

From: [Courtney M. Crawford at OAK CORP](#) [REDACTED]
To: [Luke Wisniewski](#)
Cc: [Scott Hauck at OAK CORP](#) [REDACTED]; [Dan Moylan at LAX](#) [REDACTED]; [Paul Krupa at OAK CORP](#) [REDACTED]; [Dale Johnston at TAC x](#) [REDACTED]; [Gartzmann Gould at TAC x](#) [REDACTED]
Subject: RE: NTSB Party Participation request Matson Navigation Company- Loss of Propulsion aboard Containership Maunalei DCA22FM039
Date: Tuesday, April 9, 2024 8:20:13 PM
Attachments: [Matson to NTSB - Responses to Investigation Inquiry \(DCA22MF039; Johnston Interview\).pdf](#)
[Conv 4093-S45-2-01_REV-3_MLI_STERN_TUBE_LUBRICATION_SYS_21DEC2022APPF.pdf](#)
[2212061-2.3.pdf](#)

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Luke,

As discussed, attached please find Matson’s responses to the NTSB pre-interview questions. Do not hesitate to let me know if you have any questions or if there is anything further you would like to discuss.

Thank you,
Courtney



Courtney Crawford | Assistant General Counsel | Law Department
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From: Courtney M. Crawford at OAK CORP x4355
Sent: Tuesday, March 26, 2024 12:17 PM
To: Luke Wisniewski [REDACTED] >
Cc: Scott Hauck at OAK CORP [REDACTED] <[REDACTED]>; Dan Moylan at LAX [REDACTED] <[REDACTED]>; [REDACTED] >; [REDACTED] USCG MSU PORTLAND (USA) <[REDACTED]>; Paul Krupa at OAK CORP x4395 [REDACTED] >; [REDACTED] USCG (USA) [REDACTED] >; Dale Johnston at TAC x [REDACTED] <[REDACTED]>; Gartzmann Gould at TAC x [REDACTED] <[REDACTED]>
Subject: RE: NTSB Party Participation request Matson Navigation Company- Loss of Propulsion aboard Containership Maunalei DCA22FM039

Luke,

Thank you for your email. As info., I have added Gartzmann Gould to this thread. Mr. Gould is the Senior Port Engineer in Tacoma, overseeing Dale’s team. Please keep him included going

forward, as he may be a useful resource.

Thank you also for sharing the NTSB's remaining questions, below. Matson is working to ensure that these questions can be fully answered during the upcoming meeting. To that end, and upon conferring with our team, I understand that not all necessary parties are available tomorrow for the meeting as scheduled. Our apologies for the confusion, it simply appears that Dale did not have everyone's up-to-date availability when scheduling.

Would the NTSB and USCG be amenable to rescheduling our meeting for April 4, 2024 at 3:00 p.m. Pacific time? This time will accommodate Mr. Gould's schedule (as he is attending a drydocking in China) and Mr. Krupa's schedule (as he will have just returned from a pre-scheduled trip to Europe).

Thank you for your consideration in this matter. We look forward to working with you further.

Regards,
Courtney



Courtney Crawford | Assistant General Counsel | Law Department

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From: Luke Wisniewski >
Sent: Tuesday, March 26, 2024 3:58 AM
To: Dale Johnston at TAC x <>
Cc: Scott Hauck at OAK CORP <>; Dan Moylan at LAX x <>; <>; <> USCG MSU PORTLAND (USA) <>; Courtney M. Crawford at OAK CORP <>; Paul Krupa at OAK CORP x <>; <> USCG (USA) <>
Subject: RE: NTSB Party Participation request Matson Navigation Company- Loss of Propulsion aboard Containership Maunalei DCA22FM039

****** SECURITY ADVISORY! This email originated externally. Verify sender is authentic before opening any attachments. Do not click on links in this email, and instead go to the sender web page directly from your browser and enter your credentials there. ******

Good morning Dale,

In receipt. Here are a few remaining questions I have for you regarding the Maunalei CPP incident on

August 11th, 2022.

1. What was the approximate total loss of hydraulic oil (Mobil SHC Aware ST 100 Series) from the CPP system from August 4th to 11th, 2022?
2. Request a short description of the stern tube and how it is connected to the CPP system? Did both system shared a common head tank?
3. Please explain the concern of depleting the hydraulic oil from the CPP system and it's effect on the stern tube system?
4. On August 29, 2022 after all repairs were completed to CPP system and stern tube system were flushed and renewed with hydraulic fluid, the ABL's report from 4th of October 2023 stated the vessel was however placed under underway restriction, with limitations to pitch, engine rpm and speed to reduce the dynamic cyclic stresses (forces) on face of blades until the manufacturer and company could further evaluate the blade design? What were the operating restrictions to rpm, pitch, sea state?
5. After the no. 2 propeller blade was removed in November of 2022, was third party testing performed on the no. 2 blade similar to no. 4 blade (ie: Charpy V-notch impact test, tensile strength testing, or quantitative compositional analysis)?
 - a) Request any and all copies of third-party testing to no. 2 propeller blade.
6. Were all 5 blades eventually replaced? What was the internal radius of the counterbore for all seven bolt holes on the newly installed blades?
7. Has the Maunalei's CPP system / propeller blades experienced any additional problems or issues since the incident on August 11th 2022?
8. Is there any additional information regarding the CPP system that we did not cover but should be discussed or explored in the investigation?
9. Did Maston make any changes to policy, procedures, or safety management system in response to Maunalei's CPP incident on August 11th, 2022?

I look forward to our discussion tomorrow at 11:00 PST. Teams conference call link and number will be provided in my next email. Please let me know if that works for you.

Thank you.

Best Regards,

Luke Wisniewski

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April 9, 2024

Luke Wisniewski
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National Transportation Safety Board
490 L'Enfant Plaza East, S.W.
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Via Email Only

Re: M/V *Maunalei* Controllable Pitch Propeller¹ Incident; August 11th, 2022
NTSB Investigation No.: DCA22MF039
Subject: Matson Responses to NTSB Questions re Dale Johnston Interview

Dear Investigator Wisniewski,

Matson provides the following responses to your questions issued on March 29, 2024, in advance of your interview of Matson Party Representative, Port Engineer Dale Johnston. These responses were also shared during Mr. Johnston's April 4, 2024, interview and are provided here for completeness.

NTSB Question 1

What was the approximate total loss of hydraulic oil (Mobil SHC Aware ST 100 Series) from the CPP system from August 4th to 11th, 2022?

Matson Response to NTSB Question 1

Per MAN 2212907, the system oil quantities are:

Lubricating oil in CPP hub:	890 liters (235 gals)
Lubricating oil in shafting, stern tube, seals, and tanks:	<u>920 liters (243 gals)</u>
Total system volume EAL ² oil:	1810 liters (478 gals)
17 x 208 liters (54.95 gal) drums Mobil SHC Aware original stock: 3536 liters (934 gals)	
4 x 208 liter drums Mobil SHC Aware put onboard in Anchorage:	<u>832 liters (220 gals)</u>
Total Mobil SHC Aware EAL oil consumed by the CPP System:	4368 liters (1154 gals)

Total Consumed: 6178 liters (1632 gals)

¹ Controllable Pitch Propeller ("CPP")

² Environmentally Acceptable Lubricant ("EAL")

Note: this estimate is of total amount of EAL oil “consumed” by the system, not total amount lost into the water. This is because the EAL oil remained in the stern tube system but was contaminated by water ingress. Matson is not able to provide an exact estimate of the amount of EAL released or that remained in the system, as the system was processed upon the vessel’s arrival in dry dock. The oil/oily water mixture was not weighed/measured.

NTSB Question 2

Request a short description of the stern tube and how it is connected to the CPP system? Did both systems share a common head tank?

Matson Response to NTSB Question 2

The CPP and stern tube system have separate independent oil systems and head tanks but there is a common forward stern tube seal that separates the two systems. Both systems use the same EAL, hydraulic oil Mobil SHC Aware ST 100.

NTSB Question 3

Please explain the concern of depleting the hydraulic oil from the CPP system and it’s [sic] effect on the stern tube system?

Matson Response to NTSB Question 3

There is a forward stern tube lip seal separating the CPP and stern tube hydraulic systems. This lip seal seals tightly with the slightly higher pressure CPP system oil. If there is a large loss of hydraulic oil in the CPP system and head tank, the system head pressure will be reduced to the lip seal separating the stern tube system and CPP system and the lip seal will no longer be able to prevent oil flowing from stern tube hydraulic system into the CPP hydraulic system. Please see the following attachments for further reference: 1) MAN Item 2212061-2, Blade Foot Machining Right; 2) Matson Drawing 4093-S45-2-01, *Maunalei* Stern Tube Lubricating System.

When the *Maunalei*’s #2 CPP blade base fractured, the CPP hydraulic system flowed through the fracture in the blade, then overboard. The crew tried to maintain oil in the CPP hydraulic system but flow overboard increased with the growth of the blade fracture exhausting available EAL hydraulic oil onboard the vessel. After consuming the available EAL hydraulic oil, per MAN’s recommendation, the vessel filled the CPP system with fresh water in an attempt to maintain CPP system head pressure on the lip seal and maintain oil in the stern tube system. This had very limited success and it was noted by the vessel that the stern tube oil was being contaminated with water. The vessel was then no longer safely able to proceed on her own propulsion and was towed the remainder of the voyage to Vigor Shipyard by tug *Sammantha S*.

NTSB Question 4

On August 29, 2022, after all repairs were completed to CPP system and stern tube system were flushed and renewed with hydraulic fluid, the ABL’s report from 4th of October 2023 stated the vessel was however placed under underway restriction, with limitations to pitch, engine rpm and speed to reduce the dynamic cyclic stresses (forces) on face of blades until the manufacturer and company could further evaluate the blade design? What were the operating restrictions to rpm, pitch, sea state?

///

Matson Response to NTSB Question 4

The propeller blades were designed for full load (100% MCR load corresponding to 21770 kW at 108 rpm) for a lifetime of at least 30 years.

Restrictions:

Engine Speed – 90 RPM (normal engine speed is 108 RPM)

Engine Power – 9159 kW (~43% MCR; normal is 21770 kW)

Vessel speed – Approx. 17.7 knots

Engine speed and engine power were the only two restrictions in place. There were no restrictions on pitch degree, sea state, or any other variable.

NTSB Question 5

After the no. 2 propeller blade was removed in November of 2022, was third party testing performed on the no. 2 blade similar to no. 4 blade (ie: Charpy V-notch impact test, tensile strength testing, or quantitative compositional analysis)?

Request any and all copies of third-party testing to no. 2 propeller blade.

Matson Response to NTSB Question 5

No testing was done to #2 blade after removal from the vessel for permanent repairs, and after observation of the #4 blade failure. All parties were satisfied with SOCOTECH report; MAN declined to pursue any further testing; none was necessary. The #2 blade was retained by Vigor Marine Shipyard for decorative use.

NTSB Question 6

Were all 5 blades eventually replaced? What was the internal radius of the counterbore for all seven bolt holes on the newly installed blades?

Matson Response to NTSB Question 6

During the vessel's second emergency dry docking at Vigor Marine Shipyard November 2022, the damaged blades #2 and #4 were replaced. The two newly manufactured MAN replacement blades (shipped from Portugal) with 4mm blade bolt hole bottom radius were installed in #2 and #3 blade positions.

Blades #1, #3, #4 (#4 spare previously installed August 2022), and #5 were removed from the vessel and transported to and from Western Machine facility (also in Portland) for the blade bolt hole bottom 4mm radius modification per MAN drawing 2212061-2. MAN service engineers were on site to oversee the work and blade modifications. The blades' bottom radiuses were dye penetrant inspected for fractures before and after machine work modifications. After the vessel's blades were modified at Western Machine, they were transported back to the Vigor Portland Shipyard and installed on the vessel in the following order: #1 blade back in #1 position; #4 blade in #4 position;

#3 blade in #5 position. The unused original modified blade #5 became a vessel spare stored in Matson's marine warehouse.

NTSB Question 7

Has the Maunalei's CPP system/propeller blades experienced any additional problems or issues since the incident on August 11th 2022?

Matson Response to NTSB Question 7

No. There have been no additional problems or issues with the *Maunalei's* CPP system since permanent repairs were performed during the second dry docking on November 22, 2022.

NTSB Question 8

Is there any additional information regarding the CPP system that we did not cover but should be discussed or explored in the investigation?

Matson Response to NTSB Question 8

No, there is no additional information regarding the CPP system itself. Matson, however, notes that during the November 2022 dry docking it added an after stern tube lube oil filtration system and cooler pursuant to the recommendation by the seal manufacturer Simplex. This recommendation was made after the August 2022 emergency dry docking for the CPP system. This modification was made by Simplex because the *Maunalei* operates in warmer climates.

NTSB Question 9

Did Matson make any changes to policy, procedures, or safety management system in response to Maunalei's CPP incident on August 11th, 2022?

Matson Response to NTSB Question 9

Matson did not make any changes to policy, procedures, or safety management system in response to the *Maunalei's* CPP incident on August 11th, 2022, as none were needed.

NTSB Question 10

When was next scheduled dry docking after the blades were put on in November 2022.

Matson Response to NTSB Question 10

During the 04/04/24 NTSB interview of Mr. Johnston, this question was added to those questions earlier provided by the questioning Agent. Matson responds as follows:

The next scheduled dry docking after the November 2022 dry docking is set for September 2, 2025. This date is based upon fact that the November 2022 dry docking was deemed an intermediate docking. Blade inspections and polishing, as well as hull inspections continue to occur on a regular, quarterly basis.

Prior to the incident, propeller and hull inspections and underwater dive surveys for the *Maunalei* were conducted on the same regular quarterly schedule. As they do now, those inspections and surveys included videos and close inspections of the blades, hubs, etc. No abnormalities,

NTSB; SMI Wisniewski

April 9, 2024

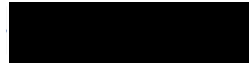
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indications, or other issues were noted at any time prior to this incident. All inspections since the November 2022 dry docking have been close inspections with no issues noted.

We understand that upon your review of the above responses, you will send a copy of the NTSB draft report for Matson's review and comment. Matson appreciates its incorporation into this investigation process and looks forward to receipt of the NTSB's report.

Please do not hesitate to contact me if you have any further questions or if there is anything you would like to discuss.

Thank you,

A black rectangular redaction box covering the signature of Courtney M. Crawford.

Courtney M. Crawford
Assistant General Counsel
Matson Navigation Company, Inc.

Attachments: as noted in correspondence