the preparation of their reports and also in discussion. Although the experts managed to reach agreement on a number of issues, the remaining issues occupied three days of court time with first factual evidence from Mr Reichert and then cross examination of Mr Cooper and Mr Danhash.

645. However the outcome of the quantum is dependent on the findings on various issues of liability and thus quantum, if it were to be determined in its entirety, would vary depending on the findings of liability (e.g. in relation to the cause of the Dent and the alternative case of repair of the Dent only).

646. Although it is not necessary for me to determine the issues of quantum, I wish to express my gratitude for the extensive work done in relation to quantum and the work that was ongoing over the course of the trial to refine the issues and the helpful submissions that were made on both sides to explain the technical matters that were at issue.

Conclusion

647. For all the reasons set out above I find on the evidence before this Court that:
    a. the Damage to the Pipelines (both the Ruptures and the Dent) was "*directly or indirectly occasioned by, happening through, or in consequence of war*"; and
    b. such Damage was excluded from cover by the terms of Exclusion 2.i of the Policies.