

U.S. Department
of Homeland
Security



United States
Coast Guard

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United States Coast Guard
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5890
January 27, 2012

VIA EMAIL: [REDACTED]@kyl.com

IMC Shipping Co. Pte. Ltd, *et al.*
c/o Keesal, Young & Logan
Attn: [REDACTED]
1029 West Third Avenue, Suite 650
Anchorage, Alaska 99501-1954

Re: Claim Number J05003-001

Dear [REDACTED]:

On or about December 10, 2007, the National Pollution Funds Center (NPFC) received a claim from your clients, IMC Shipping Co. Pte. Ltd, *et al.*, asserting their entitlement to a limit of liability under the Oil Pollution Act of 1990, 33 U.S.C. §2701, *et seq.* (OPA), for OPA removal costs and damages resulting from the December 8, 2004, M/V SELENDANG AYU oil spill incident off Spray Cape on Unalaska Island, Alaska. Your clients concurrently claimed a sum certain of removal costs and/or damages incurred as a result of the incident in excess of the asserted limit of liability of \$23,853,000.00 totaling \$148,651,185.13

NPFC has reviewed the available evidence, and has determined (encl (1)) that your clients are entitled to a limit of liability under OPA 33 U.S.C. § 2704(a)(1), based on the size of the M/V SELENDANG AYU (39,755 gross tons), of \$23,853,000.00. We are proceeding to adjudicate the amount claimed and will consider the supporting documentation provided. If you have any additional documentation or information that you want considered you should provide it within 30 days. You may receive further correspondence requesting additional information or documentation as the claims manager, [REDACTED] or the Natural Resource Damage Division Chief, [REDACTED] deem necessary to complete the adjudication.

If you have any questions or would like to discuss the matter, you may contact me at the above address or by phone at [REDACTED].

Sincerely,

[REDACTED]

Chief, Claims Adjudication Division

Encl: (1) Claim Determination/Summary
(2) Alan Stanley report dated November 30, 2010

CLAIM SUMMARY / DETERMINATION FORM

Date	: January 20, 2012
Claim Number	: J05003-001
Claimant	: IMC Shipping Co. Pte. Ltd. et al
Type of Claimant	: Corporate
Type of Claim	: <u>Limit of Liability</u>
Claim Manager	: [REDACTED]

I. INCIDENT

The M/V SELENDANG AYU (the vessel) was on a voyage from Seattle to China when, on the morning of December 6, 2004¹ while operating in adverse heavy weather conditions, the crew shut down the main engine as a result of a casualty to the No. 3 cylinder. The crew initially intended to repair the cylinder by changing the liner but determined to only isolate the cylinder. After some hours spent isolating the cylinder, the crew could not restart the engine. It was then decided to renew the piston rings in the No. 6 cylinder, which required removal of the cylinder head. While attempting to renew the piston rings, the vessel drifted toward Unalaska Island and eventually grounded on December 8 on a rocky shelf on the north shore of Unalaska Island, northeast of Spray Cape. The grounding ruptured the vessel's bottom tanks, releasing approximately 330,000 gallons² of bunkers into the waters off Unalaska Island.

II. CLAIMANT AND THE CLAIM

Claimant

The claimants are the OPA responsible parties and their insurers. Ayu Navigation Sdn Bhd was the owner of the vessel and IMC Shipping Co. Pte. Ltd. was the operator of the vessel. Sveriges Angfartygs Assurans Forening (The Swedish Club), the members of the International Group of Protection and Indemnity Clubs ("International Group"), and the International Group's re-insurers were their subrogated underwriters.

Claim

The claimants assert that the responsible parties are entitled to a limitation of their OPA liability for removal costs and damages. They seek reimbursement of removal costs and damages exceeding the applicable limit on liability.

¹ See, Claimant Submission, Attachment 24, Government's Videotape Deposition of Kailash B. Singh Vol. I, 00074.

² See, Claimant's submission letter, page 3, paragraph 3.

The vessel was a 39,755 gross ton dry cargo ship. At the time of the incident the applicable statutory limit on liability was \$600/gross ton or \$500,000, whichever is greater.³ Accordingly, 39,755 gross tons X \$600/gross ton = \$23,853,000. Therefore, if claimants are entitled to limit their liability the amount of that liability would be \$23,853,000. According to its December 6, 2007, submission letter claimants state they incurred removal costs and damages approximating \$148,651,185.13 or \$124,798.13 in excess of their liability.

The measurement of Oil Pollution Act (OPA) compensable costs are not assessed in this limit of liability analysis.

III. FACTS

The Vessel, the Route and the Weather

The vessel, operating on a time charter⁴ from Seattle to China, departed Seattle in the evening of November 28, 2004. The charter party warranted that on the day of delivery the engine speed was about 13.5 knots at 86 rpm's in laden condition with good weather conditions.⁵

The charterer hired Ocean Routes MARINCOM to provide routing and weather information to the SELENDANG AYU during her Seattle to China voyage.⁶ Typically the weather reports forecasted conditions between two and five days ahead of time with updates every 48 hours unless conditions worsened; then updates would come sooner.⁷ The Master asked for two alternate routes from Seattle to Xiamen, China, while transiting to Seattle on November 21, 2004.⁸ He knew that he was not obligated to follow the suggested routes.⁹ In the end he did follow the suggested route, which was from Seattle, through the Gulf of Alaska on a Great Circle route through the Unimak Pass into the Bering Sea. The vessel would then continue past Attu Island, Alaska, to Erimo-Misaki and then Rhumb line via the Tsugaru Strait to Xiamen, China.¹⁰

In a December 5, 2004 email¹¹, the Master notified IMC that taking their current route through Unimak Pass and into the Bering Sea would violate the terms of the charter party, which provided that '[T]he vessel shall be employed in such lawful trades between safe ports

³ The current limits on liability with respect to a vessel of less than 3,000 gross tons is \$950/gross tons or \$800,000, whichever is greater.

⁴ Time Charter dated January 1, 1998, between Ayu Navigation Sdn Bhd and IMC Transworld Pte Ltd., IMC, 503276.

⁵ Bates IMC 503283-508285 Time Charter Ricer Clause 28a. If the weather was more than Force four (winds approx. 15kts) on the Beaufort scale, the vessel could operate at lower speeds. Claimant's submission, Attachment 24, Vol. I, Videotape deposition of [REDACTED], 00063-00064

⁶ See, Claimant's submission, GOVT's videotape deposition of [REDACTED] 0036.

⁷ See, Claimant's submission, GOVT's videotape deposition of [REDACTED] 00806-00807.

⁸ See, Bates USA 012807; SELENDANG AYU email to MARINCOMWX dated November 21, 2004.

⁹ See, Claimant's submission, GOVT's videotape deposition of [REDACTED] 0038.

¹⁰ See, Bates USA 012785; SELENDANG AYU email to MARINCOMWX dated December 2, 2004.

¹¹ See, SELENDANG AYU email dated December 5, 2004 to IMC; Bates IMC 00160.

and places within *trading within AITW*.. but charterers' option to break such limits – with owners prior consent which is not unreasonably withheld – against their paying the additional insurance premium paid by owners according to their underwriters' tariff...as the Charterers or their agents shall direct.”¹² [REDACTED] IMC, agreed and estimated the steaming period for the Bering Sea transit is about 3.3 days and the cost would be approximately \$10,000.¹³ The insurance department at IMC confirmed the Bering Sea transit required additional insurance and agreed to arrange coverage with the underwriters for this transit.¹⁴

The weather began to deteriorate and the vessel began rolling and pitching as it passed the Straits of Juan de Fuca on November 29, 2004. The vessel's speed ranged from 5.2 knots to 10.7 knots.¹⁵ By December 2nd the wind was at Force 11 (56-63 knots) on the Beaufort scale and at Force 8 (34-40 knots) on December 5 when the vessel arrived at Unimak Pass.¹⁶ On December 3, 2004, the vessel's speed was 3 knots at 77 rpm due to the heavy weather.¹⁷ On December 7th winds were out of the west at Force 8 gusting to 9 (34-47 knots) on the Beaufort scale.¹⁸ The weather improved slightly to Force 7-8 (27-40 knots) while the vessel was riding on both anchors¹⁹, but did not improve from this time until the vessel grounded on December 8, 2004 at 1705 Alaska Standard Time (AST).

The Seattle Bunkers

Upon arrival in Seattle, the vessel was loaded with approximately 60,200 metric tons of soybean cargo²⁰ and 1000 tons of IFO 380 cSt. fuel in the number 2, 3, and 4 fuel tanks.²¹ This fuel, available worldwide and successfully burned in marine two-stroke diesel engines, is approximately half the cost of marine diesel oil, which is a much higher grade of fuel oil.²² The Seattle bunkers had a high level of micro carbon residues (MCR) and density, although both were within an acceptable range. The fuel analysis report,²³ received on December 3, 2004,²⁴ warned against operating the vessel at reduced speed for long periods of time and recommended that two purifiers be operated to treat the fuel oil.²⁵

¹² American Institute lists ports or places requiring additional insurance if a vessel transits those places. The American Institute of Trade Warranties, No. 7: “Warranted no Bering Sea, no east Asian waters north of 46° N. Lat. and no port or place in Siberia except Vladivostok and/or Nakhodka.”

¹³ See, [REDACTED] email dated December 06, 2004, Bates USA 11086.

¹⁴ See, Claimant's Submission, Attachment 18, email 02 dated December 6, 2004; Bates IMC 00176.

¹⁵ See, Claimant's submission letter, page 21-22.

¹⁶ See, Claimant's submission, deposition of Kailash Singh, Vol.3, 00813.

¹⁷ See, SELENDANG AYU email dated December 3, 2004 to IMC; Bates IMC 00147.

¹⁸ See, SELENDANG AYU email dated December 8, 2004, 7:55 AM.

¹⁹ See, SELENDANG AYU Position Update 20 email dated December 9, 2004, 9:59 AM; Bates IMC 00269.

²⁰ See, Bates USA 012792; email from SELENDANG AYU dated November 29, 2004.

²¹ See, Claimant submission, attachment 20, page 2, number 8.

²² See, JSL Marine Associates report dated 30 November 2010, page 22, 7.2.

²³ This report contains information regarding the chemical contents of the fuel, its grade and any limitations on use of the fuel. Under the MCR comments of the analysis, it was noted that the carbon formation tendency increases with the level of MCR and it advised to avoid extended periods of reduced speed operation when using this fuel. In addition the analysis noted that the SELENDANG AYU operates on single centrifuge mode and the fuel density was near the maximum capability for operation in a conventional centrifuge.

²⁴ See, IMC Bates 00151-00153 Email from [REDACTED] dated December 03, 2004 with attached Maritech Fuel Quality Report.

²⁵ Three fuel analysis reports, dated December 3, 2004, September 21, 2004, and February 27, 2004,

The vessel operated on 380 cSt fuel on the trip from Singapore to Seattle and Seattle enroute to Xiamen, China.²⁶ The Seattle fuel analysis report issued by Maritech states that Maritech's records show the SELENDANG AYU operated on single centrifuge mode (one purifier operating in clarifier mode). The report recommends that if the vessel has a purifier on standby with piping that allows parallel operation, it should run both clarifiers in parallel as clarifiers in "emergency mode" while using this fuel.²⁷ During much of the trip from Singapore to Seattle and then Seattle to China, one of the purifiers was inoperative.²⁸ Therefore, even if it was possible to run two clarifiers in parallel, the lack of operational clarifiers would have prevented this.

The Master immediately began using the Seattle bunkers when the vessel departed Seattle on November 28, 2004.²⁹ The Master decided to use the bunkers from the number 2 center tank in order to maintain an even keel because there was a draft restriction at the vessel's discharge point in China.³⁰ The Master received the Seattle fuel analysis report via e-mail on December 3, 2004.

Maintenance Issues Prior to the Incident³¹

Engine's Speed

Since at least September 2004 the engine was suffering from high scavenge temperatures, high exhaust temperatures; it could not achieve full power without exceeding the normal parameters for the engine. There could have been problems with the fuel pumps and/or the fuel valves since April 2004, and probably earlier.³² While the crew and IMC made efforts to identify and solve the problem there is no evidence that the problem was permanently resolved.³³

IMC was pressuring the Master to give more speed in order to save time and costs. On August 13, 2004, prior to the Seattle to China voyage, [REDACTED] IMC, emailed the Master ([REDACTED]), writing that due to very high offhire costs and charter rates, management is

recommended the use of two purifiers but this advice was ignored on all three occasions.

²⁶ See, IMC Bates 504038-504040 email from [REDACTED] dated September 21, 2004 and IMC Bates 00151-00153 email from [REDACTED] dated December 03, 2004 with attached Maritech Fuel Quality Report.

²⁷ See, IMC Bates 00151-00153 email from [REDACTED] dated December 03, 2004 with attached Maritech Fuel Quality Report.

²⁸ See, Govt's Videotape Deposition of [REDACTED] 00056 and Keesal, Young & Logan letter dated December 4, 2008, page 5-6; answer to NPFC question 7.

²⁹ See, Claimant submission, attachment 20, page 3, number 9.

³⁰ See, Claimant submission, attachment 20, page 3, number 9.

³¹ The Department of Justice press release noted that IMC Shipping Co. Pte. Ltd. pled guilty in federal court in Alaska to two violations of the Refuse Act for the illegal discharge of oil and soy beans and one violation of the Migratory Bird Treaty Act for killing thousands of migratory birds that resulted from the grounding of the M/V SELENDANG AYU. IMC was sentenced to pay a criminal penalty of \$10 million and to three years' probation that included an audit of IMC's maintenance program. (Department of Justice Release #07-644 dated August 22, 2007)

³² See, JSL Marine Associates report dated 30 November 2010, Section 5.30-32.

³³ This fact conflicts with Claimants' argument that the engineering staff reviewed parameters, evaluated abnormal parameters, and forwarded performance reports to IMC for review by the technical staff.

very sensitive to any off hires and is pursuing the aim of zero downtime very seriously.³⁴ On October 21, 2004, [REDACTED] emailed [REDACTED] to check the load on the engine and to give more speed if possible, noting that in case of poor average speed, there will be a speed and fuel claim against them.³⁵ On October 28, 2004, [REDACTED] emailed [REDACTED] stating that although engine revolutions are 86 rpms (the standard cruising rpm for the vessel), the vessel was making poor speed. His email went on to remind [REDACTED] that, as explained earlier, management is highly sensitive to off hires of any sort and they are likely to end up with a speed claim against them. He then asked the Master to make all efforts to bring up the speed.³⁶

The Master sent noon reports to IMC, who monitored them. IMC kept reminding him that he needed to improve the vessel's average speed. [REDACTED] stated that he raised the rpm's to ensure that they met the requirements of the charter party as far as fuel and speed were concerned.³⁷ He also stated that he received messages from the shipping company during the trip from Seattle to China stating the vessel's speed was too low and fuel consumption was too high.³⁸ The Master received such an e-mail from [REDACTED] on December 8, 2004.³⁹

Pneumatic Control System

The pneumatic control system translates the maneuvering orders (start, stop, ahead and astern) and speed settings to the main engine components. In October 2001, MAN B&W published a service letter titled, "Insufficient Maintenance to Pneumatic Control System." The service letter recommended that the control system, along with the air supply for the system, be tested regularly under controlled conditions and that its components should be overhauled at least every two years. IMC received the letter; however, there is no evidence in the record reflecting that IMC implemented these new recommendations, either by letter or in the vessel's planned maintenance program, BV ORCA. Nor is there evidence that IMC tested and overhauled the components of the system.

After the MAN B&W service letter was published and distributed in 2001, the SELENDANG AYU experienced several main engine problems related to the pneumatic control system:

- March 7, 2002, the SELENDANG AYU's engine would not start. Control air valves 10 and 11 were found to be leaking profusely and the piston in valve 38 was seized. After these valves were overhauled, the engine started and maneuvered correctly.

³⁴ See, IMC email to SELENDANG AYU dated August 13, 2004; Bates IMC 503948.

³⁵ See, IMC email to SELENDANG AYU dated October 21, 2004; Bates IMC 504114.

³⁶ See, IMC email to SELENDANG AYU dated October 28, 2004; Bates IMC 504144.

³⁷ See, Gov't Videotape Deposition of [REDACTED], Vol. II; 00567.

³⁸ See, Gov't Videotape Deposition of [REDACTED], Vol. II; 00580.

³⁹ There is evidence that the Master felt the IMC pressure to increase speed because he "pocketed miles," inaccurately reported the vessel's position to IMC and logged false positions into the vessel's official log book in order to falsely reflect that the vessel speed was maintained at 13.5 knots. The engineers onboard the SELENDANG AYU also used a system known as "sleeve oil", which allowed them to adjust the amount of bunkers consumed on a trip each day in much the same fashion as "pocket miles" were used. The Master states that this was an industry practice and his company, IMC, was aware of this.

- April 3, 2002, erratic functioning of the reducing air valves for the main engine control air was reported by the vessel.
- August 14, 2002, the SELENDANG AYU reported to IMC that they made two unsuccessful attempts to start the main engine and re-anchored in port due to the problem. Control air valves were suspected, but no follow-up report to IMC was found in the record.
- January 26, 2004, main engine controls were tested from the control room and emergency station. After changing from the emergency station back to the control room, the engine ran astern, but not ahead. IMC emailed the vessel, requesting a description of the fault and work done to solve the problem. There is no response to the IMC request in the record.
- March 7, 2004, the main engine would not start astern on bridge control or engine room control. Following this incident, IMC required SELENDANG AYU to overhaul the turning gear blocking device (an interlock in the control air system) at six month intervals and to record the maintenance in the BV ORCA⁴⁰. Maintenance to the air start controller is also included in BV ORCA, but BV ORCA does not contain maintenance records to any of the other components of the control air system, which include the main engine control air dryer, filter system and pneumatic system.

Fuel Valves

During 2004, it was necessary to change fuel valves and exhaust valves more often than required in the planned maintenance system.⁴¹ Either the fuel valves were not properly overhauled, there were problems with the fuel treatment, or a combination of both.⁴² During 2004, cylinder No. 3 had four fuel valves changed and cylinder No. 6 had five fuel valves changed.⁴³ Except for cylinder No. 5, on average, the fuel valves were being changed every 2000 hours.⁴⁴

Fuel Oil Purifiers

On November 27, 2004, while the SELENDANG AYU was in Seattle, an Alfa Laval technical representative was called to inspect the #2 purifier that would not close properly.⁴⁵ The technical report identified several problems. Most notably, the disc stack did not have enough discs installed and the spindle bearings were in very poor condition. The technician states that the unit needs to be overhauled with new bearings and seals. He discovered that the shaft bearing was in poor condition; however, for an unknown reason it was not renewed.⁴⁶

During his evaluation of the purifier and questioning/training of the engine room crew, the Alfa Laval technician found that the crew had been disassembling the separator by standing

⁴⁰ BV ORCA is the vessel's maintenance program.

⁴¹ BV ORCA and MAN B&W's Instruction Manual call for replacement of fuel valves every 4,000 hours.

⁴² See, JSL Marine Associates report dated 30 November 2010, Section 5.14.

⁴³ In comparison, cylinder No. 5 needed only one fuel valve changed all year.

⁴⁴ See, JSL Marine Associates report dated 30 November 2010, Section 5.14.

⁴⁵ See, Claimant submission, attachment 22.

⁴⁶ See, Alfa Laval Field Service Report dated 11/27/04; Bates IMC 506154.

on the bowl assembly to keep the special tool in place while another engineer would hit it with an 8 pound sledge hammer.⁴⁷

The Alfa Laval technician stated that since the purifier was always very hard to disassemble in the past, he believes that the previous crew had removed a few discs to make the unit easier to disassemble. The Chief Engineer informed the technical representative that he did not have any discs onboard.⁴⁸ It is unknown whether the additional discs needed for proper operation were ever installed.

The Alfa Laval technician operationally tested the purifier, which ran well except for minor to moderate vibrations in the bowl caused by the worn spindle bearings and the lack of compression in the disc stack.⁴⁹ Once underway from Seattle to China, the #2 fuel oil purifier was placed in operation. On the "Weekly Work Done" report dated 11/29/04-12/05/04, the #2 fuel oil purifier was stopped and checked because of heavy vibration. The vertical shaft bearing was worn out. The purifier was opened and a broken bearing was found. The bearing was renewed, run successfully and put back into use.⁵⁰

Installation of the Homogenizer

A homogenizer was installed at the shipyard dry docking in January/February 2003. The claimants' state that the homogenizer was installed based on the manufacturer's recommendations. It was installed before the purifier. Thus, it circulated oil in the settling tank, homogenizing the oil before it passed through the purifiers.⁵¹

The MAN B&W operational manual, Edition 40 (1993), section 705.06-40, 1.4, which was in effect at the time of the incident, states that a homogenizer may be installed in the fuel oil system to homogenize possible water and sludge still present in the fuel *after* centrifuging (passing through the purifiers).⁵² While the engine manufacturer states that installing a homogenizer is optional, if one is installed it must be placed after the purifier. The homogenizer was incorrectly installed at the shipyard in accordance with the MAN B&W engine manual.

Despite the homogenizer manufacturer's recommendation the homogenizer should have been installed after the purifier because if the fuel is not purified before going through a homogenizer, harmful elements in the fuel such as abrasive catalytic fines enter into the engine in an amount that may damage the engine and fuel system components.⁵³ Installing the homogenizer before the fuel purifier allows contaminants, particularly aluminum and

⁴⁷ See, Alfa Laval Field Service Report dated 11/27/04 – Note 1; Bates IMC 506154.

⁴⁸ See, Alfa Laval Field Service Report dated 11/27/04 – Note 2; Bates IMC 506154.

⁴⁹ See, Alfa Laval Field Service Report dated 11/27/04; Bates IMC 506154.

⁵⁰ See, Claimant Submission, Attachment 12 - Weekly Work Done From 29.11.04 To 05.12.04; Bates IMC 504370-504371.

⁵¹ Claimant's submission letter, page 58.

⁵² See, Claimant Submission, Attachment 30, 05_MAN B&W Operational Manual, Edition 40 (1993), section 705.06-40, 1.4.

⁵³ The fuel used by the vessel contained high amounts of catalytic fines. While the amounts were acceptable they were on the high end of acceptability.

silicone (catalytic fines) particles, to pass through the purifiers to the service tank and engine, allowing them to wear down the fuel system parts, including the fuel pumps, fuel injection valves, piston rings and cylinder liners.⁵⁴ In effect the placement of the homogenizer reduced the effectiveness of the purifier.

The fuel oil purifiers were not run in series or parallel as recommended in the September 21 and December 3, 2004 fuel analysis reports. Each was set up to run as a fuel oil clarifier.⁵⁵ Running one purifier set up as a clarifier is less effective than running one set up as a purifier because when set up as a clarifier, the machine does not remove any water from the fuel. Since catalytic fines are hygroscopic (attracted to water) they may remain in the fuel, which, as noted above, allow them to wear down fuel system parts. Two fuel oil purifiers should have been operated in parallel or in series at all times, but particularly during bad weather, when the ship is pitching and rolling heavily.⁵⁶ It is noted from the monthly engine abstracts that without exception, only one centrifuge is in operation at any time.⁵⁷

The Incident

The Cylinder Liner Leak and Main Engine Shut Down

On December 6, 2004, a cooling water leak was discovered during the 8 a.m. to noon watch.⁵⁸ The Fourth Engineer on watch discovered a "jet of water coming out from the number three unit".⁵⁹ At approximately 1000 hours the crew shut down the main engine.⁶⁰ According to the Master, initially, the Chief Engineer wanted to change out the cylinder liner, but then changed his mind as the weather was deteriorating.⁶¹ However, documents provided in the claimant's submission provide proof that a lack of equipment may have been the deciding factor.⁶² The crew then decided to isolate a cracked cylinder liner in the No. 3 unit.⁶³ When the main engine was shut down the vessel was more than 80 nautical miles from Spray Cape, where its point of grounding would occur more than 52 hours later,⁶⁴ and the wind was out of the northwest at Force 7 (28-33 knots) on the Beaufort scale.⁶⁵

Cause of the No. 3 Cylinder Liner Crack

⁵⁴ See, JSL Marine Associates report dated 30 November 2010, Section 6.2.

⁵⁵ See Keesal, Young and Logan letter dated December 4, 2008, page 5, answer to question 7.

⁵⁶ See, JSL Marine Associates report dated 30 November 2010, Section 7.23.3.

⁵⁷ See, JSL Marine Associates report dated 30 November 2010, Section 7.19.

⁵⁸ See, Brookes Bell report dated 18 June 2008, 4.1.

⁵⁹ See, Claimant Submission, Attachment 26, 354578, NTSB Interview with [REDACTED] page 9.

⁶⁰ See, Claimant Submission, Attachment 26, 340229, NTSB Interview with [REDACTED] page 22.

⁶¹ See, Claimant Submission, Attachment 26, 340228, NTSB Interview with [REDACTED] page 19-20.

⁶² See, Claimant Submission, Attachment 18, email 01, Bates IMC 504085 and IMC 504153 which state the SELENDANG AYU did not have a liner lifting tool onboard and the spare liner onboard did not match the drawing in the certificate or the main engine manual. Additionally, Bates IMC 507785, states the reason it was decided to isolate "this unit" was due to the liner lifting tool not being found onboard the vessel.

⁶³ See, Bates IMC 00179; email from SELENDANG AYU to IMC. This email shows the stoppage time as 1215, however the Master of the SELENDANG AYU admits during a second interview with the NTSB that the actual stoppage time was approximately 1000.

⁶⁴ See, Kessel, Young & Logan letter dated December 6, 2007, page 53, paragraph b.

⁶⁵ See, Bates USA 012783; SELENDANG AYU email to MARINCOMWX dated December 7, 2004.

The crack in the cylinder liner was caused by thermal overload.⁶⁶ The thermal stresses resulted when certain engine components were fouled, i.e., pistons, piston rings, turbo charger blades, fuel injectors and scavenge spaces. The fouling reduced the air flow through the scavenge spaces into the engine, which resulted in increased differential pressure in the cylinders and caused a rise in the engine temperature.

The reduced air cooler and turbocharger performance were mainly due to increased fouling caused by operation of the main engine at reduced speed using a fuel with an elevated microcarbon level and increasing mal-performance of fuel valves due to coke formation on atomizers.⁶⁷ Placement of the homogenizer before the purifiers⁶⁸ and the fact that only one purifier was used were also factors causing the fouling.⁶⁹

Isolation of the No. 3 Unit and Attempts to Restart the Main Engine

IMC determined that isolation of the No. 3 unit was the best way to temporarily solve the crack in the cylinder liner. The crew followed the MAN B&W manual directions for isolating the unit; however, after isolation was completed the engine failed to restart.⁷⁰ MAN B&W subsequently provided further advice but the crew still could not restart the engine.⁷¹ IMC requested information and pictures on the pistons and the piston rings, which the crew forwarded to IMC on December 8 at 0053 Singapore time.⁷² Within minutes (December 8 at 0105 Singapore time)⁷³ and before IMC sent the pictures and information to MAN B&W (December 8 at 1044 Singapore time) IMC advised the crew to change out the No. 6 unit which required removal of the head.⁷⁴

The crew completed removal of the head by December 8 at 0755 Singapore time. At this time the crew was unable to continue work due to the vessel rolling up to 25 degrees.⁷⁵ MAN B&W provided additional advice on restarting the engine to IMC on December 8th. It noted that the No. 3 and No. 6 units appear to be collapsed but if the remaining four units are in more or less good condition starting the engine should be possible provided the fuel equipment is not faulty.⁷⁶ IMC e-mailed this information to the vessel on December 8 at

⁶⁶ The claimant provided two expert reports with its claim submission; Peter Greve's report dated 12.05.2007 and Brookes Bell report dated 18 June 2008. The NPFC contracted an expert, Alan Stanley, who submitted a report dated 30 November 2010. All three experts agree the crack in the number three cylinder liner was caused by a thermal overload. See, Claimant's expert report from Peter Greve dated 12.05.2007, page 3.a; Claimant's expert report from Brookes Bell dated 18 June 2008, 4.3; NPFC expert report from Alan Stanley dated 30 November 2010, 15.3.1.

⁶⁷ See, Peter Greve report dated 12.05.2007, page 3.a

⁶⁸ See, Alan Stanley report dated 30 November 2010, 15.5.1

⁶⁹ See, Alan Stanley report dated 30 November 2010, 7.20-7.21

⁷⁰ See, email from SELENDANG AYU to IMC dated December 7, 2004, 3:32 PM.

⁷¹ See, email from MAN B&W to IMC dated December 7, 2004, 5:17 PM.

⁷² See, email from SELENDANG AYU to IMC dated December 8, 2004; Bates IMC 00207.

⁷³ See, email from IMC to SELENDANG AYU dated December 8, 2004; Bates IMC 00214.

⁷⁴ See, email from IMC to MAN B&W dated December 8, 2004; Bates IMC 05075-05076.

⁷⁵ See, Bates IMC 05029; SELENDANG AYU email to IMC dated December 8, 2004.

⁷⁶ See, MAN B&W email dated December 8, 2004, 3:52 PM.

1602 Singapore time and asked the Chief Engineer to "check accordingly, carefully."⁷⁷ However, by this time the cylinder cover (head) had been removed, which negated a restart attempt.

Other Investigation

The National Transportation Safety Board (NTSB) provided a report adopted September 26, 2006 determining, "that the probable cause of the grounding of the *Selendang Ayu* was the failure of the main engine's No. 3 cylinder, which led the crew to shut down the engine; the freighter then drifted 100 miles and ran aground off Unalaska Island. Contributing to the cause of the grounding was the inability of the *Selendang Ayu* crew to restart the engine after it had been shut down and the inability of the responding vessels to effect a tow or otherwise halt the freighter's drift in the extreme wind and sea conditions."⁷⁸

Notice of the Casualty and Requests for Assistance

When the leak in the cylinder liner was discovered and the main engine was shut down on December 6, 2004 at approximately 1000 (ship's time), the vessel was over 50 nautical miles away from the nearest point of land – Bogoslof Island and 105 nautical miles away from the nearest assistance out of Dutch Harbor, Alaska.⁷⁹ After the Chief and Second Engineer decided the best option would be to isolate the number three cylinder and the Master researched the nearest available port for repairs, they contacted IMC technical support with their recommendations. IMC agreed with their plan.⁸⁰ The Master made no attempt to call for help outside of his own company until he started becoming concerned about the situation at 2100 – 11 hours after shutting down the main engine. At this time, the Master attempted to contact the Harbormaster in Dutch Harbor.⁸¹ The Master did not believe that the mechanical issue with the cylinder was an emergency.⁸² From December 6th at 2100 thru December 7th at 0030 (3.5 hours), the Master attempted unsuccessfully to call the Dutch Harbor Harbormaster by radio.⁸³ He did not attempt any other communication method besides VHF radio for the 3.5 hours.⁸⁴ On December 7th at 0050, the Master finally contacted the Dutch Harbor Harbormaster by phone.⁸⁵ After being contacted by the Harbor Master, the Coast Guard contacted the SELENDANG AYU on December 7th at 0130 (ship's time).⁸⁶

On December 6th at approximately 2230 the Master spoke with the IMC safety department about finding a tug.⁸⁷ Between 0200 and 0300 on December 7th, the Master found out IMC hired a tug to assist them.⁸⁸

⁷⁷ See, Bates IMC 00245; IMC email to SELENDANG AYU dated December 8, 2004.

⁷⁸ See, NTSB Marine Accident Brief, Accident No. DCA-05-MM-008.

⁷⁹ See, Claimant submission, Attach 24, Govt's Videotape Deposition of [REDACTED] Vol. I, page 00182-00183.

⁸⁰ See, Claimant submission, Attach 20, page 7, paragraph 27.

⁸¹ See, Claimant submission, Attach 24, Govt's Videotape Deposition of [REDACTED] Vol. I, page 00237-00239.

⁸² See, Claimant submission, Attach 24, Govt's Videotape Deposition of [REDACTED] Vol. I, page 00239.

⁸³ See, Claimant submission, Attach 24, Govt's Videotape Deposition of [REDACTED] Vol. I, page 00247.

⁸⁴ See, Claimant submission, Attach 24, Govt's Videotape Deposition of [REDACTED] Vol. I, page 00247-00249.

⁸⁵ See, Claimant submission, Attach 24, Govt's Videotape Deposition of [REDACTED] Vol. I, page 00250.

⁸⁶ See, Claimant submission, Attach 24, Govt's Videotape Deposition of [REDACTED] Vol. I page 00300.

⁸⁷ See, Claimant submission, Attach 24, Govt's Videotape Deposition of [REDACTED] Vol. I, page 00258. It is

Assistance Provided and Results

On December 7, 2004, between three and five o'clock am Alaska Standard Time (AST), the Coast Guard was notified of the SELENDANG AYU's situation.⁸⁹ By 0510 AST, Coast Guard District 17 (CG D17) directed the Coast Guard Cutter (CGC) ALEX HALEY to divert from its Bering Sea patrol to assess the SELENDANG AYU's situation.⁹⁰ They arrived on scene December 7th at 1100 AST (December 8 at 0400 Singapore time).⁹¹ At 1630 AST (December 8 at 0930 Singapore time), CG D17 directed the CGC ALEX HALEY to take the SELENDANG AYU in tow to slow their drift rate.⁹² Shortly thereafter, on December 7th at 1737 AST (December 8 at 1037 Singapore time), CG D17 directed the CGC ALEX HALEY to allow the tug hired by IMC, the SIDNEY FOSS, to tow the SELENDANG AYU.

According to [REDACTED] (Chief of Search and Rescue for CG D 17) deposition, the Alex Haley had minimal towing equipment onboard and given the weather, the tug SIDNEY FOSS was better suited to attempt towing the SELENDANG AYU.⁹³ The SIDNEY FOSS arrived on scene at 1830 AST (December 8 at 1130 Singapore time)⁹⁴ and took the SELENDANG AYU in tow December 7th by 2027 AST (December 8 at 1327 Singapore time).⁹⁵ They were unable to turn the SELENDANG AYU's bow into the wind or stop its drift rate. Another vessel contracted by IMC to assist the SELENDANG AYU, the JAMES DUNLAP, arrived on scene December 8, 2004 at 0430 AST (2130 Singapore time).⁹⁶ On December 8, 2004 at 0732 AST (2132 Singapore time), the SIDNEY FOSS' towline parted. At this point, the Captain of the JAMES DUNLAP stated he would not attempt to pass a line to the SELENDANG AYU due to the weather conditions.⁹⁷ The Coast Guard also asked a salvage vessel, the REDEEMER to go to the scene. CG D17 [REDACTED] states he knew the vessel was not set up for any kind of towing, but felt they would be a good resource if anyone went into the water. The REDEEMER arrived on scene the morning of December 8, 2004 AST.⁹⁸

Setting Anchors, Failure to Hold, Eventual Grounding, Discharge of Oil

December 8th at 1115 AST (December 9, 2004 at 0415 Singapore time) the SELENDANG AYU dropped its port anchor and by 1215 AST it began dragging.⁹⁹ On December 8, 2004 at

assumed the Master time was referring to Ship's Time, which was two hours behind Alaska Standard Time. This is the time the ship used. See Claimant submission page 26, footnote 66.

⁸⁸ See, Claimant submission, Attach 24, Govt's Videotape Deposition of [REDACTED] Vol. I, page 00301. It is assumed the Master time was referring to Ship's Time, which was two hours behind Alaska Standard Time. This is the time the ship used. See Claimant submission page 26, footnote 66.

⁸⁹ See, Claimant submission, Attach 26, 340616, page 6.

⁹⁰ See, Claimant submission, Attach 26, Alex Haley's Logbook; 315593; page 1.

⁹¹ See, Claimant submission, Attach 26, Alex Haley's Logbook; 315593; page 2.

⁹² See, Claimant submission, Attach 26, 315593; page 2.

⁹³ See, Claimant submission, Attach 26, 315593; page 2.

⁹⁴ See, Claimant submission, Attach 26, 315593; page 2.

⁹⁵ See, Claimant submission, Attach 26, Master of Sidney Foss Dep; page 9.

⁹⁶ See, Claimant submission, Attach 24, Master Dep; page 934.

⁹⁷ See, Claimant submission, Attach 24, Master Dep; page 480 & Attach 26, Master of Sidney Foss Dep; page 11.

⁹⁸ See, Claimant submission, Attach 24, Master Deposition, page 1030.

⁹⁹ See, Claimant Attach 24, Master Deposition, page 494.

1330 AST (December 9, 2004 at 0630 Singapore time) the ALEX HALEY attempted to tow the SELENDANG AYU. It passed the messenger, but had to cut the line due to a loss of steerage way due to the rough weather.¹⁰⁰ At 1355 AST (December 9, 2004 at 0655 Singapore time) the SELENDANG AYU's starboard anchor was down and holding. By 1700 AST¹⁰¹, the starboard anchor was dragging and by 1705 AST (December 9, 2004 at 1005 Singapore time), the SELENDANG AYU grounded,¹⁰² eventually releasing approximately 330,000 gallons¹⁰³ of bunkers into the waters off Unalaska Island.

IV. APPLICABLE LAW

Limitation of Liability under OPA 90

In general, OPA provides that "...each responsible party for a vessel or a facility from which oil is discharged, or which poses the substantial threat of a discharge of oil, into or upon the navigable waters or adjoining shorelines...is liable for the removal costs and damages specified in subsection (b) that result from such incident." 33 U.S.C. § 2702(a).

Removal costs include all removal costs by the United States, a State or Indian Tribe under 33 USC 1321(c), (d), or (l) and any removal costs incurred by any person for acts consistent with the National Contingency Plan. 33 U.S.C. § 2702(b)(1). Damages include loss of natural resources, loss of real or personal property, loss of subsistence use of natural resources, loss of government revenues, loss of profits and earning capacity and increased costs of State and local public services. 33 U.S.C. § 2702(b)(2)(A)-(F).

Removal costs means the costs of removal that are incurred after a discharge of oil has occurred or, in any case in which there is a substantial threat of a discharge of oil, the costs to prevent, minimize, or mitigate oil pollution from such an incident. 33 U.S.C. § 2701(31).

Incident means any occurrence or series of occurrences having the same origin, involving one or more vessels, facilities, or any combination thereof, resulting in the discharge or substantial threat of discharge of oil. 33 U.S.C. § 2701(14).

A responsible party's liability may be limited. For a vessel other than a tank vessel the total of the liability of a responsible party under section 2702 of this title and any removal cost incurred by, or on behalf of, the responsible party, with respect to each incident shall not exceed \$600 per gross ton or \$500,000, whichever is greater... 33 U.S.C. § 2704(a.)

However, liability is not limited in certain circumstances addressed at 33 U.S.C. § 2704(c).

(c) Exceptions—

(1) Acts of Responsible Party.—Subsection (a) does not apply if the incident was proximately caused by—

(A) gross negligence or willful misconduct of, or

¹⁰⁰ See, Claimant Attach 24, Master Deposition, page 499-500.

¹⁰¹ See, Claimant Attach 24, Master Deposition, page 522.

¹⁰² See, Claimant Attach 24, Master Deposition, page 524.

¹⁰³ See, Claimant's submission letter, page 3, paragraph 3.

(B) the violation of an applicable Federal safety, construction, or operating regulation by, the responsible party, an agent or employee of the responsible party, or a person acting pursuant to a contractual relationship with the responsible party...

(2) Failure or Refusal of Responsible Party.—Subsection (a) does not apply if the responsible party fails or refuses—

(A) to report the incident as required by law and the responsible party knows or has reason to know of the incident;

(B) to provide all reasonable cooperation and assistance requested by a responsible official in connection with removal activities; or

(C) without sufficient cause, to comply with an order issued under subsection (c) or (e) of section 311 of the Federal Water Pollution Control Act (33 U.S.C. 1321), as amended by this Act, or the Intervention on the High Seas Act (33 U.S.C. 1471 et seq.).

The responsible party for a vessel or facility from which oil is discharged, or which poses the substantial threat of a discharge of oil, may assert a claim for removal costs and damages under section 2713 of this title only if the responsible party **demonstrates (emphasis added)** that the responsible party is entitled to a limitation of liability under section 2704 of this title. 33 U.S.C. § 2708(a)(2)

In addition, 33 CFR 136.105(a) provides: The claimant bears the burden of providing all evidence, information, and documentation deemed necessary by the Director, NPFC, to support the claim.

In making determinations with respect to claims where gross negligence is an issue, the NPFC has defined gross negligence as follows:

Negligence is a failure to exercise the degree of care, which a person of ordinary caution and prudence would exercise under the circumstances. A greater degree of care is required when the circumstances present a greater apparent risk. Negligence is “gross” when there is an extreme departure from the care required under the circumstances or a failure to exercise even slight care.

In making determinations with respect to claims where willful misconduct is an issue the NPFC has defined willful misconduct as follows:

An act, intentionally done, with knowledge that the performance will probably result in injury, or done in such a way as to allow an inference of a reckless disregard of the probable consequences.

An OPA incident is defined to include a series of occurrences resulting in a discharge or substantial threat of discharge of oil. Thus the analysis of what may constitute gross negligence or willful misconduct that may proximately cause an incident, depends on the circumstances of a particular incident, as well as any series of negligent or intentional acts that may have proximately caused those occurrences. Water Quality Insurance Syndicate v. United States, 522 F. Supp. 220, 228-231 (D.D.C. 2007). See also *In re Tug Ocean Prince*, 584 F. 2d 1151 (C.A.N.Y. 1978) and *Grey v. American Airlines*, 227 F. 2d 282 (2nd Cir. 1955) in respect to a series of acts constituting willful negligence or misconduct.

See also Matter of Oil Spill by Amoco Cadiz Off Coast of France on March 16, 1978, 954 F. 2d 1279 (7th Cir. 1992) The Amoco Cadiz Court determined that certain actions were negligent, including the following: (1) failure to reasonably perform its obligations to repair and maintain the steering gear, (2) failure to adhere to manufacturer recommendations regarding proper maintenance of the ship's components and (3) failure to address the leakage of seven to 12 liters of hydraulic fluid a day when the acceptable level was a few drops a day.

V. CLAIMANTS' ASSERTION THAT THE RESPONSIBLE PARTIES ARE ENTITLED TO A LIMITATION OF LIABILITY

Claimants' Argument

The claimants assert that the proximate causes of the incident were: (1) mechanical problems with the ship's main engine; (2) the lack of adequate tugs in the area to prevent the ship from grounding; and (3) the decision by the United States Coast Guard not to assist the available tugs in their effort to tow the SELENDANG AYU to safety.¹⁰⁴

They argue that the mechanical problems that developed on the vessel's main engine were not the result of gross negligence or willful misconduct. The crew shut down the main engine because of a crack in the No. 3 cylinder liner. The claimants state the primary cause of the cylinder liner crack was a thermal overload of the main engine, which developed during the heavy weather experienced by the vessel in the North Pacific and the Bering Sea, after the vessel left Seattle for China.¹⁰⁵ They specifically state the ship was well maintained but developed a thermal overload despite the crew's efforts to prevent such a condition from developing.¹⁰⁶ They further assert that service and maintenance records for the vessel revealed no significant problems with its main engine prior to the 6 December 2004 crack in its No. 3 cylinder liner.¹⁰⁷

The claimants assert that the engineers reasonably decided to overhaul unit No. 6.¹⁰⁸ Further, they provide that any problems in the fuel system were not the result of negligence on the part of the owners, managers or crew.¹⁰⁹ Finally, they state that [REDACTED] (the Master) acted reasonably in responding to the main engine problems.¹¹⁰

Claimants argue that a second proximate cause of the grounding was a lack of adequate salvage resources to respond to the vessel. The grounding occurred in a remote area of the world that lacks adequate salvage resources to respond to large vessels in distress.¹¹¹ The harbor tugs in Dutch Harbor were neither designed nor equipped nor manned to respond and

¹⁰⁴ See, Kessel, Young & Logan letter dated December 6, 2007, page 10, Section IV, paragraph 2.

¹⁰⁵ See, Kessel, Young & Logan letter dated December 6, 2007, page 48, paragraph 2.a.

¹⁰⁶ See, Kessel, Young & Logan letter dated December 6, 2007, page 44, paragraph 1.

¹⁰⁷ See, Kessel, Young & Logan letter dated December 6, 2007, page 16, Section D.

¹⁰⁸ See, Kessel, Young & Logan letter dated December 6, 2007, page 54, paragraph c.

¹⁰⁹ See, Kessel, Young & Logan letter dated December 6, 2007, page 56, paragraph d.

¹¹⁰ See, Kessel, Young & Logan letter dated December 6, 2007, page 59, paragraph G.

¹¹¹ See Kessel, Young & Logan letter dated December 6, 2007, page 43, paragraph F.

had the engine problems developed in nearly anywhere else along the U.S. coast salvage vessels would have responded and saved the vessel.

Finally, claimants assert that a third proximate cause of the grounding was the failure of the U.S. Coast Guard to provide meaningful assistance to the SIDNEY FOSS in preventing the grounding.

Claimants argue these proximate causes were not due to the gross negligence or willful misconduct of the claimants. They state that the incident was reported in a timely manner to the United States Coast Guard as required by law¹¹² and the incident was not caused by the violation of any federal navigation or safety regulation;¹¹³ therefore, they are entitled to a limitation of liability.

Claimants support their assertion to entitlement to a limitation of liability citing to a prior NPFC decision upholding the statutory limitation of liability (In re Kuroshima, 2003 A.M.C. 1681), and two court decisions, (Steuart Transportation Co. v. Allied Towing Corp., 596 F. 2d 609 (4th Cir. 1979), and Sause Brothers Ocean Towing, 769 F. Supp. 1147 (D. Or. 1991)), that upheld statutory limitations of liability.

Documentation Submitted by the Claimants

The claimants presented their claim to the NPFC on December 6, 2007. In addition to their 84 page claim submission letter asserting entitlement to the limitation on liability, they included certain documentation.¹¹⁴ Notwithstanding that the claimants acknowledge that a proximate cause of the incident was mechanical problems with the main engine, they provided little pertinent information about the vessel's maintenance or IMC in its December 6, 2007 submittals. The NPFC requested four subsequent requests for information in order to obtain details regarding the vessel's maintenance records and IMC's decision-making processes.¹¹⁵ NPFC also obtained pertinent parts of the ship's computer hard drives in order to analyze the data it contained.

Claimants submitted an engineering report by Mr. Peter Greve with their December 7, 2007, submittal to the NPFC. Mr. Greve's report focused on the cause of the crack in the cylinder

¹¹² See, Kessel, Young & Logan letter dated December 6, 2007, page 65, paragraph H.

¹¹³ See, Kessel, Young & Logan letter dated December 6, 2007, page 68, paragraph I.

¹¹⁴ See Attachment 1.

¹¹⁵ The NPFC first requested additional information by letter dated October 20, 2008, addressing 34 items including the vessel's fuel system, fuel sampling and vessel maintenance. Claimants responded by letter dated October 24, 2008, attaching 33 tabs of information. The NPFC again requested additional information by letter dated January 12, 2009, for 56 items regarding issues including maintenance, manuals, vessel drawings and reports noted in Claimants' original and follow-up submissions. Claimants responded by letter dated March 13, 2009, which included a CD with tabbed attachments to supplement the response. Claimants provided more information by letters dated April 9 and April 15, 2009. Two CD disks were attached to the April 9, letter. NPFC requested missing Selendang Ayu engine room logs on July 25, 2009; Claimants responded on August 29, 2009 that they could not produce these logs. On November 12, 2009 a Claimant e-mail stated it would provide a CD containing scanned documents that were found on the vessel's hard drives but not previously produced. Finally, on July 30, 2010, the NPFC requested that Claimants provide three additional items noted in Captain Singh's depositions but not included in the original submission. Claimants made their final response by e-mail dated August 23, 2010.

lining and why the crew was unable to restart the main engine after the stoppage and isolation of the No. 3 cylinder. Claimants submitted a second engineering report by Mr. Brian Boorman dated June 18, 2008, which addressed the standard for technical management of the vessel and machinery and to the reasonableness of the crew actions on discovery of the main engine problems which occurred prior to the incident.

VI. NPFC ANALYSIS

It is fundamental that in order to establish a claim against the Fund founded on a limit on liability theory the claim record must establish the cause of the incident in order to rule out unlimited liability. Speculative theories of what may have caused an incident or general and vague assertions that acts did not constitute gross negligence or willful misconduct are not sufficient. While the NPFC may develop additional evidence bearing on causation during adjudication of the claim, it is the claimant's burden to prove its claim to the NPFC. The time taken since 2007 to adjudicate this claim substantially reflects the need for the claimant to provide additional evidence in order to meet its burden.

Where causation for the incident is established NPFC can determine that liability is limited only after determining that the proximate cause of the incident is not one that meets the criteria for unlimited liability under OPA (33 U.S.C. § 2704(c)(1)) and that the acts of the responsible party satisfy the reporting and cooperation criteria under 33 U.S.C. § 2704(c)(2).

Claimants focus on the actions taken by the Master and crew from the time the crack in the cylinder liner was discovered on December 6, 2004, until the grounding on December 8, 2004. They argue that the Master and crew acted reasonably as they addressed the crack in the cylinder liner, followed their Safety Management Procedures and coordinated their actions with IMC, the operator and shore side support for the vessel in their efforts to restart the engine.

Claimants assert in part, that the incident was proximately caused by mechanical problems with the main engine. They argue in general, vague terms that the actions of the Master and crew did not constitute gross negligence or willful misconduct because scheduled maintenance on the vessel were carried out, that unscheduled maintenance was performed as needed, that the main engine's parameters were checked and abnormal parameters were evaluated and discussed with the technical department. If problems could not be readily addressed and resolved the technical department would hire experts such as the manufacturer's technicians to come aboard the vessel to remedy the problem.¹¹⁶

Since mechanical problems may be rooted in an occurrence or series of occurrences that occurred prior to the actual discharge of oil, and the proximate cause of any such occurrences must be established in order to support the claim, the NPFC reviewed and analyzed a broader range of evidence of acts and/or omissions of the Master, the crew, and the vessel's operator, IMC, in respect to operation and maintenance of the engine. The NPFC reviewed records associated with the Master's and crew's actions, including those from the time the vessel

¹¹⁶ Claimants' submission dated December 6, 2007, pages 14-15.

departed Seattle and earlier records related to the mechanical and maintenance practices of the vessel.¹¹⁷ Thus, the NPFC reviewed occurrences farther back in time than the casualty to the No. 3 cylinder. Some evidence could not be included given the catastrophic loss of the vessel, including the deaths of senior engineering personnel that could not be questioned for the purposes of this claim. There is no evidence in the record that a post mortem evaluation of the engine was conducted which could have provided additional relevant evidence.

The NPFC contracted with Alan Stanley to review the records and prepare a report. Mr. Stanley's report, dated November 30, 2010, focused on the maintenance programs, the homogenizer, the fuel systems and the reasons for the crack in the cylinder and the failure of the engine to restart. The NPFC fully reviewed the voluminous information submitted by the claimants, the Greve and Boorman expert reports and the Stanley expert report. The Claims Manager analyzed the ship's maintenance plan, missed opportunities for improvement of that plan, deficiencies in the plan, how the plan was carried out and how the Master, crew and IMC adhered to, or failed to adhere to, the plan, and how these actions resulted in the crack in the cylinder liner and the failure of the main engine to restart. As an aid the NPFC constructed a timeline of events from November 28, 2004, when the SELENDANG AYU departed Seattle for China, until the vessel grounded on December 8, 2004.¹¹⁸

The Master's decisions regarding the Seattle-China route, the weather, slow speed and use of the Seattle bunkers.

The Master knew that he had options and did not have to follow the route provided by Ocean Routes MARICOM. On November 21, 2004, when the vessel was enroute to Seattle, he requested two alternate routes. The Master states that at one time he had serious concerns that the suggested route was not safe and he should not go along with it.¹¹⁹ He also knew that when he left Seattle that the weather would be adverse. On December 5, 2004, when he was well into the voyage, he recognized that transiting this route would violate the American Institute Trade Warranties and he notified IMC, who agreed to arrange additional insurance coverage during the passage through Alaska and the Bering Sea. The requirement for additional insurance coverage indicates a heightened risk when traveling this route and a requisite higher duty of care.

The Master knew that because the weather was forecast to be continually rough that he would operate the vessel at reduced speeds for long periods of time.¹²⁰ After receiving the December 3, 2004 fuel analysis report, he also knew or should have known that the fuel that he was using, one with high levels of MCR and catalytic fines, should not be used for long periods of time when the vessel was operating at slow speeds because it increases the risk of

¹¹⁷ For instance, while claimants assert that all abnormal engine parameters were investigated and resolved, evidence in the record reflects that since 2004 the engine could not achieve full power without exceeding the engine's normal parameters.

¹¹⁸ See, Attachment 2.

¹¹⁹ See, Claimant submission, Attachment 26; 340229; Interview of [REDACTED], page 50-51.

¹²⁰ This in fact happened. The recorded noon positions from November 29, 2004 – December 6, 2004 show the highest average speed was 10.7 knots; the lowest average speed was 5.2 knots. In a December 3, 2004 e-mail to IMC the Master reported that the vessel was making 3 knots at 77 rpm due to heavy weather.

fouling the engine components. However, he decided to use the Seattle bunkers that were loaded into the number 2 center tank in order to maintain an even keel because there was a draft restriction at the vessel's discharge point in China. He began using this fuel before he received the fuel analysis report on the Seattle bunkers on December 3, 2004, but even without the report he should have known what the report's advice would be because this type of fuel was used on two previous voyages and he received similar advice in the previous fuel analysis report for the same type of fuel. The reports advised using two purifiers when burning this type of fuel. On the voyage from Rizhao to Seattle this type of fuel was used and only one purifier was operable and in use. There is no evidence in the record that two purifiers were ever used during this voyage as recommended in the fuel analysis report. Additionally, only one purifier was in use for the subsequent Seattle to China voyage.

Cause of the crack in the No. 3 cylinder liner.

All three experts agree that the crack in the No. 3 cylinder liner was caused by thermal overload and that the crack resulted in part because of the fouling of the fuel system components – the pistons, fuel injectors, turbo charger blades and the scavenge spaces. Several decisions of the Master, the crew and IMC led to the fouling and ultimately to the crack. The Master decided to use the fuel with its high MCR and catalytic fines and continued to run the main engine at slow speeds in heavy weather – which was not recommended by the fuel analysis report received by the Master on December 3, 2004. IMC, the Master and the crew failed to use two purifiers as advised by the fuel analysis reports and failed to ensure that two purifiers were operable and available for use. The decision to use the fuel and run the main engine at slow speeds during the heavy weather and the failure to maintain and use two purifiers contributed to the fouling, which contributed to the crack in the No. 3 cylinder liner.

IMC's decision to place the homogenizer before the purifier, which allowed more MCR and catalytic fines into the fuel, was contrary to the engine manufacturer's recommendation to install the homogenizer after the purifier. This, too, contributed to the thermal overload.

An important question is when the fouling of the fuel system components began. One of Claimant's experts, Mr. Greve, opines that the heavy soot deposits (fouling) found on the cylinders and in the scavenge spaces accumulated only from the time that the vessel left Seattle until the casualty and were solely related to poor combustion. He bases this opinion on a statement made by the Second Engineer (now deceased) who stated that he inspected the cylinders and the scavenge space when the vessel was in Seattle and that they were satisfactory. While there is some corroboration that an inspection took place the Second Engineer's statement cannot be further examined and the Greve opinion is not persuasive.

The more persuasive evidence in the administrative record is that the fouling began earlier and was enhanced by the high MCR content in the fuel and the heavy weather. Mr. Stanley bases this opinion on the maintenance records for the No. 3 and No. 6 units, where the fuel valves were changed four times during 2004. He believes that this reflects combustion problems or problems in improper overhauling of the fuel valves. More importantly, his opinion is based on the condition of the No. 1 cylinder that was overhauled in Seattle and

was much cleaner than the other cylinders at the time of the casualty. He argues that if the fouling occurred only from the time the vessel left Seattle, all the cylinders, including the No. 1 cylinder, would have been fouled. He concludes that the fouling was not caused solely by the fuel and the adverse weather from the time the vessel left Seattle but probably began before the Seattle-China voyage. The failure of IMC and the crew to recognize and investigate the chronic fouling problems and rectifying problems with the fuel valves was a significant oversight that ultimately contributed to the crack in the No. 3 cylinder liner.

Cause of the Main Engine Not to Restart.

Failure of the main engine to restart was another occurrence of the incident. Claimants have provided no clear evidence or argument as to why the engine failed to restart. The record reflects at least two possible reasons but neither are conclusive based on information submitted by the claimants. The NPFC expert, Alan Stanley, opines that the failure to restart was mechanical problems with the pneumatic control system. The pneumatic control system translates the maneuvering orders, i.e., start, stop ahead and stern, and the speed settings to the main engine components. The vessel experienced problems related to the main engine's pneumatic control system over a two year time period. In March and August 2002 the engine would not start. In January 2004 the engine ran astern but not ahead. After the January 2004 problem IMC requested that the vessel describe the fault and the work done to solve the problem but there is no record that the vessel's crew or IMC responded to the request. After a March 2004 problem when the main engine would not start astern on bridge or engine room control IMC required the vessel to overhaul the turning gear blocking device at six month intervals and record the maintenance in BV-ORCA, the vessel's maintenance program. Since the BV ORCA does not contain complete maintenance records of all the vessel components it is not known if the crew overhauled the turning gear block device or if that was in fact the problem with restarting the engine.

- In October 2001 IMC received the manufacturer's notice from MAN B&W to check the pneumatic control system under controlled conditions and to overhaul or replace needed parts. Notwithstanding all the problems from 2002 to the time of the grounding we have not seen evidence that IMC adhered to this recommendation and that the system was overhauled as needed. Failure to follow the MAN B&W recommendations to overhaul the system and failure to address the problems related to the pneumatic control system, if such is the case, is indicative of marginal maintenance practices on the part of IMC and the ship's engineers. Since the pneumatic control system translates the maneuverability of the main engine, including the starting of the engine, it is possible that the mechanical issues related to failure of the main engine to restart are related to the pneumatic control system.

According to the NPFC expert, Mr. Stanley, defects in these systems result in unreliable starting, reversing and maneuvering of the main engine.¹²¹

¹²¹ See, JSL Marine Associates report dated 30 November 2010, page 11, 5.2.

There is evidence that the reason the main engine failed to restart was problems with the fuel equipment. Communications between IMC and MAN B&W reflect that MAN B&W suggested that the engine should restart if the fuel equipment was not faulty. There is evidence in the administrative record that some of the fuel valves needed replacement more often than required by MAN B&W and could have been an indication of mechanical or maintenance problems with the fuel system.

One of the claimants' experts, Mr. Boorman, agrees that the failure of the main engine to restart was probably associated with the fuel system. He states that the increased wear on the fuel injection system (the fuel pump, fuel valve injectors and the plungers) may have suffered increased wear due to the sediment containing the catalytic fines from the bottom of the fuel oil service tank that would have entered the fuel supply due to the heavy weather. His opinion is supported by the analysis of fuel samples taken after the incident that revealed a high concentration of catalytic fines in the sediment in the fuel tanks.¹²² The wear on the fuel pump plungers and fuel valve injectors would result in a retardation of the timing of fuel injection.

While claimants have not definitively established why the main engine failed to restart the administrative record reflects that it was probably either a faulty pneumatic control system or faulty fuel equipment. For the reasons discussed above there is evidence that the failure of the Master, the crew and IMC to follow MAN B&W's advice to check and overhaul the pneumatic control system, failure to place the homogenizer after the purifier, failure to use two purifiers during the voyage, and failure to investigate why fuel valves required frequent maintenance, contributed to the crack in the No. 3 cylinder liner and the subsequent failure of the main engine to restart on December 7, 2004.

IMC decisions regarding actions to restart the engine

On December 6, 2004, when the crew discovered the crack in the cylinder lining the Master, crew and IMC determined that isolation of the No. 3 unit was the best way to temporarily solve the crack in the cylinder liner. They knew that the main engine could run on less than six cylinders and that changing the cylinder liner would be laborious and, in light of the extreme weather, would be dangerous to crew members working on changing the liner, which would first require lifting off the five-ton cylinder head. The crew followed the MAN B&W manual directions for isolating the unit; however, the engine failed to restart. MAN B&W subsequently provided further advice on isolating the unit but the crew still could not restart the engine. IMC requested information and pictures of the pistons and the piston rings, which the crew forwarded to IMC on December 8 at 0053 Singapore time. The pictures reflected fouling of the pistons and piston rings.

¹²² Claimant's submission, Attachment 40, Newfield's August 25, 2005 report shows the vessel's starboard settling tank had Aluminum and Silicon levels at 119mg/kg, when the acceptable limit is 80 mg/kg. Note B of the report states "Exceeds limit of 80mg/kg. Increased wear of liners, piston rings, injectors, and fuel pumps is possible if Al + Si is not reduced sufficiently prior to use". Note C states that "Effective settling and centrifuging should reduce Al + Si to acceptable operating levels".

Within minutes of receiving the pictures from the vessel and prior to sending the pictures on to MAN B&W for their analysis and advice, IMC advised the crew to change out the No. 6 unit. The Master was concerned that changing out the cylinder liner was extremely dangerous to the crew because of the sea condition and the weight of the cylinder head. He knew that once the cylinder head was removed the main engine could not be restarted until the head was replaced. The crew removed the cylinder head cover at 0730 on December 8. MAN B&W provided additional advice on restarting the engine several hours later. It stated that the No. 3 and No. 6 units appear to be collapsed but the remaining four units are in more or less good condition and starting the engine should be possible provided the fuel equipment is not faulty. IMC e-mailed this information to the crew (December 8 at 1602 Singapore time) ten hours after the cylinder head had been removed, asking the Chief Engineer to "check accordingly, carefully." This IMC advice to the crew at this time was not helpful because even if the fuel equipment was operative the engine could not be restarted until the cylinder head was replaced. It would have been prudent to investigate the simpler engineering systems first, such as checking the fuel system, before attempting to change out the cylinder's piston rings. From the evidence presented, it appears that at the time the decision to remove the cylinder head cover was made, it was premature and ill advised.

Neither the lack of adequate salvage resources to respond to the vessel nor the decision of the U.S. Coast Guard not to assist the tow were proximate causes of the incident.

Claimants argue that two other proximate causes of the incident were (1) the lack of tugs in the area and (2) the U.S. Coast Guard's decision not to provide assistance. They argue that if the incident occurred in any other area of the United States coast there would have been available tugs to aid the vessel and that if the Coast Guard had provided assistance earlier the grounding could have been prevented.

The incident occurred in the Aleutian Islands and the Bering Sea and the vessel owner and IMC should have known that the area is remote and lacking resources for vessels in distress. The Master recognized, and IMC agreed, that transiting this route was a violation of the charter party to transit the Bering Sea without providing more insurance coverage. This reflects that both the Master and IMC were aware of the dangers and conditions in the area, which would include extreme weather, remoteness and a lack of resources. There is a heightened duty of care in this area because of the heightened risks.

In fact, the Coast Guard did direct the ALEX HALEY to the SELENDANG AYU on the morning of December 7th. The ALEX HALEY was conducting a fisheries patrol approximately 55 miles away from the SELENDANG AYU, but was diverted to the scene to monitor the situation which was "not an emergency at the moment, but could potentially turn into an emergency later on".¹²³ According to the U.S. Coast Guard Addendum to the United States National Search and Rescue Supplement (NSS), Coast Guard resources normally do not provide immediate assistance if alternate assistance is available. A Coast Guard resource

¹²³ See, Claimant's Attachment 26; 340616; page 004, [REDACTED] USCG Interview with NTSB.

may assist when no higher priority mission exists and no other capable resource is reasonably available.¹²⁴

Once on-scene and finding no other resource available, the ALEX HALEY prepared an attempt to take the vessel in tow. However, once the SIDNEY FOSS, a vessel contracted by an IMC representative, approached, the ALEX HALEY stood down in order that the SIDNEY FOSS could aid the vessel. This is in keeping with the Coast Guard's efforts to support private enterprise. Another resource contracted by IMC, the JAMES DUNLAP, also arrived on-scene to assist. Although the situation was fluid and the weather was deteriorating, the Master of the SELENDANG AYU states he did not believe this was an emergency situation until the SIDNEY FOSS' tow line parted over 20 hours after the ALEX HALEY arrived on-scene.¹²⁵ By this time the SELENDANG AYU had drifted closer to shore where the wave action increased. The SIDNEY FOSS made a second attempt to tow the vessel, which did not succeed. The JAMES DUNLAP refused to attempt to tow the SELENDANG at this point.

Proximate cause is legal cause and not simply the cause in fact of an incident. Claimant's arguments distilled are that since neither tugs nor the Coast Guard prevented the grounding those circumstances are proximate causes of the grounding. We find this argument meritless. At most claimant raises a "but for" causation argument that does not give rise to legal or proximate causation.

Liability must rest on the causal relationship between the negligent aspect of the conduct and the harm resulting from that conduct. Tug Ocean Prince, Inc. v. U.S., 436 F. Supp. 907, 916 (D.C.N.Y. 1977) (*Citing American Smelting & Refining Co. v. S.S. Irish Spruce*, 548 F. 2d 56, 60 (2nd Cir.)) (The proximate causes of the incident were errors in navigation and not the inability to locate a buoy. The obscured buoy was merely a "but for" factor, which if it had been visible might have corrected the navigational errors. It cannot be said that the inability to locate the buoy was the proximate cause of the incident. The premise that additional aids to navigation might have assisted in correcting a navigational aid is a fortuity having nothing to do with proximate cause. The accident was not inevitable but instead due to negligence.)

In this case the incident occurrences included the crack in the cylinder liner, the decision to shut down the engine and the subsequent failure of the engine to restart; the proximate cause was not a lack of tugs in the area or the Coast Guard's decision to stand down when the SIDNEY FOSS arrived onscene. The premises that adequate tugs or greater Coast Guard actions may have prevented the grounding do not vitiate the responsibilities of the responsible party or cut off causation but are fortuities having nothing to do with proximate cause. The incident was not inevitable but due to acts and/or omissions of the responsible party, its agents, the Master and the crew, some of which were negligent.

Claimants also cite case law that is not helpful to this case. To support its assertion of entitlement to limitation of liability claimants cite to three cases in which either the courts or

¹²⁴ See, U.S. Coast Guard Addendum to the United States National SAR Supplement, COMMANDANT INSTRUCTION M16130.2D, dated 29 April 2004, Section 4.2.5.4.

¹²⁵ See, Claimant's Attachment 24, page 283.

the NPFC determined that the limitation on liability should be upheld. None of these cases are helpful to the claimants' arguments. They seemingly rely on the Kuroshima case because the M/V Kuroshima grounded near Dutch Harbor in the winter. The Master of the Kuroshima made a decision not to move the vessel farther offshore and as a result the vessel was hit with a wave. That incident was caused by one decision of the Master and the basis for upholding the limitation of liability was that the Master's decision not to move the vessel farther offshore was a mistake but did not constitute gross negligence or willful misconduct.

In this case the claimants acknowledge that one of the proximate causes of the incident were mechanical issues with the main engine. The mechanical issues resulted from several decisions of the Master the crew and IMC to act or fail to act and these acts resulted in the grounding of the vessel.

Neither Sause Brothers Ocean Towing nor Steuart Transportation is dispositive because the negligent acts in those cases were not similar to the negligent acts in the instant case. In Sause Brothers the court determined that the failure to maintain and inspect a tow wire, failure to keep the crew on a 12-hour schedule and failure to have experienced or certified crew members, were ordinary negligence only. In Steuart Transportation the court held that inadequate methods of inspection and violations related to manning and watch standing were negligent acts only. In this case claimants have not argued that a failure to inspect components or inspection violations were proximate causes of the incident. In fact they argue that all maintenance and inspections were current.

More on point is Water Quality Insurance Syndicate v. United States, 522 F. Supp. 220 (D.D.C. 2007). In that case a tow line connecting a tug and barge parted and the crew, after retrieving the barge, repaired the line. Several hours later the line parted again, the barge stranded on a reef and discharged 798,000 gallons of oil onto the beach and waters adjoining Puerto Rico. The court, relying on the definition of "incident," found that the NPFC was in error when it determined there was a single act, i.e., the faulty repair of the tow line that caused the oil spill. Since the incident is defined as any occurrence or series of occurrences having the same origin resulting in the discharge of oil, the focus must look at a series of occurrences that together constitute the incident that led to the spill.

What constitutes any incident is a question of fact and will vary from case to case.

VII. Conclusion/Decision

In this case the incident included at least the failure of the Number 3 cylinder, the failure of the engine to restart after it was shut down and the subsequent grounding and breakup resulting in the oil discharge.

The failure of the number 3 cylinder was the result of thermal overload caused by a combination of slow speed, fuel type used and a less than efficient fuel filtering system. The failure of the engine to restart is not entirely clear but there is sufficient evidence to establish that it was caused by a decision to remove the number six cylinder head that was

not clearly necessary or advised, and a subsequent failure of either the fuel system or the pneumatic system, or both as a result of poor or marginal maintenance and operation practices.

By claimants' own admission the proximate cause of the incident was mechanical issues with the main engine. The administrative record and the three expert reports reflect that the failure of the engine to restart was either a failure of the pneumatic control system or problems with the fuel equipment. However, the vessel grounded before the crew was able to attempt to restart the engine one last time. If the engine had restarted with the new cylinder piston rings, the mechanical problems would have been related to fuel system and the maintenance of that system. On the other hand if the engine had not restarted with the new cylinder piston rings, the failure to restart could have been mechanical issues with the pneumatic control system and the failure to overhaul and replace it as recommended by MAN B&W. There is clear indication of some marginal maintenance and repair of certain engineering systems onboard as well as some ill advised decision making. These actions were causes of the ultimate grounding, break up and release of oil by the SELENDANG AYU. However, collectively these causes do not rise to the level of the extreme departure of care or failure to exercise even slight care that would constitute gross negligence. After thorough review, the NPFC finds that the incident was not proximately caused by gross negligence, willful misconduct or the violation of an applicable Federal safety, construction, or operating regulation by the responsible party. Additionally, the NPFC's review found that the responsible party met all requirements to report the incident and to provide reasonable cooperation and assistance and complied with orders as required.

Therefore, the claimants' limitation of liability is upheld. The decision to uphold the limit represents a very close analysis; slightly different facts could well have resulted in a finding of gross negligence and a decision to deny entitlement to a limit on liability.

Claims Manager: [REDACTED]

Submission Date: January 20, 2012

Claim Supervisor: [REDACTED]

Date of Supervisor's Review: 1/27/12

Supervisor Action: Limit Upheld - Approved

Supervisor's Comments:

Attachment 1

Documents Initially Submitted by Claimants

1. International Tonnage Certificate
2. Claims Summary
3. Certificate of Registry
4. Management Agreement
5. Notice of Designation
6. Certificate of Insurance
7. Letters of Authorization for Keesal, Young & Logan
8. Affidavit of Publication
9. Declaration of [REDACTED]
10. Crew Service Letters
11. BV ORCA Records
12. Weekly Work Done Reports from 8 December 2003 – 5 December 2004
13. Performance Reports for Main Engine
14. Monthly Engine Abstracts
15. Vessel Inspection Reports
16. ABS Interim Periodic Surveys
17. Drydock Records for February 2003
18. Emails
19. Declaration of Third Engineer [REDACTED]
20. Declaration of Captain [REDACTED]
21. Declaration of [REDACTED]
22. Alfa Laval Field Service Report
23. SELENDANG AYU Deck Log Book
24. Depositions of [REDACTED] Second Officer [REDACTED] Third
Engineer [REDACTED] Fourth Engineer [REDACTED]
25. Declaration of [REDACTED]
26. NTSB Documents
27. Chief Engineer Order Book
28. Master's Notes While Drifting
29. Chart 16500 Displaying Vessel's Position Over Time
30. MAN B&W Engine Manual
31. Correspondence Between IMC and MAN B&W
32. Declaration of [REDACTED]
33. Vessel Phone Records
34. City of Unalaska Department of Ports and Harbors Incident Report
35. Declaration of [REDACTED]
36. Declaration of [REDACTED]
37. Declaration of [REDACTED]
38. Peter Greve's Report, submitted on behalf of Claimants
39. Emails with Salvage Brokers
40. Analysis of Fuel Samples from Service and Settling Tanks
41. Declaration of [REDACTED]

- 42. MR & Associates Letter re Claims Adjusting
- 43. Vessel Certificates

Attachment 2

Relevant Timeline of Events

November 28, 2004 – **2200U** (Seattle Time) – Vessel departs Seattle bound for Xiamen, China.

November 29, 2004 – Second Mate states the weather started getting bad right after leaving the Straits of Juan de Fuca.

December 2, 2004 – Wind at Force 10 on the Beaufort scale (48-55 knots). Master states surging of the main engine occurred.

December 4, 2004 -- Wind at Force 11 on the Beaufort scale (56-63 knots). Master states surging of the main engine occurred.

December 5, 2004 – Wind at Force 8 on the Beaufort scale (34-40 knots) until 1200. Vessel arrives at Unimak Pass.

- **2106X** Vessel enters the Bering Sea via Unimak Pass westward.

December 6, 2004 – **0950X** (Approximately) Chief or Second Engineer shuts down the main engine due to a jet of water coming from the #3 cylinder liner, without first consulting with the Master. Wind at Force 7 (28-33 knots).

- **1010X** Chief Engineer notifies the Master that he is going to change the #3 cylinder liner.
- **1100-1130X** Chief Engineer decided not to change out the cylinder liner because of the weather; just isolate it.
- **1200X** Master sent out noon report stating the vessel is still running, even though it had been shut down for over two hours.
- **1200X – 1700X** Took five hours to isolate the #3 cylinder.
- **1900X** After over nine hours of being shut down, Master did not ask for tug assistance. He had confidence that the engineering staff would fix the problem and was sure there were tugs available in Dutch Harbor to help if necessary (although at this point he had not checked the size or availability of tugs).
- **1900-2030X** Tried unsuccessfully to restart the engine after isolating the #3 cylinder.
- **2100X** Master found out gale force winds were coming for the next two days.
- **2100-0030X** Master starts becoming concerned about the situation and tries to call the Harbormaster by radio from 2100 until December 7th, 0030 (3.5 hours). He still does not consider this an emergency. Master never considered that there would not be a tug available, even though he had not called to inquire yet.
- **2200-2230X** Master talks with IMC Safety Department about finding a tug for the first time. He has no knowledge at this point as to availability or size of tugs available.

December 7, 2004 - **0050X** Master tries to contact the Harbormaster by telephone after trying for 3.5 hours over the radio.

- **0130X** Coast Guard contacts the SELENDANG AYU by radio, after the Harbormaster from Dutch Harbor contacted the Coast Guard. Master also finds out that a tug agent has been appointed by IMC around this time.
- **0145-0315X** Vessel tried to restart the main engine after making MAN B&W (engine manufacturer) recommended changes to the isolation steps. Restart did not work. Wind at Force 7 (28-33 knots) on the Beaufort scale.
- **0200-0300X** Master finds out a tug has been arranged by IMC to help them.
- **0430X** IMC called the SELENDANG AYU, advising them to change the #6 piston rings. This decision was made after IMC reviewed pictures of all the piston rings taken by the crew earlier. The Master stated that when this decision was made, the vessel was rolling heavily side to side, with 22 degree rolls. The rolling increased to 28 degrees each side when trying to take the cylinder head off.
- **0510V** Coast Guard Cutter Alex Haley is directed by Coast Guard District 17 to assist the SELENDANG AYU.
- **0730-0800X** SELENDANG AYU crew started taking the #6 cylinder head off.
- **1100V** Alex Haley arrives on scene with the SELENDANG AYU
- **1108V** Tug Sydney Foss departs Dutch Harbor to assist the Selendang Ayu.
- **1200X/1400V** SELENDANG AYU changed their clocks to move from ship's time (-11 X) to Alaska Standard Time (-9 V). The #6 cylinder head is removed. Master states the weather started getting bad. Wind at Force 8-9 (34-47 knots) on the Beaufort scale. Vessel is rolling 22-28 degrees each side.
- **1430V** Master states constructive work stopped in the engine room due to weather.
- **1600V** SELENDANG AYU drifts clear to the Northeast of Bogoslof Island, Alaska.
- **1630V** Coast Guard District 17 directs Alex Haley to take the Selendang Ayu in tow to slow its rate of drift.
- **1737V** Coast Guard District 17 directs Alex Haley to back off and allow Tug SIDNEY FOSS to tow the SELENDANG AYU.
- **1830V** Tug SIDNEY FOSS arrives on scene.
- **1930V** Tug JAMES DUNLAP gets underway from Dutch Harbor.
- **2027V** SIDNEY FOSS' towline is connected to the SELENDANG AYU and taking a strain.
- **2100V-0000V** Wind at Force 8 (34-40 knots).

December 8, 2004 - **0430V** Tug JAMES DUNLAP arrives on scene.

- **0732V** Tug SIDNEY FOSS towline parts. Tug JAMES DUNLAP does not

want to pass a towline because of the weather. Captain of the Alex Haley states the weather on scene this day is 20-30 foot seas and 40-60 knot winds.

- **0900-0930V** Work starts again in the SELENDANG AYU engine room. Crew is ready to lift the #6 piston out of the liner.
- **1055V** SELENDANG AYU started dropping the port anchor.
- **1115V** Port anchor down and fetched up.
- **1215V** Port anchor starts dragging.
- **1330V** Coast Guard Cutter Alex Haley attempts to tow the SELENDANG AYU. They pass the messenger, but it parts due to heavy strain in the rough weather conditions.
- **1335V** Master starts lowering the starboard anchor. Wave heights are 7-8 meters.
- **1350V** First group of non-essential personnel depart from the Selendang Ayu by Coast Guard helicopter.
- **1355V** Starboard anchor down and holding.
- **1430V** Master allows the second group of personnel (9) to leave the vessel by Coast Guard helicopter after the heavy work was done. Chief Engineer states he needs until 1600-1630 to complete repairs.
- **1700V** Starboard anchor starts dragging bottom. Chief Engineer states he would be ready to try out the engine in ten minutes.
- **1705V** SELENDANG AYU runs aground.