



Neutral Citation Number: [2022] EWHC 2686 (KB)

Case No: QB-2021-00651

IN THE HIGH COURT OF JUSTICE
KING'S BENCH DIVISION

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 25 October 2022

Before :

HHJ Lickley KC Sitting as a Judge of the High Court

Between :

BAE Systems Marine Limited
- and -
Alfa Laval Limited

Claimant

Defendant

Mr Richard Livingston (instructed by **DAC Beachcroft Claims Ltd**) for the **Claimant**
Mr Kam Jaspal (instructed by **Clyde and Co Ltd**) for the **Defendant**

Hearing date: 11 September 2022

Approved Judgment

This judgment was handed down remotely at 10am on 25th October 2022 by circulation to the parties or their representatives by e-mail and by release to the National Archives

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HHJ Lickley KC sitting as a Judge of the High Court:

1. The Claimant seeks a contribution from the Defendant pursuant to S.1(1) of the Civil Liability Act 1978, concerning an original substantive claim brought against the Claimant by Mrs Jacqueline Burry as the Personal Representative of the Estate of her late husband David Burry. That action sought damages for personal injury and loss arising out of the deceased's exposure at what was then the Vickers Dockyard Barrow in Furness between January 1970 and February 1975, where it was alleged the deceased was exposed to asbestos dust. That exposure was said to have caused the deceased's subsequent diagnosis of Mesothelioma from which he died on 24th October 2016 aged 82.
2. The original action was commenced against the Claimant on the basis that they were the owners and operators of the Dockyard, then known as Vickers Shipbuilding and Engineering Company.
3. The employers of the deceased throughout the period from 1969 and 1975 were Powell Duffryn Engineering Limited, Norstel & Templewood Hawksley Limited, Templewood Activated Sludge Co Limited, Temple Hawksley Act Sludge Limited and the current Defendant, Alfa Laval Limited. The original claim alleged that during one period of employment in the said period, the deceased was required to go to the Barrow-in-Furness Dockyard to work '*on at least two of the Royal Navy's vessels, specifically HMS Sheffield (a type 42 Destroyer) and a nuclear submarine*'. The deceased was said to be at the dockyard to work on the design of filtration systems for vessels under construction and to oversee the work once the design had been completed. In the course of this work, the deceased was said to have been in charge of the installation of pipework which was lagged with asbestos. It was said that he observed the mixing of asbestos and its application to pipework. The said processes were said to be dusty and he was exposed to the dust. It was said he was not provided with protection and he inevitably inhaled the dust. No specific vessel or time period was alleged other than as pleaded.
4. A medical report dated 10th January 2017 by Dr J A Roberts, Consultant Physician, confirms the cause of death as Malignant Mesothelioma as a result of exposure to asbestos. The report refers to the deceased being exposed to asbestos between 1974 and 1976 while working as an engineer aboard HMS Sheffield for Alfa Laval. That appears to be taken from the deceased's witness statement that I will turn to later. Dr Roberts noted that the deceased had been well, save for the last nine months of his life when he was affected by the developing Mesothelioma.
5. The original action was compromised by the Claimant who paid damages and costs. The consent order has been produced, dated 18th October 2019 (p.52/300). The sum claimed in this action is £190,696.12 in total, being a combination of the original damages paid plus costs, CRU recoupment and the Claimant's costs in defending the original claim. The Claimant did not accept or concede liability.
6. In this action, the Claimant repeats the nature of the original claim and the said circumstances of the alleged exposure to asbestos. At paragraph 16, the Claimant alleges that the '*Defendant exposed the deceased to dangerous levels of asbestos*

negligently and/or in breach of statutory duty'. The Claimant repeats the original allegations of breach of statutory duty and negligence.

7. The Defendant admits that the deceased was their employee, given the HMRC schedule confirming his employment in the tax year 1974/75 and 1975/76. No other employment records exist to provide the precise dates. No work records exist to show what the deceased was doing and where or when he was so employed. It is alleged that the deceased did not commence proceedings against the Defendant despite submitting a letter of claim. Liability was repudiated in a response. It is said that the deceased was unable to confirm precisely when he was exposed to asbestos during the period 1969 to 1975, hence the claim against the Claimant. The Defendant denies that a filtration system required lagging. The Defendant puts the Claimant to proof that any exposure to asbestos took place during the deceased's relatively short period of employment with the Defendant.
8. The HMRC schedule provides the dates of the deceased's employment with the other employers from 1969. From the tax years 1969 to 1976, the deceased had five employers. There is no evidence of what work was done by the deceased and on what vessel during that time.
9. In the original claim, the Claimant in this action as part of their defence:
 - (i) Denied that the deceased was exposed to such levels of asbestos dust that there was a foreseeable risk of injury at that time [5].
 - (ii) Averred that '*it is highly unlikely that the filtration system which the deceased was charged with designing and overseeing would have been assembled inside the hull as late as 1974*' [6.5(a)].
 - (iii) Averred, in any event, that any filtration system and/or pipework servicing such a system would not require insulation [6.5(b)].
 - (iv) Relied upon the survey of HMS Cardiff of 14th January 2008 to show the lack of asbestos used in lagging [6.6].
 - (v) Relied upon the research by Geoffrey Slee of 28th February 2005 who reported that the only asbestos used at the Dockyard in the 1970s was compressed asbestos fibre used in gaskets between sections of pipe [6.9].
 - (vi) Averred the deceased would not have been employed to design the filtration system at the Dockyard at the time alleged [7.1].
 - (vii) If the deceased was at the Dockyard at the date alleged, he would not have been present when the filtration system was designed [7.2].
10. In the substantive claim therefore, the Claimant in this action, then as Defendant, disputed the basis of the claim and pleaded a case that is now replicated by the Defendant Alfa Laval Limited. Mr Livingston, who drafted the defence in the substantive claim and the Particulars of Claim in this action, was unable to assist me as to how it was BAE Systems have pleaded one case in the original action and taken a contrary position in this action. In particular, how and why it was averred that it was '*highly unlikely*' the HMS Sheffield filtration system would have been installed as late as 1974. Now BAE systems are reliant on the deceased saying he did design the system and oversaw the installation from 1974 to 1975.
11. The issue in this case is straightforward. Can the Claimant prove on the balance of probabilities that the deceased was employed by the Defendant at the Dockyard, and at

that time he was exposed to asbestos and as a consequence, that exposure materially increased the risk of him developing Mesothelioma?

The evidence

12. There is very little evidence available. The Claimant relies upon the witness statement of the deceased dated 28th September 2016. It was clearly, given the heading, prepared for an anticipated action against Alfa Laval Limited as they are the only Defendant named. It is signed by the deceased on 30th September 2016 and was dealing with events some forty years earlier. The deceased died approximately one month after signing.
13. A number of anonymous handwritten amendments appear on my copy. It appears that the Claimant misstated his age as 72, being born in 1944. That has been corrected by hand to 82 and 1934, without any apparent signature from the deceased himself. The note reads '*changed d of b for CV reasons*'. Later, the year of leaving school was stated as 1960, but 1950 has been added by hand. Two other notes appear, the first '*Jewell fitters*' that seems to clarify an employer named as 'Dual fitters', and the second '*10 years missing*'. The statement, one assumes, was supplied to the Claimant as part of the original action that was eventually brought not against Alfa Laval Limited but the Claimant.
14. In the witness statement, the deceased refers to his employment history albeit commencing in 1960, when that might be 1950 when he was aged 16. In paragraph 4, the deceased stated that he joined Templewood Hawksley Activated Sludge Limited in approximately 1970, where he remained until 1974 when he joined Alfa Laval Limited. Given the similarity in the names of his employers, it might be that he was employed by one company that changed trading name in the period from 1970 to 1974. That is a reasonable inference on the facts.
15. The deceased stated that Alfa Laval Limited employed him as a Senior Engineer working on the design of separation/filtration modules. He said that he undertook work for various petrochemical and industrial plants and was later responsible for STD plant rationalisation. He said:

“It was during this time I was required to travel up north where I worked on HMS Sheffield. I was responsible for designing the filtration system for the ship. I also worked on a nuclear submarine designing a filtration system for discharge of effluent from the submarine in such a manner so as to protect marine life. I was required to oversee the project to ensure that the men carried out the work in accordance with specifications and to time.”
16. The deceased then described his exposure to asbestos. He said:

“I recall seeing the men installing the pipework for the filtration system. Given the nature of the system the pipes were lagged with asbestos. I recall ladders mixing asbestos in drums with water and applying it to pipework. The mixing of the asbestos in drums created large amounts of airborne dust which were in my immediate vicinity. I can recall there being a ‘mist’ in the air which was from the dust created from the lagging process. I cannot recall the duration of the project but I do remember travelling up and down on a daily basis despite the distance because I was a ‘home bird’ and needed to come home at the end of the day to my family.”

This latter assertion is accepted as being wrong by the Claimant, given that the deceased lived some 300 miles from the Dockyard and so daily commuting is not thought likely.

Other evidence

17. Two witness statements, with the heading of the original claim, are relied upon by the Claimant. Statements from David Armstrong dated 8th January 2019 and Ian Carruthers also dated 8th January 2019 have been served. The precise status of their evidence is unclear. They were not called to give live evidence and were said to be both deceased. Nothing has been produced to support that contention. Their evidence is of limited value:

- (i) David Armstrong: he said his statement was *‘in relation to my previous work in the Vickers Dockyard in the 1970’*. Perhaps it was meant to be *‘in the 1970s.’* He was a Joiner, having started his apprenticeship in 1970. He thought he worked on HMS Sheffield in 1973. He recalled an explosion on board the ship in the spring of 1971. He worked on the ship for two and a half years before transferring to another ship. When he began that work, he was an apprentice. He said he saw welders using asbestos sheets that were two or three feet square, used to wrap around pipes, as guards, so sparks would not hit them. He said a lot of pipework on HMS Sheffield was lagged in a covering so no condensation would develop. He could not remember the lagging work taking place. He said the ship was a work in progress. He recalled fitters mixing powder into a paste and using that to lag pipework on a nuclear submarine. He was not told it was asbestos. He said that dust mixed on the submarines was *‘very intense’*. He said he had no doubt he came into contact with asbestos *‘during the course of my work at the Dockyard’*.
- (ii) Ian Carruthers: He started working at the Dockyard as an apprentice in 1966. He was employed as a Joiner. He made the wooden furniture for ships and submarines. He undertook insulation work and used fibre glass. He recalled asbestos being used at the Dockyard. He first saw it in the Joiners workshop that was situated on two levels. This would appear to be a separate building at the Dockyard. He recalled seeing upright columns in the Joiners shop being lined with asbestos sheets when works were done to the building to instal drawing offices. He often went on board ships and saw pipe fitters lagging pipes. He described the lagging coming in preformed sections. He said the work was

'relatively dusty', particularly when the sections were cut. He said powder was mixed into a *'gloop when they put the sections together'*. He recalled the contractors being covered in a white dust. He also described the mixed powder as a *'gunge'* that was applied to pipes by hand. In 1970, he finished his apprenticeship and became a Joiner's Liner. This involved him going on board and marking out the components onto bare steel. As he did that, the pipes, engine and cables would be installed. He worked on HMS Sheffield for a while, but he cannot remember exactly when, other than that it was a *'hive of activity'*. He was working on a submarine when the explosion occurred. He recalled a *'big push'* concerning health and safety precautions in the mid to late 1970s.

18. There is a relatively narrow timeframe in this case. HMS Sheffield was launched in 1971. She was commissioned in February 1975. The deceased was employed by the Defendant in the tax year 1974-1975. The name of the submarine he worked on is not known.
19. Mr Livingston for the Claimant accepts there is no evidence from, for example, a naval architect to assist with when, assuming there was such a system, the filtration system mentioned by the deceased would be fitted as part of the building of the ship. No diagrams or plans have been produced demonstrating where the system was and how it was lagged, if at all. Presumably, during the period leading up to the commissioning in February 1975, HMS Sheffield would have undergone sea trials but again there is no evidence to assist me to determine when the filtration system was fitted, and if that accords with the deceased's employment with the Defendant.
20. The Slee report *'The Study of the Historical Use of Insulation Materials'* dated 28th February 2005 has been produced and referred to in submissions. Mr Slee has not been called to give evidence. The report is therefore adduced by agreement. The experts have referred to the report. The purpose of the report is stated as being *'to provide evidence of where the MOD mandated the use of asbestos-based materials either directly as part of the Contract or as Part of the accompanying Build specifications or as issued by the MOD to direct their general requirements and practice'*. Selected Royal Navy ship building contracts are referred to during what is described as the *'vulnerable period'* running from 1943-1971. Some ships were built at the Claimant's Dockyard, but not all. No Class 42 Destroyers are mentioned in the chart at the end of the report. The report refers to *'assumptions'* including (i) asbestos was starting to be phased out of military specifications during the late 1960s *'as evidence of its darker side became available'* and (ii) the vulnerable period covers vessels that were in build over a 30-year span between 1943 and 1970.

Expert witnesses

21. Both parties have instructed experts. They have reported and produced a joint report. Despite areas of disagreement, they have not been called to give evidence.
22. Mr Ian Glendenning is a Chartered Health and Safety practitioner and expert witness. He is also a Chartered Engineer. He has experience in cases involving exposure to asbestos. His report is dated 6th June 2022. In relation to a central question who the deceased said employed him when he worked on HMS Sheffield and/or the submarine,

Mr Glendenning said *'it is not, in my opinion. clear to me who the deceased was saying employed him when he worked on HMS Sheffield and/or when he worked on the nuclear submarine'* [3.36]. He continued and said that it is not clear to him when the deceased saw men installing pipework for the filtration system and when he said he saw asbestos *'in the early days'*, if that meant the early days working for Alfa Laval Limited or another employer. He concludes by saying it is likely that the intention was to identify Alfa Laval Limited as the employer when exposure occurred.

23. Later in his report, Mr Glendenning said:

“The specification of pipe lagging used on vessels under construction in the period of the deceased’s employment with the Defendant is uncertain. It is possible that either asbestos free or asbestos containing pipe insulation could have been specified. The position as to the actual use of asbestos pipe lagging is not, it seems to me to be confirmed either way from the documents available.” [3.52].

24. Mr Martin Stear is a Chartered Occupational Hygienist. He has experience in dealing with all aspects of the management and control of risks relating to asbestos. His report is dated 9th May 2022. Mr Stear concluded that in his opinion *'and on the balance of probabilities that the deceased was not exposed to asbestos as alleged when in the employment of the Defendant'*. He gives his reasons as:

- (i) The use of asbestos lagging started to decline in the UK around the mid to late 1960s. It ceased altogether in the mid-1970s. Mr Stear cites reports.
- (ii) While the use of asbestos lagging remains possible in 1974 however, from 1974 onwards, much more of the lagging used in the UK generally used asbestos free alternatives. Therefore, he suggests lagging seen from 1974 would more likely be asbestos free. The Royal Navy instruction issued in 1969 referred to the discontinued use of crocidolite (blue) and amosite asbestos at that time and trials were then in hand to reduce the use of chrysotile (white) asbestos. No colour of asbestos lagging is referred to by the deceased. [4.3-4.10].
- (iii) As to when the filtration system was installed on HMS Sheffield he said:
“it seems reasonable to me that the filtration system would have been installed before the ship was launched and not at some later date. ...I do not know if when launched, further work could have taken place on the now floating vessel and as such after 10th June 1971 but it still seems unlikely to me that the installation for the ships filtration system could have been as late as 1974.” [4.11].
- (iv) His research noted two submarines laid down between March 1972 (HMS Sceptre) and February 1974 (HMS Superb) and launched in November 1974 and November 1976 respectively. It is therefore possible the deceased worked on one of these submarines or earlier submarines built in the same class before he worked for the Defendant.
- (v) An asbestos report for another Class 42 Destroyer (HMS Cardiff) found only modest amounts of asbestos, mostly in gaskets and textiles and not as lagging. In addition, no reference is made in the report to any pipework being lagged with asbestos insulation. That said, HMS Cardiff was commissioned after HMS Sheffield and different techniques may have been used. In addition, asbestos

may have been removed earlier. That said, I add, it seems rather pointless to conduct a survey and report on asbestos found if that material had been removed and not noted.

25. The experts' joint statement has been prepared, dated 10th August 2022. The key points to note are:

- (i) The experts agree:
 - (a) It is unclear from his witness statement as to who the deceased was saying employed him when he worked on HMS Sheffield and/or the nuclear submarine. That must be because '*this time*' might be from 1970 to 1974, or when he joined the Defendant company in 1974. Mr Glendenning provides a commentary as to what it is likely the deceased meant.
 - (b) Cold water filtrations systems were not typically lagged with asbestos containing insulation.
 - (c) That at the time of his employment with the Defendant, it is possible that either asbestos free or asbestos containing pipe insulation could have been specified for use for hot water or steam systems.
 - (d) The use of asbestos lagging in the UK declined from the mid to late 1960s onwards and ended in the UK at some point during the mid-1970s.
 - (e) That at the time of the commencement of the deceased's employment with the Defendant, most (more than 50%) of the lagging installed in the UK would have been asbestos free. They do not know the date when the use of asbestos lagging ceased in the UK. They add caveats to the above.
 - (f) The Royal Navy was moving away from the use of asbestos lagging from the mid to late 1960s.
 - (g) In the early 1970s, coloured (yellow and pink) asbestos free thermal insulation materials were in use to distinguish them from those containing asbestos. The deceased has not described a colour of the lagging he saw. From the mid-1970s, the remaining use of asbestos was more likely to be chrysotile asbestos than other types of asbestos fibres.
 - (h) There is no asbestos survey for HMS Sheffield or for any nuclear submarine that was under construction at the time the deceased was employed by the Defendant.
 - (i) That the deceased could be mistaken about the timing of his work on HMS Sheffield and as such, may have worked on the vessel when employed by another employer.
 - (j) That given the timings, the deceased could have worked on the two named submarines, however there are no asbestos surveys for either vessel.
 - (k) Mr. Stear accepts that if the court were to find that the lagging the deceased saw being used did contain asbestos, then the deceased was likely exposed to asbestos and does not disagree with Mr Glendenning's views on potential exposure levels.
- (ii) The experts disagree:
 - (a) Mr Stear assumes the filtration system was installed before the ship's launch in 1971. He accepts that further work could have taken place to the system after launch, but says it is unlikely that it would have been as late as April 1974 which was only 10 months before formal commissioning into service.

He considers there would have been a need for effluent treatment long before 1974.

- (b) Mr Glendenning says he has no knowledge of when filtration system(s) would be installed. He says that in his view, the installation or further work on such systems is likely to have occurred during the commissioning period that extended to 1975.
- (c) As to what lagging material may have comprised in 1974, Mr Stear will say it is more likely that the deceased saw asbestos-free lagging being mixed and applied when working for the Defendant, and if he did see asbestos lagging work it was much more likely to have been at the start of the period 1969 to 1975 when not employed by the Defendant and when it was more likely that asbestos lagging was used. Mr Glendenning is of the opinion that despite the Royal Navy instruction of 1969, it does not preclude or prohibit the use of chrysotile asbestos and that continued. The reference to 'lagging work' explicitly recognises that chrysotile lagging work would continue after the date of the document.
- (d) About the survey report for HMS Cardiff. Mr Stear considers, given that the ship was launched in 22th February 1974 and commissioned on 24th September 1979, it is unlikely that asbestos lagging would have been used. Mr Glendenning cannot rule out Mr Stear's explanation and says that substantial amounts of asbestos insulation present at the time of construction may have been removed by the time of the survey in 2005, particularly if there had been a re-fit.
- (e) Mr. Stear says in his opinion, that the deceased either saw non-asbestos lagging being used when employed by the Defendant or if it was asbestos lagging being used at the Dockyard, it was before he was employed by the Defendant.
- (f) Mr Glendenning says that if the court were to find the deceased was present when asbestos lagging was mixed, he would have been exposed to chrysotile asbestos dust at concentrations in the order of 250 fibres/ml. If in the immediate vicinity when asbestos lagging was applied, the deceased would have been exposed to chrysotile asbestos dust at concentrations of 10fibres/ml. These concentrations are likely to have exceeded TDN 13 standards for use in connection with the Asbestos Regulations 1969 published within TDN 13.

Submissions: Causation and Liability.

26. I have considered the written and oral submissions for both parties on the topics of causation and liability. In summary:

- (i) Mr Livingston for the Claimant submits:
 - (a) The evidence of the deceased is clear in that during his employment with the Defendant, he was first employed on HMS Sheffield and a nuclear submarine, working first designing the installing filtration systems and second, during that work he was exposed to asbestos.
 - (b) He accepts the evidence is limited.
 - (c) That the evidence of Mr Armstrong and Mr Carruthers supports the evidence of the deceased. Mr Armstrong saw welders using asbestos sheets, lagging

was taking place, mixing of powder into paste took place and although he did not say it was asbestos, that was the impression he gave. Mr Carruthers described similar activities.

- (d) The court should take a holistic view of the evidence and ask, '*how likely is it that a Senior Engineer has confused asbestos with another insulation material?*' It is submitted that is '*extremely unlikely*'.
- (ii) Mr Jaspal for the Defendant submits:
 - (a) There is no evidence as to when any filtration system would have been installed. The assumption by Mr Stear that such a system would have been installed prior to launch is logical. That is before 1971.
 - (b) There is no evidence that the filtration systems were anything other than cold water systems and therefore did not require lagging to prevent heat transmission.
 - (c) The time of the deceased's employment with the Defendant falls '*towards the back end*' of the period in which the deceased had been potentially exposed to asbestos as alleged in the substantive claim.
 - (d) It is highly unlikely that any lagging used from 1974 contained asbestos.
 - (e) The experts agree the deceased could be mistaken about the timing of his work on HMS Sheffield.
 - (f) The evidence produced has not been tested, however on analysis the statements of Mr Armstrong and Mr Carruthers are not supportive of the deceased's account of alleged asbestos exposure.

Decision – Causation and liability.

- 27. The Claimant has to prove, on the balance of probabilities, that when employed by the Defendant at the Claimant's Dockyard, the deceased was exposed to asbestos. In other words, '*is it more likely than not?*'.
- 28. The deceased and therefore the Claimant in this action, tie the incidents of alleged exposure to asbestos to specific periods of time, namely the design and installation of filtration systems on HMS Sheffield and/or an unnamed nuclear submarine and at a time when employed by the Defendant. That is upon analysis a very limited window of time.
- 29. The central issue is this: Does the evidence support the linking of the three events on HMS Sheffield and/or a nuclear submarine namely, design and installation of filtration systems by the deceased, the lagging of the systems using asbestos and employment with the Defendant all at some point from 1st April 1974? The answer turns to some extent on another key issue, namely at what stage of the ship building process had the construction of HMS Sheffield reached during the spring/summer of 1974?
- 30. The evidence of the deceased is of limited value in my judgment. I come to that conclusion for a number of reasons:
 - (i) The evidence is not capable of being tested in court.

- (ii) The witness statement was made shortly before the deceased succumbed to his illness and one can only assume he was unwell and might have been very unwell at the time.
- (iii) He was attempting to describe events more than 40 years before without any supporting material.
- (iv) There are factual errors: age, date of birth and daily commuting.
- (v) The evidence of Mr Armstrong and Mr Carruthers does not support the timing i.e. from 1974 of the installation of a filtration system on HMS Sheffield and/or a submarine and that any parts of such a system were lagged with asbestos. Their evidence is general and where asbestos or other insulation is mentioned, it was used in other ways, different locations and on 'pipework'. They too were not available to give evidence in any event. The weight I attach to their evidence is therefore limited.
- (vi) The experts are unclear as to what precisely the deceased is saying about the timing of his work on HMS Sheffield. It might be he is referring to an earlier period in time and not after 1974.

31. I add as preliminary comments that there is no other independent evidence that:

- (i) HMS Sheffield was, in fact, fitted with a filtration system and that if there was such a system it was designed and installed by the deceased when employed by the Defendant.
- (ii) Such a system involved a 'hot' component that required insulation.
- (iii) Any insulation applied was or included asbestos.
- (iv) The same points apply to any nuclear submarine under construction at the relevant time.
- (v) When, during the process of the building of a ship or submarine, any filtration system is installed and operational.

32. Despite the shortcomings set out above, I make the following findings of fact as properly established on the evidence that is, they are more likely than not:

- (i) The deceased worked for a number of companies from 1969 and was, at some point, engaged in the design and/or installation of filtration systems on ships and/or submarines.
- (ii) In the course of his work at some point from 1969, the deceased was required to work at the Claimant's Dockyard and did oversee the installation of filtration systems to ships and/or submarines under construction.
- (iii) At some point from 1969, the deceased did work on HMS Sheffield and/or a nuclear submarine as he stated.
- (iv) The deceased was employed by the Defendant during the tax year 1974-1975 and for the following year 1975-1976. That means at some point from 1st April 1974 to 31st March 1975, he was employed by the Defendant. It is not possible to say with any further certainty when he was in fact employed in the period 1974-1975.
- (v) HMS Sheffield was laid down on 15th January 1970, launched on 10th June 1971 and commissioned on 16th February 1975. Therefore, installation of any filtration system took place before commissioning, namely before 16th February 1975.

- (vi) Accordingly, the maximum period when the deceased could have engaged in such work on HMS Sheffield and be employed by the Defendant was between 1st April 1974 and 16th February 1975, being a period of approximately 10 months. The precise period of employment might be considerably less and might be only a matter of weeks. He might even have worked for the Defendant company after 16th February 1975 and before the end of the financial year.

33. On the evidence, the Claimant has failed to prove on the balance of probabilities the following:

- (i) That the filtration system for HMS Sheffield was, at the very least, installed after 1st April 1974 and before 16th February 1975. I come to this conclusion for the following reasons:
 - (a) The evidence of the deceased is not persuasive as to the timing of his work on HMS Sheffield. The experts agree that the deceased could be mistaken about the timing of his work on HMS Sheffield and he may have worked on the vessel earlier in the 1970s when employed by another employer.
 - (b) Absent any evidence of the build specification, design or drawing for a Type 42 Destroyer or evidence from a Naval Architect to assist on the question of '*when during construction a filtration system was or would be installed*', the only other evidence is that from the experts. On this topic I prefer the evidence of Mr Stear, namely that the installation of such a system would have been prior to launch and not as late as 1974. I do so for the following reasons:
 - (i) His conclusion is reasonable and fits with the timetable of the ship's build and commissioning.
 - (ii) Mr Glendenning has no knowledge of when such a system would be installed and, despite that, says that installation and further work '*is likely to have occurred during the commissioning period which extended to 1975*'.
 - (iii) Lack of evidence. I am surprised that the Claimant has not adduced any evidence on this central point. The plans and specification for Type 42 Destroyers (and submarines built at the time and those potentially identified by the expert witnesses) I assume still exist and given that they were built at the Claimant's Dockyard, would be available. Other evidence would be available from crew members, for example who would be available to provide the detail necessary. The Claimant has simply failed to adduce supporting evidence on a major issue in contention.
 - (iv) As an additional point, the Claimant has failed to adduce any evidence as to the design, nature, size, location, operation of, maintenance or servicing of any such filtrations systems.
 - (v) The Claimant pleaded a different case in the substantive claim namely that (a) it would be '*highly unlikely*' that the filtration system for HMS Sheffield was assembled inside the hull as late as 1974 and (b) that any filtration system and/or pipework would not require insulation.

- (ii) That any filtration system installed on HMS Sheffield and/or a nuclear submarine being built at the relevant time was, or included, a hot system requiring insulation. There is no reliable evidence on this point.
- (iii) In any event, if such a filtration system requiring insulation was installed on HMS Sheffield and/or a nuclear submarine at the relevant time i.e. after 1st April 1974 and when the deceased was working for the Defendant, that any insulation used contained asbestos. I come to that conclusion for the following reasons:
 - (i) The experts agree that:
 - (a) Asbestos lagging use declined in the UK from the mid to late 1960s.
 - (b) The use of such lagging ended in the UK in the mid-1970s.
 - (c) From the time the deceased was employed by the Defendant i.e. 1974/75, it is likely that most, that is more than 50%, of lagging installed in the UK would have been asbestos free. The possibility of lagging containing asbestos is not persuasive.
 - (d) The Royal Navy indicated the use of two types of asbestos in ships had ceased by 1969 and the use of a third type was to be reduced from that time.
 - (e) No colour of lagging was specified by the deceased to give an indicator of type seen.
 - (f) There is no asbestos survey for HMS Sheffield or any submarine under construction at the time.
 - (g) No working plans, specifications or diagrams have been produced to indicate if asbestos was to be used in the build of HMS Sheffield and/or a submarine constructed at the time and if so, where.
 - (h) The asbestos survey for HMS Cardiff does not support the extensive use of asbestos in her construction and in particular in relation to any pipework associated with a filtration system. While asbestos might have been removed before the survey in 2005, HMS Cardiff was launched on 22th February 1974, having been laid down on 6th November 1972. The build period is therefore very similar to that of HMS Sheffield and the lack of asbestos supports, in a limited way, the contention that HMS Sheffield was built in a similar largely asbestos-free way.

34. Therefore, I conclude that the most likely period when the deceased was exposed to asbestos at the Dockyard was in the early 1970s. At that time, he was not employed by the Defendant.

35. By reason of the above, the claim fails in relation to causation and therefore liability. As a consequence, it is not necessary for me to determine any contribution pursuant to S.2(1) of the 1978 Act.

36. Subject to any submissions the parties wish to make, the Defendant has been successful and is entitled to an award of costs.

37. Formally I order that the claim is dismissed.