

GDI<sup>pc</sup>.G.6

2,1961

IN THE PRIVY COUNCIL

No. 23 of 1960

ON APPEAL  
FROM THE SUPREME COURT OF NEW SOUTH WALES  
ADMIRALTY JURISDICTION NO.7 of 1952

B E T W E E N

OVERSEAS TANKSHIP U.K. LIMITED  
(Defendant) .. .. . Appellant

- and -

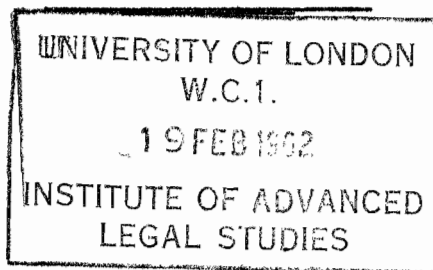
MORTS DOCK & ENGINEERING CO.  
LIMITED (Plaintiff) .. .. . Respondent

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RECORD OF PROCEEDINGS

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VOLUME II  
(Pages 213 to 552)



63637

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CASE FOR THE DEFENDANT

No. 35

EVIDENCE OF N.D. McMAHON

NATAL DOUGLAS McMAHON  
Sworn, examined, deposed:

In the Supreme  
Court of New  
South Wales  
Admiralty  
Jurisdiction

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N.D. McMahon.

Examination.

10 MR. MEARES: This witness is the third mate of a  
Burns Philp ship, the "Malekula", which is sailing  
today, I understand from the witness. I understand  
also from the witness that what is being done in  
accordance with the regulations and so on is this:  
they cannot sail short-handed and they have had to  
20 appoint a third officer, third mate, for the purpose  
of the voyage to Brisbane. Mr. McMahon hopes to  
join the ship, after he has given his evidence, in  
Brisbane. I think the last time he could join his  
ship there would be Monday or Tuesday and if he can-  
not rejoin his ship it means he has lost his employ-  
ment with that ship. He is most anxious that that  
should not happen if, subject to the Court's conven-  
ience, it could be avoided.

HIS HONOR: So far as I am concerned I will do every-  
thing possible to avoid that happening.

TO MR. MEARES: My name is Natal Douglas McMahon.  
I am at present employed by Burns Philp & Co. Ltd.  
as third mate on the "Malekula".

Q. You heard me indicate to His Honor that you des-  
ired to be permitted to re-join your ship at Brisbane  
for the reasons I have indicated to His Honor? A. Yes.

30 Q. And the statements I made were correct; is that  
so? A. Correct

HIS HONOR: I do not know how that is going to be  
evidence.

MR. MEARES: It is quite idle, actually It might  
all go out. It does not help at all.

Q. In 1951 what was your occupation? A. At that  
time I was fourth mate with the Caltex Oil, during  
that year. I am not sure which ship, but I was on  
the "Waggon Mound" --

40 Q. Fourth mate with whom? A. Overseas Tankships  
U.K. Ltd.

Q. What ship were you mate on? A. For part of that  
year, the "Waggon Mound", anyway.

HIS HONOR: I think the witness did say he does not  
know what ships he was on. You may not have heard that.

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continued

WITNESS: I think I went from the "Kent Union", but I do not know whether it extended into 1951 or not.

MR. MEARES: Q. You were in 1951 on the "Waggon Mound"? A. Yes.

Q. What time in 1951? A. It was towards the latter part of the year

HIS HONOR: Q. Were you on it when the fire occurred? A. Definitely.

MR. MEARES: I want more than that

Q. What were you on the "Waggon Mound"? A. Without referring to my discharge I could not say It was approximately a period of twelve months.

10

Q. What experience have you had on tankers now; how many years? A. Four years altogether.

Q. When did you leave Overseas Tankships U.K. Ltd.? A. The latter end of 1953, I think.

Q. And you have been at sea for how many years? A. I first went to sea in the Navy in 1943

Q. And you have been at sea ever since? A. That is right.

20

Q. And you were fourth mate on the "Waggon Mound" when she was discharging at Sydney at the Caltex Wharf during October, 1951? A. That is right.

Q. We understand that she arrived in Sydney on 29th October and she sailed on the morning of the 30th October. Is that correct? A. It was approximately those dates, from my recollection now.

Q. Would you tell me what watches you were on during that time? A. Yes, in the morning of arrival I was on watch from 8 o'clock until midday, officially

30

Q. From 8 a.m. to noon? A. Yes. My watch extended past the time I should have been there

Q. You say you were officially on watch from 8 to noon? A. Yes, but my watch extended past the time I should have been there.

Q. What time did you go off watch? A. Approximately 12.30 or a little later than that.

Q. Thereafter when were you on watch? A. From 30 past midnight.

Q. Half-past midnight on the 30th? A. Yes. That was the following day.

40

Q. Until when? A. Until approximately 4.30 or five o'clock. I did not note the time.



- Q. On the morning of the 30th? A. The 30th.
- Q. After that did you turn in? A. I did.
- Q. When did you again resume your duties, if at all, on the 30th? A. Just prior to sailing, just prior to the departure. That was about 11, or something like that.
- Q. Would you look at Exhibit "E" (Log book handed to witness). Would you have a look at the Rough Deck Log. There are certain entries in the Rough Deck Log in your handwriting? A. Yes.
- 10 Q. You are looking at the Rough Deck Log? A. Yes.
- Q. Can you tell me when the ship arrived alongside the Caltex wharf? A. The first line was ashore at 9.45.
- Q. 9.45 a.m.? A. Yes.
- Q. And she lay with her starboard side to the wharf? A. That is right.
- Q. Would you tell me when her last line was taken off the wharf? A. That was the following morning?
- 20 Q. Yes. A. At 9 minutes past 11 a.m. on the 30th.
- Q. When she was made fast you were on watch? A. Yes.
- Q. Was the Chief Officer also on duty on the morning of the 29th? A. Yes. At all times when we were commencing to discharge or load the Chief Officer is on duty. It is essential.
- Q. And he was on duty on this morning? A. Definitely.
- Q. Were you receiving certain instructions from the Chief Officer in regard to discharging? A. I was assisting him.
- 30 Q. What was the first commodity from the ship that was discharged? A. From memory, gasoline; definitely gasoline.
- Q. Can you tell me, as far as the ship was concerned, how was the gasoline discharged? A. The shore installation people connected the hoses to our discharging manifold, which is just up ---

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continued.

HIS HONOR: Q. Who connected it? A. The people from the shore installation.

MR. MEARES: Q. (Showing photograph to witness): Would you have a look at this photograph? Do you see the two hoses in the photograph? A. Yes.

Q. Does that show a ship and a wharf? A. It does.

Q. It is not the Caltex wharf nor is it the "Waggon Mound", is it? A. No. Not that I recognise.

Q. Do you see the hoses? A. Yes.

Q. Do you see their connection? A. Yes.

10

Q. Is that a method of connection, broadly speaking, showing the way hoses were connected from the shore to the ship for the purpose of discharging gasoline? A. Yes. That is how it is.

(Photograph tendered.)

Q. Might I have this from you: as to the photograph of that Ship in Exhibit "1" is that ship very similar in its deck layout to the "Waggon Mound"? A. It is very similar, most tankers are, anyway.

(Photograph marked Exhibit "1".)

20

Q. So far as the connecting of the hose from the shore to the ship is concerned, who connected the hose to take the gasoline being discharged from the "Waggon Mound" on the 29th? A. The people employed by the shore installation.

Q. That is by Caltex? A. That is correct.

Q. And the hose is connected by them onto the connecting point on the ship ---? A. Yes.

Q. What is the connecting point on the ship called? A. We term it the discharging manifold.

30

Q. And that manifold in which the discharging gasoline --? A. That is not quite correct. We also call it a loading manifold.

Q. That manifold to which the hose was attached on the "Waggon Mound" discharging gasoline is situated where? A. Just about 10ft. aft of the amidship deck housing.

Q. On which side? A. You have connections on both sides.

Q. These would be connected up on the starboard side? A. Yes.

Q. Can you tell me when it was that the hose was connected up? A. To tell you exactly I would have to refer to the log - (peruses book) - 10.45.

Q. Is that entry in your writing? A. Yes.

10 Q. Was that made by you shortly after the time of connecting up? A. Yes

Q. I think when the ship comes in and before the hoses are connected certain tests have to be made, or made rather of the commodities which are to be put into the tanks to see that it is up to quality, and so on? A. Those tests are made while we are connecting the hoses.

HIS HONOR: Q. What tests? A. By the chemists, as to the quality and to check for water.

20 MR. MEARES: Q. When the hoses were connected up at 10.45 were you then in a position to commence discharging? A. After we received the O.K. from the shore staff - as to the valves and pumps - everything was in readiness.

Q. May I take it there is quite a lot of necessary turning of valves and general fixing of the appropriate lines from the pump to the manifold?  
A. There is quite a lot to be done, yes.

Q. When did you start discharging? A. From memory I think it was about 11.30 - 11.20.

30 Q. At that time what was your job? A. In general, to act on the Chief Officer's orders; but the usual thing --

Q. Don't worry about the usual thing; on that day?  
A. On that day I was supervising the pump and I started the pump first.

Q. When you explained that to us - do you see Exhibit "1"? A. Yes

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Q. Would you just tell us, as far as supervising a pump is concerned, whereabouts you stand? A. You have pumping gauges, pressure gauges, and just inside this door --

Q. You point inside the door within the housing in the centre of the photograph? A. Yes.

MR. TAYLOR: On a ship that is not the "Waggon Mound".

MR. MEARES: Q. It is not the "Waggon Mound"? A. It is an exactly similar ship, though. 10

Q. You are standing inside the door? A. Not inside, unless you want to give an order to the pump man who is down below.

Q. You stand at the entrance to the door? A. Yes.

Q. What is your function while standing there?  
A. After starting the pumps, which involves just pressing a button -

Q. Where is the button? A. Just around aft from this door, inside this alleyway there is a control panel. 20

Q. How far from where you stand? A. No more than a couple of steps.

Q. Is that an electrically controlled switch? A. Yes.

Q. Has that button the ability to stop instantaneously pumping? A. Yes.

Q. You were standing, you told us, in that position; and you are able from that position to control - by signs and voice - the operation of the pumping room staff? A. That is right.

Q. Who are in effect underneath you? A. Yes. 30

Q. On this day, as far as pumping was concerned, did you start pumping at full pressure or did you start pumping at a lower pressure? A. Definitely a very much lower pressure.

Q. What pressure did you commence at 11.20 pumping?  
A. It would be hard to say exactly but I would say between 15 and 20 lbs. per square inch.

Q. What is the reason for that? A. It gives us a chance to check our pipe lines and our valve glands and that, and the operation of the pump. The shore staff also like to check their pipeline for possible leaks.

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Q. That is a practice that is always adopted in your experience? A. Always.

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Q. And was adopted on this occasion? A. Yes.

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10 Q. Close to you was there a valve? Is that the right name for it, or is it a gland? A. Yes. There was a group of them, as a matter of fact.

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Q. A group of what? A. They are what we call the cross-over manifold, which link three different discharging lines just forward of the pump room.

Examination - continued.

HIS HONOR: Q. "Cross-over manifold"? A. Yes.

20 Q. What is the purpose of that? A. They are not normally used but they connect the three different pipelines so that it is possible to change from one line to another without changing the operation of your pumps. In the event of a breakdown of a pump they are frequently very useful.

MR. MEARES: Q. The actual mechanics or construction of these things is fairly complex, is it not? A. It is.

Q. But at any rate that manifold is metal, it is not a rubber hose? A. No, definitely not

Q. It is metal? A. Yes.

30 Q. How far away from you was that when you were supervising discharging? A. No more than say, 12 feet.

Q. And was within your view? A. No. To clear that up: it was in my view. I could see it by taking a step forward or a step aft from the controls.

Q. By taking a step forward or a step aft. After getting the pumping going at 11.20 was pumping at any time stopped, and - if so - when? A. It was stopped approximately, if I recollect correctly, about 20 minutes after we commenced to raise pressure.

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continued.

Q. Could you just make that clear? Twenty minutes after you commenced pumping or 20 minutes after you raised pressure? A. Twenty minutes after we commenced pumping.

Q. When was the pumping stopped? A. 11.45.

Q. So that would be about 25 minutes after?  
A. Twenty-five.

Q. Would you just explain to the court what happened in regard to the reason for stopping the pumping and what you did from the time the pumping started until you stopped? (Objected to - question withdrawn.) 10

Q. Would you just tell me this: from the time you started pumping what happened until the pumping stopped, and what did you do? A. Following the normal procedure after we raised the pressure to the limit that I had been ordered to raise it to, that was low pressure pumping --

Q. What was it? A. That is between 15 to 20 lbs. Then I walked around the deck to check the deck line for leaks, and the Chief Officer was doing the same thing. Then I was just aimlessly walking around waiting for the signal order from shore to commence raising the pressure. At that time there were no leaks but we placed a drip tray under the manifold, which is the normal practice for discharging, mainly. 20

Q. You mean by that the manifold to which the hoses are connected on the ship? A. Yes.

Q. There always is a drip tray there? A. Yes, always.

Q. And on that day? A. Yes, at some time, at 11.45 I think it was, the Chief Officer shouted. He was on the other side of the deck and he shouted out to stop pumping, so I simply rushed to the - and as I passed the manifold -- 30

Q. Which manifold? A. This one at the after bulk-head of the pump room.

HIS HONOR: Q. Which one? A. (Indicated on Exhibit "1".)

MR. MEARES: Q. The cross-over manifold would be the one, Mr. Taylor suggests? A. Yes. 40

Q. As you passed the cross-over manifold what did you see? A. I noticed it was leaking. That made it clear why we should stop pumping. I simply pressed the stop button and commenced to tighten up the flanges.

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Q. You pressed the stop button. Did that stop any leak immediately? A. Yes.

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10 Q. When you left your position where you have indicated pumping started, you then walked along generally inspecting the line, did you? A. Yes.

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Q. And when you walked along inspecting the line was there any leak of the cross-over manifold at all? A. No.

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continued.

Q. Perfectly --? A. None whatever.

20 Q. Could you tell me then how long it was, approximately, to the best of your recollection from the time you noticed the cross-over manifold was all right until your attention was drawn by the Chief Officer to this leak? A. Fifteen minutes, but it would be from the time after we - yes, 10 to 15 minutes.

Q. When you saw the leak what sort of a leak was it? A. It was a slight spray coming up from between the flanges of this connecting piece.

Q. Of the cross-over manifold? A. Yes.

Q. When you say a slight spray, could you describe it to the Court? A. It is difficult to describe a thing like that. It was nothing very much, just spraying a bit under pressure.

30 Q. Take, for the sake of argument, --? A. To clear up this point: we had already increased our pressure and we were slowly raising our pressure at that time. It was coming up very very slowly and I was walking backwards and forwards on one line, and the pressure gauges in the pump room, so I was passing it all the time. It was not a question of me being stationed at the pump room gauges at the time.

40 Q. If you had been passing it all the time, as you say, can you tell me what would have been the

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longest time which elapsed between the time you last saw the manifold and when you saw the leak?

A. A very, very short period.

Q. Give us an idea? A. 30 seconds or a minute perhaps. You are alert for these things.

Q. The Chief Officer shouted out and you ran and switched it off, did you? A. Yes. He saw it before I did.

Q. What was the size of the leak? A. It is hard to describe. But I should think the gasoline I saw spilt afterwards - you would get about the same amount of gasoline as you get around as if you splashed a four-gallon can around the deck, a full four-gallon can was emptied around the deck. 10

HIS HONOR: You are suggesting, are you, that four gallons is your estimate of the escaped gasoline?

A. Yes.

MR. MEARES: Q. It was not like a fire hose leak?

A. No, definitely not.

Q. What was it like? A. It was just a small spray that spurted up from between this flange. 20

Q. Do you mean the size of a drinking fountain.

A. That does not quite describe it, because it was coming around from several parts of this something like a garden hose when it is on a very fine spray.

Q. At full pressure? A. No, it was just a very weak sort of a spray.

Q. You switch off the pumps by the button? A. Yes.

Q. After you switched off the pumps was there any petrol? What was the extent of the petrol lying around? A. There was a drop lying around the deck, if my recollection is correct, but it was a warm day and there simply was not sufficient for us to bother mopping it up. It simply evaporated in 10 or 15 minutes. 30

Q. Did any of it flow through any of the scuppers?

A. No, definitely not; no. That is something you have to be very careful of.



Q. Was there enough petrol at any time for you to do anything in regard to mopping it up, or something like that? A. No, not at any time. No, that was simply not necessary. There was not enough.

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10 Q. Can you give the Court an idea of the area of the deck that was wet from petrol? A. It was spread over around the cross-over manifold and the pipe line, extended across the deck a little way - mostly on the port side - and for an area of, say, perhaps - from the edge of this table, possibly.

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Q. From the edge of the Associate's table? A. Yes, across to the wall of the Courtroom and then from here down to approximately your table, to the front edge of your table.

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Examination -  
continued.

HIS HONOR: Can you express that in terms of square feet or square yards? A. No. That is a bit much, actually. I would say an area of 10 by 10: 100 square feet

20 MR. MEARES: Q. Something of that order? A. Yes.

Q. Was it anywhere near the sides of the vessel? A. It was running towards the port side, because that was the particular flange that leaked.

Q. The port side? A. Yes.

Q. But anywhere near the starboard side? A. No.

Q. Was there any suggestion or evidence whatever of any flow over the side? A. No. (Question objected to - pressed - disallowed.)

30 Q. You saw this area. Where did that area go? How close did that go to the sides of the ship? A. It flowed down towards the ship's side but definitely did not reach it, if it did it would have built up in a pool against the scupper plate, which is the sheer strake actually, and it would be necessary then to mop it up and pour it back into the tanks.

40 HIS HONOR: Q. You say this leak occurred in the manifold on the port side? A. No, the manifold itself is amidships, but there are three pipelines and the flange that was leaking was on the port side of these pipe lines - port No. 1 - which means

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continued.

that due to the camber of the deck the gasoline would run toward the port side more than the starboard, although the spray had caused a certain amount of splashing towards the starboard side.

Q. The ship's lines were fixed on the starboard side? A. Yes.

Q. And you mean that the manifold was the one nearest the port side? A. Yes. But even so it was a good distance away from the port side of the ship. It was in the amidships section of the ship. 10

MR. MEARES: Q. Can you tell us how far the cross-over manifold where the leak was was from the manifold where the shore line hose was connected? A. It would only be a guess, but I would say approximately 200 ft.

HIS HONOR: Q. It was 200 ft from where? A. From the cross-over manifold that was leaking to the shore connection; to the discharging connection.

Q. They are on the shore --? A. Yes.

MR. MEARES: I will withdraw that question, and put it again. 20

Q. How far was it from the cross-over manifold to the manifold on the ship to which the shore line was connected? A. That would be approximately 200 ft.

MR. MEARES: Q. Is that clear? A. This discharging manifold here, and the pump installation connection is here (indicating on Ex. "1") where the cross-over manifold would be, it would be like that.

HIS HONOR: Thank you very much, I had quite an erroneous picture. 30

MR. MEARES: Q. Might we have it clearly so that the Court can follow: you have got the shore and the hoses from the shore to connect up to the manifold on the ship? Is that correct? A. Yes.

Q. From what I might term the hose manifold on the ship there is, from there to the cross-over manifold a metal pipe, is that correct? A. Yes.

HIS HONOR: Q. I take it that these pipes shown here are not concerned with the discharge of gasoline? A. No, they are pulled in to the shore installation, and they are connected, but we pump through these metal pipes and they bring those hoses aboard, and I connected this rubber hose to their pipes on the wharf

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10 Q. What is the section that is 200 ft? A. The gasoline is pumped up from the pump room, which is right aft and it goes along the deck to this manifold.

Q. It is fed into this manifold from the pump room? A. Yes, through the metal lines back and up to these rubber hoses which lead into the installation.

Q. It was 200 ft. down that line that this leak occurred? A. Approximately.

MR. MEARES: 200 feet from where?

20 MR. MEARES: Q. So far as the escape of petrol on a tanker is concerned; in your experience as an officer on a tanker is that a matter of importance to you? A. It is a matter of very serious concern. Gasoline will get you a quick blast, even a minor one; and besides your own safety - a consideration of your own safety.

Q. Assuming any petrol had escaped into the water, would that be a matter of interest to you also? (Objected to - question pressed - further objected to - question withdrawn.)

30 Q. Would it have been a matter of concern? A. (Objected to - allowed.) What is your answer? A. It would be a matter of very serious concern.

Q. From the time you have indicated until the ship left did you at any time see any evidence of fresh petrol or petrol of any sort either on the ship or on the waters? A. No, none whatever; except for the normal small drip that you get from the connection of your rubber hose.

Q. Is that a hose manifold? A. On the hose manifold, yes; but you have drip trays to catch that.

40 Q. Can you give the Court an idea of them? A. I do

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not recollect exactly what the drips were during the period of discharge, but it would be quite normal to have to empty these drip trays once per watch.

Q. Once per watch of four hours? A. Yes, perhaps not even then.

Q. What would the drip trays hold? A. It is hard to say. They are rectangular things, 3 ft. by 2 ft.

Q. Can you give us a rough idea? A. Possibly two or three gallons.

10

HIS HONOR: Q. What depth are they? A. Only two or three inches. They are very shallow.

MR. MEARES: Q. What is done with the contents of them? A. I could not say without working it out, but possibly I should say two or three gallons, but the thing is that you usually empty them before they get full, as a matter of convenience, for they were too awkward to handle otherwise.

Q. What would you do with that petrol? A. You pour it back into the tanks that you are discharging from.

20

Q. So far as this leak that had occurred was concerned, what was the trouble? A. It is quite normal experience to find leaks after a long sea voyage.

Q. Would you just answer? What was the trouble? A. The flanges between the connecting piece - the metal connecting the pipe lines - had strained slightly with the working of the ship, the bolts did not slacken, but with the working of the ship as is normal at sea, by working the metal so much it could permit a leak under pressure.

30

Q. Did you then set to repair it? A. Immediately, yes.

Q. Who was repairing it? A. The Chief Officer, two pump men and myself.

Q. The Chief Officer, two pump men and yourself. What did you have to do? A. We merely had to tighten up the bolts connecting the flanges.

Q. How long did it take? A. It took a while, because these bolts are seldom used, and I distinctly remember that they were very difficult to move because I wanted to go ashore and it took 20 minutes or 30 minutes, but I can tell you definitely - possibly more. 11.45 to 12.30 we were stopped.

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Q. Did you wait after the terminating time of your watch? Did you keep on the extra half hour for the purpose of completing the job? A. Yes.

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10 Q. After you completed the job did you see discharging commence without any leak? A. Yes.

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Q. Did you then go ashore? A. Yes.

Examination -  
continued.

Q. Before you came into port how long had you been at sea - prior to the ship going? A. 28 days. It is 28 days from Bahrein to Sydney in the ship.

Q. Can you tell me when you finished discharging gasoline? A. Not without referring to the log book.

Q. Would you refer to the log book? (Objected to.)

20 MR. TAYLOR: (By permission): Q. The discharging of gasoline; is that in your writing, entered by you? A. The commencement of it is.

Q. And the rest of it is not? A. Some of it; the watch I kept.

Q. You were not there on duty when it was finished? A. No, I was not.

MR. TAYLOR: I object to the witness referring to the book. (Objection overruled.)

30 MR. MEARES: Q. What time did the discharging of the gasoline finish?---

HIS HONOR: Q. You are getting this from the Rough Deck Log? A. Yes.

(TO MR. MEARES): It was 11.30 p.m. on the 29th.

Q. You have told us that you came on watch again half an hour after midnight on the 30th October? A. Yes.

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Q. On that watch at any time did you see the second engineer, Suete? A. Yes, I did see him.

Q. You were yourself not concerned with loading bunkers? A. No. It was no business of mine whatever, no responsibility.

Q. Between midnight and an incident that occurred round about 4 o'clock, did you see Suete? A. I did definitely see him. If I remember correctly I had coffee with him at least on one occasion, and I cannot say how many times or just where we just passed each other on the deck. 10

Q. Did you see Suete after the oil leak had occurred? A. Yes, definitely.

Q. When you saw him during the watch before the incident and after the time of the incident did you notice in any way anything abnormal about him? A. No - he seemed - it is a long way back - but he seemed quite normal to me, and he did definitely seem quite normal when the panic started.

Q. When you had coffee with him was there anything abnormal about him at all? A. No. I would have remarked on it; I would have remembered it, actually, in view of what happened after. 20

Q. You knew this man Suete and you knew his habits, did you not? A. Yes.

Q. Were you on the aft deck early in the morning of the 30th? A. Yes, I was aft at approximately four o'clock.

Q. About four o'clock in the morning of the 30th? A. Yes, that is when I was checking my tanks and gauges and other stuff. 30

Q. You were of course discharging other commodities after the gasoline? A. Kerosene, I think, then.

Q. You were just about to go off watch, were you? A. Yes.

Q. Did you notice anything? A. At that time I found that there was a faint - I found afterwards there was a faint spray of oil. I only noticed because I thought it was water on my face when I wiped my fingers on it. 40

- Q. Did you notice some on your face? A. Yes.
- Q. Where was it? What did you do? A. I could not see anything wrong on the after deck.
- Q. You noticed first something on your face? A. Yes.
- Q. When you noticed something on your face did you then do something? A. It felt like oil; I could not believe it was, but I rushed forward.
- Q. It felt like oil and you were on the aft deck on the starboard side? A. Yes.
- 10 Q. And you rushed forward? A. Yes.
- Q. Where did you go to? A. From the starboard alleyway it leads to the amidships accommodation housing of the bridge, and so forth.
- (Ten photographs, m.f.i. "4" tendered and marked Exhibits "2(1)" to "2(10)").
- Q. You rushed through a companionway in the deck-house? A. The alleyway
- Q. On the starboard side? A. Yes. It was immediately obvious, when going through forward that the
- 20 bunker tank was overflowing.
- HIS HONOR: Q. What did you say? A. The forward bunker tank on the starboard side was flowing, you could see it flowing out.
- MR. MEARES: Q. Could you tell me whether or not it was flowing out when pumping was still going on? A. I would say definitely that the pumping was still continuing.
- Q. Why do you say that? A. I have seen bunker
- 30 tanks overflow with air locks, which is the favourite excuse for bunker tanks overflowing but this one was definitely flowing over in such a stream that it was definitely being pumped.
- HIS HONOR: Q. Flowing under pressure? Is that what you mean? A. That is what I think, yes. Of course I was not on the barge to see whether it was pumping, but that was my observation.

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MR. MEARES: Q. And you had had some experience of these pumps? A. Yes.

Q. You say it seemed as if the pump was going. What did you do? A. The shortest way to stop it was to the bunker barge which was on the port side.

HIS HONOR: Q. The Bunker, what? A. Barge. We were bunkering from a barge.

It was amidships, not far from where I was standing at that time and I went straight back through the alleyway across to the deck, to the rail by the barge. I only shouted once, I think, and I did not get immediately an answer. I did not see anyone on the deck so I immediately rushed to find the engineer or the officer to open another valve to relieve the pressure on the tank overflowing. I found him at the starboard valve, right against the after part of the housing. 10

Q. Is that after the housing? A. No, that is just against the bulkhead accommodating the engine room and the accommodation. It is immediately opposite the pump room. That is the one on the starboard side, and he was trying to open it. 20

Q. Open what? A. Open this valve.

Q. What did you do? A. I tried to give him a hand, to try to operate it, but it became obvious that we could not open it without using a wheel spanner, a tool.

Q. How long did it take? A. Just a split second, with the two of us on it. He thought he could open it with his hand at first. 30

We both rushed back to the bunker barge. If I remember correctly I think there was a man from the barge on deck, or there were men from the barge on deck and he shouted to them to stop pumping. I don't recollect what they did after that in any case. I immediately went forward again through the alleyway, and then the pumping had stopped, anyway.

Q. From the time you first felt the oil on your face until you went and found no oil coming out, how long would you say elapsed? A. It is very difficult to tell, when you are in such a flap as that, such a panic or rush, but possibly a minute. 40



Q. When you first got to the ---? A. It may have been slightly longer, but only very very slightly

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Q. When you first got to where the oil was coming out, or being pumped to, when the surging out of it ceased - you are quite unable to say? A. Yes.

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Q. But at the end of a minute or slightly longer, from noticing it on your face, you went back and there was no oil escaping then? A. That is correct.

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10 Q. (Showing witness Exhibit "2(4)"). This photograph shows the starboard side? A. Yes.

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Q. Would you indicate to me the door of the alleyway? It is there, is it? A. (Indicating). Yes.

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continued.

Q. The alleyway from which you could see the petrol surging out--? A. The oil.

Q. The oil? A. (Indicating). This door here.

Q. You indicate the entrance on the right-hand corner of the photograph? A. That is right.

20 Q. Can you tell us to the best of your knowledge from which trunk the oil was coming out? A. (Indicating.) This one, definitely

Q. You indicate the most forward trunk which is open on the Exhibit? A. Yes.

(Photograph shown to His Honor by Mr. Meares.)

MR. MEARES: Your Honor will appreciate that that is a photograph of the forward deck.

Q. Just so this may be clear, looking at Exhibit "2(4)", you were on the other side of the housing not shown in that photograph when you felt the oil? A. On the after side.

30 Q. And you then moved to the entrance to the alleyway, the deck housing, on the forward side and you could then see from there the barge? A. Yes.

Q. Called out. You then went back through the alleyway aft? A. No. I misunderstood you, I am afraid. From this alleyway I went aft again through the alleyway and then across to the port side and then aft again and across to the other side.

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Q. To see Suede? A. Yes.

Q. Are you able to say whether before that leak the scuppers were not blocked? A. Well, I personally did not check the scuppers.

Q. So you cannot swear? A. No.

Q. Is there a note in the log in your handwriting which says "Scuppers blocked"? A. Yes, there is.

Q. Was that entry made on some information from the Chief Engineer? A. From the Chief Officer, yes.

Q. But you could not swear from your recollection at present as to whether or not on the night of 29th-30th before this leak the scuppers were or were not blocked? A. No. Except I could swear that the one I saw was blocked. Suede looked at that. 10

Q. When was that? A. That was after the oil spilt. I checked - I don't remember which one but I think probably the starboard side one.

Q. You are not certain? A. No. Suede went to the other one I know. He said "I will take a look at the other one". 20

Q. That was blocked at the time you got there? A. Yes, by this time I was not interested in the affair. It was the Engineer's responsibility then.

Q. After that did you retreat to the completion of your duties? A. Yes. I went back and continued preparing to hand over my watch.

Q. Was that the aft deck? A. Yes.

Q. And you did not concern yourself with the spillage any more? A. No. 30

Q. Do you see in Exhibits "2(5)", "2(2)", "2(3)", "2(10)" and "2(6)" a portion of the side of the ship which rises to the deck housing? A. Yes, I do.

Q. And having looked at "2(6)" is the rise of that from fore to aft or aft to for'ard - the rise of that piece of metal? A. From for'ard to aft.

Q. And on "2(6)" you are looking towards the stern?  
A. Yes.

Q. Is that piece of metal known as the fish plate?  
A. Yes, loosely; but it is not a fishplate.

Q. Loosely it is called a fish plate, but it is not a loose fish plate? (Photograph shown to His Honor by Mr. Meares).

MR. MEARES: The fish plate is rising aft of the deck house.

10 Q. Then did you see the photographs "2(4)", "2(8)", "2(7)" and "2(9)"? A. Yes.

Q. Did those photographs show, amongst other things the gunwale board - what do you call it? A. It is a scupper plate. Technically it is the upper edge of the sheer strake.

Q. That is something, is it, that is rising up at right angles? A. Yes, at right angles to the decks.

Q. On the edge of the deck? A. Yes.

Q. What is it called again? A. The sheer strake.

20 Q. Can we call it the gunwale board? A. Scupper plate.

Q. How high was the scupper plate on the "Waggon Mound" on the deck where the leakage took place?  
A. I do not remember exactly, but I would say three inches.

Q. Would you be reasonably accurate on that? A. Yes, I think so.

MR. BEGG: There is a ruler up against it in one of those pictures.

30 MR. MEARES: Q. Do you see up against it in Exhibit "E2" and also in Exhibit "E3" the same sort of rule to indicate the height of the scupper board? Is that clear? A. Yes.

MR. TAYLOR: Q. Where is the rule? A. (Indicates on photograph).

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MR. MEARES: Q. At the time of this leak on the morning of the 30th October was the ship trimmed for'ard or aft? A. By the stern, well by the stern; which means that the bow is up and the stern down.

Q. Was that the condition right from 29th October until she sailed? A. Yes. We invariably make it a point on discharging; rigorously that is the way -

MR. MEARES: I am assuming that Your Honor would not be concerned with the method of loading the oil. I do not know whether it would be of any assistance but I just mention it in case Your Honor would like to make some inquiries. 10

CROSS-EXAMINATION

MR. TAYLOR: Q. Were you up and about before the ship sailed on the morning of the 30th? A. No. I was only called just in time to prepare for departure.

Q. You were there, up and about, when the ship sailed from the Caltex wharf? A. I was on the bridge. 20

Q. That was 11 o'clock in the morning? A. Approximately, yes.

Q. Did you see any furnace oil on the water of the bay? A. Well, I did not pay any attention and --

Q. Didn't you? A. I didn't see it, no.

Q. Would you be prepared to swear there was not any there? A. No. I didn't look.

Q. Do you say you did not bother to look to see? A. No. I was busy. 30

Q. You were busy, were you? A. Yes.

Q. The departure of the ship was delayed, wasn't it? A. I can't remember.

Q. Don't you? A. After all --

Q. Were not ---? (Mr. Meares asked that the witness be permitted to complete his answer.)

MR. TAYLOR: Q. Don't you recollect that there was an unusual incident before the ship sailed? A. Yes, of course.

Q. A Maritime Services inspector came aboard. Were you present when he interviewed the Captain? A.No. That was the Engineer's responsibility.

HIS HONOR: The witness has not answered your question as to whether a Maritime Services Inspector came aboard.

10 MR. TAYLOR: He said "Yes" to it.

WITNESS: No, I don't know.

HIS HONOR: You proceed to the next question, without giving him the opportunity of saying yea or nay.

MR. TAYLOR: Q. Did you see whether or not an inspector from the Maritime Services Board came aboard the "Waggon Mound" that morning before you sailed? A. I don't know.

20 Q. You don't know one way or the other? A. No, I expect he did, after an occurrence like that I would expect one.

Q. You would expect it; that this vast quantity of oil floating on the water would be something - (objected to; disallowed).

Q. Why did you think the Maritime Services Inspector would come down there? A. Because I had noticed some oil on the water.

Q. Had you? A. Not on departure.

Q. When did you see it? A. After four o'clock.

30 Q. After four o'clock in the morning? A. Yes, after the spill had occurred.

Q. Where was it then? A. The oil was trapped in a sort of bay between the pylons and the wharf.

Q. Between the "Waggon Mound" and the Caltex wharf? A. Yes.

Q. It did not run out the scuppers? A. No, I don't

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know it ran out the fish plate, over the edge of the scupper plate.

Q. Did you have a look at the side of the ship?  
A. No.

Q. Did you see any anywhere else, apart from between the ship and the Caltex wharf? A. On the fore deck, yes.

Q. Very deep on the fore deck, wasn't it? A. It had run down towards the after part of the amidships house. There was enough to cover the soles of your feet, I think anyway; definitely.

10

Q. (Showing Exhibit "2(4)" to witness): As I understand it, you say that that--? A. On the Exhibit both them were overflowing - that is the one I saw.

Q. When do you call these trunkways? A. It is the bunker head.

Q. The one with the lid off in Exhibit "2(4)", you say that one was overflowing? A. Yes.

Q. Do you think the two of them were? A. No. This is a covered dummy hatch which is not used for anything, but this is the second one on the port side.

20

Q. This one was overflowing, without that, the one on the port side? A. Yes.

Q. If that one overflowed what is to stop the oil that flowed out of it going into the sea? A. This scupper plate along here.

Q. The three inch scupper plate, the one you described as three inches? A. Yes. What happens is that the ship is trimmed at the stern, and it runs down the deck and collects against the after bulkhead.

30

Q. Where are the scuppers? A. I do not remember exactly how many there are on the foredeck but there is one right against the after bulkhead, and probably another two on the fore deck.

MR. MEARES: Q. On either side of them? A. On either side.

MR. TAYLOR: Q. If you get oil coming out in quantities, which builds up on the deck to more than three inches high, it can just go over the side?  
 A. No, that is not correct. The ship is trimmed on arrival by the stern, and there are always large quantities between the bulkhead and these fish plates --

Q. You mean it runs down towards that? A. It runs down the back.

10 Q. Towards the stern of the ship? A. No.

Q. You do not know on this morning how this ship was trimmed, do you? A. Yes, I do.

Q. What is the entry in the log about it? A. There is none, but I know how she was trimmed.

Q. You can remember that? A. Yes, it is elementary for tanker personnel, because you find your tanks will not pump properly if they are trimmed the other way.

20 Q. Were you still pumping? A. Yes, we were still pumping cargo ashore.

Q. You do not remember any occasion - that morning when the ship was listing a bit to starboard? A. I think - but I cannot swear to it - but I think she had a faint starboard list at four o'clock, I have a faint recollection.

Q. Would that affect the chance of oil going into the harbour, if she had a list to starboard? A. It would make them greater, yes.

30 Q. You left Overseas Tankships, or Caltex - did you have experience on Caltex tankers? (Objected to - last part of question allowed.) A. In actual fact that is incorrect.

Q. What is the answer to that? A. This is a fact that may be verified. Our contracts of employment were signed with what we call "overtuk", that was the cable address for Overseas Tankers U.K. Ltd., or Overseas Tankers U.K. They were our employers, but as you know with these tanker companies -- (objected to).

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Q. Did you ever work for the Caltex people? A. My contract of employment was with Overseas Tankships. It was with Overseas Tankships, New York, and then it was transferred to London.

Q. And the position, so far as you knew, was that Caltex -- (Question objected to).

HIS HONOR: I will not stop the cross-examination at this stage.

MR. TAYLOR: Q. When you came back here the ship immediately went to Caltex wharf, didn't it? A. Yes.

10

Q. And Caltex of course were the agents for the ship out here? (Objected to - disallowed).

Q. After you got here I suppose you went ashore, did you? A. After I saw the commencement of discharging satisfactorily.

Q. And you went up to the Caltex place? A. No. I went through their installation to go ashore.

Q. And the Caltex men came aboard your tanker? A. Caltex were the consignees, and naturally they would - yes, but I do not know that he was --

20

Q. You had been out on this run before, on the "Waggon Mound"? A. I cannot say whether I had been in Sydney on the "Waggon Mound" or not, but we had been in New Zealand.

Q. And you would have some duties to perform, I suppose, to do with the supply of commodities to the ship? A. I did not have any.

Q. You did not? A. No.

Q. Did not you know that the Caltex people were the agents that supplied -- (Objected to - pressed - question disallowed).

30

Q. Did you know Mr. Mervyn Smith? A. No, I may have met him, but I do not know his name as anything.

Q. Did you know Mr. Durack in charge of the installation? A. I met him again this morning and I have a vague recollection of his face, that is all.



Q. Where did you meet him this morning? A. Outside. In the Supreme

Q. Outside here? A. Yes. Court of New

Q. And you vaguely remembered it? A. I am not sure. I just have a recollection of him, I may have seen him coming to the installation. Admiralty  
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Q. When you came out on this voyage did you yourself draw any money from Caltex when you were here?

A. I would not personally draw it. The Radio Officer handles that sort of thing and he would just simply pay me on my signature.

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Q. Were you paid in Sydney? A. I can't remember. Cross-

Q. Had you been paid in Sydney by Caltex when you were in Sydney on the "Waggon Mound" before? A. I cannot recollect. Examination -  
continued.

Q. The crew of this tanker got some leave when the ship was in port? A. Yes.

Q. I suppose the crew got paid? A. Yes.

Q. Is it to your knowledge that they were paid from funds furnished by Caltex? (Disallowed.)

20

Q. Did you yourself on this voyage, or on any previous voyage, draw pay that came from Caltex? (Objected to - pressed).

HIS HONOR: On this ship?

MR. TAYLOR: Yes.

Q. What is your recollection of that? A. I have no recollection. I would not know who I drew money from. I just get it from the Wireless Operator who makes up my pay.

30

Q. You do not know who it comes from, it can come from the other side of the world? A. That is right.

Q. This time you were out here you did not go to any shipping company or any shipping agents in Sydney?

A. I don't believe I did? I don't think so.

Q. After you left Sydney the "Waggon Mound" went to Newcastle, did she not? A. Yes.

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Q. And then back to Bahrein? A. Yes.

Q. That was the run, from Bahrein to Australia?

A. No. We used to get our sailing orders four days before we arrived at Bahrein. Up to four days before we arrived there we did not know where we were going.

Q. When you did come to Australia on the "Waggon Mound" you came from Bahrein? A. Yes.

Q. I suppose you know it was Caltex petrol you were bringing out here? (Objected to - disallowed).

10

Q. After the ship tied up, I suppose you saw the Captain go ashore? A. I don't recollect him going ashore.

Q. Don't you? A. I may have.

Q. You told us quite a lot to do with the events that happened on the 29th and 30th October 1951. When were you first asked to cast your mind back to the events of those two days? A. It was a topic of conversation on the ship.

Q. At the time it happened I suppose it was? A. And all the way back to Bahrein too.

20

Q. When were you first interviewed by any legal gentlemen about this case? A. I am not too clear on that point. You say "Legal gentlemen"?

Q. Yes. A. I expect that was probably in London.

Q. When was that? A. I don't remember.

Q. This happened seven years ago? A. Approximately 12 months after the spill occurred.

Q. Twelve months after the spill occurred? A. I had been interviewed on previous occasions, though

30

Q. Had you? By whom? A. By our Captain, the Chief Engineer and the Marine Superintendent of the Middle Eastern Area.

Q. And interviewed in connection with the furnace oil spillage? A. That is right. They also probed it. Captain Schlaaten in Bahrein went right through

the whole operation from commencement to end of loading the bunkers and discharging.

Q. When were you first asked to recollect the petrol escaping on this vessel? A. That is impossible for me to say.

Q. Were you asked about it before last week? A. Oh yes.

Q. When was it that you were asked about it? A. No, I am sorry. I cannot say definitely

10 Q. Would you swear you were ever asked to recollect anything about petrol before you came to Sydney last week? A. Yes, definitely.

Q. You would? A. Yes.

Q. But you cannot say when? A. No.

Q. You told us that the explanation of this petrol escaping was that in a 28-day voyage with the working of the ship there had been some looseness in the glands, the flange? A. Yes.

Q. Is that right? A. Yes, that does occur.

20 Q. And that is your considered view, is it? A. That that would cause it to leak?

Q. That that would cause it? A. There could be other explanations, but that is the logical one.

Q. No test had been made of the flanges or the valves before you started pumping, had it? A. No. May I explain --

Q. Answer it, please. To your knowledge no test had been made before you started? A. It is impossible to make a test.

30 HIS HONOR: The answer to that is yes or no.

MR. TAYLOR: Q. No test had been made, had it? A. No. It is impossible to make one.

Q. You say it is impossible? A. Yes.

(Short adjournment.)

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Q. I was asking you about the valves of the pipes. I want to put this to you, would you agree that it was an instruction known to you from the owners, that is, Overseas U.K. on these bulkhead and pipeline leaks, "On this and all subsequent voyages you are to arrange to have all cargo pipelines, cargo valves and cargo tank bulkheads tested for leaks. In testing your cargo-handling system we suggest you utilise your cargo pumps to obtain 125 lbs. pressure which we feel is necessary to test this system thoroughly. Any leaks are to be plainly marked and their extent and location reported to this office immediately by radio"? A. That is quite correct. It was known to me.

10

Q. That was not done on this voyage? A. This voyage was a loaded voyage. That was all carried out during the return trip to Bahrein.

Q. Was it done on this voyage? A. No.

Q. This was Voyage 27 in the "Waggon Mound" coming out in October? A. Both ways.

20

Q. Both ways? A. Voyage 27 includes the voyage both ways.

Q. Does it? A. Yes.

Q. Is that your understanding of it that the voyage to one side of the world and the voyage back are on the same voyage? A. Yes.

Q. This had not been carried out from the time the ship left Bahrein until it got in Sydney Harbour? A. No.

Q. You suggest, do you, that this instruction relates only to testing when there is no cargo in the ship. Is that what you say? A. Yes.

30

Q. What would you want to test if there was no cargo in the ship? A. So that on any or non-load voyage you would not experience these leaks and bulkhead leaks, etc.

Q. This is what you say that on the way back empty, before you got to Bahrein, you test? A. Yes, and make repairs.

- Q. You then load and come out to Sydney. You know that on a 28-day voyage you will probably, because of the working of the ship, have some trouble with flanges or pipelines. You know that, don't you?  
A. Yes.
- Q. But without any test you immediately start to pump? A. No, you only expect limited trouble and you start to pump very cautiously.
- Q. But you had not had any tests? A. No.
- 10 Q. Do you say it is impossible to do tests to determine whether or not a flange is going to leak when you have a full ship? Do you say that? A. It is a long time since I have sailed in tankers but I think it can be done with a lot of difficulty and the possibility of contamination of cargo too.
- Q. Do you remember swearing earlier that it was impossible to do it? A. Yes, I want to retract that statement.
- Q. It was untrue, was it not? A. Yes, it was.
- 20 Q. The plain fact is that the tests could have been done? A. It is possible, yes.
- Q. (Approaching witness). Have a look at this document that I show you. You see the signature on the bottom? A. Yes.
- Q. "Leonard A. Smith, Overseas Tankships". You would know Mr. Smith, I suppose? A. Not now I would not.
- 30 Q. I am not suggesting that you recognise him but when you worked for U.K. Tankships I suppose you met at some time the General Manager? A. I probably met him once very briefly.
- Q. I suppose he signed your agreement? A. I do not remember who did, but possibly the Marine Superintendent.
- MR. MEARES: Has not Your Honor ruled that it is not open to my friend in his statement of claim to allege negligence in the spilling of petrol?
- HIS HONOR: I do not think I gave a ruling on it.

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When that matter was raised I think I said, before it was argued, "It seems to me this is outside the pleadings".

MR. TAYLOR: My friend was seeking to show there was no possible form of escape of this petrol.

MR. MEARES: The purpose of my evidence was to give the Court in all detail what happened in regard to this leak. Now my friend has said this statement of claim - I suppose it can go to credit - at no point of time did we adopt a negligent system of unloading petrol at all.

10

HIS HONOR: The argument put forward was not directly on the question of petrol but on the question of the substances which escaped into the waters of the Harbour.

MR. MEARES: This is a statement of claim which even on a close consideration Your Honor with hesitation may include the claim in regard to the petrol but I submit on no reading of it can it possibly include the allegation that the system of our pipelines on the ship were negligently maintained.

20

MR. TAYLOR: I do not suggest there is anyway in the plaintiff's pleading that petrol was negligently allowed to escape. I am putting this because, as I understand my friend's case, when he led this witness, he was seeking to show that this was something that you could not have guarded against, it happened quickly and there was a minimum period of time over which this petrol escaped. I seek to show by this evidence that nobody bothered to look at these flanges before they commenced to unload and that their condition was not known when they commenced to unload petrol, and I propose to follow it up by certain cross-examination as to the time that this could have been going on.

30

HIS HONOR: It seems to me you are cross-examining on an issue of negligence in construction and maintenance of petrol lines on the ship. That seems to me to be quite irrelevant. As I understand it the question of petrol may be arguable resulting in a substance coming on to the water which had certain dangers.

40

MR. TAYLOR: Of course it might have a material

bearing on the other question of the escape of the crude oil, the general efficiency and maintenance of the ship.

(Further argument ensued.)

HIS HONOR: I think it is too remote.

MR. TAYLOR: Q. You as the 4th Officer, I suppose, would have some clerical work to do in the ship?

A. A little, yes.

10 Q. Would you do that for the Chief Officer or for the Captain? A. No, the Radio Operator would do the Captain's work. It was clearly outlined what I did.

Q. You used to do what? A. I used to keep watch do a little work here and there. It is impossible to pin it down, nothing to talk about.

Q. Where were the ship's papers kept - in the Captain's cabin? A. In the Captain's safe I believe.

20 Q. Would you look at this document which I showed you before? Had you seen a document or a copy of that document when you were in the "Waggon Mound"? A. That is the first time I have seen one or a copy.

MR. TAYLOR: It is part of the documents produced from Caltex in the file to which no objection was taken. It is Voyage No. 27 on the 21st September, 1951. It is a voyage charter.

(Above document m.f.i. 6.)

Q. How many ship's officers, leaving out ship's engineers for the moment, were there on the "Waggon Mound"? A. There were the Master and four officers.

30 HIS HONOR: Q. That is four deck officers? A. Yes.

MR. TAYLOR: Q. The Chief Engineer? A. The Chief Engineer. There was the First, Second, Third and Fourth.

Q. You had been in the "Waggon Mound" for this voyage, and for any previous voyages? A. It is difficult to recollect now but - yes, I had definitely been in the "Waggon Mound".

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Q. You knew all the officers quite well at least for 28 days? A. Yes.

Q. I show you the rough deck log and the engine room logs. This is the page you were looking at, was it? (Approaching witness). A. Yes.

Q. The rough deck log, Monday 29. Where do the entries made by you start? A. Here.

Q. What is that written in there "W.P."? A. Mr. Piggotson was the Second.

Q. That means that he is the officer on the bridge? 10  
A. Yes. I took over at 8 o'clock and the entries commence in my handwriting after that.

Q. This entry being "slight sea" is in your handwriting? A. Yes.

Q. You see the entries there "scuppers plugged"?  
A. Yes.

Q. Did you write those? A. Yes, I did not write this entry.

Q. You did not write the first part of it?  
"Commenced taking bunkers", whose handwriting is 20  
that in? A. That is in the Third Officer's. He entered that because I had forgotten to do it.

Q. You wrote "scuppers plugged"? A. Yes.

Q. What was there before you wrote the words, "scuppers plugged"? A. I do not know.

Q. You will agree that obviously there has been a rubbing out before "scuppers plugged" was written?  
A. I do not know. It could have been.

Q. Have you any doubt about that? A. It is a very soft pencil. It could have been smeared. 30

Q. It looked like a rub out. Have you any recollection of something before there, before you wrote the words "scuppers plugged"? A. No.

Q. You say you wrote those words on instructions from the Chief Officer? A. I do not remember being instructed but I would normally.



HIS HONOR: Q. You would normally what, write them on the Chief Officer's instructions? A. Yes.

MR. TAYLOR: Q. The scuppers they would refer to would be the scuppers down on the port side, down aft? A. All over

Q. May I take it that you were told by the Chief Officer to record the fact that in your watch on the morning of the 29th all ship's scuppers were plugged? A. Yes.

10 Q. That means scuppers for'd and scuppers aft? A. Yes.

Q. The only thing that would call for scuppers being plugged on your watch was the escape of petrol from this gland, was it not? A. No, they were routine standing orders to have them plugged.

Q. Routine standing orders to have them plugged. When? A. Immediately on arrival in port.

Q. Have a look. When did that vessel arrive in port? A. 8 o'clock.

20 Q. Who was on duty then? A. That was the Third Officer - No, at 8 o'clock we would all be there then.

Q. You say it was routine orders to plug the scuppers when the ship came alongside the wharf? A. Yes.

HIS HONOR: Q. Before or after coming alongside the wharf? A. After you get your deck drains clear.

MR. TAYLOR: Q. Have you the rough log? A. The one in pencil is the rough log.

Q. Look at the next entry, the voyage when you were at Newcastle? A. Yes.

30 Q. You see the rough deck log for the ship when you were at Newcastle? (indicating) A. No, that is the arrival, departure Sydney.

Q. Where is the "departure Sydney"? A. 10.15, pilot aboard.

Q. Is that on departure - A. No, that is the departure from Sydney

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Q. 12 o'clock? A. Yes.

Q. You may be right. Here we are (indicating).  
This is Sydney? A. This is arrival at Newcastle.

Q. Then you give certain measurements, "commenced  
pumping water through lines for testing purposes.  
Stopped pumping. Commenced discharge gasoline from  
6.30 a.m. Terminated-" You are discharging at  
Newcastle then, aren't you? A. Yes.

Q. "Cease discharging. Continued to discharge.  
Continued to discharge gasoline throughout. Stopped  
discharge gasoline, Commence flushing holds with  
water" - 10

MR. MEARES: I object to this. I make the logs  
available to my friend and Your Honor has admitted  
a certain aspect of the log. I submit my friend  
is not entitled to belabour this witness with part  
of a log which deals with entries made by other  
people if it was something done at Newcastle.

HIS HONOR: Mr. Taylor is cross-examining because  
of a statement made by this witness that certain  
things are standard practice and Mr. Taylor is show-  
ing him certain entries in the rough log, and I have  
no doubt that he wants to refresh the witness'  
memory and renew some questions on the question of  
his regular practice. 20

(Further argument ensued.)

HIS HONOR: There may be certain consequences flow-  
ing from his cross-examination.

MR. TAYLOR: Q. You agree with me there is no entry  
"scuppers plugged"? A. The log has been carelessly  
kept. 30

Q. Is that a considered answer on your part, the log  
has been carelessly kept? A. Yes, that entry  
should have been made.

Q. I want to suggest to you that on the 29th you re-  
corded that the scuppers were plugged under the in-  
struction of the Chief Officer because that was the  
day the petrol escaped, was it not? A. The petrol  
escaped on the 29th from the gland, the flange?  
A. Yes. 40

Q. Is not this the true position, so that there can be no suggestion that this petrol got into the water you recorded the fact that the scuppers were plugged? A. No, not correct.

Q. It is not usual, is it, to plug the scuppers of a ship, an oil tanker such as this, unless you want to retain in-board something that might flow through the scuppers? A. No -

10 Q. That is the purpose? A. All tankers, I believe in other Companies also, it is standard practice to plug the scuppers to take care of such things as bunker spillage.

Q. You only plug the scuppers - A. But you do not plug them afterwards.

Q. You only plug scuppers to keep in-board of the ship anything that may leak or escape or spill? A. Yes.

20 Q. These were in fact one of those scuppers - it was plugged that morning after this gland was leaking? A. They were plugged the following morning. I knew that.

Q. No, on the morning of the 29th, after this petrol had leaked from the flange, to your knowledge one of those scuppers at least was plugged that morning, was it not? A. The Chief Officer told me they were plugged and I took his word for it.

Q. Do you say that you had no knowledge yourself of them being plugged? A. No, we were very busy at the commencement.

30 Q. I suppose the Chief Officer asked you to make sure? A. No, it was considered so important that the Chief Officer used to check that himself. That was one of his duties

Q. To check that the scuppers were plugged? A. It was a simple matter. He merely had to look at them, walking along the deck.

40 Q. If they were plugged on the morning of the 29th, would there be any reason for the plugs being taken out between that time and the ship's departure, that you know of? A. There may have been.

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Q. If what you say is right there would be no way that this fuel oil could have got out of the scuppers on the 30th, could there? A. Yes, there is.

Q. How? A. It could have flowed down to the after part of that deck, so that it did flow over and also it was blowing very hard that morning. That is how I -

Q. Flowed down the after part of the deck? A. It could have been built up against the after bulkhead and then built up to such an extent that it flowed over the side of the scupper plate. 10

Q. What you call the sheer strake? A. Yes.

Q. There would be no way it could get out the scuppers that were plugged, would there? A. Well, if they were properly plugged, no.

Q. So that if they did go over the scupper plate the oil would have to be up on the deck over the deck more than 3 inches deep, would it not? A. Not all over the deck, not over the entire deck.

Q. Over the deck, portion of it? A. Portion of the after-deck. 20

Q. Do you not know that on the morning of the 30th when, to use your phrase, the panic was on, people were trying to plug the scuppers? A. Were they?

Q. Didn't you know that? A. No, I did not.

Q. I suppose if what you say is true there would have been no need for anybody to order that the scuppers be plugged on the morning of the 30th? -

HIS HONOR: You need not answer that. He has only said that the Chief Officer told him that the scuppers were plugged and he said himself he did not look. 30

MR. TAYLOR: Q. Do you say you did not look at any time on the 29th or 30th? A. On the 30th, on the morning, yes.

Q. What about when you found the oil escaping? A. I certainly looked then.

Q. How were the scuppers then? A. I looked at one and it was quite satisfactory.

Q. Was it plugged? A. It was, yes.

Q. Which one? A. I cannot swear to which one I looked at.

Q. For'd or aft? A. The one against the after bulkhead where the oil was.

HIS HONOR: Q. How many scuppers are there? A. I do not remember exactly. I think there would be three each side on the foredeck.

MR. TAYLOR: Q. The one you looked at on the morning of the 30th was the bulkhead scupper down aft? A. Yes.

Q. What about the one up for'd? A. There was no oil lying there, it was running down aft.

Q. But it was escaping up for'd, was it not? A. It could have been. The wind was blowing up over the side. After the pumping ceased then the oil on the deck flowed down against the after bulkhead.

Q. But this tank hatch that you pointed out in the photograph, that is up for'd, isn't it, over the forepeak tank? A. Yes.

Q. Near where that is, further forward from it, are the bulkheads? A. Yes.

Q. In either of those there are scuppers? A. I do not recollect exactly, very likely there is.

Q. It would be a curious ship if there were not? A. It is not very essential right up there.

Q. Do you say that on this night you did not observe whether they were plugged or not? A. Not the for'd ones. There was no occasion to look.

Q. I am showing you Exhibit 2(4), the one with the lid off. That is the one you have indicated as being the one out of which the oil was coming? A. Yes.

Q. That is a photograph of the ship looking, what? A. From for'd to aft on the port side.

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Q. Would you mind telling me whether on that photo-  
graph these scuppers would be down aft that you  
looked at? A. Yes, right in here, against this  
fishplate.

Q. That indicates the scupper would be in front -  
A. That is the bridge there.

Q. In front of the bridge

HIS HONOR: Q. You cannot see it there? A. No.

MR. TAYLOR: Q. What is that? A. That is what we  
call a panama lead. It is a lead for laying rods  
and wires through. It is made slightly different  
to others and the lower lip would be 6 inches above  
the deck.

10

HIS HONOR: Q. It is not on deck level? A. No.

MR. TAYLOR: Q. But it is a hole in the bulkhead?  
A. Yes, you could not get oil through it from a  
bunker It would have to flow over the sides  
first, over the scupper plate.

Q. You cannot see the scuppers for'd? A. No, when  
the oil overflows the ship, being trimmed by the  
stern, it should run straight down the deck.

20

Q. I am speaking now about the escape of furnace  
oil that you observed about 4 o'clock in the morn-  
ing. You were down aft, would you agree, about 200  
ft from the place where the oil was bubbling out?  
A. Probably more.

Q. Standing there, furnace oil was blown - A. A very  
fine spray.

Q. You could not go directly up the deck from where  
you were to where the leak was? A. No.

30

HIS HONOR: Q. You say the oil was in the form of a  
very fine spray? A. Very fine mist.

MR. TAYLOR: Q. So it was bubbling out. Would that  
exclude any spurting out? A. Yes, it was just  
flowing over on all sides of the tank.

Q. You show me in Exhibit 2(4) where you were stand-  
ing? A. In this photo I cannot. I was on the  
starboard side aft.

Q. Between you and where this leak was taking place was the whole of the bridge structure? A. Yes, the tank on the other side was the one I observed was leaking.

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Q. Would any one of these photographs show where you were standing? A. No, that is better. This was the tank that I observed. This was a photograph taken from for'd to aft and I was standing on the after side of this one (indicating).

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10 Q. That is Exhibit 2(4). How far behind the bridge would you be - right down near the stern? A. 60ft.

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Q. 60ft from the bridge? A. Yes.

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Q. Further aft. The first thing that drew your attention to something being not quite right was, you say, oil blowing in your face. You then went from where you were through the bridge structure and went for'd and I suppose you did not realise for a while where it was coming from, this oil on your face? A. No, I was looking for it.

20 Q. I suppose it took a bit of time to work out what it was? A. No, you take some action very quickly.

Q. Did it take you a while to work out what it was? A. I just looked at my hand.

Q. You say it was black? A. Yes.

Q. You do not usually have furnace oil blown about in a fine mist, do you? A. No.

HIS HONOR: Q. What was the nature or the strength of the wind at the time? A. It was blowing very hard. The log-book would probably tell you.

30 MR. TAYLOR: Q. If it came from the deck of the ship it would have to be picked up by the wind and in some fashion brought around the bridge? A. That is quite common on ships with curved superstructures. The superstructures cause eddies of wind and it would be aggravated by the high installation buildings near the ship.

HIS HONOR: Q. When you say "blowing very hard", could you, as an estimation, express it to a land-lubber in miles per hour?

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MR. TAYLOR: Q. Which force would it be? A. I would have said force 4 6, which would give you the wind.

Q. That is gale, is it not? A. About 35 or 40 miles an hour.

Q. That is of the order of a gale? A. It is classed as a gale at sea, gale force.

Q. You say 4 6? A. Yes, approximately.

Q. Would you expect furnace oil to be picked up by a strong wind if it was flowing over somewhere where the wind could get it? A. It would be easier to pick up where it was flowing over from the tank. 10

Q. What about if it was flowing over from the ship's side? A. The wind would not pick it up because the wind was blowing from the other side. It was blowing across from the port side to the starboard side.

HIS HONOR: Q. How was the ship lying on a compass bearing? A. I think at that wharf - you can check on the chart - I think it is approximately sou' sou' west. The wind would be from the direction coming across the ship, about south-east. 20

MR. TAYLOR: Q. Look at that chart (shown to witness). There is the Caltex wharf? A. Yes.

Q. It runs - A. - approximately south-west

Q. The line north-east to south-west? A. Yes.

Q. Where did you say the wind was blowing? A. I did not pay much attention. I do not remember actually. I do know the wind was coming from across here, approximately the south-east. 30

Q. When you got up there to where the oil was coming out of the hatches - do you call these hatches or tank tops? A. We call them hatches. It is a loose term - tank hatches.

Q. Oil was coming out of both hatches? A. I did not see the port one.

Q. The starboard? A. Yes.



- Q. And between where you started off and you got up there you saw nobody? A. No.
- Q. There was no member of the ship's crew on duty where this hatch was? A. No.
- Q. Where the oil was coming out of the hatch. There was a quantity of oil about on the deck then? A. Yes.
- Q. It was pouring over the deck, I suppose? A. Yes.
- 10 Q. You do not know how long it has been going on for? A. No.
- Q. It is correct, is it not, that there was nobody on the starboard side, where it was coming out of the hatch there? A. I saw no one in there. There would not be - there was only the engineer on duty and I found him down aft at the valve trying to open it.
- Q. This was a matter that had nothing to do with you? A. No.
- Q. Quite outside your ordinary duties? A. Yes.
- 20 Q. The people in charge of bunkering of the ships were the engineers? A. Yes.
- Q. It comes down to this that if you had not by a fluke from what you saw that night - happened to observe this it would have gone on until the barge was empty? (Objected to; question rejected.)
- Q. You found the Second Engineer, did you? A. He was working trying to relieve the pressure on that tank.
- Q. When you found him? A. Yes.
- 30 Q. Where was it you found him? A. He was on the starboard side of the after deck against that after bulkhead.
- Q. Right down aft near where the pumproom is? A. Yes.
- Q. I suppose 300 ft. away from where this oil was escaping? A. Yes

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Q. You found him after you had gone to the side to call out to the barge and come back again? A. Yes.

Q. That would be a matter of some minutes? A. No, I was in a hurry.

Q. Would you deny that it would be as much as five minutes? A. Yes, definitely. One minute.

Q. Were you keeping a check on how long you were at these various places? A. I just know I did not stop.

Q. But you did stop, did you not, to call out to the men on the barge? A. Yes, I called once and when I could not get an immediate answer I left, running. 10

Q. It was still pumping? A. It may have stopped by then because it was stopped when I went back for'd the second time.

Q. When you called out your belief was that it was still pumping? A. Yes.

Q. You called once? A. Yes. Well, I will not swear to that. I may have called twice.

Q. Whether it was once or twice you received no answer? A. No. 20

Q. You went down, I suppose, to try yourself to do something about stopping the spillage? A. I did not know what to do, I went looking for the Engineer.

Q. You did not know, yourself, what to do? A. No, I did not. I do not know his bunker tank system.

Q. You remember on this voyage the Chief Engineer had gone ashore shortly after the ship berthed and did not come back till just before she sailed? A. I do not know. 30

Q. The Chief is always there when they are bunkering, your Engineer? A. The Chief Engineer? I cannot say because bunkering was no concern of mine. I did not care about it.

Q. But would it not be within your knowledge that the Chief Engineer would always be there, the Chief Engineer? A. Well, you would see him around but you are busy yourself in port.

- Q. The Chief Officer has nothing to do with bunkering, has he? A. No, you see these people around busy on their own duties. You have own to worry about.
- Q. The Second Engineer was not there? A. I thought Suete was Second.
- Q. Who was the man you say you saw at the valve?  
A. Suete. Whether he was the Second or Third I do not remember.
- 10 Q. You saw him down aft trying to unscrew the valve?  
A. Yes.
- Q. What sort of valve is this? A. It was only a valve. It is a stop valve in a line which led into the first tank.
- Q. What is the top of the valve? A. It has a wheel about 12 inches across.
- Q. The valve is opened by screwing the wheel around and that raises - what did you call it? A. I have forgotten now. That is correct.
- 20 Q. It operates the same way as a big tap - A. Yes, a disc affair.
- Q. When you got there Mr. Suete was doing what? A. Trying to open it.
- Q. Was that a valve that was stuck? A. It was jammed because both of us tried for a second to move it.
- Q. Was that a valve it would have been impossible to test before the ship commenced to take in bunkers?  
A. I understood that he had been using it previously.
- 30 Q. Is there any reason why that valve should not have been tested before, that you know? A. No reason whatever, no.
- Q. You would not know, I suppose, whether there was more than one valve that you could use in an emergency such as this to divert the oil from coming out of this hatch? A. I would not know.
- HIS HONOR: Q. You do not know? A. I do not know.

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MR. TAYLOR: Q. You and the Second Engineer between you managed to get it to work? A. We did not, no.

Q. So is this the position that there was nothing that you and the Second Engineer did to get this valve open? A. We could have got it open easily if we had taken the time to go looking for tools but it was far better to stop the pump.

Q. Than to what? A. Well, you have what is called a wheel spanner which has simply a patent catch on the end of it and it is a long lever which gives you a fair amount of leverage and with this you can open any heavy valves.

10

Q. You could have opened it with that? A. Well, it could have been done.

Q. But you could not open it, just the two of you, using such strength as nature gave you? A. No.

Q. I suppose you would agree that a valve that cannot be opened by two men without recourse to a tool to do it is not a very satisfactory valve, is it? (Objected to; rejected.)

20

Q. I suppose you agree that a valve in that condition is not working properly? A. No.

Q. You did not succeed, the two of you, in getting this valve to work? A. We did. At least I understand the Engineer did.

Q. When? A. Later on.

Q. It was not opened when you left? A. No.

Q. What caused you to leave? A. I thought that it was very much quicker - and so did Suete - to go to the barge, if we had to go to the barge, ourselves and shut it down or else to close the manifold back.

30

Q. You could not stop it at your end? A. No.

Q. So you thought you would stop it at the other end? A. Yes, the pumping end.

Q. You went to call out to somebody on the barge? A. Well, when we got back my recollection is that there were men on the deck of the barge.

Q. And the pumping had stopped from what you could see? A. Well, the tank was not overflowing when I went back for'd.

Q. Did you remain there for any length of time? A. The barge, no. I left immediately.

Q. At that stage there would be furnace oil covering the deck from these hatches for'd right down aft to the scuppers? A. There was a pool of oil against the after bulkhead and there was oil over the decks where it had been running down the deck.

10

HIS HONOR: Q. A pool where? A. Against the after bulkhead.

MR. TAYLOR: Q. You did not at that time look to see whether there were any signs of it having gone over the side of the ship? A. I had a look over the side.

Q. When? A. Shortly afterwards when I went back to my own job.

20

Q. Shortly after that you looked down? A. Yes, not right down but ..

Q. Which side? A. Starboard side.

Q. Did you see any sign of oil there? A. Yes, there was oil on the water.

Q. It is impossible, I suppose, for you to say precisely how long it was between the time the oil came on your face and the time you got back to the hatch out of which the furnace oil had been coming the second time? A. I would say an absolute maximum of two minues.

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Q. But you did not take the time, did you? A. No, definitely not, not under those circumstances.

Q. You will agree with me that in estimating that it is rather difficult? A. It is.

Q. As you say yourself there was a panic on at the time? A. Yes.

Q. Did you know the rate at which this fuel was being pumped into the ship? A. No, I did not know the pumping fuel rate.

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Q. Would you look at this? That is the engineroom log of this vessel on the 29th. Mr. Surney, he was the Chief Engineer, was he? A. Yes.

Q. Who is this one? A. Suete.

Q. He was the Second Engineer, was he? A. Yes.

Q. K. Holland? A. I do not know. I do not remember that chap's name.

Q. Could you make out that writing? It looks like "S-e-l-". A. It is "Sollied", something like that.

Q. What was he? A. One of the engineers, I do not know which one. 10

Q. Then there is a gentleman named McNamara? A. Yes.

Q. He was also an engineer? A. He may have been promoted to Engineer. He was a machinist at first.

Q. Although the engineroom has nothing to do with you you would have some knowledge of the structure of the ship? A. Very slight.

Q. The cargo is carried, isn't it, in tanks that are kept separate from the tanks that carry the bunker oil? A. Yes. 20

Q. And there is a double bulkhead between them? A. Yes.

Q. So that if either one leaks they do not intermingle? A. Yes.

Q. Would you know that for'd of that double bulkhead are the forepeak fuel tanks? A. Yes.

Q. There are other fuel tanks down aft? A. Yes, I am not so clear about their location. They are not visible.

Q. This ship had come direct from Bahrein to Sydney? A. Yes. 30

Q. Not called at any intermediate port? A. No.

MR. TAYLOR: The page I showed the witness with the signatures on were folios 29 and 30 of the Engine room log dated October 29th and 30th.

Q. I show you folio 123 and 124 of the log of the engineroom. You see that signature down there?  
 A. Surney, The Chief; Suete, the Second; Sollied, whatever his name is.

Q. Who is this one, do you know? A. He is a bloke, if I remember, Aert, or something like that.

Q. Who was he? A. One of the Engineers.

Q. On folio 124 there is Surney's signature, Sollied, Suete and the same man? A. Yes.

10 Q. Who was Miller? A. I do not remember him.

Q. P.29 and 30 of the smooth engine room log, the signatures on that are the ones you saw before in the rough engine log? A. Yes.

Q. The same would apply to 123, Suete's signature. The Chief has not signed this one? A. Yes.

Q. I asked you about the operation on the morning of the 29th. You say that the Caltex people couple their hose into the manifold out of which the gasoline is going to be drained? A. Yes.

20 Q. That is down where - amidships? A. Amidships.

Q. Where the pump room is is down aft, would you say, some 200 ft. or more? A. 150 ft. I guess.

HIS HONOR: 150 ft. to where?

MR. TAYLOR: From the pump room up to this manifold.

Q. Where is the Chief Engineer's cabin? A. It is in the after part of the housing.

Q. And it is two decks up above the main deck level, it is in the fore part of the after housing on the starboard side.

30 Q. Do you remember a man, Mr. Cullen Ward, from the Vacuum being there? A. No, I do not.

Q. Do you remember any civilian or stranger being aboard? A. There were quite a lot around.

Q. You do not know the bunkering officer from the Vacuum? A. No.

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Q. This is correct, the first you knew of any petrol leaking that day was when the Chief Officer called out to you? A. Yes.

Q. The petrol was leaking from a flange in a pipe that was about the centre of the ship? A. Against the after pump room, the pump room end.

Q. On the port side or the starboard? A. It was amidships. The three pipes were amidships. The flange was on the port side of them.

Q. At that time it was your duty, as you say, to inspect the lines between the pump room and the discharge manifold? A. Yes. 10

Q. And to see there were no leakages? A. Yes.

Q. You say you walked up to the manifold? A. No, I do not think I said I walked up to the manifold.

Q. Walked up towards where it was discharging, walked around the deck? A. You do not get very far from your pump controls in these conditions. You can see all your lines.

Q. You said you walked around the deck and checked the lines? A. That is what I was doing, by sight. 20

Q. Were you checking them - it would be the port side of the ship or do the lines run right up the centre? A. No, they run up the centre. I was on the starboard side.

Q. You were the only person checking? A. No, the Chief Officer was on the port side.

Q. This discharge occurred on the port side, this leak? A. Well, about 2 ft. to port of the amidships section, in the middle of the ship. 30

Q. If you were checking one side and he was checking the other side, on his side - A. On the port side.

Q. Where were you when the Chief Officer called out? A. Not very far from the pump room.

Q. Do you remember where you were? A. Yes I had just turned back towards it and immediately he shouted I saw immediately what was happening; it commenced to leak.



- Q. You say immediately he shouted? A. Well, I was just -
- Q. Where were you when he shouted? A. I would be possibly 20 ft. -
- Q. Do you remember where you were? (Objected to.) Where were you? A. I would say in the middle section of the starboard side, that is a quarter of the way from the ship's side and approximately 20 ft. from the after bulkhead for'd, 20 or 30 feet.
- 10 Q. Had you been up and checked the lines right up - A. No, you could see all your lines. Checking is a matter of doing that by sight for these leaks. The junior officer does not go very far from the pump controls so that he can deal with these things.
- Q. By the pump control is a man? A. No, we have to press a button on deck so that we can stop -
- Q. This is all on deck level? A. Yes. The man down below controls the pressure.
- 20 Q. Can you show me in this photograph - see if there is one in these photographs that shows this leaking flange? A. No, not the flange.
- Q. Is there one that shows the pump room? Is that it? A. No, it is on this one I think.
- Q. That is a pump room on another ship? A. It is exactly similar. Here is your pump room this recess here. This door you see here you can see -
- 30 Q. The door goes into the pump room? A. The door is open there but the control panel is just inside that second door. That is where the control panel is, just inside the door.
- Q. You see the pipeline running along there, the centre, that would be the type of pipeline there was? A. No, it was much longer. That is only a domestic and water line, the domestic service line.
- Q. This photograph - A. - does not show the main pipelines. It does faintly, just inside this winch.
- Q. The main pipelines are on the side? A. No, slightly on the port side of the midships side of the ship, slightly to port.

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Q. You cannot really see them in this picture at all? A. No, you cannot really see them.

Q. Of course you would be concerned, I suppose, with the question of any leak that occurred on the ship's side of these rubber hoses, would you not?

A. That would be part of it.

Q. And you would be concerned actually with - A. Not entirely.

Q. But you would be concerned amongst other things with what quantity was leaking out into these drip trays, would you not? A. Yes.

10

Q. May I take it that at some time after pumping started you went for'd to see how the connections at the hoses were? A. No, I would not go away from the pump control. I could see the rate of spillage.

Q. Did you not tell us that it was part of your duty to check the lines? A. Yes, you only have to do it by sight. At night time I would have had to have gone with a torch, of course.

Q. Do you suggest you would be able to see if anything was leaking from where these rubber hoses of the Caltex people came on to your manifold discharge from back even a few feet of the pumproom? A. Yes.

20

Q. When you heard this call do you say you saw immediately that there was a flange leaking? A. Well, I only had to turn towards it to see it and of course -

Q. You turned towards it? A. I turned towards the shout. As I turned to run to the control I saw it in passing.

30

Q. Which way did you turn? Were you up forward of it? A. I do not recollect. I was slightly for'd of the leak, yes.

Q. Where was the Chief Officer? A. He was over on the port side of the deck when he called.

Q. It was you who went and pushed the button and stopped the pumping? A. Yes, I was the nearest.

Q. You were nearer than he was to it? A. Yes.

Q. Do you remember there was more than one flange leaking? A. I do not recall, no. There may --

Q. I suggest to you where this flange was -

HIS HONOR: You again stopped the witness.

Q. What were you going to say? A. There may have been others.

MR. TAYLOR: Q. This much is clear that although you were about within 20 ft., did you say, of the pump room at the time you heard the call - A. Within approximately 20 ft. as far as I recollect.

Q. You had not observed this before the Chief Officer called out to you? A. No, I hadn't.

Q. The Chief Officer was further away from you? A. No, he was closer to the actual leak. I was closer to the pump control.

Q. He was closer to the leak. How far ahead was this pumphouse? A. Two or three feet.

Q. You say you were closer to the pumphouse door than he was? A. The pump control was on the starboard side.

Q. Where this happened, of course, would be quite close to where the scuppers were, would it not? A. No, it would be a distance of at least 15 ft. across? 15 ft. away from the scuppers? A. Unless you take a diagonal on it and it would be even further.

HIS HONOR: Q. The site of the leak? A. The site of the leak.

MR. TAYLOR: Q. It was within 15 ft? A. No, I did not say it would be within 15 ft. It would be 15 ft. I think.

Q. I will give you 20 ft. if you like, 15 to 20 feet from where the flange was leaking to the scuppers? A. Yes.

Q. That is the scupper on the port side? A. Yes.

Q. That scupper was open, not plugged at that time? A. Was it?

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Q. Don't you know? A. No, I did not look. It was not necessary. Gasoline, as I stated, was not running as far as the scupper.

Q. Do you tell His Honor that with a leaking flange and more than one leaking flange - A. It had stopped leaking immediately the pump stopped.

Q. And you are not able to say whether that scupper was open or not; you did not look at it? A. No, the Chief Officer really sent me away for tools or something and in any case the scuppers are definitely his responsibility and he would see to it and, as I stated, it was not necessary anyway. Neither of us concerned ourselves with this scupper. 10

Q. You do not know how long it had been going on?  
A. A split second, yes.

Q. You had seen it start? A. I had not seen it start but I had been looking around for just a split second before.

Q. You had been looking around and missed it? A. No, it had not started. 20

Q. It did start at some time? A. Yes.

Q. You did not see it? A. I could have been looking the other direction.

Q. You had your attention directed to it by the Chief Officer? A. Yes. I did not have -

Q. You know that the scupper was not plugged? A. No, I do not know.

Q. Will you pledge your oath that you did not look that day to see the scupper was plugged? A. Yes.

Q. It would be of vital concern to you to know whether or not that scupper was plugged? A. Only if gasoline was running. 30

Q. What about the possibility of gasoline having gone over the side? A. It did not go. You could see the deck.

Q. The deck was dry? A. Down towards the scuppers and so forth. It was -

- Q. You made an examination of that, did you?  
(Objected to.)
- Q. You say it was dry? A. It was dry except for that area I described previously which would be about 10 x 10.
- Q. How did you know it was dry? A. You could see.
- Q. Did you see it? A. Yes.
- Q. And you swear that? A. Yes.
- 10 Q. Some of it was dry and some wet with petrol?  
A. Yes.
- Q. Had this petrol run down across the slope of the deck against the scupper plate? A. No.
- Q. There is a slope, is there not? A. Yes.
- Q. It had not run down? A. It had run down and it was evaporating very rapidly.
- Q. Evaporating so rapidly that it could not get to the scupper plate. Is that what you are saying?  
A. No, for one thing on that deck there is a piece of reinforcing steel about half an inch in thickness that runs fore and aft.
- 20 Q. Was that what prevented it getting across to the scupper plate? A. That would trap some of it.
- Q. Was there some petrol there? A. I do not remember whether there was or not but there was not enough to be concerned about.
- Q. You see in 20 ft. I suppose if you tipped the deck what you had on the deck had the slope - A. But you remember it was spraying.
- 30 Q. You would expect that to run across to the scupper plate would you not? A. It depends on how it was tipped.
- Q. And how full the deck was? A. This was a slight spray that was going slightly upwards which -
- Q. How did the spray from the one that you described as a slight spray compare with what was coming out of the others? (Objected to.)

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Q. There were others leaking? A. There may have been other flanges as I said, but it would all be combined in the one leakage, the main one I am talking about. The other one would be merely drips.

Q. You did not observe them? A. No, I cannot swear to that.

Q. You cannot swear to what extent other flanges were leaking? A. I can say that they were leaking very very slightly. I can swear to that.

Q. Didn't you tell me a moment ago that you could not swear as to how they were leaking? A No. 10

Q. So is this it you are prepared to swear as to the manner in which other flanges were leaking? A. I am prepared to swear as to the manner in which the main one was leaking.

Q. But not the others? A. The others were leaking so slightly I was not concerned. I will swear to that.

Q. How many others were leaking? A. I do not recollect. 20

Q. It may have been half a dozen? A. There was not that many flanges there.

Q. How many were there? A. You might get three or four perhaps.

Q. Is that the best you can do? A. Yes.

Q. They may have all been leaking? A. They may have all been leaking, yes.

HIS HONOR: Q. If they were leaking, apart from the one which has been discussed, was there any valve on which the leak was visible to your eye? A. It is impossible to recollect clearly but it could well have been only in negligible quantity. 30

MR. TAYLOR: Q. In any valve except the one which has been discussed are you able to say whether there was a leak in any other valve beyond a drip? A. I am unable to say but I suspect there may have been a leak in another flange that was slightly more than a drip.

Q. You repaired more than one? A. My recollection is a bit vague on that but I have an idea we probably did.

Q. You repaired the lot before you started pumping again? A. No. To repair all of these valves and flanges would have taken us half a day.

Q. What did you do? A. It is only a matter of tightening it.

10 Q. You tightened up all the flanges that were there that day before you started pumping? A. That is something I would not swear to. We could have. It would be normal practice when you find one leaking flange, only one, to check the nuts on every flange. Then you would go around the whole lot because once one started the others would probably go eventually too.

Q. Is that all you want to say? A. Yes.

20 Q. Would you answer my question? You did repair all the flanges there that day? A. I am sorry I cannot answer that Yes or No.

(Luncheon adjournment.)

AT 2.10 P.M.

MR. HUNT: I did receive a message that Your Honor did not require either myself or counsel at 10 a.m. but I am concerned that, as Your Honor is leaving the City for a fortnight, some decision should be reached with regard to the documents resting in Court. Could Your Honor inform me whether we could recover the documents?

30 HIS HONOR: The documents which I have held to be privileged may be recovered by you. They may be handed out immediately.

MR. HUNT: I take it Your Honor has not altered Your Honor's ruling?

HIS HONOR: In what respect?

MR. HUNT: In respect of privilege.

HIS HONOR: Mr. Taylor closed his case and I saw no point in taking the matter any further.

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MR. TAYLOR: Q. Could you tell me when you joined the "Waggon Mound"? Were you on the previous voyage? A. I believe I was, yes. I won't swear to it.

Q. Have a look at the rough deck log for Voyage 26, and if you can tell me - A. Yes, this is my writing.

Q. Voyage 26, do you remember where the ship went to? A. No, I am sorry.

Q. Would you agree with me that no where on Voyage 26 when the vessel was in port is there an entry in that log to the effect that the scuppers were plugged? A. Well, it should have been, according to - 10

Q. It should have been? A. Yes.

Q. You were apparently in Bombay port? A. Yes.

Q. It should appear, should it not, when you went into port? A. No, at Bombay if they were there for such a long period we would be undergoing repairs.

Q. But when you came in you apparently did not? A. No, it would not be necessary. We would be in ballast. 20

Q. If you had oil in your tanks it would be necessary? A. Yes.

Q. Voyage 26, the first entry you have got there - are you in port there? A. Not here, no. Here we are.

Q. "Pilot aboard. Proceeded to anchorage Let go anchor. Pilot left". A. We would anchor there. This is to do with the cleaning and testing of the tank. 30

Q. Can you tell me whether you discharged cargo at Bombay? A. I will be able to tell you. No. We are still at anchor. You did not discharge at anchor. That would be working ballast for cleaning tanks, washing bilges, filling ballast, just on ballast, work.

Q. It indicates up to when this log commences, if you had cargo, you had discharged it previously? A. Before we arrived in Bombay.



Q. So the only two ports in this log in which you discharged cargo in the "Waggon Mound" were at Sydney and at Newcastle? A. Correct.

Q. Above where this flange was leaking there is a cat-walk? A. That is right.

Q. That goes practically the length of the ship? A. That is right.

10 Q. Do you remember on the day this flange was leaking - I withdraw that. Do you remember at any time seeing a man come out of the Engineer's cabin and walk along the catwalk and go down, cross over to the wharf on the gangplank and leave the ship? A. I cannot say -

Q. At any time do you remember seeing that? A. I cannot say that I recall it. There are so many people around.

Q. From the time you first observed this flange leaking do you recollect seeing any man do that? A. No. We were too busy I would not have been interested.

20 Q. Of course you say that from the time the leakage was drawn to your attention until you stopped the pumps was a matter of seconds? A. Yes, split seconds.

Q. I may take it that in that time, from the time you first saw it to the time you pressed the button there would have been time for a man to come out of the Chief Engineer's cabin and walk along the catwalk? A. No.

30 Q. While the flange was still leaking? A. It depends. I can explain if you wish. As you increase the pressure slightly on these pumps, it is designed to find out where any leaks are likely to be. That is the idea of running it slowly. If you only had a very minor leak you would continue pumping and tighten it up then, but it would only have to be a very small, little more than a dripping leak. So it could have been seen that there was a slight leak to begin with but as your pressure slowly increased that leak would increase also and you would simply  
40 shut down and make repairs.

Q. What you mean by that is this that there could have been a leak from this flange for some period

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of time before it increased to the extent that it was when your attention was directed to it? A. It could, a very minor one.

Q. And the pumping commenced at 11.20 didn't it?  
A. Yes.

Q. The pumping was ceased at 11.45? A. Yes.

Q. So taking your last answer, it is possible for there to have been a leak, however small it was, continuously from the time pumping started to the time pumping stopped? A. It is not possible that there would have been a sufficiency of a leak during that period to become apparent on the deck. The pumping would have been stopped. 10

Q. First of all you have agreed - A. It was possible for a very slight leak. It could have evaporated on the deck and you would not worry about that.

Q. Whatever the nature of that leak was you agree it could have been going on from the time pumping started to the time pumping was shut down? A. Yes.

Q. You told my friend that the escape of petrol from the ship was a matter that concerned you? A. Yes. 20

Q. Indeed, if you were on duty at the time it would have been your responsibility if any petrol had escaped from the ship? A. It would have been the Chief Officer's responsibility, actually I was assisting him.

Q. A responsibility in which you would have shared?  
A. Yes.

Q. Because, as you have said, your duty at that time was to see there was no leak in the ship's system? A. Yes. 30

Q. You used the expression that any escape of petrol from the ship, I think the expression was, would have earned you a blast. You mean by that that you would have been reprimanded by your superior officer?  
A. That is correct.

Q. It would have involved that there would have been some mark recorded against you? A. Yes. In addition to that there is always the question of your own personal safety.

Q. Did you notice when this flange was leaking that you could smell petrol? A. You can always smell petrol on a tanker.

Q. Did you notice any difference on the flanges?  
A. No, I cannot say I did.

Q. Do you know enough about the structure of the ships and pumps to help me on this? When you are pumping out tanks the pipe out of which you would be pumping would be down the bottom? A. Yes, the system of pipelines runs along the bottom, the whole length of the ship into your pumps into the pumproom. From there it goes up on deck.

Q. When you take in cargo that is also taken in at the bottom of the tank? A. No, it may not come in through the same manifold as we use for discharging.

Q. The same set of pipes? A. Exactly.

Q. When it goes into the ships tanks it goes in at the bottom and fills up that way? A. Yes.

Q. There is a reason for that, is there not; you do not splash it in from the top? A. No, that would create too much gas and you would not be able to check your levels.

Q. Did all the ship's tanks, including the storage tanks of cargo, not only the storage tanks but the bunkering tanks, they are filled and emptied from the bottom? A. I do not know enough about the bunkering system to say it but I would expect that to be so.

Q. And, I suppose, for the same reasons? A. Yes.

Q. Do you remember using an expression, cross-over manifold? A. Yes.

Q. That is the way you described this flange that was leaking? A. It is a connecting piece. It has linkages between three different pipelines and they are fitted with valves whereby you can fit any one of these particular pipelines.

Q. It is the whole system of valves you call the cross-over? A. Yes.

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Q. This flange which was found to be leaking is just one part of it? A. Yes.

Q. If you were standing anywhere near the cross-over manifold you would be standing - what, directly underneath the catwalk? A. No, you would be standing - it would be inconvenient to stand directly under the catwalk, there is too much of a conglomeration of pipes and equipment. You would be standing to one side slightly.

Q. Does the catwalk go over the top of this cross-over manifold? A. It does. 10

Q. When pumping started that morning can you remember where you were? A. When I commenced pumping? By the pump-room.

Q. How far is that from where the cross-over manifold is? A. It is just a mere matter of 10 ft.

Q. There is a door at the pumproom? A. Into the pumproom.

Q. Would you be inside it? A. No, normally your gauges are placed on the starboard side. 20

Q. Are the gauges inside the pumproom or outside? A. They are inside the pumproom, a place where you can view them from the outside.

Q. You can open the door and see them from the outside? A. You just look in.

Q. Are there some technicians in the pumproom? A. There is a pumpman down below operating the pressure valve.

Q. It would be one man down below and yourself, either in the pumphouse or outside the door? A. And the Chief Officer directing operations always, at the commencement of the operation. 30

Q. It is your duty to read the gauges as soon as it commences pumping? A. Yes.

Q. They are pressure gauges? A. Yes.

Q. They also have quantity gauges? A. No, only pressure gauges.

- Q. Do you have to record the readings of those?  
A. No.
- Q. You just watch them? A. That is correct.
- Q. Are you given some instructions before pumping commences about the pressure at which you are to start? A. That particular morning, it depends on the condition of the pipelines ashore. That particular morning, so far as I can recollect, we commenced at 15 to 20 pounds.
- 10 Q. That is an instruction you get from somebody else? A. Yes.
- Q. That figure may vary? A. It may vary slightly.
- Q. You may start at 15, you may start higher or lower? A. Yes.
- Q. Is any record made at the time of the pressure at which you start? This is not put in the log apparently. A. No.
- HIS HONOR: Q. The pressure valves are not self-adjusting? A. No.
- 20 MR. TAYLOR: Q. As you increased pressure, is that left to your discretion? A. No, providing we are satisfied with our own pipeline system, the shore staff would have to be satisfied about their line. They are receiving the cargo and that will vary the increase.
- Q. You mean by that that you do not increase it above the pressure you start at until you get some communication from people on shore? A. Providing we are satisfied.
- 30 Q. On this particular morning did this happen; I think you have told us that you increased it starting at 15 to 20 lb. and you increased it above that? A. Yes, it was -
- Q. What I want to know is where did you get the instruction from to increase your pressure? A. I got it from the Chief Officer.
- Q. You mean by that that you got it verbally from him? A. Yes.

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Cross-  
Examination -  
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Cross-  
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continued.

Q. He came and told you in the pumphouse? A. I was not inside. I was standing outside waiting for the order.

Q. When you got that order I suppose you had to communicate it in turn to the man down below?

A. Yes.

Q. Having communicated it to him you then had to watch your gauges and see the instruction was carried out? A. No, not all the time because the pumpman - if you wish me to explain - always on the tankers I have been on they must increase pressure very very slowly, which they do. It is a standing instruction that they must increase pressure very slowly.

10

Q. I thought you told me a moment ago - A. Which gives you a chance to watch your pipelines and your hoses, to watch for leaks. That is the idea. To simply bang the pressure up to 100 lb. per sq. inch from 20 is crazy and in that time - it may take you ten minutes to ease the pressure from 20 to 60 or 70 and in that time you are backwards and forwards between the pumphouse and keeping an eye on the lines also.

20

Q. Could you tell me what the pressure was increased to on this particular morning? A. I cannot tell you. I did not look at the pressure when I shut the pump down. I shut it down immediately.

Q. You started at 15 to 20 and you have told me you were given some instructions to increase it? A. Yes.

Q. What is the maximum pressure at which you pump out of a tank? A. It depends on the condition of the shorelines, what they will allow, but our maximum on the ship is 125 lb. per sq. inch, on that class of ship.

30

Q. The maximum is 125 provided the shorelines will stand it? A. Yes.

Q. Would I be correct in assuming that the greater the pressure the greater the discharge? A. Correct. I have an idea Caltex at that time was 60 to 70 but that is only a vague recollection.

40

Q. I suppose your idea would be to build up to the maximum provided you could do it, provided it was

all right with the shore people and what you had - you would get to the maximum? A. No, we were never in a hurry

HIS HONOR: What maximum do you mean, the ship's maximum or the maximum on the line?

MR. TAYLOR: The maximum on the line.

Q. Are you serious when you say you are never in a hurry? A. No, we are not. You are only in port for one or two days after being 60 days at sea.

10 Q. This ship was on a daily rate of charter? A. I do not know about that. Captains worry about those things.

Q. Can you tell me what you increased the pressure to from 15 to 20 when you got the communication? A. I cannot tell you but I have a vague idea that it may have got up to about 60 or 70. That is only very vague. I won't say definitely.

20 Q. On your recollection of it 60 or 70 would be the maximum for this ship on the Caltex wharf this day? A. To my recollection, yes.

Q. How long would it take to build up from 20 lb. pressure to 60? Can you do it straightaway? A. No.

Q. How long does it take? A. It would take you at least ten minutes.

HIS HONOR: Q. Can you do it straightaway? A. No.

30 Q. Is there any physical obstacle to you doing it straightaway? A. Yes. Your bypass valves are usually fairly heavy and the pumpman operating them is on his own so that he cannot close them quickly enough. It is not a question of shutting a valve off. You have to work the valve around.

Q. He increases pressure by closing down the bypass valve? A. Yes.

Q. The process is a gradual one irrespective of any orders you may give? A. Yes

MR. TAYLOR: Q. You have no bypass valves but the man down below - A. He is operating one, one on each line.

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continued.

Q. When he is pumping at 15 to 20 lb. pressure he has that valve open, I suppose, to a certain extent?  
A. That is right.

Q. To increase the pressure from that to 60 he has to shut it off - not entirely? A. That is right.

Q. But he does not close it off entirely? A. No.

Q. If he closed it entirely you would get maximum pressure in your lines of 125 lb? A. That is a very technical process. If you had the pipeline ashore and you had short leads you would not get 125 lb. In those circumstances it would be correct to say that, yes.

10

MR. TAYLOR: Q. So altering the by-pass valve to increase 15 and 20 would necessitate him turning the tap wheel? A. Yes.

Q. You observed, I suppose, whatever pressure would be applied to increase it and you would take observation of the gauge, and test it, and see it did not go above? A. Yes.

Q. That means, I suppose, you would have to see the gauge after he had closed down the valve? A. Well, observe it periodically, as it comes out.

20

Q. You observed it periodically? A. As it comes out, as the pressure rises.

Q. I suppose to notice the pressure that has been ordered you watch it pretty carefully? A. Yes.

Q. When it gets close to the pressure that has been ordered you watch it carefully? A. Yes.

Q. That is your job? A. In addition to this, the pump man has a gauge of his own.

30

Q. That is not good enough? A. No.

Re-  
Examination.

RE-EXAMINATION

MR. MEARES: Q. You were asked a question about having a mark against you? Do you recollect that? Mr. Taylor suggested that certain conduct might be a mark against you? A. To allow gasoline to run into the harbour?



Q. Or over the side? A. It would not be so very serious so far as the company was concerned but it would get me a blast from the old man, and would be a reflection --

Q. From the skipper? A. Yes.

10 Q. As far as you can recollect when you refer to being reprimanded by the Master; if it was the Chief Officer's fault he would be reprimanded - not you? A. Correct. The senior officer present takes the responsibility for everything that goes on.

Q. You were asked about people walking across the catwalk and whether you saw anybody walking across the catwalk when this leak was being attended to. When you were attending to the leak was your attention fully concentrated on it? A. Attending to the leak? A. Yes, it was.

20 Q. At any time on the 29th did you have any report from anybody at all when you were on duty about any leak of petrol into the harbour? A. None whatever, no.

Q. You have spoken a lot about scuppers; do you follow me? A. Yes.

Q. Some scuppers I think are designed for the purpose of taking away a sea that has come on board? A. Yes.

Q. Were the scuppers on this ship designed for that purpose? A. No. They were merely for the purpose of drainage.

30 Q. Draining what? A. Draining water, when merely washing down, or the remains of a sea that has come aboard.

Q. There was no need to have draining scuppers for the sea, because --? A. There were no bulkheads on the ships, just rails, and it flowed over.

40 Q. So far as the scuppers were concerned, can you give the Court an idea of their dimensions? A. I do not remember from that class of ship, but I would say possibly about three inches by four inches. Something like that. That is only a guess.

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continued.

Q. That is the best you can do? A. Yes.

Q. If one were walking along at what intervals would they be put? Very roughly, to the best of your ability. A. No closer than 50 ft.

Q. Approximately every 50 ft.? A. That is only a guess too.

Q. Then Mr. Taylor asked you was it possible that there was a leak on more than one flange. Do you remember that? A. Yes.

Q. You cannot recall any more than one leak? Is that correct? (Objected to as leading.) Can you recall more than one leak or not? A. No, I don't.

10

Q. You can only recollect one leak? A. Yes.

Q. When Mr. Taylor speaks of more than one flange, are the flanges all sort of concentrated at the cross-over manifold? A. Yes.

Q. Then you were asked by Mr. Taylor about the names of certain persons in the Engineer's log book, at Folios 29, 30, 123 and 124. Do you recollect that? A. Yes.

Q. Are you able to identify those signatures or simply the names? A. The names, not the signatures.

20

Q. You are not in any way connected or interested with the plaintiff now? A. No---

Q. I am sorry, with the defendant? A. No.

Q. After you went off duty at 5 a.m. on the morning of the 30th, until just before sailing time, you told me you turned in? A. Yes.

Q. You were asleep. Then you were asked by Mr. Taylor might it have taken you five minutes from the time you felt the oil on your face until you saw the hatch or trunk not spew forth oil. I think you said that the absolute maximum would be two minutes? A. Yes.

30

Q. But do you adhere to your evidence that the best you can do is that it was, in your opinion, a minute or just a little over? A. Yes. That is my opinion.

(Mr. Meares asked that the witness could have permission to leave the Court.)

HIS HONOR: Q. When is your ship likely to be back in Sydney? A. Approximately 28th March. I was on board at lunch time and they have a relief for me. It will be leaving at three o'clock so it is not necessary for me to go and catch the ship now.

Q. You have still got to catch it in Brisbane, have you? A. Yes.

10 MR. MEARES: We will find out his port, and do everything we can if my friend wants him.

HIS HONOR: Q. By the way, Mr. Meares, you did not obtain the witness' address when he was giving his evidence.

MR. MEARES: I am sorry, Your Honor.

Q. Would you tell me your address? A. The best one is "c/o the Marine Superintendent, Burns Philp, 7 Bridge Street, Sydney".

20 HIS HONOR: Q. What I want to know is: are you a Sydney resident when you are ashore? A. I am not really. We live on the ship while the ship is in port.

MR. TAYLOR: Q. What is your home port?

MR. MEARES: Q. What is your home port? Mr. Taylor wants to know. A. Melbourne.

(Witness retired and allowed to leave.)

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No. 36

EVIDENCE OF F. W. GODFREY

FRANK WILLIAM GODFREY

Sworn, examined, deposed:

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F.W. Godfrey.  
Examination.

TO MR. MEARES: My name is Frank William Godfrey.  
I live at 24 Welsh Ave., Glebe Point. I am a  
boilermaker by occupation.

Q. You were employed at Morts Dock on the day of the  
fire, the subject of this litigation, which was 1st  
November, 1951? A. Correct.

10

Q. And you have been following the trade of boiler-  
maker for upwards of 20 years, and to the best of  
your recollection you were employed at Morts Dock  
from approximately 1948 until 1957. Is that right?  
A. At that particular time, yes.

Q. So that you had been working on the Sheerlegs  
Wharf for some time when the "Corrimal" was along-  
side? A. That is right.

Q. You had a mate, an assistant, working with you?  
A. Yes, a chap named Sid Hill.

20

Q. Do you recall some oil or substance in and around  
the Sheerlegs wharf? A. Yes. On the day previous,  
I think it was. I am nearly sure it was the day  
previous - there was a lot of oil around the wharf  
and in the bay.

Q. You were working on 1st November until the fire  
started. Is that correct? A. Yes, that would be  
right.

Q. You were working, were you, on the wharf? A. On  
the wharf.

30

Q. What were you working on? A. I was using an oxy  
acetylene burner.

Q. Where were you burning? A. On the mast at one  
time, and at the time of the fire I was burning bolts  
to make into studs.

Q. And the mast was lying fore and aft, to the wharf,  
parallel to the way the ship was laying? Is that  
correct? A. Yes.

Q. As to the bolts that you were dealing with; may I take it that your mate was holding the bolts?  
(Objected to as leading - objection withdrawn.)

Q. What were you doing? What were you and your mate doing with the bolts? A. With the bolts, sir, my mate was holding them with a pair of tongs, while I burnt the heads of them so they could be welded on for studs.

10 Q. You were taking the heads off the bolts to use as studs on the mast? A. That is correct.

Q. Did you at that time have anything underneath you? A. Oh yes, we had wet bags.

Q. Who put them there? A. My mate, Sid Hill, He was the chap who put them there. We also had a bucket of water.

Q. Is that all you had in the way of protection?  
A. That is all I can recall. That is the usual procedure when you are burning over wood.

20 Q. So far as putting those things there; that is the function of your assistant? A. That is correct.

Q. And has always been in the trade ever since you have been in it? A. Always. The ironworker generally does that.

Q. As to what was the size of this bagging, you would not know? A. I beg your pardon?

Q. You would not know the size of the bagging?  
(Objected to.)

Q. Do you know the size of the bagging? A. I would say an ordinary corn sack.

30 Q. Where were you, Mr. Godfrey, on your recollection in relation to the midships - centre - of the "Corrimal"? A. I would say I would be practically midships of the "Corrimal".

Q. Can you tell me how far you were from the edge of the wharf or the sponson of the wharf? A. I would say roughly about 10 feet.

Q. And you were about your duties, taking heads off

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F.W. Godfrey

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continued.

bolts, assisted by your mate? A. At that particular time, yes.

Q. At that particular time was there anybody doing anything on a floating stage? A. To the best of my recollection - I think it is pretty right - there was a chap on a floating stage amidships on the boat, underneath the bridge, and he was hanging over the side of the ship.

Q. How high was he; take his feet? How high approximately were his feet above the wharf? Just do the best you can? A. I would say he would be above the wharf - he may have been five or six feet. 10

Q. Five or six feet; that would be his feet? A. Yes.

Q. And he was facing in towards the side of the--?  
A. The side of the ship.

Q. Doing some welding on the side of the ship?  
A. Correct.

Q. That was actually at the time of this fire?  
A. Yes.

Q. Was he a Morts -- 20

Let me ask you this: Were there any air pipes there? Do you know an air pipe? A. Yes. Compressed air you mean?

Q. Yes, compressed air. A. Yes.

Q. Can you just tell me where they ran from and to?  
A. They ran from a pipeline off the wharf, like the feeder pipe line on to the machine. They were air-propelled, for the rivetting machine, the reaming machine, and that class of machine. They were air-propelled, like a machine tool. 30

Q. During the process of the work was there a number of this equipment using air working together? A. Oh yes, there would be three or four lines running onto the wharf, I would say, like flexible hoses.

Q. Three or four air hoses running from the ship to the wharf, in turn running from the wharf to this main compressed air pipe? A. Correct.

Q. At the time of the fire were these pipes there?  
A. Yes.

Q. Were they burnt by the fire? A. Yes, they were burnt.

Q. Did you ever at any time hear any noise from them? A. When they busted I heard the noise of the flames started - like a fire was accelerated and it seemed to come through the wharf.

10 Q. Let us get the picture. You were going about your duties. What was the first warning you received of any fire? A. There was a chap, I think his name was Charlie McCabe, and he drew my attention to it. I was working near him. He said "It's alight" or "She's alight" or something to that effect.

20 Q. What did you do? A. I saw smoke arising from underneath the pile about amidships, opposite the "Corrimal" and I had a look over the side and saw flames around the pile and smoke arising off the water.

Q. Flames? In your recollection can you tell us for certain whether they were on the water or on the water and on the piles or only on the piles? What is the best of your recollection? A. They were around the pile. You could not tell by the smoke but definitely the pile was alight.

Q. When he said "She's alight" you had a look over, did you? A. That is right.

30 Q. After that, what did you do? A. I walked back to where I had my burning gear and I was talking there for awhile, you know, generally. I could not say or recollect now what the conversation was, but it was appertaining to the fire, and we stayed there five or six minutes, and a lot of smoke came up, and round about 10 minutes after the Fire Brigade came down and we ajourned then.

Q. What did you do at that time? A. We walked over towards the store. There is a store on the side of the wharf - and off the wooden planking.

40 Q. When you mentioned these fire hoses and the fire seeming to gain in velocity, when was that - can

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continued.

you tell us? Was that shortly before the Brigade came or very early in the piece, or when? If you do not know say so. A. When the fire got a real go on, I would say it was just before the Brigade arrived.

Q. Were you able to observe whether there was any fire on the water on the starboard side of the "Corrimal"? A. No, I could not see --

Q. Could you give the Court an idea as to where the fire was? A. In relation to the wharf? 10

Q. Yes. Whichever side it was --? A. It was about amidships on the "Corrimal" under the bridge - the housing on the bridge - and that was more towards the Yeend St. wharf.

Q. It was about amidships on the "Corrimal"? A. On the "Corrimal"

Q. Was the fire forward - more towards Yeend St. wharf or not; and where did it go to? A. You mean did I see where the fire spread to?

Q. Yes. A. I couldnot say which way it went but it seemed to go back towards Morts Dock. 20

Q. Did you see at any time a fire spreading on the sides of the ship? A. No, I never noticed that.

Q. Did you see whether there was any fire for'ard of amidships of the "Corrimal"? A. No, I could not say that either. It was mostly amidships. That is where it started.

Q. When those hoses were burnt, what did you say you noticed? A. I heard the hoses bust and the compressed air escaping, and when that happened the flames started to go up through the cracks in the wharf. 30

Q. When you are cutting with a welder, with an oxy-torch, are you throwing sparks when you are cutting? A. It all depends how you are holding your torch. Certainly, you throw sparks because you are creating what they call a slag. That is, molten metal drops out of the burnt metal that you are burning.

Q. What about when you are using a holder when you



are welding? A. Like electric welding? You have practically the same effect. You still have sparks dropping.

Q. They will cascade? A. That is right.

Q. Would you give us a rough idea, if you could, of the distance from the wharf to the water, at the time of the fire? A. The wharf to the water?

Q. Yes. A. I could not say. I could not say what tide it was, but even at any tide it would be 8 ft. at least.

Q. Apart from those noises when you heard the compressed air escaping, did you hear any other "woofing" noise, I can use that expression, that you recall? A. I think I have a recollection of an acetylene or oxygen bottle busting. However, I think that was on the ship.

Q. Apart from that you heard no other unusual noise? A. No. I could not say I did.

HIS HONOR: As counsel are aware, I will not be available for two weeks for the continuation of this hearing.

MR. MEARES: We were going to ask Your Honor if Your Honor would resume the hearing of this matter on the 11th March, not the 10th. That is a Tuesday, if Your Honor is to resume in that week. I then wanted to mention something else to Your Honor.

HIS HONOR: If I do not resume in that week you may find yourselves in further difficulties later on.

MR. MEARES: I just mention this because I do not wish to mislead my friend. Your Honor will recall that I mentioned that as a result of this case that my friend sought to make against me I would have to have further inquiries made as to further evidence, and I am still not in a position to indicate at this stage whether we will have that evidence by 11th March or not. But I would ask Your Honor to accept my assurance that I will do everything I can to see that it is got.

HIS HONOR: I have no doubt about that, Mr. Meares. You said you will do your best; that is quite

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sufficient.

MR. MEARES: We will, and I have told someone to  
hurry up.

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(Further hearing adjourned until 11th March,  
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IN ADMIRALTY

CORAM: KINSELLA J.

MORTS DOCK & ENGINEERING CO. LTD. v. OVERSEAS  
TANKSHIP U.K. LTD.

SIXTH DAY: TUESDAY, 11th MARCH, 1958

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No. 37

10

Application  
by Counsel  
for Plaintiff.

APPLICATION BY COUNSEL FOR PLAINTIFF

11th March 1958. MR. TAYLOR: I handed to my friend, and subsequently  
handed to Your Honor, the work and time sheets of  
the 29th and 30th November, that were subpoenaed.  
Might I have them back? I will produce them at  
any time to my learned friend. I produce them as  
on subpoena, though no subpoena has been served.  
(No objection; documents handed to Mr. Taylor.)

(Dennis John Hickey, an articled clerk of the  
firm of Hughes, Hughes and Gardiner, solici-  
tors for Vacuum Oil Company, produced on sub-  
poena duces tecum documents from the Vacuum  
Oil Company, being a file containing an  
analysis of records as set out in the subpoena  
of 10th March, 1958.

20

On Mr. Meares' application His Honor made  
these documents available to both counsel.)

No. 38

EVIDENCE OF F.W. GODFREY (continued)

FRANK WILLIAM GODFREY,  
Examination continued:

MR. MEARES: I have no further questions I wish to ask Mr. Godfrey in chief.

CROSS-EXAMINATION

MR. TAYLOR: Q. You are no longer employed at Morts Dock? A. No.

10 Q. You left some years ago, I think; did you not?  
 A. About 12 months ago I was discharged on account of lack of work.

Q. On this day that the fire took place you were using this oxytorch - they call it, do they not?  
 A. That is right.

Q. Some distance back from the edge of the wharf?  
 A. I would say round about 12 feet from the edge of the wharf.

20 Q. You told us that previously, just before the fire started, you had been doing some work on the mast?  
 A. I had been doing work for the mast.

Q. Actually at the time you first saw this fire you were cutting the heads off bolts? A. That is correct.

Q. When you were working on the mast the mast had been held up by the big crane, I suppose? A. No. It was on its cradle, a trestle.

Q. In a trestle? A. Yes.

30 Q. You yourself were working cutting these bolts; and the heads would be dropped into a drum of water?  
 A. We had a drum of water there, and also wet bags

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continued.

underneath actually where we were working. The water was to saturate the wet bags.

HIS HONOR: Q. It was not for the purpose of dropping the bolt heads into the bucket? A. Some of them could have fallen in.

MR. TAYLOR: Q. From time to time you would move about over, I suppose, those weeks? You would move the places where you were using this oxy-torch - move your gear? A. Yes.

Q. When you moved your gear there was quite a bit of it to shift? A. Yes. You would not be on the one job too long; not in the one position, I mean.

10

Q. And you have have moved it up and down this wharf, I suppose, as much as 30 or 40 yards over the period? A. Over the period the ship was there?

Q. Yes? A. Yes.

Q. Do you remember that you had sheets of corrugated iron underneath the bags, or flat iron? A. I could not say that. That was a job for the ironworker - to do that.

20

Q. The riggers moved you when you had any gear or stuff to be moved? When you had any gear or safety precautions that had to be moved the riggers did that? (Objected to.) A. No. It was the ironworkers job to do that. (Objection withdrawn.)

Q. You say it was the ironworkers' job? A. He was the chap who was supposed to assist me and see that everything was moved.

Q. He assisted you in the ironwork, but the moving of this gear is a job for the riggers, is it not? A. No. I would not say that. There were only the bags and a bit of --

30

Q. A bit of tin? A. If there was any tin there the ironworker could easily shift that.

Q. You have got a pretty clear recollection of this day, have you? A. Yes. I think it was something that you would not forget in a long while.

Q. Do you remember telling us on Friday last how you

walked over and saw some flames down on the water near one of the piles? A. Yes.

Q. And you went back to where your oxy-burner was and you talked there for a few moments and then strolled off the wharf? --

MR. MEARES: I don't think he said that.

MR. TAYLOR: Q. "I walked back to where I had my burning gear and I was talking there for awhile, you know, generally. I could not say or recollect now what the conversation was but it was appertaining to the fire, and we stayed there five or six minutes and a lot of smoke came up, and round about ten minutes after the Fire Brigade came down and we adjourned then."

10

20

Did you intend to convey by that that it was quite leisurely; your going off this wharf was quite a leisurely proceeding and there was no panic? A. No. At the time I walked off the wharf the wharf was not really alight then.

Q. Was not really alight. You had plenty of time to have a talk and then stroll off the wharf? Is that what you say? A. Yes.

Q. You say you have got a clear recollection of that? A. Pretty well, because the Fire Brigade knocked a fence out and I walked out that way.

30

Q. I want to put to you an entirely different picture. I want to suggest to you that this fire broke out so suddenly that you had to run off the wharf. What do you say to that? A. I would say it would be not right.

Q. And you would be quite sure of that? A. Certainly.

Q. So suddenly that you did not even have time to grab your bag or a cardigan? A. My cardigan was lying on the mast.

Q. You did not have time to get it, did you? A. I did not think about it at that time.

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Q. You say you did not think about your cardigan?

A. No. It was not cold at the time.

Q. Was there anything else you did not think about or left there inadvertently? A. I left some of my tools there

Q. You left and had destroyed in this fire a centre pin? A. Yes.

Q. That is a thing you use in your burning gear, isn't it? A. Yes.

Q. Your own property? A. Yes.

10

Q. A pair of dividers? A. Yes.

Q. A centre punch? A. Yes.

Q. Your cardigan? A. Yes.

Q. And a steel rule? A. Yes.

Q. Those things: the rule, pin, dividers and the punch, were all things you were using in your work that day? A. No.

Q. Were they not? A. No.

Q. They were all near the mast where you were working? A. No.

20

Q. They were all near the mast where you were working? A. No, I was not using those sort of things. I was burning the bolts at that particular time.

Q. You had been using them when you were working on the mast? A. Yes.

Q. Did you forget them when you leisurely strolled off the wharf? A. There was more to distract my attention, I think, with the fire.

Q. You, I suppose, were worried about the men with the "Corrimal", were you not? A. Certainly, to a certain extent.

30

Q. Did you think to run down to the after end of the "Corrimal" to go and warn them? A. No.

Q. I suppose you saw men jumping off the side of the "Corrimal" on to the -- A. The "Audrey Dee"?

Q. Yes? A. I heard about them jumping on to it.

Q. You heard about it? A. I was on the opposite side to that.

Q. At the time you went off the wharf - left the wharf - would you agree that the flames were burning between the "Corrimal" and the wharf down at the after end of the "Corrimal"? A. No.

10 Q. You would not? A. No. It would be burning about amidships.

HIS HONOR: That is at the time?

MR. TAYLOR: At the time he went off the wharf.

Q. So you could see no reason, I suppose, at the time you went off the wharf why anybody could not have come off the gangplank at the after end of the "Corrimal" on to the wharf? A. I do not know if the gangplank was down at the after end of the "Corrimal". I think it was in the amidships.

20 Q. When you went over and saw this bit of fire, you say, it was pointed out to you by a man named McCade? A. That is right.

Q. There was a fire, Was it burning on the water? A. No. It seemed to be on the pile.

Q. You are not sure about it, are you? A. I would say it was mostly on the pile because that is where I saw it first.

30 Q. It could not have been that there was something floating on the water next to the pile? A. No. I would say it would be the pile, I should think.

Q. You should think? A. Yes.

Q. You have some doubt about it? A. It is a long while ago. I have a clear recollection of that.

Q. However, you did nothing about it? A. There was nothing I could do about it.

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Q. You did not sound the alarm or tell anybody there was a fire? A. Everybody who was working on the wharf knew about it, I think.

Q. And you watched it there for some minutes? A. Yes.

Q. And it was a small fire burning around the edge of one pile of this wharf? A. As far as I could see.

Q. That is all you saw? A. That is all I could see. It could have been under the wharf.

10

HIS HONOR: Q. If it was a small fire at one pile, what did you observe or see that led you to believe that everybody knew about it? A. A chap named McCabe said, "A fire is there", and everybody who was working on the wharf was working around that vicinity. It was mostly on the mast, and the mast was about amidships of the wharf and where the fire broke out was about amidships of the position of the boat.

MR. TAYLOR: Q. You did nothing about it? A. There was not very much I could do about it.

20

Q. I suppose you could have thrown the bucket of water over it? A. I did not have any water to throw on it.

Q. What about the drum you had? A. I did not have any drum.

Q. I thought you had a drum of water? A. We had a bucket of water there to saturate the bags when we were burning on them.

Q. You could not have used it to put the fire out? You knew there was water on the wharf? A. I did not know there was.

30

Q. You knew there was a fire on the land side of the wharf? A. The water was not alight on the top. It was alight on the pile near the wharf

Q. Nothing about it alarmed you at all? A. Not at that particular time.

Q. When you got alarmed was when you saw the flames coming up from the cracks in the wharf? A. That is right.

40



Q. You remember before you saw that you heard the sound like a "swoosh"? A. Yes.

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Q. Do you remember telling my learned friend on Friday that there were some compressed air pipes on this wharf? A. They were running off, the compressed air pipes, the flexible pipes, on to the ship.

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10 Q. And of course flexible hoses on to the ship go for some distance above the decking of the wharf?  
A. Yes.

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Q. Let me show you in the photograph. (Showing Exh. B4 to witness). You see a pipe sticking out, that looks like a small -- A. That is right. That is where they connect it.

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Q. That is an aluminium pipe that goes up from the wharf and it has, I suppose, what you would call valves going off it? A. That is right. You connect up with them.

20 Q. And to those valves the men, if they are working on the ship, would put their rubber hoses and go from there into wherever they are working in the ship? A. That is right.

(Exh.B4 shown to His Honor by Mr. Taylor.)

Q. I am showing you a copy of it. (Shown to witness). This hose of course would be some distance above the wharf? --

MR. MEARES: Do you mean where they were connected to the wharf?

MR. TAYLOR: Yes.

30 Q. It is a height - it stands three or four feet above the wharf? A. Yes, it does; but still, all the same, I have seen hoses in the water.

Q. I suppose sometimes you have seen hoses -- A. Yes, with a dip in them.

Q. You did not see any there that day, did you?  
A. I did not notice any.

Q. I suggested to you that they were aluminium. I

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think I was wrong. I think they were galvanised iron pipes? A. I should think they would be, yes.

Q. And those pipes that go to this - what I might call - valve point, they are underneath the decking of the wharf? A. The pipes themselves that carry the air?

Q. Yes? A. I would not know.

Q. They are not on top of the decking of the wharf? I suppose you know that, don't you? A. I do not know whether they go under the wharf. I do not think they run along the wharf, all the way along.

10

Q. I suppose you have a number of these points - two or three of these points - on the wharf? A. I think the plumbers connect them up where they are wanted, in what position on the wharf you need them.

Q. Are you suggesting you saw these rubber hoses burst that day? A. I am not suggesting that. I heard them burst.

Q. You heard a noise? A. Yes.

Q. And you took that to be -- A. The rubber hoses.

20

Q. That is the hose between the valve take-off and the machines the men were using? A. Yes.

Q. That is what you took it to be? A. That is what I thought it would be.

Q. That is because, I suppose, you heard a roaring noise? A. A hissing noise.

Q. Can you tell me where you were when you heard that noise? A. I was in close to where I was working. I had not shifted from there a great deal.

Q. May I take it that it was about that time you left the wharf? A. No. I do not think I left the wharf until the Fire Brigade came down.

30

Q. After you heard this hissing noise the fire spread very rapidly, did it not? A. Yes.

Q. And you saw it, I suppose - the flames coming up from underneath the wharf? A. I saw dense smoke, anyway.

Q. Dense black smoke? A. Yes.

Q. Did you see the oil on the water burning - black smoke? A. No, I did not bother looking over again, over the side of the ship.

Q. Did you see it burn further out in the bay, round the counter of the "Corrimal"? A. No, I did not see that.

Q. At the time you heard this hissing noise do you say then you could see where the fire was? A. No.

10 Q. What I am suggesting to you is that at the time you heard this hissing noise you were standing near where you were working and you were not conscious of any danger from fire? A. Not at that particular time.

Q. And that you then heard what you described as a hissing noise and in a very short space of time the whole of the underneath wharf caught aflame? A. I could not see that. I was not looking underneath the wharf. I saw the smoke coming up around the --

20 Q. Let us take it this way: You heard the hissing noise and then the fire spreads very rapidly?  
A. Yes.

Q. Was it just after you heard the hissing noise that you observed - if you did - the "Corrimal" itself was on fire? A. I do not think the "Corrimal" caught alight at that time.

Q. You do not think it caught alight? A. No.

Q. But it did catch alight at one time? A. It did at one part of it.

30 Q. You remember that as well as the hissing noise you talked of an explosion. I think you called it "busted". Do you remember saying you heard that; that you had a recollection of hearing the acetylene or oxygen bottle busting? A. I did hear that.

Q. You mean, by that, an explosion? A. Yes.

Q. When you heard that you had got off the wharf, had you? A. I could not say. I think I had left the wharf.

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Q. That is what I am suggesting to you. You heard that after you left the wharf? A. Yes.

Q. That took place and came from the ship itself?  
A. I think it was on the ship.

Q. At this point when you heard that the "Corrimal" was well and truly alight, was she, or do not you quite remember? A. When the "Corrimal" caught alight, it was aft of the ship, and I was working more forward of the ship. I could not say where the "Corrimal" caught alight, what part of the ship, but it was mostly aft of the ship that the "Corrimal" caught alight. It was not forward at all. 10

Q. I am not asking you where it caught alight. You did see some part of the "Corrimal" burning? A. I saw the "Corrimal" burning at the after end of it.

Q. Down the stern? A. Aft of the ship.

Q. We will try it this way: Somewhere between amidships and down aft? A. More aft, of No. 2 hold.

Q. Where was the mast? Where were the cross-trees that day? A. I think there is one forward and one amidships. 20

Q. Do you remember saying one of the cross-trees was alight? A. No, I cannot remember saying that.

Q. You see that photo I show you. (Showing Exh.A3 to witness). That is a photograph taken from the land side, looking across back of the wharf where all that junk is, on to the "Corrimal" at some time of the fire.

You see that mast that is shown there? Do you say she had two like that? A. I thought there was one forward, but I am not sure. 30

Q. That (indicating on photo) looks like the aft?  
A. I think that is one amidships. That looks like one down there forward of the skippers - the Captain's - accommodation. I am not sure.

Q. Do you remember seeing some of the men from Mort's Dock playing a Mort's Dock hose on the fire before the Fire Brigade got there? A. No. I have no recollection. I saw a hose played there but I thought it came from the Caltex Company. 40

Q. Was that before the Brigade came? A. Yes. It was before the Fire Brigade came.

Q. The wharf was well alight? A. There was dense smoke coming up. I could not say whether the wharf was really alight then.

Q. The fire was well under way when that hose --  
A. When the Caltex people came, yes.

Q. Does this put to you accurately a picture of it: At first there is a small fire down near the water on one of the piles? A. Yes.

10

Q. And nothing is done about that by anybody that you see? A. Not to my knowledge, no.

Q. And at some time later - and I leave the period blank - there is a noise which I think you have described as a hissing noise? A. Yes, like escaping air.

20

Q. And that within minutes of that hissing noise there are first of all dense black smoke and then flames coming through the wharf, between the wharf and the ship? A. I would not say it was minutes.

Q. Seconds? A. It would not be seconds. It was a fair interval of time. I really think it was the hissing noise, soon after the hissing noise, that the wharf seemed to, you know --

Q. That is what I am putting to you.

MR. MEARES: "Seemed to, you know" - What?

WITNESS: I think it was after the hissing noise I heard, I thought it was escaping air, and that fanned the flames along.

30

MR. TAYLOR: Q. So the time between your hearing the hissing noise and the time between the hole between the wharf and the ship being alight is a very short space of time? A. Three or four minutes.

Q. You agree with me after that - for that fire to have burnt through that hose that day, the top of the wharf would have to be alight, wouldn't it?

A. I do not think that would be necessary either; if the hoses were in the water.

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Q. Either the top of the wharf or the water has got to be alight? A. I could not see over that side of the wharf.

Q. You do not suggest that day that you saw any hoses down in the water, do you? A. No.

Q. Of course if you were right, if air escapes from this hose, do you suggest there is more than one hose? A. Yes. I would say more than one hose was connected up there.

Q. What? A. I would not know how many bust because I did not see them bust. I just heard them.

10

Q. You heard them and you think that hoses burst? A. That is what I naturally think.

Q. How many do you say you heard bust? A. I did not say I heard any bust. I say I heard a hissing sound from them bursting.

Q. Did you hear that once? A. After the hissing sound I could not say what it was then - it is a long while ago - I could not say what the sound was like but they seemed to be the start of the main fire, when they started to bust.

20

Q. We have got this much: You put the start of the main fire in relation to the time you heard this hissing noise? A. That is correct.

Q. You will agree with me from the time you heard what you call the start of the main fire there was a fair bit of panic and confusion down there? A. I really was not concerned about that at the after-end of the ship. Around our quarter there was a lot of discussion going on about it.

30

Q. I do not mean discussion. I mean there were men running off the wharf and leaving their gear behind? A. I do not think there was that much panic, because the crane driver drove the crane where I was working away from the ship, away from the seat of the fire.

Q. Did not you see that day men running off this wharf? A. I might have been one of them myself. I cannot recollect them, you see ---

Q. What I am putting ---

MR. MEARES: Let him finish.

MR. TAYLOR: Q. What were you going to say? A. What I would like to tell you is that the wharf is not only made of wood. You step off the wharf and you can tread on to ground around the building.

Q. You yourself may have been one of those who ran from the wharf? A. I may have hurried away, certainly away from the seat of the flames, yes

10 Q. You knew, I suppose, that a lot of men had their gear burnt in this fire? A. I knew one chap had a bag burnt, a chap named Taylor.

Q. Who was the chap working with you? A. Hill.

Q. You say you knew one man at least who had his belongings destroyed in the fire? A. He had his kit bag burnt.

Q. This fire spread, you told us on Friday, from where it started about amidships down towards the dock? A. Yes, went aft; towards the dock.

20 Q. And it spread over a pretty wide area? A. Yes, practically all along the wharf from amidships.

Q. At one time there was a very large fire? A. Oh yes, there would be.

Q. You saw a number of engines from the fire brigade? A. Yes.

Q. Did you see the floats? A. The fire floats?

Q. Yes? A. I have a recollection they were there but I am not really sure, because the "Corrimal" was in between me and the water side.

30 Q. You do not remember whether they were there or not; is that it? A. I have a recollection that the fire floats were there and they were squirting the oil away.

Q. Squirting the burning oil away? A. Blowing it away with a water hose.

Q. You had seen, of course, this oil under the wharf and around the water for two or three days before

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this fire; or is it your recollection that it was only one day? A. I am not really sure of that. I know it was a day previous.

Q. Do you remember talking on Friday of a man who was working on some sort of staging on the ship, a welder? A. Yes.

Q. Was that a man called Taylor? A. I could not really recollect now. I thought he was a welder welding there about amidships, and he was welding outside the accommodation - outside the office accommodation.

10

Q. Outside the office accommodation? A. Over the side of the ship.

Q. And this accommodation is where? A. Amidships.

Q. And that would be some little distance inboard? A. No. It was flush with the shell of the boat.

Q. The office accommodation? A. Yes. I think, if I recollect rightly, the accommodation comes down flush with the gunwale.

Q. Would you be sure it was the day of the fire or the day before the fire he was working there? A. I am pretty near sure it was the day of the fire.

20

Q. Would he have a mate, an offsider, working with him? A. No. He is working off the stage, I believe. A welder does not usually carry a mate.

Q. And you have a recollection of him working there that day? A. Yes.

Q. He would be much higher than the wharf? A. He would be five or six feet higher than the wharf.

Q. He would be at least that. The deck of the ship would be higher than the wharf? A. It all depends on the tide.

30

Q. You can take it at the time the fire broke out it was pretty well dead low tide? A. That would bring the deck down.

Q. From where he was working to the water - I think you said on Friday - would be about eight to ten



feet. Did you say eight to ten feet? You said his feet above the wharf would be five or six feet, and I think you said it would be eight to ten feet from the wharf down to where the water was? A. It would be about that, I should think.

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Q. Do you remember anybody else who was working near where you were besides this man on the stage you have told us about? A. Yes. There was a chap named Hay. He was a boilermaker.

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10 Q. He was working somewhere near you? A. I think he was working on the deck beams, on the hatch beams.

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Q. This hissing noise that you told us about, Mr. Godfrey; when did you first think it had something to do with the compressed air? A. That is the only thing I could put it down to, the compressed air.

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Q. You mean you thought of that at the time? A. I thought it was an air hose that had busted.

20 Q. Do you remember where the air hoses were that day? A. No. I was not working on the ship that day.

Q. I suggest first of all - you would not be prepared to swear whether there were any air hoses connected from the ship to the compressed air valves from the wharf that day? A. I would not like to swear to it but I think it would be only logical they would be because they were working a reamering machine, and that, and they were all propelled by air.

30 Q. You do not remember seeing them there but you assume they were because of the machinery that was being worked? A. Yes.

Q. At this stage you do not know whether they were connected up to the aft end of the ship or amidships or forward, do you? A. No, I do not.

Q. If they were connected down at the aft end of the ship; that is not where the fire broke out, is it? A. No.

40 Q. The fire broke out, you say, about amidships of the "Corrimal"? A. Round about amidships.

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RE-EXAMINATION:

MR. MEARES: Q. You mentioned the fire brigade coming and knocking down a fence. Do you recall that?  
A. Yes.

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Q. Where did they bring their hoses? A. They brought their hoses, I think, through where they broke the fence down, and they had their engines pumping water out of the harbour.

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Q. Where did they bring their hoses? A. I am not really sure. I think they brought them through where they knocked the fence down.

10

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Q. Through on to where? That is what I want to get? A. On to the wharf, I think.

Q. And they were on the wharf using their hoses?  
A. When I left, yes.

Q. I want to get this clear if I can. Mr. Taylor asked you first of all did you have a bucket of water and he asked you why you could not have thrown that over to extinguish the flames. Do you recall that? A. Yes.

20

Q. You remember McCabe said, "She's alright" or words to that effect? A. That is correct.

Q. And you then had a look? A. That is right.

Q. When you went over to have a look, would a bucket of water have done any good - in your opinion? A. I don't think so.

Q. As far as the question of a kit being burnt: you were asked whether somebody lost his kit bag. Where was the kit bag? A. I think he left his kit bag on the wharf after he had his lunch. He brought his lunch around in the kit bag and left it on the wharf so he could pick it up when he was going back to the dressing shed.

30

Q. So far as the hoses which carry the compressed air were concerned, you of course had been working on the "Corrimal" for many months - had you not - prior to this fire? A. Prior to that.

Q. You told me they were on the "Corrimal" using machines which needed compressed air? A. Yes.

Q. Continually? A. Most of the time.

Q. Mr. Taylor has indicated to you a connecting point of the hose, which is a little bit above the level of the wharf. Is that so? A. Yes.

Q. Then may I take it that hosepipes lead from there across the gap between the wharf and the "Corrimal" on to the "Corrimal"? A. Yes.

10 Q. And sometimes, you said, they might be as low as to be almost in the water. Is that right? A. Yes. (Objected to.)

Q. Generally, can you tell us from your recollection of these air hose pipes, some were between the wharf and the "Corrimal"? First of all were they between the wharf and the "Corrimal" and were they higher than the wharf, level with the wharf or sagging down? A. In most cases I would say they would be sagging because they have got to give way for the shifting of the boat. If you have them taut you bust the hoses.

20 (Witness retired and allowed to leave.)

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EVIDENCE OF F.G. HEATH

FREDERICK GEORGE HEATH,  
Sworn, examined, deposed:

TO MR. MEARES: My full name is Frederick George Heath. I am a Senior Customs Officer employed by the Dept. of Customs.

30 Q. Have you for a number of years, and were you in 1951, been the Officer in Charge of the Dipping of Fuel tanks on the foreshores of the harbour for Customs and Excise purposes? A. I was the warehouse supervisor and as such the officers under my control did that dipping.

Q. Were you aware of a tank which Vacuum Oil Depot, known as No.2 tank? A. Yes

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continued.

Q. Where was the Vacuum Oil Depot? A. Pulpit Point.

Q. What did that No.2 tank hold? A. Fuel oil.

Q. Was that the only fuel oil tank there at that time? A. I understand it was at that time.

Q. Was that tank dipped before or after a ship called the "British Ranger" came there? (Objected to; disallowed.)

Q. Do you remember a ship called the "British Ranger" coming in? A. I cannot say I remember the ship coming in. There are so many ships come into that installation. 10

Q. Have you any record of the "British Ranger" coming in? A. Yes.

Q. Can you tell me when she did come in? A. 15/10/51.

MR. TAYLOR: Q. (By permission). Is that a record you made yourself? A. No. This is a record made by our officer at the installation.

(Evidence objected to by Mr. Taylor).

MR. MEARES: Q. So far as these records are concerned, did you yourself check those records? A. I had spot checks at the various installations. 20

HIS HONOR: What do you mean by checking? Do you mean he will look at the ship to see if the ship was there?

MR. MEARES: The records.

HIS HONOR: You mean checking the records? In a case like this what does the check involve?

MR. MEARES: Q. Can you tell me what you mean by "checking"? A. The check is that the tank is dipped before the discharge of a tanker, and the tank is dipped after the completion of discharge and the quantity received in the tank is assessed both before and after dipping - based on temperature correction. 30

Q. So it is the job of the branch of the department that you are in charge of to ascertain the amount of

fuel oil that goes into the fuel tanks from various ships? A. Correct.

Q. And for that purpose the tank is measured before the ship comes alongside and after she departs?  
A. Correct.

HIS HONOR: Q. It is the contents of the tank that are measured? --

MR. MEARES: Thank you, Your Honor, yes.

10 Q. You were telling us of the "British Ranger" and you were telling us that somebody had made some records of it when the "British Ranger" came in. Do you recollect? A. Yes.

Q. And you have those records in front of you? A. Yes, they are here.

Q. And they are not in your writing? A. No. They are in one of our officer's writing.

Q. What officer? A. The locker at this installation.

20 Q. What is his name? A. Mr. Silman. He was the locker in charge of that particular installation at that particular time.

Q. How do you spell that? A. I think it is "Silman" or "Sulman". I think it is "Silman".

Q. Could I have a look at the document you have?  
A. (Document produced to Mr. Meares.)

30 Q. Having looked at a note in this book in Mr. Silman's writing, did you make any check of the accuracy of the information contained in that note? (Objected to; pressed; allowed). A. I would not say I checked those actual figures.

Q. Would you answer my question. Did you make any check of the accuracy of the record? A. No.

Q. You cannot tell me that? A. No.

Q. Is Mr. Silman still in the department? A. Yes.

MR. MEARES: I will have to leave it that way if my friend is taking the formal objection.

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F.G. Heath.

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MR. TAYLOR: If I knew what my friend was trying to prove I might be able to help him.

MR. MEARES: I just wanted to endeavour to establish - I do not think my friend will mind me saying this - that the "British Ranger" on 15th October discharged X-thousand gallons of bunker oil into Vacuum No. 2 tank.

HIS HONOR: I suppose there should be no insuperable difficulties about that?

MR. MEARES: Q. Would you just have a look at the document? (Handed to witness). Do you see the end figure there of so many thousand gallons? Do you see it there? A. Yes. 10

Q. Was duty paid on that figure? A. That is correct.

Q. Would you tell me this: What was the amount of bunker oil that was discharged into Vacuum's No. 2 tank from the "British Ranger" on 15th October, 1951? A. 465,755 gallons at 60 degrees temperature.

Q. Could you tell me what was in the tank before that? A. 1,247,555 gallons at 60 degrees. 20

Q. Of bunker oil? A. That is correct.

MR. TAYLOR: I have no questions.

(Witness retired).

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No. 40

C. McCabe.

EVIDENCE OF C. McCABE

Examination.

CHARLES McCABE,  
Sworn, examined, deposed:

WITNESS: Excuse me, Judge, I am very hard of hearing.

HIS HONOR: Q. If there is any question you do not hear or do not understand properly say so, will you? Do not answer it unless you are sure that you have heard. A. Thank you very much, Your Honor. 30

MR. MEARES: Q. Your full name is Charles McCabe and you live at 188 Short Street, Balmain? A. Yes.

Q. You are an ironworker? A. That is right.

Q. You are at present employed at Cockatoo Dock? A. Yes.

Q. But from 1947 until 1956 you were employed as an ironworker at Mort's Dock? A. That is correct.

Q. In 1951 you were working on the Sheerlegs' Wharf in connection with the refitting of the "Corrimal"?

10 A. That is quite right; on the mast.

Q. You had been working on that wharf in connection with refitting the "Corrimal" for some months before a fire in November, 1951? A. Yes, a considerable time

Q. Do you recall a fire that took place on the Thursday, 1st November 1951? A. I could not safely say, but I think it was early in the morning. I could not safely say the exact date, but it was round about that time.

20 Q. What was early in the morning? A. When we noticed the oil at first it was early in the morning.

HIS HONOR: Q. Do you remember the fire? A. Yes, I remember the fire.

Q. Mr. Meares wants to know do you remember it on 1st November, 1951? A. It would be that date.

Q. You do not remember the exact date? A. No. It is six years ago.

MR. MEARES: Q. What day of the week was it? A. It was a Thursday.

30 Q. On that day where were you working? A. I was working on the Sheerlegs wharf about six feet from the edge of the wharf from where the "Corrimal" was lying; six or eight feet.

Q. Where were you in relation to the "Corrimal"? A. The "Corrimal" was fendered out about three feet. That would be about ten feet from the "Corrimal" to where the mast was lying.

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Examination -  
continued.

Q. Were you towards the stern of the "Corrimal" or the bow of her or amidships? A. The mast was lying practically in line with the midships of the "Corrimal".

Q. So you were working approximately opposite midships of the "Corrimal"? A. That is correct.

Q. What was your job? A. My job was assisting the boilermaker fitting the mast, strengthening the mast and putting doubling plates on - strengthening the mast.

10

Q. With whom were you working? I was working with a boilermaker called Ken Osborne.

Q. Do you remember on that Thursday observing anything towards the edge of the wharf? A. That is quite correct.

Q. What did you first notice? A. I noticed some smoke coming up. You have to visualise there is a lot of welding leads running from the wharf to the boat and quite often the weight of the leads causes a short where they are coupled. Apparently smoke was coming up there and I went to the wharf and saw where the smoke was coming from.

20

Q. You saw some smoke coming up. Was that between the edge of the wharf and the "Corrimal"? Is that right? A. That is quite right.

Q. Whereabouts was it in relation to the midships of the "Corrimal"? A. Right amidships.

Q. And you saw smoke - a wisp - come up and you thought of the electric welding leads? A. Shorting.

Q. That is why you leant over? A. That is right.

30

Q. What amount of smoke was it you saw coming up before you went to the edge of the wharf? A. A very small wisp of smoke.

Q. Did you go and look over the edge of the wharf? A. That is right.

Q. Would you tell us what you saw, if anything, when you looked over the edge? A. It apparently looked like a bit of bark to me. It could have been some



floating material on top of that, some smouldering fabric - it could have been waste, it could have been cloth.

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Q. A piece of bark or some other material? A. Floating debris.

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10 Q. And, on top of that, waste or cloth smouldering? First of all, what was this piece of bark? What was the size of that? A. Roughly I would say it would be in the vicinity of a foot or 12 inches or 14 inches or (indicating) something like that - about that long

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C. McCabe.

Q. How wide? A. It would be - it was not very wide - it would be about three or four inches.

Examination -  
continued.

Q. Three or four inches wide. You saw on this there was some waste or cloth? A. I am not sure it was waste. There was some smouldering fabric of some sort.

20 Q. About what size was that smouldering fabric? A. A very small bundle. I would say an amount you could easily clutch in your hand. It would not be any more. It was not a big bundle.

Q. Having seen that, did it cause you any concern at all? A. No, no I never had any concern at all.

Q. And this piece of bark that you saw; was that floating on the water? A. Yes, on top of the water.

Q. Was it anywhere near any part of the wharf? A. Just entering under the wharf. Just going under the wharf.

30 Q. So far as the piles of the wharf were concerned, where was it in relation to them? A. It was quite close to the pile going under.

Q. Quite close. You saw then it was not a short from the electric welding lead? A. That is right.

Q. And then you resumed your duties, did you? A. I went back to my job.

Q. Then later on what did you notice? A. Later on then it was smoke or flames coming from around the vicinity of the pile.

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Examination -  
continued.

Q. Which pile? A. The pile where the debris - where the smouldering material - was going underneath.

Q. How long after first seeing this piece of bark was it you noticed the smoke and flames? A. Only a few minutes.

Q. When you saw this did you go and have a look then or not? A. No. I stopped on the job where I was working. Then I gave the alarm there was a fire there and I went off the wharf then.

Q. Were you working anywhere near the oxywelder and oxy-burner? A. There was a burner there. 10

Q. Who was he? A. Frank Godfrey.

Q. As far as the fire was concerned could you tell me what it did? Can you just give us -- A. So far as the fire was concerned - I cannot get the last part?

Q. Can you give His Honor an idea of just what happened in regard to the spread of the fire? A. When the fire started all the flames seemed to go aft of the ship. Forward of the ship was not touched, but if I can remember aright, I worked on the ship after and the after plate - the after plate of the bridge was the one where the repair work was going on - if I can remember aright -- 20

Q. Take the wharf. Where was the fire in relation to the wharf; all over the wharf or on a part of it or where? A. I cannot quite catch that. Where was the fire on the wharf?

Q. Yes. Was the fire all over the wharf or only on part of the wharf? A. The fire seemed to go, if I remember aright, under the wharf, back to the wharf, and the fire went more aft of the ship. 30

Q. Along the wharf? A. Yes.

Cross-  
Examination.

CROSS-EXAMINATION:

MR. TAYLOR: Q. (Indicating). You know this gentleman here? A. Mr. Sharp.

Q. The Industrial Officer? A. That is right.

Q. Do you remember after the fire the next day he came around and interviewed you and had a talk to you about the fire? A. That is quite correct.

Q. And I suppose the next day you had a very vivid and clear recollection of what had happened? A. Most likely I had.

Q. Do you remember telling Mr. Sharp this - if you do not hear me, say so? A. I will.

10 Q. I am putting to you that this is what you told Mr. Sharp the day after the fire? A. Excuse me. I might not be sure of this, but I think Mr. Sharp and me had an interview with the detective, but actually what happened after the day of the fire - I would not say for sure the conversation with Mr. Sharp at that time.

20 Q. I suggest you said to him this - did you tell him you saw smoke coming from the water level, and on looking over the wharf you saw a piece of floating debris which was either woodbark or cardboard? A. Yes; some material - floating material.

Q. Did you tell him that on this flames were flickering as it drifted in the wind? A. No. There was smouldering material on top of the debris. I actually did not see any flames at that time.

30 Q. You did not see flames at that time. Did you tell Mr. Sharp you saw flickering flames as it drifted in the wind? A. No, I don't remember that. It was quite vivid to me at that time. I would tell the same story then as I told now. I am here to tell the truth.

Q. Do you remember telling him this: That you called out to the other employees working on the wharf that there was a fire below and almost as you spoke the whole of the wharf decking burst into roaring flames and the men ran clear? Did you tell him that? A. I don't remember telling him that.

Q. That is what happened, isn't it? A. No. What I said before - what I told the detective at that time.

40 Q. I do not want to know what you told the detective? A. It is the same as I am saying now.

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Cross-  
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Cross-  
Examination -  
continued.

Q. Is not what happened that the whole of the wharf decking burst into roaring flames and the men ran clear? That is what happened? A. I was on the wharf myself.

Q. Just answer my question. Is that what happened; that the whole of the wharf decking burst into roaring flames and the men ran clear? Is not that what happened that day? A. I described to Mr. Meares what happened that day was that first of all --

Q. Never mind about my learned friend. Does that describe what happened that day? A. You want me to describe it?

10

Q. No. I want you to listen to what I am putting to you. I am suggesting to you that that is what you told Mr. Sharp the next day. Do you follow me?  
A. What I told Mr. Sharp the next day at the time? I cannot remember what I said to Mr. Sharp the next day because I can visualise Mr. Sharp came and got me --

Q. You don't remember telling him anything? A. Mr. Sharp called me on the wharf and took me over to the detective in his office.

20

Q. Did Mr. Sharp ask you next day what you saw of the outbreak of the fire? A. What I saw of the outbreak? That is what I just said.

Q. Did Sharp ask you the next day to tell him what you had seen? A. I had seen what I told you.

Q. Did Sharp ask you the next day? A. I don't visualise Mr. Sharp asking me the next day. What actually happened now, after six years, at that time - I still say what I said. I am not here to tell lies.

30

Q. I suppose if you were asked to describe what happened the day after the fire whatever you said then would be right, would it not? A. That is if I said that at the time?

Q. Yes. Whatever you said at that time would be correct, wouldn't it? A. Six years ago is a long while. But the only thing is that I am trying to visualise what happened at that particular time

40

Q. If you do not hear me, please tell me; and if you do not understand me also tell me.

Whatever you said about the fire the day after it happened would be right, wouldn't it? A. It most likely would be, yes. Six years after; that is right.

Q. You would have a better memory of it then, wouldn't you, than you have now? A. That is quite right.

10 Q. Do you remember describing to this man here the next day what you saw about the fire? A. I cannot remember that.

Q. You do not remember that one way or the other? A. I don't remember describing to Mr. Sharp after that.

Q. You do remember Mr. Sharp at some time taking you to the Police Officer? A. That is right.

20 Q. According to what you have said today, you saw first of all a piece of bark with something smouldering on top? A. On top of it. That is quite right.

Q. That was somewhere between the ship and the side of the wharf, was it? A. It was floating underneath the wharf, yes.

Q. Was it a piece of bark or a piece of wood? A. Quite right. When you look over the side of the ship you see it. There is oil on the water and it was only something floating, some floating debris; I do not know what it was.

30 Q. I am quite prepared to take that. You cannot tell precisely what it was. But it had something smouldering on it? A. Quite right.

Q. Are you sure there was not some flame, a flickering flame? A. No. I never noticed any flame.

Q. When you saw that did you do anything about it? A. No, no.

Q. You just went back to your work? A. Yes.

Q. And there was just a slight wisp of smoke coming up? A. Enough to distinguish, like from the level.

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Cross-  
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Cross-  
Examination -  
continued.

Q. You say some time later, a few minutes after that, you looked over again? A. No.

Q. Didn't you? Did you only see the fire on the water once, or more than once? A. I only saw the smouldering debris and went back to my work. From my job the next thing I noticed was, after a few minutes, flames and smoke coming up around the pile. I never went back to the edge of the wharf after that.

Q. You never went back to the edge of the wharf at all? A. After the first time. 10

Q. So whatever you saw on the water you saw the first time? A. That is right.

Q. The next thing you knew while you were at work, you saw flame and smoke coming up through the wharf? A. Around the pile.

Q. The next thing that happened was that she went away with a "woosh" - is that right? A. That is with the flames coming I got off the wharf

Q. Do you remember hearing the roar of the flames as they went along the wharf? A. No, I never heard any roar. 20

Q. You got off the wharf in a great hurry, did you not; with a lot of other people? A. I got off the wharf because the wharf was open, cracked, and the flames started to come up through the wharf, and quite naturally I got off the wharf not to get burnt.

Q. You remember just after you got off the wharf did you hear an explosion at any time? A. When the oxygen bottle went off. 30

Q. Were you off the wharf then? A. It was on the ship.

Q. Were you off the wharf? A. I was off the wharf.

Re-  
Examination.

RE-EXAMINATION:

MR. MEARES: Q. Do you remember the fire brigade coming along? A. The fire brigade? Where I come from - I was on the Mort's Dock side and the fire brigade came there.

Q. When the fire brigade came were you on the wharf or off the wharf? A. I was off the wharf.

Q. And this explosion of this oxygen bottle, did that take place before or after the fire brigade came? A. I would not like to say that.

Q. You would not say? A. No. It is doubtful. I would not say that.

(Witness retired and allowed to leave).

(Short adjournment).

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Re- Examination - continued.

10

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No. 41

EVIDENCE OF F.W. GODFREY - RECALLED

F.W. Godfrey. Recalled.

Examination.

FRANK WILLIAM GODFREY:  
Recalled:

MR. TAYLOR: Q. (Indicating). You know this gentleman here, Mr. Sharp? A. Yes.

Q. Do you remember the day after the fire, the Friday, Mr. Sharp interviewing you about the fire? A. I don't think Mr. Sharp interviewed me. I think it was two detectives.

20 Q. That could have happened as well. I am suggesting Mr. Sharp saw you first and then later on you may have seen some detectives? A. I would not be sure of that but I remember seeing the detectives. I was working out the harbour and I have a clear recollection of it - I was brought back to the dock to interview them.

30 Q. There is no doubt that impressed itself on your mind. Do you remember Mr. Sharp interviewing you about what you had seen of this fire? A. No. I have no recollection of that.

Q. Let me ask you this: Did you tell him this - that you had been cutting the heads off bolts over a

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F.W. Godfrey.  
Recalled.

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- continued.

water bucket and wet bags, you were then preparing to go and work on the mast lying on the wharf? That is what I suggest you told Mr. Sharp on the Friday. What do you say to that? A. I could not remember that, so far as I can remember.

Q. You could not remember one way or the other?  
A. No.

Q. That you then heard McCabe call out that fire was burning on the water. This is again what I am suggesting you told to Sharp. You were about ten yards back from the edge of the wharf and could not see to the water but noticed this smoke was rising between the vessel and the wharf, and as you looked it thickened considerably. Did you say that to Sharp the next day; or don't you remember? A. No. I cannot recollect. I walked across the wharf and had a look at it myself.

10

Q. Did you say to him that before you could take any steps in the direction of the smoke a fire burst out from the wharf decking and seemed as if it had run up the pile. Did you say that to Sharp the next day? A. I could not remember exactly

20

Q. Did you say to him that your first thought was that a spark might have alighted on the bark of the pile which had been dried out by the sun and been then saturated with oil from the bay ignited and caused the pile and the oil soaked bark to take fire.

Did you say that to him? Or anything like that?  
A. I could have said it. I cannot remember the exact words. I cannot remember interviewing Mr. Sharp, but the detectives are the chaps I remember interviewing.

30

(Witness retired.)

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No. 42

EVIDENCE OF H.J. McANALLEY

HENRY JOHN McANALLEY,

Sworn, examined, deposed:

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H.J. McAnalley.

Examination.

HIS HONOR: Q. You are hard of hearing? A. Yes.

Q. I want you to make sure you hear any question before you try to answer it. If you are not sure what you have heard, say so. A. Very well.

10 MR. MEARES: Q. I think your full name is Henry John McAnalley? A. Yes.

Q. You live at 9A Wharf Road, Balmain? A. That is right.

Q. You are employed with Caltex? A. Yes.

Q. You have been with Caltex for the last 28 years? A. That is right.

Q. For many years you have been shipping foreman for Caltex at their depot at the head of Mort's Bay? A. That is right.

20 Q. Your duties include the receiving of all cargoes, both bulk and package cargoes, that are destined for your depot where you are employed? A. Yes.

Q. You have actually been engaged in receiving cargoes at the depot where you are now working, for how long? A. For about 25 years.

Q. I think you recall the occasion when the "Waggon Mound" came alongside the Caltex wharf? A. Yes.

30 Q. Would you look at this document and would you tell me whether that is a location plan drawn to scale showing your company's installation and the distance between the edge of the wharf and the shore line? A. Yes.

Q. This scale, I think, is 20 ft. to the inch, is it not, this map? A. Yes.

MR. MEARES: I tender that plan.

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H.J. McAnalley.

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continued.

MR. TAYLOR: This is a hypothetical ship drawn here.

MR. MEARES: That is a ship drawn there, a hypothetical ship, yes. Would Your Honor's Associate mark on the plan, scale 20 ft. to the inch?

(Above plan marked Exh.3).

Q. You recall the "Waggon Mound" coming alongside your wharf with her starboard side to the wharf on the 29th October, 1951? A. That is the actual date. It happened to be on a Monday. I remember it better by being on a Monday.

10

Q. Tuesday or Monday, was it? Your recollection is a Monday. It was on Monday you recall it coming alongside? A. I think it was a Monday, alongside.

Q. Do you recall the "Waggon Mound" leaving? A. Yes, she left somewhere before midday on the next day.

Q. That was a Tuesday? A. Yes.

Q. Can you tell us what her length is? What is the length of the "Waggon Mound"? A. I think somewhere about 520 ft.

Q. Would that be longer than your wharf? A. Yes.

20

Q. To what extent would she overhang your wharf? A. I would say she would overhang an average end of 150 ft.

Q. Both ends together? A. No, the total overhang.

Q. The total overhang, you say, was approximately 150 ft.? A. Yes, that is with the dolphins. The dolphins are included in the wharf. They are not attached to the wharf but they are there for the protection of the wharf.

Q. Would you tell me the total overhang of the wharf leaving out the dolphins? A. Somewhere about 320 ft.

30

Q. The total overhang would be? A. Yes.

HIS HONOR: Q. What do you say is the total length of the wharf? A. The wharf itself is about 200 ft. long.

MR. MEARES: Q. When she came in, the "Waggon Mound", on the Monday, the 29th, were you on duty?  
A. Yes.

Q. You remember she came in on the morning of the 29th? A. In the morning, yes.

Q. She left about midday on the 30th, the following day? A. Yes.

10 HIS HONOR: I take it, Mr. Meares, it is clear that is the only time the "Waggon Mound" was tied up to the wharf. Is this the only visit of the "Waggon Mound"? If so, we need not go into any question of a date.

MR. MEARES: Q. Had the "Waggon Mound" been in before this time? A. I beg your pardon?

Q. Apart from this particular time she was tied up on this occasion, had she ever been in discharging before this? A. I could not say but she was one of our regulars so she probably would have been in at some earlier period.

20 Q. You say you were on duty when she came in?  
A. Yes.

Q. Could you tell me from the time she came in until the time she left, were you on duty continually or not? A. I had a break in the evening.

Q. The evening of the 29th? A. Yes, from roughly about half past 6 or 7 o'clock to 11.

Q. Apart from that period of time, you were on duty at the Caltex depot the whole time she was in?  
A. Yes.

30 Q. Looking at the depot from the water, the depot rises up a hill, does it not? A. That is right.

Q. The installations are built gradually up this hill? A. Yes.

Q. Have you got an office? A. Yes.

Q. Where is your office? A. Up in the main office building, up near the gate.

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continued.

Q. How far is the gate from the wharf, just roughly?  
A. I would say about 100 yds. or so.

Q. From your office can you see what is going on on  
the wharf? A. No.

Q. What period of time when you were on duty on  
these two days did you spend in and around the wharf  
and the ship? A. With the ship in like that I  
usually spend most of my time with the ship.

Q. When you say "with the ship", what do you mean  
by that? A. With the ship and its related duties. 10

Q. Do you mean you are on the ship or on the wharf  
or where? A. On the ship, on the wharf or on our  
tank farm.

Q. Most of your time you would be in those areas  
when a ship is in? A. Yes.

Q. You are not in charge of any loading into the  
ship? A. No.

Q. You are only in charge of discharging? A. Dis-  
charge operations.

Q. Do you recall the cargo of gasolene being dis- 20  
charged? A. Other products besides. Gasolene was  
portion of the cargo and then there were other pro-  
ducts besides that.

Q. What was taken off first? A. We would take the  
gasolene off first.

Q. As far as the gasolene was concerned, did unload-  
ing of the gasolene start on the morning of the  
29th? A. Yes.

Q. Do you recall on that morning knowing or hearing  
anything of any leak? (Objected to; question 30  
allowed).

Q. Do you recall on the morning of the 29th hearing  
something about a gasolene petrol leak? A. Yes.

Q. Can you tell me when that was in relation to  
when discharging petrol started? A. Just from the  
best of my recollection -

HIS HONOR: That may be ambiguous.

MR. MEARES: Q. I mean, when did you hear of it?  
 A. I heard about it, I would say, about 50 minutes after discharge started because by the time I had been up to the tank farm, by the time I got back the man who was on duty on the wharf, the fitter in charge while I am away, he said "She stopped pumping for 20 minutes".

Q. When you got back had pumping started again? A. Pumping had resumed.

10 HIS HONOR: Q. This stop was for 20 minutes while you were away? A. Yes.

MR. MEARES: Q. Is it part of your duties to ensure or to check on any leakage of oils or petrol in the waters in the vicinity or onto any part of the installation? A. Yes, part of my duties is to check that.

Q. Is that an important part of your duties? A. It is, a very important part.

20 Q. As far as any question of the escape of petrol was concerned, would you consider that to be a serious matter? A. I certainly would.

Q. Why? A. That is very, very dangerous.

Q. You have been in this installation for over a quarter of a century, you tell us - over 25 years? A. Yes

30 Q. When you are on the job, if I may use that expression, when a ship is in are you constantly checking the water to see if there is any leakage? A. Every time you go aboard you naturally look down between the wharf and the ship to see if you can see anything and walk over the other side and look down the other side.

Q. When this ship was in were you checking constantly? A. Yes.

Q. Are you able to tell us whether at any time when the "Waggon Mound" was in there was any petrol observable on the water in her vicinity? A. I never observed the slightest sign of petrol in the water.

40 Q. You have working with you a staff, a staff working under you? A. Yes.

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Q. Did you at any time when you were supervising her discharging hear of any petrol on the water in the vicinity of the depot? (Objected to; question allowed). A. No.

Q. As far as the process of discharging is concerned, is it your responsibility to see that the hoses are connected to the manifolds on the ships and connected at the shore end to the tank farm?  
A. Yes.

Q. Are you in charge of pumping and the rate of pumping? A. Yes. 10

Q. In connection with your responsibilities did you have occasion to go on to the "Waggon Mound" from time to time right throughout the process of unloading? A. Yes.

Q. What did you go on there for? A. In the first place, I go to discuss with the Mate the arrangements for discharge and when they do start pumping you check the fuel they are pumping through to make sure you are getting the correct grade of product. 20

Q. Is there any other reason you go on board her?  
A. No, no other reason.

Q. Are you concerned at any time with any leaks?  
A. Leakages, yes. I am sorry, I should have said that. You look around to see everything is tight. These manifolds stretch across the ship, right across. You have port and starboard discharges and you check the opposite side to make sure there is nothing like that over on that side.

Q. Petrol was discharged and after that she took on, at some point of time she was taking on bunkers?  
A. She was taking bunkers. 30

Q. At any time when you were walking backwards and forwards to and from the ship did you observe any petrol leaks? At any time when you were on the ship on 29th and 30th, did you observe any petrol leaks? A. No, not that I can recall. There was, as I was told by the pumpman on duty when I was away that she stopped for 20 minutes because she had leaky glands somewhere but I could not tell you - it may have been in the pump room, it may have been up on deck somewhere, I do not know. I cannot recall. 40

Q. On the morning of the 30th, did you hear something about an escape of oil, bunker oil? A. Yes.

Q. Could you tell His Honor roughly what time that was that you heard about it? A. I was told just about daylight.

Q. Did you observe any oil escaping? A. Very little, just a trickle down the side of the ship when I saw it, just the last of it was coming over.

10 Q. Whereabouts was it coming over when you saw it coming over? A. Just in front of the midship house.

Q. It would be for'ard of the midship house? A. Just for'ard of the midship house.

Q. Have a look at Exh.2(4). (Approaching witness). Do you see on that photograph the midship housing in the vicinity of a ladder? A. Yes.

Q. Do you see in the vicinity of the ladder a piece of steel which has been called in this hearing a fishplate? A. Yes.

20 Q. Whereabouts in relation to that fishplate did you see what you describe as the last of the leakage? Just give us the best you can.

MR. TAYLOR: These are spurking fishplates.

WITNESS: It is that long ago, I would not swear whether it was coming from the scupper hold back in there or just over the edge of this little channel.

MR. MEARES: Would it be correct to say that he would not be able to say whether it was coming from just for'ard of the fishplate or somewhere in the fishplate, Mr. Taylor?

30 MR. TAYLOR: Or from the scupper.

MR. MEARES: Q. Or from the scupper near the fishplate. Is that right? A. Yes.

Q. However, the question of her loading was not your responsibility? A. No.

Q. When it became daylight you noticed some further oil on the water between the "Waggon Mound" and the shore? A. That is correct.

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Q. Later on you observed that that oil had spread.  
Is that so? A. Yes.

Q. Had some of that oil gone into Snail's Bay? A.  
Some worked its way around into Snail's Bay but I  
would say the bulk of it went down to Waterview Bay.

MR. MEARES: That is Mort's Bay, I think, Your Honor.

Q. Do you recall going with Mr. Durack to Mort's  
Dock and making an inspection with a Mr. Parkin?  
A. Yes, I went around with Mr. Durack.

Q. Did Mr. Parkin show you the presence of oil in 10  
the vicinity of the Mort's Dock installations?  
A. Yes.

Q. In particular did he show you oil that had col-  
lected on the slipway? A. That is right.

Q. At that time during that visit did you at any  
time hear Mr. Parkin - (Objected to; question  
allowed).

Q. Did you at any time hear Mr. Parkin asking Mr.  
Durack whether or not the oil was dangerous? A.  
No, I never heard that question brought up at all. 20

Q. Did you hear Mr. Durack say to Mr. Parkin that in  
his opinion it was quite safe to carry on Mort's  
Dock's normal work? A. No.

MR. TAYLOR: Is my friend putting that as Parkin's  
evidence?

MR. MEARES: Yes, I am, at p.67.

Q. Were you present with Mr. Durack the whole of the  
time he was with Mr. Parkin? A. I was with him,  
yes, within two or three yards of him anyway.

Q. You could hear what was going on? A. I heard 30  
some of it, yes.

Q. Did you hear all of it? Are you able to tell us  
what -

HIS HONOR: How can the witness tell you something  
that he did not hear? It is quite possible that he  
might have been quite ignorant of the conversation.



MR. MEARES: Q. When you were attending on this trip with Mr. Durack and Mr. Parkin were you within hearing distance of everything that was said between Mr. Durack and Mr. Parkin all the time or not? Just tell us from the best of your recollection? A. To the best of my recollection I think I was.

Q. Do you recall on the Thursday - that would be the 1st November - seeing evidence of fire? A. Do I recall the fire? Yes.

10 Q. Where were you when you first saw it? A. I came out of the office, to the best of my recollection, and ran down the hill towards Mort's Dock, down towards the Yeend Street wharf.

HIS HONOR: Q. Where were you when you first saw it? A. That is where I first saw it.

Q. Before you came out of the office? A. Yes. I did not see it from the office at all, although my office looks out that way. The fire alarm went. The first thing to do is to make a break.

20 MR. MEARES: Q. When the fire alarm went you then saw a fire? A. Yes, after I left the office and went outside.

Q. Would you look at Exh.A.? Would you mark in ink the course you took from when you saw the fire, where you went, just trace your steps in ink? A. Our office is here.

Q. Just mark that with an "O"? A. I went down -

30 Q. Just mark the path you took. A. I came down here and out the gate and you could see it straight across there. (Witness marks plan).

Q. What did you do then? A. I went back and got my hose team out ready.

Q. You went back to your own installation? A. Yes, and we took the hose from a hydrant here.

Q. Mark that with an "H". A. Over the fence and came down over the fence and down across Yeend St., in through the back door of Mort's. We pulled a sheet of iron off the fence.

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Q. Did you or did you not bring your hose on to the wharf then? A. We brought the hose right on to the wharf.

HIS HONOR: Q. I gather you say you took a piece of iron out of the fence? A. Yes, took a sheet of galvanised iron off the fence, just pulled it off.

Q. That is on to Mort's wharf? A. Yes.

MR. MEARES: Q. That is the Sheerleg's wharf? A. Yes.

Q. As far as that was concerned, what part of the wharf were you playing your hose on to? I do not want you to mention the particular plank. Was it aft or midships or where? A. About the centre of the wharf, a little bit our way of the centre. 10

Q. A little bit for'ard of the centre? A. Yes.

Q. A little bit the Yeend St. end of the centre? A. Yes, Yeend St. end.

Q. As far as you were concerned did that hose remain in the position you have indicated for some time playing water on to the fire? A. Yes. That hose remained there until the fire brigade had absolute control of the fire. As a matter of fact, it was about the last hose they said to stop. 20

Q. After the Fire Brigade arrived your men were still on the Sheerlegs wharf playing the hose on to the flames in the same position as when they started? A. Yes.

Q. They continued on there right until the fire was got under control? A. Yes.

Q. When was that, approximately? A. I would say it was somewhere about 5 o'clock when we cut our hose out. 30

Q. I want you to take a piece of paper and would you draw for me the wharf, just roughly, and where approximately the "Corrimal" was lying and where, if you could show it, substantially speaking the fire was. Just take your time and draw it as large as you can. A. The "Corrimal" was lying on the side of the wharf. Yeend St. runs down a bit on

an angle down here and there are certain sheds over here. (Witness sketches).

Q. You indicate some sheds. Just mark "S" for sheds. Would you like to mark with a red pencil the approximate area of the fire, to the best of your ability? A. To the best of my knowledge, when I went down there, looking down from the top there it appeared to be -

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10 Q. Just mark the boundaries in red pencil. A.  
(Marking sketch) I think it was the shed in front of that, the welding shed in front of this.

Q. Mark with a "W" the welding shed. A. The fire was in that area, somewhere about that area.

Q. Would you just indicate where, approximately, your men were with the end of the hose? A. We came in through here.

Q. Just mark that. A. We put a hose in here and brought it up somewhere about there.

20 Q. Would you mark that "H"? Where were the fire brigades? Where did they bring their hoses? A. They brought their hoses through the same way as us. They went to different places. I could not tell you where they went to but they had their engine down here.

Q. They had their engine near Yeend St.? A. Yes

Q. When you got there was the "Corrimal" pretty well alight or not? A. Yes, it was well alight then.

30 Q. Was the whole of her alight or only one portion towards her after end? A. I really could not tell you that.

Q. As far as the fire was concerned, after you got there did it spread with a rush or a roar? A. No, by the time we got there and got our hoses out it was well and truly alight.

Q. Did it spread to any extent after you got there? A. It never spread down the wharf this way.

Q. It never spread towards the Yeend St. end? A. No, I could not see the other end. That is the other end away from me.

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Q. After you got there from what you could see was the fire spreading or were you able then to control it? A. There were only a few minutes after we got our hose going that the Fire Brigade turned up and after that it was not long before they finally got it under control.

Q. Did you see an oxygen cylinder go up or not?  
A. No.

Q. You were there all the time from the time your men brought the hoses down? A. Yes.

10

Q. Did you hear any noises as though there was an explosion or anything of that sort? A. No.

Q. Did you see whether there was any flame on the water on the starboard side of the "Corrimal"? A. No, I did not see the starboard of the "Corrimal" at all. I just saw the bow end of it and that was all.

Q. After the flames were subdued did you see any oil on the water unburned? A. Yes, there were patches of oil on the water.

20

Q. Whereabouts? A. Down at the Yeend St. wharf.

Q. That oil was unburnt, was it? A. As far as I could tell, yes.

HIS HONOR: Q. Where would you say the patches of oil were? A. Down here. There is a ferry wharf juts out there and there were patches in around here.

Q. That is, between the end of the Sheerlegs wharf and the ferry wharf? A. Yes, and a bit down along the other side of the wharf there.

30

MR. MEARES: Q. Did you, with certain representatives of the "Waggon Mound" make an inspection of Mort's Dock Sheerlegs wharf in October of last year? A. Yes.

Q. I think it is common ground that in parts of the wharf there is quite a space between the planks?  
A. Yes.

Q. On the decking of the wharf. Did you see, when you made that inspection, cotton waste on the wharf?  
 A. Yes, quite a lot of it.

Q. Where did you see it? (Objected to; evidence rejected).

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CROSS-EXAMINATION:

MR. TAYLOR: Q. Is Mr. Durack still out at the Caltex place? A. Yes.

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Q. What is his position? A. He is Superintendent.

Examination - continued.

10 Q. What was his position in 1951? A. Superintendent.

Cross-Examination.

Q. When did you first know you were going to give evidence in this case? When did you first know you were going to be called here as a witness? A. Not so very long ago, as a matter of fact.

Q. In the last week or fortnight? A. It might be a bit earlier than that.

Q. Who arranged for you to come into town? Were you served with a subpoena? A. No.

20 Q. Who told you to come into town and see the legal men? A. Mr. Durack brought me to town. (Objected to.)

Q. Where did you go when you came into town the first time about the case? A. I really could not tell you the address now.

Q. Who did you see? A. I saw Mr. Yuille.

Q. Then I suppose you were taken up to the new building in Phillip St. were you? A. Yes.

Q. When was that? A. I could not tell you now.

30 Q. Was it within the last fortnight? A. No, before that

Q. This year? A. I could not even tell you that.

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Q. Was Mr. Durack with you? A. Yes, this particular time.

Q. You did not go down to Mr. Hunt's office? (Objected to; question rejected).

Q. You have been with Caltex for 28 years? A. Yes.

Q. How often has the "Waggon Mound" been tied up at the Caltex wharf discharging? A. I could not tell you that.

Q. Could it be as many as fifty times since you have been there? A. No, it would not be fifty times, nowhere near it. She may have been three or four. I do not know. 10

Q. Three or four or more? A. I do not know. I cannot remember every ship that comes in.

Q. You cannot remember every time the "Waggon Mound" has come in? A. No, I cannot.

Q. When did you first cast your mind back to the events of this fire? Do you follow what I mean? A. No, I do not.

Q. You say you came in and saw, either this year or late last year, Mr. Yuille about this case. Was that the first time you tried to remember back to what had happened to the "Waggon Mound" in 1951? A. No, the reason why the "Waggon Mound" stays in my memory was the unusual occurrence. 20

Q. That is the fire; it was an unusual occurrence, was it not? A. It was unusual.

Q. The escape of petrol, that was an unusual occurrence, too, wasn't it? A. There was no escape of petrol to my knowledge. 30

Q. Was there not? A. No.

Q. Was there not a leakage of petrol? A. Not to my knowledge.

Q. Have you made any inquiries? A. I made inquiries.

Q. From whom? A. From the Mate, one of the Mates. I do not know his name. I cannot remember all the Mates names. He said the glands were leaking.

- Q. He said the glands were leaking? A. That is all.
- Q. You were not there when the glands were leaking, were you? A. No.
- Q. Do you remember telling my learned friend that when the "Waggon Mound" was discharging it would be some time when you would go aboard her? A. Yes.
- Q. That would be when she first came in? A. Yes.
- Q. You would go aboard to see about discharge arrangements with the Mate? A. Yes.
- 10 Q. To take samples from the tanks that were going to be discharged? A. Yes.
- Q. You would take those to your laboratory, would you not? A. They would go to the laboratory.
- Q. They would go there for the purpose of seeing what you were paying for; they go there to be checked? A. That is right.
- Q. Do you take any samples and give them to the customers? A. Yes, if she is at the first port of discharge you take samples to the customers.
- 20 Q. Did you do that yourself? A. No.
- Q. So somebody else did that? A. Yes.
- Q. That would be one of the chemists at Caltex? A. No, no chemist - one of my pumpmen.
- Q. Having done that, the samples have been taken and arrangements made about discharge, you would just go back to your office? A. No.
- Q. Why not? A. I wait there until he commences to discharge, to see they get the product from the tank they designate.
- 30 Q. To see they are getting the product from the tank? A. And then have a walk around the lines and see everything is going right.
- Q. Once the discharge commenced I suppose you go back to your office? A. No, I do not.

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Q. What did you do on this occasion? A. Waited until discharge commenced, checked the tanks it was coming from.

Q. Why did you do that? A. To make sure they are pumping from the tank they designate.

Q. How do you do that? A. You can check their balance or there are two methods of checking these tanks. You can spread a bit of cloth over the top and see what they are drawing from it. If they are pumping that tank the air takes it in.

10

Q. Did you do that on that occasion? A. Yes, I always do.

Q. What do you mean by that answer? Do you mean you always do it and therefore you think you did it on this occasion? A. I always do it.

Q. You have no independent recollection of doing it on this voyage of the "Waggon Mound", have you? A. That is part of my job.

Q. The answer to my question, you have no independent recollection of doing it on this particular voyage of the "Waggon Mound" - ? A. No, only that it is part of my job. That is all.

20

Q. Would you think that you would be there for, say, half an hour on the ship, half an hour after they started discharging? A. No, I might be on there a quarter of an hour.

Q. Then you would go back to your office? A. I did not go back to the office

HIS HONOR: He said he walked around the lines.

MR. TAYLOR: Q. The line from the discharge manifold? A. From the ship.

30

Q. You would go over the ship's lines to see if there was any leakages from there? A. Only from the outlook of each side.

Q. Having observed the line is all right, what did you do then? A. It is a long while to remember back exactly what I did but there are other little jobs that crop up around the yard.



- Q. You would go where? A. There are other jobs crop up around the yard.
- Q. I suppose you have a fair amount of office work to do? A. I very seldom go to the office when I have a ship in.
- Q. What about the paper work? Is there not a fair bit of paper work to do in the discharge of the ship? A. No, not as far as I am concerned.
- 10 Q. Don't you have to put it through the Customs, the discharge? A. The Customs dip our tanks before we start and after we finish.
- Q. What about the quantity? A. Quality does not enter into it.
- Q. What about quantity? A. I work that out.
- Q. So you are there when they cease pumping from any particular pump, are you? A. Yes.
- Q. You say you went back to the ship some time that morning after she had commenced discharging. Is that what you say? A. Came back to it, yes.
- 20 Q. Came back from your office? A. From the office? No.
- Q. Is not that what you said here? A. No, I think you are mistaken. I might have come back from the laboratory.
- Q. What would you be doing in the laboratory? A. Getting all my gravities. In the laboratory? Getting my gravities from the chemist.
- Q. Would you take those samples up yourself? A. No.
- 30 Q. You said you heard about a petrol leak, "about 50 minutes from the time I got back". First of all, where were you when you heard about the petrol leak? A. Down on the wharf.
- Q. Not on the ship? A. No.
- Q. What time was it when you heard about it? You would not know, would you? A. I could give you an idea I would say it was somewhere about 11 o'clock in the morning.

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Q. 11 o'clock? A. Somewhere about that.

Q. You would be prepared to swear to that? A. Yes, somewhere about that, to the best of my knowledge.

Q. There would be no doubt about it? A. Somewhere about 11 o'clock. It may have been before or after but I am giving you an approximate time.

Q. Could it not have been 12 o'clock? A. No.

Q. Could it not have been 12 o'clock that you first heard about it? A. No, I am almost certain it was before 12 o'clock.

10

Q. When? A. Somewhere just before 12 o'clock.

HIS HONOR: Q. What time did the discharging of petrol commence? A. I could not tell you exactly; I should say somewhere in the vicinity of 10 a.m., 10.30, something like that.

MR. TAYLOR: Q. So your recollection is that it was some time after the discharging commenced that you heard about it? A. About what?

Q. It was some time after she had commenced discharging that you heard of that? A. Yes.

20

Q. I think you have said you would still be on the ship when she commenced discharging? A. Yes.

Q. And for about a quarter of an hour after it? A. Somewhere about that.

Q. Then you would go away from the ship? A. Yes, I left her.

Q. On this particular occasion do you remember where you went? A. Went and checked over the lines.

Q. After you left the ship do you remember where you went? A. Up along the dock line for a start.

30

Q. Where to then? A. I do not know where I went to then. I might have gone to the laboratory.

Q. And you might have gone to your office? A. I did not go to my office.

Q. You are quite sure of that? A. Yes, I rarely go to the office.

Q. You do not know whether you did go to but you are certain you did not go to the office? A. I am positive I did not go to the office, As far as going to my office at all, the laboratory is in the office building.

10 Q. If I told you that they commenced discharging about 11.20 in the morning, would you agree with that? A. I do not know because I can only give you approximate times. I cannot remember back that far.

Q. Just think. Was it not in the afternoon that you heard about this petrol leak, after lunch? A. No, I am almost certain it was just before 12, somewhere about that.

20 Q. What time is the lunch break out there? What time do the men knock off for lunch? A. A couple go at 12 o'clock and the other two stay on until quarter to one.

Q. Whenever it was, you were told the ship had stopped discharging because of a leaking gland? A. 20 minutes for a leaking gland.

Q. Were you told 20 minutes? A. That is what I was told, 20 minutes.

Q. You are quite sure about that? A. That is what I was told, something like that. I would not be quite sure at this distance.

30 Q. I suppose this much is clear, that when you came back to the ship when you were told about the leak she was then discharging? A. She was discharging again.

Q. If I told you that she stopped discharging at 11.45 and did not start again until 12.30, if those times are right that means that you got this information about the leak in the afternoon, didn't you? A. That is if your times are right.

40 Q. I suppose you know some of these people on the "Waggon Mound". (Approaching witness with document). Do you know the master, Olsen? A. I do not know.

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Cross-  
Examination -  
continued.

As a matter of fact, I do not know any one of the officers.

Q. The times I have put to you are the times taken from the log. A. As I say, it is a long while ago.

Q. "11.45, stopped discharging to repair leaking glands. 12.30 resumed discharge of gasoline". You see that. That is the tank number, 5. A. 5 o'clock.

Q. At 70 lbs. That is the pressure, is it? A. That is the pressure.

Q. That entry there with the little sign in front of the 5, that is tank 5, is it? A. No. 5. 10

Q. Do you know what is meant by that, c/tk? A. 5 centre tank.

Q. When you were told about this leak were you told that the scuppers had been plugged? A. No.

Q. I suppose that would be an important matter to you, would it, that the scuppers were plugged? A. No. It is later than that because we started to plug all scuppers, to see they were all plugged.

Q. When did you do that? A. I could not tell you that. It was just a little while after the "Waggon Mound" was discharged. 20

HIS HONOR: Q. After she had discharged? A. Yes, not on that particular ship.

MR. TAYLOR: Q. This is what you mean. After the "Waggon Mound" voyage at the time there was a fire, you put in a practice of seeing the scuppers were plugged when the tankers came in? A. Yes, that is when the instruction came out.

Q. From whom did you get your instructions about seeing the scuppers were plugged? Whom would you get that from? A. I would probably get that from Mr. Durack. 30

Q. You told my learned friend that from time to time during the discharging you would go down to the ship but you said you had some time off in the evening. You mean the evening of the 29th? A. Yes.

Q. What did you mean by "some time"? Were you off for six to eight hours? A. Time off to go home.

Q. Did you go home and come back the next day? A. I went home and came back about 11 o'clock that night.

Q. What time did you go home - 4 or 5 in the afternoon? A. I go about half past 6 or 7 o'clock.

Q. Who would be in charge when you were away? A. Mr. Durack.

10 Q. But Mr. Durack is your superior out there? A. My superior, yes.

Q. You mean you go away and then the responsibility would be his? A. Yes.

Q. What do you say your precise position was out there in 1951? A. Shipping foreman.

Q. Do you have an office up near where Mr. Durack's office is? Is his office in the same block as yours? A. In the same block, yes.

20 Q. The next morning, the morning of the 30th, you say about daylight, you became aware of some furnace oil that had escaped? A. Yes, that is right.

Q. I suppose you mean round about 6 o'clock in the morning? A. About daylight.

Q. Where had you been since the time you came back at 11 o'clock at night until day light on the morning of the 30th? Where would you be? A. On the ship, on the wharf, around the tank farm.

30 Q. Do you remember when the ship finished discharging? A. I could only guess at that. I would say about 8 o'clock the next morning, half past 8, somewhere about that. I would not swear to the time.

Q. "0945, hoses disconnected". I suppose that would be it.

(Luncheon Adjournment).

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AT 2.00 P.M.

(Documents produced on subpoena by Caltex  
handed to Mr. Taylor.)

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Cross-  
Examination -  
continued.

Q. Am I right in assuming that so far as the discharge of the cargo of the "Waggon Mound" is concerned your duties related to from the time it left the ship to go into your tanks? A. Yes.

Q. It would be part of your duties, I suppose, to see that the hose was put on correctly? A. Yes.

Q. And that there were no leakages from the discharge manifold forward to where it went into your tanks? A. That is right.

10

Q. Would you yourself see to that, inspect that hose from time to time? A. I do.

Q. I suppose you would also inspect where the hose went into the tanks? A. Yes.

Q. To see there was no leak from there? A. Yes.

Q. But so far as leaks on the ship are concerned, those do not come within your province; that is the province of the ship? A. Leaks on the ship they do, because I keep an eye on those too, as far as I can.

20

Q. You told us you keep an eye on them but you are not concerned to inspect, for example, the lines of the ship up to the discharge manifold; you do not inspect the lines of the ship itself? A. I usually do.

Q. Did you on this occasion? A. I would not swear to it, not at this distance.

Q. When you told my learned friend that you did not observe at any time any petrol between the ship and the wharf, you meant by that that on casual observation you had not seen any? A. I did not get that.

30

Q. You did not make a specific inspection, for example, after you were told that they had stopped pumping to repair glands? A. Yes, you inspect the side of the ship almost every time you walk on the wharf.

Q. It is your practice to inspect the sides of the ship? A. Yes.

Q. That is what you did on this occasion, inspected the sides of the ship? A. The sides of the ship.

Q. Did you know from what part of the ship it was alleged that petrol did escape, which glands were involved? A. No.

10 Q. You do not know whether it was up for'ard or down aft? A. No, it would not be for'ard because the pump room is all aft.

Q. When they are pumping out of the ship the cargo, whether it is gasoline or power kerosene, is pumped out from the bottom of the ship's tanks? A. Yes.

Q. I suppose you would know that when cargo is put into these tanks it is put into the same pipes as are used to discharge it? A. As far as I know. I have never seen a tanker actually loaded.

20 Q. You have never seen it loaded? A. No, only the depot loading we have done ourselves and we always go through the ship's pipelines.

Q. Do you know that the same practice is adopted with regard to the ship's tanks in which they keep the furnace oil; they are discharged from the bottom and filled from the bottom? A. Yes.

Q. You said that in the early hours of the morning about daylight on the 30th, you noticed there had been an escape of bunker oil. Do you remember saying that? A. Yes.

30 Q. I think you said you were told about it? A. That is right.

Q. Do you know where you were when you were told about it? A. I was on the wharf.

Q. Being told about it, you then had a look? A. Yes, I went and looked at it.

Q. I think you said you then saw what you described as just a trickle down the side of the ship? A. That is right, that is all I saw of it.

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H.J. McAnalley,

Cross-  
Examination  
continued.

Q. You showed my friend on the photograph, one of the exhibits, the place where you thought it was coming from. Do you remember that? A. Yes.

Q. (Exh.2(4) shown to witness). You indicated somewhere in the vicinity of where the fishplate goes on to the superstructure? A. The midships section.

Q. That is not a photograph of the "Waggon Mound". It is a photo of a similar tanker. Was that on the port side or the starboard side that you observed that trickle? A. It would be on the starboard.

10

Q. That would be on the wharf side? A. The wharf side.

Q. Did you go across and have a look on the port side of the ship about the same place? A. No, I was only interested in going to the ship on the starboard side. I did not look at the port side at that moment.

Q. You called it a trickle? A. It was just running and that is all. It may have been like that for hours.

20

Q. Did you observe then that there was oil lying between the ship and the wharf? A. Well, the ship was pretty close up. It was lying under the wharf.

Q. Did you make any observation yourself after the ship had gone as to where this oil had spread, what extent it was? A. Yes. As I say, the bulk of it went down into Mort's bay along under Mort's wharf, lying along our seawall.

Q. Would you agree that you had complaints from as far away as Balmain about this oil? (Objected to.)

30

Q. Did you yourself hear of complaints from a man in Balmain, a boat builder? (Objected to; question rejected).

Q. I think you told my learned friend that the oil had worked its way around to Snail's Bay? A. Yes.

Q. Did you have knowledge of it going as far as Balmain?

HIS HONOR: Does not Snail's Bay run down to Balmain?



MR. MEARES: They are both in Balmain.

MR. TAYLOR: Q. When I refer to Balmain I mean that portion of Balmain going around to the Balmain wharf which is farther up the river than Snail's Bay? A. Round into Snail's Bay. That is Snail's Bay.

MR. MEARES: The Balmain wharf is farther towards the quay, towards Peacock Point.

10 MR. TAYLOR: Q. You told us about Snail's Bay. Did you yourself have any complaints further up the river from Snail's Bay? A. I never handled a single complaint at all.

Q. After the "Waggon Mound" had gone were you on duty that day? A. I would not swear to that. I may have had the afternoon off after working all night.

20 Q. The "Waggon Mound" sailed about half past 10. Did you make an observation after the "Waggon Mound" had gone as to where this oil extended, on the morning of the 30th? A. Yes, it had spread down along our seawall, down in the direction of Mort's

Q. Could you see it down past the Sheerlegs wharf? A. Not at that particular time.

HIS HONOR: Q. Did you look to see how far? A. I only went as far as the ferry wharf where our property finished.

MR. TAYLOR: Q. Sometime in the morning of the 30th the ship sailed and you went down to Mort's Dock, you say, with Mr. Durack? A. I did not.

30 Q. Did you go down to Mort's at all? A. In the afternoon, one afternoon.

Q. Was it the day the ship sailed? A. I would not swear to that. I think it was the day after.

Q. That is the 31st? A. It would be the 31st.

Q. The 29th is the Monday and it sailed on the 30th? A. I may be wrong but I am almost certain it was the afternoon of the 31st.

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Cross-  
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H.J. McAnalley

Cross-  
Examination -  
continued.

Q. I may take it you were not down on Mort's Bay premises on the morning that the ship sailed? A. No, I was not.

Q. It is your recollection that when you did go to Mort's Dock premises it was some time in the afternoon of the Wednesday? A. Yes, that is my recollection of it.

Q. With whom did you go? A. Mr. Durack.

Q. Did you make an inspection? A. Yes, went and saw Mr. Parkins and we had a look around the slipway.

10

Q. I suppose on that day you saw that there was a large quantity of oil, in Mort's Bay? A. A quantity of oil.

Q. A large quantity? A. I would not say a large quantity. I would not express an opinion how much there was there.

Q. But it was all around the foreshores of Mort's Bay? A. It was up on the slipway where we looked and portion had worked around the gate of the graving dock.

20

Q. Which way did you go back after you had inspected the slipway, go back to Caltex, do you remember? A. I think we came out of the Ballast Point Road gate.

Q. Were you at any time in the afternoon of the 30th on the Sheerleg wharf? A. No, I do not think so. I do not think we went on the wharf.

Q. Is this what you say, the only time you were present with Mr. Parkin and Mr. Durack was on the Wednesday afternoon; you were then around at the slipway and had a conversation with him there? A. Yes, I think we met him at the office over near the dock and walked across the slipway.

30

Q. At no time were you with Mr. Parkin on the sheerleg's wharf? A. No, I do not think we went near the wharf.

Q. You knew, I suppose, on the morning of the 30th at least that there would be a quantity of this oil

down below the Sheerlegs wharf, underneath it. Did you know that? A. No, I knew it was working that way.

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Q. I suppose you knew that was the way the tide and the wind would take it? (Objected to.)

Q. The prevailing tide would take it down into Mort's Bay? (Objected to; question allowed.)

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Evidence.

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Q. You take it the oil would go down in the direction of Mort's Bay? A. Yes.

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10 Q. I suppose you knew that if it went that way it would go underneath the Sheerlegs wharf? A. It probably would. That is the only place it could go down in that direction.

H.J. McAnalley.

Cross-  
Examination -  
continued.

Q. I suppose you had seen this ship the "Corrimal" tied up beside the Sheerlegs wharf and down there for some months before this happened and I suppose you could see it every day when you came to work and every night when you went home? A. Yes.

20 Q. Could you see it from your office? A. You probably could.

Q. I suppose you would see it as you walked about the Caltex - ? A. Yes, walking about -

Q. You knew that they were using welding apparatus and oxy-burners in the work they were doing in that ship? A. Yes, using it pretty constantly.

Q. You knew they would be doing that on the 30th, the day after the oil escape and the next two or three days thereafter? A. Yes.

30 Q. You know, for some portion of that time at least, this oil that had come out of the "Waggon Mound" would be lying around the "Corrimal" and under the Sheerlegs wharf? A. Yes, it was lying close up to the wall there as far as I can tell you now.

Q. At no time did you yourself get in touch with anybody from Mort's Dock? A. No.

Q. On this night, the 30th - I do not want you to consider this offensive - were you deaf then? Were you wearing a hearing aid back in 1951? A. Yes, the same as I am now.

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continued.

Q. You told my learned friend that the first you knew of the fire was that an alarm went off? A. Yes.

Q. I suppose at the Caltex place you have quite a system of fire alarms? A. Yes.

Q. Are they operated manually? Does somebody have to go - ? A. Operated manually.

Q. Is your office anywhere near Mr. Durack's office? A. Yes, right alongside it.

Q. You had not seen any fire while you were in the office, in your office. Do you remember that?  
A. No, I think at that particular time Mr. Durack's office was on that corner. It looks out over the Dock.

10

Q. He would have a different view from yourself?  
A. Yes.

Q. When you did hear an alarm you then ran down to where your fire installation was? A. Ran to where our fire station is at that gate.

Q. On the way down you saw the fire. That was your first view after you got out of your office? A. Yes.

20

Q. Would it describe it accurately then to say that there was a pall of black smoke? A. Yes, a bit of black smoke, not a pall of it.

Q. What about the "Corrimal", was that on fire when you - ? A. It was on fire when I first saw it.

Q. You came out of your office and I suppose you had run when you heard the fire alarm. When you first saw the fire the "Corrimal" itself was already on fire? A. Yes.

30

Q. Can you remember whether or not when you first saw it the cross-trees of the "Corrimal" were on fire? A. I could not tell you that one.

Q. But you could see fire on the superstructure of the "Corrimal"? A. Yes, you could see flames.

Q. When you got down closer could you see the oil burning on the water? A. No.

- Q. You always had your hose on the Yeend St. end of the Sheerlegs wharf? A. That is right.
- Q. You were working from that end? A. Yes.
- Q. You could not see how far down the fire was then burning? A. I saw it coming down. You have a fair idea. You are overlooking it.
- Q. When you first saw it was it then burning down to the after end of the "Corrimal"? A. No, about amidships.
- 10 Q. Could you see how far it had gone down? A. No, I could not tell you how far it had gone down.
- Q. You did not at any time hear an explosion like an oxy bottle going off? A. No.
- Q. Did you see at any time debris being thrown from the "Corrimal" high up in the air after the fire had started? A. No, the flames were fairly high just about midships.
- Q. Did you see men jumping over the side of the "Corrimal" on to the lighter? You did not see that?
- 20 A. No.
- Q. You could not see, I suppose, from where you were what was taking place around the after end of the "Corrimal"? A. No, I could not see from my end at all.
- Q. You and other Caltex employees kept this hose going on the fire from the Yeend St. end of the wharf? A. Yes.
- Q. You were there, I think, until the fire was put out? A. Yes.
- 30 Q. It would be your concern to see there was no fire came back towards Caltex? A. Yes.
- Q. When you first saw the fire - have I got it right - the wharf was burning? A. Yes.
- Q. The ship was burning? A. Yes.
- Q. What about underneath the wharf? A. I did not see underneath the wharf I did not look underneath the wharf - not at that particular time.

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Cross-  
Examination -  
continued.

Q. You told my friend that after the fire was out you saw some patches of oil on the water up near the Yeend St. ferry wharf? A. That is right.

Q. I suppose you had seen the fire floats breaking up the oil on the water while the fire was still burning. Did you see that? A. No.

Q. Did you see the fire floats there at all? A. No, I did not see the fire floats, as a matter of fact. I may have but I do not remember seeing them. I cannot place them.

10

Q. Is part of your duties to prepare statements showing the quantity of the various portions of the cargo received from the "Waggon Mound", that is, how much gasoline came out? A. No, I get them from the home office.

Q. From the head office? A. From our home office, yes.

Q. Who measures the tanks to see how much is in them when you start receiving and when you finish? A. The Customs and my pumpman.

20

Q. That is done under your supervision? A. Yes, and under Customs supervision too.

Q. Would you agree that in this particular cargo of gasolene there was a difference between the invoiced quantity and the received quantity? A. There may have been.

Q. Will you look at these figures I show you, part of the documents produced under subpoena. Would any of those figures be your figures? A. No, the only figures we get are from the home office and I work out the stop height.

30

Q. You get these figures and you indicate the quantities received and work out what? A. I get the quantity from the home office or what we call a form 4.

Q. That is the quantity you are supposed to receive? A. Yes.

Q. Having got that you work out - ? A. I work out the stop height. I get the commencing height and work out the stop height to get that quantity.

40

Q. When you go and measure after the cargo has been discharged I suppose you could see whether you have got up to it or short of it? A. It might be a bit over it or it might be a bit under it.

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Q. On this occasion were you a little bit under it, this cargo? A. I could not tell you.

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RE-EXAMINATION:

H.J. McAnalley

10 MR. MEARES: Q. Mr. Durack at the time of this incident on the 1st November, how long had he been at the depot? A. I did not get the question.

Cross-Examination - continued.

Q. This fire took place on 1st November? A. Yes.

Q. Mr. Taylor asked you about Mr. Durack being at Caltex at the depot? A. At the depot?

Re-Examination.

Q. Do you remember Mr. Taylor asking you was Mr. Durack at the depot at the time of the fire? A. Yes, he was there at the time.

20 Q. How long had he been at the depot prior to that? How long had he been superintendent of the depot at the time of the fire? A. A couple of weeks, I think, two or three weeks. I would not swear to that but he was fairly new to the job, not as a superintendent but in our particular terminal.

Q. When you got to the fire with the hose was the port side of the "Corrimal" alight? Were the flames creeping up her side? A. No, I never saw any flames from her at all. It was from inside the boat I saw the flames come.

Q. There was smoke about? A. Yes.

(Witness retired).



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No. 43

EVIDENCE OF P.B. COLEMAN

PETER BRYANT COLEMAN,  
Sworn, examined, deposed:

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P.B. Coleman.  
Examination.

TO MR. MEARES: My full name is Peter Bryant Coleman. I reside at Wallsend, Newcastle. I am office manager of Goodyear Tyre and Rubber Company

Q. In October, 1951, I think you were employed by the Vacuum Oil Co.? A. That is correct.

Q. You had been employed by them from about 1948 to 1951? A. That is correct. 10

Q. You left them at the end of 1951? A. March, 1952.

Q. You were with them in all for how long? A. Just a little over 3 years.

Q. What was your occupation? A. Industrial chemist, you might call it.

Q. Are you a qualified industrial chemist? A. I am a Bachelor of Engineering and Technology from Sydney University. 20

Q. Does that training enable you to make analyses of petrols and fuels? A. Yes.

Q. Was it part of your duties at Vacuum Oil to take samples of fuel oil that came into the Company's No.2 tank at Pulpit Point? A. Yes.

Q. In October, 1951, did you only have the one tank where bunker fuel oil came in, was stored? A. From memory I think there were two tanks but one was only a very small one which was used for heating purposes, heating of fuel oil but it was not a main storage tank. 30

Q. Was that tank used for the purpose of filling up any of your lighters for bunkering ships? A. No, I do not think so .

Q. The main tank was the No.2 tank? A. That is correct.



Q. Was that the tank that was used for the purpose of taking oil out for the purpose of bunkering ships? A. To the best of my knowledge, yes.

In the Supreme Court of New South Wales Admiralty Jurisdiction

Q. Would you look at this document? Is that your signature on the document? A. It is not my signature, no, but it is my name, yes.

Defendant's Evidence.

Q. Can you tell me, as far as that document is concerned, was that prepared under your instructions or not? A. Well, I was in charge of the Refined Oil Testing Section of the laboratory at Pulpit Point and it was my responsibility to supervise all tests carried out, tests as well of all refined oils that came into Pulpit Point.

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10

P.B. Coleman.

Examination - continued.

Q. Having looked at that document, it refers to a fuel oil analysis in regard to No.2 tank. Apart from that document have you any independent recollection of it at all? A. None whatsoever.

Q. That document that you see dated 16th October was prepared under your instructions? A. Yes.

20

Q. At the time the analysis was made? A. That would be correct.

Q. And the analysis contained in that document was under your supervision? A. Most of it, yes.

Q. It shows, does it not, - (Objected to).

ON THE VOIR DIRE.

MR. TAYLOR: Q. The analysis was not done by you, was it? A. At this stage I could not say definitely whether I did that analysis myself

30

Q. The document you are looking at, is any part of it in your handwriting? A. No, it is a typewritten document.

MR. TAYLOR: I object to the witness refreshing his memory.

(Argument ensued.)

MR. MEARES: Q. Would you look at that document again and tell me if you can how it came into being?

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HIS HONOR: Before you answer that, the witness has said that he has no independent recollection of that document. Thereupon you are seeking to refresh his memory.

MR. MEARES: He said he had no recollection of the tests contained in that document, not of the document.

HIS HONOR: Q. Have you any recollection of that document? A. None whatsoever.

MR. MEARES: Q. As far as that document is concerned, 10  
you see it there? A. Yes.

Q. You were in charge of this laboratory, were you?  
A. Yes, this section of it.

Q. In that laboratory tests were done, weren't they; analyses were made of fuel oil coming into the company's No.2 tank? A. Correct.

Q. As far as those analyses were concerned was it any part of your duty when the analysis was done in the laboratory to record the results of the analysis? 20  
A. Yes, the results went out over my signature.

Q. How did you record the results? Did you write them on a blackboard? Do you follow? A. I get the idea now. They were written on an analysis sheet similar to this.

Q. What do you mean, written? A. Handwritten and when all the tests were completed they were sent down to be typed and then forwarded on to head office.

Q. After they were typed did you check them? A. Yes.

Q. Then as far as the rough written sheet that you had prepared - (Objected to). 30

Q. Did you write the analyses out in your own handwriting, the first sheet? A. That would be the normal procedure, yes.

Q. Then you say that you sent your sheet downstairs to have a copy made on the typewriter? A. Yes.

Q. Then you checked that with the rough sheet and then it was sent to head office? A. That is correct.

HIS HONOR: Q. Under your signature, I think you said? A. That is correct.

MR. MEARES: Q. Would you look at the document you now see? (Objected to).

ON THE VOIR DIRE

MR. TAYLOR: Q. Whoever did the analysis made the rough notes, the rough sheet, that is so? A. Yes, that would be correct. There may be one or two people involved in carrying out the tests.

10 Q. The only time you would do the rough notes would be if you did the analysis yourself? A. That is correct.

Q. You have already told us, looking at that document, that you could not say whether you did that analysis or not? (Objected to; question allowed).

Q. You have already told us that you cannot say whether you did that analysis or not? A. Correct.

20 MR. MEARES: I ask my friend to specify what analysis he refers to. My friend has not seen the document and I can tell him there are a number of tests.

MR. TAYLOR: Q. You have already looked at the document, the one you have in front of you and you have told us that looking at that document you are unable to say whether any of the tests or analyses shown in that document were done by you or done by somebody else? A. That is correct.

30 MR. MEARES: Q. As far as the laboratory was concerned how many of you were there in the laboratory, persons doing analyses? A. Persons doing analyses, there would be four.

Q. Were all those persons, was it their duty to do various analyses of the fuel oil? A. Depending on which of the four was in charge of the discharge of the ship, they would carry out the flashpoint and the specific gravity of the firm's oil but other tests would possibly be completed by me at a later date.

Q. As far as that document is concerned you see the writing on it in pencil of your name? A. Yes.

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continued.

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Examination -  
continued.

Q. Does that tell you anything? Does that tell you whether you were in charge or not at that time? A. Well, I was in charge of that section of the laboratory at that date.

Q. If you were in charge of the laboratory at that time, you tell us then you would have done the flashpoint test? A. Not necessarily.

Q. That flashpoint test may have been done by you or it may have been done by one of the other three gentlemen that were there? A. That is correct.

10

Q. But it was your duty to record the results of those tests down in the laboratory? A. Yes.

Q. You were all in the laboratory together when these tests were done? A. No, I would not say that.

Q. Is it possible, from any records you know to be in the possession of Vacuum Oil, to determine which of the four on any particular occasion did the flashpoint test of any particular fuel oil? (Objected to; argued.)

20

MR. MEARES: I will rest on the objection. If my friend continues to object it may be that I will simply have to say to Your Honor, subject to Your Honor's ruling, that it is not provable.

HIS HONOR: So far Mr. Taylor's objection appears to be a valid one so far as this has gone.

MR. MEARES: We would submit that all we can do is to adduce evidence as to certain things. It may be that the evidence is pretty thin but Your Honor might be satisfied -

30

HIS HONOR: The question is whether it is evidence.

(Further argument ensued).

HIS HONOR: I do not propose to give any ruling of a general nature. The immediate matter before me is whether this witness is entitled to refresh his memory by looking at a certain document. The rules under which that may be done are quite clear and they are limited, and it seems to me that this witness has not qualified himself in relation to the document to use it to refresh his memory.

40

(Document under discussion m.f.i.7.)

MR. MEARES: Q. You had occasion to make a large number of tests of fuel oil, furnace oil going in to No.2 tank at Pulpit Point during the three years you were there? A. That is correct.

Q. You mean a very large number of tests of the flashpoint of the furnace oil both going into No.2 tank from the ship and when it actually got into the tank? A. Yes.

10 Q. In the whole of the three years that you were employed with Vacuum, could you tell me what was the lowest flashpoint that you ever got on fuel oil going in to No.2 tank or actually in No.2 tank? (Objected to; question allowed). What is your answer? A. To the best of my knowledge it was just under 150 degrees.

Q. That is the lowest flashpoint? A. Yes, Fahrenheit.

20 HIS HONOR: Q. That is for furnace oil? A. That is correct.

Q. I think I have seen on tins of kerosene a flashpoint of - ? A. Kerosene would be totally different.

Q. The flashpoint has a different what? A. The flashpoint of different petroleum products from motor spirit which is very low and furnace oil or lubricating oils which may be over 300 degrees Fahrenheit.

30 MR. MEARES: If the flashpoint of substances is 100 degrees F it simply means that if you heat that substance up to 100 deg.F., it flashes.

MR. TAYLOR: Under certain conditions.

HIS HONOR: It means it will not flash under any conditions less than that temperature.

MR. MEARES: That is so and the flashpoints of the various substances, petrols and kerosenes vary immensely and Your Honor will be hearing some evidence as to them.

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P.B. Coleman.

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P.B. Coleman.

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continued.

Q. You were telling us that in your experience, as far as any furnace oil that the company handled going into No.2 tank or in No.2 tank, the lowest was just under 150 deg.? A. So far as I can recall.

Q. As far as your recollection is concerned was that just on one occasion or very many occasions? A. Only one occasion.

Q. So that the Court may have some idea, could you give the Court from your recollection to the best of your ability what was the highest flashpoint of fuel oil being checked into or actually in No.2 tank? 10

A. That is very hard to remember at this time but it would be over 200 degrees.

Q. When you say over 200 might it be 1,000 degrees?

A. No, I would not imagine it would be greater than 230 degrees.

Q. Could you give me, to the best of your knowledge, an average over the three years of the flashpoint of furnace oil going into or in No.2 tank? A. No. 20  
I would say it would be round about 180 degrees Fahrenheit.

Q. Would you look at this document, "Bunker delivery receipt", m.f.i.l. Do you see that document and the signature "Mr. Cullen Ward" on it? A. Yes.

Q. Mr. Cullen Ward was an employee of your company, was he? A. To the best of my recollection, yes.

Q. You may assume that Mr. Cullen Ward was in charge of the bunkering of a ship known as "Waggon Mound" with your company's furnace oil. Do you follow that? A. Yes. 30

Q. That furnace oil that was being provided for the "Waggon Mound" would have come from No.2 tank? A. That is correct.

Q. Would you give to Mr. Cullen Ward the flashpoint of the oil? (Objected to; question withdrawn).

Q. What system was adopted for each delivery of the oil? A. For bunkers?

Q. Yes. A. Well, the laboratory did not go into it

at all. There was purely an arrangement between the office at port and the ship concerned. The oil would be loaded into lighters and taken down to the ship and pumped aboard.

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Q. I think you have rather misunderstood me. We can imagine that Mr. Cullen Ward - we can assume that he is in charge of the lighters and he would be taking the oil, drawing the oil from No.2 tank.

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10 A. Yes. (Objected to; question allowed.) What is the question again?

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Q. What is the practice about informing Mr. Cullen Ward about the particulars of the oil he is putting in to the ships? A. After a ship had discharged into No.2 tank and the tank had been tested and passed for deliveries to go out, the flashpoint and specific gravity would be given to Mr. Cullen Ward or to his office by the laboratory.

P.B. Coleman.

Examination -  
continued.

20 Q. As far as that position was concerned in October, 1951, would you give that information to Mr. Cullen Ward? A. Yes.

Q. That information that you gave to Mr. Cullen Ward, was that information given to him from tests carried out in your laboratory? A. That would be correct, yes.

MR. MEARES: I tender the tanker delivery receipt invoice, m.f.i.l. (Objection to tender; admissibility argued).

30 HIS HONOR: If Mr. Cullen Ward were a party or were in relation to the plaintiff in this action to such a degree as to entitle him to make admissions for them and otherwise to bind them I think your submissions would be unanswerable, Mr. Meares. Mr. Cullen Ward is not in that position. I reject the tender.

MR. MEARES: I submit I am entitled to have that document in on other grounds. Mr. Ward was cross-examined as to the facts contained in that document.

(Further argument ensued.)

HIS HONOR: I admit the document.

(M.f.i.l. tendered and marked Exh.4).

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MR. MEARES: I know it is not necessary to add to what I have already put, but I will be really relying upon it upon this basis, inter alia, that we had every reason to accept the statement that was delivered to us by Vacuum, that what was being given to us was oil with a flashpoint of 170 - when we are charged with negligence in respect of that oil.

CROSS-EXAMINATION:

MR. TAYLOR: Q. I want to get this clear, Mr. Coleman; I think we have had it that there were four people doing tests of flashpoints in this laboratory over the time you were there? A. There were four people who were responsible for discharging all bunkers that came to Vacuum, and they would be the ones who would be doing the flashpoints, yes.

10

Q. Did they work shifts or just all work the ordinary eight hours? A. No. They worked the ordinary eight hours except, of course, when ships came in and they worked overtime.

20

Q. At any time in this laboratory any one of four persons could be the person doing the flashpoint of oil? A. Yes.

Q. You would be one of them? A. Yes.

(Witness retired and allowed to leave).

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T.G. Hunter.  
Examination.

EVIDENCE OF T.G. HUNTER

THOMAS GIRVAN HUNTER,  
Sworn, examined, deposed:

TO MR. MEARES: My name is Thomas Girvan Hunter.

30

Q. I think you are an Associate of the Royal Technical College of England, in Technical Chemistry?  
A. In Glasgow.



- Q. You are a Bachelor of Science, in oil, engineering and refining, of the University of Birmingham and you have a Degree of Philosophy of the University of Birmingham? A. Yes.
- Q. And for that degree you wrote a thesis in what? A. "Refining of petroleum".
- Q. And you are a Doctor of Science to the University of Birmingham? A. That is correct.
- 10 Q. Is that degree a higher degree than Philosophy? A. The Doctorate of Philosophy is the higher degree - it is a degree higher.
- Q. You are a member of the Institute of Chemical Engineers; a Fellow of the Royal Australian Chemical Institute and a Fellow of the Institute of Petroleum - and so far as being a Fellow of the last Institute concerned, is that higher than being a member or not? A. Yes.
- 20 Q. Between 1926 and 1927 you were the Research Assistant in the Department of Fuel of the Royal Naval College at Greenwich? A. That is correct.
- Q. From 1927 to 1931 you were a plant and refinery manager of Imperial Chemical Industries plant at Willington on Thames? A. Manufacturing oil from coal.
- Q. From 1931 to 1947 you were the senior lecturer in the Department of Petroleum Engineering and Refining to the University of Birmingham? A. Yes
- Q. You were for some years consultant to the Anglo-Iran Oil Company? A. Yes.
- 30 Q. You were consultant on petrol explosives to the Birmingham City Police? A. Yes.
- Q. And you were acting editor of a very large publication, running into four volumes with more than four million words, entitled "The Science of Petroleum" issued by the Oxford University Press? A. Yes.
- Q. You were consultant to the Ministry of Aircraft Production in London in connection with wartime problems of incendiary bombs? A. Incendiary bombs

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and flame throwers and fuel barriers around the British coast.

Q. You are at present the Professor of Chemical Engineering of the University of Sydney and you are head of the Chemical Engineering Department within the University? A. Yes.

Q. And you have held that position continually since 1947? A. Yes.

Q. You have made a study at Greenwich in connection with fire prevention and development of fires - as a fire observer? A. I was what was called an Honorary Fire Observer to the Midlands region, and that was an office created by a Committee under Lord Plymouth of the Home Office for technical people to do research and investigations on how fires start and how they proceed and things of that nature. 10

Q. Might we take it, Professor, that you have been concerned in a scientific way with oil refining and petroleum products for many many years, both here and overseas? A. Yes, for 30 years. 20

Q. And you have before today and before considering this case had occasion to consider the ability of oil to be exploded or set alight and burn on water? A. Yes.

Q. Apart from being concerned with that problem in private practice, in England were you also concerned with the methods of setting oil on fire which were proposed prior to what was thought to be the invasion time in England? Did you have occasion to consider for the Government a method of promulgating oil on the waters of the Channel and lighting that oil up in the event of an invasion? A. That is correct. We felt that -- 30

Q. I just wanted to ask you that question first? A. Yes, that is right.

Q. I think you have in connection with this case that is before the Court done a large number of experiments have you not? A. I have done what amounts to almost a research investigation.

Q. You have had the assistance of a Mr. Parker, have you? A. Who is a member of my staff. He has assisted me in the experimental part of the work. 40

Q. So far as your experiments in connection with this case are concerned, can you give the Court an idea of the amount of time that has been taken by you and your assistant in your experiments? A. We have carried out over 300 experiments on the ignition of bunker fuel oil when it is floating on seawater, and the amount of time which has been devoted to this, I estimate, to be between 400 and 500 man-hours. I cannot get it any closer than that.

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10 Q. In addition to those experiments that you have spoken of, have you also made some experiments concerning the behaviour of petrol if released on to sea water? A. We have carried out a number of experiments in that.

Q. In addition to that have you read in this case, excluding today's hearing, the whole of the evidence? A. Yes.

20 Q. Did you read the whole of that evidence after you had done a majority of the tests that you will be telling His Honor of? A. Yes.

Q. Now, I want you to assume - if you will - that you are aware of the fire at the Sheerlegs wharf at Mort's Dock? A. Yes.

Q. You have made an inspection of the Sheerlegs Wharf? A. I have.

Q. And you are aware of the position the "Waggon Mound" was in when she was taking in bunker fuel oil and discharging products at the Caltex Wharf? A. Yes.

30 Q. You also had in your possession information concerning tides, winds and temperatures on the 29th, 30th and 31st October and 1st November? A. Yes. I had detailed information of that nature.

Q. I want you to assume that in accordance with the evidence of Mr. Cullen Ward - which you have read, I think, Professor? A. Yes.

Q. I want you to assume that some petrol floated in the harbour from a leak on board the "Waggon Mound" on the morning of the 29th October, 1951. I want you to assume that? A. Yes.

40 Q. Then I want you to assume also that oil escaped from the "Waggon Mound" on the morning of 30th October, 1951 at about 4 a.m. on that morning. Do you follow that? A. Yes.

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Q. I want you to further assume that that oil, or part of it, escaped or got away from the wharf and around about it, and that the whole or part of it got underneath and around the Sheerlegs wharf and was in that position when the fire broke out on 1st November 1951 at about two o'clock. Do you follow that? A. Yes.

Q. Now, I want to ask you this straight out: Assuming that a leakage of petrol had occurred at or about the time suggested by Mr. Cullen Ward would there have been any free petrol, or any petrol, on the waters of the Harbour by four o'clock of the morning of 30th October, 1951? A. None whatever, sir. 10

Q. I want you to give us a little demonstration, if you will, with Mr. Parker's assistance. Have you made certain tests?

First of all, would you tell us why you reached that conclusion? A. As a result of certain tests which I carried out with the assistance of Mr. Parker I took nearly half a gallon - I took three litres of Caltex standard petrol and floated it to the depth of a quarter of an inch on water in a large dish which had a surface area of  $3\frac{3}{4}$  square feet. 20

Q. Seawater? A. No, just ordinary water. So far as evaporation tests are concerned whether it is ordinary water or seawater would make no difference.

I then exposed that quarter inch layer of standard petrol for varying periods from one hour, two hours, three hours, four hours and five hours, and examined the residue left on evaporation at the end of those periods. 30

Might I refresh my memory by consulting a note I made at the time, sir?

Q. Yes. A. After a period of one hour under those conditions a residue was left from the petrol evaporation of 26.5 per cent by volume. That is, over 70 per cent. had evaporated.

Q. After one hour? A. After one hour. And the residue which was left, as I hope to demonstrate, is not petrol. It has lost the characteristics of petrol, the highly volatile, highly inflammable, constituents which one finds normally in petrol have gone - practically all gone - during that first hour. 40

At the end of the second hour 90 per cent. of

the petrol had evaporated, leaving behind a residue which again was not petrol, but which I could only describe as being closer to kerosene in its inflammability characteristics.

At the end of three hours, 93 per cent. had gone - leaving seven per cent. by volume as the residue.

10 At the end of four hours 97 per cent. had gone, and at the end of five hours there was only 1.8 per cent. left - 98.2 per cent. had evaporated - and that 1.8 per cent. which was left is material which would be very difficult indeed to set afire.

Q. First of all, when you took that test you had a depth of petrol of a quarter of an inch on the water, you told us? A. Yes.

20 Q. Assuming there was a leakage - according to the evidence of Mr. Cullen Ward - do you follow that? Could you imagine that petrol that fell into the Harbour under the circumstances he mentioned would retain or would ever be, when it got into the Harbour, a depth of a quarter inch? A. If it was allowed to spread freely it would spread freely and regularly to depths very much less than a quarter of an inch, but if it had been dammed up on three or even four sides I can imagine it reaching a quarter of an inch, but not unless it was completely enclosed.

Q. In a fairly small space? A. In a fairly small space.

30 Q. In other words, restrained from spreading? A. Restrained from spreading.

Q. So far as petrol is concerned, may we take it that compared with oil it would tend to spread very much more thinly? Petrol - than bunker oil? A. I think so, because of its lower viscosity.

Q. Would you just demonstrate to His Honor this question of the evaporation of petrol and what happens to it? --

40 HIS HONOR: Mr. Meares, would you be good enough to ask Prof. Hunter to describe these experiments in words so that they may be recorded in the notes?

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MR. MEARES: Yes, Your Honor.

Q. I think the first experiment you wish to do is to demonstrate the inflammable qualities of free petrol, to start off with? A. That is correct.

MR. TAYLOR: I would not contest that.

MR. MEARES: We appreciate that, but I think it is still necessary.

HIS HONOR: You wish to demonstrate, do you, the diminution of the inflammability with the passage of time, do you?

10

MR. MEARES: Yes.

WITNESS: In the first experiment we have got Caltex standard grade petrol and an open dish, seven and a quarter inches in diameter, and we are going to take what is virtually two teaspoonsful of petrol, about five cc., which will be just enough to cover the bottom of the dish.

MR. MEARES: Q. So far as the inflammable and evaporating qualities of this Caltex standard petrol is concerned, would they vary in any material respect from the inflammable and evaporating properties of, say, super grade petrol? A. No.

20

(At this stage Mr. Parker, Prof. Hunter's assistant, arranged jars of petrol and open dishes on the jury box ledge, poured a quantity of petrol into a dish and threw a lighted match into the petrol.)

MR. MEARES: Q. Would you agree that that test establishes that when the match is first introduced to the petrol, which just covers the dish, that the whole area is almost instantaneously ignited? A. The whole area is obviously instantaneously ignited.

30

HIS HONOR: Q. Does that apply, Professor, in a widespread area as well as in a relatively confined space? A. Yes I think in the case of a bigger area the larger noise we would get on ignition. If you had a large enough area I think it would be almost what you would call a violent explosion.

MR. MEARES: Q. Supposing you had an area - taking it in the infinite - which was covered with petrol,

40

an area of ten acres - and you applied a match at some point. Could you tell me whether there would be any substantial lapse of time before that flame got to the perimeter of the area? A. In my opinion there would be no substantial lapse of time. No one of course has ever been able to find out - no one has ever done it to find out.

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10 HIS HONOR: Q. With this qualification; that the petrol was spread a quarter of an inch deep? A. It does not matter. We had it perhaps 1/50th of an inch in that tin.

MR. MEARES: Q. Assuming, however, that petrol was on the water and a light were applied to it, and it was over a substantial area; you would assume that the whole area would be substantially immediately alight? A. I think so.

Q. And you are also of the opinion, are you, that there would be a very large sized explosion? A. I think there would be a very considerable explosion.

20 HIS HONOR: Q. Would the probable explosion depend to any degree upon the depth in which the petrol was spread out? A. I do not think particularly so, Sir.

MR. MEARES: Q. Would you indicate the next experiment? A. We are going to take the residue after five hours.

Q. Would you take the residue after one hour? A. After one hour, and see the difference in inflammability.

30 Q. That is after the petrol has been in the open air, a quarter of an inch in depth, and has been evaporating for one hour? A. For one hour.

Q. How much? A. The same quantity.

40 HIS HONOR: Q. Was this in the sunlight or in the shade? I suppose temperature has something to do with it? A. Yes. It was in the shade. Perhaps broken sunlight. A temperature of 79 degrees Fahr. There was a light breeze blowing at the time, and the light condition was sometimes shady and sometimes sunlight. It was a typical day - I think on Friday of last week.

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MR. MEARES: Q. This is put in a dish of similar size, a similar quantity. Is that correct? A. Yes.

Q. In the first experiment you observed that Mr. Parker threw the match in from some distance and the petrol immediately lit? A. Yes. I am going to time for the whole surface of that dish to become completely alight.

(Mr. Parker then threw a lighted match into the dish containing petrol.)

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MR. PARKER: The match is still burning.

10

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continued.

HIS HONOR: Has the petrol started to burn yet?

MR. PARKER: No.

The petrol is just starting to burn now.

WITNESS: That is 30 seconds.

MR. MEARES: The match has gone out.

Q. How long did it take for the match to go out? Did you check that? A. 45 seconds.

Q. Would you try now the petrol, a quarter of an inch deep, which you extracted after it had been exposed for five hours under the conditions you have indicated to His Honor? -- 20

MR. MEARES: I think it would be proper to say this - I do not know whether your Honor observed it --

HIS HONOR: The petrol did not burn - it lit?

MR. MEARES: For one split second.

HIS HONOR: And then went out?

MR. MEARES: Yes.

HIS HONOR: And remained unconsumed?

MR. MEARES: Yes.

Q. In this experiment you are putting the same quantity of material in the same sized dish and the material you are putting in is the remains of petrol 30



that has been exposed in the way you have indicated for a period of five hours? A. That is correct.

Q. And you are going to apply a lighted match to it? Is that correct? A. Yes.

(Mr. Parker applies a lighted match to the petrol in a dish.)

MR. MEARES: The match is out, Your Honor.

HIS HONOR: No burning of the petrol?

WITNESS: 25 seconds for the match to go out.

10 MR. MEARES: Q. Did you also take tests to find out what happened to petrol of the depth that you have indicated after a period of ten hours, exposed or not? A. Yes.

Q. Could you tell me the result of those tests? A. The quantity evaporated was very much greater and the residue was so small that I could hardly measure it.

20 Q. May we take it that assuming petrol to the depth of a quarter of an inch was on the water for a period of ten hours, that after that time there would be nothing left that could be measured really as a quantity? A. Not strictly true. There would be a tiny quantity, which, provided you used enough petrol, and collected all the residue together, was sufficient to measure. It was not ten hours after; it was 17 hours.

30 Q. Taking your experience and knowledge of the product and the tests that you have carried out - taking those factors into consideration - and assuming that there was a substantial escape of petrol into the Harbour on or about between 11 o'clock to 1.00 p.m. on 29th October, 1951; in your opinion in any circumstances that you can imagine would any of that petrol or its derivatives or any part of it have been in, about or under the Sheerlegs wharf at 2 p.m. or at any time on 1st November, 1951? A. That was a period of time of 15 hours, was it?

Q. Over 50 hours, isn't it? A. Over 50 hours?

Q. Or might be, if you wish. Take noon on the 29th to noon on the 1st. That is 48 hours - no, that is

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three times 24? A. 72.

In my opinion there would have been no petrol  
left whatever.

(Further hearing adjourned until Wednesday,  
12th March, 1958 at 10 a.m.)

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IN ADMIRALTY

CORAM: KINSELLA, J.

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MORTS DOCK & ENGINEERING CO. LTD.

v.

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OVERSEAS TANKSHIP U.K. LTD.

SEVENTH DAY: WEDNESDAY, 12th MARCH, 1958

10

THOMAS GIRVAN HUNTER,  
Examination continued:

MR. MEARES: Q. Do you wish to make a correction to  
your evidence yesterday? A. Yes, Mr Meares.

Q. Just tell us what it is, please? A. I gave the  
Court the wrong impression in regard to evaporation  
when I said the residue of it on which the demon-  
stration had been carried out - the demonstration  
had been carried out on ordinary water. The demon-  
strations had been carried out on sea water. I am  
sorry. 20

Q. But you adhere to the view whether they were  
carried out on fresh or sea water it would make no  
difference? A. It still makes no difference.

Q. Supposing you had petrol a quarter of an inch  
deep, after 72 hours there would have been no petrol  
left whatsoever. I want to put now to you that  
supposing you had petrol a quarter of an inch deep,  
on the water, after 16 to 17 hours what would your  
opinion be? A. I think it would have all evaporated. 30  
There may have been a slight residue of a fraction  
of a percent.

Q. But would that be of any significance from the  
point of view of it being inflammable? A. I think  
that residue would have an inflammability close to  
that of the fuel oil which had been spilt, and

therefore would have no significance with regard to the starting of a conflagration.

HIS HONOR: Q. I take it you had the opportunity of examining some of the fuel oil? A. I have.

Q. Are you referring to the particular fuel oil and of the quantity that was spilled on this occasion, or similar oil? A. I am referring to similar oil.

10 MR. MEARES: Q. You told the Court of a test where you had petrol in fact dammed up, in a contained area, and so you were able to get a depth of petrol of a quarter of an inch? A. Yes.

Q. And your evidence deals with that petrol evaporating in the way you have indicated over the times you have indicated? A. Yes.

Q. May we take it that the less the depth of the petrol layer the more speedy would be the evaporation of it on the water? A. The thinner the petrol layer the greater percentage by volume of it which would have gone in any given time.

20 HIS HONOR: Q. The rate of evaporation, I suppose, being fairly constant? A. The rate of evaporation is fairly constant and the surface area is also quite constant, but the proportion which has evaporated has increased.

MR. MEARES: Q. Dealing with Mr. Cullen Ward's evidence - having read that - can you give the Court your opinion as to what probably would have been the depth of the petrol that he speaks of which had spilt on to the water? (Objected to; disallowed.)

30 Q. Would you have a look at Exh. 3. (Handed to witness.) I want to show you Exh. 3. That is a plan of the Caltex installation and it is to the scale of 20 feet to the inch. I want you to assume that the "Waggon Mound" was moored alongside the Caltex wharf, and I want you to assume that approximately 300 feet of her overhung the wharf. Do you follow that? In other words, the ship was approximately 300 feet longer than the wharf? A. Yes.

40 Q. I want you to assume a petrol spillage occurring on or about 11 or 12 o'clock in the morning of 29th October. Do you follow that? A. Yes.

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Q. First of all, as far as any spillage that occurred over the port side of the ship - that would be the side opposite or away from the wharf - do you follow that? A. Yes.

Q. So far as that petrol spillage was concerned can you give the Court any idea of the spreading qualities of that spillage? A. I think it would spread freely out into the Bay.

HIS HONOR: Q. What assumption did you make as to the weather conditions, wind and tide? Would they affect your opinion on the matter? A. I feel in the case of petrol it would have very little significance if any

10

MR. MEARES: Q. Then I want to talk of escape of petrol over the starboard side of the vessel. I show you that plan for the purpose of considering the approximate distance between the wharf into the shore - and bearing in mind that the ship would not contain anything in that which overhung the wharf at either end. Do you follow that? A. Yes.

20

Q. So far as that spillage on the starboard side is concerned, what is your view concerning the spread of that petrol? A. It would be restrained on one side by the ship and on the other by the shore. Free spreading could take place at the area adjacent to the starboard bow of the "Waggon Mound".

Q. First of all, take this spilling on the port side of some thousands of gallons - for argument's sake - do you follow that? A. Yes.

Q. Of the magnitude of some thousands of gallons. So far as that was concerned what would its spread, its thickness, be after a matter of half an hour or so? A. I could give an opinion to the effect that it could not be greater than 1/32nd of an inch. It would be a very rough estimate, Mr. Meares.

30

Q. And it is a very difficult problem, is it? A. Yes, a very difficult problem.

Q. However, when you say it could not be greater may we take it that it could be very much less than that? A. I feel that the accuracy of that estimation is not very high, so it obviously, I think, could be much less than that.

40

Q. Take the spillage of a substantial magnitude in the nature of thousands of gallons on the starboard side of the vessel. Do you follow me? A. Yes.

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Q. And bearing in mind the movement of tides and moorings of the ship, the position of the shore and so on; would you assume - what do you think would happen to the petrol in regard to the spreading under those circumstances? A. I think immediately after the initial spill it would build up to a fair thickness, but that would very quickly decrease due to the spread from the bow and the stern of the moored ship.

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Q. What in your opinion would be the maximum thickness after - we will say - an hour or so; leaving out any evaporation? A. I am sorry, but I do not think one could leave the evaporation out.

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Q. All right, take the evaporation in then? A. I would expect it to be well under a quarter of an inch - well under.

20 HIS HONOR: After what period?

MR. MEARES: An hour.

WITNESS: In fact I think I would be surprised if it was greater than a 32nd.

MR. MEARES: Q. Even under those circumstances?  
A. Yes.

Q. You have dealt with evaporation rates with petrol of a quarter of an inch, and you have also taken evaporation rates for petrol of half an inch thickness? A. Yes.

30 Q. With your knowledge of the problem confirmed by tests you have taken, could you give the Court an opinion as to what would have happened to petrol that has spilt on to the surface and which had spread to a thickness of a 32nd of an inch? A. In the case of the quarter inch layer, over 70 per cent. had evaporated in the first hour. In the case of a 32nd of an inch layer I would expect very much more than 70 per cent. to have evaporated in the first hour - probably nearly all of it - because  
40 the volume per cent. which evaporates with the thinner layer is very much greater than it is with

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the thicker layer. That is consistent with the general physical laws of evaporation, and I checked it by doing two experiments in which I had the same surface area - a quarter inch layer of petrol in the one and a half inch layer in the other. With the quarter inch all of that had gone - substantially all of that had gone - in five hours. With the half inch layer substantially all of it had gone in ten hours.

Correspondingly with the 32nd inch layer, we expect substantially all of it to have gone well under five hours - I feel well under an hour and a half.

10

Q. Assuming you had a spread of 1/32nd inch, what do you think would have happened to it - we will say - after ten hours? A. There would be no petrol there at all.

Could I correct that and say - which would be much more accurate - "No petrol residue there at all".

20

Q. Would you just explain to His Honor what flash point is? A. It is the temperature which a liquid (usually a petroleum product) must attain before the vapours which form in a completely closed vessel can be ignited momentarily by a naked flame.

Q. There is a well recognised method of obtaining the flash point of petroleum liquids by means of something called the Pensky-Marten Test? A. That is correct. It is not a well known method. It is a universally standardised method which is standard in nearly every country in the world.

30

HIS HONOR: Q. Would you be good enough to spell that for me, Professor? A. "Pensky-Marten".

MR. MEARES: Q. Can you tell us what in your opinion is the generally accepted flash point of petrol itself? A. It is usually given as below no degrees Fahrenheit, and the more accurate estimation of that would be about minus 40 degrees Fahr. That is 72 degrees below freezing point of water.

Q. That simply means, does it, if we were in a region where the temperature was 40 degrees below zero we could still make petrol flash by putting a light to it? A. Yes.

40

Q. As far as the other petroleum products are concerned, does the flash point vary considerably?

A. It varies considerably with the product.

Q. Can you give us some petroleum products? A. What is technically described as solvent naphths, which is mineral turpentine or paint thinner, has a flash point varying from 80 degrees Fahrenheit to 110 degrees Fahrenheit.

10 The next product is kerosene, used for burning in lamps, which has a flash point in U.S.A. varying between 100 and 160 degrees Fahrenheit and in Great Britain usually between 125 and 150 degrees Fahrenheit.

The flash points of fuel oils - bunker fuel oils for ships - is a universally accepted minimum of 150 degrees Fahrenheit, and they can go up to 250 degrees Fahrenheit.

20 For warship the accepted minimum has got to be higher because of the danger of igniting their fuel oil through shellfire or explosive hits. That is 175 degrees Fahrenheit - the accepted minimum.

Q. In these tests you described to His Honor yesterday you got certain residues left after one hour, five hours and so on, did you not? A. In the evaporation tests, yes.

Q. You got certain petrol residues left. Were you able in one instance to check the flash point of the residue you got left? A. Only in one instance did I have sufficient.

30 Q. Why were not you able to do it in the other instances? A. There was insufficient quantity to fill the flash point apparatus.

Q. In which instance did you have enough residue to do the Pensky-Martens flash point test? A. After the one hour evaporation test.

Q. With the residue left of petrol a quarter of an inch deep on water after an hour you did a flash point test. What did you find the flash point of that petrol to be? A. 90 degrees Fahrenheit.

40 Q. Assuming then that you had petrol a quarter of

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an inch deep on the water and assuming that had been there for one hour. You follow that? A. Yes.

Q. And assuming the residue that you described of that petrol mixed with floating oil - could you discuss the question as to whether or not that residue would affect to any extent the inflammability or flashing capabilities of the oil with which it is mixed? A. Certainly.

The flash point of the mixture would be lower than the flash point of the original fuel oil, but the amount by which it would be lower would depend entirely on the amount of petrol residue and the amount of fuel oil which was mixed; obviously.

10

Q. You have gone so far, but might I put this to you in this form: that before the residue could have any material effect on increasing the inflammability and flash point capacity of the oil you would have to have an enormous amount of residue? A. I think you would have to have a substantial amount.

20

HIS HONOR: Q. Assume that there was a substantial amount of residue mixed with portion of the oil in a comparatively small space: that would reduce the flash point of the mixture? A. I think so.

Q. And assuming the residue did not extend beyond this limited space and a flash did occur; would the oil which was not contaminated by the residue continue to burn once it started - assuming a flash occurred and the oil contaminated by the residue did ignite. Would the fire, the flame, extend to that part of the furnace oil which had not been contaminated? A. I think it would.

30

Q. Once it started it would burn? A. I think so.

MR. MEARES: Q. It follows of course from what you have said that after an hour this very minor amount of residue that you got, and the quantity of petrol, would have to be quite enormous to increase or vary the flashpoint? A. Quite a substantial amount.

Q. Having taken the flashpoint of this residue after one hour, and having observed the tests that you made on trying to ignite this residue and of its behaviour over other periods of three, four and five

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hours and so on, and conceding, as you do - that you were not able to take the flash point based on residue more than one hour old: in your opinion, as far as any residue which was five hours old was concerned, what would its flashpoint be compared to the flashpoint of fuel oil? A. It would have been much higher than the 90 degrees Fahrenheit flash point of the one hour's residue, and it would be approaching the flashpoint of the fuel oil. I cannot give you an estimate of the actual figure. That is the best I can do.

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Q. Assuming the opinions you have expressed are incorrect and assuming after 16 to 17 hours there would be still then a residue of petrol left, what would its flashpoint be? A. Very much higher than 90 degrees Fahrenheit and getting closer to the flashpoint of the fuel oil.

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Q. What do you mean by getting closer? That might mean anything. I am sorry, Professor, but I just want you to be as specific as you can? A. Within 20 or 30 degrees Fahrenheit of the fuel oil flashpoint, is the best I can do.

Q. It might be over and it might be -- A. I could have underestimated that figure

Q. Now I want to take you to a flashpoint on a residue - assuming there could be a residue, contrary to your opinion - after a matter of, say, 50 hours? A. I think that would have been almost the same flashpoint as the furnace oil flashpoint.

Q. What you found, at any rate, was that whereas you have a flashpoint of minus 40 degrees for petrol, that after one hour's exposure that flashpoint crept up from -40 to 90 degrees Fahrenheit? A. It had crept up 130 degrees Fahrenheit.

Q. May I put to you finally that on consideration of the problem as you understand it in this case - and having read the evidence - that any petrol which escaped from the "Waggon Mound" could not in any way have affected --

HIS HONOR: May I interrupt you, Mr. Meares. I suggest that is a rather unsatisfactory form of question - "Having read the evidence". The evidence of one witness as to the amount of petrol that

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escaped is that it was almost infinitesimal while the evidence of another witness was that it sprayed as from a hose.

MR. MEARES: I am obliged to Your Honor. I will put it another way.

Q. Assuming on the morning of 29th October there was a very substantial escape of petrol on to the water. Assuming that at 4 a.m. approximately on 30th October there was a very substantial escape of oil, and assuming that a fire took place under Mort's Dock on the afternoon of 1st November; in your opinion would the escape of petrol to which I have referred you as a supposition have in any way caused or accelerated the fire at Mort's Dock on 1st November? (Objected to). 10

HIS HONOR: This is put as a matter of opinion, is it?

MR. MEARES: Yes. (Question allowed.)

Q. What is your answer? A. I am strongly of the opinion that it would have had no effect on the fire at all. 20

Q. Or the bringing about of the fire? A. Or the bringing about of the fire.

Q. Leaving aside for the moment this problem of petrol, did you spend a very considerable time - with the assistance of Mr. Parker - in considering and examining the causes of burning fuel oil? A. Yes.

Q. And of igniting it? A. Yes.

Q. For the purposes of your test did you use fuel oil of one quality only? A. One quality throughout all the tests. 30

Q. What oil did you use? A. Vacuum Bunker fuel oil with the Pensky-Marten flashpoint of 170 degrees Fahrenheit.

MR. TAYLOR: Does the witness mean by that that he did the tests himself? I would like to be clear on that. Was it something he was told.

Q. Did you do the flashpoint -

MR. MEARES: Q. First of all, you ordered oil of that flashpoint, did you not? A. Yes.

Q. Secondly did you do it or did Mr. Parker do it? A. I had it done by Mr. Parker.

MR. MEARES: I have Mr. Parker here if you wish, Mr. Taylor.

Q. Did the test confirm what was supplied was what was ordered? In other words, the flashpoint was 170? A. Yes, sir. That was carefully --

10 HIS HONOR: Q. By whom? A. By Mr. Parker.

MR. TAYLOR: (To Mr. Meares). You are going to call him?

MR. MEARES: If you wish me to. If you are going to object I will take the Professor out now.

MR. TAYLOR: I only want to object to inadmissible evidence.

HIS HONOR: Q. Did you supervise the test Mr. Parker was making? A. I did.

20 Q. Did you check the flashpoint test yourself? A. No.

MR. MEARES: I think I will proceed with the Professor in any case.

Q. Were some tests done in regard to the various possible igniting agents of fuel oil in open air? A. A considerable number of such tests were carried out.

30 Q. As far as all the tests that were done by you - by you and your assistants, that you are going to relate; in your opinion would the results of the tests that you did have been substantially any different assuming a flashpoint had not been 170 but 150? A. I don't think they would have been substantially different.

Q. As far as the various igniting agents were concerned did you make a test with various igniting agents with different thicknesses of oil layers? A. Yes.

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Q. You have heard evidence, or read evidence, that there was oil being pumped into the "Waggon Mound"?  
A. Yes.

Q. And you read the evidence as to the rate of pumping? A. Yes.

Q. And you read the evidence that the "Waggon Mound" was in port alongside the Caltex wharf until approximately mid-day, 30th October? A. Yes.

Q. And that on the following day there was a considerable spread of oil noticed in and around Mort's Bay? A. Yes. 10

MR. TAYLOR: On that day, on the 30th.

MR. MEARES: Q. On the 30th. Do you follow that?  
A. Yes.

Q. In your opinion what would have been the maximum thickness of that oil in and around the "Corrimal" where she was situated alongside the Sheerleg's Wharf? (Objected to.)

Q. This question is, I think, with regard to a matter which is an extremely difficult one? A. 20  
Very difficult indeed.

Q. Are you able to reach a conclusion as a result of certain tests and calculations? A. As a result of certain tests and calculations I can give an estimate.

Q. Now, would you tell the Court how? A. First of all, the oil caught fire. According to the tests I supervised it was very difficult for oil that had a thickness under a 1/16th of an inch - virtually impossible for furnace oil under 1/16th of an inch thick - to catch fire on sea water. One would gather from that that the oil must have been at least 1/16th of an inch. 30

I carried out some spreading tests of this 170 degrees flashpoint furnace oil on sea water and found that after the initial spread of oil the oil tends to break into a lens, which varied in thickness from 1/25th of an inch to an 1/8th of an inch. That observation is confirmed by a report of the British Ministry of Transport. May I quote from this? 40

Q. Yes. A. The report of the Committee on The Prevention of the Pollution of the Sea by Oil, and on p.43 - referring to the pollution of the sea by fuel oil - we find the following:

"Under the conditions of the experiment (that is, those making this report carried on some experiments) the fuel oil showed a loss of spreading power and this was followed by the formation of an emulsion on the water."

10 That loss of spreading power, standing in water, was properly what we observed when we spread the fuel oil on the seawater, so the tendency then is for it after the initial spread to thicken up and form lenses, and it spreads then at a thickness at least somewhere in the region of a 1/25th to 1/8th of an inch. That was the best we could do.

20 Q. In your opinion, so far as the question is concerned, to say a maximum thickness was possible, the maximum thickness would be 1/4 of an inch - that would be quite safe? A. In arriving at the estimate of the maximum thickness we have so many factors to take into account. The effect of the tides, the moving of oil from that area to piling it up against the shore line - against the sides of the vessels - the fact that it is going to emulsify with seawater and thicken up. All those factors make it extremely difficult to hazard an opinion at all as to the maximum thickness we are likely to obtain.

30 HIS HONOR: Q. I suppose in certain circumstances the wind would largely confine spilled oil in a bay towards which the wind was blowing? A. Yes. That would affect the thickness very considerably.

MR. MEARES: Q. Can you give us your opinion then about the maximum thickness? A. I could only put it in a very negative way; that it must have been greater than 1/8th of an inch maximum thickness.

HIS HONOR: Q. When did you deduce that? A. I deduced that from the experiments.

40 MR. MEARES: Q. So far as igniting agents were concerned, did you take a fuel oil from 1/16th of an inch up to 1/8th of an inch? A. Yes.

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Q. Did you do various tests with various possible igniting agents? A. Yes, a very considerable number of tests.

Q. You just had those tests typed out? A. Yes.

MR. MEARES: In principle, to have this taken down and not be able to see it in some form would make it most frightfully difficult for the Court, so I have had these typed out. If I could put it this way: Q. So far as the tests of oil layer of 1/16th of an inch, have you tried cigarette butts and matches --

10

MR. TAYLOR: I do not mind you putting this in, as to what he did and the results of the test.

MR. MEARES: I am aware of that. I will put it in.

Q. You tried burning hessian, coke, fireworks and so on and you were not able to ignite the oil in any instance? A. Unable to ignite the 1/16th inch thick layer by any of the means given.

Q. And that included even an oxy-acetylene torch with a flame six inches above the oil, directed at the oil? A. The flame was not in contact with the oil but the tip of the flame was six inches above the oil.

20

Q. When you say fireworks held over the oil, was that a roman candle which throws a very hot jet of sparks out? A. Yes.

HIS HONOR: Q. I see you mention at the bottom of the page: "Oil 52 degrees Fahrenheit" in one case, and 105 in the other. I take it that was the temperature of the oil at the time the experiment was made? A. Yes. That was the experiment: to see if the variation of oil temperature had any profound effect on the ease of ignition.

30

MR. MEARES: Q. And with the oil thickness of an 1/8th of an inch you could ignite it at times with this roman candle and a torch held six inches from it? A. They were the only two means by which it would ignite.

Q. When you got to a quarter inch thickness you could ignite it with a red hot coke plus a roman candle and a direct flame? A. Yes.

40

HIS HONOR: Q. For my own information: I see here in the sheet that the red hot coke dropped from two feet would ignite the oil of the thickness of a quarter of an inch but a red hot coke dropped from six inches would not.

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10 What is the explanation of that? I would have thought the shorter the drop the higher the temperature of the coke? A. That is correct. I think that is a fortuitous observation. There is a certain amount of statistical error goes into this type of observation. I think that is right. There are so many variables affecting it that I think we must expect that in this type of work.

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MR. MEARES: Q. You heard some evidence also of the practice - or you read some evidence - of actually doing rivetting in an area where fuel oil is contained? --

MR. TAYLOR: "Welding".

20 MR. MEARES: Q. Welding. In your opinion would that process fail to ignite the oil? A. That was the evidence in the transcript, on welding of a tank which contained fuel oil?

Q. Yes? A. Yes. I think that was reasonably safe, provided the welding was below the oil surface of the tank.

HIS HONOR: Q. Is that because the oil must vapourise before it ignites? A. Yes, and there must be a flame with the vapour.

30 MR. MEARES: I have a bundle of these tests, and perhaps it might save time to tender them as a bundle.

HIS HONOR: I do not know what the nature of the other tests must be.

MR. MEARES: There are half a dozen of them.

HIS HONOR: Tender them, and I suggest as it may be convenient the others can be added to this exhibit.

(Report headed "Various igniting agents in open air" tendered; Exhibit 5 )

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MR. MEARES: Q. So far as the problem you had was concerned about this oil, or whatever it was, in and around the "Corrimal" I think you took the view that it was highly improbable that any of those igniting agents referred to in Exh. 5 were a cause of the fire which has been described? A. That is correct. I had that view before those tests were carried out; in the light of my previous experience in this field.

Q. Before any tests were made did you form a view that this fire could have been caused only in one way - one general way, if I can put it in that way? A. Not before the tests were carried out; after the tests were carried out. 10

Q. What was that view? A. That there must have been a wick present floating on the oil, and further the wick must have been burning and probably fanned by a breeze - not more than 20 miles an hour.

Q. When you say a wick floating there, could the fire have been caused by a stationary wick such as a pile? A. The pile is a burning pile. 20

Q. Yes? A. Yes. That could have ignited the oil on the surface.

Q. So that we may get it clear; by "wick" you mean any substance in the oil, part of which is in the oil, which has the ability of being lit and which could burn above the oil? A. Yes.

Q. As far as the wick is concerned, bearing in mind the fact that before you could even get a flash you have to get the oil up to a certain temperature, could you just explain how a wick of any sort could heat the oil to the required flash point? A. There are two ways in which it could occur. Firstly by radiant heat from the flame of the burning wick. 30

Q. What is that again? A. Heat which is transferred from a source to another object in much the same way that radio waves would be transferred.

Q. I suppose if you put a match near my hand the radiant heat would burn my hand? A. You could feel the heat coming off it. That is radiant heat. 40

The other type of heat is convection heat,



which is the current of hot air which is travelling above the flame.

Q. First of all, radiant heat? A. Secondly, by the flame of the burning wick actually coming in contact with the oil surface. In order to get that effect you must have a wind which will blow the flame over on to the oil surface.

10 Q. Speaking generally, in the first place you agree that the better method of being able to cause the oil to flash would be for the flame from the wick to be directed by wind on to the oil rather than burning upright? A. Much better.

20 Q. So far we have dealt with the flashpoint; and the wick, we take it, increases the heat of the oil until it gets to the heat at which it will flash? Is that correct? A. The burning wick increases the heat of the oil in itself until it reaches the flashpoint and then increases it still further until sufficient vapour is generated to give a continuing flame.

Q. So there is a distinct difference between flashpoint on the one hand and the fire point on the other? A. Quite a distinct difference. The fire point is very much higher than the flash point. The flash point is a purely momentary phenomenon.

HIS HONOR: Q. Is there a measurable relation between the flash point and the fire point? A. Yes.

30 MR. MEARES: Q. Can you give us that in relation to fuel oil? A. The fire point is approx. 20 to 25 degrees higher than the flashpoint, and that is the furthest; I think I should make this clear, furthermore, that is the fire point which has been determined in a standard piece of equipment, under very special conditions, in which the flame applied to the surface of the hot oil has been shielded by the sides of a dish. So if you put it out in the open air with the wind blowing the actual fire point of that oil would be very much greater than the determined fire point in the laboratory in the fire point equipment.

40

Q. I think you did tests, which you are going to tell us about, in seawater, did you not? A. Yes.

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Q. And you did them in dishes with not a very great depth in them? A. That is correct.

Q. Although I think in your opinion it is a little academic, would you agree with me that the shallower the water in which you do the tests the greater the probability would be of your getting ignition?

A. It helps the ignition because when you are dropping ignited agent into the oil layer supported over a shallow depth of water the flaming igniting agents tend to be supported by the bottom of the dish and stay above the surface of the oil; whereas if you put any in a deep depth it drops right through the water and becomes immediately quenched.

10

Q. When I put it to you as being academic; so far as the reality of the test is concerned do you think that is really unimportant? A. I think so. I think the tests as carried out illustrate the principles.

Q. Then did you do a test with burning hessian in still air and in open air? A. Yes.

20

Q. What was the wind velocity in the open air? A. The prevailing wind velocity was seven miles an hour.

(Report headed "Burning Hessian in Still and Open Air - all test pieces suspended half in oil" tendered; Exhibit 6.)

HIS HONOR: Q. The test piece was soaked in oil of what nature? A. Furnace oil.

MR. MEARES: Q. So far as the hessian was concerned, the test pieces varied in size, and I think the tests disclosed - did they not - that you got the best results with the larger sizes, and you got the best results the thicker the oil got? --

30

HIS HONOR: What are the "best results"?

MR. MEARES: Q. You got the best results so far as lighting it up was concerned? A. Yes.

Q. So far as the wicks were concerned, did all the tests insure that half of the wick in each case was in liquid - to the best of your ability - and half was exposed to the open air? A. Half the

40

wick was lying flat on the surface of the oil - immersed in it - and the other half was sticking up at right angles.

Q. So far as the wicks were concerned would that be a pretty good one or a pretty bad one, or a poor one? A. As a wick for causing the ignition of the oil; not a very good one.

10 Q. What would be a better one? A. More of crumpled wick, any large surface, or things like cotton waste or hessian crumpled in a ball which when exposed to large surfaces of air would be very much better as a wick, and the flame which is coming from it coming closer to the surface of the oil, rather than burning from this upright type of wick.

Q. Also did you do a test to ascertain the ability of burning cotton waste to ignite oil in the open air? A. Yes.

20 (Report headed "Burning Cotton Waste in Open Air; all test pieces soaked with oil", tendered; Exhibit 7.)

Q. So far as that test was concerned, what was the wind velocity? A. Seven miles an hour; as in the previous one.

Q. You mentioned the conditions of the tests. You mentioned you did it with two pieces of waste; one weighing .6 grams and the other weighing 5 grams? A. Yes.

Q. Can you give the Court an idea of the size of those two pieces? A. (Produced.)

30 (Two pieces of waste, weighing .6 and 5 grams tendered; Exhibit 8a. and Exhibit 8b.)

HIS HONOR: Q. Might I take it that the waste was substantially in the same physical form as that which you have tendered. Waste, of course, may be teased out? A. It was teased out a little. It has got pressed a bit in my pocket.

40 Q. I see that the test with the oil layer of a quarter of an inch thickness shown there was combustion with the .6 grams of cotton waste and none with the 5 grams. Is that a result that you would

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expect? A. There is a considerable element of chance coming in here. You notice the wick, the cotton waste, was soaked in oil; and it depends on the proximity of the oil and cotton waste to the flame, and that again is rather a chancy matter.

Q. In other words you might get this result in some extremes and you might get much the same in others?

A. In order to get complete consistency there one would have to do several hundred experiments at a time, and you would get your consistent statistical average from that. Nevertheless this smaller number of tests did indicate the average.

10

MR. TAYLOR: Your Honour will see the processes reversed when you come to 3/8ths, it does not light and the five grams does.

MR. MEARES: Q. Did you, nextly, do some tests with cotton waste of 20 grams? A. Yes.

Q. Would you produce the waste of 20 grams of weight? A. (Produced).

(Piece of cotton waste - 20 grams; tendered; Exhibit 8c.)

20

Q. With that larger piece of waste, did you impregnate that with different types of oil? A. With three different types of oil.

(Report of tests done tendered; Exhibit 9.)

Q. That was with a wind velocity of 1.6 miles an hour? A. Yes, on a depth of seawater of four inches.

Q. With that larger piece of waste, with a light wind, impregnated with varying types of oil - three different types - did you get ignition of the oil layers of different thicknesses as shown in Exhibit 9? A. Yes.

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Q. In every case? A. 100 per cent. success over the number of tests carried out.

HIS HONOR: For the sake of convenience I think I had better alter the marking of the last exhibit. I think it had better accompany the tests to which it refers.

MR. MEARES: There are a number of tests to which it refers.

HIS HONOR: In that case I will leave it as it is.

MR. MEARES: Q. Just stopping there for the moment. Have you, with these tests up to date, reached any conclusions as to the likelihood of ignition of the oil in regard to the wicks and the conditions which would be better than others? A. The conclusion I had formed at that stage of the investigation was that an oily cotton waste would be an ideal wick for igniting the fuel oil and one would be almost certain to get it ignited by such an oily cotton waste if that oily cotton waste was on fire.

Q. And had you had a certain size or not? A. Preferably not less - not too much smaller - than 20 grams in weight; and that is a handful of cotton waste.

Q. What about the factor of the wind? A. Wind velocity: provided it was not too high it would have its usual effect and fan the flames of the ignited wick, and would have the added effect of blowing the flames flat on to the surface of the oil and promoting ignition in that way.

Q. In the tests up to date, when you referred to the results, in other cases did you get a continued burning after the flash? A. When the test is labelled "Yes", that means the oil was definitely on fire and continuing.

Q. And continued alight? A. A continuing fire.

Q. I think during your investigation you had heard of the possibility of a substance smouldering, in effect being detected on a raft or a piece of substance on the water? A. Yes, I have.

Q. Did you give some consideration to this possibility; first of all that you had on the water a wick? Do you follow that? A. Yes.

Q. And the wick was one which would not sink rapidly. Did you then give consideration to the question of assuming that object was on the water and not lit, as to whether the conditions prevailing as you understood them at Mort's Dock on 1st November --

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whether there was any chance of that wick being lit by any operations that were being conducted on the dock? A. We gave that matter very considerable attention and came to the conclusion that it would be advisable to experiment and see if it was possible to ignite such a wick by means such as oxy-cutting, oxy-welding or electric-arc welding - which was going on at the dock at the time.

Q. Until you had done those tests that you are now going to tell us about was your opinion up to that date the conducting of the operations in question at Mort's Dock with the oil being there would not have been a hazard? A. I am quite convinced from previous experience that the oil floating on the water under the wharf was not a fire hazard at that time, and that comes from my experience of the difficulty of igniting oil floating on seawater; particularly the experience I had during the war in trying to erect a flame barrage around the South Coast of England in which pools of floating oil on the sea - we attempted to ignite them - and the means of ignition were so uncertain that it had to be given up.

Q. Was your own opinion also supported by your readings of tests done in England? A. The opinion was confirmed by this publication of the Ministry of Transport report of the Committee on the Prevention of Pollution of the Sea by Oil, dated 1953. It is quite categorical. On p.3 - we find under the heading, Risk of Fire in Harbours and Other Enclosed Waters, this, referring to oil floating on such waters, "We have had no evidence that the risk of fire from floating oil is serious".

That was my own opinion.

Q. Then did you make some attempts to ignite waste under various conditions which you thought might have been obtaining at Mort's Dock on the day in question? A. A very large number of tests.

Q. Had you done there some tests of the ignition of oily cotton waste with hot metal fragments? A. Using waste 20 grams in size - 20 grams weight of waste.

HIS HONOR: What were the conditions under which these tests were done?

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20

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MR. MEARES: I think it appears from the test.

(Report headed: "Ignition of Oily Cotton Waste with Hot Metal Fragments"; tendered, Exhibit 10.)

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Q. How did you produce the hot metal fragments; with what apparatus? A. Pieces of scrap metal which were heated in a Bunsen flame. This was purely a preliminary test to see if it was possible to ignite the oily cotton waste by hot metal fragments. If it had turned out completely impossible to do that obviously there was no point in going on.

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Q. You did not use at that stage an oxy-burner? A. No. This was the preliminary test before proceeding.

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continued.

HIS HONOR: Q. When you say "oily waste" does the oil refer to furnace oil? A. Furnace oil.

Q. Of what quality? A. Of the same quality.

MR. MEARES: Q. Can you give His Honor an idea of these weights of metal?

20 MR. TAYLOR: Q. Was this done with cotton waste floating on water? A. No.

MR. TAYLOR: If my friend is going to do it this way might he get from the witness what it is that he has done.

30 MR. MEARES: We would put it this way at this stage: We are not concerned with the question of whether it is in water or in oil or whether it is in wine. What we are trying to find out is this; Assuming we had a piece of waste - whether it is lying on the wharf or lying on the water - that part of it adjacent in a liquid can ignite by burning fragments. That is what he is trying to establish.

40 You might have other tests that you are giving evidence on, but it seems to me that the relevance of the test may be affected by the question of whether the cotton waste was floating on water or not: for one thing, you may have a fairly substantial piece of molten metal falling on a piece of cotton waste which was firmly on the ground and then one result might follow, but if it fell on a piece of cotton

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waste that was floating in water, another result may follow.

MR. MEARES: I see what Your Honor is putting. I do not know whether we have done that other test, but I will ascertain.

HIS HONOR: That is on the basis of Mr. Taylor's objection.

MR. MEARES: Q. First of all, did you do any tests to ascertain the ability of lighting cotton waste up that was actually on water? A. A bark floating on oil on water? 10

Q. Yes? A. The specific conditions which were reported by one witness.

Q. You did that? A. We did that specifically. It follows in the next table.

Q. Leaving out the weight of three grams, do you tender the pieces of metals which are respectively the weights mentioned in Exh.10? A. Yes.

(Six fragments of metal tendered: Exh.11.)

Q. In Exh.11 one observes that of all the seven tests that were done two of them were done in other than still air, and in those two the waste did not inflame on impact but smouldered for a period of time. Do you follow that? A. Yes. 20

Q. As far as that test is concerned, in your opinion is that typical or fortuitous? A. Fortuitous. It depends entirely upon what portion of the cotton waste hit the metal fragment - landed, if it happened. Obviously in those two cases it landed on portion of the waste which did not have any oil near it. 30

Q. When you say it did not have any oil near it you mean by that - this was not on water, you said - this is cotton waste not totally impregnated in oil? A. No.

Q. What condition was it? Can you describe it to us? A. Partially covered with oil. The condition we tried to get at was this: If someone had taken the cotton waste and wiped oily hands on it.



Q. Did you try to simulate a piece of cotton waste that would be used for normal purposes in dock operations? A. As far as possible.

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Q. Then did you nextly do some tests with a similar type and weight of oily cotton waste with an oxy-cutting torch in still air? A. Yes.

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Q. In this case where was the waste? A. The waste was 20 grams in weight.

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10 Q. Where was it? A. Floating on a bark raft on an oil layer of varying thickness, which in turn was on top of seawater.

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(Reports headed: "Ignition of Oily Cotton Waste by Oxy-Cutting in Still Air" tendered: Exhibit 12.)

Examination - continued.

Q. And did the tests which are described in Ex.12 result in every case the oil being ignited where the oxy-cutting was being done within a minimum height of three feet from the water and a maximum height of 10½ feet from the water? A. 100% success.

20 HIS HONOR: I do not understand that. I do not understand what you mean by the height of drop.

MR. MEARES: Q. Would you tell the Court what you mean by the height of drop mentioned in Exh.12? A. Half inch steel plate supported those heights above the surface of the oil layer was cut by an oxy-torch so that the drop of the metal fragments resulting from the operation would have been the heights given in column 2.

30 HIS HONOR: Q. That is really the height the metal was -- A. That is the height the metal obtained in the oxy-cutting operation.

MR. MEARES: Q. Then do you produce some tests to be done with both dry and oily cotton waste in a wind velocity of 11 miles an hour? A. Yes.

(Report headed, "Ignition of Dry and Oily Cotton Waste by Oxy-cutting in a wind of velocity of 11 m.p.h." tendered: Exh.13.)

MR. MEARES: I propose to prove for Your Honor's information - although I am not ready so to do - at

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the time of this fire the wind was in the vicinity of 11 miles an hour. That is why we have taken that 11 miles an hour.

(Short adjournment.)

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MR. MEARES: Q. Having looked at Exh.13, with a wind of 13 m.p.h. you were able to ignite cotton waste in every circumstance mentioned in the test?  
A. Correct.

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continued.

Q. It is to be observed, is it not, that in Exh.13 the tests that were done were with cotton waste upwards of four times, the weight of 20 grams? A. Yes. Not only ignited the cotton waste, but ignited the oily layer on which it was floating.

10

HIS HONOR: Q. What was the depth of water on which the oil was floating? A. A quarter inch layer of oil floating on four inches of seawater.

MR. MEARES: Q. In your opinion so far as the depths of seawater in any of these tests was concerned - I think you have already expressed the opinion, have you not, that any difference between the depth you used and the depth of the water in question would be really of academic interest only? A. I think they would have no practical significance. If I thought it had had any practical significance I would have varied the seawater depths as well.

20

Q. Do you produce, "Particulars of Test by Oxy-Cutting 13'2" above Dry and Oily Cotton Waste"? A. Yes.

Q. Does that show on every occasion you got ignition, but depending upon the circumstances the ignition varied in point of time? A. Yes. There was no oil or seawater in these experiments. This was only to try the effect of wind velocity on the ignition of either dry or oily waste at varying heights.

30

Q. Mr. Taylor seems to be interested in certain ones you did not try. Did you have any reason for not trying, or not? A. No. I felt it was unnecessary.

(Report headed, "Particulars of Test by Oxy-Cutting, 13'2" above Dry and Oily Cotton Waste" tendered; Exhibit 14.)

40

Q. It is fortuitous, these ones you did not try?  
 A. They were left out on purpose in order to cut down the work involved.

Q. Then do you produce a test if ignition of dry cotton waste, dropping metal from a height of 30'6"?  
 A. Yes.

Q. Was that test and the preceding two tests done with an oxy-cutter? A. No. They were done with an electric arc welder.

10 Q. Which tests were done with the electric arc welder? A. The ignition of dry cotton waste, wind velocity and so on, the height of dropping. That was done with the electric arc welder, 30'6" above the cotton waste.

Q. That was done with cotton waste of various sizes, was it? A. Yes.

Q. We notice that 20 grams that did not ignite in 180 seconds - did you see that? A. Yes.

20 Q. Did you establish whether or not metal particles fell on that piece or not? A. None, so far as one could observe. The fact it did not ignite was due to the fact that by chance no pieces of molten metal from the electric arc welder landed on that cotton waste.

HIS HONOR: Q. That really was not tested, then?  
 A. It was not tested, Your Honor.

It is very difficult indeed, to get this stuff to land on cotton waste from a height of 30'6".

30 Q. It seems to me that that first item is quite misleading? A. Yes. I think it should come out.

MR. MEARES: I do not mind it going out.

HIS HONOR: Anybody reading this would assume it had come in contact with hot metal and after 180 seconds did not ignite; but if the metal did not touch it --

MR. MEARES: I think it is of some significance. I have got the explanation from the witness.

HIS HONOR: As to the explanation --

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WITNESS: Might I interpose here, sir?

MR. MEARES: Q. Yes, go on, Professor? A. I must report all tests; whether they are positive or negative, as well as having the others. Hence everything that is done is reported.

Q. There is a considerable variation in the time for ignition in relation to the 40 gram weights. One took 70 seconds, but the immediately following one took ten seconds to ignite. Is that quite fortuitous or are there any circumstances which would account for it? A. The circumstances that account for it are virtually the time taken for us to hit the waste by the molten metal. 10

Q. This time does not represent then, the time of ignition, or smouldering after contact with the oil? A. Not after contact. That is given under "Remarks".

HIS HONOR: The time is not given under "Remarks". There is nothing here to indicate the time in which any effect on contact with the oil was observed.

MR. MEARES: I think I can explain it. 20

Q. As far as this test is concerned, when you have "Time to ignite" - you follow that? A. Yes

Q. You say that is measured from when? A. From the start of the operation.

Q. In other words you do your welding, and you were welding and oxy-cutting pieces of metal, and causing pieces of metal and causing sparks to fall? A. Yes.

Q. From the time you started welding? The time given is from the time of starting welding until you get a result you have recorded in the second column? A. That is correct. 30

Q. But you say this, do you: That you are quite unable - and you had no means of being able - to determine the precise point at which one of these sparks actually hit the waste? A. Only by the observation of smouldering or ignition.

Q. So you assumed, did you, that welding from 30 feet that if sparks fell and happen to hit the waste

they cause it to smoulder? A. From my observations of those tests I think that is what happens.

Q. Might I say this to you: From your knowledge of this matter so far as heights are concerned, could you ignite cotton waste from an oxy-acetylene welding operation from much higher distances than 30 feet in fact? A. I think you could ignite it from 100 feet.

10 Q. Do you produce some tests you made concerning your ability to ignite oily cotton waste from a height of 30'6" from a wind velocity of 1.6 miles an hour? A. Yes.

(Report headed, "Ability to Ignite Oily Cotton Waste from Height of 30'6"." tendered; Exh.16).

Q. Was that test done on water or not? A. No.

Q. Does that show in all circumstances the waste lit up? A. Much easier if it is wet with oil.

Q. Than if it were dry? A. Than if it were dry.

20 HIS HONOR: Q. Then again I take it electric arc welding was used? A. The electric arc holder.

MR. MEARES: Q. For the purposes of these experiments and the relevance of them, do you think there is any important difference between the use of a welding holder or an oxy-acetylene torch? A. I don't think so.

Q. Might we assume then you would have anticipated the results somewhat similar whether you used a torch on the one hand or an electric welding holder on the other? A. I think so.

30 (Witness stood down).

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No. 45

EVIDENCE OF H.H.S. PARKER

HOWARD HENRY SHELLEY PARKER,

Interposed:

Sworn, examined, deposed:

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H.H.S. Parker.

Interposed.  
Examination.

TO MR. MEARES: My name is Howard Henry Shelley Parker. I live at 57 West Street Balgowlah. I am a Bachelor of Science (Sydney University), in Chemistry, and I am a lecturer at the Sydney University in the Dept. of Chemical Engineering, and I lecture in the subjects of industrial chemistry and applied chemistry, amongst others. I am a member of the Institute of Instrument Technology

10

Q. How long have you been a lecturer at the University in these subjects? A. Roughly 25 years.

Q. You have been in Court whilst Prof. Hunter has been giving evidence? A. Yes.

Q. And you are aware of details of certain tests that have been tendered in evidence before the Court? A. Yes.

20

Q. The tests that have been referred to by him in his evidence? A. Yes.

Q. Were you present and did you take a large part in doing each and every one of those tests? A. Yes.

Q. For the purposes of the tests did you use a certain oil? A. I used a fuel oil of a flashpoint of 170 degrees Fahrenheit.

Q. Why do you say that? Did you make any tests yourself of that oil? A. I checked the flashpoint of the oil myself

30

Q. Did you do it according to the conventional Pensky-Marten method of testing? A. Exactly as laid down by the standard specifications for the Pensky-Marten Closed Cover Test.

Cross-  
Examination.

CROSS-EXAMINATION:

MR. TAYLOR: Q. Do you claim to be an expert on petroleum? A. No.

Q. I beg your pardon? A. No.

Q. Would it be within your knowledge that there has been a considerable change over the last eight or nine years in the quality of some of the petroleum oils that are used in this country? A. Just exactly what do you mean by "quality"?

Q. First of all, have there been any changes? --

HIS HONOR: Changes in what?

10 MR. TAYLOR: Q. Changes at all? A. Not being an expert, I could not answer that.

HIS HONOR: Do you mean chemical changes? What do you mean by changes?

MR. TAYLOR: I want the witness to tell me.

HIS HONOR: There have been changes in price. We know that.

You are referring to his capacity as a chemist?

MR. TAYLOR: Yes, I thought the witness would take that; chemical changes in the oil used out here.

Q. Has that been within your knowledge? A. No.

20 Q. You say you did this flashpoint test yourself. To test the oil that was used in these experiments to 170 degrees flashpoint - A. I tested the flashpoint in the oil, that is the question you are asking me, is it?

Q. That is right. When did you do that, can you remember? A. That was done about April, 1956.

Q. April, 1956. Did you yourself get this oil?  
A. It was ordered for purposes of these experiments.

Q. Did you order it? A. No.

30 Q. The first you saw of it, I suppose, it arrived at the University? A. Yes.

Q. What was it in? A. What was it in?

Q. Yes, what sized container? A. Forty four gallon drums.

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Cross-  
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continued.

Q. A 44 gallon drum of it, was there? More than one drum? A. Two drums.

Q. And it has been kept at the University ever since? A. Yes.

Q. Still some of it there, I suppose? A. Yes.

Q. Did you do any other tests on this oil except the flashpoint test? A. You mean to determine the physical characteristics of the oil?

Q. Yes? A. No.

Q. You never did any ignition tests? A. What do you mean by ignition test? 10

Q. Does not that convey anything to you; an ignition test of the oil? A. That is the type of flashpoint.

Q. Is there any difference so far as you know between the test of the flashpoint of the oil and the ignition of the oil? A. The ignition test is carried out in some type of test burner but I did not carry out a test of that kind.

Q. Did you do a test to determine the fire point? A. Yes. 20

Q. You understood, did you not, that the flashpoint is the temperature at which the oil giving off volatile vapours will start momentarily to flame? A. Yes.

Q. The ignition point of oil is the temperature at which it will burn, is it not? A. That is. Yes, I did those; but I did it as the Cleveland Open Cup Test.

Q. You did an ignition test? A. I did the Cleveland Open Cup Test. 30

Q. When did you do this? A. At the same time.

Q. Some time in 1956? A. Yes.

Q. These tests so far as the quality of the oil and its characteristics were the only ones you did in respect of the oil? A. Yes.



- Q. You did not do any tests for viscosity? A. No.
- Q. Even these experiments the Professor told us about, I suppose in point of fact you were present at them all? A. I prepared the experiments and carried them out under the Professor's supervision.
- Q. You would be the man who used the arc holder? A. No.
- Q. Who did that? A. One of the workshop people. I observed the oil and took times of ignition.
- 10 Q. Where was this done, at the University? A. Yes.
- Q. In the laboratory? A. In and around the laboratories, yes.
- Q. In some of them, we have been told, there is a wind velocity. Is that an artificial velocity created in the laboratory or done in the open air? A. Some of it was done in the open air, and the air velocity measured in an anometer, and some of the wind velocities were produced artificially and that velocity also measured with an anometer.
- 20 Q. That would be inside the laboratory, the ones that were done with the wind produced artificially? A. For the most part. Sometimes at that stage there was not sufficient wind outside and I used the artificial means.
- Q. I suppose you have seen these large number of sheets showing the results and the nature of tests? I suppose you prepared them, did you? A. I have seen the originals.
- 30 Q. At the time you were doing the tests - and we are up to Exh.16 at the moment (it would be starting at Exh.5.) - covering six lots, did you take the room temperatures? A. In many cases, yes.
- Q. Did you record those? A. Yes.
- Q. You see they are not recorded on sheets showing the results of the experiments which have been produced here. They would be recorded somewhere, would they? A. Most of them.
- Q. When you used water, seawater, did you record the temperatures of the water? A. In many cases, yes.

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Q. Were you endeavouring to simulate and give such conditions when you did these tests? A. No, I could not because I did not know exactly what the conditions were.

Q. Take, for example, the tests you did with cotton waste. There are quite a number of experiments with cotton waste? A. Yes.

Q. When you have been using cotton waste and trying to ignite it. That is just ordinarily without it being on the water - that would be done in the laboratory, would it? A. Yes.

10

Q. Were all the experiments to ignite the cotton waste done inside the four walls of the laboratory? A. No.

Q. Which ones were done outside? A. All the ones done at over 30 feet of drop.

Q. Thirty feet and over were done outside? A. They were done outside.

Q. And the others done inside? A. Not all the others. Some of the initial experiments were also done outside.

20

MR. TAYLOR: I would prefer to defer any further cross-examination until they are all in.

MR. MEARES: They are all in.

MR. TAYLOR: I do not think I will cross-examine further.

Re-  
Examination.

RE-EXAMINATION:

MR. MEARES: Q. You told Mr. Taylor something about temperatures, did you? A. Yes.

Q. Can you tell me anything about temperatures, temperatures the tests were done in? A. The latest series --

30

Q. I am afraid I have taken some of these out of context, but to put it chronologically you will have to describe the tests, you see? A. I was proposing to do that.

With the latest tests concerning the evaporation of petrol the air temperatures were of the

order of 75 degrees Fahrenheit to 82 degrees Fahrenheit.

Q. And prior to that had you done other tests somewhat similar with a lesser temperature? A. You mean evaporation tests on petrol?

Q. Yes? A. No, they were all within that range.

Q. Thank you, then go on? A. And with the tests dealing with the ignition of cotton waste the temperatures varied from 65 to 75 degrees Fahrenheit.

10 Q. As far as the water was concerned in which these tests were done -- A. For the most part the water that was to be used for these tests was kept in a similar atmosphere for a considerable number of hours previous to the conduct of the test and therefore the temperature of the water was ostensibly the same as the atmospheric temperature.

20 (Documents showing the average seawater temperature over 75 degrees at Fort Denison for the month of October and November and showing the highest monthly average and the lowest monthly average tendered; Exh.17.)

Q. So that there will not be any chance of misleading; in addition to the tests that Prof. Hunter has enumerated certain other tests were done, is that correct? A. That is correct.

Q. And you have particulars of those tests? A. Yes.

Q. And they are available if they are required?  
A. Yes.

(Witness retired.)

30

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FURTHER EVIDENCE OF T.G. HUNTER

MR. MEARES: I will take the responsibility of not having led certain tests. I do not think they are relevant but I want my friend to know they are available if required.

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MR. MEARES: Q. In addition to the tests that you have given evidence of certain other tests were done - is that correct? A. Yes.

Q. And you do not think that they contribute anything to the conclusions you have reached? A. I do not think so. A great number of them were preliminary tests in which we were feeling our way, and they had no great significance.

Q. Bearing in mind the operations that have been carried on on the wharf at Mort's Dock of oxy-acetylene burning at one part of the wharf and of welding at another part of the wharf, and having heard that there was a substantial concentration of oil between the "Corrimal" and the shore where she was lying, in your opinion is it probable or not that the conflagration on 1st November was brought about by a wick on the water becoming lighted and in turn lighting the oil? (Objected to; pressed.)

10

HIS HONOR: I think you are entitled to ask the witness as to whether, in his view, that could be a cause.

20

MR. MEARES: I would ask that the question be read.

HIS HONOR: I think it was to this effect - bearing in mind the oxy-acetylene burning being carried on at a part of the wharf and the operation of welding at another part of the wharf, and having in mind that there was a substantial concentration of oil between the "Corrimal" and the wharf, in your opinion is it not probable -- ?

MR. MEARES: Q. In your opinion could this fire have been brought about by a wick on the water becoming lighted and in turn lighting the substance on the water? A. It could.

30

Q. Bearing in mind the premises that I have just put to you, do you think or can you think of any other cause for the fire on that day? (Objected to; pressed; argument ensued.)

HIS HONOR: I think that the question is too wide unless the witness is in a position, as a scientist, to say that oil floated on water in the circumstances in this case cannot be ignited otherwise than by a wick floating on the water.

40

MR. MEARES: Q. You have told us that oil can be lighted by a stationary wick - such as a lighted pile? A. Yes.

Q. Can you tell the Court any other methods by which fuel oil floating on water, of a flashpoint of 150 and above - any other method by which that oil can be ignited? A. Yes.

Q. If it is on the water? A. Yes.

10 Q. Tell us any other method by which that oil can be ignited? A. By someone holding an oxy torch on the surface of the oil, by someone holding a roman candle over the surface of the oil, by putting extremely red hot coke on the surface of the oil. I can think of no other methods.

HIS HONOR: Q. Do you negative the possible existence of any other cause other than those causes which you have now mentioned? A. I cannot think of any other method.

20 Q. And your opinion now expressed relates to furnace oil which is not mixed with any other substance? A. Quite.

MR. MEARES: Q. I want you to assume that a ship is painted with an inflammable substance? A. Yes.

Q. Can you give the Court an idea of how inflammable it is (Objected to).

Q. Can you say - if not say so - have you any idea of the flashpoint of paint? A. No.

Q. Or its inflammability? A. No.

Q. Or its constituents? A. Yes.

30 Q. What are the inflammable constituents of paint? A. Sometimes the inflammable constituent is linseed oil, which on contact with the air forms a hard film in the paint, which is inflammable.

Q. Is it as inflammable as fuel oil, or more so? A. I do not know.

Q. Supposing a ship's sides were painted? A. Yes.

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Q. And supposing flames were seen going up the side of the ship? A. Yes.

Q. In your opinion would the paint have been a contributing factor, and if so to what extent? A. I think that it would have been a contributing factor.

Q. A substantially contributing factor? A. Yes.

Q. Is there anything in the evidence which you have read which suggests to you that this was a fire brought about by petrol mixed with, on or underneath fuel oil? (Objected to; rejected). 10

Q. Could you tell me in respect of any facts that you have read, whether those facts or any of them point to a petrol fire or otherwise? (Objected to; pressed).

HIS HONOR: I think you will have to confine the questions to specific matters.

MR. MEARES: Q. You told us yesterday, I think, assuming that petrol was existent in the subject area, that it would ignite, substantially speaking, the whole area of it instantaneously? A. I think so. 20

Q. And that it would ignite with a very substantial explosion - is that correct? A. Yes; a substantial detonation, I would prefer.

Q. Under any circumstances - assuming some way, which you cannot understand, petrol escaped from the "Waggon Mound" on 1st November, can you imagine that in those special circumstances this substance that was underneath Mort's Dock, only portions of it had petrol in it and other portions were substantially free of it? Can you imagine that? A. Yes. (Objected to.) 30

Q. What is your opinion? A. I do not think that there would be anything.

Q. And supposing that the oil escaped not on 1st November but on 30th October, would your opinion be the same? A. Yes.

Q. Assuming that the escape of petrol at the place and at the time I have indicated, occurred - namely

29th October - and that the escape of the oil occurred on the morning of 30th October - in your opinion, if there had been a mixture of petrol with the oil - do you follow? A. Yes.

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Q. And if that mixture had got to the Mort's Dock area, in your opinion would the whole area - what was described as looking like oil - would the whole area have gone up? A. No.

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Q. What would have happened?

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10 HIS HONOR: What do you mean by "would have gone up"?

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MR. MEARES: Lit up - caught on fire.

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HIS HONOR: There was some suggestion in evidence of something going up with a "whoosh" and the other suggestion of burning oil.

WITNESS: No; there would be no "whooshing" noise or no burning oil.

20 MR. MEARES: Q. There would have been no "whooshing" noise or no burning oil when? A. If there had been a mixture of oil and petrol.

Q. If there had been a mixture of oil and petrol -? A. There would have been no "whoosh" and no instantaneous burning, that mixture having taken place several days beforehand, several hours beforehand.

HIS HONOR: Q. And would that be within the limits of the volatility of the petrol? A. Yes.

30 Q. Assuming that there had been some mixture of the petrol and oil and the volatile elements of the petrol had evaporated, could the remaining elements of the petrol increase the inflammability of the oil? A. Not significantly.

(Certified statement of the average hourly wind directions, from the 29th October 1951 to 1st November 1951 recorded at the Sydney Weather Bureau, tendered; objected to; admitted and marked Exh.18.)

MR. MEARES: Q. You heard Mr. Taylor's objection, that the wind at the Sydney Weather Bureau is not

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necessarily the wind at Balmain? You would agree with that, of course? A. I think so.

Q. And you would also agree with this proposition, that particularly coming around a point, or in a backwater, you can get funnels and dead spots? A. Yes.

Q. And gusts that vary? A. Yes.

Q. If you had a wind on that day - the 1st November - which had the capacity of putting down on to the substance on the water the flame of a wick whatever it was, those circumstances would be quite ideal for the creating of a fire, would they not? A. Yes

10

Q. As far as a fire is concerned, if there is wind existent at the time, will that create, under certain circumstances, a roaring noise? A. I think so.

Q. Are you able to tell us, of your own expert knowledge, without expressing a layman's opinion, as to whether or not if you had a fire started underneath a wharf - like a sheerleg's wharf, with piles and cross beams and that sort of thing - whether any noise from the wind in those circumstances would be more a roaring noise than if the fire was fanned by wind in the open? Do not give a layman's opinion. If you have any particular knowledge of it, tell me? A. Yes; I would suggest that I am competent to express an opinion on that, and that it would have a greater roaring noise in that confined space with that wind tunnel effect than it would have in the open.

20

30

HIS HONOR: Q. And would that be a momentary noise or a continuing noise? A. It would depend on the wind velocity - whether it was varying or constant or gusty or what it was.

MR. MEARES: Q. I want you to take fuel bunker oil on the water of sufficient thickness to be ignited by a wick, and I want you to take the condition of a favourable wind, favourable to putting the wick, the light or the flame, on or near the oil - once you got a flashpoint of portion of the oil - do you follow what I mean? A. Yes.

40

Q. Once you got a flashpoint could you discuss



whether a large area would be alight in a second or whether it would take some time or what the position would be?

HIS HONOR: Flashpoint or fire point?

MR. MEARES: Q. From the time of flashpoint until the thing got really under way? A. From the time of the initial ignition of the oil until the time it got under way?

10 Q. Well, from the initial flash until the time it got under way? A. It is very difficult to come to a conclusion as to what point represents "well under way".

HIS HONOR: I suppose the first point is flashpoint, and if the fire is to develop it must proceed to fire point? A. Yes.

Q. And at fire point the combustion commences, does it? A. Yes.

20 MR. MEARES: Q. The time between flashpoint and the time it really gets under way? A. Do you mean until the surface of the oil just ignites or until a good portion of the oil surface ignites?

Q. Yes? A. Several minutes.

HIS HONOR: Q. And what do you suggest is a "good portion"? A. Say 10 ft. out from the initial flame.

MR. MEARES: Q. Now from the flame point - do you follow that? A. Yes.

30 Q. From flame point until the thing gets well under way, what would be the time? A. I am having difficulty about "gets well under way". I want you to be more specific.

Q. Well, you tell us how it spreads.

HIS HONOR: The distance.

WITNESS: From the initial point of ignition until the fire has reached a point 10 ft. away, one minute.

HIS HONOR: Q. And would that involve an area with

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a diameter of 20 ft.? I assume that if the flame would move 10 ft. in one direction, it would move 10 ft. in the opposite direction? A. Not necessarily so. One might be upwind and the other might be down wind. 10 ft. downwind - I should perhaps qualify the statement by that.

MR. MEARES: Q. Does it increase at the same rate, or does it accelerate after that? A. I think it accelerates rapidly then.

HIS HONOR: Why is that? A. The area which is being affected is rapidly increasing in geometrical progression. The area is rapidly getting bigger and bigger, so that the net effect is a rapid acceleration of the fire. It is a fairly common experience in most fires.

10

MR. MEARES: Q. And with the fire spreading over the surface you are getting the fire feeding itself, as it were with the increased heat of the fire and flame? A. Yes, quite definitely there is a continuous acceleration and extent of the fire.

20

Q. It rapidly increases? A. It rapidly increases.

Q. And the times you have given me - you have said that it was a matter of extreme difficulty, would that be correct? A. Yes.

Q. And it would depend upon a number of factors, including wind velocity and other matters? A. A considerable number of factors.

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CROSS-EXAMINATION:

MR. TAYLOR: Q. And of course it would depend tremendously on how volatile the oil was that was burning? A. Quite.

30

Q. For instance, if it were petrol, it would be practically instantaneous, an explosion? A. Yes.

Q. And at the other end of the scale, if it was oil of a very very high ignition point, it would be much slower? A. Much slower.

Q. And between those two you could have an infinite range? A. Variety.

Q. Yes, variety? A. Yes.

Q. Two expressions have been used to you - fuel oil and the furnace oil? A. Yes.

Q. Do you understand "fuel oil" to mean any oil that is used as fuel in engines - in boilers? A. No; any oil that is used as a fuel irrespective of what type of furnace is burning, from a diesel engine upwards.

10 Q. So that you would include in the expression "fuel oil" the oil you would use to run a diesel engine? A. I think so.

Q. And then "furnace oil", I take it, would be a somewhat restricted class? A. Yes.

Q. You would use the expression "furnace oil" to denote those types of fuel oil to feed furnaces? A. Yes.

Q. And "fuel oil" would include all furnace oils, in your understanding? A. Yes.

20 Q. And of course, "fuel oil" would, in your mind, cover a large range of oils where the flash point might vary? A. Yes.

Q. And very considerably? A. Yes.

Q. You have based the evidence you gave here on the assumption, have you not, that the oil with which we are concerned under the wharf on this day had a flashpoint of 170 degrees - approximately 170 degrees. (Objected to).

Q. 170? A. Yes.

30 Q. And from the point of view of your expert evidence, is that an important assumption? A. The opinions were based on experiments done with a bunker furnace oil with a flashpoint of 170 degrees Fahrenheit, and I feel that a variation of the flashpoint 20 degrees either way from that would not be highly significant with regard to the ignition experiments we have carried out.

Q. So far as your experiments were concerned, performed since you have come into this case, give or take 20 degrees either way from the flashpoint of 170 degrees would make no substantial difference

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from the opinions you have expressed? A. Very little.

Q. What happened to this particular oil that was underneath the wharf and surrounding the wharf on the 1st November - are your opinions in regard to that on the basis that the flashpoint does not make any difference, or is it on the basis that the flashpoint of 170 degrees? A. The oil underneath the wharf?

Q. The oil that was burned. You have given us the benefit of a number of opinions on this oil that was burned on 1st November? A. Yes.

10

Q. I want to know whether, in expressing those opinions, you have taken the oil to have a flashpoint of 170 or whether you have taken the oil to have a flashpoint from 150 to 190? A. Yes; I have based my opinions on an oil having a flashpoint 150 to 190.

Q. With, as I said, a give and take limit of 20 degrees either way? A. Yes.

20

Q. And having in view a give and take limit of 20 degrees, as a scientist you would not care to give an opinion on what would happen in the case of a greater range, would you? A. When I take a give and take of 20 degrees, if I am to extend that range I would like to have more evidence.

Q. And if you are to go outside that range, your opinions would have some qualification? A. I think so.

Q. When you were asked about the oil that was the subject of the experiments out at the University, you said it was oil of one quality - Vacuum oil - and that it had a flashpoint of 170 in the tests carried out by Mr. Parker. You meant by that that it was oil that you obtained from the Vacuum Oil Company? A. Yes.

30

Q. You said "Vacuum Oil"? A. Yes.

Q. You obtained it from the Vacuum people? A. I did not obtain it personally from the Vacuum Oil people.

40

Q. Who obtained it? A. Mr. Yuill obtained it. It had to be paid for.

Q. Can you tell me when it was tested was a sample taken from each drum and that tested for the flash-point? Do you follow what I mean? Were both drums tested? A. I do not know.

Q. I suppose in your time you have had a good bit to do with tankers? A. Not with tankers.

10 Q. But you have been in a tanker, have you not?  
A. Never.

Q. We have been told here how this fuel oil came to these fuel tanks somewhere up forward of the ship, and the system of pumping it from a barge through an intake manifold. Did the pipes go in at the bottom of the tank, do you follow me? A. Yes.

HIS HONOR: You mean that the inlet point of the pipe is near the bottom of the tank?

MR. TAYLOR: Yes.

20 Q. And if you have a tank which is already half full, and you put some fuel oil into the bottom of it, I suppose the first result of that is that it fills up? A. Yes.

Q. And if the fuel oil you are putting in at the bottom is a heavier oil - that is a higher, or is it a lower specific gravity - which one is it that I want? A. A higher specific gravity.

Q. A higher specific gravity than the one already there? A. Yes.

30 Q. The one already there will tend to remain on top of the oil that is coming up? (Objected to; pressed; argument ensued).

HIS HONOR: I cannot assume at this stage what Mr. Taylor's object is, but I allow the question.

MR. TAYLOR: Q. That would be right, would it not?  
A. I cannot answer unless you could be a little more specific as to conditions.

Q. Will you answer it generally? You have a tank on a ship two-thirds full of oil? A. Yes.

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Q. And you are pumping at the bottom fuel oil which is heavier than the existing oil? A. Yes.

Q. And then eventually the oil gets to the top and it runs over? A. Yes.

Q. Now what runs out? (Objected to; pressed; admitted).

Q. Do you remember the question? A. Yes.

Q. Now what comes out of the top - what was there originally or a mixture of the two? A. It depends entirely on the rate of pumping. If you are pumping in at a terrific rate you get agitation and a mixture of the two. If you are pumping so that the flow is fairly slow into the tank, then you get the top layer coming out first, and then there is some mixture of the two in between. 10

HIS HONOR: Q. When you say "fairly slow" - that would be a relative slowness, would it not, or a speediness or slowness relative to the size of the tank? A. It depends on the conditions. It depends on the speed of pumping and the size of the tank and the relative viscosities of the two oils. 20

Q. Is there a tendency for a lighter oil to rise to the surface where there has been a mixture of oils of two specific gravities? A. The lighter oil is being pumped in at the bottom.

MR. TAYLOR: No, the heavier one at the bottom.

HIS HONOR: The heavier one at the bottom?

A. There is no lighter oil to rise; it is already there.

Q. But assume that the lighter oil was pumped into the bottom - where there is an admixture of two oils of different specific gravities, is there a tendency for them to coalesce - is that the term - or does one tend to rise through the other to the surface? A. Once again it depends entirely on conditions. 30

(At this stage Mr. Meares asked leave to obtain from the shorthand writer a copy of the transcript of Mr. Taylor's opening address to His Honor.)

HIS HONOR: You may renew your application at 2 o'clock. It is not usual to make available addresses of counsel. If they are taken they are taken as a substitute for the Judge's notes, but I can certainly say if there is any question on the matter mentioned I will have that portion read to you, and the question of having the transcript of the whole address made available to you I will deal with at 2 o'clock.

(Luncheon adjournment).

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10 AT 2 P.M.:

(On resumption Mr. Meares renewed his application for a copy of the transcript of Mr. Taylor's opening address. His Honor stated that Mr. Meares could have a look at his copy, and handed the document referred to to Mr. Meares.)

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20 MR. TAYLOR: Q. you were telling us before the luncheon adjournment in broad outline what would happen if there was an admixture of two lots of oil.  
A. Yes. (Objected to and asked to be struck out of the notes; argument ensued).

HIS HONOR: If you show me that you have been misled by Mr. Taylor's opening, or if you are otherwise substantially prejudiced, I will hear you on the question of an adjournment. Your objection is noted and you have the benefit of it, but I will not stop that line of cross-examination. You may proceed, Mr. Taylor.

30 MR. TAYLOR: Q. I want to show you an entry in this book - I am referring to the engine log book, p.29 (shown to witness). Under an entry on p.29 you will see "arrived Sea buoy", and the fuel oil figure is 3,248 barrels. Then on the 30th, the next day, you will see, "Fuel taken in", etc. 6114 barrels. If that quantity of fuel oil was already in the "Waggon Mound" before it commenced to take in oil from the Vacuum barge, it would follow, I suppose, that there was an admixture of the two oils? (Objected to: pressed: argument ensued).

40 Q. If you had a given quantity of fuel oil of a certain flashpoint, and it was mixed with another quantity of fuel oil with a lower flashpoint, the combined admixtures would have a different flashpoint - different from the two of them? A. Yes.

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Q. You could work out the flashpoint roughly, could you not? A. It would be very rough.

Q. You said that your understanding fuel oil was not an inflammable oil? A. Yes.

Q. And I understand that the effect of your evidence was that speaking of fuel oil with a flashpoint within 20 degrees either way of 170 - that fuel oil was not inflammable? A. Except under very special circumstances.

Q. And one of your conclusions is that it is not inflammable on water unless you have it of a height of a sixteenth of an inch or more? A. That is what our experiments suggest. 10

Q. And it follows, I suppose, the thinner the film of oil on the water the more it is kept cool by the water itself? A. I think that might be one of the causes.

Q. And the next thing that follows from a thin film of oil on water is that you cannot get it up to a temperature at which it will flash? A. I could envisage that as one of the possibilities. 20

Q. So that the risk of fire is increased as you increase the depth of the film of oil on the water? A. That again is what our experiments suggest.

Q. And you used the expression a "lens"? A. Yes.

Q. You meant by that something more than a film of oil? You meant a film of a certain depth? A. It is still a film, but it is lenticular in shape.

Q. It goes into blocks? A. It aggregates into lens-shaped areas. 30

Q. I think you made some reference to some very recent learning about a particular quality that fuel oil has - it loses its capacity to disperse? A. To "spread" was the word used.

Q. If you can disabuse your mind from scientific knowledge, it is a popular conception that if you put oil on water it spreads and thins? A. Yes.

Q. Such a conception is a fallacious conception so



far as fuel oil is concerned, is it not? A. Not always. It depends on a lot of conditions. I can refer to a case where one of the oil companies put 15 tons of fuel oil on to the sea 50 or 100 miles from the shore and it spread to an area of 8 square miles which I think, works out to an oil thickness of one-thirty-thousandth of an inch.

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10 HIS HONOR: Q. And what type of oil was that? A. I think that was fuel oil. I will have to quote you the reference for it if I may just check that point.

Q. Yes, certainly. (Witness refers to document).  
A. Fuel oil discharged into a calm sea.

MR. TAYLOR: Q. What sort of oil was it? A. Do you wish the authority?

Q. I am sure I would not understand it. You might just give the reference to it? A. The reference is "Ministry of Transport Report of the Committee on the Prevention of Pollution of the Sea by Oil".

20 Q. Is that the one you referred to previously - 1953? A. Yes, 1953 - p.7.

Q. So that it follows then that there are a lot of circumstances to be taken into consideration when determining to what extent the oil will spread?  
A. A great many.

Q. And I suppose you can have a set of circumstances in which it will attain a height on the water of more than a quarter of an inch? A. I imagine that if it was partially dammed it could, yes.

30 Q. And in that event the fire risk would be increased?  
A. Because of the increased thickness yes.

Q. And it follows, does it not, that as the depth of the oil on the surface of the water is increased, so the fire risk is increased? A. Yes, I think so. Given special circumstances, it would be set on fire, of course.

40 Q. It all presupposes that you have some fire applied to it. You as a scientist would be able to envisage the circumstances or some of the circumstances in which fuel oil put on water would be a fire danger? A. Yes.

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Q. And you would be able then, I suppose, to envisage circumstances in which it would not be a danger at all? A. Yes.

Q. But it requires, I suppose, a great deal of study and a great deal of knowledge to determine, in any given case whether or not there will be fire danger? A. I think it wants a lot more than that - a great deal of experiments along with it.

Q. Of course you cannot just go along and measure the height of a film of oil on water, can you?

10

A. It is not an easy job.

Q. Is there some scientific way of doing it, or is it just done by calculation? A. Calculation is the easiest way.

Q. You said that your view before you did these experiments was the fuel oil was not an inflammable liquid. Is that the phrase you used, or did you mean that it was not a fire danger? (Objected to: pressed). A. A fire hazard.

Q. A fire hazard you meant, not a fire danger? A. I said that it was not a fire hazard.

20

Q. And that was prior to doing these experiments? A. Yes.

Q. May I take it since you have done these experiments on fuel oil you have had occasion to alter your opinion? A. Only in the case of particular circumstances.

Q. Those particular circumstances were not known to you before you held these particular experiments? A. No.

30

Q. So that the hours of experimentation that you have carried out have added to your knowledge? A. Yes.

Q. And they have added to your knowledge to this extent that that which you hitherto regarded as not being a danger, you now consider it to be a danger in certain circumstances? A. Yes.

Q. Is it still your view that given a depth of fuel oil on the surface of water of not more than one-

sixteenth of an inch it is still not a fire danger?  
A. Yes, I think that is so.

Q. And the result of your experiments is that you have not succeeded in igniting any fuel oil below one-sixteenth of an inch in thickness? A. We did not try below; we only went as far as the sixteenth.

Q. And did you succeed in igniting any oil of a sixteenth thickness? A. So far as my memory suggest, we did not succeed in igniting any of a sixteenth. My answer is subject to the tests.

Q. And if I asked you whether any oil on water was a fire danger, the first inquiry you would make the depth of the oil? A. Yes.

Q. If it was one-sixteenth or less you would say "No"? A. Yes.

Q. If it was more than that you would want to know a lot of the circumstances - you would want to know more of the circumstances? A. Yes.

Q. The question of the height to be attained by oil on the surface of water is governed by a lot of circumstances? A. Yes.

Q. One is the nature of the area of sea water on which it is put. By that I mean if you put it over the open sea 100 miles from the shore you would expect it to spread? If you put it in a place where it would possibly be affected by debris on the water, by piles on wharves, by the presence of a vessel that could act as a sort of dam - those would be some of the matters that you would take into consideration in determining whether or not it was likely to be a fire danger? A. Yes.

Q. And in your wisdom I suppose you would call for different sets of precautions depending upon what circumstances existed?

MR. MEARES: Q. Do you mean at that stage?

MR. TAYLOR: Q. In any question where you are asked to give your views as to whether fuel oil on water is a fire danger - if it is a place where it can get over one-sixteenth of an inch in height, you would want to know all the circumstances before you

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could express an opinion as to whether it was a fire danger? A. All the circumstances with regard to the depth and all the circumstances with regard to the possible means of ignition which exists over that area.

Q. Let us take, first of all, the dropping of red-hot bits of metal on it? A. Yes.

Q. If it was on the surface of the water and the water was of some depth - six feet or more - then, from your evidence, if the oil is less than one-sixteenth of an inch you would not worry about it? A. That is so.

10

Q. And if it was more than one-sixteenth of an inch up to half an inch, red hot metal dropped on it would still go through without igniting it? A. I think so.

Q. The reason being that there is not sufficient time during which the hot metal is in contact with the oil for it to have raised its temperature sufficiently? A. Presumably. That is the main reason.

20

Q. Have you ever taken a quantity of this oil in a tin and put a white hot piece of metal into it? All it does is bubble, does it not, if you put it right in? A. I should think so.

Q. If you held it near the surface and it is white hot and the temperature is sufficient, first of all you get a flash and then ignition? A. I do not know.

HIS HONOR: Q. What would be the circumstances that would lead to ignition - that the white hot metal was partly within and partly without the film of oil? A. I do not know.

30

MR. TAYLOR: Q. To get the oil on the water to flash you have to apply heat to the surface of the oil? A. Yes, I think so -

Q. That is the trend? A. That could be so.

HIS HONOR: Q. May I take it that your reply to my last question - when you said you did not know - am I to take it that you do not know whether it would ignite at all under those circumstances? A. Yes, that is so. I do not know whether it would ignite at all.

40

MR. TAYLOR: Q. So that first of all you have to have sufficient height of the fuel oil on the water - that is to get ignition? A. Yes.

Q. And then you have to have the temperature raised for the vapours to come off? A. Yes, and you have to have a flame present.

Q. Does that mean you could not do it under any circumstances with red hot metal? A. I do not know. I have not tried. I might qualify that, if I may. I have not tried any experiments of that nature except dropping from oxy-welding.

Q. When you drop from oxy-welding you drop the particles into the oil on top of the water - you did not suspend them above, did you? A. No.

Q. And on that occasion you did not succeed in getting any ignition at all? A. No.

Q. And you continued that experiment with oil on the surface, to a height of - A. Three-eighths of an inch.

Q. That is six times the minimum - six-sixteenth? A. Yes.

Q. And that three-eighths of an inch would be a depth of oil on the surface that you would not expect to get? You would want special circumstances before you would get it to that depth? A. Do you mean in these particular circumstances or in any instance?

Q. Take any circumstances. You would not get three-eighths of an inch thickness of oil on the surface of the open sea for any length of time? A. I should doubt it.

HIS HONOR: Q. Would not that depend on the viscosity of the oil? A. The condition of the surface.

Q. Would a very light oil tend to spread more thinly than a very heavy oil? A. Yes.

MR. TAYLOR: Q. So that in any case that we are talking about, viscosity is a factor? A. One of the factors.

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Q. And the specific gravity - is that a factor?

A. I do not know.

Q. What circumstances would you envisage that would give you a height of fuel oil - I am dealing with the type of fuel oil that you used for your experiments here - of the waters of say, Sydney Harbour - what would you ordinarily want to build it up to three-eighths? A. Some form of containment of the oil - of the necessary size.

Q. Dealing only with the depth of the oil up to three-eighths of an inch, we can leave out, can we not, any question of it being ignited from oxy-welding or electric welding? A. Yes, I think so - directly ignited.

10

Q. And you could leave out any question of it being ignited by an oxy-welding flame? A. Yes.

Q. And you could also leave out, I suppose, a piece of burning rag unless you had other special circumstances? A. The rag would have to be floating on the oil.

20

Q. And dealing with rag for the moment - it would have to be floating on the oil, but would it have to have some oil in it itself, other than the oil that it would perhaps pick up? A. Not necessarily, no.

Q. And then, of course, it would be quite possible, I suppose, to light a piece of rag, put it on fuel oil on the surface of the water, to a depth of three-eighths of an inch, and the rag burns out with no ignition - that is possible, is it not? A. I think that is possible, as well as the igniting.

30

Q. And you have to have other special conditions beyond merely the burning piece of rag? You have to have some wind or something that will put the flame down on to the surface of the oil? A. That helps, but it is not 100% essential. There are so many factors involved.

HIS HONOR: Q. One factor is the form in which the rag was at the time it came on to the water? A. Yes.

40

Q. If it was crumpled up into something of the

nature of a ball, that might have a different effect than if the rag was slack? A. Yes.

MR. TAYLOR: Q. Did you conduct any experiments taking a small piece of rag, dipping it into fuel oil, lighting it and putting it into a container of fuel oil? A. Without seawater?

Q. Yes? A. No.

Q. You did not conduct that experiment? A. No.

10 Q. You would not agree that the rag would go out without igniting the fuel oil at all? (Objected to).

HIS HONOR: Q. Can you answer it from your own knowledge? A. I do not know. I could not answer that.

MR. TAYLOR: Q. The circumstances in which you succeeded in lighting this oil with the use of cotton waste were that you had the cotton waste first of all impregnated with some form of oil? (Objected to).

Q. That did not apply to all your experiments?

20 HIS HONOR: I do not think the word "impregnated" was used.

WITNESS: "Dry" and "oil" were both employed for the ignition of oil on sea water.

MR. TAYLOR: Q. Did you find that when the cotton waste was impregnated with oil or had oil in it you got ignition better than if it was dry? (Witness refers to notes). A. Very little difference.

30 Q. But the cases in which you succeeded igniting the oil with the cotton waste, using an oxy-welder, were cases in which you had the cotton waste floating on some sort of a platform? A. Yes.

Q. I suppose if you had not had it on the platform there would have been a tendency for the metal first of all to go through the cotton waste? Do you follow what I mean? A. I follow what you mean.

Q. Having it on the platform is to make sure that when you land a piece of metal on it it stays there? A. Yes.

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Q. Otherwise it would have a tendency to go through into the water? A. I do not know.

Q. What I am suggesting to you is that if you dropped the hot metal on to a piece of waste itself floating on the water and not on a raft, you might or might not get it to ignite? A. Yes.

Q. The chances of getting it to ignite are increased by putting it on a platform? A. I do not know.

HIS HONOR: Q. Would you not expect the cotton waste floating on water to absorb a quantity of water? 10

A. Floating on oil or on water?

Q. Floating on a very thin film of oil on water?

A. Yes, that is possible.

Q. And would that minimise the prospects of its igniting, or reduce the prospects of its igniting?

A. I do not know.

MR. TAYLOR: Q. Ordinarily, if you have a piece of cotton waste floating about in the harbour, even if there is oil on the water, the cotton waste tends to get wet, there is a constant movement of the waters in the harbour and the cotton waste would not stay dry? A. This is on oil or on water? 20

Q. Oil on water, and cotton waste? A. I do not know.

HIS HONOR: Assuming that the cotton waste is somewhat balled up? A. Yes.

Q. The film of oil is likely to be something in the order of a-sixteenth of an inch or less? A. Yes.

Q. Would not you expect that the cotton waste would go through the film of oil into the water beneath? 30  
A. I think you would be justified in thinking that, but whether it would or not, I do not know.

MR. TAYLOR: Q. Is not the picture one where the film of oil completely prevents it getting wet, or is there a chance of it getting wet, or do you not know? A. I do not know.

Q. Supposing you have a film of oil on the water and you throw a cornsack on it, you would expect,



I suppose, the cornsack to get wet, or would you have any doubts about it? (Objected to).

Q. You may have oil a-sixteenth or three-eighths of an inch thick? A. If it fell right through the oil, of course it would get wet.

Q. The oil is not a solid film; it is broken up into lenses - patches of oil and patches of water - or do you have in mind a continuous film of oil covering the surface? A. I have in mind a continuous film.

HIS HONOR: Q. What would prevent a substance such as a ball of cotton waste or a crumpled piece of cotton waste which reposed on a film of oil from reaching the water? Would it be the tensile strength on the surface of the water? A. It depends on the preferential wetting of the cotton waste or oil by water, and I do not know which the water wets preferentially.

Q. Would not the cotton waste penetrate the film of oil into the water beneath? A. I do not know.

Q. What was the largest lump of cotton waste in your experiments - 80 grammes, was it not? A. Yes.

Q. Take a piece of cotton waste roughly in the shape of a ball. If that were placed on a sheet of oil floating on water, would you not expect some of the cotton waste to penetrate the oil into the water? A. I do not know that I would know what was going to happen.

Q. The alternative would be that the weight of the cotton waste would be borne entirely by the film of oil on the surface of the water? A. Yes, that would be the alternative.

MR. TAYLOR: Q. May I take it where you performed experiments with cotton waste - where you did not use the raft - they were floated on the film of oil? A. Yes.

Q. And as far as you could see they had no contact with the water? A. Yes.

Q. You would agree that in the harbour around the wharves there is always some movement of the water? A. Yes.

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Q. And the greater the movement of the water, the less of that film would remain - it would be broken up? Do you follow me? A. Yes, I follow you. I do not know. I will say that it is not an unreasonable assumption.

HIS HONOR: I suppose a slight movement of the surface of the water would not necessarily break up the surface of the oil? A. That is so.

MR. TAYLOR: Q. You have some difficulty in expressing opinions scientifically? You have some difficulty in expressing an opinion scientifically on that? A. Yes. 10

Q. Could you not express an opinion as a laymen that the movement of the water would break up the film of oil? A. I cannot make an assumption of a layman because I do not know what a layman would assume.

Q. Do you remember telling His Honor - giving to either my learned friend or His Honor some figures about once you get the surface of the oil to flash-point the space of time in which the fire would develop - I think you gave one figure, that it would go 10 feet in about a minute? A. From the time it was first ignited until it travelled 10 ft. - one minute? 20

Q. Yes? A. Yes.

Q. That depends on the thickness of the oil on the surface, does it not? A. Yes.

Q. If you had it, say, half an inch thick, you would get a more rapid spread than if you had it a quarter of an inch thick? A. I am sorry. I do not know if you would get that 30

Q. But would it not follow that the greater the height of it on the water the more inflammable it is? A. I do not think that it necessarily follows.

Q. And of course you would agree that the figure you have given is an estimate and one that is not based on a very good scientific basis? A. No, I would not agree with that at all.

Q. You would not agree at all with that in regard to 40

the figure of one minute, would you? A. No, I would not agree with that.

Q. Well, would you not agree that it would be possible for the fire to spread much faster than the 10 ft. in one minute that you gave? A. If the wind were higher than 10 miles per hour, it would spread that distance in much less than a minute.

Q. And would the height of the oil on the water affect it? A. I do not know.

10 Q. And after it spreads 10 ft., to use your phrase it goes in geometrical progression? A. Yes, I think so.

Q. The next ten feet would take much less time? A. Yes.

Q. And the fire increases in intensity as it goes along? A. Yes.

Q. And as it increases in intensity it goes more quickly? A. One would expect that.

20 Q. And fuel oil gives off great heat - it is an efficient fuel and that is why it is used? A. Yes.

Q. You have assumed that on this particular day the oil burned on the surface of the water - we have taken that as a fact? A. It was not the natural surface of the water where it was burning. It was not the natural surface of Walsh Bay that was on fire.

Q. Precisely - it was the oil. Nor do I suggest that it was the paint on the side of the ship that was burning? (No answer).

30 Q. You do not seriously suggest that the paint on the side of the ship, if it burned at all, burned as a result of the oil fire, do you? A. If it were burned it was burned as a result of the oil fire.

Q. Yes? A. I think it must have been.

Q. And whether the ship had been painted or whether it had not been painted, you would not have suggested that that made any difference to this fire, would you? A. If it had not been painted at all

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and was just bare iron it would not have burned - there would not have been any paint at all.

Q. But the ship would still have caught fire, would it not? A. You mean the iron would have caught fire?

Q. The wooden deck? A. I do not know. (Objected to).

Q. You did answer a question put by my friend that paint itself could burn; do you remember that?  
A. Yes.

10

Q. You said, if I recollect your evidence correctly that the paint on the side of the ship could have been a contributing factor? Did you mean by that that it could have been a contributing factor to the size of the fire? A. To the general fire, yes.

Q. And you would want to know, before you gave that as a firm opinion, you would want to know what the paint was? A. Yes.

Q. And the paint that you had in mind had a linseed oil base? A. And other paint that had a synthetic base.

20

Q. Can you say what of those more readily burns?  
A. I cannot.

Q. A great deal would depend on how long before the ship had been painted? A. I should imagine so.

Q. You have accepted the position that the oil on the surface of the water burned? That oil burns with a black smoke, does it not? A. Do you mean this particular oil?

Q. No, furnace oil burns with a black smoke? A. Yes; furnace oil generally burns with a black smoke.

30

Q. And you have told me that it creates a great deal of heat? A. Yes.

Q. Did you take into consideration that the plates of this ship along the side have been buckled as a result of this fire? A. I did not know that.

Q. If you accept the position that the plates on the

side of the ship facing the wharf were burned and buckled as a result of heat, I suppose it would indicate to you that at that particular point there must have been a very large quantity of oil, or cannot you make any reply to that? A. I could not make any prognostication about that. I feel that the expansion of the metal plates could have been caused by quite a small amount of heat or quite a large amount of heat.

10 Q. They are held by the ends and they expand with the heat? A. Yes.

Q. Have you accepted, for the purpose of the evidence you have given here about the fire, that it spread very quickly from the time the oil first caught? A. from reading the transcript on the evidence I have formed the impression that it had taken several minutes to spread.

Q. From the time that something was first seen burning on the water? A. Yes.

20 Q. And on that you would except, I suppose, it to take some time - for example, a piece of cotton waste burning on the surface of the water adjacent to the fuel oil, it would take some time to start the fuel oil burning at all - to get ignition of the fuel oil? A. We have our cotton waste on the fuel oil and it is burning - your question is how long would it take to get it ignited?

Q. Yes? A. I would say about a minute.

30 Q. Under a minute? A. About a minute; that is assuming that we have a 10 mile an hour wind velocity, which presumably was the prevailing wind.

40 Q. Have you taken into consideration that the spread of this fire was so rapid that it spread down to the after end of the ship before men could get off the ship - the space of time I am suggesting to you is about two minutes. If that were the fact, would it not indicate to you that the spread of this fire was due to something other than ordinary fuel oil? By "ordinary fuel oil" I mean oil of the flashpoint that you have spoken of here. (Objected to; question withdrawn).

Q. I want you to assume that from the time when the

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oil first caught on fire and the smoke coming up was noticeable - that from then until the time that it spread down the length of the wharf - right down to the after end of the "Corrimal", which would be something more than 200 ft., was no more than two minutes: on that assumption, would you agree that the oil that was burning had a higher flashpoint - I am sorry, a lower flashpoint than the oil you have spoken about here? A. I would not be prepared to give any opinion on that whatsoever. I would not be prepared to give any prognostication. I would not dare to make any prognostications with regard to the speed at which the fire spread, just from mere opinions.

10

Q. But you do agree with me that the spread of the fire would be quicker if the fuel oil had a flashpoint lower than the one you have spoken about here? A. I do not know.

Q. You do not know? A. No.

Q. Supposing you took it down to the flashpoint of kerosene - what is the ordinary flashpoint of kerosene? A. From about 100 to 150.

20

Q. Would you say that a fire started under the same circumstances on kerosene would not spread more quickly than a fire on fuel oil? A. That is kerosene with a flashpoint of 100 and fuel oil with a flashpoint of 150?

Q. Yes? A. I would expect kerosene, with a flashpoint of 100 to spread more quickly than fuel oil with a flashpoint of 150. That was not the question you asked me. You did not specify the flashpoint of the fuel oil in the first place.

30

Q. I should have specified it. The oil that was beneath the wharf and around the "Corrimal" on this day - I am talking about that specific oil - if you assume that it exhibited these characteristics, that from the time it first caught fire it spread underneath the wharf, alongside the "Corrimal", and within a space of two minutes the flames had gone up to the crosstrees of the "Corrimal", on those facts would you agree that that oil did not behave as you would expect fuel oil to behave with a flashpoint of 150 to 170 on being ignited? A. Under those circumstances?

40

Q. Yes? A. I do not know because I do not know how these particular oils would behave under these particular circumstances.

Q. But that behaviour would not be what you would expect from the fuel oil here being ignited under those circumstances? A. I just do not know.

Q. I want you to assume that after this fuel oil caught on fire, there was first of all some black smoke - ? A. Yes.

10 Q. And then it travelled underneath the wharf and alongside the ship and made a noise that has been described to you as a "whooshing" noise? A. Yes.

Q. If that noise was caused by the fire, it indicates the presence of volatile vapour, does it not? A. Not necessarily.

Q. Would you be able to tell me whether that would be the normal sort of noise you would get from an oil fire spreading rapidly? A. In a wind of a fair velocity, yes.

20 Q. What is it that makes the noise of a fire? A. It is usually referred to as the roar of the flames.

Q. Would you expect to get that noise in fuel oil that burned comparatively slowly - fuel oil of the order that you speak of, of 150 flashpoint - under the circumstances that prevailed there on that day? A. I think that whatever oilyou had burning on the surface of the water with a 10 mile an hour wind, you would still have the roar of the flames.

30 Q. That is the noise of the spreading of the flames themselves? A. Yes.

Q. If it is a fact that these flames, within a space of two minutes, had spread over 200 ft. and had got to the point of the crosstrees of this ship, which has been given a height of 150 to 200 ft. from the water - does that give you any idea or a guide as to whether the flashpoint of the fuel oil that was burning was 150 or higher? (Objected to).

HIS HONOR: You may put it as a hypothetical question, if you wish to.

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MR. TAYLOR: Q. Assuming the facts that I put to you, that within two minutes the fire spread along 200 ft. of the wharf and had gone around the end of the "Corrimal" and up to the cross-trees about 200 ft. high, - does that give you any idea as to whether the fuel oil had a flashpoint of 150 or a flashpoint of less than 150? A. It does not help me very much as to the flashpoint of the oil.

Q. It would not help you very much? A. Not a great deal. 10

Q. I suppose you will agree that on the day this fire happened, there was, beneath the Morts Dock Wharf, oil that was a fire danger? (Objected to: pressed: argument ensued: rejected)

Q. You have told us that prior to your doing these experiments, in any event you would not have regarded fuel oil of the range you have spoken about - that is 150 to 190 - as a fire danger? A. No, I did not say that.

Q. Prior to doing these experiments I understood you to say that you did not regard fuel oil - ? 20  
A. That is right.

Q. You mean fuel oil generally? A. Yes, but I did not specify the flashpoint range.

Q. Yes - as a danger. Would you regard oil that was capable of burning the way this oil burned - and when I say "this oil burned" I want you to make the assumption that you have already made, that from the time it caught alight first, it spread over the length of the wharf and around the "Corrimal" - would you regard that as a dangerous oil? (Objected to: pressed: argument ensued: rejected). 30

(At the request of Mr. Taylor the question was read from the shorthand notes).

(Question disallowed).

MR. TAYLOR: Q. Taking the assumptions I put to you in the last question, you will agree that the oil underneath the wharf that day was capable of being ignited? A. Yes.

Q. Capable of being ignited by a piece of cotton 40



waste, you would say, floating on a piece of bark and coming on top of the oil? A. Yes.

HIS HONOR: Q. Burning cotton waste, of course? --

MR. TAYLOR: Yes, burning cotton waste.

Q. And you would regard it as being capable of being lit by a pile catching fire and burning with the oil around it? A. I think it would.

10 Q. It follows from what you previously said it would have to be in the vicinity of the flame, and a height on the water of 1/16th of an inch? A. From the experiments.

Q. You agree that the circumstances existing under the wharf around the "Corrimal" on this day enabled this oil to be ignited? A. Yes.

Q. Once it was ignited it was, by reason of its qualities, capable of burning very rapidly, wasn't it? --

HIS HONOR: In the condition that existed that day.

20 MR. TAYLOR: Q. And under the conditions that existed that day it was capable of burning very rapidly? A. I find great difficulty in finding out the rate it spread, from the evidence

Q. Do you quarrel with "very rapidly"? A. I am not very happy about it.

Q. Capable of spreading much more rapidly than supposing somebody had set fire to the wooden structure of the wharf itself; much more rapidly than that? Would you agree with that? A. Would you mind repeating that.

30 Q. I say it spread much more rapidly than it would spread if there was no oil and you just set fire to the wooden wharf? A. Yes. I think it probably would.

Q. It would have to be there in sufficient quantities underneath the wharf and around the ship for the fire to catch it as it went along. Do you follow what I mean? A. To catch?

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Q. It had to be continuous oil? A. A continuous layer of oil?

Q. Yes? A. So it could spread over that area, yes

Q. One of the things of course that would contribute to the oil being capable of burning to the extent you have been told was the quantity of it?

A. That would determine the extent of the fire, yes.

Q. And of course the quantity would determine, I suppose, in some way the area or the depth - I think depth is the better word - of the oil on the surface of the water? A. Yes.

10

Q. So it would follow, would it not, that a lesser quantity of oil may not have accumulated to such sufficient depth to burn at all? A. Quite.

Q. And a lesser quantity of oil may have caused a fire that could have been put out very easily? A. How much lesser quantity?

Q. Professor, you feel some difficulty in answering the question in the form I put? A. I cannot answer that. You ask me if a lesser quantity of oil would give a fire which would be put out more easily. I just do not know how easy it is to put out fires.

20

Q. Have you given any consideration to determining what quantity of this oil was on the surface around the foreshores of Mort's Bay? What was the total gallonage of it? Have you given any thought to that? A. Yes.

Q. You have taken the evidence that was given here, and assumed it to be correct, as to the place in which it was some two or three days later? (Objected to)

30

Q. For the purpose of endeavouring to work this out what did you take to be the extent of the spread of the oil? A. Worked out the thickness of the oil layer or to work out the quantity which had been discharged?

Q. The quantity that had been discharged? A. I have not got a possible hope of ever finding out what that was.

40

Q. But the quantity that did come out of the ship on to the water is an important factor, is it not in determining whether or not there is a possibility of fire danger? A. Yes, it is a contributory factor.

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Q. For example, if you were told that this pumped out at the rate of 300 to 350 gallons a minute - somewhere between those figures -- "It would be something over 20,000 gallons an hour, which would be something over 300 gallons a minute" - Supposing you only had 100 gallons of this oil that went over the side of the "Waggon Mound" in the early hours of the morning of the 30th. In that case I suppose you would expect it to spread over a wide surface?  
A. Yes.

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Q. If instead of 100 gallons you had ten thousand gallons would it not be reasonable to expect - coming from the same place - at the end of three days' time you would have in places oil to a greater depth on the water than you would have if it had been 100 gallons, after three days of each? Is that a reasonable assumption? A. I do not think you put it quite correctly. I think the correct way of putting it is with the larger quantity of oil there would have been more chance for areas of considerable thickness to exist.

HIS HONOR: Q. The thickness of the volume of oil does not depend solely on the quantity of oil that is released? A. I do not think it does entirely in this case because after all part of the oil is free to be moved by tides and wind action.

MR. TAYLOR: Q. It is a factor, is it not; given the same area and the same circumstances so far as the situation of the wharf is concerned with the same quantity of debris and stuff on the Harbour - would you expect to get oil at the end of three days to a greater depth in places if you put ten thousand gallons out than if you put a thousand out? A. That is if both the oils were spreading over the same area?

Q. Yes? A. Yes.

Q. And it is the height of the oil on the water that increases its fire danger, is it not? A. Yes, increases the hazard.

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HIS HONOR: Q. Would you assume that 100 gallons of oil is spread over the area of the thousand gallons of oil released from the same spot; there is the open Harbour to one side, at any rate? A. I did not interpret his question in the light of that. I interpreted it to mean if we had the same area over which 100 gallons is spread and the 10,000 gallons is spread would one have a thicker volume than the other?

MR. TAYLOR: Yes.

10

HIS HONOR: Q. With the 10,000 gallons you would expect to have locations in which circumstances would lead to the thickening of the volume of the oil? A. Yes.

MR. TAYLOR: Q. Will you take the case of 1000 gallons that comes from the "Waggon Mound"; you would expect it in the course of time to come in on to the foreshores? A. I think some of it; but what proportion I would not like to hazard. Some of it would reach the foreshores.

20

Q. If you make an assumption that the effect of the tides and the winds is to take it in the direction of Mort's Bay then I suppose you would expect to find it thicker around the foreshores? A. I think some tides and winds would take it there and some would take it away.

Q. If the quantity is increased tenfold from 1000 to 10,000 then you would expect to find it more thicker around the foreshores? I think that follows from the previous answer, doesn't it - in the same place? A. Yes. I think that is quite reasonable.

30

Q. You would, I suppose, as an expert be concerned if you were considering a question of fire danger with the quantity of oil that was lying under a particular wharf? A. No relation whatever to the fire danger.

Q. You mean by that that quantity does not matter, it is the height? A. It is the thickness.

Q. And you would not relate that in any way to the quantity? A. Not to the actual danger of it igniting.

40

- Q. Is it not important if you are addressing your mind to the question of fire danger to know not only the height of the oil on the water but over what area that height extends? A. Yes.
- Q. That is a vital factor, isn't it? A. Yes.
- Q. And that factor is governed by the quantity?  
A. Quantity alone.
- Q. That factor is governed by quantity? A. Yes, I suppose it is.
- 10 Q. You told my friend that your experiments with the petrol had led you to the view that any petrol that escaped from the "Waggon Mound" would have to all intents and purposes gone by ten hours? A. Yes.
- Q. But by five hours you would have residuals only left with little or none of the volatile vapours of petrol in it? A. Yes
- Q. Have you ever addressed your mind to the question of petrol and furnace oil becoming mixed? A. Yes they mix.
- 20 Q. They would mix? A. Yes.
- Q. Each is soluble -- A. Yes.
- Q. If petrol and furnace oil are mixed together would that retard the rate at which the volatile vapours of the petrol would be given off? A. Yes.
- Q. And retard it - I think you will agree - considerably? A. Proportionate to the amount of fuel oil in the mixture.
- 30 Q. Does that mean if you had a mixture of 50/50 it would take twice as long to go? A. No, it does not mean that. I did not say the direct proportion. I just said "proportionate". I do not know what the proportion would be.
- Q. It was put to you that there would be no petrol left on the surface of the water if any had escaped by the time the oil came over, four o'clock the following morning? A. Yes, that was put - I think.
- Q. In answering that question you had regard, I

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suppose, to the experiments you have made at the University? A. Yes.

Q. You had regard of course to your knowledge and experience, but did you take into account that petrol may have gone from the ship beneath the wharf, or something of that order? A. Yes.

Q. Did the circumstances make any difference?  
A. None.

Q. None at all? A. No.

Q. So you would say you would get the same rate of dissipation of the volatile fumes of the petrol if it was put underneath the wharf or put out in the open air? A. I think you would.

10

Q. If you put the petrol on the water and then fuel oil was put on top of it would the petrol tend to come to the surface or mix on top of the fuel oil or mix with it? A. Mix with it.

Q. It would tend to mix with it? A. Yes.

Q. I want to ask if you will assume these facts: First there was heard a noise that was described as a "whoof", and then the wharf was a mass of flames - within seconds.

20

If you assume that is what happened, would that be the sort of fire you expect to get from fuel oil or furnace oil having a flashpoint of 150 to 170 degrees Fahrenheit? (Objected to; allowed).

Q. What I am putting to you is a noise and then it burst into flames underneath the wharf. That is not the sort of thing you would expect to happen with fuel oil of the order of which you have been talking about - 150 to 190 - ignited by a piece of cotton waste, is it? A. No.

30

Q. For you to get that happening through oil ignited it would have to have a flashpoint of much lower than 150? A. I would expect so.

HIS HONOR: Q. Are you basing your opinion on an assumption that the "whoof" and the appearance of a mass of flames indicated the commencement of the fire? A. Yes. That was, I think, the condition stated by Mr. Taylor.

40

MR. TAYLOR: Yes, the commencement.

HIS HONOR: Q. If the fire had been burning some time before this phenomenon, you might draw a different conclusion and a different inference? A. I would not take that conclusion I gave to Mr. Taylor at all. I would think it was consistent with a fuel oil fire.

10 MR. TAYLOR: Q. Do I take it from that if the oil had been alight before and there was this sudden "whoofing" noise and it spread all over the wharf in a mass of flames you say that would be consistent with fuel oil burning with the flashpoint of which we have been told? A. Yes. That fuel oil - if that fuel oil, as His Honor said, had been burning some time before.

Q. You envisage the possibility of it burning some time before and then expanding very rapidly? A. Yes.

20 Q. And of course in burning fuel oil you would expect it to give off black smoke? A. Dense black smoke.

Q. I want you to assume when this fire started there was a dense pall of black smoke that rose to a height of something like 50 or 60 feet within a minute of the fire starting.

Would that be consistent with a fuel oil burning that had a flashpoint you are speaking of? (Objected to; allowed).

30 Q. What would you say about that? A. Could I still be certain about that? Within a minute of the oil catching fire we have dense black smoke rising to a height of 50 feet?

Q. Yes? A. I would not believe that would take place with any oil fire.

Q. You would not believe it would take place? A. No.

Q. What is it that would make it improbable to you? A. The 50 feet of dense black smoke in one minute from the start of the ignition. No.

40 Q. From the start of the oil catching? A. From the start of the oil catching, no.

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continued.

Q. I suppose you would expect it with regard to oil that had a flashpoint down about 90 degrees? A. I don't think so. I think I would expect a mass of flames from that oil.

Q. That is a misunderstanding. I am not excluding the flames. I am putting to you that this was the way it went: A dense cloud of smoke up to 50 feet high, and there would of course be flames underneath it. I am not excluding the flames? A. Within a minute?

10

Q. Yes? A. Of ignition?

Q. Yes? (Objected to; allowed).

Q. What is your answer? Would you expect that from the sort of fuel oil you speak about, within a minute of it catching fire there was this vast cloud of black smoke rising to that height - not excluding flames? A. No. I would not expect it from any type of oil, and if anyone said that was the case I would say they were completely mistaken.

Q. Why is that? A. I have never known any oil fire that behaves in such a manner whatever.

20

HIS HONOR: Q. Your opinion now applies equally to flashpoints of 90 and from 150 to 190? A. Yes

MR. TAYLOR: Q. What is the first thing you would expect to happen if you had a flashpoint of 90? A. A considerable amount of flame.

Q. What about smoke? A. A little black smoke from the top of the flame, and as the flames would extend and the fire would increase the extent of the smoke would increase too, but it would never be dense, black smoke.

30

Q. Not from any type of oil? A. From fuel oil you would get dense black smoke.

Q. Not from any fuel oil having a flashpoint of 90? A. No.

I beg your pardon, I have to correct that. Benzine might do it.

Q. Petrol might? A. Benzine - pure hydro-carbon-benzol.



Q. I want you to make this assumption: That there appeared on some substance on the water a small flame, then there was a roar and then there were flames and smoke spreading all over the wharf.

If that is the way it behaved does that not indicate to you that it was something other than fuel oil of the order of 150 to 190? (Objected to).

10 Q. What I am putting to you is that outbreak, roaring flames all over the place, followed immediately a small flame was seen on the water? A. We have a small flame, an instantaneous roar and flames all over the place? The only possible thing that could have caused that would have been pure petrol.

20 Q. If you introduce the time factor between you first seeing the flames on the water and then the roar and the flames; supposing you introduced between those a time factor of a minute, would you say that could happen if it was fuel oil of a flashpoint of the order of 150 to 190? A. We have a small flame, there is a period of a minute and then we have a roar and flames all over the place? I could not imagine what on earth it would be.

Q. You could not imagine what on earth it could be?  
A. No.

Q. It could, I suppose, be accounted for by a volatile oil? A. No.

Q. Not by an oil that had a flashpoint of about 90?  
A. No.

30 Q. What about a mixture of the fuel oil of which you have been speaking with petrol; could you get that then? A. I do not know.

Q. You have not conducted any experiments, have you, on the way those two mix? A. We do not have to. I know they mix completely

Q. As to how they burn? A. As to how the mixture burns?

Q. Yes? A. Yes, I have.

Q. What; you have conducted experiments on that?  
A. Yes.

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Q. What have they shown you? A. I used a trough of 11 foot long with seawater in it, and a quarter of an inch of fuel oil on the seawater and I measured the rate of spreading of the flames after the fuel oil was thoroughly alight. That was ten feet per minute. When I added one per cent. of pure petrol to the fuel oil and mixed them and used it up, the rate of spreading was five feet per minute.

Q. One per cent? It slowed it down? A. Yes.

Q. Did that come as a surprise to you? A. Yes.

10

Q. Indeed you have got quite a number of surprises in these experiments you have performed? A. Yes.

Q. You have never done anything with any mixture greater than one per cent? A. No.

Q. Would you expect the more petrol you put with it the greater it would burn? A. Yes. One would expect that.

Q. You read the evidence that has been given here - so you told my learned friend - so I do not want the bit you accept and the bit you do not; but would you take this general picture of the fire: There was first of all some flame on the water and then that was followed within a space of no more than two minutes with a conflagration that went down the whole of the length of the wharf and there were flames all over the side - very quickly spreading fire --

20

MR. MEARES: In the first place it might be fair to suggest it did not first of all go the length of the wharf on any consideration of the evidence as I understand it. The fire started halfway along the wharf.

30

MR. TAYLOR: Q. I am putting that to you as a description which I want you to assume of how this fire happened.

Does that not indicate to you that what was burning was some very highly inflammable substance? A. We had a small flame, it took several minutes to get this thing alight, and then when it was alight it was almost instantaneous?

40

Q. Yes? A. I can make nothing of it other than to suggest that the witness was completely mistaken.

HIS HONOR: Q. What do you mean by "completely mistaken"? It is quite possible after a lapse of years his recollection, which might have been a very lively one then, could be affected.

10 I feel, for your information, Mr. Taylor, and for you too, Mr. Meares, that I do not propose to give literal effect to the evidence in that regard. The main evidence means in my mind, is that this was a rapidly spreading fire.

You may convince me, Mr. Taylor, that I should take a different view, but that is my present view.

MR. TAYLOR: Q. You know the area, and you have been given a picture of where the "Corrimal" was?  
A. Yes.

20 Q. Let us assume what is underneath this wharf is fuel oil of this order of 150 to 190 and it is set alight by one of the things you say could set it alight - a floating piece of cotton waste. How would you expect the fire to behave, and you have got the wind, if the substance that was being burnt was fuel oil of this order? How would you expect it to behave? A. I would expect after the fuel oil caught it would take a minute to spread ten feet and then after that it would go fairly rapidly. What the exact rate of that spread would be I could not give an opinion on because my experiments stopped at the ten feet a minute part.

30 Q. And the other part of the picture, intense heat, black smoke and flames shooting up high; would all be something you would expect from a fire of that order? A. Yes, not inconsistent with fuel oil.

Q. So in the things I have been putting to you apparently the thing you do not accept is the period of time? A. I feel awfully doubtful about it.

HIS HONOR: Q. Have you examined the wharf where this fire took place? A. Yes.

40 Q. Have you observed the piles underneath it? A. I have.

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continued.

Q. Assuming with the rise and fall of the tide there being oil on the surface, you would expect some oil to adhere to the surface of the piles to the extent of the rise and fall? A. Yes.

Q. And would the inflammability or the likelihood of that pile catching fire be affected by any coating of oil of this nature that might be on it? A. I think it would. I think the likelihood of the whole pile catching fire would be increased by the oil coating.

10

(At this stage further hearing adjourned until  
Thursday, 13th March, 1958 at ten a.m.)

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IN ADMIRALTY

CORAM: KINSELLA, J.

In the Supreme  
Court of New  
South Wales  
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JurisdictionMORTS DOCK & ENGINEERING CO. LTD. v. OVERSEAS  
TANKSHIPS U.K. LTD.EIGHTH DAY: THURSDAY, 13th MARCH, 1958

MR. TAYLOR: As to the film I opened to Your Honor, I asked Your Honor whether it would be of any assistance and I think Your Honor told me that I would have to prove it in the ordinary course of evidence.

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10 HIS HONOR: If you want to use it, unless Mr. Meares consents to it going in.

T.G. Hunter

MR. TAYLOR: I will discuss the matter with my friend.

Cross-  
Examination  
- continued.

THOMAS GIRVAN HUNTER  
Cross-examination continued:

20 MR. TAYLOR: Q. When I talk about fuel oil I am talking about fuel oil in your range of flashpoint. Would fuel oil retain its flashpoint for a period of time if it is put out on the waters of the Harbour and lying underneath a wharf? A. Yes.

Q. There would be no alteration, I take it, in its capacity to ignite with the passage of time?

A. Not in a matter of a few days, but in a matter of a month or two, yes.

Q. That is because it would break up?

A. It hardens up and the flashpoint definitely gets a little higher over a month or two, but in four or five days there is no alteration.

30 Q. So far as it being a fire danger is concerned, fuel oil would be just as much a fire danger on the day it went into the Harbour as it would be in four or five days time. A. I would think so.

Q. In that respect it differs from more volatile oil? A. Yes.

Q. But other oils with a higher degree of volatility become comparatively safe with the passage of time? A. They have rapid evaporation, particularly petrol.

40 Q. But fuel oil does not give off volatile vapours until the temperature is raised to a special point? A. Yes. It is starting to give off very small quantities of volatility at a flashpoint. In order to get a sufficient amount of evaporation you would have to raise this temperature well above the flashpoint.

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Cross-  
Examination  
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Q. Do you remember yesterday telling us about some of the things that in your view could set fuel oil alight on water if it was over a thickness of 1/16th of an inch? A. Yes.

Q. I think it all came down to this; if the substance - it had to have some of the properties of a wick? A. Yes.

Q. To a certain extent? A. Could I put it more generally: As a floating flame on the fuel oil.

Q. A floating flame on the fuel oil? A. One of the easiest ways to get that, of course, is a wick. 10

Q. So it would not matter what the burning substance was provided it produces flame and that flame for a sufficient period of time came in contact with the surface of the oil?

A. That is right.

Q. You, of course, having other conditions present; that is a thickness of more than a 1/16th of an inch? A. Yes.

HIS HONOUR: Q. Does that apply to any flame? 20  
A. I think so.

Q. Because flames, I suppose, vary in their heat?  
A. Not a great deal.

Q. I had in mind a flame from an oxy-welder?  
A. Yes. It is very much hotter than a flame from a candle, and you would expect that to be a very much more efficient igniter than a candle flame.

MR. TAYLOR: Q. But did you say any flame would do if it is given the right thickness of oil and put in the position where the flame could come down on to the oil? A. Yes. 30

Q. I suppose some would take longer than others?  
A. Yes.

Q. So any burning substance that came down floating underneath this wharf with a flame on it, after the oil got there, if the condition was of sufficient thickness of the film of oil - if that existed - it could set it on fire? A. Yes.

Q. I think you spoke at some considerable length on the cotton waste as a perfect form of an igniting agent. That is a perfect form of an igniting agent, isn't it? A. I would have thought it was most likely to be present around a dockyard. 40

Q. No doubt you were inspired when you thought that, but you selected cotton waste because conditions indicate it is a form of ignition agent -

if I can use that expression that would work if it is set alight under appropriate conditions?

A. Yes.

Q. Of course, as you told me, any other burning substance would do? A. That is right.

Q. There is no way, for example, that you can tell from the way the fire happened what it was that set it alight? A. I don't think so.

10 Q. Do you remember yesterday making an assumption that there was a flame on the water near a pile?

A. Yes.

Q. And I think you told my learned friend that was one of the things that could set it alight?

A. Yes.

Q. Did you have in mind yesterday that piles under the wharf, by reason of the job being done at the time, might have a slick of oil over them?

A. I did.

20 Q. And I think in answer to His Honor you said they would be more likely to burn with that slick of oil over them than they otherwise would have been? A. I feel so.

Q. Are you suggesting you could ignite that slick of oil on the pile itself as the original ignition fire? A. I think it would be possible.

Q. Would you have to have that of any thickness? Your figure of 1/16th related only to oil on water?

30 A. The vertical pile would be rather restricted to the thickness of the film on it, because the force of gravity would tend to make it run off and one would just have a film or thickness which would be virtually constant.

Q. You would not get a very thick film of oil on the pile? A. No.

HIS HONOR: Q. You said in answer to Mr. Taylor a few moments ago that any flame would do for the purpose of lighting oil on the surface? A. Yes.

40 Q. You have a flame from a wick? For instance, if a piece of newspaper were lit and thrown on the surface of the oil would that, in your opinion, be sufficient to light it? A. I think provided there was sufficient newspaper there to enable the flame to be prolonged for a fair period of time.

Q. What period of time is required is exemplified by a wick? A. Exemplified by a wick. That

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gives you your prolonged flame for a prolonged period of time.

Q. I thought Mr. Taylor used the expression "any flame would do", simpliciter. Does that express the real position? A. Not quite, Your Honor. "Any prolonged flame".

MR. TAYLOR: Q. You do not mean when you use the expression of the wick the burning of it has to be capable of soaking up the furnace oil and burning it as does the wick of a candle? A. That is an ideal condition, of course, but if your cotton waste - shall we take that as an example - was already soaked with oil - might I term that as a general wick - it would have the same effect. 10

Q. Take the example His Honor put to you that if you had a bundle of newspaper, crushed up paper, and that was alight and resting against a pile with the flame of it going down on to the water, that would be sufficient to start it off if it remained in one place for a sufficient time and the flame was sufficiently hot? A. Yes. 20

Q. And there would be no need for the newspaper to, as it were, suck up the oil from the water? A. No, I don't think so.

HIS HONOR: Q. The only effect, if it did suck up the oil, would be to prolong the flames? A. Prolong the burning and give an intensive and bigger flame.

MR. TAYLOR: Q. A number of agents that can be used in burning is quite extensive? A. You could imagine quite a lot. 30

You asked me some questions yesterday about the cotton waste, while we are on the subject of wicks, and I was rather forced to answer you all the time that I did not know. I hope you did not think I was trying to be an obstructionist but I did not know; but I do know this morning.

Q. I see. Suppose I avail myself of the invitation. What do you say about cotton waste now? You mean the series of questions which I asked you, and some of which His Honor asked you, about this cotton waste if put on water whether or not it would get wet? A. Yes. 40

Q. You have given some thought to it since, have you? A. I have done some experiments.

Q. What is the result of your experiments? A. I took an 1/8th inch layer of 170 flashpoint



furnace oil on seawater and placed a 20 gram bundle of cotton waste on that. The cotton waste sucked up oil on the layer, the bottom part of the cotton waste penetrated the oil layer and went into the water but had been coated completely with the oil and did not pick up any water at all, but remained completely dry in respect of water sucked up merely oil, and I left it floating for a period of 14 hours and it still contained only oil and no water.

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10 Q. And that was done in the same trough you have up at the University? A. It was done in a bucket, actually, Mr. Taylor, in order to get the depth of sea water beneath the oil.

Q. You would have no wind velocity? A. It was done inside without any wind present.

Q. You would not have any movement of the surface? A. There was no movement of the surface at all.

20 Q. Did you do any other experiments? A. Yes, I did a number. I also took 20 grams of cottonwaste and on it I had weighted previously 20 grams of oil and tried some experiments with the same result. It did not matter whether it was dry or oily cotton waste, we got the same effect.

30 I then took a heavier piece of cotton waste - 40 grams - which I weighted with furnace oil and I dropped it on the quarter inch layer of oil on water from a height of 9 ft.; and again we had the same effect. While the bottom of the cotton waste penetrated the oil layer it was already coated with oil and just retarded the water completely - I should say rejected the water completely.

So I think the answer is that if the water is preferentially treated with oil --

MR. TAYLOR: Q. But that depends on you having an unbroken field of oil on the water? A. Precisely.

40 Q. You could have a different result where there is some action of the wind on the surface of the water causing it to be choppy? A. Except that the presence of the oil there would stop it being choppy. It would depress the waves.

Q. That again depends on the particular conditions at the time the film of oil was broken on the surface of the water and the cotton waste comes in contact directly with the water - would you expect to get water into it then? A. I think once you get it wet first with water it would reject the oil.

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HIS HONOR: Q. Had you any purpose in increasing the thickness of the layer to a quarter inch?  
A. No. Just to try the effect of two different oil layers. I used a very much heavier piece of waste then and I dropped it from a height to see if it would penetrate the layer and get any water from beneath. When it still did that it still rejected the water.

MR. TAYLOR: Q. Coming back to this question of things that start a fire; I suppose a piece of wood burning on the surface outside the water would do if it had a flame? A. I think so.

10

HIS HONOR: I diverted you, Mr. Taylor, I am afraid. You were dealing with the piles when I harked back to that earlier question. I am just reminding you in case I have broken the thread of your cross-examination.

MR. TAYLOR: Q. If you had any burning substance with the flame on it that came up against a pile and remained there, I think you said you could get a lighting of the slick of oil on the pile?  
A. Yes.

20

Q. And that, of course, itself could set fire to the oil on the surface of the water? A. Yes.

Q. If there happened to be oil of the requisite thickness at the bottom of the pile? A. I have done some experiments on it in order to be sure about these things, and I coated a portion of the same type of wood used for making marine piles with a layer of fuel oil and then applied a flame to the bottom part, and the oil eventually caught fire and as it heated up the pile and the oil on it it tended to make it less viscous and it ran down into the fire at the bottom and continually fed it; so the general effect was that the fire could be fed and creep up the pile.

30

Q. So this oil of which you were speaking, after a period of days, can coat a pile with a substance - with a full tide - that is capable of being ignited by fire? A. Yes.

40

Q. And that does not depend upon the oil on the pile being of a thickness of 1/16th of an inch?  
A. No.

Q. It could be less? A. It is. I am sure it is less.

Q. Is this the position; that you have to qualify - you do not have to qualify, because when you give the evidence you restricted your 1/16th of an inch to oil on the water? A. Yes.

Q. When you are considering this oil as a fire hazard, then a much lesser quantity can be a fire hazard if it is on the outside of a pile? A. Yes.

Q. And it would follow then, I suppose, that the risk of fire is greater at low tide than it is at high tide? All your pile would be covered up at high tide, wouldn't it? A. I think that is too sweeping a statement. It would depend upon the number of piles which were coated with oil - a fire risk - but considering the single pile; yes, if a single pile, the risk would be greater at low tide than it would be at high tide. The overall risk would be. There are a large number of things to be considered.

Q. Do you say you did not regard the fuel oil in the range of which you speak as a fire hazard prior to you doing these experiments? A. I think I put it to you wrongly yesterday. I put "inflammability" and you said you did not regard it as a fire hazard.

Did you mean that you did not regard that as a fire hazard because of your experience and your own knowledge and your own reading? A. Yes.

Q. Are you familiar with a hand book of "Dangerous Materials" by a man named Sax? A. No.

Q. I put to you generally, are you aware of any publication which, prior to 1951, described fuel oil as a flammable liquid of moderate fire hazard - fuel oil of a flashpoint of 150 plus? Are you aware of any publication of a scientific nature that described it as that? A. Flammable liquid, a moderate fire hazard? I just cannot recall any document.

Q. You cannot? A. I just cannot recall any at the moment.

Q. Let me put to you "National Fire Protection Association Institute". Are you aware of that publication? A. No.

Q. The 48th Edn., written by a man called Coxley Fish Foster? Are you familiar with that gentleman? A. No.

HIS HONOR: Is that a local publication?

MR. TAYLOR: I do not think so.

Q. You do not know of that publication?

A. I do not know of it.

Q. (Showing witness Exhibit 5) Exhibit 5 is the

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list of agents. You see in it "Red hot coke dropped from 2ft. on quarter inch", you get ignition, and at 3/8ths of an inch you do not. I think you told His Honor yesterday that was purely fortuitous? A. One would write it off as an experimental error.

Q. That red hot coke dropped from 2ft. on to a quarter inch film of oil; did that stop on top or go through? A. That stops on top.

Q. It all stayed on top, all the coke? A. Yes. 10

HIS HONOR: Q. When you say it is fortuitous you mean by that it might on some occasions ignite and on other occasions might not? A. Precisely. The reason for that, I think, is because of the extraordinarily wide number of variables that come into these experiments, and it is so difficult to reproduce these variables exactly each time.

Q. Do you mean, of course, if you get ignition with hot coke dropped from 2ft. to the quarter inch you ought to have got it under the same conditions on the 3/8ths inch? A. If the coke was exactly the same and the amount of fire it had exactly the same; but those are rather hard to get. 20

Q. I suppose you would have got it if you had the same conditions? A. Precisely.

MR. TAYLOR: Q. As to the Roman candle, you have got 1/8th, 1/4 and 3/8ths and you described that yesterday as being a firework that produces quite intensive hot flame? A. A large amount of sparks. 30

Q. And the direct flame from the oxy-acetylene torch held 6 inches above the oil; can you tell me how long, for example, that flame was held over the 1/8th inch oil? What is the time factor involved? A. I have no record of that.

Q. Was a record made? A. I made no record at the time.

Q. So none of these tests are related to any particular time factor? A. No time factor.

Q. Would you be able to tell us from your recollection where you got the ignition on the 3/8th\* inch layer in less time than you got it on the 1/8th inch layer; or would not you remember? 40  
A. I would not remember.

Q. You say all those experiments were performed in the open air. Do you mean outside the four walls of the building? A. Yes.

- Q. That was somewhere in the University?  
 A. Outside the University.
- Q. What was the oil in; a trough? A. A small dish.
- Q. And they were done outside, in the open air conditions? A. Yes.
- Q. Of those the only ones that would be flaming when they came in contact with the water would be the fireworks. The matches, I suppose, would be.  
 A. Matches?
- 10 Q. Yes. That would be a flame? A. The fireworks and the oxy-acetylene torch, the coke --
- Q. The cigarette lighter? A. Yes, the cigarette lighter. I am sorry, I missed that one.
- Q. You could not get any ignition from the cigarette lighter at all? A. No.
- HIS HONOR: Q. I suppose it would be difficult to keep the flame of the cigarette lighter in contact with the oil, would it? A. Very difficult.
- 20 MR. TAYLOR: Q. Would you take Exhibit 6. (Handed to witness). That is the canvas, the burning hessian. When you say "All test pieces suspended half in oil", do you mean you put your pieces of hessian up to halfway in the vessel that contained the oil and the water? A. A piece of hessian was folded to a right angle like that (demonstrating), and the hessian laid on the surface of the oil with this (indicating) sticking up.
- Q. You light the -- ? A. Wick.
- 30 Q. Did that hessian have any oil on at first?  
 A. Yes, at first they were soaked with oil.
- Q. Soaked with furnace oil? A. Yes.
- Q. So the whole hessian was soaked before you started? A. Yes.
- Q. How did you manage to keep it set at a right angle? A. By supporting it with a clamp.
- Q. And it was soaked in the same fuel oil that you floated it on? A. Yes.
- Q. That again was carried out in the open air?  
 A. That was in the open air.
- 40 Q. Was that done in a bucket? A. That was outside in the open air, and the ones labelled "still air" were done inside the laboratory.
- Q. What sort of a container; which container?  
 A. The same as the previous test, a dish about 2ft. by one and a half by about 6 or 7 inches deep.

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Q. The actual weight of the piece of canvas varied in size? A. That is the only - some hessian was cut into different sizes.

Q. And you got nothing from the first size, 3 x 1?  
A. No.

Q. Of course, as to the size of the hessian; I suppose the larger the size the wider the area of the flame and the longer the flame lasts? A. Yes.

Q. With that second one, 3 x 3, you got a result on quarter inch in the still air, you got one with the 3/8th inch, but none in the open? A. That is right.

10

Q. Again, I suppose, it would be something in connection with the conditions that prevailed; the flame did not get down to the top of the oil exactly? A. The difficulty is the exact reproduction of conditions.

Q. Then you took your 6 x 6 piece and you were successful with that from 1/8th inch onwards?  
A. Yes.

20

HIS HONOR: Q. The 3 x 1 piece failed to ignite in all tests. Are you able to say whether 1 x 3 would have operated? 3 x 3 succeeded. I gather in that there was contact along three inches of the hessian? A. Yes.

Q. Are you able to say - you may not be - whether if the first piece had been 1 x 3 instead of 3 x 1 the one inch suspended direct above the surface could have been sufficient to ignite?

A. I am unable to say. I am sorry, I have to confess it was a variable I failed to think of.

30

MR. TAYLOR: Q. What do you mean precisely by this exhibit when you say the word "Yes"? Does that mean you have got ignition or does it mean that you get the oil completely burning?

A. It means we were successful in getting a continuing fire. If the oil surface merely flickered with small flames and then eventually went out I regarded that as "No". The oil had definitely to be on fire before we gave a recorded "Yes".

40

Q. If it had caught afire for an appreciable period of time you have recorded that as a positive result? A. Yes. There is no real doubt as to whether it is on fire or not.

Q. Exhibit 9 was the cotton waste test. All these pieces of cotton waste were soaked with furnace oil, were they? "Ignition of smouldering oily

cotton waste, wind velocity 1.6 miles an hour." What did you do in that test? You took the smouldering cotton waste and put it on a layer of oil of 1/8th inch, 1/4 inch and 1/2? A. Yes.

Q. When you say "smouldering" you mean there was no flame? A. No, no flame to start with.

Q. No flame to start with? A. Yes.

10 Q. How was the flame generated? Did the cotton waste just start flaming naturally or did you put some air on it? A. Some air on it.

Q. In what form; artificially with bellows? A. Artificially, with an air blower.

Q. Normally, I suppose, if you had not done that the cotton waste would have just smouldered and not flamed at all? A. I think largely yes.

20 Q. So you put the blower on this. The wind velocity you have got at the top - 1.6 miles an hour - that is not the speed of the air from the blower? A. That was the speed of the air passing over the smouldering cotton waste used in the test.

Q. From the blower? A. Yes.

Q. Was it? I see. A. That speed was measured by a proper monometer.

Q. So what you actually did with this was to take smouldering cotton waste that had been covered with oil and fan it into a flame with the blower and then it ignited the oil in every instance? A. Yes.

30 Q. Any time factor involved in that? A. It was not recorded.

Q. And the blower had the same effect as it had in the open with the wind velocity of 1.6 miles an hour? A. Exactly the same. Actually, the blower used was a vacuum motor, in reverse; the fan from a vacuum.

Q. The 1.6 miles an hour is a very, very slight current of air, isn't it? A. Very slight.

Q. What is the flashpoint of this grade S.A.E.60? Can you tell me that? A. I could not.

40 Q. You did not do any test of that? A. I did not do any test of that.

Q. Lubricating oils, as a rule, have a very high flashpoint? A. It varies over the range approximately from 275, I think, to 675, roughly. They have a very much higher flashpoint than fuel oil.

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Q. Exhibit 10 is the one where you lit the oil waste without metal fragment? A. Yes.

Q. And they were the experiments you performed with the metal dropping direct on to the cotton waste. Was it on a raft or just on a bench?

A. Just on the floor.

Q. So when the metal hit the cotton waste it stayed with it? A. It stayed with it.

Q. Those are the metal fragments you produced here that were tendered yesterday? A. Yes.

10

MR. MEARES: With the exception of three grams ---

MR. TAYLOR: Q. You say here the red hot - you agree with that? How hot were they? They had been heated with an oxy torch?

A. They had been heated in a Bunsen burner.

Q. And again no time -? A. Factor was noted.

Q. When you say the oily cotton waste ignited you mean it smouldered and then flamed? You have got it here "It smouldered and flamed in six minutes"?

A. Yes.

20

Q. Was any artificial air used on the cotton waste when it was smouldering? A. Throughout the whole of the experiment the air was 1.6 miles an hour.

Q. That is what I wanted to get. That is some artificial air current? A. Yes.

Q. This one I have is Exhibit 12, the ignition of oily cotton waste caused by oxy-cutting in still air. That means you put the cotton waste floating on a raft? A. Yes.

30

Q. And the oxy-cutting was arranged so that the fragments of the metal fell on to it?

A. Fell on to the raft containing the cotton waste.

Q. And, I suppose, some of them right on to the cotton waste? A. Some went into the oil and some went outside.

Q. How long does it take you to ignite cotton waste in that fashion? A. There was no record taken of the time to ignite. I felt it was quite valueless because much depended largely on the time it took to hit the cotton waste with the metal fragments. It was purely chance.

40

Q. In every case you ignited both the waste and the oil in this fashion? A. Yes.

Q. The cotton waste being impregnated with furnace oil? A. Furnace oil.



Q. And you get your ignition on your waste from all your heights, and it seemed to make no difference? A. It did not.

Q. Did you notice whether any of the sparks of metal coming from the oxy-cutting machine were still red when they hit the cotton waste?

10 A. Some are still red. I should say the majority of them are glowing. That is the effect you have to watch then - in all of these experiments one of the most noteworthy points from my point of view was the fact that obviously pieces of metal from oxy-cutting or electric arc welding were alighting on the cotton waste and they would flame, and I would say they would not have ignited it, but they did.

Q. Of course, they remained in contact with it because they were on the raft? A. Yes.

20 Q. Did you do any experiments with trying to ignite oily cotton waste where it was just floating on water itself? A. No, if it would help, Mr. Taylor, I can give you a sample of the fragments that we got from these operations.

Q. So your next one is the ignition of dry oily cotton waste by oxy-cutting in a wind velocity of 1.6 miles an hour. Would you expect in that wind velocity to get ignition, with the cotton waste to burn, more quickly, and to get a fire more rapidly?

30 A. There is a double effect coming in here, which made me a little uncertain as to what would happen, the higher wind velocity obviously fans the flames of the waste once it has been ignited and promotes an effect; but at the same time high wind velocity could cool down the metal fragments. It was somewhat doubtful whether in a wind of that velocity these metal fragments would remain hot enough to set fire to the waste. The answer was that they did.

40 Q. But these experiments were done by again dropping on cotton waste that was floating on a raft? A. Yes.

Q. Were they done inside or outside? This wind is an artificial one? A. Again artificial; inside.

Q. They would be down inside. That would have been with the oil floating - I think you said - a quarter of an inch? A. Four inches of sea water with a quarter inch layer of oil.

Q. Was it floating in a container that had sides? A. Yes.

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Q. Surrounding it? What was the height of the sides above the oil, can you tell me that? Would the wind be directly on to the burning cotton waste? A. Yes, the wind was directed on to it by placing the blower so that it would direct the stream of air on to the waste.

Q. And your purpose of that was to get the flame on to the surface of the oil? A. To try and reproduce the conditions which we felt were prevailing at the time of the fire. 10

Q. The next one - that is the dry and oily cotton waste just on the ground? A. Yes.

Q. Any different wind velocity? The next one, I think, is "Dry cotton waste ignited by an electric arc welder". That again is dry cotton waste on the ground? A. On the ground, done outside.

Q. And the last one is the same sort, oily cotton waste? A. Yes.

Q. And is again done with the cotton waste on the water? A. On the ground. 20

Q. I am sorry; on the ground. "Burning cotton waste in open air, all test pieces soaked with oil". That is Exhibit 7. That was a test performed in the open air, apparently?  
A. Is this Exhibit 7-?

Q. Yes. A. That was in the open air with a wind velocity of 7 miles an hour.

Q. And with just the cotton waste put on top of the oil on the water, and it burned? A. Yes.

HIS HONOR: Q. The velocity in Exhibit 7 was a wind velocity of 7 miles an hour? A. 7 miles an hour. 30

MR. TAYLOR: Q. I think you said it in chief yesterday? A. I must stand corrected. I said we had done no experiments where we had just placed the cotton waste on the water with bark. We had. I had forgotten about these.

Q. I was asking you about the experiments where you ignited it by dropping things on to it. The significance of it being on the raft was that they would not go through? A. No. 40

Q. That was just floating naturally on the water? A. Yes.

Q. From the small piece you get ignition on the quarter inch thickness, but you do not from the larger piece. That is right? A. That is correct.

Q. And the process was reversed when you came to 3/8th inches? A. Yes.

Q. I suppose it is fair to say from that there is quite an amount of chance? A. That is the great difficulty of exact reproduction of conditions.

10 Q. I suppose that you would agree now in the light of your knowledge that if you had furnace oil of the range of which you had been talking escaping and going under a wharf, that if it collected there in layers of 1/16th of an inch or more deep that would constitute, in your view, a fire hazard?

MR. MEARES: I object - in fact, I did not hear the question.

20 MR. TAYLOR: Q. I suppose you would say now in the light of what you know that if you had a quantity of furnace oil of the flashpoint 150 to 190 beneath a wharf in circumstances where it was of a depth on the water to more than 1/16th of an inch that it would, in your opinion, constitute a fire hazard? (Objected to - allowed).

Q. What is the answer? A. I think I can answer that best by putting it this way: The fire hazard under these circumstances depends on the habits of the people working on the wharf rather than the oil itself.

Q. Just a minute, Professor. Of course, if there is no oil on top of the water you can forget any type of fires, can't you? A. Yes.

30 Q. If there is fuel oil to not more than 1/16th of an inch then you do not have to consider fire risk, whatever they are doing on the wharf, do you? A. That is right.

40 Q. What I am suggesting is if you increase the height of it above 1/16th of an inch there is then something under that wharf that is a fire danger that was not there before. A. If the oil is there entirely by itself it does not constitute a fire danger but if it is oil plus floating wicks, it is then a fire danger.

Q. Of course, you have always got ---

HIS HONOR: Q. Floating wicks without the oil is not a danger? A. The combination, Your Honor, is the danger.

MR. TAYLOR: Q. It is the fact it is there and the possibility, I suppose of anything which you describe as a floating wick coming in contact with it is a danger? A. Yes, (Question objected to).

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Q. You would, I suppose, say now that if you had this fuel oil accumulate anywhere where floating wicks would come in contact with it, and it is over 1/16th of an inch, precautions ought to be taken (Objected to).

MR. TAYLOR: I won't press it because I think we have got the answer in the other question.

RE-EXAMINATION

MR. MEARES: Q. I think you stated to Mr. Taylor that fuel oil was different from furnace oil? 10

A. It was in a wider category.

Q. But you will recall when I was examining you I think on occasions I used the word fuel oil and furnace oil without discrimination?

A. I think that is correct.

Q. Professor, I just want to ask you this: Do you yourself on occasions use that expression without discrimination? A. I do, and so does everybody else in the petroleum industry.

HIS HONOR: Q. I suppose furnace oil is fuel oil, and fuel oil is not necessarily furnace oil? 20

A. That is correct. I mean when we are talking about furnace oil and should say furnace oil we call it fuel oil.

MR. MEARES: Q. When I used the expression "fuel oil" to you or "furnace oil" to you, did you answer the questions on the assumption that I was speaking of furnace oil? A. I did.

Q. Mr. Taylor has asked you some questions about the behaviour of a pile which had oil on it if something were dropped in the water in the vicinity of the pile. You recall those questions? A. Yes. 30

Q. Can you tell us of your own knowledge whether the piles underneath this wharf were smooth covered? Were they smooth piles or stringy bark piles or piles covered with bark, or what were they? (Objected to).

MR. TAYLOR: A lot of these piles have been renewed since the fire.

MR. MEARES: Q. Did you know of your own knowledge whether the piles under the wharf at the time of the fire were smooth, on the one hand, or covered with bark; or what they were? 40

A. At the time of the fire?

Q. At the time of the fire?

A. No, I would not know.

Q. You did tell Mr. Taylor, assuming there was oil on the piles, of the certain sort that you mentioned, that the flame would tend to go up and the oil would tend to run down? A. Yes. I said that the flame having been started at the bottom of the oily pile, the heat going up from it reduces the viscosity of the oil which tends to run down into the fire which has been started at the bottom.

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10 Q. Supposing the flame were started on a pile 6 inches above the surface of the fluid - I use that expression advisedly - do you follow? A. Yes.

Q. Would it go down to the fluid or would it only go up, or are you unable to say?

A. It would run down to the fluid.

Re-Examination  
- continued.

Q. You think it would go down? A. Yes.

20 Q. Then you were asked about some hand book by Mr. Foster Fisk, and you were asked as to what your view would be now. I think you have already indicated to the Court, have you not, that your view now is very, very different to the view that you had in 1951 about this matter, and in fact until you commenced doing your tests last year?

A. Yes. They have been modified as a result of the tests.

30 Q. As you indicated, prior to doing the tests you would not have thought that was a fire hazard? Prior to doing the tests, as you have indicated you would not have thought that this oil was a fire hazard? A. Not a serious hazard.

Q. And you referred, I think, to some deliberations of the British committee in England about it?

A. Yes.

Q. The approach there taken was that it was not a serious hazard - until you referred us to that evidence? A. That is correct.

40 Q. As far as that committee was concerned when were its deliberations undertaken? A. It was appointed on 24th September, 1952, and its report was issued in 1953.

Q. And it was a committee appointed by the Government of Great Britain? A. By the Ministry of Transport in Great Britain.

Q. Was it a very representative committee?

A. It was composed of five members nominated by the General Council of British Shipping, two nominated by the oil companies, one member nominated

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by the Dock and Harbour Authorities Association, one by the British Transport Commission one by the Dry Dock Owners and Repairers Central Council, two representatives from the Admiralty, one from the Ministry of Agriculture and Fisheries, one from the Ministry of Fuel and Power, one from the Department of Government Chemists, one from the Department of Scientific and Industrial Research, and three from the Ministry of Transport.

The picture of that committee is a complete representation of people interested in this particular problem.

10

Q. Then Mr. Taylor asked you some questions about wind velocity and the effect of wind velocities from the tests you did. From the tests you did can you tell me whether the wind velocity of 11 miles an hour that you took - would you describe that as being ideal for production of a fire or a very bad wind velocity for the production of a fire or what? A. Very good for the production of a fire.

20

Q. Supposing you get a higher wind velocity; would that be less suitable for the production of a fire? A. A little higher than 11 miles an hour would improve the propagation of the fire, but we cannot go too high because if we do we blow it out. After all, the standard method of getting fires out is to put a high wind velocity on them.

Q. Some wind helps, too much wind harms. Would it be fair to put it that way? A. Yes.

30

Q. Then you were asked about whether it would be possible to light the oil simply by newspaper or some other means - do you follow that - than burning hessian or cotton waste? A. Yes.

Q. So far as a wick is concerned, if one can use that expression, do you think that cotton waste would be - as far as you can envisage - the ideal wick? A. I think it is an ideal wick.

Q. So far as the results that newspapers or any similar commodity was concerned, do you think the risk there would be very minimal? A. Much less than the cotton waste or hessian, very much less.

40

Q. You were asked about some buckled plates on the side of the "Corrimal" and suggested that that might be indicative of very great heat. So far as the buckling plates were concerned, I want you to assume that water was played on those plates some time when they were heating. What effect would that have? A. That would cause buckling.

Q. Mr. Taylor has asked you some questions about the noise described by some witnesses as a "whoosh", or as if petrol were thrown on a fire. I think you said you could not understand it - I will leave it at that.

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You, of course, were quite unable to express any view as to whether the fire, from the description you heard, was accelerated by some means that were actually on the water.

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10       Supposing there had been, for instance, some paint thinner on the water - do you follow that?  
A. Floating on to the water or on to the oil? Or on the oil on water?

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Q. On the oil?   A. This paint thinner is over the whole surface of the oil or in a local concentration?

Re-Examination  
- continued.

Q. In a local area, we would say?   A. I think that would have accelerated the spread of the fire.

20       Q. So far as petrol fire is concerned, will you get dense black smoke with a petrol fire?

A. Not dense black smoke, black smoke, but not dense black smoke.

Q. If you have something that is highly combustible then you get more flame and less smoke? Is that correct?   A. Would you repeat that again, Mr. Meares? I did not quite catch it.

Q. If things are highly combustible the more combustible they are, with those things you tend to get more flame and less smoke?   A. Yes.

30       Q. And the less combustible they are you get less flame and more smoke?   A. That is a fairly rough generalisation of the situation.

Q. I think one of those things would be benzol - that you mentioned yesterday?   A. I mentioned that specifically. That does give a lot of black smoke.

Q. You have done your test of the flashpoint of 170 degrees. Is that correct?   A. Yes.

Q. I think you told us that you yourself did not do that flashpoint test?   A. That is right.

40       Q. Mr. Taylor asked you whether there were two drums of oil that were ordered?   A. Yes.

Q. I think it is true that up to date, at any rate, you have never delved into the second drum?

A. That has not been broached.

Q. As far as the tests are concerned, before any of these tests were conducted was the drum revolved

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for a considerable period of time to ensure that there was a complete admixture of its contents?

A. It was put on a set of rubber rollers and revolved for a period of two days by means of an electric motor so that we would absolutely ensure complete mixing of the contents.

Q. You have done your test with oil of only one flashpoint? A. Yes.

Q. You told Mr. Taylor you thought the results of the tests would have been the same, substantially speaking, with flashpoints of this substance between 150 and 190? A. Yes.

10

Q. You are, however, aware that furnace oil, as such, can be used with a flashpoint of 200 or more? A. Yes.

Q. Up, even, I think to 230 you can go?

A. It is very common; up to 230. Flashpoints up to 230 are quite common with furnace oil.

Q. From your knowledge of the matter - both your own knowledge together with these tests that you have made - assuming the flashpoint were above 190; would I be correct in assuming that it would be possible that you would get a negative result in certain of the tests that you conducted and told the Court of? A. One would anticipate the possibility of getting slightly different results in different cases with the 190 or above flashpoint compared to the 170. It is very difficult to make any definite sharp line of demarcation. If you were to give me oil with a flashpoint of 191 and say "Would that behave differently to oil of 190?" - with which you are satisfied, I would say "No, I don't think so". So you would keep on and on and we would get then a fringe area between 190 and X where we would probably get much the same result as 190 or 170. So you can see I am in considerable difficulty here.

20

30

Q. One appreciates that. Would it be fair to put this to you: Take furnace oil of a known flashpoint (and you have given me the range) above 170, and I want you to consider with such an oil and a wind of 11 miles an hour, cotton waste on the water or on a raft impregnated with oil, or dry. Do you understand? A. Yes.

40

Q. From your knowledge would you be able to light the surface by using those means? A. I think it would go, I think if you had oil of a flashpoint of 300 degrees Fahrenheit under those conditions you would get it to ignite. I don't think



you could help it. But the time it would take to ignite might be a little longer. That would be the only considerable difference.

10 Q. Might I add: If you tried that low flashpoint six times with one thing and got a positive result six times, with a higher flashpoint if you tried six times you might only get a positive result four times? A. No. I would not agree with that. I think you would get a positive every time under those conditions but the difference between them would be that one would take longer than the other, and the limiting thickness for ignition in one case might be 1/16th and in the other case it might be 1/10th, or something of that nature.

Q. You put it as high as a flashpoint of even up to 300 and you think you could still ignite oil on water by means of cotton waste? A. Under those conditions you just specified, with that wind and cotton waste which is thoroughly on fire, yes.

20 Q. Or, for that matter, any other suitable wick? A. Yes. Only provided the wick was big enough to burn long enough.

Q. May I take it if you had oil on the water with a flashpoint up to 250, that the result of your tests would not have been substantially different? A. I think there would have been some difference in minor categories but, I think, substantially very similar. We would have had sometimes a "No" where previously we had a "Yes", and it might even be vice versa.

30 Q. And the view you had prior to these tests as to this being a hazard or not; that view was one you had formed not only as a result of your reading but as a result of tests and experiments you had carried out? (Objected to)

MR. TAYLOR: I do propose to ask Your Honor to allow me to ask questions in cross-examination.

40 Q. (By permission) I want to ask you something about the state of your knowledge about fuel oil and dieseline, which is a type of fuel oil.

Prior to the end of 1951 you had known of course about a big fire in Fremantle Harbour, the "Panamanian"? A. I did hear about it.

Q. And you knew that it was a case in which fuel oil - in which dieseline and furnace oil, two varieties - both had been burning on the harbour? Did you know that? A. I don't remember the type of

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Defendant's  
Evidence.

No.46.

T.G. Hunter.

Re-Examination  
- continued.

In the Supreme  
Court of New  
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Defendant's  
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T.G. Hunter.

Re-Examination  
- continued.

oil that was burnt in that case. I do remember vaguely the term dieseline coming into it.

Q. You remember sufficient about it to remember it was dieseline with a flashpoint of 170?

A. I don't remember that.

Q. Even if the dieseline had a flashpoint of 170, then so far as burning on the water is concerned, there is no difference between that and the furnace oil you have been talking about, is there?

A. None whatever.

10

Q. Did not you do more than hear about this fire at Fremantle, prior to 1951? A. Before 1951?

Q. Yes, I think the fire took place in 1944 or 1945 - towards the end of the war?

A. I did not hear about it then prior to 1951.

Q. Do you tell me you only heard about it when you only got the Law Reports? A. Yes.

MR. MEARES: This was kept pretty secret at the time. No one knew about it.

MR. TAYLOR: Q. There were a lot of eminent scientists who gave evidence in the subsequent litigation? A. Yes.

20

Q. That litigation took place, of course, prior to 1951? --

HIS HONOR: Q. I take it the Law Reports are not part of your regular reading? A. No.

MR. TAYLOR: Q. Is this the position: The only knowledge you had was that it was a fuel oil fire and had burned on the water of Fremantle harbour? A. Yes.

30

Q. Did you know anything about the circumstances; how it caught on fire or anything like that?

A. Not much.

Q. No I can take this, can I: At some time prior to 1951 you knew there had been a fuel oil fire on the waters of Fremantle Harbour?

A. No. Not prior to 1951.

Q. When was it you knew about it? A. About 1956.

Q. 1956? A. Yes.

Q. You had not read about it when it happened?

A. No.

40

Q. When it was in the Law Reports? You mean you only found out about it when you came to give evidence in this case? --

MR. MEARES: The evidence was concluded in March, 1951. Then it was reported in 83 C.L.R. It happened during the war.

MR. TAYLOR: Q. You say you did not know about it until you came to investigate this case?

A. That is correct, never heard about it.

Q. You agree, having read that case, it was known to scientific people well before 1956 - well before 1951? A. By two or three, perhaps; but that would be all.

10

Q. The people who were concerned in that case?

A. Yes.

MR. MEARES: No further questions.

(Witness retired)

(Short adjournment).

(M.f.i.5 tendered. Mr. Meares stated that he tendered both sides of the document but that he relied on the side entirely in blue pencil. Marked Exhibit 19).

20 (Case for the Defendant closed)

HIS HONOR: Is it agreed that the rough log is to be taken as the official log of the ship?

MR. TAYLOR: Yes, the smooth log is only copied from the rough log.

MR. MEARES: In view of something that happened yesterday we instituted some inquiries through Bahrein. Your Honor remembers it being suggested that this ship had some fuel oil from Bahrein in her when she came in. We have received a cable saying it has been referred to the New York office.

30

If anything we can get throws light on the matter, which we do think is of importance, which may be of some value, I would seek leave before the addresses are embarked upon to tender some evidence as to that.

There is only one other point dealing with this question of the flashpoint, about which we are having inquiries made.

Subject to that I close my case.

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Defendant's Evidence.

No.46.

T.G. Hunter.

Re-Examination - continued.

In the Supreme  
Court of New  
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CASE IN REPLY

No. 47.

EVIDENCE OF H. PITSTOCK

Plaintiff's  
Evidence,  
in Reply.

No.47.

H. Pitstock.  
Examination.

HERBERT PITSTOCK, Sworn, examined, deposed:

TO MR. TAYLOR: My name is Herbert Pitstock. I reside at 16, Foucart St., Rozelle. I am a painter and docker by occupation.

Q. Do you remember this fire on the "Corrimal"?

A. Yes.

Q. On the day of the fire were you employed by Morts Dock? 10  
A. Yes.

Q. Were you employed working in the "Corrimal" that day?  
A. Yes.

Q. What were you working at?

A. I was working a pneumatic pick.

Q. That is a pick driven by compressed air?

A. Yes.

Q. One of those you hold and it goes (demonstrating)?  
A. Correct.

Q. Had you had some previous experience with that type of pneumatic pick? 20  
A. Yes, three years or more.

Q. Whereabouts were you working, on what part of the ship?  
A. Under the bridge, in a washhouse; picking the concrete out.

Q. Were you using a pick that was connected by its air hose to the compressed air installation on the wharf?  
A. Yes.

Q. Where did your line go from the wharf?

A. Along the edge of the wharf. 30

Q. There is a place to fit them on?

A. Yes, a standard with cocks on.

Q. You fit the hose into some sort of socket?

A. Yes.

Q. Whereabouts was that in relation to the "Corrimal"? Whereabouts on the wharf in relation to where you were working was your hose fixed?

A. I would be working here (indicating) and my hose would be connected over the side of the ship and on to the wharf. 40

Q. Near where you were working? A. Yes.

Q. You were working about amidships, did you say?

A. Under the bridge.

Q. You were working away there. Did you notice anything a bit after 2 o'clock as you were working?

A. Yes. I was working in this wash house and it appeared to me it was getting hot. The door was shut and I thought well - this appeared to me a couple of times - and I opened the door to look out to see what was up or why it was getting hot, and somebody rushed past and said "Fire".

10 Q. Up to that time that person rushed past was your pick still working? A. Yes, full pressure.

Q. I suppose when somebody hurried by and said "fire", I suppose you left? A. Yes, I dropped it.

Q. And left? A. Yes.

Q. Right up to that time had you lost any pressure with your jack pick? A. No.

Q. Can you tell me whether at any time before you ceased work with the jack pick any air hose from the wharf installation on the wharf to the ship had been cut through? A. No.

20 Q. Would it have affected your jack pick? A. Yes. (Question objected to).

HIS HONOR: Q. Have you had experience of another hose on the same line being disconnected while you have been working? A. If you are working with a jack pick every hose that comes up on the line means you lose a little bit of pressure off your pick.

Q. Is that from your experience?

A. That is from my own experience.

30 (Question allowed).

MR. TAYLOR: Q. I think there is some well recognised form of joke that is played against your fraternity by putting a kink in the hose?

A. Yes. Sometimes when they want to talk and you are making too much noise with your pick some of your mates will get your hose and take a kink in it and that would cut your air off, and the pick stops.

Q. If any other hose was cut in, or put on, so that the air would go through; what would happen to your jack pick?

A. It would lose a little bit of its pressure.

Q. Did you notice any loss of pressure? A. No.

Q. Can you tell me whether anybody else apart from yourself that day was using a compressed hose on

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Examination  
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H. Pitstock.

Examination  
- continued.

Cross-  
Examination.

the ship? A. Yes. Another chap was on the other side, using a pneumatic pick.

Q. On the other side? A. The starboard side. I was on the port side.

Q. Where was he working, level with you or down aft? A. Level with me; straight opposite on the starboard side.

Q. Was there any other hoses being used on the ship at all? A. I could not swear to that.

CROSS-EXAMINATION

10

MR. MEARES: Q. These hoses are rubber hoses?  
A. Yes.

Q. And they go from the wharf on to the ship?  
A. Yes, to the machine you are using.

Q. And over the side of the ship? A. Yes.

Q. There were available how many lines on that wharf? A. How many lines were on it?

Q. Yes. A. There were standards right along the wharf, to connect anywhere you want. If you move down aft, amidships, you connect down there.

20

Q. Where you were amidships, how many lines could you connect up there? A. I think on the standard there were eight cocks; four on each side of it.

Q. Four on each side? A. Yes.

Q. Then how many other standards were there?  
A. I never counted them. It would be impossible for me to say that.

Q. Roughly? A. Because there are so many connecting points.

30

HIS HONOR: Q. About how many yards apart, roughly?  
A. They are connected so many yards apart. Roughly I would say there would probably be nine along the wharf.

MR. MEARES: Q. Nine standards. Were all these standards taken from the one main pipe of compressed air or were there a couple of different pipes of compressed air?

A. No. They were all taken off the one.

Q. So you could have 15, 20 or 30 compressed air hoses going at the one time?

40

A. You could if you wanted the men to work on it.

Q. I suppose if one of these 20 hoses went - do you follow me - that would not make any appreciable difference in the other 19, would it? A. Yes.

Q. What? A. It is all straight out. The air has got an easier flow out from going through the hose to the machine.

Q. Would it not really mean instead of there being enough air - or the air being divided amongst 20 hoses - it was really only divided as a result of the break amongst 19? A. To my experience with it, if you are all connected up you must all be using the hoses at once, and then if a hose broke, the air is getting easier on the main, and it must make a difference to you.

Q. You notice there might be a slight lessening of power? A. Yes, that is correct. There would be a slight lessening of power on your machine.

Q. It was not a very hot day, was it, Mr. Pitstock? A. No. I would say it was hot only when the fire started; it got hot.

Q. It got hot, and you sort of thought about it and did not do anything and then you thought about it a bit more when it got hotter?

A. That would not be an hour between.

Q. I am not suggesting that to you, but from the time it started to get hot until you thought, and so on, and dealt with the matter in your mind; you would think then about 10 minutes before you opened that door? A. No. It would not be that long.

Q. About five? A. It could be five, and it could be less.

Q. When you opened the door you sort of did not waste any time then looking at your hose or anything like that? A. No. I just dropped everything.

(Witness retired)

No. 48.

LANCELOT IVOR SHARPE (Recalled)

MR. TAYLOR: Q. You are the Industrial Officer at Morts Dock? A. That is correct.

Q. The day this fire happened were you detailed by Mr. Parkin to make some investigation? A. I was.

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No. 47.

H. Pitstock.

Cross-  
Examination  
- continued.

No. 48.

L.I. Sharpe  
(Recalled)

Examination.

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No.48.

L.I. Sharpe  
(Recalled)

Examination  
- continued.

Q. On the following day, the 2nd, did you interview a number of witnesses - people who said they were witnesses of the outbreak of the fire?

A. I did. I interviewed about half a dozen of employees who had been working on the vessel.

Q. Did you interview Charles McCabe? A. I did.

Q. And Frederick Godfrey? A. Yes.

Q. Where did you interview them? A. I interviewed McCabe on the Sheerlegs wharf itself, and I think I have an idea that I had to see Godfrey in the boiler shop as he was going to another part of the works. 10

Q. When you interviewed him did you make any notes of what they told you? A. I took rough notes on a foolscap block.

Q. Having taken the rough notes did you then go back to the office and type out something for Mr. Parkin? A. I did.

Q. Would you look at that? (Document shown to witness) Is that a copy of what you typed out for Mr. Parkin? (Question objected to - allowed). Is that a copy of what you typed out for Mr. Parkin? -- 20

HIS HONOR: With the qualifications that he typed it out?

MR. TAYLOR: Yes.

Q. I only want you to look at the statements by witnesses? A. Yes.

Q. Looking at that, can you tell me what Charles McCabe told you? (Objected to).

Q. How long after you did the rough notes did you type it out? A. As soon as I took the notes on Friday the 2nd, I went to the boiler shop and the Sheerlegs Wharf and interviewed these supposed eye witnesses and I took down what they told me in long-hand on a foolscap block and I read it back to them and I asked them was that substantially what they said, and when they agreed I returned straight to my office and on my own typewriter typed from the rough notes. 30

Q. What did you do with your rough notes? 40

A. I destroyed them, as I always do.

Q. You did it immediately afterwards?

A. Within half an hour, I would say that report was in the manager's office by 9 or 9.30 a.m.

HIS HONOR: Do you press your objection to the witness refreshing his memory from them?



MR. MEARES: No.

HIS HONOR: I suppose you should test his present recollection, Mr. Taylor.

MR. TAYLOR: Q. Without looking at your notes can you remember what it was that they told you - precisely? A. Fairly well.

Q. I take it you looked at them in the last day or so? A. Only just now as a matter of fact. I did not know you had a copy of it.

10 Q. What was said? A. The ostensible --

Q. Just tell us what McCabe said? A. He told me that he saw something floating on the surface of the oil covered water, which appeared to be smouldering material on either cardboard or a wood bark float, and on questioning him he said --

HIS HONOR: Q. Tell us as near as you can what was said. I appreciate after this lapse of time you cannot give the exact words, but as near as you can recollect them tell us what you said to him and what he said to you. If you can imagine the conversation being played back from a tape recorder that is the way we would like to have it. A. I said very little to him except for him to tell me what he actually saw as best he could remember.

He told me that he had observed this floating object, either bark or cardboard, on which was what appeared to be a piece of smouldering material, and on watching he saw flames flickering at the edge of it.

30 MR. TAYLOR: Q. Did he tell you what he did then? Do you remember what else he told you? A. No, I cannot recall exactly. (Objected to) I could not recall exactly now.

MR. TAYLOR: I do not press the evidence.

Q. What did McCabe say to you then?

A. I cannot recall the exact sequence now.

Q. Would you have a look at the typewriting?

A. Without looking at that I think he said --- (Objected to)

40 Q. Have a look at the notes.

HIS HONOR: I allow what he thinks. A witness must give his recollection to the best of his ability.

MR. TAYLOR: Q. Can you remember without looking at your notes? A. Frankly, I cannot.

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Examination  
- continued.

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L.I. Sharpe  
(Recalled)

Examination  
- continued.

Q. Have a look. What did McCabe tell you after he said that he saw this object on the water?

A. He said that he called out to other men standing by. (Objected to - objection withdrawn).

Q. What did he say? A. He said that he called out to other employees standing nearby that there was a fire under the wharf, and almost immediately it burst into flame.

Q. What burst into flame? A. The fire he was speaking of, and immediately covered the water.

10

Q. Did he say what sort of flames? A. I think he said it burst into fierce flames or something like that.

Q. Would you have a look? A. "Burst into roaring flames and the men ran clear".

Q. What did Godfrey tell you? A. Do you want me to ---

Q. Tell us what it is? A. He said that he had been cutting heads off bolts over a water bucket and wet bags, and he was then preparing to go to work on the mast which was lying on the wharf when he heard McCabe call out that the fire was burning on the water. He was about 10 yds. back from the edge of the wharf, then he (Godfrey) could not see into the water but noticed that smoke was rising between the vessel and the wharf, and as he looked it thickened considerably

20

He said that before he took any steps in the direction of the smoke the fire burst up through the wharf decking and seemed as if it had gone up the pile. He stated that his first thought was that a spark must have lodged on the bark of a pile which had been dried out by the sun but, being then saturated with oil from the bay, ignited and caused the whole of the oil soaked wharf to take fire.

30

Q. I think you obtained a list, did you, of the vessels that were moored at the Sheerlegs wharf since 27th February, 1951? A. I had that list typed from information supplied by the foreman who keeps the book.

40

Q. Is that foreman outside?

A. Yes, and his books are in Court.

(List tendered - objected to).

CROSS-EXAMINATION

MR. MEARES: Q. How long have you been an industrial officer? A. Since 5th January, 1954.

Q. Since then you have been Industrial Officer for Morts Dock continually? A. I have.

Q. I suppose you realised the importance of this fire, did you? A. I do now, but I did not at the time.

Q. Did not you think it was an important fire?

10 A. I knew it was a serious fire, Mr. Meares, but I  
---

Q. A serious fire? I suppose you were interviewing these employees, were you, to find out what the facts were? A. Yes.

Q. And, of course, you are aware, are you not, that very often these men will be at Morts Dock today and within a month they might be working at some other dockyard? A. That has not been particularly so with Morts Dock, up till very recently.

20 Q. What time was it you interviewed Godfrey?

A. Shortly after commencing time on the Friday, 2nd November.

Q. Where was it you interviewed him?

A. In the boiler shop.

Q. Was there anybody else present?

A. There would have been other chaps from the wharf, probably timekeepers.

30 Q. Anybody else? A. There could have been. I could not say now. Usually the interview is somewhere near the foreman's office.

Q. Did you see Sgt. Dimmock?

A. I did later on in the morning.

Q. Did you see or hear him interviewing the men?

A. He interviewed some men in my office.

Q. Were you present? A. I was not. I stayed outside and sent them in as the sergeant wanted them.

40 Q. Did you know he was coming down? A. After I made my preliminary investigation on the company's behalf --

Q. You got these statements typed out?

A. I typed them out.

Q. Yourself? A. Yes.

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No.48.

L.I. Sharpe  
(Recalled)  
- continued.

Cross-  
Examination.

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(Recalled)

Cross-  
Examination  
- continued.

Q. Did you give a copy to Mr. Dimmock?

A. I gave several copies to the Works Manager. He may or may not have given them to Sgt. Dimmock. I did them for the Works Manager.

Q. Did you tell Sgt. Dimmock when he came down that you got the statements?

A. No. The works Manager told him.

Q. Did you tell him? A. No. I had no occasion to.

Q. Did it occur to you when you typed these statements out that you may have got them signed by these various employees? A. I did not regard them as statements for the Police.

10

Q. Did it occur to you? A. No. They were only for the Works Manager. They were not sworn statements. It was just an account of what they saw.

Q. They were not sworn statements? A. No.

Q. I suppose if they were not sworn statements you did not say to the men when you got them "Now, I want you to be certain everything that you say here is absolutely true and completely accurate"?

20

A. I said I just wanted to know what they saw or knew of the fire.

Q. And you never gave them an opportunity of reading through what you had typed out there at all?

A. I read my rough notes out to them and they agreed that was --

Q. Did you give them any opportunity of reading what you had typed out? A. No. I typed out the rough notes --

Q. Would you answer the question?

30

A. I answered it by saying no.

Q. I suppose they had not been warned that they were going to be asked to give a statement to you?

A. They had been warned.

Q. Who warned them? A. The foreman boilermaker.

Q. When? A. First thing, 7.45 on the morning, because I told him the afternoon before I would require them.

Q. You were not prepared to swear that they were told they were required to come to you and make a statement? A. I will swear they were told not to go far from the boiler shop because I would want to interview them at starting time.

40

Q. Then they knew? A. Yes.

- Q. The position was when this man Godfrey came in you then commenced to ask him of the events of the day before? A. I asked him what he saw.
- Q. Incidentally, did you find him at all hard of hearing? A. Godfrey? Not particularly.
- Q. What about McCabe? A. McCabe? Yes.
- Q. You just asked them what happened, did you?  
A. I asked them to tell me what happened so far as they could relate it.
- 10 Q. Did you question them at all?  
A. Only in order to have them tell various things as to what they were doing.
- Q. Did you question them?  
A. I had to question them to get the answers.
- Q. In particular about the evidence you have given today; that was answers they gave to you putting questions to them? A. I would have done so.
- Q. What? A. I must have done to get the answer, I will say.
- 20 Q. You will say Yes? A. I must have done.
- Q. They were just describing the events of that day, were they? A. Yes.
- Q. In a conversational way? Is that right?  
A. Not in a conversational way. They would give me their account of it while I wrote it down.
- Q. Were you taking shorthand notes?  
A. No, I cannot take shorthand.
- Q. You are suggesting, of course, that anything you took in longhand was only rough notes of what they said - is that so? A. That is so.
- 30 Q. And what you typed out on that statement was very much more detailed than the rough notes you took down? A. I would not say so, no.
- Q. Just let me have a look at what you refreshed your memory from in regard to Mr. Godfrey?  
A. (Document handed to Mr. Meares) There are only six or eight lines.
- Q. Are you suggesting that you took what you have got down here in typewriting; do you suggest you took that down word for word in longhand? A. Yes.
- 40 Q. What? A. Yes.
- Q. Word for word? A. Practically.

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Cross-  
Examination  
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Cross-  
Examination  
- continued.

Q. What do you mean by practically?

A. I left "ifs" and "ands" out. I take the minutes of the conferences at Mort's Dock by longhand.

Q. You take minutes? A. Yes.

Q. Are you prepared to swear what you took down in longhand is identical with this typewriting?

A. I would say yes.

Q. You would say Yes? A. Yes.

Q. Are you certain it was? A. Yes.

Q. You are certain about it? A. Positive. 10

Q. You told me it may have had something left out?

A. Only "if" or "and".

Q. Only what? A. Punctuation.

Q. Did it occur to you you may have asked these men, after you had read it all back, to sign it?

A. I read it back to them and asked them and they said that was what they said.

Q. Did it occur to you to ask them to sign it?

A. No.

Q. I suppose you would agree with me, would you, - for instance, you would not suggest that McCabe was a particularly astute person, would you? 20

A. I would say not.

Q. And I would suggest you would agree with me that they may well want to correct a mistake they have made -- (Objected to - not pressed).

Q. You did not give them any opportunity to sign, or you never asked them to sign anything that you wrote down as being what they said?

A. No, I told you earlier why not. 30

Q. Tell me this now. Did you make inquiries of Mr. Cullen Ward? A. I don't know the gentleman.

HIS HONOR: Q. Just answer the question?

A. No, Your Honor, I did not.

MR. MEARES: Q. Did you make any inquiries of Mr. Mintz or Mr. Shields? A. I was only asked to interview our own employees.

Q. How many employees did you interview in connection with this matter? A. I would say about eight. 40

Q. Who were they? A. Hodgkiss, Osborne - they were the two first men I interviewed. That was on the afternoon of the fire. I interviewed McCabe, McGiffin, Haughey, Godfrey.

Q. You say that Sgt. Dimmock came down and got statements from these men after you had interviewed them? (Objected to)

Q. Dimmock came down and interviewed these men after you had interviewed them on Friday 2nd?

A. Sgt. Dimmock came down much later, in the forenoon.

Q. On the Friday? A. Yes.

10 Q. Now, I am putting to you that Sgt. Dimmock interviewed these men - Godfrey and McCabe, not on the Friday but on the Thursday.

A. I don't think so.

Q. Just think again? --

MR. TAYLOR: In his presence?

MR. MEARES: Q. Just think again. A. I am almost sure it was the following morning.

20 Q. Are you sure? I am suggesting that you are quite wrong when you say Dimmock came down and interviewed them after you interviewed them on the 2nd? A. Sgt. Dimmock did come down on the Friday morning and interviewed these people in my own office.

Q. I am putting to you that Dimmock interviewed these men in your office not on the 2nd but in the afternoon of the 1st? A. I am sure he did not.

Q. Did he come down on the afternoon of the 1st?

A. He may have, he may have been on the other side of the works away from where I was.

30 Q. He came down about the fire?

A. He would have donw.

Q. What was he doing on the afternoon of the 1st?

A. I don't know.

HIS HONOR: Q. Did you see him on the afternoon of the 1st? A. I am sure I did not.

MR. MEARES: Q. Are you sure you did not?

A. I am positive I did not see any police officers on this side of the works. There were police officers on the other side of the dock, but who they were I could not identify.

RE-EXAMINATION

MR. TAYLOR: Q. Did you have any reason to believe

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Re-Examination.

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- continued.

that these men would tell you anything but the truth about that?

A. No doubt whatever. (Objected to - question disallowed).

Q. You were asked by my learned friend about whether you got them to sign it. When you read back the rough notes did they agree or disagree with it - (Objected to).

(Witness retired)

No.49.

G.T. Higgins.

Examination.

No. 49.

EVIDENCE OF G. T. HIGGINS.

GERALD THOMAS HIGGINS, Sworn, examined, deposed:

TO MR. TAYLOR: My name is Gerald Thomas Higgins. I am foreman rigger at Mort's Dock.

Q. Have you been employed there since some time before February, 1951? A. Since 1940.

Q. Is it your duty out there to record the times and the date that ships are taken alongside the Sheerlegs wharf? A. Yes.

Q. And also to record the date on which they go away from the wharf? A. Correct. 20

Q. And you keep those records in these books I show to you - I hold up to you? A. A carbon copy

Q. Have you made out a list of all the ships that were at the Sheerlegs wharf and their arrival and departure times since February, 1951?

A. That is correct.

Q. Have a look at that. (Showing document to witness)? A. Yes, that is it.

(List tendered and marked Exhibit N). 30

Cross-  
Examination.

CROSS-EXAMINATION

MR. MEARES: Q. I suppose the ships, for instance, - until the date of this fire was not there quite a large number of ships alongside the wharf in 1951? A. In the year 1951 there had been -----



Q. In the year 1951 there had been quite a large number of ships alongside the Sheerlegs wharf?

A. Yes.

Q. Having all sorts of things done to them?

A. All sorts of work?

Q. Yes. A. Yes.

Q. Fitting work, boiler-makers' work, ironworkers, painters and all sorts of things and conditions of types of work? A. Yes, ship building and repairing.

10

Q. That would, of course, include, on occasions, flushing out and washing out of their oil tanks?

A. Yes. Not exactly there; you would not wash out a fuel tank hardly against a wharf.

Q. Where would you wash one out?

A. Usually in dry dock.

Q. Usually what? A. In dry dock.

Q. But sometimes you wash them out alongside the wharf, don't you? A. Oh yes, but it ---

20

Q. And the "Corrimal" of course, - it was almost making a new ship of her, wasn't it? A. Yes.

Q. And before the fire she had been all freshly painted of course, amongst other things, had she not? A. Yes, the general work was going on.

Q. Had she been freshly painted? They had painted her all up, had they not? A. I would not say for sure. It was nearly all towards the end of the job.

30

Q. What would you say from the best of your recollection; would you say she had been painted?

A. It would be normally painted in the course of the work that was done. BC

Q. On the day of the fire there were a large number of painters and riggers on board her?

A. They would be painting.

Q. And also on the "Corrimal" they were doing engine renovations and repairs?

A. Yes. She was a coal burner.

40

Q. In that year a number of other ships had engine repairs done to them alongside the Sheerlegs wharf? A. Correct.

(Witness retired and allowed to leave)

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No. 50.

SUBMISSION BY COUNSEL FOR DEFENDANT

(Mr. Taylor tendered folio 29 and folio 30 of  
the engineroom log - objected to - admitted)

Plaintiff's  
Evidence in  
Reply

No. 50.

Submission by  
Counsel for  
Defendant.

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HIS HONOR: As at present advised I do not know  
that I would be entitled to infer because it is a  
different parcel of oil that it differs in its  
characteristics from the oil that came in from  
the Vacuum Co.

MR. MEARES: Might I have it noted also that my  
learned friend in his address in opening his case  
stated:

10

"At the same time its bunker tanks were being  
filled with furnace oil from barges operated  
by Vacuum. That process continued until 4.00  
a.m. early in the morning of 30th October - a  
large quantity of that furnace oil escaped."

HIS HONOR: I shall have the opening address made  
part of the transcript in this case.

MR. MEARES: I do not want to make any tender at  
this stage.

20

MR. TAYLOR: Subject to the question of seeing  
this film, that is the Case in Reply

HIS HONOR: As to that film; it can be seen by  
consent but if there is no consent it will have to  
be proved in the same way as any other photograph.

(Case in Reply Closed)

(Court adjourned for view of Mort's Dock at  
2.00 p.m.)

(Further hearing adjourned until 10.30 a.m.  
Friday, 14th March, 1958).

30

No. 51.

JUDGMENT OF HIS HONOR MR. JUSTICE KINSELLA  
IN THE SUPREME COURT OF NEW SOUTH WALES  
IN ADMIRALTY

CORAM: KINSELLA, J.

WEDNESDAY, 23rd April 1958

MORT'S DOCK &amp; ENGINEERING CO., LIMITED

v.

OVERSEAS TANKSHIP (U.K.) LIMITED

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10

JUDGMENT

HIS HONOR: Mort's Dock & Engineering Co. Limited  
 sues Overseas Tankship (U.K.) Limited for damage  
 done to its wharf, equipment, plant and tools when  
 a quantity of furnace oil escaped from the Defend-  
 ant's ship "Waggon Mound" on the waters of Sydney  
 Harbour in the vicinity of the Plaintiff's premises,  
 became ignited and caused a conflagration in which  
 the wharf was severely damaged.

20

The relevant parts of the statement of claim  
 read:

"3. On Tuesday the thirtieth day of October One  
 thousand nine hundred and fifty-one the vessel  
 "Waggon Mound" was taking oil into her bunkers  
 and in the process of bunkering oil a large  
 quantity of oil was permitted to escape from  
 the vessel into the waters of the Bay. This  
 said oil was of a highly inflammable nature  
 and floated on the surface of the water.

30

5. On the first day of November One thousand  
 nine hundred and fifty-one the said oil be-  
 came ignited and the fire therefrom greatly  
 damaged the Plaintiff's wharf and the equip-  
 ment machinery plant and tools which were on  
 the wharf.

8. In particular the Plaintiff says that those  
 in charge of the "Waggon Mound" (being the  
 servants and agents of the Defendant) were  
 negligent in that

40

(a) They permitted refuelling operations to  
 be carried out without taking proper or  
 adequate precautions to prevent the es-  
 cape of highly inflammable fuel or oil  
 from the ship.

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- (b) They permitted inflammable oil to escape from the ship in such large quantities that it was capable of being ignited.
- (c) Large quantities of highly inflammable oil having escaped from the ship at a time and place where by reason of the currents and tides it was likely to accumulate around the Plaintiff's wharf they failed to take any steps to warn the Plaintiff of the danger or to remove the accumulation of oil from the vicinity of the Plaintiff's wharf or to render the accumulation of oil near the Plaintiff's wharf harmless".

10

In the Answer the Defendant pleaded:

- "3. The Defendant denies that the damage mentioned in the statement of claim was caused or contributed to by any negligence on the part of itself or its servants as alleged or at all and says that the said damage was solely caused by the negligence of the Plaintiff or its servants. Save as hereinafter expressly admitted the Defendant denies each and every allegation contained in the statement of claim. 20
4. On the Thirtieth day of October One thousand nine hundred and fifty-one the S.S. 'Waggon Mound' moored to the Caltex Jetty, Ballast Point, Mort Bay, had completed bunkering with oil fuel, hereinafter called 'furnace oil', at about four a.m. 'Furnace oil' floating on water is not highly or easily inflammable and can be ignited only by some burning substance coming in contact therewith capable of acting as a wick. 30
7. Prior to and at the time of the outbreak of the said fire the Plaintiff by its servants and workmen was operating oxy-acetylene plant and other apparatus on its said wharf and on a ship lying alongside.
8. The said fire was caused by the negligence of the said Plaintiff its servants and workmen in and about the operations conducted on the said wharf and ship and in and about the care control and management of the workmen so employed and in and about the failure to prevent ignited materials falling from the said wharf, well knowing of the presence of oil beneath and in the vicinity of the said wharf". 40

The Defendant was charterer by demise of the "Waggon Mound", an oil-burning vessel of 10,172 tons gross and 6,134 tons nett, which arrived in Sydney with a cargo of petrol and was moored to the Caltex Jetty in Mort's Bay from about 9.35 a.m. on 29th October 1951 until about 11 a.m. on 30th October for the purpose of discharging petrol and taking in bunker oil. It is not disputed that some time before 4 a.m. on 30th October, during the process of bunkering, a substantial quantity of furnace oil overflowed from one of the bunker tanks of the "Waggon Mound" and escaped into the Harbour, and that the Defendant did not take or cause to be taken any action to dissipate or otherwise deal with the oil which had escaped.

10

20

The Plaintiff's property is in close proximity to the Caltex Jetty and it was obviously likely that the escaped oil, or much of it would spread or be carried by wind and tide on to that property and, in particular, to that part of it on which is built a substantial wharf known as the Sheerlegs Wharf, some 400 feet long and about 40 feet wide.

30

At the time of the escape of the oil, and for many weeks previously, the s.s. "Corrimal", a ship 250 feet long, was tied to the Sheerlegs Wharf where she was being overhauled and refitted by the Plaintiff. Her mast was laid on the wharf and a large number of the Plaintiff's workmen were engaged on various jobs, some on the wharf and some aboard the ship. Among them were tradesmen who were using electric torches and oxy-acetylene welding apparatus for burning off and doing welding work on the mast and on the ship. Other workmen, including fitters and turners, plumbers, painters and boilermakers were working in and about the "Corrimal". In addition a number of workmen employed either by the owners of the "Corrimal" or by sub-contractors were working about her.

40

The Sheerlegs Wharf was built of timber, on wooden piles, and there were spaces up to 2 inches wide between planks of the decking.

The first witness called on behalf of the Plaintiff was Mr. Cullen-Ward, at the time chief bunkering officer of the Vacuum Oil Company, who said that he went aboard the "Waggon Mound" about 11.5 a.m. on 29th October and was informed by her Chief Engineer that about 950 tons of bunker oil was required.

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Barges owned by the Vacuum Oil Company were then brought alongside, carrying furnace oil and equipped with hoses and pumps. The hoses were connected to the ship's valves and pumping proceeded. The witness said that he remained aboard the "Waggon Mound" substantially all the time from the morning of 29th October until about 4 a.m. on 30th October when bunkering was completed. About that time he was about to go from the ship to the barge alongside and found oil bubbling out of the ship's forepeak tank, the hatch of which was open. He reported the spillage to the ship's officers, and deposed that the Captain told him not to worry, as the oil had been delivered to the ship, it was their fault (i.e. the ship's fault) that it had overflowed. 10

Mr. Cullen Ward was asked about an escape of petrol on the "Waggon Mound". Mr Meares, senior Counsel for the Defendant, objected on the ground that the Plaintiff's complaint is limited by the pleadings to an escape of furnace oil. I allowed the evidence as I was of opinion that the Statement of Claim in referring to "oil" in paragraphs 3 and 8 was wide enough to cover "oil" contaminated by other substances. The witness then said that on the morning of 29th October (apparently shortly before noon) he saw petrol escaping from a pipe on the ship on to the deck and running through the scuppers into the harbour. He described it as coming out "like from a garden hose". He does not know how long it had been escaping, nor has he any idea of how much had escaped. 20 30

Mr. McMahon, who at the time was fourth mate of the ship, gave evidence that the escape of petrol was no more than a slight leak between flanges of a hose connection at a time when the connections were being tested for leaks before full pressure was applied, that it was corrected immediately and that the quantity which escaped was insignificant.

Mr. Taylor, senior Counsel for the Plaintiff relied strongly on the evidence of Mr. Cullen Ward to establish the escape of a dangerous substance from the ship. In my opinion, if I accept Mr. Cullen Ward's evidence - as I am inclined to do - it does not establish the fact of an appreciable escape of petrol into the harbour. I am sure Mr. Cullen Ward himself held that view. The extreme danger of free petrol around an oil tanker or, indeed, anywhere else, is notorious. Yet the work on the "Waggon Mound", on the Caltex Jetty and on 40 50

Mr. Cullen Ward's barges went on without interruption. Mr. Cullen Ward did not raise an alarm and no special precautions were taken. He himself, with many years of experience of petrol and petroleum products, remained on the ship apparently quite unconcerned for his own safety or the safety of others. His equanimity is consistent only with an insignificant leakage. If those considerations were not sufficient to dispose of this aspect of the case, the evidence of Professor Hunter would certainly do so. He is a highly qualified expert - I shall mention his qualifications later. As a layman, without the help of expert evidence, I would assume that if petrol had escaped into the harbour on the morning of 29th October it would have evaporated by midday on 1st November - a period of some 72 hours - before the oil fire started. This assumption has the unequivocal support of Professor Hunter. He testified that he had made a number of tests, including the placing of petrol a quarter of an inch deep on water and exposing it to air for various periods. He found that after one hour 70 per cent. of the petrol had evaporated and the highly volatile and highly inflammable constituents had disappeared. After five hours 98.2 per cent. by volume of the petrol had disappeared and the remaining 1.2 per cent. was of material which would be very difficult to set on fire. Thus it appears that in the interval between the leakage of petrol and the escape of furnace oil any petrol which had reached the harbour would have disappeared and, therefore, there can be no question of an admixture of petrol and furnace oil which would have increased the inflammability of the latter.

He concluded his evidence on this point by saying that in his opinion, bearing in mind the escape of petrol before noon on 29th October, the escape of furnace oil at 4 a.m. on 30th October and the outbreak of the fire about 1 p.m. on 1st November, the escape of petrol could not have caused or accelerated the outbreak of fire.

The evidence of Professor Hunter effectively disposes of any suggestion that the fire was caused by, facilitated by, or aggravated by petrol which escaped from the Defendant's ship. The Plaintiff's case therefore must be limited to escape of furnace oil and its consequences.

On the question of the volume of furnace oil on the water and its inflammability the Plaintiff

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called Captain Craven, an Inspector employed by the Maritime Services Board, who said that he went aboard the "Waggon Mound" about 10.30 a.m. on the 30th October. He saw heavy black oil on the deck, on the sides of the ship, and a large quantity on the waters of the harbour extending over a considerable area; some of it in thick concentration. He had a conversation with the Master who told him there had been an overflow of oil. The Master also said that he would leave authority with his agents to act on his behalf - naming Mr. Durack - in any proceedings against him for breach of regulations in permitting oil to escape into the harbour. Mr. Durack was manager of the Caltex Oil installation at Morts Bay. Captain Craven was asked by Mr. Taylor "Was this furnace oil a fire hazard on this day?" He replied "No, it was not".

10

Mr. Parkin, works manager of the Plaintiff Company, gave evidence that when he arrived at the works before 8 o'clock on the morning of the 30th October he saw a very large quantity of heavy oil floating in the vicinity of the caisson, along the foreshores and across the deck. It had got on to the slipways and had congealed on them, thereby interfering with the Plaintiff's use of the slips. It extended under the Sheerlegs Wharf and around the "Corrimal".

20

He immediately issued instructions that no welding was to be done until further orders, and then telephoned the manager of Caltex Wharf, Mr. Durack, who came to the Plaintiff's premises about 10 a.m. He assured Mr. Parkin that the oil was quite safe for normal work to continue. Mr. Parkin thereupon directed that normal work be resumed, including the use of electric torches and oxy-welding apparatus, and this work was continued until the outbreak of fire in the afternoon of 1st November.

30

He said that on that day about 2 p.m. he was in his office when he received a telephone call from Mr. Durack, who asked his permission to bring someone over to inspect the damage to the Plaintiff's property, and, that before he could answer, Durack exclaimed "Good Lord, your place has gone up in flames".

40

The witness then described the nature and extent of the fire as he observed it.

In Cross-examination he said that the condition as to oil was much the same from the morning



of 30th October until the outbreak of fire on 1st November, and that during that period burning was being done by his men with electric torches and with oxy-acetylene welders on the wharf, and that welding had been done on a staging between the "Corrimal" and the wharf.

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10 Notwithstanding his evidence that when he saw the oil he ordered burning and welding work to be suspended till he was told by Mr. Durack that it was safe to carry on, Mr. Parkin was asked by Mr. Taylor for his opinion as to the safety of furnace oil in the open. He replied "reasonably safe", and, being asked to amplify that, said that he thought, in the light of his experience, that it would be nearly impossible to ignite it in the open.

20 Mr. Hodgkiss, a boiler-maker employed by the Plaintiff in charge of other boiler-makers working on the "Corrimal" job, said that when coming to work along the Sheerlegs Wharf in the morning of 30th October he saw thick, very dark oil which seemed to come from the Caltex Wharf and was under the Sheerlegs Wharf and about the stern of the "Corrimal". He instructed the men who had been using torches and welders not to do any more burning. Later on that day he spoke with Mr. Parkin and Mr. Durack and thereafter he told his men to carry on their work as usual. He went aboard the "Corrimal" and was in the engine room when he  
30 heard a cry of "fire". He came up and found the ship afire. He tried to get to the wharf but the flames drove him back, and he had to go over the starboard side of the "Corrimal" on to a lighter which was alongside her, on which he and others escaped. He gave evidence that burners were operating, before the outbreak of fire, on the wharf and on the "Corrimal".

40 Mr. O'Toole, a rigger employed by the Plaintiff on the Sheerlegs Wharf, described the outbreak of fire as very sudden. He said that he heard a noise "Woof", "and the next minute a mass of flames", and the fire was "alongside the ship, under the wharf and everywhere".

50 Mr. McGiffen, a boilermaker's assistant, was on the wharf. He heard someone say "Come and look here. There is a small flame", and when he went to look over the edge of the wharf "there was a roar and flames and smoke spread over the place". The small flame, he said, was definitely on the water.

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All of these witnesses were rigorously cross-examined by Mr. Meares. A number of inconsistencies and discrepancies appeared, which is not surprising since the incidents they were speaking of occurred more than six years ago, but their veracity remained unshaken, and I accept their evidence in general.

Evidence as to the outbreak of fire was given by witnesses called for the defence to indicate that there was no sudden outburst but a gradual spread of the fire. Mr. Godfrey, a boiler-maker employed at the time by the Plaintiff, said that on 1st November he was working on the wharf burning the heads off bolts with an oxy-acetylene burner. There was a lot of oil on the water around the wharf. He said a chap drew his attention by saying "She's alight" and he saw smoke arising. He looked over the side and saw flames around the pile. He walked back to his apparatus and stood talking for five or six minutes and, after about ten minutes the fire brigade arrived. The fire got "a real go on" just before the brigade arrived. Cross-examination elicited that this witness, although he denied that the fire broke out suddenly, had to run off the wharf and left behind him his cardigan and some tools which were his personal property. 10 20

Mr. McCabe was employed as an ironworker on the wharf on the day of the fire. He noticed a wisp of smoke arising and looked under the wharf and saw what appeared to be a piece of bark with some material smouldering on it, which could have been waste or cloth - a bundle which could be clutched in one hand. It was quite close to a pile. A few minutes later he noticed smoke and flames. 30

I now turn to the nature and qualities of the oil in question.

I have already said that I am satisfied that the escape of petrol from the "Waggon Mound" on 29th October had nothing whatever to do with the fire on 1st November, which therefore must be attributed entirely to the oil which escaped from the ship on 30th October. 40

From his presentation of the Plaintiff's case it appeared that Mr. Taylor relied on the escape of petrol. He was at pains to lead evidence from his witnesses, Cullen Ward, Craven and Parkin, and to get in the opinion of Durack, all of whom are men of great experience, that furnace oil is safe. 50

When Professor Hunter's evidence had excluded petrol from relevance to the fire, Mr. Taylor sought to establish that the furnace oil which escaped from the ship was not ordinary furnace oil but was an oil of a more inflammable nature and therefore a dangerous substance. His submission was that the rapidity with which the oil burst into a conflagration was entirely inconsistent with its qualities as furnace oil. His proposition appears to be that since furnace oil is safe, and the oil in question burst into flames, therefore it was not furnace oil (i.e. ordinary furnace oil).

Mr. Meares tendered a delivery docket given to the Master of the ship by Mr. Cullen Ward, made out in his handwriting and signed by him on behalf of the Vacuum Oil Company, in relation to the furnace oil delivered to the "Waggon Mound", and specifying the flash point to be 170°F. Overruling a strong objection by Mr. Taylor, who contended that the document is not evidence against his client of the flash point of the oil or of any qualities of the oil, I admitted it. On the issue of negligence it is relevant and admissible to show the nature of the oil within the reasonable contemplation of the Defendant.

Later Mr. Taylor submitted that there is no evidence that the oil which escaped was oil pumped into the bunkers by the Vacuum Oil Company. He pointed out, quite correctly, that there is no evidence that the tank from which the oil escaped was empty when pumping to it began, and he submits that as the escaped oil acted in a manner inconsistent with "safe" furnace oil I should infer that there was already in the tank some lighter and more inflammable oil. There is evidence that bunker tanks are filled from the bottom, and consequently that a lighter oil would tend to ride on top of the heavier furnace oil and so flow out first, or, alternatively, it would mix with and contaminate the furnace oil being pumped in.

I do not accept his submissions. I think that the overwhelming probability is that oil in the bunkers of an oil-burning ship is ordinary furnace oil. In the absence of evidence I think it unlikely that two oils of substantially different qualities would be mixed in the one tank. The evidence of eye-witnesses is that the oil they saw on the waterfront was very heavy and thick. Mr. Coleman, employed by the Vacuum Oil Company from 1948 to 1952, as an industrial chemist, gave evidence that one of his duties was to analyse its

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furnace oils and that in his experience there the lowest flash point he had seen was a little below 150 degrees fahrenheit and the highest over 200°F, the average being about 180°, Professor Hunter, to whose evidence I shall presently refer, said that as far as fire hazard is concerned there is little difference in flash points within the range 150° to 190°. I take oils within that range to be ordinary furnace oil.

I find that the oil which escaped was furnace oil of the order of 170°F. flash point - that is to say, oil which was delivered by the Vacuum Oil Company on 30th October. If I be wrong in this I would hold that the oil which escaped was ordinary furnace oil with a flash point in the range from 150°F. to 190°F. It follows that the Plaintiff has proved only that ordinary furnace oil escaped from the "Waggon Mound", and on that its case must stand or fall.

I turn now to the scientific evidence as to the incidents and characteristics of the oil.

Professor Hunter, whom I have mentioned earlier, is Professor of Chemical Engineering within the University of Sydney. He is a Fellow of the Institute of Petroleum, and was awarded his Doctorate of Philosophy by the University of Birmingham for a thesis on the Refining of Petrol. He was for a time Research Assistant in the Department of Fuel in the Royal Naval College at Greenwich; from 1931 to 1937 he was Senior Lecturer in the Department of Petroleum Engineering and Refining in the University of Birmingham; for some years he was Consultant to the Anglo Iran Oil Company; he was, during the war, Consultant to the Ministry of Aircraft Production in England in relation to incendiary bombs, flame throwers and fuel barriers around the English Coast, and was concerned in consideration of methods of igniting oil on the surface of the English Channel in the event of invasion.

In connection with the present case he has recently carried out more than 300 experiments on the ignition of furnace oil floating on sea water. For these he used furnace oil of flash point 170°F. obtained from Vacuum Oil Company. He said that the results would have been substantially the same with oil within the flash point range of 150°F. to 190°F., as would the opinion which he expressed as to its inflammability.

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In his experiments he found it virtually impossible for furnace oil less than 1/16th of an inch thick on sea water to catch fire. He could not ignite it in the course of his experiments.

10 With oil 1/8th of an inch thick he tried various means of igniting it, but succeeded only with two -- a roman candle (which emits a jet of very hot sparks) and an oxy-acetylene flame held 6 inches from the oil. When the thickness of the oil was increased to a quarter of an inch, it was lit by these two methods and also by red hot coke. Attempts to light floating oil by dropping molten metal on to it all failed. A large number of tests were carried out, the results of which were tabulated and put in evidence. I do not find it necessary to analyse them. Professor Hunter said that after the tests were carried out, and as a result of them, he came to the view that the oil which escaped from the "Waggon Mound" could have  
20 been fired by a wick. To quote his words:

"There must have been a wick present, floating on the oil and further the wick must have been burning and probably fanned by a breeze -- not more than 20 miles an hour".

30 He defined a wick as a substance floating on oil, partly submerged in the oil and partly above it which is lit and burns above the oil. He conducted a number of tests with various substances, particularly hessian and cotton waste, and found them effective wicks. He formed the conclusion "that an oily cotton waste would be an ideal wick for igniting the fuel oil and one would be almost certain to get it ignited by such an oily cotton waste if that oily cotton was on fire".

40 He then described tests in which molten metal from oxy-welding processes fell distances from 3 feet to 10½ feet on to cotton waste floating on a raft in sea water, and ignited it in every case. The tests showed also that the oily waste when so lit set fire to the floating oil 1/8th of an inch thick.

50 He was questioned as to the probability of the fire on the 1st November having been ignited by a wick, and he said it certainly could have been ignited by that means, and the only other means which he could think of were by holding an oxy-torch near the surface of the oil, by holding a roman candle over the surface of the oil or by putting extremely hot coke on the surface of the oil. These methods need not concern us.

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I find that the oil which caught fire was ordinary furnace oil with flash point of the order of 170°F.; that immediately before the outbreak of the fire there was floating in the oil underneath the wharf a piece of debris on which lay some smouldering cotton waste or rag which had been set afire by molten metal falling from the wharf; that the cotton waste or rag burst into flames; that it was close to a wooden pile coated with oil; that the flames from the cotton waste or rag set the floating oil afire either directly or by first setting fire to the wooden pile; that after the floating oil became ignited the flames spread rapidly over the surface of the oil and quickly developed into a conflagration which severely damaged the wharf. In this last finding I have not overlooked the doubts expressed by Professor Hunter as to whether the fire of floating furnace oil could have so quickly spread as some witnesses described it.

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I find also that the oil which escaped had done some damage to the property of the Plaintiff before the fire occurred, in that it had got on to the slipways and interfered with the Plaintiff's use of the slips, and had caused a suspension of the operations of burning and welding for some hours.

The evidence of this damage is slight and no claim for compensation is made in respect of it. Nevertheless it does establish some damage, which may be insignificant in comparison with the magnitude of the damage by fire, but which nevertheless is damage which, beyond question, was a direct result of the escape of the oil.

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The question of foreseeability of fire damage from the furnace oil has been debated at length. I have referred to the evidence led by the Plaintiff that prior to this occurrence furnace oil was regarded as safe. In addition the following evidence was led by Mr. Meares from Professor Hunter:

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"As you indicated, prior to doing the tests you would not have thought that this oil was a fire hazard? A. Not a serious hazard.

Q. I suppose you would say now in the light of what you know that if you had a quantity of furnace oil of flash point 150 to 190 beneath a wharf in circumstances where it was of a depth on the water of more than 1/16th of an inch that it would, in your opinion, constitute a fire hazard? A. I think I can

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best answer that by putting it this way: the fire hazard under those circumstances depends on the habits of the people working on the wharf rather than the oil itself.

... ..

Q. If there is fuel oil not more than 1/16th of an inch then you don't have to consider fire risk, whatever they are doing on the wharf? A. That is right.

Q. What I suggest is if you increase the height of it above 1/16th of an inch, there is then something under the wharf that is a fire danger that was not there before?

A. If the oil is there entirely by itself, it does not constitute a fire danger but if it is oil plus floating wicks it is then a fire danger".

This evidence I interpret to mean that before he made his tests and, of course, before he knew of the subject fire, the Professor did not regard floating oil as a serious hazard in any circumstances; and that in the light of knowledge gleaned from his tests he now regards it as not being dangerous in itself, but capable of being made dangerous by people who are working near it. These latter remarks throw no light on the problem, as they would apply equally to every substance which is capable of being set on fire.

I feel bound on the evidence to come to the conclusion that, prior to this fire, furnace oil in the open was generally regarded as safe, and that in the light of knowledge at that time the Defendant's servants and agents reasonably so regarded it. Mr. Taylor urged that the fire in Fremantle Harbour in which s.s. "Panamanian" was damaged, litigation as to which is reported in 83 C.L.R. 353, would be notorious among owners of oil-burning ships. The suggestion has some merit, but in the absence of any evidence I am not satisfied that the incident was in 1951 known generally in the mercantile world or, in particular, to the Defendant or its agents.

The *raison d'etre* of furnace oil is, of course, that it shall burn, but I find the Defendant did not know and could not reasonably be expected to have known that it was capable of being set afire when spread on water

I have now to decide whether the Defendant is liable on the facts which I have found, the basic

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fact that the oil escaped through lack of reasonable care on the part of the Defendant.

Mr. Meares advances two principal submissions to negative liability:

- (a) that there was no duty owed to the Plaintiff in respect of the injury he complains of as that damage was outside the area of potential danger; <sup>12</sup>
- (b) that the damage is too remote.

These submissions may be dealt with together. 10

Mr. Meares does not dispute that the oil escaped through negligence of the Defendant, but contends that it is not actionable negligence - he calls it mere careless conduct. He submits that inasmuch as an essential element in the tort of negligence is foreseeability of resultant damage by a reasonably careful and prudent Defendant, and as the Defendant could not reasonably have foreseen the possibility of fire in the oil, the tort has not been established. 20

He relies strongly on *Bourhill v. Young* ((1943) A.C. 82), and in particular on Lord Thankerton's definition of duty (the breach of which is the foundation of negligence) as the exercise of such reasonable care as will avoid injury to such persons as he can reasonably foresee might be injured by failure to exercise such reasonable care (p.98) His Lordship said:

"If then the test of proximity or remoteness is to be applied, I am of opinion that such a test involves that the injury must be within that which the cyclist ought to have reasonably contemplated as the area of potential danger which would arise as the result of negligence" (ibid). 30

and then expressed the view that the possibility of any injury resulting to the Plaintiff from the cyclist's manner of driving was so remote that he could not reasonably be bound to have contemplated it, and so was not liable. 40

That case was decided on the ground that the injury was not a direct result and that the Defendant could not reasonably have contemplated that any injury of any kind would result to the Plaintiff from his conduct and that therefore the injury which did in fact occur was outside the area of potential danger, which was all that the law required him reasonably to guard.



Mr. Meares then cited Bolton v. Stone ((1951) A.C. 850) in which Lord Porter said:

10 "It is not enough that the event must be such as could reasonably be foreseen; the further result that injury is likely to follow must be such as a reasonable man would contemplate, before he can be convicted of actionable negligence. Nor is the remote possibility of injury enough; there must be sufficient probability to lead a reasonable man to anticipate it". (at p.858)

The decision in Woods v. Duncan ((1946) A.C. 401) was based on the same principle, that foreseeability is an essential ingredient of actionable negligence.

Lord Porter (at p.434) said:

20 "Both companies then, in my view, were negligent in respect of this careless painting of the rear door and their failure to detect the blocking of the orifice of the test-cock by a proper inspection. But negligence in failing properly to paint a ship is not necessarily negligence towards all or any of those on board her. The two companies, no doubt, owed a duty to all the ship's company, both naval ratings and civilians, but would only be guilty of want of care towards them if the act or omission complained of would reasonably be anticipated as likely to do them harm".

30 Mr. Meares submits on the authority of these cases, and several others which he cited, that since the evidence here establishes that the furnace oil in its escaped state was reasonably regarded as safe (i.e. safe in relation to fire risk), the Defendant is not liable for the consequences of its unforeseeable combustion.

40 Faced with the decision in In re Polemis Furness Withy & Co., Pty., Ltd., (1921) 3 K.B. 574, and in particular with the following passage from the judgment of Scrutton, L.J (at page 577):

"To determine whether an act is negligent, it is relevant to determine whether any reasonable person would foresee that the act would cause damage; if he would not, the act is not negligent. But if the act would or might cause damage, the fact that the damage it in fact causes is not the exact kind of damage one would expect is immaterial, so long as the

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damage is in fact directly traceable to the negligent act, and not due to the operation of independent causes having no connection with the negligent act, except that they could not avoid its results. Once the act is negligent, the fact that its exact operation was not foreseen is immaterial".

Mr. Meares submitted firstly that the decision in *In re Polemis* is not good law: secondly that no damage was suffered by the Plaintiff other than was caused by the unforeseeable fire, so that the case is covered by *Bourhill v. Young* (supra) and *In re Polemis* has no application; and finally that even if damage had been caused to the Plaintiff other than fire damage, the fire damage in respect of which this action is brought is not directly traceable to the careless act of the Defendant but was due to the operation of extraneous causes not connected with the Defendant's act.

I appreciate that the first of these submissions was made in order to preserve the right to renew it before a tribunal competent to review a decision of the Court of Appeal. Apart from the inherent authority of a decision of that Court the question is concluded, so far as this State is concerned, by the recent decision of the Full Bench in *Malleys Ltd. v. Jones* (55 S.R. 390) in which the validity of *In re Polemis* was challenged:

"Although some criticism, both by text writers and in subsequent decisions, has been directed to various aspects of this case, it has for thirty-four years withstood all attacks upon its correctness, and the principles of law there laid down must be those which must be adopted in this case in determining the points raised by the Appellants".  
(per Street, C.J. at page 393).

I may add that in *Thorogood v. Van den Berghs Ltd.* (1951) 1 A.E.R. 682, Asquith, L.J. held that *In re Polemis* had not been overruled or its binding authority shaken.

Mr. Meares' pro forma submission having been recorded and denied, I come to his second submission. It is inconsistent with the facts. I have already stated my finding that the oil fouled the Plaintiff's slipways and caused interruption to its operations and that those consequences were foreseeable to any reasonable person. Mr. Meares urged however that the Plaintiff is not entitled to rely on this damage, inasmuch as no claim is

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pressed in respect of it. Nor has evidence been given on which compensation could be assessed, and that I should therefore exclude it from consideration. I am not able to agree. The Plaintiff's failure to press a claim for this damage is not an admission that it was not actionable damage, or that it was in itself insignificant - although it may well have been relatively insignificant in view of the very large amount claimed for damage by fire.

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It follows, since foreseeable damage was caused to the Plaintiff, that the Defendant's careless act became impressed with the legal quality of negligence, and the case therefore is covered by the principles of *In re Polemis* and not those laid down in *Bourhill v. Young*.

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In support of his third submission, Mr. Meares contended that the fire damage is not actionable inasmuch as it is not directly traceable to the Defendant's wrongful act of allowing oil to escape, but is attributable to the operation of independent causes unconnected with the wrongful act. He refers to the lapse of nearly 60 hours between the escape of oil and the outbreak of fire during which period the oil had been subjected to the influences of wind and tide which may well have affected its density and its location; that it had been affected by human activities such as the passage of boats through or near to it, the casting of debris or rubbish into the foreshores of Morts Bay, and the operation of welding operations on and near the wharf with the constant possibility of molten metal falling on to the oil. He urged that extraneous causes had materially and even vitally operated to bring about combustion of the oil, specifying the activities of the Plaintiff's workmen in welding and burning metals on the wharf: the fortuitous carriage by wind and tide of inflammable debris under the wharf and the probable fact that molten metal had fallen during the workmen's operations upon inflammable cotton wool which happened to be floating below them and had thereby caused the fire. These intervening facts, he submitted, rebut the Plaintiff's claim that the damage is directly traceable to the careless escape of oil.

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The answer to this argument is that direct consequence is not necessarily an immediate consequence. Damage may be directly traceable to an original act although there has intervened a series of happenings, no one of which could have brought

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about the ultimate damage, but which in sequence or in combination caused or enabled the original act to result in that damage. In my opinion all the matters urged by Mr. Meares as extraneous or independent causes having no connection with the original act are in reality directly traceable to the original act by reason of the fact that they were all reasonably foreseeable by the careless actor. The probability of oil in heavy concentration remaining for a considerable time between the "Corrimal" and the wharf should have been apparent: that the oil would be subject to the influence of wind and tide and to the passage of harbour craft was obvious: debris floating along the foreshores and under wharves is an ordinary incident of an industrial waterfront, and the possibility of inflammable material in the debris was reasonably foreseeable; the operation of refitting the ship at the wharf was clearly in sight of the officers of the "Waggon Mound", involving the use of oxy-acetylene and other burning apparatus on the wharf and on the ship. I consider that these facts, since they should have been observed or reasonably anticipated by the Defendant cannot be said to be independent causes intervening between the negligent act and the ultimate damage. On the contrary, they are steps through which the damage may be directly traced to the original negligent act.

It follows that this case falls squarely within the principles laid down in *In re Polemis*. In such case it is no answer for a Defendant to say "The damage which I caused is not the damage which I expected to cause"

Mr. Meares' third submission fails.

For my formal determination of the issue of liability, the proper direction to myself as a tribunal of fact is in my opinion to be derived from the judgment of Asquith, L.J. in *Thorogood v. Van den Bergh's Ltd.* (supra) in the course of which His Lordship said:

"Warrington, L.J. said (in *Polemis*' case):  
'The result may be summarised as follows:-

The presence or absence of reasonable anticipation of damage determines the legal quality of the act as negligent or innocent. If it be thus determined to be negligent, then the question whether particular damages are recoverable depends only on the answer to the question whether they are the direct consequence of the act.

Devlin, J. has already performed the process described in the first of these two sentences. Applying and rightly at this stage and for this purpose the test whether damage of some kind (for instance, the 'necktie' kind) can be reasonably anticipated as likely to result from the Defendants' act, he 'determines the quality of the act' as negligent. It only remains for him to perform the process described in the second sentence of Warrington, L.J. namely, to decide whether the 'particular damages' namely, the damage actually sustained, is recoverable. In answering this second question the foreseeability of the damage actually sustained is wholly irrelevant. Directness of causation is the sole criterion of recoverability. The actual damage may be wholly different in character, magnitude, or the detailed manner of its incidence, from anything which could reasonably have been anticipated."

Accordingly the first question I ask is "Does the evidence establish that the Defendant's act caused damage to the Plaintiff which the Defendant could reasonably foresee?" To that my answer is "Yes", for leaving aside entirely the ultimate damage caused by the improbable fire, the Defendant caused damage by fouling Plaintiff's slipways and interfering with its industrial operations, both of which results were clearly foreseeable. This establishes that the Defendant was negligent. I therefore ask a second question: "Was the ultimate damage suffered by the Plaintiff, that is to say damage by fire which was not reasonably foreseeable by the Defendant, directly caused by the Defendant's negligence?"

For the reasons already expressed my answer is "Yes".

On these answers the Plaintiff must succeed.

I have dealt with the action as one for negligence.

Towards the end of his final argument Mr. Taylor sought to press his claim alternatively in nuisance. Mr. Meares objected that this was not open to him on the pleadings. I take the view that in this State a Plaintiff in Admiralty may develop his cause of action in negligence or nuisance or both if the facts alleged in the pleadings and proved are capable of supporting his cause in those forms. It is not the usual practice

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in this jurisdiction to file pleadings, although they may be, and in this case were ordered to be filed. When filed they are not to be construed with the strictness appropriate to pleadings at common law. It is not necessary, however, to decide the point, nor is it necessary to decide whether, if negligence were not established the Plaintiff would be entitled to succeed in nuisance.

The matter will be referred to the Registrar for inquiry as to damages.

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No.52.

Notice of  
Appeal.

5th June, 1958.

No.52.

NOTICE OF APPEAL

IN THE SUPREME COURT OF NEW SOUTH WALES  
IN ADMIRALTY

No.7 of 1952

BETWEEN:- OVERSEAS TANKSHIP (U.K.)  
LIMITED (Defendant) Applicant

- and -

MORTS DOCK & ENGINEERING  
CO. LIMITED (Plaintiff) Respondent

TAKE NOTICE that the Full Court will be moved on the first day on which its business permits after the expiration of sixteen days from the date hereof for an Order that the judgment herein be set aside and that judgment be entered for the Defendant. 20

The date and other particulars of the judgment appealed from are as follows :-

The suit was tried before His Honour Mr. Justice Kinsella on the seventeenth, eighteenth, nineteenth, twentieth and twenty first days of February and the eleventh, twelfth, thirteenth, fourteenth, seventeenth and eighteenth days of March One thousand nine hundred and fifty eight. 30

On the twenty second day of May One thousand nine hundred and fifty eight judgment was given for the Plaintiff against the Defendant and the matter referred to the Registrar for inquiry as to damages.

The grounds of appeal are as follows:-

1. That His Honour was in error in holding that the Defendant was negligent in respect of the matter in issue in this suit.
2. That His Honour should have entered judgment for the Defendant.
3. That His Honour was in error in finding that the Defendant's act caused damage to the Plaintiff which the Defendant could reasonably foresee.
- 10 4. That His Honour was in error in finding that the ultimate damage suffered by the Plaintiff, that is to say damage by fire which was not reasonably foreseeable by the Defendant, was directly caused by the Defendant's negligence.
5. That His Honour's findings in paragraphs 3 and 4 hereof or either of them were against the evidence and the weight of the evidence.
- 20 6. That the question as to whether the Plaintiff's slipways had been damaged by the oil which had escaped, and its operations interrupted, was irrelevant.
7. That His Honour's findings on the matters mentioned in paragraph 6 hereof were against the evidence and the weight of the evidence.
8. In the light of the pleadings and/or the manner in which the trial was conducted, damage to the Plaintiff's slipways or interruption to its industrial operations was not in issue.
- 30 9. That His Honour should have found that any such damage by pollution was not relevant to the question of Defendant's liability in respect of fire damage.
10. In view of His Honour's finding that furnace oil in its escaped state was reasonably regarded as safe (i.e. safe in respect of fire risk) and that the risk of fire damage from its escape was not reasonably foreseeable by the Defendant, His Honour should have found that the Defendant was not liable.
- 40 11. That His Honour was in error in holding that "It follows that this case falls squarely within the principles laid down in In re Polemis. In such case it is no answer for a Defendant to say 'The damage which I caused is not the damage which I expected to cause'".
12. That His Honour was in error in holding that

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- since foreseeable damage was caused to the Plaintiff, the Defendant's careless act became impressed with the legal quality of negligence, and that the case therefore was covered by the principles of *In re Polemis* and not those laid down in *Bourhill v. Young*.
13. That His Honour erred in law both in following and applying the principles laid down in *In re Polemis*.
  14. That His Honour should have held that even if there were a duty towards the Plaintiff in respect of the risk of pollution from escaped furnace oil there was no duty towards the Plaintiff in respect of a fire hazard from such oil. 10
  15. That His Honour's finding that the operation of refitting the "Corrimal" at the wharf involving the use of oxyacetylene and other burning apparatus on the wharf and on the ship were clearly in sight of the Officers of the "Wagon Mound" was against the evidence and the weight of the evidence. 20
  16. That His Honour was in error in finding that the probability of oil in heavy concentration remaining for a considerable time between the "Corrimal" and the wharf should have been apparent.
  17. That His Honour was in error in finding it was obvious that the oil would be subject to the influence of wind and tide and to the passage of harbour crafts. 30
  18. That His Honour was in error in finding that debris floating along the foreshores and under wharves is an ordinary incident of an industrial waterfront, and the possibility of inflammable material in the debris was reasonably foreseeable.
  19. That His Honour should have found that the cause of the damage suffered by the Plaintiff was from an intervening independent cause. 40
  20. That His Honour should have held that there was no duty owed to the Plaintiff in respect of the injury it complained of as that damage was outside the area of potential danger.
  21. That His Honour should have held that the damage was too remote.



DATED this 5th day of June, 1958.

B. Burdekin

Counsel for the Defendant.

THIS NOTICE OF APPEAL is filed by Norton Smith & Co., Solicitors of 39, Hunter Street, Sydney,

Solicitors for the Defendant.

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TRANSCRIPT OF JUDGMENT ON APPEAL

IN THE SUPREME COURT OF NEW SOUTH WALES

No.7 of 1952

CORAM: OWEN, J. MAGUIRE, J. MANNING, J.

THURSDAY, 3rd DECEMBER, 1959.

MORT'S DOCK AND ENGINEERING CO. LIMITED v.

OVERSEAS TANKSHIPS (U.K.) LIMITED

JUDGMENT

MANNING J: This is an appeal from a decision of Kinsella J., sitting in Admiralty, in an action brought by Mort's Dock and Engineering Co. Limited (the Respondent in the appeal) against Overseas Tankship (U.K.) Limited (the Appellant).

The Respondent sought to recover damages for negligence. The Appellant's ship, "Wagon Mound" was moored at a jetty some 500 or 600 feet from the Respondent's Wharf in Mort's Bay, Sydney Harbour, and whilst furnace oil was being pumped into the bunkers of the "Wagon Mound" a quantity of this oil escaped, ran over the side of the ship and spread over the waters of the bay in the early hours of the morning of 30th October 1951. In the early afternoon of 1st November (some 55 to 60 hours later) the oil lying under the Respondent's wharf became ignited and caused a conflagration in which the wharf and installations were severely damaged.

The facts are set out in detail in the full and careful judgment of the learned trial Judge. None of his findings of fact has been challenged before us, nor, in my view, did anything appear

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during the course of the hearing which might suggest that there was the slightest justification for any criticism of any of His Honour's findings of fact.

It is beyond doubt that a somewhat extraordinary series of circumstances occurred to cause the fire.

The furnace oil spilled over the side of "Wagon Mound" because of carelessness on the part of the ship or its personnel.

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Furnace oil is heavy, black oil which has a flash point of 170°F.

When the Works Manager of the Respondent Company arrived at the wharf some time before eight o'clock on the morning of the 30th October he saw a very large quantity of this oil floating on the water in the vicinity of the Company's installations. At the time, the S.S. "Corrimal" was tied to the wharf where the Respondent Company was overhauling and refitting her. The work involved was being carried out both on the wharf and aboard the ship. Electric torches and oxy-acetylene welding apparatus were being used both on the wharf and on the ship and, in addition, other tradesmen were employed. The Works Manager, seeing the oil, immediately issued instructions that no welding was to be done until further orders. It is apparent that, at that stage, he considered that there was a possibility of danger by reason of the presence of the oil and the nature of the work being done. He communicated with an officer of the Caltex Oil Company, at whose wharf the "Wagon Mound" had been moored when the spillage took place, and was assured that the oil was quite safe for normal work to continue. It was considered that the cooling action of the water under the thin film of oil would render it impossible for the oil to be heated to approximately 170°F. to which temperature it would require to be heated before it would burn. Upon being advised that it was safe to continue work, the Works Manager directed that work be resumed, and the use of both electric torches and oxy-welding apparatus was continued for over two days before the fire ultimately occurred. In the meantime, the oil continued to lie on the surface of the water in Mort's Bay.

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There was evidence that on the day of the fire one of the Respondent's employees, who was engaged in performing his duties on the wharf,

noticed a wisp of smoke arising from under the wharf and looked and saw what appeared to be a piece of bark floating, and resting on it was some material which was smouldering. The material appeared to be either a small piece of cotton waste or of cloth.

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10 There was evidence, which His Honour accepted, from witnesses of great experience, that furnace oil floating in circumstances such as those described may be regarded as safe. However, His Honour accepted the evidence of Professor Hunter, Professor of Chemical Engineering within the University of Sydney and a gentleman of very great knowledge and experience with petroleum and petroleum products, who carried out more than 300 experiments with a view to ascertaining whether furnace oil floating on water could be ignited and, if so, in what manner.

20 In the result, Professor Hunter expressed the view that there must have been a wick present, floating on the oil, and the wick must have been burning and probably fanned by a breeze of a strength of not more than 20 miles an hour. He defined a wick as a substance floating on oil partly submerged in the oil and partly above it which is lit and burns above the oil. He was of the opinion that oily cotton waste would be an ideal wick for igniting fuel oil in such circumstances and one could be almost certain that it would be ignited by such an oily cotton waste if that oily cotton waste was on fire.

30

40 In the result, His Honour found that the oil, which had the characteristics mentioned, was ignited because there had been floating in the oil underneath the wharf a piece of debris on to which had fallen a piece of cotton waste or rag and which in due course had been set afire by molten metal falling from the wharf in the course of welding operations. He further found that the cotton waste or rag having been so set afire burst into flames, that it was then close to a wooden pile coated with oil, that the flames from the cotton waste or rag set the floating oil afire either directly or by first setting fire to the wooden pile, and that after the floating oil became ignited, the flames spread rapidly over the surface of the oil and quickly developed into a conflagration which severely damaged the wharf.

50 His Honour also found that the oil which escaped had done some damage to the Respondent's

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property before the fire occurred. It made the slipways greasy and caused the welding and similar operations to be suspended for some hours. It may not be without significance that there was no evidence of any monetary loss being sustained in this connection and no claim for compensation was made in respect of it. Nevertheless, His Honour found that it was established that some damage of the nature mentioned was sustained which, although insignificant in comparison with the magnitude of the damage caused by fire, was nevertheless damage which was sustained as a result of the escape of the oil.

10

In his conclusion His Honour expressed the view that, prior to this particular fire, furnace oil floating on water in the open was generally regarded as safe and, in the light of available knowledge at that time, the Appellants reasonably regarded it as safe. Accordingly, His Honour found that the Appellant did not know and could not reasonably have been expected to have known that the oil was capable of being set afire when spread on water.

20

As it was clearly established that the oil escaped through the wrongful act of the Appellant, His Honour held that foreseeable damage was sustained inasmuch as the slipways were fouled and the Respondent's operations interrupted. Although no evidence had been given which would enable any compensation to be assessed in respect of these matters and no claim made for such damage, His Honour concluded that foreseeable damage had been sustained as the result of the Appellant's wrongful act and there had been damage and accordingly the tort of negligence had been established.

30

10 His Honour then proceeded to consider whether the Respondent was entitled to recover compensation in respect of the damage caused to the wharf which he had held to be not foreseeable and concluded that the fire damage could be traced directly to the original negligent act. Accordingly, following the decision in *In Re Polemis* (1921 3 K.B. 560), His Honour found a verdict for the Respondent and directed an inquiry by the Registrar to ascertain the amount of the damage proper to be awarded in respect of the loss sustained by the Respondent consequent upon the fire. This last mentioned course was taken at the suggestion of the Respondent and without objection by the Appellant.

20 Having regard to the fact that none of His Honour's findings of fact was challenged before us, it is clear that the real question between the parties depends in the first instance upon the first two submissions made by Counsel for the Appellant, namely (1) that *In Re Polemis* was wrongly decided and that, having regard to the determination that the fire damage in this case could not reasonably have been anticipated or foreseen, it is not recoverable in an action of tort; (2) that, assuming that *In Re Polemis* was rightly decided, the damage by fire was not a "direct consequence" of the Appellant's wrongful act within the meaning of the cases.

30 The decision in *In Re Polemis* has stood for nearly 40 years. In *Thorogood v. Van Den Berghs & Jurgens Limited* (1951 2 K.B. 537) Asquith L.J. said (at p.555):-

40 "Nor do I consider that the decision in *In Re Polemis* and *Furness Withy & Co. Limited*, (1921 3 K.B. 560) has been overruled or its binding character, so far as this Court is concerned, in any degree shaken. The utmost that can be said is that certain of the Lords of Appeal in Ordinary have reserved the right to consider it, if and when, before the House of Lords, its authoritative character should come directly in issue. Meanwhile it stands".

In these circumstances I do not think that it would be proper for this Court to do other than regard the decision as an authority binding upon it. The decision in this case must depend upon the view to be taken of the effect of *In Re Polemis* and the manner in which the decision should be applied.

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The decision in *In Re Polemis* has been subjected to much criticism and, in the course of the long and detailed discussions that have followed, various conflicting viewpoints have been expressed. In particular the decision has been carefully and closely examined by Lord Wright in a most illuminating article in 14 *Modern Law Review*, 393. His Lordship explains what he understands to be the effect of the decision and appears, to a degree, to have been actuated by a close personal interest in the problem. His Lordship argued the case unsuccessfully before the Court of Appeal and commences his article by referring to the fact that the Court "wisely rejected the contentions I advanced". On the other hand, Dr. A. L. Goodhart has subjected the decision to a searching scrutiny in his article published in 68 *Law Quarterly Review*, at p. 514. This distinguished jurist concludes that the notion that damage which, although not foreseeable, can be classified as direct, is recoverable cannot be justified, although he adds that he regards the case of *In Re Polemis* as having been correctly decided in the result, not on the ground that the damage was not foreseeable but nevertheless was direct, but because the damage was in fact foreseeable. 10 20

It would be idle for me to attempt to summarise or recapitulate the conflicting opinions on the question which have been set out in so much detail and with such clarity and force. 30

I find considerable difficulty, however, in appreciating the effect of the decision and, although the matter has been discussed in both the articles referred to, I desire, as shortly as possible, to express the particular problems which have caused me the greatest difficulty. In this regard I should add that since the conclusion of the argument my attention has been drawn to the fact that one broad aspect of the matter as to which I expressed a tentative view had already been discussed by Evatt J. in *Chester v. Waverley Corporation* (62 C.L.R.1). His Honour said (at p. 29): 40

"Since the decision in *In Re Polemis* and *Furness Withy and Co.*, there has been something of a tendency to avoid its important results by the argument that unless the actual damage a Plaintiff has sustained as a direct consequence of the Defendant's act or omission could have been foreseen by a reasonable person in the Defendant's position, that act or 50

omission cannot be imputed to the Defendant as negligence. This argument is in flat defiance of the Polemis decision. In substance it seeks to restore the rejected rule of damage by denying the existence of a duty wherever the consequences to the Plaintiff of the Defendant's careless act or omission were not the 'natural and probable' consequences. It attempts to produce the legal result condemned in the Polemis case by altering the line of attack",

Whilst I respectfully agree without reservation with His Honour's remarks quoted above, it seems to me that three matters in particular continue to cause the gravest of difficulty. These are:-

- (1) That in reality the claim in *In Re Polemis* was a claim for breach of contract. While *Hadley v. Baxendale* (1854 9 Ex.354) was not referred to, it appears to me that what was said in *In Re Polemis* involves that the measure of damages will differ in contract and in tort notwithstanding that the respective causes of action arise out of the same incident or subject matter. For example, in cases of bailment, where a claim is made in the alternative in contract and in tort, or in cases of so-called professional negligence, where an alternative claim is made similarly, damages recoverable in respect of the breach of contract would include any loss which may fairly and reasonably be considered either as arising naturally, i.e., according to the usual course of things, from the breach of contract, or such as may reasonably be supposed to have been in the contemplation of the parties, which I understand, notwithstanding some of the views expressed by Lord Wright, to be synonymous with "foreseeable" damages in cases of tort, but would not include damage which was not foreseeable but was nevertheless "direct" in the sense that word is used in the decision in *In Re Polemis*.
- (2) Upon a careful examination of the decision in *In Re Polemis* and many other cases, it seems to me that the use of the word "negligence" in a sense that was not clearly defined has given rise to considerable confusion. The claim made in the Polemis case was for breach of contract and it was not necessary at any stage to consider whether the charterers had committed the

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tort of negligence or the consequences that might flow as a result of the commission of such tort. It was necessary to consider the "negligence" of the charterers, only because that word was said to have been present in an implied term of the contract, and the real question for determination was the construction of such implied term.

- (3) It is by no means easy to reconcile the view that the legal quality of an act, as wrongful or innocent, is determined by ascertaining whether the actor might have reasonably anticipated that some damage would result, with the alternative view that the actor will not have committed a legal wrong unless the injury in fact done is within the area of potential danger which the actor ought reasonably to have contemplated. These difficulties require elaboration and discussion. 10

An appreciation of the problems which arise from a consideration of the cases and the textbooks is clouded by two primary factors. 20

First, the development of the law of negligence, within a relatively short space of time, has resulted in discussions of the same subject matter, at different periods, proceeding on somewhat different basic approaches, and yet, in later cases and discussions, it seems to have been assumed that, on earlier occasions, the approach was the same. 30

Second, principles or rules which originally may (or may not) have been expressed with clarity have been developed, altered in some respects, and new divisions or branches of such principles or rules have been developed. This would not cause any difficulty if our language had developed concurrently in a way which permitted the developments to be expressed in words which did not cause ambiguity or confusion. Unfortunately such has not been the case. 40

The first of these difficulties is illustrated by the disagreement, which in some quarters still persists, as to whether negligence is a separate tort. It was not until Comyn's Digest was published in 1762 that negligence was discussed in detail and the only action there dealt with was an "action on the case for negligence". Such actions became frequent in the early part of the last century but the notion that negligence was a separate tort was a much more recent development. 50



The assertion of this development was not advanced so as to attain any measure of acceptance until the early part of this century. Professor Fleming in his most lucid and learned exposition, "The Law of Torts" (1957), is at pains to make it clear that, in his view, it is misleading to speak of a tort of negligence. He asserts that negligence is a basis of liability and not a single nominate tort. It seems that his difficulty is not dissociated from the matters which trouble me, because he refers to the fact that if we were to speak of the kind of conduct we call "negligent" as a tort, we might just as well say that "intention" is a tort. The former concept of negligence as something akin to a state of mind, as opposed to intention, and its application in the law of torts to conduct i.e. a way in which some torts might be committed, is not difficult to understand, but the later use of the same word over a period of years during which the modern concept was evolving, and its present day use as describing a separate tort, have led to considerable difficulty in appreciating precisely what was meant by its use from time to time during the era of evolution. At least it seems safe to say that there is grave danger in assuming that when used during the last hundred years, it was necessarily used in the sense in which it is understood today. This latter meaning is made clear in the opening paragraph of a paper presented to the Seventh Legal Convention of the Law Council of Australia by Mr. Justice Fullagar on 13th August, 1951 (25 A.L.J. 278) as follows :-

"Some years have now passed since the decision of the House of Lords in *Donoghue v. Stevenson* (1932) A.C. 562 and of the Privy Council in *Grant v. Australian Knitting Mills Ltd.* (1936) A.C.85 and it seems now to be the generally accepted view that there is a tort of 'negligence' in the same sense in which there is a tort of defamation and a tort of malicious prosecution".

The confusion which has resulted from the variation in thought during the development of present day concept is inevitably mixed with the dialectical question to which I have referred. Apart altogether from the multitude of expressions which have been used (which confuse me) in an attempt to re-define the class of damage referred to in *In Re Polemis* (supra) which, for want of a better phrase, I shall call "direct but not foreseeable", the lack of uniformity in the text books as

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to the meaning of the word "negligent" is significant. Sir Percy Winfield in his authoritative work "Law of Tort" (1st Ed.) says that the word has two meanings viz. -

1. A mental element which is to be inferred from one of the modes in which some (but by no means all) torts may possibly be committed.

2. An independent tort which consists of a breach of a legal duty followed by damage. 10

This statement in precisely the same form appears in the most recent edition (6th Ed.) of the work. Salmond's Law of Torts (12th Ed.) p.388 is to the same effect, and this statement is at least as old as the editions edited by Dr. Stallybrass (vide 9th Ed. p.34).

However, Charlesworth's Law of Negligence (in both the original edition and in the current 3rd Edition, at p.1) adds a third meaning to the word viz. careless conduct. I would respectfully adopt this view, not only because it accords with my own experience and knowledge, but because I am convinced that many of the cases can only be explained if it is accepted that it is used in this sense. Indeed this was the language of pleadings before the Judicature Acts. Bullen & Leake (2nd Ed. (1863) at pp.317 et seq.) refers constantly to an allegation in terms of acts being said to have been done "negligently and unskilfully", and the word negligent must necessarily have been used in relation to the alleged quality of the act, and not to a mental element or a tort. It is not without some significance to note that although the more recent editions of this work have prescribed forms in which, generally speaking, the word "negligently" alone appears to be regarded as sufficient, yet in the 10th Edition (1950) the word is combined with the words "and unskilfully" at pp.397 and 402. Although the use of the word "negligently" in pleadings derived from the meaning first attributed to it by Sir Percy Winfield i.e. a mental element, its combination (during the nineteenth century) with the words "unskilfully" was in a manner which persuades me that they were used in an almost synonymous sense to indicate carelessness. This is still the position in New South Wales today. 30

Thus in considering any discussion on the subject of negligence, at least prior to the decision in *Donoghue v. Stevenson* ((1932) A.C.562), it seems to me to be necessary first to enquire 40 50

how far the judge's or author's views had progressed along the road of which the beginning was the concept of negligence as a factor in an action on the case and of which the end is the concept of negligence as a tort. Secondly it is necessary to enquire (and in this regard I would place no limitation as to time) which of the three meanings of the word was that which was intended.

10 I have written thus at some length by way of introduction because it seems to me impossible properly to deduce the meaning of many pronouncements and dicta unless these considerations are kept firmly in mind.

I pass now to consider the effect of the decision in *In Re Polemis* (supra).

20 The first (and to me virtually insurmountable) difficulty is that a literal reading of the judgments involves acceptance of the proposition that the measure of damages in an action for breach of contract differs from that in an action of tort. I am aware that this view is to a degree inconsistent with at least some of the views expressed by so eminent and distinguished a lawyer as Lord Wright (14 Mod. L.R. 393) but I find the argument advanced by Dr. A.L. Goodhart (68 L.Q.R.514) so convincing that I am content to adopt his conclusion (at p.535) that to reconcile *In Re Polemis* with *Hadley v. Baxendale* is "a feat of extreme difficulty". It is certainly beyond my capabilities. It would be tedious if I recapitulated the arguments on the point and am content to say that even if I am wrong in the view I have formed, the difficulties drawn to attention by Dr. Goodhart are at least as real to me as they appear to have been to him.

30

40 It now seems desirable to examine *In Re Polemis* because (although most aspects of the decision have been already discussed to an extent which would almost justify the use of the expression *ad nauseam*) there are still matters of difficulty associated with the general problems I have discussed earlier.

The facts of the case, so it seems to me, have been regretfully neglected by many who have discussed it.

One thing is clear viz. that it was a claim based on breach of contract, not on tort. The claim was referred to arbitration. An award was

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delivered in the form of a special case. The contract of which it was said a breach had occurred was a charter party. It is summarised in the report. ((1921) 3 K.B. at 561). The reference to arbitration is not reproduced in the report. The allegations and replies thereto appear in the first two paragraphs on p.563. If there had been pleadings, they would have been in a form of which the following is a summary:

Claim: The owners chartered the ship to the charterers under a time charter. Charter money was fixed at a stated sum per calendar month, which was to continue until her redelivery to the owners in the same good order and condition as when delivered to them fair wear and tear excepted. The ship was totally destroyed by fire. The charterers were guilty of a breach of their contractual obligation to return it to the owners. The owners claimed the value of the ship. 10 20

Defence: It is admitted that the charterers failed to return the ship to the owners as required (prima facie) by the contract. But the contract contained a provision under which liability for such breach was excepted in the event of the breach occurring as a result of (inter alia) fire. The ship having been destroyed by fire, the breach is excused and the charterers are not liable.

Reply: The excepted peril (i.e. loss by fire) as provided by the contract relates only to fire not caused by the negligence of the charterer or its servants or agents for whose acts it is responsible. The fire was in fact caused by the negligence of those for whom the charterers were responsible and accordingly the charterers were not excused. 30

Rejoinder: (a) Fire however caused is an excepted peril. 40  
(b) There was no negligence.  
(c) If there was negligence the danger and/or the damage were too remote, i.e., no reasonable man would have foreseen danger and/or damage of this kind (i.e. by fire) resulting from the alleged negligent act.

In framing the above summary, I have endeavoured to follow the allegations and counter allegations described in the report. It may not be out of place to draw attention to the manner in which

Bankes, L.J. summarised the nature of the claim. After reading the charter party, His Lordship shortly stated how the fire occurred and proceeded (at p.568):

"The owners claimed the value of the vessel from the charterers, alleging that the loss of the vessel was due to the negligence of the charterers' servants".

10 The exception clause in the charter party was in the following terms:-

"The act of God, the King's enemies, loss or damage from fire on board in bulk or craft, or on shore, arrest and/or restraint of princes, rulers, and people, collision, any act neglect or default whatsoever of pilot, master or crew in the management or navigation of the ship, and all and every of the dangers and accidents of the seas, canals, and rivers, and of navigation of whatever nature or kind always mutually excepted".

20

In the course of his judgment, Warrington, L.J. said (at p.573) after reading the exception clause set out above:-

"There is, therefore no express exception of loss by fire caused by negligence. The present claim is based on negligence. It appears to be well settled that in such a contract as the present the exception would not be construed so as to excuse the shipowner for loss of the nature described if caused by the negligence of himself or his servants, unless expressly so framed: Carver on Carriage by Sea ss. 14, 22; Aniger Line (1891) 1 Q.B.623; and in my opinion the same construction must be given to the clause when it is the liability of the charterers which is in question. This defence therefore fails".

30

40 In this manner, paragraph (a) of my supposed rejoinder was disposed of. Paragraph (b) was the subject of an express finding by the arbitrators. This was purely a question of fact, and could not be challenged. As a result the matter fell to be determined on the facts as found by the arbitrators upon the issue raised by paragraph (c) of my supposed rejoinder.

Two points are to be emphasised:

(1) Liability depended in the first instance

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upon a question of the construction of  
the contract.

- (2) The word "negligence" where used throughout refers to the negligence of a contracting party, which would preclude him from obtaining the protection of an exclusion clause in the contract. The meaning to be assigned to it would be the same as if it actually appeared in the contract e.g. as if the exclusion clause read "fire (other than fire caused by negligence) ..... etc."

10

I should have thought that the question which was basic to the whole problem was what meaning should be given to the word "negligence" where it is used in a contract in these circumstances but this does not appear to have been adverted to. It has, to some extent, been regarded as meaning the tort of negligence.

Bankes, L.J. stated in his judgment (at p.568) after having read the findings of the arbitrator:

20

"These findings are no doubt intended to raise the question whether the view taken, or said to have been taken, by Pollock C.B. in *Rigby v. Hewitt* (5 Ex.243) and *Greenland v. Chaplin* (5 Ex.248) or the view taken by Channell B. and Blackburn J. in *Smith v. L.& S.W.Rly. Co.* (L.R. 6 C.P. 21) is the correct one".

I regret that I find myself unable to understand how it was supposed that the findings were so intended. *Rigby v. Hewitt* (the correct reference is 5 Ex. 240) was an action brought by a passenger in an omnibus, alleging that he had been injured as a result of a collision between the omnibus in which he was travelling and another omnibus when the two vehicles were engaged in a race and collided. *Greenland v. Chaplin* (the correct reference is 5 Ex. 243) was a case in which the Plaintiff was a passenger in a steamboat and was injured by the falling of an anchor caused by the Defendant's steamboat colliding with another steamboat. *Smith v. L.& S.W. Rly. Co.* (L.R. 6 C.P. 21) is a case which is so well known that the facts do not require to be stated.

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But all these cases were cases in tort. And the supposition made by His Lordship seems necessarily to involve that the word "negligence" where used in the circumstances which I have set out, should be read as meaning "the tort of negligence".

If this is not so, I do not understand how the case proceeded as it did.

I have already drawn attention to the fact that His Lordship earlier stated that the owners' claim was for the value of the vessel. In one sense no question arose as to what damage was recoverable. If the owners were entitled to a verdict it was not disputed that they were entitled to recover the value of the vessel, presumably because that was necessarily the loss which flowed, according to the rule in *Hadley v. Baxendale* (supra), consequent upon the charterers' failure to re-deliver it.

But the real question, as I have stated, is what is the meaning to be attributed to the word "negligence" where it is used in the provision which, as a matter of construction, was implied in the charter. Prima facie I would have thought that it should be read as "careless conduct". Indeed, the exception clause itself proceeds to speak of "any act, neglect, or default whatsoever of pilot, master or crew". In that context, I would have thought it beyond doubt that the words "neglect or default" were used to describe the quality of an act, i.e. an imprudent or careless act and I find it difficult to imagine that when it is necessary to imply the word "negligence" in the same clause, in the circumstances stated, the word "neglect" should be given the third meaning assigned by Charlesworth and the word "negligence" should be given another. In any event the use of the latter word in a contract and in such a context seems utterly opposed to the idea of the tort of negligence or even a cause of action for negligence.

The other problem involved in a consideration of the decision in *In Re Polemis* is whether the tort of negligence is committed by a wrongful act which does not but is likely to cause "foreseeable" damage and does in fact cause "direct" damage, or whether it is necessary that some foreseeable damage does in fact flow from the breach of the duty which constitutes the wrongful act, whether "direct" damage is suffered or not.

There is some reason to suppose that the distinction which has been made in considering many of the cases cannot be disposed of lightly by taking refuge in the use of such expressions as that culpability is to be determined one way and that compensation is to be assessed somewhat differently.

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The classic definition of Lord Esher (then Sir William Brett) in *Heaven v. Pender* (11 Q.B.D. 503 at 507) is as follows :-

"Actionable negligence consists in the neglect of the use of ordinary care or skill towards a person to whom the Defendant owes the duty of observing ordinary care and skill, by which neglect the Plaintiff, without contributory negligence on his part, has suffered injury to his person or property".

10

Later, in *De Lievre v. Gould* ((1893) 1 Q.B. 491), Lord Esher and A.L. Smith, L.J. indicated that the doctrine laid down in *Heaven v. Pender* (supra) was limited by a notion of proximity which is not material for present considerations.

With appropriate reservations as to the danger of seeking a complete logical definition of the general principle, the statement cited was, in effect, approved in *Donoghue v. Stevenson* ((1932) A.C. 562) by Lord Atkin, at p.582, and by Lord Macmillan, at p.614, I think it may be taken as a safe and sound guide and that it has been almost universally recognised as such, right up to the present day.

20

It is important to note that this dicta refers to the Plaintiff having suffered injury by reason of the neglect of the Defendant to exercise reasonable care.

The decision in *In Re Polemis* is based upon the view that the presence or absence of a reasonable anticipation of damage determines the legal quality of the act as negligent or innocent (see per Warrington L.J. (1921) 3 K.B. at p.574). And this appears to be the view adopted in *Smith v. L.& S.W. Rly. Co.* (L.R. 6 C.P. 14), although, curiously enough Blackburn J., whose judgment has been referred to and relied upon so often, stated at p.21: -

30

"I have still some doubts whether there was any evidence that they (the Defendants) were negligent .....

40

and at p.22, he adds:-

"It can hardly be negligence not to provide against that which no one would anticipate".

The question may well then be asked whether it is possible to say that a Defendant is guilty



of negligence by failing to provide against that which no one would anticipate, merely because his act caused damage which was "direct".

Moreover, if *In Re Polemis* was correctly decided, it is difficult to understand why so many cases have been determined on the issue of "negligence or no negligence" without regard to damage which might have been considered to have been "direct".

10 Of course, this may be due in part to the fact that there is a line of cases in which it seems that there has been a different approach. For example, *Sharp v. Powell* (L.R. 7 C.P. 253) was decided only two years after *Smith v. L. & S.W.Rly. Co.* (supra) but the two cases are not easy to reconcile. Indeed, in *Sharp v. Powell*, Smith's case was not referred to in the judgments, and as far as can be judged from the report, counsel for the Plaintiff (who moved to set aside a nonsuit) referred to Smith's case as one in which the damage was the "natural and necessary consequence of the negligence" (see p.256) while counsel for the Defendant appears to have conceded that Smith's case was "a distinct authority in favour of the Plaintiff". (p.257).

20

I do not think the problem is assisted by Lord Sumner's oft-cited statement in *Weld-Blundell v. Stephens* (1920 A.C. 956, at 984) as follows:-

30 "What a defendant ought to have anticipated as a reasonable man is material when the question is whether or not he was guilty of negligence, that is, of want of due care according to the circumstances. This, however, goes to culpability, not to compensation".

40 Although his Lordship's speech has been referred to very many times, it is to be noted firstly that he expressly defined the sense in which he used the word "negligence", and secondly that the damages being discussed were consequent upon a breach of contract, and the defined use of the word "negligence" in those circumstances, if not kept firmly in mind, may lead very easily to a wrong application of the views expressed.

The real difficulty appears more clearly in recent cases, particularly *Hay (or Bourhill) v. Young* ((1943) A.C. 92) and *Woods v. Duncan* ((1946) A.C. 401).

Some of the dicta in *Hay (or Bourhill) v. Young* (supra) may be cited.

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In a speech in which he expressly reserved the question of whether In re Polemis correctly states the law, Lord Thankerton said (at p.98):-

"If, then, the test of proximity or remoteness is to be applied, I am of opinion that such a test involves that the injury must be within that which the cyclist ought to have reasonably contemplated as the area of potential danger which would arise as a result of his negligence".

10

Lord Russell of Killowen, after citing portion of Lord Macmillan's speech in Donoghue v. Stevenson ((1932) A.C. 562 at 618), to the effect that liability only arises where there is a duty to take care and where failure in that duty has caused damage, added (at p.102):-

"In my opinion, such a duty only arises towards those individuals of whom it may reasonably be anticipated that they will be affected by the act which constitutes the alleged breach".

20

It will be noted that His Lordship is describing the duty which is owed, and it appears to follow that he is of opinion that liability will only arise when a breach of such duty has caused damage. It seems likely that His Lordship was of the view that the damage caused must be within the "area of potential danger". His approval of the dissenting judgment of Sargeant, L.J. in Hambrook v. Stokes ((1925) 1 K.B. 141) is of some importance.

30

Lord Macmillan expressly doubted the correctness of the decision in In Re Polemis (at p.106) and referred to the "powerful dissent" by Sargeant L.J. in Hambrook v. Stokes (supra), at p.105. In speaking of the Plaintiff's allegations of negligence he said (at p.103):-

"To establish this, she (the Plaintiff) must show that he (the Defendant) owed her a duty of care which he failed to observe, and that, as a result of this failure of duty on his part, she suffered as she did".

40

I have difficulty in reconciling the views so expressed by their Lordships with the theory which seems to me to be implicit in the decision in In Re Polemis that damage which did not result from the breach of duty, but as a direct result if an act which, if foreseeable damage had been suffered, would have constituted a breach of such duty, can give rise to tortious liability.

50

I think it likely that Denning, L.J. had much the same difficulty in mind when he said in his judgment in *Roe v. Minister of Health* ((1954) 2 Q.B. 66 at 85) that the three questions, duty causation and remoteness run continually into one another and expressed the view that they are simply three different ways of looking at one and the same problem.

10 In *Woods v. Duncan* (1946) A.C. 401, Lord Porter, who had been counsel for the unsuccessful charterers in *In Re Polemis*, but who subsequently expressed agreement with the decision (5 Cambridge L.R. 176) said, at p.436:-

20 "Both companies then in my view were negligent in respect of this careless painting of the rear door and their failure to detect the blocking of the orifice of the testcock by a proper inspection. But negligence in failing properly to paint a ship is not necessarily negligence towards all or any of those on board her. The two companies no doubt owed a duty to all the ship's company both naval ratings and civilians, but would only be guilty of want of care towards them if the act or omission complained of would reasonably be anticipated as likely to cause them harm. No question of measure of damage arises here, as arose in *In Re Polemis & Furness Withy & Co. Ltd.* Your Lordships are concerned with the earlier question whether these Defendants were negligent towards the two men whose widows are making a claim - a question similar in character to that discussed in *Hay (or Bourhill) v. Young*".

30

40 Whilst I do not desire to suggest that it should be inferred that His Lordship receded from his previously expressed approval of *In re Polemis*, I think it clear that the separation by him of the two questions in the manner referred to raises problems which are not easy of solution. One might also be permitted to draw attention to the fact that His Lordship uses the words "negligent" and "negligence" to describe (as I understand him) what Charlesworth calls "carelessness" as well as to describe the tort of negligence.

50 On the other hand, Lord Wright, in effect, reiterated his agreement with the decision in *In re Polemis (Hay (or Bourhill) v. Young* ((1943) A.C. at 110) and support for this view is also found in several other cases, notably *Aldham v. United Dairies (London) Ltd.* ((1940) 1 K.B. 507).

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-----  
No.53.

Transcript of Judgment on Appeal.

3rd December, 1959

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To say that the problems, doubts and difficulties which I have expressed above, render it difficult for me to apply the decision in *In re Polemis* with any degree of confidence to a particular set of facts would be a grave understatement. I can only express the hope that, if not in this case, then in some other case in the near future, the subject will be pronounced upon by the House of Lords or the Privy Council in terms which, even if beyond my capacity fully to understand, will facilitate for those placed as I am, its everyday application to current problems.

10

Not without considerable trepidation, I must now proceed to endeavour to apply the decision in *In re Polemis* to the facts of this case. As I have said, the decision must be regarded by this Court as a binding authority and I shall continue to use the words "foreseeable" and "direct" as describing the types of damage to which the members of the Court referred.

20

Earlier, I have drawn attention to the lack of precision with which the word "negligence" has been used from time to time. The inadequacy of our language is also apparent in much of the discussion in which attempts have been made to define what is meant by "direct" but not "foreseeable" damage. Attempts to elaborate these expressions have at times served to confuse rather than to clarify what was meant.

In *In Re Polemis*,<sup>51</sup> Bankes, L.J., refers to the damage in question as "Damage as a direct result of the negligence", (p.572); Warrington L.J. refers to the damage as being "The direct consequence of the act", (at p.574); whilst Scrutton L.J. says that the damage is recoverable so long as it "is in fact directly traceable to the negligent act and not due to the operation of independent causes having no connection with the negligent act except that they could not avoid its results".

30

Lord Wright said (14 Mod. L.R. 393) that the gist of the decision was "put in a nutshell" by Mr. Justice Oliver Wendell Holmes, in the well-known letter written by that celebrated Judge to Sir Frederick Pollock in the following terms "the tort once established the tortfeasor takes the risk of consequences". I regret that the nut is one which I am unable to digest because it does not assist me to understand what is meant by the word "consequences". One of the few matters which emerges with clarity from the discussion of this

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complex problem is that a wrongdoer is not liable without restriction from all the harmful consequences of his wrongful act. The problem is to ascertain the extent to which the consequences are restricted. (Salmond on Torts, 12th Ed. p.726).

I have been unable to find any statement which describes what is meant by "direct" damage more clearly than the words used by Scrutton L.J. set out above.

10 Mr. Meares, in the course of his able and lucid argument, submitted that, in this case, the damage suffered could not be said to be direct if the test applied was that which I have mentioned. He contended that there were a series of improbabilities, heaped one upon the other, which resulted in the conflagration. Some of the circumstances to which he referred really formed the background to the fire. Among them were:-

1. That s.s. Corrimal was lying at the wharf.
- 20 2. That welding and similar processes were being carried out on the ship and the wharf.
3. That the wind or the tide or currents carried the oil under the wharf.
4. That oil accumulated to a depth of not less than one-sixteenth of an inch.

However, the events which immediately preceded the fire did comprise what must have been a most extraordinary and unusual combination. They were:-

- 30 1. That when a piece of cotton waste fell from the wharf, it alighted upon a piece of debris which acted as a raft.
2. That the raft floated or drifted to a position near to where welding was being carried out.
3. That a piece of molten metal fell, struck the oil soaked waste and stayed in contact with the waste for long enough to set it smouldering.
4. That, at that time, there was a wind of a suitable strength and direction to fan the smouldering waste into flame.
- 40 5. That all these events should happen one after the other.

If a logical analysis is made of this series of events, there is very strong support for the view that there were intervening circumstances of a kind which render it impossible to say that the

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conflagration was a direct result of the oil spillage.

Furthermore, in the light of available knowledge at the time the incident happened, it would have been difficult to conclude that there could have been a fire as a result of the spillage. It was the knowledge subsequently acquired when Professor Hunter conducted his experiments that established that the fire was traceable to the spillage.

10

Testing the matter by reference to Scrutton, L.J.'s definition it seems to me that the fact that the fire was traceable to the spillage is established. Two questions then remain, namely:-

1. Was it "directly" traceable?
2. Was it due to the operation of independent causes having no connection with the negligent act except that they could not avoid its results?

I assume that the matter is to be determined from a purely objective standpoint. Although I feel considerable difficulty about this aspect of the matter, I think that I am bound to answer the question of whether the fire could be traced to the spillage by having regard to the state of knowledge at the time of the trial, not at the time of the fire.

20

What then is meant by "directly" traceable?

Mr. Meares submitted that "direct" involves physical consequences which do in fact flow from the act in question, without the intervention of any extraneous occurrences and that the consequences must be "immediate". In my opinion this submission cannot be sustained.

30

It is true that the word "physical" has been used to describe the consequences of the particular act in question in *Liesbosch Dredger v. Edison* ((1933) A.C. 449), but it was used to distinguish a particular type of damage which was claimed in that case. It would be unwise to infer a general rule from language used in order to distinguish one particular type of damage from another.

40

It is also true that the word "immediate" has been used to describe the type of damage contemplated by the rule, as have such words as "natural", "necessary", "probable", "effective" and "proximate". But these words have once again been used in an attempt to illustrate the rule in relation

to particular cases. Lord Wright (14 Mod. L.R. at p.396) expressed the view that these words are often confusedly used and referred to the speech of Lord Sumner in *Weld-Blundell v. Stephens* ((1920) A.C. 956). Although that was a case in which damages were claimed in respect of a breach of contract, His Lordship's speech does much to remove many of the misconceptions which have arisen. He said (at p.983):-

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10 "My Lords, what canon is to be applied to such  
a case? It is argued that the Respondent is  
liable for any damage, which is 'a natural  
consequence' or 'a natural and necessary con-  
sequence' of his breach of duty; that the  
conduct of Mr. Hurst was 'under the circum-  
stances probable', and that Mr. Stephens was  
therefore responsible for it; that the Re-  
spondent's breach of duty was 'the effective  
cause of the litigation', and that Mr. Hurst's  
20 'intervening negligence does not affect' this  
result.

What are 'natural, probable and necessary'  
consequences? Everything that happens, hap-  
pens in the order of nature and is therefore  
'natural'. Nothing that happens by the free  
choice of a thinking man is 'necessary', ex-  
cept in the sense of predestination. To speak  
of 'probable' consequence is to throw every-  
thing upon the jury. It is tautologous to  
30 speak of 'effective' cause or to say that  
damages too remote from the cause are irre-  
coverable, for an effective cause is simply  
that which causes, and in law what is ineffec-  
tive or too remote is not a cause at all. I  
still venture to think that direct cause is  
the best expression. Proximate cause has ac-  
quired a special connotation through its use  
in reference to contracts of insurance.  
Direct cause excludes what is indirect, con-  
40 veys the essential distinction, which *causa  
causans* and *causa sine qua non* rather cum-  
brously indicate, and is consistent with the  
possibility of the concurrence of more direct  
causes than one, operating at the same time  
and leading to a common result".

In my opinion, the question of what is "direct"  
damage must be determined by a consideration of  
the circumstances as a whole rather than by a care-  
ful analysis of each link in the chain of events  
50 leading to the occurrence. The question is in

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reality one of causation and the general rule was expressed by Lord Wright in *Yorkshire Dale Steamship Co., Ltd., v. Minister of War Transport* (1942) A.C. 691 at 706 as follows :-

"This choice of the real or efficient cause from out of the whole complex of the facts must be made by applying common sense standards. Causation is to be understood as the man in the street, and not as either the scientist or the metaphysician would understand it. Cause here means what a business or seafaring man would take to be the cause without too microscopic an analysis but on a broad view".

10

This statement was adopted with approval by Starke J. in *Piro v. W. Foster & Co., Ltd.*, (68 C.L.R. 313 at 328).

Further assistance is afforded by a consideration of a passage from the speech of Lord Wright in *Summers v. Salford Corporation* (1943) A.C. 283 at 296 as follows:-

20

"It is said that her conduct was *novus actus interveniens* which broke the chain of causation between the Respondents' default and the Appellant's hurt. I do not criticise the Latin phrase or the mechanical metaphor, because both have been regularly used by the highest authorities, nor do I wish here to seek to exhaust the discussions which have centred round these and similar phrases. Whatever refinements may be imagined, I take it to be clear that, if a Plaintiff suffers damage by the Defendant's default, the damage may be directly due to that default and recoverable even though the accident and damage would not have happened but for some action of the Plaintiff, so long as his action was in the ordinary course of things and, at least generally speaking, was not blameworthy. The same may be true of the action of a third party. The Plaintiff's damage may still be the direct and natural consequence of the Defendant's default, notwithstanding the co-operation of human conduct whether of the Plaintiff or of a third party".

30

40

The question of what will amount to "independent causes" which have no connection with the negligent act is, to a large extent, interwoven with the problem of whether the damage is directly caused, and the two problems do not require

50



separate and independent consideration. I would adopt the statement contained in Salmond on Torts (12th Ed.) at p.723, as follows :-

10 "The central problem is, of course, to determine the true scope of the term 'direct' as used by the Court. It can be said to be clear that, as so used, the term direct cause cannot have its strict logical signification, as meaning the immediate or proximate cause, a cause so connected with the consequence that there is no intervening link in the chain of causation".

The questions I have posed, upon which the liability of the Appellant depends, may therefore, in my opinion, be answered together and I have come to the conclusion that the verdict of the learned trial judge was correct.

20 Notwithstanding that, if regard is had separately to each individual occurrence in the chain of events that led to this fire, each occurrence was improbable and, in one sense, improbability was heaped upon improbability, I cannot escape from the conclusion that if the ordinary man in the street had been asked, as a matter of common sense, without any detailed analysis of the circumstances, to state the cause of the fire at Mort's Dock, he would unhesitatingly have assigned such cause to spillage of oil by the Appellant's employees.

30 There is much to be said against this conclusion from the point of view of logic, and in some respects it may seem unfair, in a moral sense, that the Appellant should be required to make good the loss; but I think that the law, as it is to be deduced from the authorities, justifies this conclusion rather than that for which the Appellant contends.

40 I am of opinion that this appeal fails and that the proper order to make is that it be dismissed with costs.

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South Wales  
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No.53.

Transcript of  
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Appeal.

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- continued.

In the Supreme  
Court of New  
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Jurisdiction

No. 54.

RULE

IN THE SUPREME COURT OF NEW SOUTH WALES  
IN ADMIRALTY

No.7 of 1952

No.54.

Rule.

3rd December,  
1959.

BETWEEN:- OVERSEAS TANKSHIP (U.K.)  
LIMITED Appellant (Defendant)

- and -

MORT'S DOCK AND ENGINEERING  
CO. LIMITED Respondent (Plaintiff) 10

R U L E

THURSDAY, the third day of December, 1959.

THE APPEAL HEREIN coming on to be heard on the 20th, 21st and 22nd days of October last WHEREUPON AND UPON READING the notice of motion dated the 5th day of June 1958 and the appeal book filed herein AND UPON HEARING what was alleged by Mr. Meares of Queen's Counsel with whom were Mr. Burdekin and Mr. Bell of Counsel for the Appellant and by Mr. Taylor of Queen's Counsel with whom was Mr. Bainton of Counsel for the Respondent THIS COURT on the said 22nd day of October last DID ORDER that this appeal should stand for Judgment and the same standing in the List this day for Judgment accordingly THIS COURT DOTH ORDER that the appeal herein be and the same is hereby dismissed AND THIS COURT DOTH FURTHER ORDER that it be referred to the proper Officer of the Court to tax and certify the costs of the Respondent of and incidental to this appeal and that such costs when so taxed and certified be paid by the Appellant to the Respondent or to its Solicitors Messrs. Minter, Simpson & Co. 20 30

BY THE COURT

C.T. HERBERT

Deputy Prothonotary

No. 55.

ORDER GRANTING CONDITIONAL LEAVE TO APPEAL  
TO THE PRIVY COUNCIL

IN THE SUPREME COURT OF NEW SOUTH WALES  
IN ADMIRALTY

In the Supreme  
Court of New  
South Wales  
Admiralty  
Jurisdiction

No.55.

No.7 of 1952

BETWEEN:- OVERSEAS TANKSHIP (U.K.)  
LIMITED Appellant (Defendant)

- and -

10 MORT'S DOCK & ENGINEERING  
CO. LIMITED Respondent (Plaintiff)

Order granting  
Conditional  
Leave to Appeal  
to the Privy  
Council.

7th December,  
1959.

CONDITIONAL LEAVE TO APPEAL

The Seventeenth day of December 1959

UPON MOTION made this day on behalf of OVERSEAS  
TANKSHIP (U.K.) LIMITED WHEREUPON AND UPON READ-  
ING the notice of motion herein dated the 7th day  
of December, 1959, and the Affidavit of Colin Keith  
Yuill sworn the 7th day of December, 1959, and  
UPON HEARING Mr.B.Burdekin of Counsel IT IS OR-  
20 DERED that leave to appeal to Her Majesty in  
Council from the Judgment of this Court be and the  
said is hereby granted to OVERSEAS TANKSHIP (U.K.)  
LIMITED hereinafter called the Appellant UPON  
CONDITION that the Appellant do, within three  
months from the date hereof, give security to the  
satisfaction of the Prothonotary in the amount of  
Five hundred pounds (£500.0.0) for the due prose-  
cution of the said appeal and the payment of such  
costs as may become payable to the Respondent in  
30 the event of the Appellant not obtaining an order  
granting him final leave to appeal from the said  
Judgment or of the appeal being dismissed for non-  
prosecution or of Her Majesty in Council ordering  
the Appellant to pay the Respondent's costs of the  
said appeal, as the case may be AND UPON FURTHER  
CONDITION that the Appellant do within fourteen  
(14) days from the date hereof deposit with the  
Prothonotary the sum of Twenty-five pounds (£25.0.0)  
40 as security for and towards the costs of the prep-  
aration of the transcript record for the purposes  
of the said appeal AND UPON FURTHER CONDITION that  
the Appellant do within three months of the date  
hereof take out and proceed upon all such appoint-  
ments and take all such other steps as may be

In the Supreme  
Court of New  
South Wales  
Admiralty  
Jurisdiction

No. 55.

Order granting  
Conditional  
Leave to Appeal  
to the Privy  
Council.

7th December,  
1959  
- continued.

necessary for the purpose of settling the index to the said transcript record and enabling the Prothonotary to certify that the said index has been settled and that the conditions hereinbefore referred to have been duly performed AND UPON FURTHER CONDITION finally that the Appellant do obtain a final order of this Court granting it leave to appeal as aforesaid AND THIS COURT DOETH FURTHER ORDER that the costs of all parties of this application and of the preparation of the said transcript record and of all other proceedings hereunder and of the said final order to follow the decision of Her Majesty's Privy Council with respect to the costs of the said appeal or do abide the result of the said appeal in case the same shall stand or be dismissed for non-prosecution or be deemed so to be subject however to any orders that may be made by this Court up to and including the said final order or under any of the rules next hereinafter mentioned that is to say Rules 16, 17, 20 and 21 of the Rules of the second day of April One thousand nine hundred and nine regulating appeals from this Court to Her Majesty in Council AND THIS COURT DOETH FURTHER ORDER that the costs incurred in New South Wales payable under the terms hereof or under any order of Her Majesty's Privy Council by any party to this appeal be taxed and paid to the party to whom the same shall be payable AND THIS COURT DOETH FURTHER ORDER that so much of the said costs as become payable by the Appellant under this order or any subsequent order of the Court or any order made by Her Majesty in Council in relation to the said appeal may be paid out of any moneys paid into Court as such security as aforesaid so far as the same shall extend AND that after such payment out (if any) the balance (if any) of the said moneys be paid out of Court to the Appellant AND THIS COURT DOETH FURTHER ORDER that pending the said Appeal all proceedings under the said Judgment or otherwise in this cause be and the same are hereby stayed AND that each party is to be at liberty to restore this matter to the list upon giving two days notice thereof to the other for the purpose of obtaining any necessary rectification of this order.

BY THE COURT

C.T. HERBERT (L.S.)

Deputy Prothonotary

No. 56.

ORDER GRANTING FINAL LEAVE TO APPEAL  
TO THE PRIVY COUNCIL

In the Supreme  
Court of New  
South Wales  
Admiralty  
Jurisdiction

IN THE SUPREME COURT OF NEW SOUTH WALES  
IN ADMIRALTY

No.56.

BETWEEN:- OVERSEAS TANKSHIP (U.K.)  
LIMITED Appellant (Defendant)

Order granting  
Final Leave to  
Appeal to the  
Privy Council.

- and -

31st March,  
1960.

10

MORT'S DOCK & ENGINEERING  
CO. LIMITED Respondent (Plaintiff)

RULE GRANTING FINAL LEAVE TO APPEAL

The 31st day of March, 1960.

UPON MOTION made this day pursuant to the Notice  
of Motion of the 29th day of March, 1960, WHERE-  
UPON AND UPON READING the said Notice of Motion  
the affidavit of Colin Keith Yuill sworn on the  
30th day of March, 1960, and the Prothonotary's  
Certificate of Compliance, AND UPON HEARING what  
is alleged by Mr. B. Burdekin of Counsel for the  
Appellant and Mr. D.T. Simpson for the Respondent  
IT IS ORDERED that final leave to appeal to Her  
Majesty in Council from the judgment of this Court  
given and made herein on the Third day of December  
1959 be granted to the said Appellant and for a  
further Order that upon payment by the Appellant  
of the costs of preparation of the transcript re-  
cord and despatch thereof to England the sum of  
Twenty-five pounds (£25.0.0) deposited in Court by  
the Appellant as security for and towards the costs  
thereof to be paid out of Court to the Appellant.

20

30

BY THE COURT

FOR THE PROTHONOTARY,

(Sgd.) E.R. Stephens,

Acting Chief Clerk.

Exhibits

"J"

Tides and winds  
(from  
Meteorological  
Bureau)

29th January,  
1958.

E X H I B I T SEXHIBIT "J"TIDES AND WINDS (FROM METEOROLOGICAL BUREAU)

Telephone  
BU 2191

COMMONWEALTH OF AUSTRALIA

Meteorological Bureau,  
Observatory Park.

In reply, Please  
Quote No.56/4416.

Sydney,  
29th January, 1958.

10

Messrs. Minter, Simpson & Co.,  
Box 521 G.P.O.,  
SYDNEY.

Dear Sirs,

In answer to your DTS of 22nd January, 1958,  
the following information is supplied -

A summary of the weather conditions recorded  
at Sydney Weather Bureau for the period 29th Octo-  
ber to 1st November, 1951 is as follows :-

1951

20

October 29th -- "High cloud scattered to overcast  
6 a.m. to 6 p.m. otherwise clear,  
Dense smoke haze throughout.  
Light winds chiefly NE'ly to 9.20  
p.m. when changing to moderate  
and gusty SSE'ly "

October 30th -- "Scattered cloud before 6 a.m. and  
between 12 noon and 3 p.m. other-  
wise overcast. Light drizzle  
7.30 p.m. to end of period. Light  
to gentle N.E. to S.E. winds".

30

October 31st -- "Scattered cloud 9 a.m. to 6 p.m.  
otherwise overcast. Rain 3.50 a.m.  
to 5.45 a.m. Light to moderate  
and gusty S. to S.E. winds".

November 1st -- "Scattered cloud to 9 a.m. then  
clear. Light to gentle wind S.E.  
to S.W. to 9.30 a.m. then chiefly  
NE'ly."

The following are 3 hourly temperature and  
wind records taken at Sydney Weather Bureau for  
the period 9 p.m. on 29th October to 3 p.m. on 1st  
November, 1951 -

40

29th October, 1951 30th October, 1951 31st October, 1951 1st November, 1951

	Wind Direction and Velocity (MPH)	Temperature (°F)	Wind Direction and Velocity (MPH)	Temperature (°F)	Wind Direction and Velocity (MPH)	Temperature (°F)
3 a.m.	--	--	SE 8	61.0	SE 12	59.5
6 a.m.	--	--	ESE 5	61.1	SE 8	57.7
9 a.m.	--	--	ENE 3	64.0	SSE 11	61.7
12 Noon	--	--	NE 7	67.2	SSE 17	63.1
3 p.m.	--	--	ENE 9	68.0	SE 15	62.6
6 p.m.	--	--	E 6	64.4	SE 12	59.9
9 p.m.	Calm	68.1	ESE 7	60.3	SSE 8	59.0
12 mid-night	SSE 19	61.8	SE 7	59.7	SSE 7	57.7

533.

Yours faithfully,

H.M. TRELOAR,

A/G. DEPUTY DIRECTOR.

(H.M.TRELOAR)

Exhibits

"J"

Tides and winds  
(from  
Meteorological  
Bureau)

29th January,  
1958

- continued.

Exhibits

"K"

Smooth Log 29th  
extract showing  
11.45 commenced  
Bunkers.

EXHIBIT "K".

SMOOTH LOG 29th EXTRACT SHOWING 11.45  
COMMENCED BUNKERS.

11.45 Commenced taking bunkers, scuppers plugged.

"L"

Letter from  
Overseas Tank-  
ship (U.K.)  
Limited to  
Caltex Oil  
(Australia)  
Pty. Ltd.

16th November,  
1951.

EXHIBIT "L".

LETTER FROM OVERSEAS TANKSHIP (U.K.) LIMITED  
TO CALTEX OIL (AUSTRALIA) PTY. LTD.  
DATED 16th NOVEMBER, 1951

OVERSEAS TANKSHIP (U.K.) LIMITED  
30, OLD BURLINGTON STREET,  
LONDON, W.1.

10

Telephone  
Regent 8211

Telegrams:  
Overtuk, Piccy,  
London.

Cables:  
Overtuk,  
London.

PER AIR MAIL

16th November, 1951.

In reply please quote our Reference No.  
OTUK-214 761605/INS.

Caltex Oil (Australia) Pty. Ltd.,  
Commercial Bank Buildings,  
62, Margaret Street,  
Sydney,  
Australia.

20

Dear Sirs,

s.s. "Waggon Mound" - Oil Spillage

Further to your letters OTUK-192 and OTUK-195  
in the above matter, we would acknowledge your  
cable No.199 also regarding this incident. We note  
your comments regarding a substitute vessel for  
the ss. "Waggon Mound" second half November and  
this matter is receiving our urgent attention. We  
will advise you further in due course.

30

In the meantime, we have written Bahrein fully  
on the matter and have asked them to obtain the  
necessary statements.

We should be obliged if you would be good  
enough to advise us if the ship's personnel, or



your goodselves, advised the Harbour Authorities of the spill, or was it discovered by their own Patrol? We should also like to know if any steps were taken by the Authorities to disperse the oil safely, also if you warned the people in the vicinity of the Bunker spill.

Yours very truly,  
OVERSEAS TANKSHIP (U.K.) LIMITED  
E.J. Shearer - Managing Director.

By L.A. Smith (WAL)  
L.A. Smith - General Manager.

10

WAL/BMB  
751.2

Exhibits

"L"

Letter from  
Overseas Tank-  
ship (U.K.)  
Limited to  
Caltex Oil  
(Australia)  
Pty. Ltd.

16th November,  
1951  
- continued.

EXHIBIT "L".

COPIES LETTERS FROM CALTEX OIL (AUSTRALIA) PTY.LTD.  
TO OVERSEAS TANKSHIP (U.K.) LTD.  
DATED 2nd NOVEMBER, 1951.

"L"

Copies of 2  
Letters from  
Caltex Oil  
(Australia)  
Pty. Ltd., to  
Overseas Tank-  
ship (U.K.) Ltd.  
2nd November,  
1951.

Letter No.OTUK-192 SYDNEY, 2nd November, 1951.

20

TANKER AGENCIES -  
S.S. "WAGGON MOUND"  
OIL SPILLAGE.

Overseas Tankship (U.K.) Ltd.,  
30, Old Burlington Street,  
LONDON, W.1.

Dear Sirs,

We confirm our cable No.193 of 1.11.51 regard-  
ing bunker fuel oil which was spilled into the  
harbour at Sydney by the S.S. "Waggon Mound" on  
October 30th.

30

At the time of the incident, the vessel was  
berthed at our Ballast Point wharf and was dis-  
charging into our storage tanks ashore. At the  
same time, it was receiving bunkers from a Vacuum  
Co. oil barge moored alongside the vessel. At 4  
o'clock on the morning of October 30th, the forward  
deep tank into which the bunker fuel was being  
pumped, overflowed and a quantity of fuel was dis-  
charged into the harbour.

40

We attach hereto an abstract of the vessel's  
Log wherein you will note that it is stated a

Exhibits

"L"

Copies of 2  
Letters from  
Caltex Oil  
(Australia)  
Pty. Ltd., to  
Overseas Tank-  
ship (U.K.) Ltd.  
2nd November,  
1951  
- continued.

faulty valve was the cause of the overflow and that strong winds at the time blew the spillage into the water. No estimate of the quantity lost can be ascertained, but the amount of oil floating on the water is more than the particulars in the Log would seem to indicate.

Harbour authorities were very concerned at the incident, particularly as previous instances of this nature have caused considerable trouble, but they allowed the vessel to depart without any delay on a written authority being given by the Master for us to represent him in any proceedings which might be taken, copy of this is also attached. 10

The vessel subsequently departed for Newcastle at 11 a.m. on the same day without any undue delay.

Court proceedings were instituted by the Maritime Services Board and we were requested to appear in the local court at 10 o'clock on the morning of 1st November. As was to be expected, judgment was given against the vessel, but fortunately a minimum fine only of £25.0.0. was imposed with court costs of 10/- and professional costs of £4.4.0, in all a total of £29.14.0. to which must be added legal expenses of the Solicitor appearing on our behalf. 20

In addition to these, indications are that heavy claims for damages are to be expected from many waterfront property owners and owners of small craft. The oil has floated into many parts of the Harbour causing interruption to the boat building operation of several concerns as well as damage to their facilities which have become smeared with the oil, making it necessary for them to pay heavy penalty rates to workmen in an endeavour to clear away the oil and in the meantime causing a hold-up of their operations. 30

Large numbers of privately owned small craft have been effected by the oil and many claims in this regard also are expected, as also are they from private property owners on the waterfront. Already one claim for £100.0.0. damages from a ship-building firm has been received, and indications are that others are contemplating similar action. 40

You will appreciate that the extent of the costs resulting from this incident can be far-reaching but we will keep you advised as developments occur and we are in a better position to gauge the extent of the damages which are being claimed.

In the meantime, we have engaged the services of a Surveyor from Lloyds Agents to review all claims which might be received.

Yours very truly,  
CALTEX OIL (AUSTRALIA) PTY. LTD.

Handled by: (Signed) W.E. Field.

(Signed) J.H. Wallace. W.E. Field  
Managing Director.

WJMce/GV  
Attachs.

Letter No. OTUK-195

SYDNEY.

2nd November, 1951.

TANKER AGENCIES -  
S.S. "WAGGON MOUND"/  
OIL SPILLAGE

Overseas Tankship (U.K.) Ltd.,  
30, Old Burlington Street,  
LONDON, W.1.

Dear Sirs,

We have already given you a report in our letter OTUK-192 which followed our cable 193 of 1/11/51 - concerning the spillage of bunker fuel oil into Sydney Harbour from the s.s. "Waggon Mound".

We now wish to confirm our cable 194 of 2/11/51 in which we advised you that a fire had occurred adjacent to our Sydney Terminal.

The question of the oil spillage has received considerable publicity in the Sydney Press reports of the fire. We are attaching two copies each of cuttings from the evening papers, "The Sun" and "Daily Mirror" dated 1.11.51, and morning papers, "Sydney Morning Herald" and "Daily Telegraph" dated 2/11/51.

As indicated in our cable, we have received a letter from Morts Dock Engineering Company Limited in which they infer they will be lodging claims on us on behalf of the ship for the damage incurred. Undoubtedly we will receive similar claims from the owners of the s.s. "Corrimal".

In the meantime we have interviewed Norton Smith & Company who advise they have been instructed by the United Kingdom Mutual Steamship Assurance Association Limited to represent the Master and render him all assistance in connection with the oil spillage.

Exhibits

"L"

Copies of 2  
Letters from  
Caltex Oil  
(Australia)  
Pty. Ltd., to  
Overseas Tank-  
ship (U.K.) Ltd.

2nd November,  
1951

- continued.

Exhibits

"L"

Copies of 2  
Letters from  
Caltex Oil  
(Australia)  
Pty. Ltd., to  
Overseas Tank-  
ship (U.K.) Ltd.

2nd November,  
1951  
- continued.

We are denying liability in all cases but, as indicated in our previous letter, are having the damage insofar as the oil spillage is concerned covered by a surveyor appointed by Lloyds Agents. We are planning to have a fire loss Assessor make a thorough investigation with a view to determining just how the fire did start.

We will keep you further advised.

Yours very truly,

CAITEX OIL (AUSTRALIA) PTY. LTD. 10

Handled by:

(Signed) J.H. Wallace.

TOF/VGD.

(Signed) A.B. Gurney  
for:

W.E. Field,  
Managing Director.

"M"

List showing  
Arrivals and  
Departures of  
Ships.

EXHIBIT "M".LIST SHOWING ARRIVALS AND DEPARTURES OF SHIPS.VESSELS BERTHED AT SHEERLEGS WHARF SINCE

27th FEBRUARY 1951

NAME	ARRIVED	DEPARTED	REMARKS
s.s. "CORRIMAL"	27- 2-1951	19-11-1951	20
p.s. "CAPTAIN COOK"	20- 4-1951	23- 4-1951	
s.s. "FIONA"	1- 6-1951	13- 8-1951	
s.s. "CAP FARIFA"	17- 8-1951	23- 8-1951	
s.s. "TAMBUA"	6-10-1951	22-10-1951	
m.v. "ELMORE"	14-11-1951	14-11-1951	
s.s. "TUGGERAH"	27-11-1951	21-12-1951	
s.s. "POUL CARL"	14- 2-1952	29- 2-1952	
m.v. "ELMORE"	29- 2-1952	10- 3-1952	
s.s. "CORRIMAL"	15- 4-1952	22- 4-1952	30
s.s. "TARRA"	18- 4-1952	22- 4-1952	
s.s. "RONA"	30- 4-1952	25- 9-1952	
s.s. "TAMBUA"	23- 9-1952	1-10-1952	
s.s. "ADELONG"	13-11-1952	19-11-1952	
s.s. "MANGOLA"	28-11-1952	2- 1-1953	
m.v. "NYORA"	20- 2-1953	7- 3-1953	
m.v. "BOONAROO"	28- 3-1953	-	Newly launched.

				Exhibits
				"M"
	NAME	ARRIVED	DEPARTED	REMARKS
	s.s. "RONA"	15- 4-1953	22- 4-1953	
	Hopper "NURINEE"			
	V/83	29- 7-1953	12- 9-1953	
	m.v. "BOONAROO"	-	29- <del>8</del> -1953	for Docking
			8 <sup>e</sup>	from
	m.v. "BOONAROO"	2-10-1953	-	Docking
	m.v. "BOONAROO"	-	7-10-1953	for Sea
10	m.v. "BOONAROO"	7-10-1953	-	Trials.
	m.v. "BOONAROO"	-	12-10-1953	from Sea
	m.v. "BOONAROO"	12-10-1953	-	Trials
	m.v. "BOONAROO"	-	29-10-1953	from Sea
	m.v. "BOONAROO"	-	29-10-1953	Trials
	s.s. "TAYO"	5-11-1953	9-11-1953	Delivered
	s.s. "TAYO"	12-11-1953	13-11-1953	
	s.s. "KINDUR"	9-12-1953	11-12-1953	
20	s.s. "AYRFIELD"	23-12-1953	3- 1-1954	
	s.s. "ABERSEA"	4- 1-1954	18- 1-1954	
	s.s. "FIONA"	26- 1-1954	13- 5-1954	
	m.v. "BOONAROO"	29- 4-1954	12- 5-1954	
	s.s. "QUEBEC"	13- 5-1954	18- 5-1954	
	s.s. "CORDIAN"	2- 7-1954	5- 7-1954	
	s.s. "TAYO"	19- 7-1954	2- 9-1954	Engine repairs
	s.s. "RONA"	5- 9-1954	29-11-1954	
	s.s. "TAMBUA"	10- 9-1954	15- 9-1954	for docking
30	s.s. "RONA"	2-12-1954	8-12-1954	
		from		
		Docking		
	m.v. "BARALGA"	11-12-1954	-	Newly
				launched.
	s.s. "QUEBEC"	18- 3-1955	28- 3-1955	
	s.s. "CORDIAN"	16- 6-1955	18 <sup>e</sup> 6-1955	
	s.s. "CORDIAN"	14- 7-1955	15- 7-1955	
	m.v. "BARALGA"	-	20- 7-1955	for
				Docking
40	s.s. "CORDIAN"	27- 7-1955	29- 7-1955	
	m.v. "BARALGA"	27- 7-1955	-	from
				Docking
	s.s. "BEECH HILL"	10- 8-1955	18- 8-1955	
	m.v. "BARALGA"	-	25- 1-1956	For Sea
				Trials
	m.v. "BARALGA"	25-1-1956	-	From Sea
				Trials
	m.v. "BARALGA"	-	27- 2-1956	For final
				Docking
	m.v. "BARALGA"	9- 3-1956	-	From final
				Docking

List showing  
Arrivals and  
Departures of  
Ships

- continued.

Exhibits

"M"

List showing  
Arrivals and  
Departures  
of Ships

- continued.

NAME	ARRIVED	DEPARTED	REMARKS	
m.v. "BARALGA"	-	17- 3-1956	Delivered	
m.v. "POLYNESIE"	29- 3-1956	5- 4-1956		
s.s. "ABERSEA"	6- 4-1956	8- 4-1956		
m.v. "POLYNESIE"	9- 4-1956	16- 4-1956		
s.s. "COBARGO"	16- 4-1956	8- 5-1956		
m.v. "NOVICE DEL MAR"	12- 5-1956	19- 5-1956		
m.v. "MALEKULA"	21- 5-1956	22- 5-1956		
m.v. "BARALGA"	12- 6-1956	15- 6-1956		10
s.s. "COBARGO"	2- 7-1956	5- 7-1956		
s.s. "KURUAH"	7- 9-1956	11- 9-1956		
s.s. "WAITAKI"	6-10-1956	10-10-1956		
s.s. "BRANXTON"	10-10-1956	16-10-1956		
s.s. "CARCOOLA"	16-11-1956	19-11-1956		
s.s. "AGE"	26-11-1956	2- 1-1957		
s.s. "DALBY"	1-12-1956	-	For con- version	
s.s. "AYRFIELD"	31- 1-1957	14- 3-1957		
"DALBY"	-	14- 5-1957	For docking	20
s.s. "TAMBUA"	14- 5-1957	20- 5-1957		
s.s. "WALLARAH"	20- 7-1957	27- 7-1957		
s.s. "TAIPING"	8- 8-1957	7- 9-1957		
s.s. "WOOMERA"	7- 9-1957	8- 9-1957		
s.s. "SHANSI"	1-11-1957	2-11-1957		
Whaler "TOSHI MARU NO.6"	13-12-1957	14-12-1957		
s.s. "TAIPING"	7- 1-1958	9- 1-1958		

NO FURTHER VESSELS HAVE BERTHED AT THE  
SHEERS WHARF SINCE

30

EXHIBIT NO. 6.WICK EXPERIMENTSBURNING HESSIAN IN STILL AND OPEN AIRALL TEST PIECES SUSPENDED HALF ON OILExhibits"6"Wick  
experiments.

Conditions of Test	Oil layer thickness 1/16 inch		Oil layer thickness 1/8 inch		Oil layer thickness 1/4 inch		Oil layer thickness 3/8 inch	
	Still Air	Open Air	Still Air	Open Air	Still Air	Open Air	Still Air	Open Air
10 Size of test piece 3 in. x 1 in. soaked with oil	No	No	No	No	No	No	No	No
Size of test piece 3 in. x 3 in. soaked with oil	No	No	No	No	Yes	Yes	Yes	No
20 Size of test piece 6 in. x 6 in. soaked with oil	No	No	Yes	Yes	Yes	Yes	Yes	Yes

EXHIBIT NO. 9.RESULT OF TEST OF COTTON WASTEIGNITION BY SMOULDERING OILY COTTON WASTE(WIND VELOCITY 1.6 m.p.h.)"9"Result of test  
of Cotton Waste.

Type of Oil on Cotton Waste	Ignition with oil layer thickness 1/8 inch	Ignition with oil layer thickness 1/4 inch	Ignition with oil layer thickness 1/2 inch
	Lubricating oil, grade SAE 60	Yes	Yes
Fuel oil, flash point 170°F	Yes	Yes	Yes
Heating oil, flash point 140°F	Yes	Yes	Yes

EXHIBIT "N"

FOLIOS 29 and 30 OF ENGINE ROOM LOG

Sea Log Voy. 27

Engine Dept.

From Bahrein

Toward Sydney

Date - Oct. 29, 1951.

Exhibits

"N"

Folios 29 and 30 of Engine Room Log.

LINE	MAIN GENERATORS				MAIN PROPULSION MOTOR				MAIN TURBINE			LUB. OIL				MISCELLANEOUS	
	FIELD	MAX. STATOR TEMP. COIL POSITIONS	COOLER TEMP.	AIR COOL-ER TEMP.	MOTOR FIELD	MAX. STATOR TEMPERATURES	MAIN STEAM	EXTRAC-TION PRESS-URES	TEMPS.	GOV. PRESS	BEARING TEMPS		ECON. TEMP.				
1150	155	80	76	4525	430	450	85	87	1.2	12	122	240	285	290			
2200	125	83	90	136	125	725	L.P.	87	48	150	150	325	285	290			
18100	135	78	90	100	TEMP.		3	87		148	148	28.7	74	64			
6063	80	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	155	80	76	4525	TEMP.		3	87		148	148	28.7	74	64			
	125	83	90	136	TEMP.		3	87		148	148	28.7	74	64			
	135	78	90	100	TEMP.		3	87		148	148	28.7	74	64			
	80	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	83	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	78	78	90	100	TEMP.		3	87		148	148	28.7	74	64			
	76	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	90	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	4525	78	90	100	TEMP.		3	87		148	148	28.7	74	64			
	136	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	100	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	430	78	90	100	TEMP.		3	87		148	148	28.7	74	64			
	125	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	87.7	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	81	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	81	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	84	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	450	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	725	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	85	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	85	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	450	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	725	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	85	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	85	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	1.2	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	12	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	48	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	124	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	150	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	148	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	114	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	113	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	240	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	325	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	28.7	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	74	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	64	78	90	136	TEMP.		3	87		148	148	28.7	74	64			
	285	78	90	4525	TEMP.		3	87		148	148	28.7	74	64			
	290	78	90	136	TEMP.		3	87		148	148	28.7	74	64			

12-4 A.M.

4-8 A.M.

REMARKS:

M.C. 53944160  
F.O. 3546900  
K.W. 470800

K. SOLLIED,  
Sig. Engr.

REMARKS:

Arrival Seabuoy 07.26 M.C. 53963290  
F.O. 3548890  
K.W. 487200

Blew Boiler Tubes  
C/o to Low Suction 07.30

N. Saute,  
Sig. Engr.

Arrival at Dock 10.11 M.C. 53966520  
F.W.E. F.O. 3549340  
K.W. 488900

A.C.  
Sig. Engr.

Fuel prev. day	3486	Bbls.	Speed O.B.S.	14.31	F.W.	182
Fuel this day Arr. Seabuoy	3248	Ebbls.	Ctr. at noon		Fuel meter	
Grade of fuel	238	"	Dist.by O.B.S.	278	Prev. noon	
Lube oil noon	2336	Gals.	Dist. by eng.	298	This noon	
Boiler water analysis Ph. P.80	5.80		Slip %	7.2	Hrs. cent.	
Alk. D 14, S 14.8 Sal.	0.8 0.8		Time Hrs. 19 Min.	26	Hrs. evap.	
Chemicals- Type Amt.			Hrs.evap. S. F.		F.O.temp.at burner	
Butterworth hrs.			R.P.M.	89.0	F.O. press.	
K.W. 88000	S.H.P. 5900		R.P.D.	103860.		

B. Carey,  
Chief Engr.





Exhibits

Sea Log Voy. 27

Engine Dept.

From Sydney

Toward Newcastle

Date - Oct.30, 1951

"F"  
Folios 29 and  
30 of Engine  
Room Log  
- continued

LINE	MAIN GENERATORS							MAIN PROPULSION MOTOR				MAIN TURBINE				LUB. OIL			MISCELLANEOUS																																																		
	AMPS.	VOLTS	KWTS.	H.P.IMP.	AMPS.	VOLTS	TEMP.	MAX. STATOR TEMP. COIL POSITIONS	COOL-ER TEMP	WATER FROM- AIR TO-	K.V.A.	AIR COOL-ER TEMP.	MOTOR FIELD	MAX. STATOR TEMPERATURES	MAIN STEA. PRESS. TEMP.	EXTRAC-TION PRESS-URES	TEMP'S.	GLAND SEAL PRESS	GOV. PRESS TRIP PUMP	BEARING TEMPS			ECON. TEMP.	VACUUM	OV.BR.DIS.TEMP.	SEA	STACK																																										
																				FORWARD	CENTRE	AFT						THRUST FORWARD	AFT	INLET	OUTLET																																						
<p>8-12 A.M. Depart Dock 10.50 M.C. 53963290 F.O. 3552610 K.W. 490900</p> <p>Depart Seabuoy M.C. 53969060 F.O. 3552910 K.W. 491000</p> <p>C/o to Low Suction 12.00</p> <p>Tested Steering Gear, Telegraph, Wistle Remarks Bell Book.</p> <p>A.C. Sig. Eng'r.</p>																																																																					
<p>Fuel prev.day Dep. Sydney 9202 Bbls. Speed O.B.S.14.63 F.W.320 Tons Dep.</p> <p>Fuel this day Arr.N.Castle 9152 Bbls. Ctr. at noon Fuel meter</p> <p>Fuel Consumer 50 " Dist.by O.B.S. 61 Prev. noon</p> <p>Lube oil noon 2335 Gals. Dist.by eng. 62 This noon</p> <p>Boiler water analysis Slip % 1.6 Hrs.cent.</p> <p>Alk. Sal. Time Hrs.4 Min.10 Hrs.evap.</p> <p>Chemicals- Type Amt. Hrs.evap. S. F. F.O.temp.at burner</p> <p>Butterworth hrs. R.P.M. 86.0 F.O. press</p> <p>K.W.18000 S.H.P. 5650 R.P.D. 21520</p> <p>Arrival Sydney Seab. 3248 Bbls. Received Fr.Water 152 Tons</p> <p>Seabuoy to Dock 10 "</p> <p>Consumer at Dock 140 "</p> <p>Received Bunkers 6114 "</p> <p>Dock to Seabuoy 10 "</p> <p>Depart Seabuoy 9202 "</p> <p>Draft leaving Delays Weather</p> <p>Draft arriving</p> <p>B. Carey Chief Eng'r.</p>																																																																					
<p>12-4 P.M.</p> <table border="1"> <tr> <td>1100</td><td>2200</td><td>17100</td><td>5729</td><td>155</td><td>120</td><td>130</td><td>79</td><td>82</td><td>79</td><td>80</td><td>94</td><td>4275</td><td>138</td><td>104</td><td>420</td><td>120</td><td>88.0</td><td>81</td><td>81</td><td>84</td><td>450</td><td>730</td><td>85</td><td>3"</td><td>90</td><td>84</td><td>1.2</td><td>1.2</td><td>84</td><td>126</td><td>154</td><td>144</td><td>117</td><td>117</td><td>240</td><td>324</td><td>28.5</td><td>80</td><td>66</td><td>300</td><td>285</td> </tr> </table> <p>M.C. 53989350 F.O. 3555000 K.W. 508100</p> <p>K. Sollied, Sig. Eng'r.</p>																												1100	2200	17100	5729	155	120	130	79	82	79	80	94	4275	138	104	420	120	88.0	81	81	84	450	730	85	3"	90	84	1.2	1.2	84	126	154	144	117	117	240	324	28.5	80	66	300	285
1100	2200	17100	5729	155	120	130	79	82	79	80	94	4275	138	104	420	120	88.0	81	81	84	450	730	85	3"	90	84	1.2	1.2	84	126	154	144	117	117	240	324	28.5	80	66	300	285																												
<p>4-8 P.M. Arrival Seabuoy 16.10 M.C. 53990580 F.O. 3555160 K.W. 509000</p> <p>N.Castle</p> <p>Arrival Dock K.W. 518600 F.O. 3566020 M.C. 5399402</p> <p>Remarks Bell Book.</p> <p>N. Saute Sig. Eng'r.</p>																																																																					
<p>8-12 P.M. In Port Newcastle</p> <p>A. E. Sig. Eng'r.</p>																																																																					



EXHIBIT NO. 4.

BUNKER DELIVERY RECEIPT

FOR INVOICE NO. 422-7-co75 BLKS. (100's)-11/50

Supplying Company - VACUUM OIL COMPANY PTY. LTD.

Port of Delivery - SYDNEY

Date -- 29/10/51. 30/10/51. 19

Delivered to s/s. WAGON MOUND

For A/c of OVERSEAS TANKSHIP CORP.

Product Delivered - BUNKER FUEL OIL

Delivered by BARGE

Exhibits

"4"

Bunker Delivery Receipt.

29th October, 1951.

	1st Load Received	4.30 p.m.	1.15 a.m.	11.15 a.m.	5.30 p.m.	1.45 a.m.	Noon	7.50 p.m.	4.15 a.m.
	2nd "	11.10 a.m.	6 p.m.	A.M. Started	11.40 a.m.	6.30 p.m.	A.M. Finished	1.40 p.m.	7.25 p.m.
Barge Alongside at	3rd "	1.55 p.m.	7.45 p.m.	P.M. Pumping	2.10 p.m.	10 p.m.	P.M. Pumping	2.45 p.m.	10.45 p.m.

TANK MEASUREMENTS			1	2	3	4	
1st Load Shore	19677 78°F						
2nd Tank No. or Barge	49989 1561 48428 68°F	6th Load 54742 - 78°F	Local Measured Volume	Gross Oil Delivered in Local Measured Volume (Imp.Glns.)	Corrected Gallons	Tons (2240 LBS.)	Corrected Barrels (42 U.S. GINS.) @ 60°F.
3rd Before Pumping	19300 80°F	7th Load			(Col.1) Corrected to 60°F	(Col.2) X.S.G @ 60°F 224	(Col.2) X.0286
4th	47497 1563 45932 68°F	INCHES	Imp.Gallons				

5th After Pumping	19745 80°F		214718	213787	929.59	6114.29
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Observed Tank or Barge Temp. °F.	A.P.I. Gravity at 60°F	Flashpoint	Viscosity S.S.F.at 122°F.	Viscosity S.S.U.at 100°F	B.S.& W. %
78 68 8068 8078 68.	13.8	170	-	505	-

Remarks: Overtime incurred £..... as per supporting voucher

Specific Gravity 974 @ 60°F B.T.U. 18.609 per lb.

MASTER'S OR CHIEF ENGINEER'S CERTIFICATE

Received the above oil in good condition:-

Vessel - Wagon Mound

Owners or Operators - Overseas Tankship Corp.

By B. Craig. Title o/E.

GAUGER'S OR BARGE CAPTAIN'S CERTIFICATE

We certify that the above oil was delivered and that the contents are correct:-

Supplying Company - VACUUM OIL COMPANY PTY. LTD.

By - B.A. Cullen Ward Title - Bunkering Officer.

Exhibits

"5"

Ignition tests  
on Fuel Oil.EXHIBIT NO. 5.IGNITION TESTS ON FUEL OIL  
VARIOUS IGNITING AGENTS IN OPEN AIR.

Agent and Conditions of Test	Oil layer thick- ness	Oil layer thick- ness	Oil layer thick- ness	Oil layer thick- ness	
	1/16 inch	1/8 inch	1/4 inch	3/8 inch	
Cigarette butt, dropped from 2 feet	NO	-	-	NO	10
Cigarette butt, dropped from 6 inches	NO	-	-	NO	
Cigarette lighter, flint type, held over oil	-	-	-	NO	
Matches, safety, dropped from 6 inches	NO	-	-	NO	20
Matches, safety, placed on oil	NO	-	-	NO	
Matches, fusee, dropped from 6 inches	NO	NO	NO	NO	
Burning glass	NO	NO	NO	NO	
Spark from high vol- tage spark coil	-	-	-	NO	
Red hot coke dropped from 2 feet	NO	NO	YES	NO	30
Red hot coke dropped from 6 inches	NO	NO	NO	NO	
Fireworks dropped from 6 inches	NO	NO	NO	NO	
Fireworks held over oil	NO	YES	YES	YES	
Red hot metal from oxy.acet.torch (oil 52°F.)	-	-	-	NO	
Red hot metal from oxy.acet.torch (oil 105°F.)	-	-	-	NO	40
Direct flame from oxy.acet.torch held 6 inches above oil	NO	YES	YES	YES	

Exhibits

"10"

Test of Ignition of oily Cotton Waste Wick with metal fragments.

EXHIBIT NO. 10.

TEST OF IGNITION OF OILY COTTON WASTE WICK WITH METAL FRAGMENTS

IGNITION OF OILY COTTON WASTE WITH HOT METAL FRAGMENTS

Weight of red-hot metal gram.	Dropped from Height	Wind conditions	Result
2.3	6 ft.	Still air	Inflamed on impact
3.0	6 ft.	1.6 m.p.h.	Smouldered and in-flamed in 6 minutes
5.7	6 ft.	Still air	Inflamed on impact
13.4	6 ft.	1.6 m.p.h.	Smouldered and in-flamed in 7 minutes
24.5	6 ft.	Still air	Inflamed on impact
40.0	12 ft.	Still air	Inflamed on impact
62.0	12 ft.	Still air	Inflamed on impact

10

"12"

Tests as to ignition of oily cotton waste by Oxy-welding in still air.

EXHIBIT NO. 12.

TESTS AS TO IGNITION OF OILY COTTON WASTE BY OXY-WELDING IN STILL AIR

IGNITION OF OILY COTTON WASTE BY OXY-CUTTING IN STILL AIR

Thickness of oil layer	Height of drop	Waste Ignited	Oil layer ignited
$\frac{1}{8}$ inch	3 ft.	Yes	Yes
$\frac{1}{8}$ inch	9 ft.	Yes	Yes
$\frac{1}{8}$ inch	10 $\frac{1}{2}$ ft.	Yes	Yes
$\frac{1}{4}$ inch	3 ft.	Yes	Yes
$\frac{1}{4}$ inch	9 ft.	Yes	Yes
$\frac{1}{4}$ inch	10 $\frac{1}{2}$ ft.	Yes	Yes
$\frac{1}{8}$ inch	9 ft.	Yes	Yes

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EXHIBIT NO. 13.

TESTS AS TO IGNITION OF DRY AND OILY COTTON WASTE  
BY OXY-WELDING IN WIND VELOCITY 11 m.p.h.

IGNITION OF DRY AND OILY COTTON WASTE BY  
OXY-CUTTING IN A WIND VELOCITY 11 m.p.h.

Exhibits"13"

Tests as to  
 Ignition of  
 dry and oily  
 Cotton waste  
 by oxy-welding  
 in wind  
 velocity  
 11 m.p.h.

	Type of Cotton Waste	Weight of cotton waste test piece	Height of drop	Waste ignited	Oil ignited
10	Dry	20 grams	3 ft.	Yes	Yes
	Dry	40 "	3 "	Yes	Yes
	Dry	80 "	3 "	Yes	Yes
	Dry	20 "	9 "	Yes	Yes
	Dry	40 "	9 "	Yes	Yes
	Dry	80 "	9 "	Yes	Yes
20	Oily	20 grams	3 ft.	Yes	Yes
	Oily	40 "	3 "	Yes	Yes
	Oily	80 "	3 "	Yes	Yes
	Oily	20 "	9 "	Yes	Yes
	Oily	40 "	9 "	Yes	Yes
	Oily	80 "	9 "	Yes	Yes

Exhibits

"14"

Tests as to ignition of dry and oily cotton waste by Oxy-welding 13'2" above.

EXHIBIT NO. 14.TESTS AS TO IGNITION OF DRY AND OILY COTTON WASTE BY OXY-WELDING 13'2" ABOVEIGNITION BY OXY-CUTTING 13 FEET 2 INCHES ABOVE DRY AND OILY COTTON WASTE

Time from start of oxy-cutting to ignition of waste in flames

Wind Velocity

m.p.h.	Wt. of waste - 20 grams		Wt. of waste - 40 grams		Wt. of waste - 80 grams		10
	Dry	Oily	Dry	Oily	Dry	Oily	
4.7	Not tried	Not tried	15 secs.	3 secs.	Not tried	Not tried	
5.5	55 secs.	15 secs.	25 secs.	6 secs.	Not tried	Not tried	
11.5	8 secs.	40 secs.	29 secs.	18 secs.	15 secs.	On impact	
14.0	Not tried	Not tried	33 secs.	17 secs.	Not tried	Not tried	20

"15"

Ignitions of dry cotton waste dropping of metal 30'6"

EXHIBIT NO. 15.IGNITIONS OF DRY COTTON WASTE DROPPING OF METAL 30'6".IGNITION OF DRY COTTON WASTE

Wind velocity - 0-1.6 m.p.h.  
Height of drop - 30ft. 6 ins.  
Area of waste exposed - that of a circle 7 $\frac{1}{4}$  inches in diameter.

Weight of cotton waste test piece	Time to ignite	Remarks	30
20 grams	-	Did not ignite in 180 secs.	
40 "	7 seconds	Smouldered then inflamed	
40 "	8 "	Smouldered	
40 "	37 "	Smouldered then inflamed	
40 "	45 "	Smouldered	
40 "	70 "	"	
40 "	10 "	Smouldered then inflamed	



Weight of cotton waste test piece	Time to ignite	Remarks
40 grams	12 seconds	Smouldered then inflamed.
40 "	80 "	Smouldered
40 "	65 "	"
40 "	95 "	"
80 "	53 "	"

Exhibits

"15"

Ignitions of dry cotton waste dropping of metal 30'6"  
- continued.

10

EXHIBIT NO. 16.

IGNITIONS OF DRY COTTON WASTE WIND 1.6 m.p.h.

IGNITION OF OILY COTTON WASTE

Wind velocity - 0-1.6 m.p.h.  
Height of drop - 30ft. 6 ins.  
Area of Waste exposed - That of a circle 7½ inches in diameter.  
Oil used on waste - fuel oil flash point 170° Pensky Marten and 220°F Cleveland open cup.

"16"

Ignitions of dry cotton waste (wind 1.6 m.p.h.)

20

Weight of Cotton Waste test piece	Weight of oil used	Time of ignite	Remarks
20 grams	12 grams	8 seconds	Inflamed
40 "	12 "	12 "	"
40 "	12 "	4 "	"
40 "	12 "	20 "	"
40 "	12 "	12 "	"
40 "	12 "	8 "	"
40 "	12 "	27 "	"
40 "	12 "	27 "	"
40 "	12 "	60 "	"
40 "	12 "	22 "	"
40 "	12 "	12 "	"
80 "	12 "	9 "	"

30

Exhibits

"17"

Seawater  
temperatures  
at Fort Denison.

EXHIBIT NO. 17.SEAWATER TEMPERATURES AT FORT DENISON.

Telephone  
BU 2191

COMMONWEALTH OF AUSTRALIA,

Meteorological Bureau,  
Observatory Park.  
Sydney,

In Reply,  
Please Quote  
No. 53/3288.

17th August, 1954.

Messrs. Norton, Smith & Co.,  
Box 1629, G.P.O.,  
SYDNEY.

10

Dear Sirs,

In reply to your letter 2/Mc of 13th August,  
the following information is given :-

Fort Denison Sea Water Temperatures

<u>Month</u>	<u>Average</u> <u>(Over 75</u> <u>years)</u>	<u>Highest Monthly</u> <u>Average</u>	<u>Lowest Monthly</u> <u>Average</u>
October	63.7°F.	67.2°F. in 1889	60.8°F. in 1905
November	67.1°F.	72.7°F. in 1908	63.6°F. in 1880

Yours faithfully,

20

C.J. Wiesner

A/G. DEPUTY DIRECTOR.

(C.J. WIESNER)

551.

EXHIBIT NO. 18.

HOURLY WIND VELOCITY 29th OCTOBER TO 1st NOVEMBER  
1951

Telephones  
BU 2191

COMMONWEALTH OF AUSTRALIA  
STATEMENT NO. 43

Meteorological Bureau,  
Observatory Park,  
Sydney.

In Reply,  
Please Quote  
No. 56/4416.

10

12th March, 1958.

CERTIFIED STATEMENT OF AVERAGE HOURLY WIND  
DIRECTION AND VELOCITY FOR THE PERIOD 29th  
OCTOBER TO 1st NOVEMBER, 1951 RECORDED AT  
SYDNEY WEATHER BUREAU

The following average hourly wind direction  
and velocity was recorded at Sydney Weather Bureau:

(The wind conditions are averaged for the half  
hour preceding and the half hour following the  
time stated and the velocity is in miles per hour).

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Exhibits

"18"

Hourly Wind  
Velocity 29th  
October to  
1st November,  
1951.

Exhibits

"18"

Hourly Wind Velocity  
29th October to 1st November, 1951  
- continued.

552.

1951

TIME	29th October		30th October		31st October		1st November	
	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity
1 a.m.	N	1	S.S.E.	15	S.E.	9	S.S.E.	6
2 a.m.	Calm		S.E.	12	S.E.	10	S.S.E.	6
3 a.m.	Calm		S.E.	8	S.E.	12	S.S.E.	5
4 a.m.	Calm		S.E.	5	S.E.	8	S.	4
5 a.m.	Calm		S.E.	4	S.E.	7	S.W.	3
6 a.m.	W.N.W.	1	E.S.E.	5	S.	8	S.W.W.	3
7 a.m.	Calm		E.S.E.	5	S.	6	W.S.W.	4
8 a.m.	W.	1	E.S.E.	4	S.S.E.	8	W.S.W.	5
9 a.m.	N.E.	1	E.N.E.	3	S.S.E.	11	S.W.	3
10 a.m.	E.N.E.	5	E.N.E.	4	S.S.E.	13	N.W.W.	4
11 a.m.	E.N.E.	6	E.N.E.	5	S.S.E.	16	W.N.W.	3
12 Noon	E.N.E.	5	E.N.E.	7	S.S.E.	17	N.E.	9
1 p.m.	N.E.	4	E.N.E.	9	S.S.E.	16	N.E.	11
2 p.m.	N.E.	9	E.N.E.	9	S.S.E.	16	N.E.	10
3 p.m.	N.E.	5	E.N.E.	9	S.S.E.	14	N.E.	11
4 p.m.	E.N.E.	7	E.N.E.	9	S.E.	15	N.N.E.	10
5 p.m.	E.N.E.	7	E.N.E.	9	S.S.E.	15	N.N.E.	10
6 p.m.	E.N.E.	5	E.N.E.	6	S.E.	12	N.E.	8
7 p.m.	E.N.E.	2	E.S.E.	6	S.S.E.	12	N.E.	5
8 p.m.	E.N.E.	2	E.S.E.	6	S.S.E.	9	N.E.	4
9 p.m.	Calm		E.S.E.	7	S.S.E.	7	N.W.	2
10 p.m.	S.S.E.	19	S.E.	5	S.S.E.	10	N.N.W.	1
11 p.m.	S.S.E.	19	S.E.	8	S.S.E.	8	Calm	
12 midnight	S.S.E.	19	S.E.	7	S.S.E.	7	Calm	

I hereby certify that this statement of average hourly wind direction and velocity for the period of 29th October to 1st November, 1951 recorded at Sydney Weather Bureau, is a true copy of the official records in my custody.

Messrs. Norton Smith & Co.,  
39, Hunter St.,  
SYDNEY.

H.M. Treloar.  
A/G. DEPUTY DIRECTOR.  
(H.M. TRELOAR).





ON APPEAL  
FROM THE SUPREME COURT OF NEW SOUTH WALES  
ADMIRALTY JURISDICTION NO.7 of 1952

B E T W E E N

OVERSEAS TANKSHIP U.K. LIMITED  
(Defendant) .. .. Appellant

- and -

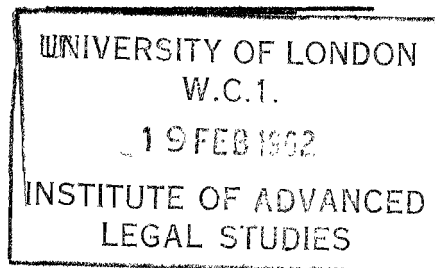
MORTS DOCK & ENGINEERING CO.  
LIMITED (Plaintiff) .. .. Respondent

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RECORD OF PROCEEDINGS

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VOLUME II  
(Pages 213 to 552)



63637

WILLIAM A. CRUMP & SON,  
2 & 3, Crosby Square,  
Bishopsgate, E.C.3.  
Solicitors for the Appellant.

LIGHT & FULTON,  
24, John Street,  
Bedford Row, W.C.1.  
Solicitors for the Respondent.