

From: [REDACTED] [LT USCG MARINE SAFETY CENTER \(USA\)](#)
To: [Young Brian](#) [REDACTED] [CDR USCG \(USA\)](#) [REDACTED] [LT USCG \(USA\)](#)
Subject: RE: EMMY ROSE Stability Analysis Summary
Date: Thursday, April 7, 2022 4:14:29 PM

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Brian,

The SASHA LEE stability instructions criteria of "Righting Arm Curve Characteristics" is the same criteria as 28.570 Intact Righting Energy. The same goes for "IMO Sever Wind and Roll Criteria" being equal to 28.575 Severe Wind and Roll.

The stability instruction shows the vessel passes the requirements of these criteria, however our independent analysis showed failures, mostly in Intact Righting Energy. This is likely due to the difference of buoyant credit given to the vessel above the waterline that becomes a factor as the vessel is heeled over to create the righting arm curves. Our model did not include buoyant credit for the bulwarks or house since the freeing ports allowed the free flow of water on to the deck and we did not know the watertight integrity condition of the house. Without the model used in the creation of the stability instruction I can't say how they credited the buoyant volume in their model/analysis.

Very Respectfully,
LT [REDACTED], P.E.
Small Vessel Branch (H1)
USCG Marine Safety Center
[REDACTED]

From: Young Brian <brian.young@ntsb.gov>
Sent: Thursday, April 7, 2022 1:24 PM
To: [REDACTED] LT USCG MARINE SAFETY CENTER (USA) [REDACTED],
[REDACTED] CDR USCG (USA) [REDACTED] >; [REDACTED] LT USCG (USA)
[REDACTED]
Subject: [URL Verdict: Neutral][Non-DoD Source] RE: EMMY ROSE Stability Analysis Summary

Hi [REDACTED]

Thanks very much for the reply and explanation of the Subchapter C regs and how they applied to the Emmy Rose.

Would it be fair to say that the righting arm curve and severe wind and rolling criteria listed in the Sasha Lee stability instructions/booklet match the requirements of the regulations?

Do we believe that the 2001 incline test and stability instructions prove that the vessel met the stability criteria in the regs?

Thanks again,
Bria

Brian Young
Sr. Marine Engineer
National Transportation Safety Board
490 L'Enfant Plaza East, S.W.
Washington, DC 20594-2000
(202) 314-6454
(202) 285-7590

From: [REDACTED] LT USCG MARINE SAFETY CENTER (USA) [REDACTED] >
Sent: Thursday, April 7, 2022 12:22 PM
To: Young Brian [REDACTED] CDR USCG (USA)
[REDACTED] LT USCG (USA) [REDACTED]
Subject: RE: EMMY ROSE Stability Analysis Summary

[CAUTION] This email originated from outside of the organization. Do not click any links or open attachments unless you recognize the sender and know the content is safe.

Good morning Brian,

Apologies I have been on a work trip and forgot to give you an update before I left as to the extra calculations for the water on deck with Laz flooding, but they have been passed up for review and should be your way shortly.

As far as the applicability of the Sub C regulations, I was under the impression this vessel was converted from a gulf shrimper to a New England trawler. I am unaware if that triggered a major conversion determination and by who. I think 28.500 (b) and probably (c) are met with the conversion but we would need the previous lightship characteristics before the conversion to know if the characteristics changed by more than the prescribed percentages. It seems the changes were believed to adversely affect stability and the qualified individual conducted an new incline experiment and stability calculations in 2002 following the modifications. Those calculations/stability instructions contained Intact Righting Energy, Severe Wind and Roll, and Lifting.

Following suit with the qualified individual, our stability analysis used those criteria in the stability instruction for comparison with the addition of Water on Deck as an exploratory criteria. Going forward with the load conditions at the time of incident and other suspected load conditions (uneven fuel transfers) the same criteria were applied.

Unintentional flooding would not be applicable regardless of the major conversion determination since 28.580 only states vessels built on or after 1991 must comply. From a stability perspective, if

existing vessels that underwent a major conversion were required to meet this criteria they would likely have to move or add bulkheads to comply which might not be possible.

Those are my thoughts but I will defer to CDR [REDACTED] and LT [REDACTED] for more insight.

Thanks,

[REDACTED]

Very Respectfully,

LT [REDACTED] P.E.

Small Vessel Branch (H1)

USCG Marine Safety Center

[REDACTED]

From: Young Brian [REDACTED]

Sent: Wednesday, April 6, 2022 8:31 AM

To: [REDACTED] LT USCG MARINE SAFETY CENTER (USA) [REDACTED]

[REDACTED] CDR USCG (USA) [REDACTED] LT USCG (USA)

[REDACTED]

Subject: [URL Verdict: Neutral][Non-DoD Source] RE: EMMY ROSE Stability Analysis Summary

Good morning [REDACTED]

Sorry to be a pain, just checking in on the additional nav arc request about laz flooding with additional water on deck.

Also, for any of you, can you please explain how Emmy Rose would be subject to sub c stability requirements since the build date was before 1991? And if we don' have any evidence of major conversions / significant alterations, how would it be applicable to sub c requirements, (including freeing ports?) – This question is being raised by my managers as they review my report.

Also, why would this vessel be excluded from unintentional flooding regs?

Thanks,

Brian

Brian Young

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From: [REDACTED] LT USCG MARINE SAFETY CENTER (USA) [REDACTED]
Sent: Wednesday, March 23, 2022 1:06 PM
To: Young Brian [REDACTED] CDR USCG (USA)
[REDACTED] LT USCG (USA) [REDACTED]
Subject: RE: EMMY ROSE Stability Analysis Summary

[CAUTION] This email originated from outside of the organization. Do not click any links or open attachments unless you recognize the sender and know the content is safe.

Good morning Brian,

I have not considered the combined effect of water on deck and a flooded laz in my analysis. The vessel essentially had no heel for the time of incident, load condition 9, which would allow for drainage out the port side even with the laz flooded since that space is symmetrical about the centerline. I could specify a heel to starboard and load the water on deck with "spill points" at the top of the bulwarks on the starboard side and at the freeing ports on the port side then vary the flood height in the laz. Once I release the specified heel and solve this case I would anticipate the vessel to return to a more neutral heel angle from the righting energy. However, the flood case for the laz did induce a large trim angle which generally reduces stability so this could have an effect.

I know I won't be able to get to it this week but I will try to run the analysis towards the end of next week.

Thanks,

[REDACTED]

From: Young Brian <brian.young@ntsb.gov>
Sent: Wednesday, March 23, 2022 8:50 AM
To: [REDACTED] USCG MARINE SAFETY CENTER (USA) [REDACTED]
[REDACTED] CDR USCG (USA) [REDACTED] LT USCG (USA)
[REDACTED]
Subject: [URL Verdict: Neutral][Non-DoD Source] RE: EMMY ROSE Stability Analysis Summary

Good morning [REDACTED],

Thank you again for all your help. Not sure if it's too late in the game, but wondering if you might have any information available for the consideration of a flooded lazarette at different percentages with accumulated water on deck (stbd side)? We know some of the freeing ports were closed on the stbd side, and trying to explore the possibility of effects of water on deck combined with a flooded laz.

Thanks,
Brian