ELLIOTT BAY DESIGN GROUP



9/21/2026

LARGE CLASS ENFORCEMENT VESSEL

Stability Assessment

Prepared for: Alaska Wildlife Troopers | Anchorage, AK

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Rev. -

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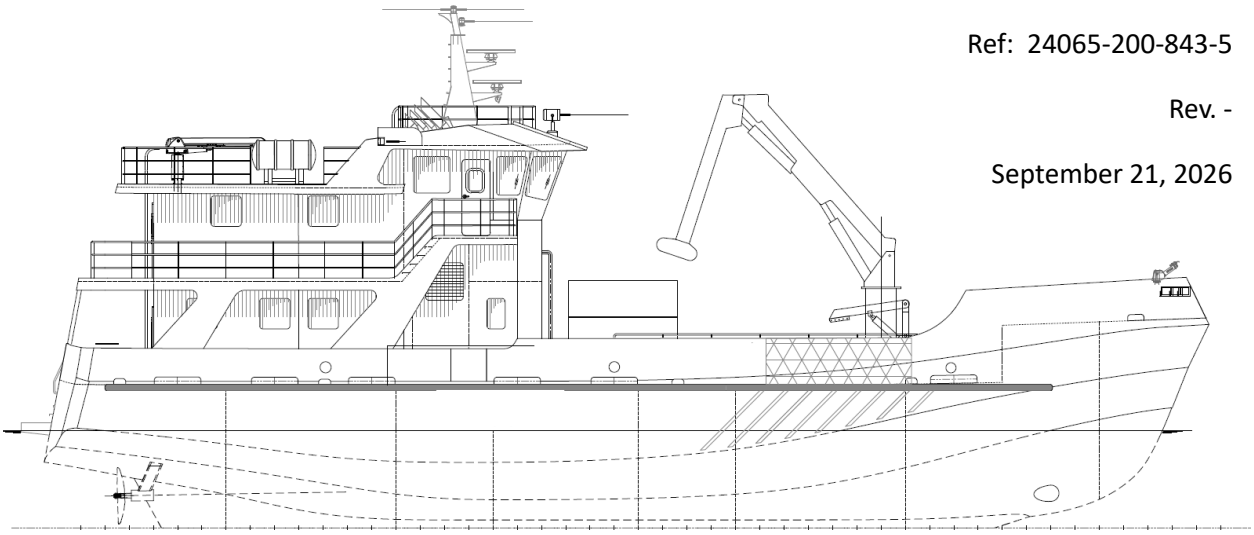

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General Notes

1. This document is prepared to demonstrate the suitability of the vessel's stability characteristics for the proposed operation. It is not developed for review by regulatory bodies.

Revisions

REV	DESCRIPTION	DATE	APPROVED
–	Initial issue	09/21/2026	SKW 55707

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1. Purpose

This report presents the results of a stability assessment for a new large class enforcement vessel to be built for Alaska Wildlife Troopers. While this vessel is not subject to United States Coast Guard (USCG) regulations, Subchapter T regulations have been used as the basis for this analysis. This report is not intended for USCG submittal.

2. Vessel Identification

Type:	Large Enforcement Vessel
Owner:	Alaska Wildlife Troopers
Hull Material:	Steel
Superstructure Material:	Aluminum
Length, overall:	96'-3/8"
Length, Design Load Waterline:	91'-7 7/8"
Beam, over guards:	28'-0"
Beam, at max draft:	26'-10"
Depth, at side:	11'-9"
Draft, at DLWL:	7'-9"
Typical Frame Spacing:	24"

3. Procedure

General HydroStatics (GHS) stability software and Microsoft Excel were used to perform the intact and damage stability assessment by evaluating the hydrostatic model of the vessel, Reference [1], and applying the applicable stability criteria to the sample load conditions that represent the operating envelope of the vessel. The vessel's stability was evaluated for the loading conditions given in Section 4.5. All calculations assumed operations in salt water with a 1.025 specific gravity.

4. Given and Assumed Parameters

4.1 Virtual Hull Model

An electronic model of the vessel was used to evaluate stability. The GHS hydrostatic model used in this assessment [1] was developed from the Rhino 3D model and lines plan, References [2] and [3]. The margin line is defined in the model as 3 inches below the deck edge. The model origin and axis convention are as follows:

Table 1: Model axis convention

Axis	Origin	Direction
Longitudinal	Frame 0, AP	Positive aft
Transverse	Centerline	Positive starboard
Vertical	Baseline	Positive up

The hull model (Figure 1) includes vessel tanks, compartments, and sail area, including cargo on deck. Shell plating is not included.

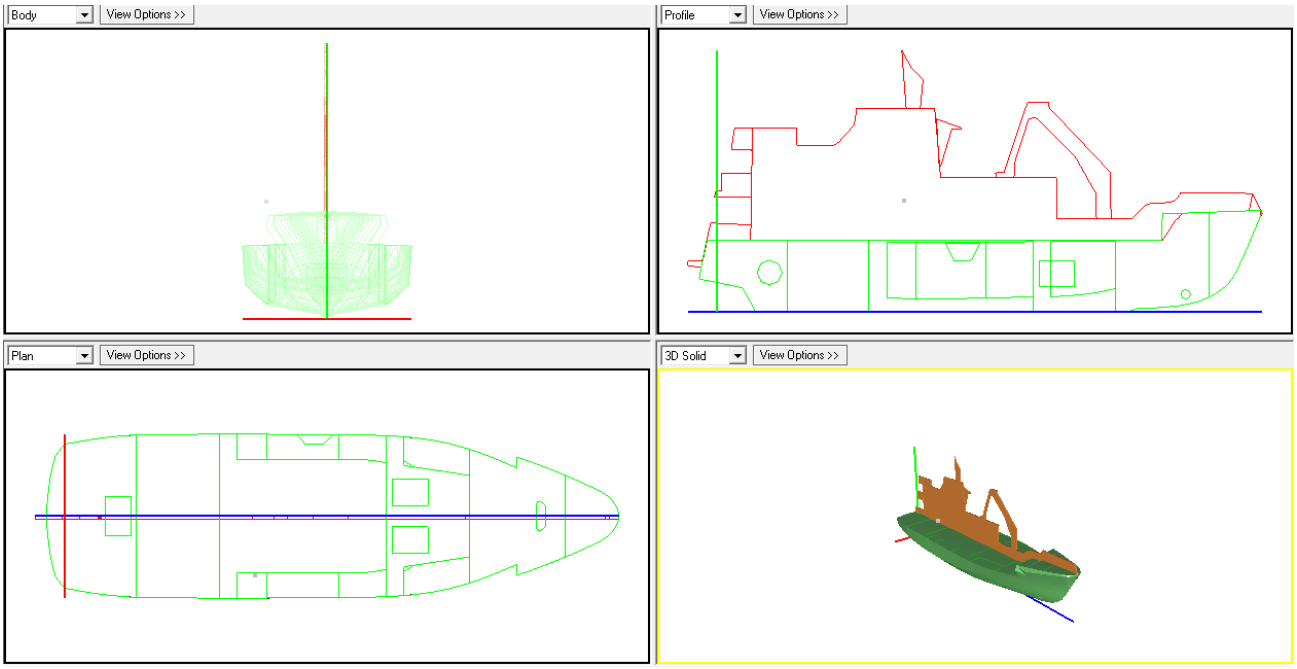

Figure 1: 3D hull model

A summary of critical points is provided in Table 2.

Table 2: Summary of critical points

No.	Description	Long'l ft fwd FR 0	Trans ft stbd CL	Vertical ft abv BL	Type
1	ER Air Intake	32.00	-9.92	18.75	Downflood
2	FO1 Vents	67.88	-11.00	14.67	Weathertight
3	FO2 Vents	36.25	-13.50	14.67	Weathertight
4	FO Day Vents	29.33	-13.50	14.67	Weathertight

4.2 Lightship Weight

The lightship weight and centers of gravity are calculated from Reference [3]. Note that to account for increases in vessel weight and VCG over its service life, a service life margin is added to the lightship weight for each condition. Note that the lightship VCG includes a roughly 6" margin.

Lightship:	170.0	LT
LCG:	39.00	ft fwd FR 0
TCG:	0.12	ft OCL, +stbd
VCG:	11.61	Ft ABL, +up

4.3 Stability Criteria

The following stability criteria were applied to each of the load conditions in exposed waters.

Intact Criteria

1. 46 CFR 170.173(c) Intact Righting Energy Criterion
2. 46 CFR 170.170 Weather Criterion

3. 46 CFR 173.095(b) Towline Pull Criterion
4. 46 CFR 173.020(b) Crane Lifting Criterion

Damage Criteria

1. 46 CFR 171.070 and 171.072 Subdivision Requirements – Type II
2. 46 CFR 171.080(f) Damage Stability Criterion

4.3.1 Towing Criterion

While this vessel is not intended for regular towing operations, towing criteria were evaluated for emergency operations. This analysis assumes that the vessel is equipped with two 600 hp main engines, two 56" diameter, four-bladed propellers, and two 62"x37.5" rudders. It is assumed that towing is performed from pad eyes located on the vessel's main deck.

4.3.2 Lifting Criteria

This analysis simulates the cargo crane lifting the skiff from main deck off the side of the vessel. A 6,000lb weight is hung from the end of the boom at 19.5ft off centerline and 32.5ft off baseline, accounting for the length of the straps required to lift the skiff over the vessel's side. The analysis also accounts for the shift in the boom's center of gravity during lifting. This analysis uses a partially-protected waters lifting criteria.

4.3.3 Damaged Tank Contents and Permeability

While this stability assessment is generally prepared in accordance with 46 CFR Subchapter T, the tank arrangement does not allow for the practice of double-counting tank loading for damage stability, as is typical in small passenger vessels by MSC policy. Instead, this analysis allows tank runoff consistent with other types of commercial vessels.

4.3.4 Extent of Damage

In general, the damage criteria of 171.080(f) are applied with a damaged extent of 12.66ft in length and 5.4ft inboard. The one exception is the evaluation of engine room damage. In this case, it is assumed that damage does not occur to the engine room, FO_DAY.C, FO_FWD.S, and FO2_AFT.S simultaneously.

4.4 Loads

4.4.1 Fixed Weights

Weights and centers for the following items were included in each sample condition. As lube oil is consumed, it will remain on the vessel in the lower waste oil tank, putting the fixed lube oil weight at a conservative height for arrival conditions. While gasoline may be burned throughout operations, the gasoline tank is located above main deck, making it a conservative assumption to keep the tank full in sample conditions.

Table 3: Sample condition fixed weights

No.	Description	Weight (LT)	LCG (ft, +aft)	TCG (ft, +stbd)	VCG (ft, +up)
1	Stores & Spares	5.00	34.00	0.00	10.00
2	Skiff	2.68	55.00	-8.00	14.50
3	Deck Cargo	4.50	51.00	0.00	16.30

No.	Description	Weight (LT)	LCG (ft, +aft)	TCG (ft, +stbd)	VCG (ft, +up)
4	Lube Oil Tank, 180 gal	0.52	53.00	-7.42	10.20
5	Gasoline Tank, 350 gal	0.98	78.00	0.00	13.80
6	Service Life Margin	25.55	38.92	0.00	13.39

4.4.2 Crew

The vessel is assumed to carry 8 crew members. For conservatism, this analysis includes 12 crew members, each at 185lb with 60lb of effects, in each condition.

4.4.3 Free Surface Correction

The maximum free surface for all consumable and non-consumable liquid tanks was calculated to exceed the requirements outlined in 46 CFR 170.285 for intact stability calculations and 46 CFR 170.290 for damage stability calculations and is included as a free surface moment (FSM) floor of 39.3 LT-ft for all sample loading conditions. Tank capacities are included in Appendix A.

4.4.4 Icing

This analysis evaluates the impact of icing on stability. The vessel is expected to operate on exposed waters north of waters north of 42° North latitude and south of 66°30' between November 15 and April 15. The icing weights are equivalent to approximately 0.65 inches of ice on horizontal surfaces and 0.33 inches of ice on a projected area of vertical surfaces. Sample conditions are analyzed both with and without icing. Icing calculations are included in Appendix C.

4.5 Sample Loading Conditions

This analysis evaluated departure, arrival, and mid-voyage conditions, both with and without icing loads. The lifting analysis is applied to each condition.

- Departure has maximum fuel, 100% full freshwater tanks, 10% sewage,
- mid-voyage has 50% fuel, freshwater, and sewage, and
- arrival has 10% fuel, 10% freshwater, and a full sewage tank.

Additionally,

- Arrival with icing contains a restriction on the minimum amount of fuel, with the FO1.P/S tanks loaded to 95%, the FO2_FWD.P/S tanks loaded to 60%, and the FO2_AFT.P/S tanks loaded to 10% capacity (equating to 36% of total fuel capacity). Operations during icing conditions should generally be avoided, particularly in the arrival condition.

4.5.1 Fuel Burn Sequence

Only one pair of fuel storage tanks may be slack at a time. Fuel shall be burned from the following order of tanks:

1. FO2_AFT.P/S
2. FO2_FWD.P/S
3. FO1.P/S

This aft-to-forward burn sequence should be adhered to in all operations.

5. Results

Figure 2 shows maximum allowable vertical center of gravity (KG) for criteria stability criteria 1, 2, and 3. This plot shows that intact righting energy, criteria 1, is the limiting intact criteria. Therefore, all conditions are evaluated explicitly against only intact righting energy and lifting criteria.

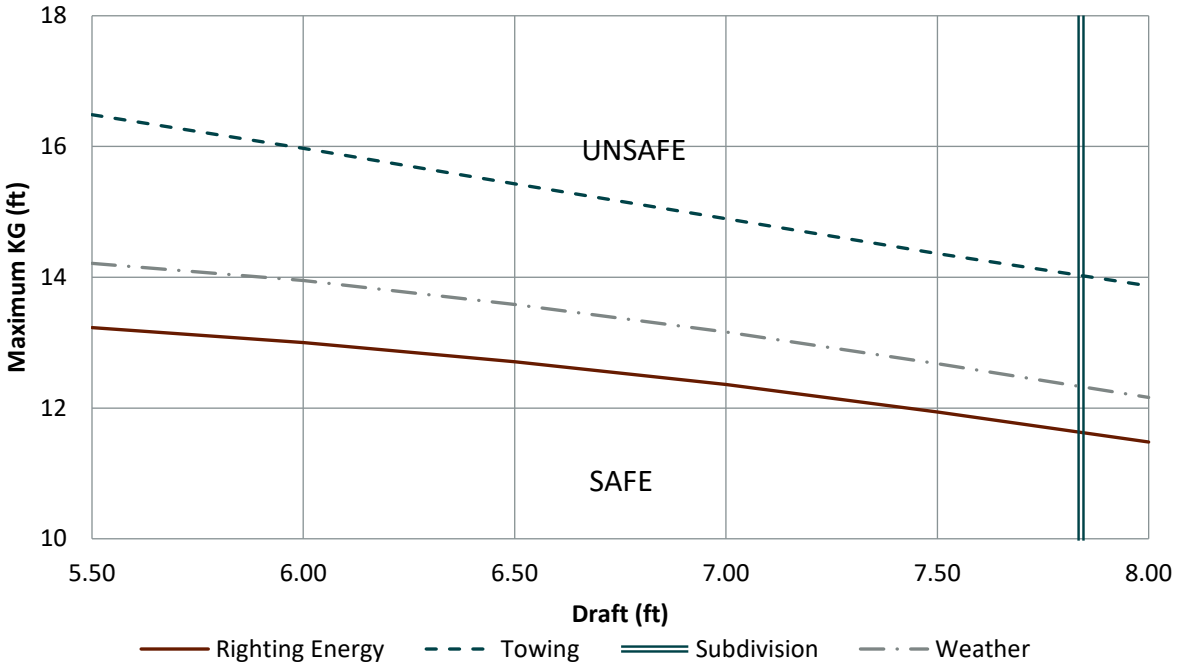

Figure 2: Maximum KG curves for intact and subdivision criteria

A summary of the load conditions used in the analysis is included in Table 4.

Table 4: Load Condition Summary

Cond No.	Description	Disp LT	LCF Draft ft	Trim ft (+ aft)	VCG (adj.) ft ABL	GMT ft
0	Lightship	170.02	5.97	1.45	11.84	6.04
1	Departure	262.20	7.67	-0.99	11.32	4.05
2	Mid Voyage	238.57	7.24	-0.54	11.58	4.22
3	Arrival	218.29	6.87	0.77	11.93	4.47
4	Departure, with Icing	267.73	7.77	-1	11.47	3.83
5	Mid Voyage, with Icing	244.10	7.34	-0.55	11.74	3.97
6	Arrival, with Icing	236.70	7.21	-0.23	11.89	3.98
7	Max Draft	271.73	7.84	0	11.53	3.76

6. Conclusions

While this vessel is not subject to United States Coast Guard (USCG) regulations, it is found to meet the applicable criteria of Subchapter S for exposed routes with the limitations for lifting and towing noted in the Operating Instructions and the exceptions noted in 4.3.3 and 4.3.4. The criteria used are not substitutions for good seamanship, and the master is ultimately responsible for the safe operation of the vessel.

7. Operating Instructions

To the Master:

You are responsible for maintaining this vessel in a satisfactory stability condition at all times and for complying with the instructions and precautions listed below. These instructions shall be posted in the wheelhouse.

7.1 Route

Operation on exposed waters is permitted. The cargo crane should only be used in calm wind and wave conditions.

7.2 Personnel

No passengers-for-hire (46 CFR 70.10-1) may be carried. This analysis demonstrates safe operation including 12 personnel.

7.3 Towing

Towing should only be performed in emergency cases. Do not operate the crane during towing operations. Towing padeyes on transom, Reference [4], are sized for a safe working load of 5,000 lb. Bridal and towing lines shall be selected to not exceed this load limit.

7.4 Crane Lifting

The vessel meets partially-protected lifting criteria with up to 6,000lb of weight (the weight of skiff) 19.5ft off centerline. Only use lifting gear in calm conditions. Do not use lifting gear in icing conditions. Do not use lifting gear during towing operations. Avoid using the crane when the midship draft (average of forward and aft drafts) exceeds 7' 9".

7.5 Deck Cargo

The vessel may carry up to 16,000lb of cargo on the working deck forward of the house, including the skiff. No cargo or stores may be carried on upper decks or house roof decks.

7.6 Icing Conditions

Icing conditions are examined as outlined for vessels operating between 42° N and 66°30'N between November 15 and April 15. The vessel meets intact criteria in icing conditions. The icing calculations were prepared in accordance with 46 CFR 28.550. This USCG approach for estimating icing accumulation is non-conservative, so it is recommended that the vessel seek safe harbor in icing conditions. If icing occurs, it is recommended that the crew remove ice to prevent major buildup, as it can accumulate quickly.

7.7 Weight Changes

It is the owner/operator's responsibility to monitor the configuration of this vessel to ensure that no modifications are made without assessing the effect on the vessel's stability.

7.8 Freeing Ports

Deck freeing ports shall always be maintained operable and unobstructed.

7.9 Bilges

The vessel's bilges and voids shall be kept to minimum content at all times. This is to be done in accordance with pollution prevention requirements.

7.10 Hull Openings

Any openings that could allow water to enter the hull or deckhouse should be kept closed when rough weather or sea conditions exist or are anticipated. Particular attention should be paid to all weather deck doors, deck hatches, and vents. All watertight doors shall be kept closed and dogged except when used for passage.

7.11 List

Make every effort to determine the cause of any list of the vessel before taking corrective action.

8. References

[1] Elliott Bay Design Group, "GHS Geometry File," 24065-.GFT, 2026.

[2] Elliott Bay Design Group, "3D Hull Structure," 24065_3D Hull Structure.3dm, 2026.

[3] Elliott Bay Design Group, "Weight Estimate," 24085-200-833-0, 2026.

[4] Elliott Bay Design Group, "Hull Structure," 24065-200-120-0, Rev -, 2026.

Appendix A

Hydrostatics
Tank Capacities
Sail Areas
Frame Table

Hydrostatics

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GHS 19.58 NEW AWT PATROL VESSEL

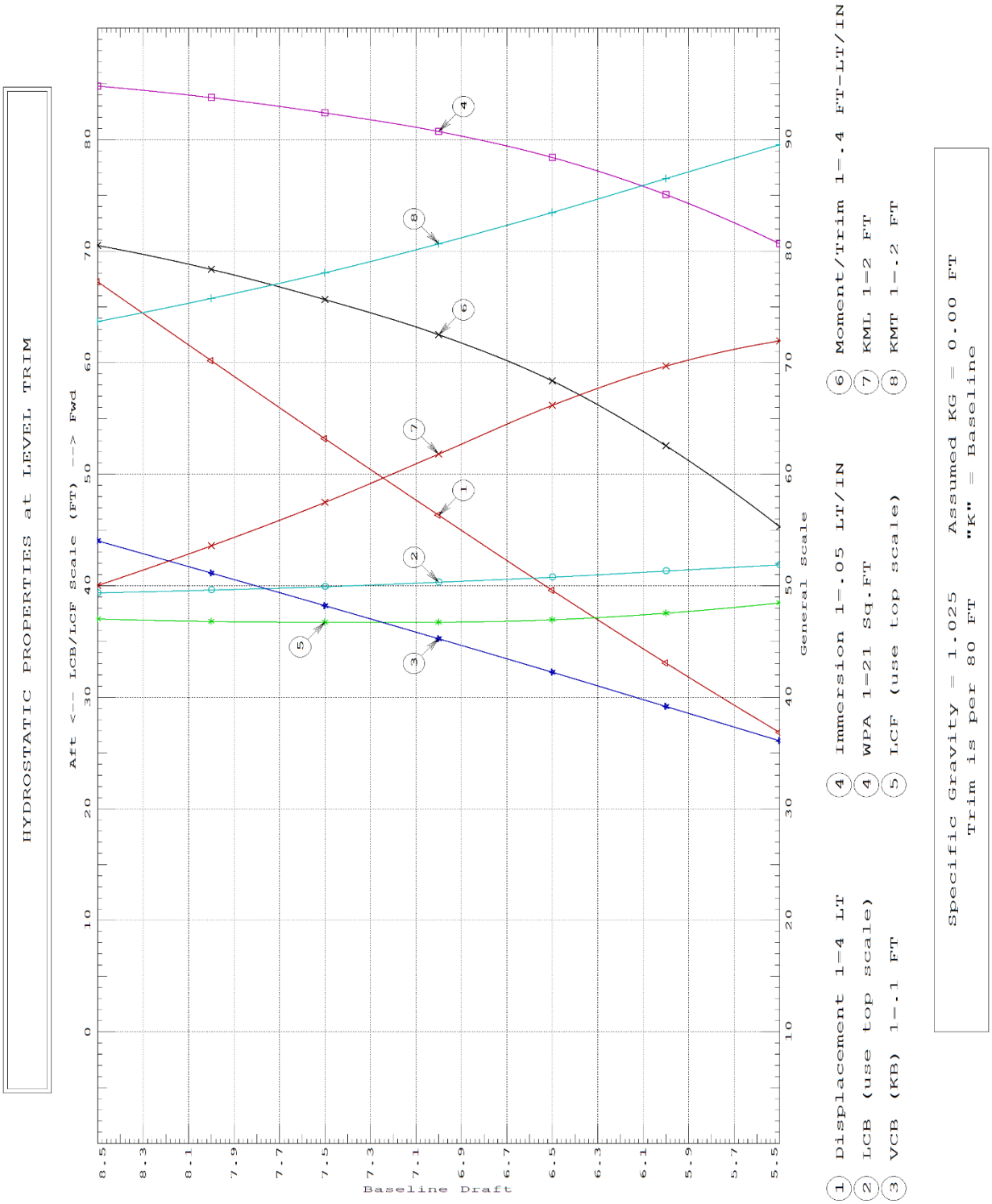
HYDROSTATIC PROPERTIES
No Trim, No Heel, Fixed VCG = 0.00

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	KML	KMT
5.500	147.46	41.90f	3.61	4.03	38.48f	22.11	144.0	17.91
6.000	172.36	41.33f	3.92	4.25	37.56f	25.02	139.4	17.30
6.500	198.40	40.80f	4.23	4.42	36.97f	27.35	132.4	16.70
7.000	225.30	40.32f	4.53	4.54	36.75f	29.01	123.6	16.14
7.500	252.78	39.93f	4.82	4.62	36.73f	30.27	114.9	15.61
8.000	280.72	39.62f	5.12	4.69	36.81f	31.35	107.2	15.15
8.500	309.01	39.37f	5.40	4.74	37.03f	32.21	100.1	14.74

Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.

Trim is per 80.00Ft
Draft is from Baseline.

07/09/26 14:53:22 Elliott Bay Design Group
GHS 19.58 **NEW AWT PATROL VESSEL**



Tank Capacities

09/16/26 19:09:02 Elliott Bay Design Group
GHS 20.00 **NEW AWT PATROL VESSEL**

------- TANK LIST --------
------- Capacities at 100% -------

TANK STATUS
Trim: zero, Heel: zero

Part	Gals.	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FO_DAY.S	1178.6	0.870	3.82	31.50f	11.34s	7.82	0.7*
FO_DAY.P	1178.6	0.870	3.82	31.50f	11.34p	7.82	0.7*
FO1.S	2025.3	0.870	6.56	62.07f	9.45s	8.65	2.8*
FO1.P	2025.3	0.870	6.56	62.07f	9.45p	8.65	2.8*
FO2_FWD.S	1661.4	0.870	5.39	49.98f	11.11s	8.10	1.2*
FO2_AFT.S	2770.8	0.870	8.98	39.93f	11.31s	7.85	1.8*
FO2_FWD.P	1661.4	0.870	5.39	49.98f	11.11p	8.10	1.2*
FO2_AFT.P	2695.1	0.870	8.74	39.87f	11.26p	7.77	1.5*
FW.S	624.5	1.000	2.33	58.00f	4.00s	6.50	1.2*
FW.P	624.5	1.000	2.33	58.00f	4.00p	6.50	1.2*
SEW.C	621.7	1.025	2.37	9.03f	0.00	6.71	4.1*
FOREPEAK.C	2965.9	1.025	11.33	86.94f	0.00	13.39	20.1*
Total Tanks--------->			67.61	52.90f	0.05s	8.83	39.3

Distances in FEET.----------Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

Condition Graphic - Draft: 0.000 Trim: zero Heel: zero



Tanks

1 FO_DAY.S	3 FO1.S	6 FO2_AFT.S	9 FW.S	12 FOREPEAK.C	15 ER.C
2 FO_DAY.P	4 FO1.P	7 FO2_FWD.P	10 FW.P	13 VOID1.C	16 WORKSHOP.C
	5 FO2_FWD.S	8 FO2_AFT.P	11 SEW.C	14 TANKVOID.C	17 LAZARETTE.C

09/16/26 19:09:02 Elliott Bay Design Group
GHS 20.00 **NEW AWT PATROL VESSEL**

------- TANK LIST FOR DAMAGE STABILITY --------
------- Capacities at 100%, Heel at 5deg -------

TANK STATUS
Trim: zero, Heel: Stbd 5.00 deg.

Part	Gals.	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FO_DAY.S	1136.3	0.870	3.68	31.50f	11.36s	7.67	0.8
FO_DAY.P	1155.1	0.870	3.74	31.50f	11.33p	7.74	0.7
FO1.S	2025.3	0.870	6.56	62.07f	9.45s	8.65	2.8*
FO1.P	2025.3	0.870	6.56	62.07f	9.45p	8.65	2.8*
FO2_FWD.S	1661.4	0.870	5.39	49.98f	11.11s	8.10	1.2*
FO2_AFT.S	2770.8	0.870	8.98	39.93f	11.31s	7.85	1.8*
FO2_FWD.P	1661.4	0.870	5.39	49.98f	11.11p	8.10	1.2*
FO2_AFT.P	2695.1	0.870	8.74	39.87f	11.26p	7.77	1.5*
FW.S	624.5	1.000	2.33	58.00f	4.00s	6.50	1.2*
FW.P	624.5	1.000	2.33	58.00f	4.00p	6.50	1.2*
SEW.C	621.7	1.025	2.37	9.03f	0.00	6.71	4.1*
FOREPEAK.C	2965.9	1.025	11.33	86.94f	0.00	13.39	20.1*
Total Tanks--------->			67.40	52.97f	0.04s	8.82	39.3

Distances in FEET.----------Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

Condition Graphic - Draft: 0.000 Trim: zero Heel: stbd 5.00 deg.



Tanks

1 FO_DAY.S	3 FO1.S	6 FO2_AFT.S	9 FW.S	12 FOREPEAK.C	15 ER.C
2 FO_DAY.P	4 FO1.P	7 FO2_FWD.P	10 FW.P	13 VOID1.C	16 WORKSHOP.C
	5 FO2_FWD.S	8 FO2_AFT.P	11 SEW.C	14 TANKVOID.C	17 LAZARETTE.C

Sail Areas

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GHS 19.58 NEW AWT PATROL VESSEL

------ WIND AREAS -------
LATERAL PLANE STATUS

Baseline draft: 5.500
Trim: zero, Heel: zero

Part	LPA	LCP	HCP	LPA	LCP	HCP
HULL	428.5	43.49f	-2.61	676.4	48.25f	3.98
SAIL1				978.0	35.03f	14.85
OVERHANGS				72.4	12.82f	16.03
MAST				20.6	33.31f	33.04
CRANE				85.3	59.59f	21.29
Total Lateral Plane->	428.5	43.49f	-2.61	1832.7	40.15f	11.39

Distances in FEET.

LATERAL PLANE STATUS

Baseline draft: 6.000
Trim: zero, Heel: zero

Part	LPA	LCP	HCP	LPA	LCP	HCP
HULL	474.0	43.39f	-2.84	630.9	48.66f	3.74
SAIL1				978.0	35.03f	14.35
OVERHANGS				72.4	12.82f	15.53
MAST				20.6	33.31f	32.54
CRANE				85.3	59.59f	20.79
Total Lateral Plane->	474.0	43.39f	-2.84	1787.3	40.09f	11.17

Distances in FEET.

LATERAL PLANE STATUS

Baseline draft: 6.500
Trim: zero, Heel: zero

Part	LPA	LCP	HCP	LPA	LCP	HCP
HULL	519.5	43.33f	-3.07	585.4	49.12f	3.52
SAIL1				978.0	35.03f	13.85
OVERHANGS				72.4	12.82f	15.03
MAST				20.6	33.31f	32.04
CRANE				85.3	59.59f	20.29
Total Lateral Plane->	519.5	43.33f	-3.07	1741.7	40.02f	10.96

Distances in FEET.

LATERAL PLANE STATUS

Baseline draft: 7.000
Trim: zero, Heel: zero

Part	LPA	LCP	HCP	LPA	LCP	HCP
HULL	565.2	43.30f	-3.30	539.7	49.65f	3.29
SAIL1				978.0	35.03f	13.35
OVERHANGS				72.4	12.82f	14.53
MAST				20.6	33.31f	31.54
CRANE				85.3	59.59f	19.79
Total Lateral Plane->	565.2	43.30f	-3.30	1696.0	39.94f	10.75

Distances in FEET.

LATERAL PLANE STATUS

Baseline draft: 7.500
Trim: zero, Heel: zero

Part	LPA	LCP	HCP	LPA	LCP	HCP
HULL	610.9	43.28f	-3.53	494.0	50.26f	3.07
SAIL1				978.0	35.03f	12.85
OVERHANGS				72.4	12.82f	14.03
MAST				20.6	33.31f	31.04
CRANE				85.3	59.59f	19.29
Total Lateral Plane->	610.9	43.28f	-3.53	1650.3	39.86f	10.54

Distances in FEET.

LATERAL PLANE STATUS

Baseline draft: 8.000
Trim: zero, Heel: zero

Part	LPA	LCP	HCP	LPA	LCP	HCP
HULL	656.8	43.28f	-3.77	448.1	50.97f	2.86
SAIL1				978.0	35.03f	12.35
OVERHANGS	0.7	3.47a	-0.17	71.7	12.98f	13.66
MAST				20.6	33.31f	30.54
CRANE				85.3	59.59f	18.79
Total Lateral Plane->	657.5	43.23f	-3.77	1603.7	39.78f	10.34

Distances in FEET.

LATERAL PLANE STATUS

Baseline draft: 8.500
Trim: zero, Heel: zero

Part	LPA	LCP	HCP	LPA	LCP	HCP
HULL	702.7	43.28f	-4.01	402.2	51.84f	2.66
SAIL1				978.0	35.03f	11.85
OVERHANGS	2.0	3.54a	-0.38	70.4	13.28f	13.40
MAST				20.6	33.31f	30.04
CRANE				85.3	59.59f	18.29
Total Lateral Plane->	704.6	43.15f	-4.00	1556.6	39.71f	10.14

Distances in FEET.

Frame Table

	Frame No.	Dist from GHS Origin (ft, +aft)		Frame No.	Dist from GHS Origin (ft, +aft)
	0	0.0		24	-48.0
	1	-2.0		25	-50.0
	2	-4.0		26	-52.0
WEB FR	3	-6.0	WT	27	-54.0
	4	-8.0		28	-56.0
	5	-10.0		29	-58.0
WT	6	-12.0	WEB FR	30	-60.0
	7	-14.0		31	-62.0
	8	-16.0		32	-64.0
	9	-18.0		33	-66.0
WEB FR	10	-20.0	WT	34	-68.0
	11	-22.0		35	-70.0
	12	-24.0		36	-72.0
WT	13	-26.0		37	-74.0
	14	-28.0	WEB FR	38	-76.0
	15	-30.0		39	-78.0
WEB FR	16	-32.0		40	-80.0
	17	-34.0		41	-82.0
	18	-36.0	WT	42	-84.0
WEB FR	19	-38.0		43	-86.0
	20	-40.0		44	-88.0
	21	-42.0		45	-90.0
	22	-44.0		46	-92.0
WEB FR	23	-46.0		47	-94.0

Appendix B

GHS Condition Output

GHS Condition Output

```
09/21/26 11:57:44          Elliott Bay Design Group
GHS 20.00                    NEW AWT PATROL VESSEL


Geometry File: C:\EBDG\ELLIOTT BAY DESIGN GROUP LLC\...\Geometry\24065-.GFT
Geometry File date and time: 09/21/26 09:42:46


GEOMETRY CREATED BY EBDG:SKW FROM RHINO MODEL 9/18/2026
NO SHELL OFFSET INCLUDED

Origin Definition
---------------------------------------
Longitudinal: STERN / FR0
  Transverse: Centerplane
    Vertical: Baseline

                            CRITICAL POINT STATUS
                            Baseline draft: 0.000
                           Trim: zero,  Heel: zero
                                      +
       Critical Points----------------------LCP-----TCP-----VCP-----Height
    (1) ER Air Intake              FLOOD   32.00f   9.92p  18.75      18.75
    (1) ER Air Intake              FLOOD   32.00f   9.92s  18.75      18.75
    (2) FO 1 Vent                  TIGHT   67.88f  11.00p  14.67      14.67
    (2) FO 1 Vent                  TIGHT   67.88f  11.00s  14.67      14.67
    (3) FO 2 Vent                  TIGHT   36.25f  13.50p  14.67      14.67
    (3) FO 2 Vent                  TIGHT   36.25f  13.50s  14.67      14.67
    (4) FO Day Vent                TIGHT   29.33f  13.50p  14.67      14.67
    (4) FO Day Vent                TIGHT   29.33f  13.50s  14.67      14.67
     Distances in FEET.-----------------------------------------------------
```

09/21/26 11:57:44 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

***** Condition 0 *****
Lightship

WEIGHT STATUS
Baseline draft: 5.065 @ 86.00f, 6.510 @ 6.00f
Trim: Aft 1.45/80.00, Heel: Stbd 1.09 deg.

Part	Weight(LT)	LCG	TCG	VCG	FSM
WEIGHT	170.00	39.00f	0.12s	11.61	
	Gals. SpGr Weight(LT)	LCG	TCG	VCG	
Total Tanks---------->	--- Included in Fixed Weight ---				39.3*
Total Weight--------->	170.00	39.00f	0.12s	11.61	
Free Surface Adjustment---------->				0.23	
Adjusted CG---------->		39.00f	0.12s	11.84	

Distances in FEET. Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

FREEBOARD STATUS
Baseline draft: 5.065 @ 86.00f, 6.510 @ 6.00f
Trim: Aft 1.45/80.00, Heel: Stbd 1.09 deg.
Least freeboard is 4.97 Ft located at 0.56f
Least extra freeboard (to margin line) is 4.72 Ft located at 0.56f

HYDROSTATIC PROPERTIES
Trim: Aft 1.45/80.00, Heel: Stbd 1.09 deg., VCG = 11.61

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
5.965	170.02	38.86f	3.92	4.32	36.18f	23.86	134.7	6.04

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

09/21/26 11:57:44 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

***** Condition 1 *****
Departure

WEIGHT STATUS
Baseline draft: 8.278 @ 86.00f, 7.286 @ 6.00f
Trim: Fwd 0.99/80.00, Heel: Stbd 0.09 deg.

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	170.00	39.00f	0.12s	11.61
Stores & Spares	5.00	34.00f	0.00	10.00
8 Crew	1.30	28.00f	0.00	23.50
Skiff	2.68	55.00f	8.00p	14.50
Deck Cargo	4.50	51.00f	0.00	16.30
Lube Oil Tank, 180 gal	0.52	53.00f	7.42p	10.20
Gasoline Tank, 350 gal	0.98	78.00f	3.74s	13.80
Service Life Margin	25.55	38.92f	0.00	13.39
Total Fixed--------->	210.53	39.48f	0.01p	12.00

	Gals.	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FO_DAY.S	1119.7	0.870	3.63	31.51f	11.34s	7.61	0.7
FO_DAY.P	1119.7	0.870	3.63	31.51f	11.34p	7.61	0.7
FO1.S	1924.0	0.870	6.24	62.06f	9.43s	8.49	2.7
FO1.P	1924.0	0.870	6.24	62.06f	9.43p	8.49	2.7
FO2_FWD.S	1578.2	0.870	5.12	49.99f	11.10s	7.91	1.2
FO2_AFT.S	2632.4	0.870	8.53	39.95f	11.31s	7.65	1.8
FO2_FWD.P	1578.3	0.870	5.12	49.99f	11.10p	7.91	1.2
FO2_AFT.P	2560.3	0.870	8.30	39.90f	11.26p	7.56	1.4
FW.S	624.5	1.000	2.33	58.00f	4.00s	6.50	0.0
FW.P	624.5	1.000	2.33	58.00f	4.00p	6.50	0.0
SEW.C	62.2	1.025	0.24	9.05f	0.02s	5.06	2.1
Total Tanks--------->			51.68	47.56f	0.06s	7.77	39.3*
Total Weight-------->			262.21	41.07f	0.01s	11.17	
Free Surface Adjustment---------->						0.15	
Adjusted CG---------->				41.07f	0.01s	11.32	

Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 8.278 @ 86.00f, 7.286 @ 6.00f
Trim: Fwd 0.99/80.00, Heel: Stbd 0.09 deg.
Least freeboard is 3.78 Ft located at 67.76f
Least extra freeboard (to margin line) is 3.53 Ft located at 67.76f

HYDROSTATIC PROPERTIES
Trim: Fwd 0.99/80.00, Heel: Stbd 0.09 deg., VCG = 11.17

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.672	262.20	41.15f	4.93	4.65	37.17f	27.66	101.3	4.05

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

09/21/26 11:57:44 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

***** Condition 2 *****
Mid Voyage

WEIGHT STATUS
Baseline draft: 7.573 @ 86.00f, 7.035 @ 6.00f
Trim: Fwd 0.54/80.00, Heel: Port 0.05 deg.

Part	Weight(LT)	LCG	TCG	VCG	
LIGHT SHIP	170.00	39.00f	0.12s	11.61	
Stores & Spares	5.00	34.00f	0.00	10.00	
8 Crew	1.30	28.00f	0.00	23.50	
Skiff	2.68	55.00f	8.00p	14.50	
Deck Cargo	4.50	51.00f	0.00	16.30	
Lube Oil Tank, 180 gal	0.52	53.00f	7.42p	10.20	
Gasoline Tank, 350 gal	0.98	78.00f	3.74s	13.80	
Service Life Margin	25.55	38.92f	0.00	13.39	
Total Fixed--------->	210.53	39.48f	0.01p	12.00	

	Gals.	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FO_DAY.S	589.3	0.870	1.91	31.51f	11.16s	5.73	0.6
FO_DAY.P	589.3	0.870	1.91	31.51f	11.16p	5.73	0.6
FO1.S	1924.0	0.870	6.24	62.05f	9.43s	8.49	2.7
FO1.P	1924.0	0.870	6.24	62.05f	9.43p	8.49	2.7
FO2_FWD.S	996.8	0.870	3.23	49.95f	10.92s	6.52	0.9
FO2_AFT.S	277.5	0.870	0.90	39.87f	10.37s	3.65	0.4
FO2_FWD.P	996.8	0.870	3.23	49.95f	10.92p	6.52	0.9
FO2_AFT.P	269.9	0.870	0.87	39.87f	10.36p	3.63	0.4
FW.S	312.2	1.000	1.16	58.01f	4.00s	5.61	1.2
FW.P	312.2	1.000	1.16	58.01f	4.00p	5.61	1.2
SEW.C	310.8	1.025	1.19	9.04f	0.01p	5.84	2.9
Total Tanks--------->			28.04	51.12f	0.01s	7.00	39.3*
Total Weight-------->			238.57	40.85f	0.00p	11.42	
Free Surface Adjustment---------->						0.16	
Adjusted CG---------->				40.85f	0.00p	11.58	

Distances in FEET.----------Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

FREEBOARD STATUS
Baseline draft: 7.573 @ 86.00f, 7.035 @ 6.00f
Trim: Fwd 0.54/80.00, Heel: Port 0.05 deg.
Least freeboard is 4.37 Ft located at 61.69f
Least extra freeboard (to margin line) is 4.12 Ft located at 61.69f

HYDROSTATIC PROPERTIES
Trim: Fwd 0.54/80.00, Heel: Port 0.05 deg., VCG = 11.42

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/Inch	Moment/ LCF	In trim	GML	GMT
7.243	238.57	40.89f	4.67	4.58	36.98f	26.75	107.6	4.22

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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GHS 20.00 NEW AWT PATROL VESSEL

***** Condition 3 *****
Arrival

WEIGHT STATUS
Baseline draft: 6.398 @ 86.00f, 7.164 @ 6.00f
Trim: Aft 0.77/80.00, Heel: Port 0.05 deg.

Part	Weight(LT)	LCG	TCG	VCG	
LIGHT SHIP	170.00	39.00f	0.12s	11.61	
Stores & Spares	5.00	34.00f	0.00	10.00	
8 Crew	1.30	28.00f	0.00	23.50	
Skiff	2.68	55.00f	8.00p	14.50	
Deck Cargo	4.50	51.00f	0.00	16.30	
Lube Oil Tank, 180 gal	0.52	53.00f	7.42p	10.20	
Gasoline Tank, 350 gal	0.98	78.00f	3.74s	13.80	
Service Life Margin	25.55	38.92f	0.00	13.39	
Total Fixed--------->	210.53	39.48f	0.01p	12.00	

	Gals.	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FO_DAY.S	118.0	0.870	0.38	31.51f	10.41s	3.65	0.2
FO_DAY.P	118.0	0.870	0.38	31.51f	10.41p	3.65	0.2
FO1.S	203.0	0.870	0.66	61.14f	8.56s	4.45	0.3
FO1.P	203.0	0.870	0.66	61.14f	8.56p	4.45	0.3
FO2_FWD.S	166.1	0.870	0.54	49.82f	10.17s	3.91	0.2
FO2_AFT.S	277.5	0.870	0.90	39.71f	10.38s	3.65	0.4
FO2_FWD.P	166.5	0.870	0.54	49.82f	10.17p	3.91	0.2
FO2_AFT.P	269.9	0.870	0.87	39.71f	10.37p	3.63	0.4
FW.S	62.5	1.000	0.23	57.93f	4.00s	4.79	0.5
FW.P	62.5	1.000	0.23	57.93f	4.00p	4.79	0.5
SEW.C	621.7	1.025	2.37	9.03f	0.00	6.71	0.0
Total Tanks--------->			7.77	35.65f	0.03s	4.82	39.3*
Total Weight-------->			218.30	39.34f	0.00p	11.75	
Free Surface Adjustment---------->						0.18	
Adjusted CG---------->				39.35f	0.00p	11.93	

Distances in FEET.----------Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

FREEBOARD STATUS
Baseline draft: 6.398 @ 86.00f, 7.164 @ 6.00f
Trim: Aft 0.77/80.00, Heel: Port 0.05 deg.
Least freeboard is 4.59 Ft located at 0.56f
Least extra freeboard (to margin line) is 4.34 Ft located at 0.56f

HYDROSTATIC PROPERTIES
Trim: Aft 0.77/80.00, Heel: Port 0.05 deg., VCG = 11.75

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
6.873	218.29	39.27f	4.46	4.52	36.38f	25.93	114.0	4.47

Distances in FEET.----------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

09/21/26 11:57:44 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

***** Condition 4 *****
Departure, with Icing

WEIGHT STATUS
Baseline draft: 8.382 @ 86.00f, 7.381 @ 6.00f
Trim: Fwd 1.00/80.00, Heel: Stbd 0.10 deg.

Part	Weight(LT)	LCG	TCG	VCG	
LIGHT SHIP	170.00	39.00f	0.12s	11.61	
Stores & Spares	5.00	34.00f	0.00	10.00	
8 Crew	1.30	28.00f	0.00	23.50	
Skiff	2.68	55.00f	8.00p	14.50	
Deck Cargo	4.50	51.00f	0.00	16.30	
Lube Oil Tank, 180 gal	0.52	53.00f	7.42p	10.20	
Gasoline Tank, 350 gal	0.98	78.00f	3.74s	13.80	
Service Life Margin	25.55	38.92f	0.00	13.39	
Weather Ice	5.53	37.52f	0.00	18.38	
Total Fixed--------->	216.06	39.43f	0.01p	12.17	

	Gals.	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FO_DAY.S	1119.7	0.870	3.63	31.51f	11.34s	7.61	0.7
FO_DAY.P	1119.7	0.870	3.63	31.51f	11.34p	7.61	0.7
FO1.S	1924.0	0.870	6.24	62.06f	9.43s	8.49	2.7
FO1.P	1924.0	0.870	6.24	62.06f	9.43p	8.49	2.7
FO2_FWD.S	1578.2	0.870	5.12	49.99f	11.10s	7.91	1.2
FO2_AFT.S	2632.4	0.870	8.53	39.95f	11.31s	7.65	1.8
FO2_FWD.P	1578.3	0.870	5.12	49.99f	11.10p	7.91	1.2
FO2_AFT.P	2560.3	0.870	8.30	39.90f	11.26p	7.56	1.4
FW.S	624.5	1.000	2.33	58.00f	4.00s	6.50	0.0
FW.P	624.5	1.000	2.33	58.00f	4.00p	6.50	0.0
SEW.C	62.2	1.025	0.24	9.05f	0.02s	5.06	2.1
Total Tanks--------->			51.68	47.56f	0.06s	7.77	39.3*
Total Weight-------->			267.74	41.00f	0.01s	11.32	
Free Surface Adjustment---------->						0.15	
Adjusted CG---------->				41.00f	0.01s	11.47	

Distances in FEET.----------Moments in Ft-LT.

+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 8.382 @ 86.00f, 7.381 @ 6.00f
Trim: Fwd 1.00/80.00, Heel: Stbd 0.10 deg.
Least freeboard is 3.68 Ft located at 67.76f
Least extra freeboard (to margin line) is 3.43 Ft located at 67.76f

HYDROSTATIC PROPERTIES
Trim: Fwd 1.00/80.00, Heel: Stbd 0.10 deg., VCG = 11.32

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.771	267.73	41.08f	4.99	4.67	37.17f	27.82	99.7	3.83

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

09/21/26 11:57:44 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

***** Condition 5 *****
Mid Voyage, with Icing

WEIGHT STATUS
Baseline draft: 7.680 @ 86.00f, 7.131 @ 6.00f
Trim: Fwd 0.55/80.00, Heel: Port 0.06 deg.

Part	Weight(LT)	LCG	TCG	VCG	
LIGHT SHIP	170.00	39.00f	0.12s	11.61	
Stores & Spares	5.00	34.00f	0.00	10.00	
8 Crew	1.30	28.00f	0.00	23.50	
Skiff	2.68	55.00f	8.00p	14.50	
Deck Cargo	4.50	51.00f	0.00	16.30	
Lube Oil Tank, 180 gal	0.52	53.00f	7.42p	10.20	
Gasoline Tank, 350 gal	0.98	78.00f	3.74s	13.80	
Service Life Margin	25.55	38.92f	0.00	13.39	
Weather Ice	5.53	37.52f	0.00	18.38	
Total Fixed--------->	216.06	39.43f	0.01p	12.17	

	Gals.	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FO_DAY.S	589.3	0.870	1.91	31.51f	11.16s	5.73	0.6
FO_DAY.P	589.3	0.870	1.91	31.51f	11.16p	5.73	0.6
FO1.S	1924.0	0.870	6.24	62.05f	9.43s	8.49	2.7
FO1.P	1924.0	0.870	6.24	62.05f	9.43p	8.49	2.7
FO2_FWD.S	996.8	0.870	3.23	49.95f	10.92s	6.52	0.9
FO2_AFT.S	277.5	0.870	0.90	39.87f	10.37s	3.65	0.4
FO2_FWD.P	996.8	0.870	3.23	49.95f	10.92p	6.52	0.9
FO2_AFT.P	269.9	0.870	0.87	39.87f	10.36p	3.63	0.4
FW.S	312.2	1.000	1.16	58.01f	4.00s	5.61	1.2
FW.P	312.2	1.000	1.16	58.01f	4.00p	5.61	1.2
SEW.C	310.8	1.025	1.19	9.04f	0.01p	5.84	2.9
Total Tanks--------->			28.04	51.12f	0.01s	7.00	39.3*
Total Weight-------->			244.10	40.77f	0.00p	11.57	
Free Surface Adjustment---------->						0.16	
Adjusted CG---------->				40.77f	0.00p	11.74	

Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.680 @ 86.00f, 7.131 @ 6.00f
Trim: Fwd 0.55/80.00, Heel: Port 0.06 deg.
Least freeboard is 4.27 Ft located at 61.69f
Least extra freeboard (to margin line) is 4.02 Ft located at 61.69f

HYDROSTATIC PROPERTIES
Trim: Fwd 0.55/80.00, Heel: Port 0.06 deg., VCG = 11.57

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.344	244.10	40.82f	4.73	4.59	36.98f	26.90	105.8	3.97

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

09/21/26 11:57:44 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

***** Condition 6 *****
Arrival, with Icing

WEIGHT STATUS
Baseline draft: 7.347 @ 86.00f, 7.122 @ 6.00f
Trim: Fwd 0.23/80.00, Heel: Port 0.06 deg.

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	170.00	39.00f	0.12s	11.61
Stores & Spares	5.00	34.00f	0.00	10.00
8 Crew	1.30	28.00f	0.00	23.50
Skiff	2.68	55.00f	8.00p	14.50
Deck Cargo	4.50	51.00f	0.00	16.30
Lube Oil Tank, 180 gal	0.52	53.00f	7.42p	10.20
Gasoline Tank, 350 gal	0.98	78.00f	3.74s	13.80
Service Life Margin	25.55	38.92f	0.00	13.39
Weather Ice	5.53	37.52f	0.00	18.38
Total Fixed--------->	216.06	39.43f	0.01p	12.17

	Gals.	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FO_DAY.S	118.0	0.870	0.38	31.53f	10.41s	3.65	0.2
FO_DAY.P	118.0	0.870	0.38	31.53f	10.41p	3.65	0.2
FO1.S	1924.0	0.870	6.24	62.04f	9.43s	8.49	2.7
FO1.P	1924.0	0.870	6.24	62.04f	9.43p	8.49	2.7
FO2_FWD.S	432.0	0.870	1.40	49.89f	10.58s	4.95	0.6
FO2_AFT.S	277.5	0.870	0.90	39.83f	10.37s	3.65	0.4
FO2_FWD.P	432.0	0.870	1.40	49.89f	10.58p	4.95	0.6
FO2_AFT.P	269.9	0.870	0.87	39.83f	10.36p	3.63	0.4
FW.S	62.5	1.000	0.23	58.02f	4.00s	4.79	0.5
FW.P	62.5	1.000	0.23	58.02f	4.00p	4.79	0.5
SEW.C	621.7	1.025	2.37	9.03f	0.00	6.71	0.0
Total Tanks--------->			20.65	51.17f	0.01s	7.12	39.3*
Total Weight-------->			236.71	40.45f	0.00p	11.73	
Free Surface Adjustment---------->						0.17	
Adjusted CG---------->				40.45f	0.00p	11.89	

Distances in FEET.----------Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

FREEBOARD STATUS
Baseline draft: 7.347 @ 86.00f, 7.122 @ 6.00f
Trim: Fwd 0.23/80.00, Heel: Port 0.06 deg.
Least freeboard is 4.49 Ft located at 55.63f
Least extra freeboard (to margin line) is 4.24 Ft located at 55.63f

HYDROSTATIC PROPERTIES
Trim: Fwd 0.23/80.00, Heel: Port 0.06 deg., VCG = 11.73

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.209	236.70	40.47f	4.65	4.57	36.84f	26.60	107.9	3.98

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

09/21/26 11:57:44 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

***** Condition 7 *****
Max Draft

WEIGHT STATUS
Baseline draft: 7.840 @ 86.00f, 7.840 @ 6.00f
Trim: 0.00/80.00, Heel: zero

Part	Weight(LT)	LCG	TCG	VCG	
LIGHT SHIP	170.00	39.00f	0.12s	11.61	
Stores & Spares	5.00	34.00f	0.00	10.00	
8 Crew	1.30	28.00f	0.00	23.50	
Skiff	2.68	55.00f	8.00p	14.50	
Deck Cargo	4.50	51.00f	0.00	16.30	
Lube Oil Tank, 180 gal	0.52	53.00f	7.42p	10.20	
Gasoline Tank, 350 gal	0.98	78.00f	3.74s	13.80	
Service Life Margin	25.55	38.92f	0.00	13.39	
Weather Ice	5.53	37.52f	0.00	18.38	
Max Cargo	3.99	46.69a	0.44p	16.00	
Total Fixed--------->	220.05	37.87f	0.01p	12.24	

	Gals.	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FO_DAY.S	1119.7	0.870	3.63	31.50f	11.34s	7.61	0.7
FO_DAY.P	1119.7	0.870	3.63	31.50f	11.34p	7.61	0.7
FO1.S	1924.0	0.870	6.24	62.04f	9.43s	8.49	2.7
FO1.P	1924.0	0.870	6.24	62.04f	9.43p	8.49	2.7
FO2_FWD.S	1578.3	0.870	5.12	49.98f	11.10s	7.91	1.2
FO2_AFT.S	2632.4	0.870	8.53	39.93f	11.31s	7.65	1.8
FO2_FWD.P	1578.3	0.870	5.12	49.98f	11.10p	7.91	1.2
FO2_AFT.P	2560.3	0.870	8.30	39.88f	11.26p	7.56	1.4
FW.S	624.5	1.000	2.33	58.00f	4.00s	6.50	0.0
FW.P	624.5	1.000	2.33	58.00f	4.00p	6.50	0.0
SEW.C	62.2	1.025	0.24	9.03f	0.00	5.06	2.1
Total Tanks--------->			51.68	47.55f	0.06s	7.77	39.3*
Total Weight-------->			271.73	39.71f	0.00	11.39	
Free Surface Adjustment---------->						0.14	
Adjusted CG---------->				39.71f	0.00	11.53	

Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.840 @ 86.00f, 7.840 @ 6.00f
Trim: 0.00/80.00, Heel: zero
Least freeboard is 3.91 Ft located at 40.47f
Least extra freeboard (to margin line) is 3.66 Ft located at 40.47f

HYDROSTATIC PROPERTIES
Trim: 0.00/80.00, No Heel, VCG = 11.39

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.840	271.73	39.71f	5.02	4.67	36.77f	27.73	98.0	3.76

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

Appendix C

Icing Calculations
Towing Calculations
Weather Criterion Output
Intact Stability GHS Output
Damage Stability GHS Output
Subdivision GHS Output

Icing Calculations

ICING CALCULATIONS

from 46 CFR 28.550

Vessel to operate north of 42° North but south of 66°30' North latitude

(1) 3.07 pounds per square foot on horizontal projected area. Which corresponds to a thickness of 0.65 inches.

(2) 1.54 pounds per square foot on vertical projected area. Which corresponds to a thickness of 0.33 inches.

(d) The projected horizontal and vertical area of each small discontinuous surface such as a rail, a spar, and rigging with no sail can be accounted for by increasing the calculated area by 15%.

Horizontal Surfaces: 3.07 lbs/ft²

Description	Area (ft)	Weight (lb)	LCG (ft)	VCG (ft)	L_{MOM} (ft lbs)	V_{MOM} (ft lbs)
Main Deck	1,628.96	5001	-49.15	12.55	-245795	62745
Upper Deck	257.91	792	-9.90	20.33	-7839	16099
Bridge Deck	38.23	117	-32.42	23.83	-3805	2797
Upper Deck Top	458.74	1408	-14.21	28.18	-20010	39687
Bridge Top	364.10	1118	-31.87	31.68	-35620	35409
Sub Total =	2748	8436	-37.11	18.58	-313068	156738
Margin =	15%	1265				
Horizontal Total =		9702	-37.11	18.58		

Vertical Surfaces: 1.54 lbs/ft²

Description	Area (ft)	Weight (lb)	LCG (ft)	VCG (ft)	L_{MOM} (ft lbs)	V_{MOM} (ft lbs)
Outboard Profile	1,527.67	2345	-39.00	17.67	-91454	41428
Sub Total =	1528	2345	-39.00	17.67	-91454	41428
Margin =	15%	352				
Vertical Total =		2697	-39.00	17.67		

Description	Area (ft)	Weight (lb)	LCG (ft)	VCG (ft)	L_{MOM} (ft lbs)	V_{MOM} (ft lbs)
Horizontal Total =		9702	-37.11	18.58	-360029	180248
Vertical Total =		2697	-39.00	17.67	-105172	47642
TOTAL ICING =		**12398**	**-37.52**	**18.38**	-465200	227890
		5.53 LT				

Towing Calculations

TOWLINE PULL CRITERION

from 46 CFR 173.095(b) - Static towline criterion

In each loading condition, the vessel's metacentric height (GM) must be equal to or greater than the following:

$$GM_{reqd} = \frac{N\,(P\,D)^{2/3}\,(s)\,(h)}{K\,\Delta\,(f\,/\,B)}$$

N = number of propellers	2	propellers
P = shaft horsepower - per shaft	600	hp
D = propeller diameter	4.67	ft
s = fraction of prop cylinder intercepted by rudder at 45 degrees	0.53	
h = vertical distance from prop shaft at rudder to tow bitts	9.50	ft
B = molded beam	23.75	ft
K = conversion factor	38.00	
Δ = displacement of the vessel in long tons.		

Tow point height abv baseline:	12.17	ft
Prop shaft height abv baseline:	2.67	ft (at rudder)
Depth to freeboard deck:	11.50	ft (low point, at edge)

Draft, T:	5.50	6.00	6.50	7.00	7.50	8.00
Displacement to T:	147	172	198	225	253	281
Freeboard:	6.00	5.50	5.00	4.50	4.00	3.50
GM required:	1.42	1.33	1.27	1.24	1.25	1.28
KMt at draft T:	17.91	17.30	16.70	16.14	15.61	15.15
Max KG incl. free surface:	16.49	15.97	15.43	14.90	14.36	13.87

SUMMARY TABLE

DRAFT	DISP	MAX KG	MIN GMt
5.50	147.46	16.49	1.42
6.00	172.36	15.97	1.33
6.50	198.40	15.43	1.27
7.00	225.30	14.90	1.24
7.50	252.78	14.36	1.25
8.00	280.72	13.87	1.28

Weather Criterion Output

WEATHER CRITERION MAXIMUM KG CALCULATION

From 46 CFR 170.170:

Each vessel must be shown by design calculations to have a metacentric height (GM) that is equal to or greater than the following in each condition of loading and operation:

$$GM = \frac{P\,A\,H}{\Delta \tan(T)}$$

P = $0.0050 + (L/14200)^2$ = 0.0050 LT/ft² *for service on* Exposed Waters

L = LBP, length on waterline at deepest operating draft = 76.4 ft

A = projected lateral area of the portion of the vessel & deck cargo area above waterline (sq. ft)

H = vertical distance from centroid of A to center of the underwater lateral area (ft)

Δ = vessel displacement (LT)

T = lesser of 14 deg or angle of heel where 1/2 freeboard to the deck edge is submerged.

Depth to freeboard deck = 10.7 ft (low point, at edge)

Beam, molded = 26.8 ft

Draft ft	Δ LT	A ft^2	H ft	Frbd ft	Ang. to 1/2 frbd (deg)	Tan (T)	$GM_{REQ'D}$ ft	KMT ft	KG_{ALLOW} ft
5.50	147	1,833	11.39	5.17	10.9	0.19	3.70	17.91	**14.21**
6.00	172	1,787	11.17	4.67	9.9	0.17	3.35	17.30	**13.95**
6.50	198	1,742	10.96	4.17	8.8	0.16	3.12	16.70	**13.58**
7.00	225	1,696	10.75	3.67	7.8	0.14	2.98	16.14	**13.16**
7.50	253	1,650	10.54	3.17	6.7	0.12	2.93	15.61	**12.68**
8.00	281	1,604	10.34	2.67	5.7	0.10	2.99	15.15	**12.16**

Unusual Proportion and Form Maximum KG GHS Output

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09/16/26 16:54:55          Elliott Bay Design Group
GHS 20.00                    NEW AWT PATROL VESSEL


Geometry File: C:\EBDG\...\Geometry\24065-DAYPS.GFT
Geometry File date and time: 07/13/26 11:48:24


GEOMETRY CREATED BY SKW IN RHINO
NO SHELL OFFSET INCLUDED

Origin Definition
---------------------------------------
Longitudinal: STERN / FR0
  Transverse: Centerplane
    Vertical: Baseline

                            CRITICAL POINT STATUS
                            Baseline draft: 0.000
                           Trim: zero,  Heel: zero
                                      +
      Critical Points----------------------LCP-----TCP-----VCP-----Height
   (1) ER Air Intake              FLOOD   32.00f   9.92p  18.75      18.75
   (1) ER Air Intake              FLOOD   32.00f   9.92s  18.75      18.75
   (2) FO 1 Vent                  TIGHT   67.88f  11.00p  14.67      14.67
   (2) FO 1 Vent                  TIGHT   67.88f  11.00s  14.67      14.67
   (3) FO 2 Vent                  TIGHT   36.25f  13.50p  14.67      14.67
   (3) FO 2 Vent                  TIGHT   36.25f  13.50s  14.67      14.67
   (4) FO Day Vent                TIGHT   29.33f  13.50p  14.67      14.67
   (4) FO Day Vent                TIGHT   29.33f  13.50s  14.67      14.67
    Distances in FEET.-----------------------------------------------------
```

09/16/26 16:54:55 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

MAXIMUM VCG vs. DISPLACEMENT with ROLL
Heeling moment is present from: user specification
Trim = zero at zero heel (trim righting arm held at zero)

Displacement		Margins					
LONG TONS	Max VCG	LIM1	LIM2	LIM3	LIM4	LIM5	LIM6
147.46	13.41	818%	6d	54%	0%	7%	7%
172.36	13.16	745%	9d	54%	0%	34%	34%
198.40	12.84	688%	10d	57%	0%	43%	43%
225.30	12.44	654%	9d	60%	0%	32%	32%
252.78	11.99	639%	8d	64%	0%	25%	25%
280.72	11.49	648%	6d	67%	0%	14%	14%

Heeling moment is present from: user specification
Trim = Fwd 1.00/80.00 at zero heel (trim righting arm held at zero)

Displacement		Margins					
LONG TONS	Max VCG	LIM1	LIM2	LIM3	LIM4	LIM5	LIM6
147.46	13.23	764%	7d	49%	0%	8%	8%
172.36	13.00	706%	10d	51%	0%	37%	37%
198.40	12.71	655%	10d	53%	0%	33%	33%
225.30	12.36	633%	9d	57%	0%	30%	30%
252.78	11.94	628%	8d	62%	0%	24%	24%
280.72	11.48	643%	6d	65%	0%	13%	13%

Heeling moment is present from: user specification
Trim = Aft 1.00/80.00 at zero heel (trim righting arm held at zero)

Displacement		Margins					
LONG TONS	Max VCG	LIM1	LIM2	LIM3	LIM4	LIM5	LIM6
147.46	13.59	871%	6d	59%	0%	8%	8%
172.36	13.31	791%	9d	58%	0%	33%	33%
198.40	12.95	717%	9d	60%	0%	41%	41%
225.30	12.51	669%	9d	63%	0%	34%	34%
252.78	12.00	649%	7d	66%	0%	25%	25%
280.72	11.48	646%	6d	68%	0%	14%	14%

Distances in FEET.---Specific Gravity = 1.025.---d = degrees.

LIM	46CFR 170.173c Righting Energy		Min/Max
(1)	GM Upright	>	0.49 Ft
(2)	Absolute Angle at MaxRA	>	15.00 deg
(3)	Residual Area from abs 0 deg to 40 or Flood	>	16.90 Ft-deg
(4)	Residual Area from 30 deg to 40 or Flood	>	5.60 Ft-deg
(5)	Residual Area from abs 0 deg to MaxRA at 15	>	13.10 Ft-deg
(6)	Residual Area from abs 0 deg to MaxRA at 30	>	10.30 Ft-deg

Intact Stability GHS Output

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09/21/26 11:57:44          Elliott Bay Design Group
GHS 20.00                    NEW AWT PATROL VESSEL


Geometry File: C:\EBDG\ELLIOTT BAY DESIGN GROUP LLC\...\Geometry\24065-.GFT
Geometry File date and time: 09/21/26 09:42:46


GEOMETRY CREATED BY EBDG:SKW FROM RHINO MODEL 9/18/2026
NO SHELL OFFSET INCLUDED

Origin Definition
---------------------------------------
Longitudinal: STERN / FR0
  Transverse: Centerplane
    Vertical: Baseline

                            CRITICAL POINT STATUS
                            Baseline draft: 0.000
                           Trim: zero,  Heel: zero
                                      +
      Critical Points----------------------LCP-----TCP-----VCP-----Height
   (1) ER Air Intake              FLOOD   32.00f   9.92p  18.75      18.75
   (1) ER Air Intake              FLOOD   32.00f   9.92s  18.75      18.75
   (2) FO 1 Vent                  TIGHT   67.88f  11.00p  14.67      14.67
   (2) FO 1 Vent                  TIGHT   67.88f  11.00s  14.67      14.67
   (3) FO 2 Vent                  TIGHT   36.25f  13.50p  14.67      14.67
   (3) FO 2 Vent                  TIGHT   36.25f  13.50s  14.67      14.67
   (4) FO Day Vent                TIGHT   29.33f  13.50p  14.67      14.67
   (4) FO Day Vent                TIGHT   29.33f  13.50s  14.67      14.67
    Distances in FEET.-----------------------------------------------------
```

09/21/26 11:57:44 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

**** Condition 0 ****
Lightship
46 CFR 170.173(c) Intact Righting Energy Criterion

RESIDUAL RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 39.00f TCG = 0.12s VCG = 11.61
Free Surface Adjustment: 0.23
Adjusted CG: LCG = 39.00f TCG = 0.12s VCG = 11.84

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Residual Arms in Trim	in Heel	Res. Flood Pt Area	Height
6.619	1.04a	0.00	169.96	0.00	-0.120	0.00	12.71(1)
6.616	1.03a	1.13s	170.04	0.00	0.000	-0.07	8.31(4)
6.502	0.97a	6.13s	170.00	0.00	0.492	1.16	11.62(1)
6.235	0.83a	11.13s	169.99	0.00	0.889	4.66	10.71(1)
5.831	0.64a	16.13s	169.97	0.00	1.204	9.92	9.78(1)
5.296	0.40a	21.13s	170.00	0.00	1.433	16.55	8.84(1)
4.629	0.15a	26.13s	170.00	0.00	1.559	24.07	7.92(1)
4.356	0.05a	28.01s	169.96	0.00	1.575	27.01	7.57(1)
3.897	0.10f	31.13s	169.99	0.00	1.532	31.88	6.97(1)
3.152	0.33f	36.13s	170.00	0.00	1.319	39.08	5.96(1)
2.795	0.43f	38.52s	170.00	0.00	1.169	42.05	0.00(3)
2.403	0.54f	41.13s	170.00	0.00	0.978	44.87	4.89(1)
1.656	0.73f	46.13s	169.99	0.00	0.555	48.74	3.78(1)
0.925	0.87f	51.13s	169.99	0.00	0.082	50.36	2.63(1)
0.806	0.89f	51.97s	170.00	0.00	0.000	50.39	2.43(1)
0.232	0.96f	56.13s	170.00	0.00	-0.408	49.54	1.44(1)
-0.430	1.00f	61.13s	170.00	0.00	-0.893	46.29	0.24(1)
-0.561	1.01f	62.12s	170.00	0.00	-0.990	45.36	-0.00(1)
-1.102	1.03f	66.13s	170.00	0.00	-1.391	40.59	-0.96(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: No tank loads are present.

+

Note: The Residual Righting Arms shown above are in excess of the overturning arms derived from these moments (in Ft-LT):
Stbd heeling moment = 0.00

+

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM 46CFR 170.173c Righting Energy	Min/Max		Attained	
(1) GM Upright	>	0.49	Ft	6.06 P
(2) Absolute Angle at MaxRA	>	15.00	deg	28.01 P
(3) Residual Area from abs 0 deg to 40 or Flood	>	16.90	Ft-deg	44.87 P
(4) Residual Area from 30 deg to 40 or Flood	>	5.60	Ft-deg	12.99 P
(5) Residual Area from abs 0 deg to MaxRA at 15	>	13.10	Ft-deg	33.16 P
(6) Residual Area from abs 0 deg to MaxRA at 30	>	10.30	Ft-deg	26.07 P

Relative angles measured from 1.134s

* No heeling moment

09/21/26 11:57:44 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

**** Condition 0 ****
Lightship
46 CFR 173.020 Crane Lifting Criterion (Partially Protected)

WEIGHT STATUS
Baseline draft: 5.065 @ 86.00f, 6.510 @ 6.00f

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	170.00	39.00f	0.12s	11.61
Remove Skiff	-2.68	55.00f	8.00p	14.50
Skiff pick	2.68	46.70f	19.50p	32.50
Boom Stow	-3.00	53.56f	0.00	19.67
Boom over	3.00	54.75f	8.75p	34.00
Total Weight-------->	170.00	38.89f	0.22p	12.15

Distances in FEET.

RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 38.89f TCG = 0.22p VCG = 12.15
Free Surface Adjustment: 0.23
Adjusted CG: LCG = 38.89f TCG = 0.22p VCG = 12.38

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
6.636	1.08a	2.24p	169.95	0.00	0.000	0.00	8.05(4)
6.489	1.00a	7.24p	170.00	0.00	0.428	1.07	11.42(1)
6.191	0.85a	12.24p	169.99	0.00	0.762	4.09	10.50(1)
5.759	0.64a	17.24p	169.97	0.00	1.017	8.57	9.57(1)
5.196	0.40a	22.24p	170.00	0.00	1.175	14.09	8.63(1)
4.509	0.14a	27.24p	170.00	0.00	1.231	20.15	7.70(1)
3.776	0.10f	32.24p	169.98	0.00	1.119	26.09	6.73(1)
3.035	0.32f	37.24p	170.00	0.00	0.839	31.05	5.71(1)
2.851	0.37f	38.47p	170.00	0.00	0.751	32.03	0.00(3)
2.622	0.44f	40.00p	170.00	0.00	0.633	33.09	5.12(1)
2.288	0.52f	42.24p	170.00	0.00	0.446	34.30	4.63(1)
1.576	0.69f	47.05p	170.03	0.00	0.000	35.40	3.55(1)
1.547	0.70f	47.24p	170.00	0.00	-0.019	35.40	3.51(1)
0.822	0.84f	52.24p	169.99	0.00	-0.523	34.06	2.35(1)
0.141	0.91f	57.24p	170.00	0.00	-1.032	30.18	1.16(1)
-0.487	0.94f	62.02p	170.00	0.00	-1.512	24.09	-0.00(1)
-0.517	0.94f	62.24p	170.00	0.00	-1.534	23.76	-0.05(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM 46 CFR 173.020 LIFTING CRITERION	Min/Max		Attained
(1) Area from Equilibrium to MaxRA	>	10.00 Ft-deg	20.15 P
(2) Area from Equilibrium to Flood	>	10.00 Ft-deg	24.09 P
(3) Area from Equilibrium to abs 40 deg	>	10.00 Ft-deg	33.09 P

* Heeling moment applied with off-center weight at crane tip, heel=-2.24deg

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GHS 20.00 NEW AWT PATROL VESSEL

**** Condition 1 ****
Departure
46 CFR 170.173(c) Intact Righting Energy Criterion

RESIDUAL RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 41.07f TCG = 0.01s VCG = 11.17
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.07f TCG = 0.01s VCG = 11.32

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Residual Arms in Trim	in Heel	Res. Flood Pt Area	Height
7.212	0.71f	0.00	262.21	0.00	-0.007	0.00	11.14(1)
7.211	0.71f	0.10s	262.21	0.00	0.000	-0.00	6.60(2)
7.155	0.73f	5.10s	262.21	0.00	0.353	0.88	10.23(1)
6.989	0.77f	10.10s	262.21	0.00	0.694	3.51	9.30(1)
6.695	0.85f	15.10s	262.21	0.00	0.992	7.74	8.35(1)
6.278	0.97f	20.10s	262.22	0.00	1.220	13.30	7.38(1)
5.988	1.07f	23.22s	262.19	0.00	1.259	17.19	6.73(1)
5.813	1.13f	25.10s	262.22	0.00	1.245	19.54	6.32(1)
5.429	1.26f	29.18s	262.21	0.00	1.135	24.43	0.00(3)
5.341	1.28f	30.10s	262.21	0.00	1.096	25.46	5.19(1)
4.857	1.40f	35.10s	262.21	0.00	0.829	30.28	3.99(1)
4.371	1.47f	40.10s	262.21	0.00	0.493	33.61	2.76(1)
3.885	1.47f	45.10s	262.22	0.00	0.116	35.15	1.50(1)
3.743	1.46f	46.56s	262.22	0.00	0.000	35.23	1.13(1)
3.397	1.43f	50.10s	262.21	0.00	-0.289	34.72	0.22(1)
3.313	1.42f	50.96s	262.21	0.00	-0.360	34.45	0.00(1)
2.903	1.35f	55.10s	262.21	0.00	-0.714	32.23	-1.07(1)
2.402	1.25f	60.10s	262.21	0.00	-1.150	27.57	-2.35(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: No tank loads are present.

+

Note: The Residual Righting Arms shown above are in excess of the overturning arms derived from these moments (in Ft-LT):
Stbd heeling moment = 0.00

+

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM	46CFR 170.173c Righting Energy		Min/Max		Attained	
(1)	GM Upright	>	0.49	Ft	4.05	P
(2)	Absolute Angle at MaxRA	>	15.00	deg	23.22	P
(3)	Residual Area from abs 0 deg to 40 or Flood	>	16.90	Ft-deg	33.61	P
(4)	Residual Area from 30 deg to 40 or Flood	>	5.60	Ft-deg	8.14	P
(5)	Residual Area from abs 0 deg to MaxRA at 15	>	13.10	Ft-deg	19.47	P
(6)	Residual Area from abs 0 deg to MaxRA at 30	>	10.30	Ft-deg	15.31	P

----------Relative angles measured from 0.099 ----------

* No heeling moment

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GHS 20.00 NEW AWT PATROL VESSEL

**** Condition 1 ****
Departure
46 CFR 173.020 Crane Lifting Criterion (Partially Protected)

WEIGHT STATUS
Baseline draft: 8.277 @ 86.00f, 7.286 @ 6.00f

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	262.21	41.07f	0.01s	11.17
Remove Skiff	-2.68	55.00f	8.00p	14.50
Skiff pick	2.68	46.70f	19.50p	32.50
Boom Stow	-3.00	53.56f	0.00	19.67
Boom over	3.00	54.75f	8.75p	34.00
Total Weight-------->	262.21	41.00f	0.21p	11.52

Distances in FEET.

RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 41.00f TCG = 0.21p VCG = 11.52
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.00f TCG = 0.21p VCG = 11.67

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.213	0.68f	3.24p	262.21	0.00	0.000	0.00	6.01(2)
7.090	0.71f	8.24p	262.21	0.00	0.318	0.80	9.65(1)
6.848	0.78f	13.24p	262.21	0.00	0.605	3.12	8.70(1)
6.476	0.88f	18.24p	262.22	0.00	0.842	6.75	7.73(1)
6.080	1.01f	22.60p	262.21	0.00	0.925	10.64	6.85(1)
6.021	1.03f	23.24p	262.21	0.00	0.923	11.24	6.72(1)
5.556	1.18f	28.24p	262.22	0.00	0.813	15.65	5.60(1)
5.471	1.21f	29.14p	262.22	0.00	0.777	16.37	0.00(3)
5.080	1.31f	33.24p	262.21	0.00	0.565	19.15	4.43(1)
4.597	1.40f	38.24p	262.21	0.00	0.236	21.19	3.21(1)
4.427	1.41f	40.00p	262.21	0.00	0.108	21.50	2.77(1)
4.288	1.42f	41.43p	262.21	0.00	0.000	21.57	2.41(1)
4.114	1.42f	43.24p	262.21	0.00	-0.139	21.45	1.95(1)
3.631	1.39f	48.24p	262.21	0.00	-0.543	19.76	0.68(1)
3.375	1.36f	50.87p	262.21	0.00	-0.764	18.04	0.00(1)
3.142	1.33f	53.24p	262.21	0.00	-0.967	15.99	-0.61(1)
2.646	1.23f	58.24p	262.21	0.00	-1.402	10.07	-1.90(1)
2.141	1.12f	63.24p	262.21	0.00	-1.841	1.96	-3.18(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1)	ER Air Intake	FLOOD 32.00f	9.92	18.75
(2)	FO 1 Vent	TIGHT 67.88f	11.00	14.67
(3)	FO 2 Vent	TIGHT 36.25f	13.50	14.67

LIM	46 CFR 173.020 LIFTING CRITERION	Min/Max	Attained
(1)	Area from Equilibrium to MaxRA	> 10.00 Ft-deg	10.64 P
(2)	Area from Equilibrium to Flood	> 10.00 Ft-deg	18.04 P
(3)	Area from Equilibrium to abs 40 deg	> 10.00 Ft-deg	21.50 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.24deg

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**** Condition 2 ****
Mid Voyage
46 CFR 170.173(c) Intact Righting Energy Criterion

RESIDUAL RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 40.85f TCG = 0.00p VCG = 11.42
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.85f TCG = 0.00p VCG = 11.58

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Residual Arms in Trim	in Heel	Res. Flood Pt Area	Height
6.995	0.38f	0.00	238.56	0.00	-0.004	0.00	11.54(1)
6.995	0.38f	0.05p	238.56	0.00	0.000	-0.00	7.21(2)
6.934	0.41f	5.05p	238.58	0.00	0.366	0.92	10.64(1)
6.752	0.47f	10.05p	238.57	0.00	0.707	3.61	9.71(1)
6.439	0.58f	15.05p	238.57	0.00	0.985	7.86	8.77(1)
5.998	0.73f	20.05p	238.58	0.00	1.217	13.39	7.81(1)
5.537	0.89f	24.45p	238.58	0.00	1.304	18.97	6.93(1)
5.472	0.91f	25.05p	238.58	0.00	1.303	19.76	6.80(1)
4.928	1.09f	30.05p	238.58	0.00	1.176	26.03	5.72(1)
4.785	1.14f	31.34p	238.58	0.00	1.117	27.51	0.00(3)
4.368	1.26f	35.05p	238.58	0.00	0.903	31.28	4.58(1)
3.800	1.38f	40.05p	238.57	0.00	0.546	34.95	3.39(1)
3.235	1.45f	45.05p	238.57	0.00	0.143	36.69	2.18(1)
3.047	1.46f	46.73p	238.58	0.00	0.000	36.81	1.76(1)
2.675	1.47f	50.05p	238.57	0.00	-0.290	36.33	0.94(1)
2.259	1.45f	53.79p	238.58	0.00	-0.626	34.63	0.00(1)
2.118	1.44f	55.05p	238.58	0.00	-0.741	33.76	-0.32(1)
1.568	1.38f	60.05p	238.57	0.00	-1.204	28.90	-1.58(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: No tank loads are present.

+

Note: The Residual Righting Arms shown above are in excess of the overturning arms derived from these moments (in Ft-LT):
Stbd heeling moment = 0.00

+

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM	46CFR 170.173c Righting Energy		Min/Max		Attained	
(1)	GM Upright	>	0.49	Ft	4.22	P
(2)	Absolute Angle at MaxRA	>	15.00	deg	24.45	P
(3)	Residual Area from abs 0 deg to 40 or Flood	>	16.90	Ft-deg	34.95	P
(4)	Residual Area from 30 deg to 40 or Flood	>	5.60	Ft-deg	8.92	P
(5)	Residual Area from abs 0 deg to MaxRA at 15	>	13.10	Ft-deg	21.92	P
(6)	Residual Area from abs 0 deg to MaxRA at 30	>	10.30	Ft-deg	17.24	P

Relative angles measured from 0.054

* No heeling moment

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GHS 20.00 NEW AWT PATROL VESSEL

**** Condition 2 ****
Mid Voyage
46 CFR 173.020 Crane Lifting Criterion (Partially Protected)

WEIGHT STATUS
Baseline draft: 7.574 @ 86.00f, 7.035 @ 6.00f

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	238.57	40.85f	0.00p	11.42
Remove Skiff	-2.68	55.00f	8.00p	14.50
Skiff pick	2.68	46.70f	19.50p	32.50
Boom Stow	-3.00	53.56f	0.00	19.67
Boom over	3.00	54.75f	8.75p	34.00
Total Weight-------->	238.57	40.77f	0.24p	11.80

Distances in FEET.

RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 40.77f TCG = 0.24p VCG = 11.80
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.77f TCG = 0.24p VCG = 11.96

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
6.991	0.36f	3.62p	238.58	0.00	0.000	0.00	6.53(2)
6.845	0.41f	8.62p	238.57	0.00	0.323	0.81	9.98(1)
6.570	0.50f	13.62p	238.57	0.00	0.590	3.11	9.03(1)
6.166	0.64f	18.62p	238.56	0.00	0.809	6.63	8.08(1)
5.656	0.81f	23.62p	238.58	0.00	0.931	11.02	7.09(1)
5.616	0.83f	24.00p	238.58	0.00	0.932	11.37	7.02(1)
5.119	1.00f	28.62p	238.58	0.00	0.840	15.54	6.03(1)
4.822	1.09f	31.32p	238.58	0.00	0.717	17.65	0.00(3)
4.566	1.16f	33.62p	238.58	0.00	0.584	19.14	4.90(1)
4.002	1.30f	38.62p	238.58	0.00	0.231	21.23	3.73(1)
3.846	1.33f	40.00p	238.58	0.00	0.123	21.48	3.40(1)
3.673	1.36f	41.53p	238.58	0.00	0.000	21.57	3.03(1)
3.438	1.38f	43.62p	238.58	0.00	-0.174	21.39	2.52(1)
2.878	1.41f	48.62p	238.58	0.00	-0.608	19.45	1.28(1)
2.322	1.40f	53.62p	238.58	0.00	-1.060	15.28	0.03(1)
2.308	1.40f	53.74p	238.58	0.00	-1.072	15.15	0.00(1)
1.770	1.35f	58.62p	238.57	0.00	-1.522	8.83	-1.23(1)
1.228	1.26f	63.62p	238.57	0.00	-1.986	0.06	-2.49(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1)	ER Air Intake	FLOOD 32.00f	9.92	18.75
(2)	FO 1 Vent	TIGHT 67.88f	11.00	14.67
(3)	FO 2 Vent	TIGHT 36.25f	13.50	14.67

LIM	46 CFR 173.020 LIFTING CRITERION	Min/Max		Attained
(1)	Area from Equilibrium to MaxRA	>	10.00 Ft-deg	11.37 P
(2)	Area from Equilibrium to Flood	>	10.00 Ft-deg	15.15 P
(3)	Area from Equilibrium to abs 40 deg	>	10.00 Ft-deg	21.48 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.62deg

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**** Condition 3 ****
Arrival
46 CFR 170.173(c) Intact Righting Energy Criterion

RESIDUAL RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 39.34f TCG = 0.00p VCG = 11.75
Free Surface Adjustment: 0.18
Adjusted CG: LCG = 39.34f TCG = 0.00p VCG = 11.93

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Residual Arms in Trim	in Heel	Res. Flood Pt Area	Height
7.221	0.55a	0.00	218.28	0.00	-0.004	0.00	11.83(1)
7.221	0.55a	0.05p	218.28	0.00	0.000	-0.00	7.72(4)
7.162	0.53a	5.05p	218.30	0.00	0.387	0.97	10.93(1)
6.980	0.46a	10.05p	218.30	0.00	0.730	3.78	10.01(1)
6.663	0.34a	15.05p	218.29	0.00	1.002	8.14	9.06(1)
6.213	0.17a	20.05p	218.28	0.00	1.223	13.73	8.10(1)
5.670	0.01f	25.05p	218.30	0.00	1.341	20.18	7.11(1)
5.111	0.16f	30.05p	218.30	0.00	1.224	26.69	6.06(1)
4.765	0.25f	33.08p	218.30	0.00	1.069	30.18	0.00(3)
4.536	0.30f	35.05p	218.30	0.00	0.945	32.16	4.95(1)
3.943	0.43f	40.05p	218.30	0.00	0.562	35.98	3.79(1)
3.337	0.53f	45.05p	218.30	0.00	0.117	37.70	2.59(1)
3.186	0.55f	46.30p	218.30	0.00	0.000	37.78	2.29(1)
2.733	0.60f	50.05p	218.30	0.00	-0.360	37.10	1.37(1)
2.137	0.61f	55.05p	218.30	0.00	-0.852	34.08	0.13(1)
2.075	0.61f	55.58p	218.30	0.00	-0.904	33.62	0.00(1)
1.555	0.58f	60.05p	218.30	0.00	-1.350	28.58	-1.11(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: No tank loads are present.

+

Note: The Residual Righting Arms shown above are in excess of the overturning arms derived from these moments (in Ft-LT):
Stbd heeling moment = 0.00

+

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM 46CFR 170.173c Righting Energy		Min/Max		Attained
(1) GM Upright	>	0.49	Ft	4.47 P
(2) Absolute Angle at MaxRA	>	15.00	deg	25.05 P
(3) Residual Area from abs 0 deg to 40 or Flood	>	16.90	Ft-deg	35.98 P
(4) Residual Area from 30 deg to 40 or Flood	>	5.60	Ft-deg	9.29 P
(5) Residual Area from abs 0 deg to MaxRA at 15	>	13.10	Ft-deg	23.55 P
(6) Residual Area from abs 0 deg to MaxRA at 30	>	10.30	Ft-deg	18.52 P

----------Relative angles measured from 0.051 ----------

* No heeling moment

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**** Condition 3 ****
Arrival
46 CFR 173.020 Crane Lifting Criterion (Partially Protected)

WEIGHT STATUS
Baseline draft: 6.397 @ 86.00f, 7.164 @ 6.00f

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	218.30	39.35f	0.00p	11.75
Remove Skiff	-2.68	55.00f	8.00p	14.50
Skiff pick	2.68	46.70f	19.50p	32.50
Boom Stow	-3.00	53.56f	0.00	19.67
Boom over	3.00	54.75f	8.75p	34.00
Total Weight-------->	218.30	39.26f	0.27p	12.17

Distances in FEET.

RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 39.26f TCG = 0.27p VCG = 12.17
Free Surface Adjustment: 0.18
Adjusted CG: LCG = 39.26f TCG = 0.27p VCG = 12.35

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.217	0.58a	3.74p	218.28	0.00	0.000	0.00	6.84(4)
7.071	0.53a	8.74p	218.30	0.00	0.328	0.82	10.25(1)
6.790	0.42a	13.74p	218.30	0.00	0.586	3.13	9.30(1)
6.374	0.27a	18.74p	218.29	0.00	0.791	6.60	8.34(1)
5.846	0.08a	23.74p	218.29	0.00	0.929	10.92	7.37(1)
5.771	0.06a	24.44p	218.30	0.00	0.932	11.57	7.23(1)
5.294	0.07f	28.74p	218.30	0.00	0.845	15.45	6.33(1)
4.805	0.19f	33.07p	218.30	0.00	0.625	18.69	0.00(3)
4.727	0.21f	33.74p	218.30	0.00	0.582	19.09	5.24(1)
4.141	0.34f	38.74p	218.30	0.00	0.206	21.07	4.09(1)
3.991	0.37f	40.00p	218.30	0.00	0.100	21.26	3.79(1)
3.854	0.40f	41.13p	218.30	0.00	0.000	21.31	3.52(1)
3.540	0.45f	43.74p	218.30	0.00	-0.239	21.01	2.90(1)
2.936	0.52f	48.74p	218.30	0.00	-0.719	18.63	1.68(1)
2.338	0.55f	53.74p	218.30	0.00	-1.214	13.81	0.44(1)
2.127	0.55f	55.53p	218.30	0.00	-1.392	11.48	0.00(1)
1.752	0.53f	58.74p	218.30	0.00	-1.713	6.49	-0.80(1)
1.182	0.47f	63.74p	218.30	0.00	-2.209	-3.32	-2.05(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1)	ER Air Intake	FLOOD 32.00f	9.92	18.75
(3)	FO 2 Vent	TIGHT 36.25f	13.50	14.67
(4)	FO Day Vent	TIGHT 29.33f	13.50	14.67

LIM	46 CFR 173.020 LIFTING CRITERION	Min/Max	Attained
(1)	Area from Equilibrium to MaxRA	> 10.00 Ft-deg	11.57 P
(2)	Area from Equilibrium to Flood	> 10.00 Ft-deg	11.48 P
(3)	Area from Equilibrium to abs 40 deg	> 10.00 Ft-deg	21.26 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.74deg

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GHS 20.00 NEW AWT PATROL VESSEL

**** Condition 4 ****
Departure, with Icing
46 CFR 170.173(c) Intact Righting Energy Criterion

RESIDUAL RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 41.00f TCG = 0.01s VCG = 11.32
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.00f TCG = 0.01s VCG = 11.47

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Residual Arms in Trim	in Heel	Res. Flood Pt Area	Height
7.307	0.72f	0.00	267.74	0.00	-0.007	0.00	11.04(1)
7.306	0.72f	0.10s	267.74	0.00	0.000	-0.00	6.49(2)
7.252	0.73f	5.10s	267.74	0.00	0.334	0.83	10.13(1)
7.090	0.77f	10.10s	267.74	0.00	0.657	3.32	9.20(1)
6.803	0.84f	15.10s	267.74	0.00	0.943	7.33	8.24(1)
6.395	0.96f	20.10s	267.75	0.00	1.147	12.59	7.27(1)
6.185	1.03f	22.47s	267.75	0.00	1.169	15.34	6.77(1)
5.951	1.11f	25.10s	267.75	0.00	1.142	18.40	6.20(1)
5.631	1.21f	28.67s	267.77	0.00	1.035	22.31	-0.00(3)
5.501	1.24f	30.10s	267.74	0.00	0.973	23.75	5.05(1)
5.040	1.34f	35.10s	267.74	0.00	0.692	27.91	3.84(1)
4.577	1.39f	40.10s	267.74	0.00	0.346	30.53	2.59(1)
4.159	1.38f	44.62s	267.74	0.00	0.000	31.32	1.45(1)
4.114	1.38f	45.10s	267.74	0.00	-0.039	31.31	1.32(1)
3.645	1.32f	50.10s	267.74	0.00	-0.450	30.11	0.03(1)
3.634	1.32f	50.22s	267.74	0.00	-0.460	30.05	0.00(1)
3.168	1.23f	55.10s	267.75	0.00	-0.880	26.79	-1.27(1)
2.681	1.12f	60.10s	267.75	0.00	-1.320	21.29	-2.56(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: No tank loads are present.

+

Note: The Residual Righting Arms shown above are in excess of the overturning arms derived from these moments (in Ft-LT):
Stbd heeling moment = 0.00

+

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM 46CFR 170.173c Righting Energy	Min/Max		Attained
(1) GM Upright	>	0.49 Ft	3.83 P
(2) Absolute Angle at MaxRA	>	15.00 deg	22.47 P
(3) Residual Area from abs 0 deg to 40 or Flood	>	16.90 Ft-deg	30.53 P
(4) Residual Area from 30 deg to 40 or Flood	>	5.60 Ft-deg	6.78 P
(5) Residual Area from abs 0 deg to MaxRA at 15	>	13.10 Ft-deg	17.17 P
(6) Residual Area from abs 0 deg to MaxRA at 30	>	10.30 Ft-deg	13.50 P

Relative angles measured from 0.104

* No heeling moment

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**** Condition 4 ****
Departure, with Icing
46 CFR 173.020 Crane Lifting Criterion (Partially Protected)

WEIGHT STATUS
Baseline draft: 8.381 @ 86.00f, 7.382 @ 6.00f

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	267.74	41.00f	0.01s	11.32
Remove Skiff	-2.68	55.00f	8.00p	14.50
Skiff pick	2.68	46.70f	19.50p	32.50
Boom Stow	-3.00	53.56f	0.00	19.67
Boom over	3.00	54.75f	8.75p	34.00
Total Weight-------->	267.74	40.93f	0.21p	11.66

Distances in FEET.

RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 40.93f TCG = 0.21p VCG = 11.66
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 40.93f TCG = 0.21p VCG = 11.81

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.307	0.68f	3.37p	267.74	0.00	0.000	0.00	5.88(2)
7.185	0.71f	8.37p	267.74	0.00	0.300	0.75	9.52(1)
6.946	0.77f	13.37p	267.74	0.00	0.571	2.94	8.57(1)
6.577	0.87f	18.37p	267.75	0.00	0.791	6.37	7.60(1)
6.267	0.97f	21.92p	267.75	0.00	0.845	9.30	6.88(1)
6.139	1.01f	23.37p	267.75	0.00	0.836	10.51	6.57(1)
5.697	1.15f	28.37p	267.74	0.00	0.698	14.42	5.44(1)
5.673	1.16f	28.63p	267.75	0.00	0.687	14.60	0.00(3)
5.243	1.27f	33.37p	267.74	0.00	0.433	17.30	4.25(1)
4.784	1.33f	38.37p	267.74	0.00	0.091	18.65	3.01(1)
4.671	1.34f	39.60p	267.74	0.00	0.000	18.70	2.71(1)
4.634	1.34f	40.00p	267.74	0.00	-0.030	18.70	2.60(1)
4.324	1.33f	43.37p	267.74	0.00	-0.293	18.16	1.75(1)
3.860	1.29f	48.37p	267.74	0.00	-0.704	15.68	0.46(1)
3.695	1.26f	50.14p	267.74	0.00	-0.855	14.29	0.00(1)
3.389	1.21f	53.37p	267.74	0.00	-1.134	11.09	-0.84(1)
2.908	1.10f	58.37p	267.75	0.00	-1.573	4.32	-2.14(1)
2.417	0.98f	63.37p	267.75	0.00	-2.014	-4.64	-3.43(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1)	ER Air Intake	FLOOD 32.00f	9.92	18.75
(2)	FO 1 Vent	TIGHT 67.88f	11.00	14.67
(3)	FO 2 Vent	TIGHT 36.25f	13.50	14.67

LIM	46 CFR 173.020 LIFTING CRITERION	Min/Max	Attained
(1)	Area from Equilibrium to MaxRA	> 10.00 Ft-deg	9.30 F
(2)	Area from Equilibrium to Flood	> 10.00 Ft-deg	14.29 P
(3)	Area from Equilibrium to abs 40 deg	> 10.00 Ft-deg	18.70 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.37deg

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**** Condition 5 ****
Mid Voyage, with Icing
46 CFR 170.173(c) Intact Righting Energy Criterion

RESIDUAL RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 40.77f TCG = 0.00p VCG = 11.57
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.77f TCG = 0.00p VCG = 11.73

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Residual Arms in Trim	in Heel	Res. Flood Pt Area	Height
7.091	0.39f	0.00	244.09	0.00	-0.004	0.00	11.44(1)
7.091	0.39f	0.06p	244.09	0.00	0.000	-0.00	7.10(2)
7.032	0.41f	5.06p	244.11	0.00	0.345	0.86	10.54(1)
6.856	0.47f	10.06p	244.10	0.00	0.667	3.40	9.61(1)
6.550	0.57f	15.06p	244.10	0.00	0.932	7.42	8.66(1)
6.115	0.71f	20.06p	244.11	0.00	1.147	12.64	7.70(1)
5.736	0.84f	23.81p	244.11	0.00	1.209	17.08	6.94(1)
5.608	0.89f	25.06p	244.11	0.00	1.202	18.59	6.68(1)
5.086	1.05f	30.06p	244.11	0.00	1.053	24.31	5.58(1)
5.007	1.08f	30.79p	244.11	0.00	1.017	25.07	0.00(3)
4.548	1.20f	35.06p	244.10	0.00	0.764	28.90	4.43(1)
4.003	1.31f	40.06p	244.10	0.00	0.395	31.84	3.23(1)
3.482	1.36f	44.85p	244.13	0.00	0.000	32.80	2.05(1)
3.459	1.37f	45.06p	244.11	0.00	-0.018	32.80	2.00(1)
2.919	1.37f	50.06p	244.10	0.00	-0.457	31.63	0.75(1)
2.598	1.35f	53.03p	244.11	0.00	-0.727	29.87	0.00(1)
2.379	1.33f	55.06p	244.11	0.00	-0.915	28.20	-0.51(1)
1.839	1.26f	60.06p	244.10	0.00	-1.382	22.47	-1.78(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: No tank loads are present.

+

Note: The Residual Righting Arms shown above are in excess of the overturning arms derived from these moments (in Ft-LT):
Stbd heeling moment = 0.00

+

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM 46CFR 170.173c Righting Energy		Min/Max		Attained	
(1) GM Upright	>	0.49	Ft	3.97	P
(2) Absolute Angle at MaxRA	>	15.00	deg	23.81	P
(3) Residual Area from abs 0 deg to 40 or Flood	>	16.90	Ft-deg	31.84	P
(4) Residual Area from 30 deg to 40 or Flood	>	5.60	Ft-deg	7.53	P
(5) Residual Area from abs 0 deg to MaxRA at 15	>	13.10	Ft-deg	19.54	P
(6) Residual Area from abs 0 deg to MaxRA at 30	>	10.30	Ft-deg	15.36	P

Relative angles measured from 0.058

* No heeling moment

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**** Condition 5 ****
Mid Voyage, with Icing
46 CFR 173.020 Crane Lifting Criterion (Partially Protected)

WEIGHT STATUS
Baseline draft: 7.680 @ 86.00f, 7.131 @ 6.00f

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	244.10	40.77f	0.00p	11.57
Remove Skiff	-2.68	55.00f	8.00p	14.50
Skiff pick	2.68	46.70f	19.50p	32.50
Boom Stow	-3.00	53.56f	0.00	19.67
Boom over	3.00	54.75f	8.75p	34.00
Total Weight-------->	244.10	40.69f	0.24p	11.95

Distances in FEET.

RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 40.69f TCG = 0.24p VCG = 11.95
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.69f TCG = 0.24p VCG = 12.11

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.085	0.36f	3.78p	244.11	0.00	0.000	0.00	6.40(2)
6.940	0.41f	8.78p	244.10	0.00	0.303	0.76	9.85(1)
6.668	0.50f	13.78p	244.10	0.00	0.554	2.92	8.90(1)
6.267	0.63f	18.78p	244.10	0.00	0.759	6.22	7.94(1)
5.820	0.78f	23.28p	244.11	0.00	0.848	9.88	7.05(1)
5.770	0.80f	23.78p	244.11	0.00	0.847	10.30	6.94(1)
5.255	0.97f	28.78p	244.11	0.00	0.725	14.30	5.86(1)
5.044	1.03f	30.77p	244.11	0.00	0.628	15.66	0.00(3)
4.723	1.12f	33.78p	244.11	0.00	0.447	17.28	4.72(1)
4.182	1.24f	38.78p	244.10	0.00	0.080	18.65	3.53(1)
4.073	1.25f	39.77p	244.11	0.00	0.000	18.69	3.29(1)
4.048	1.26f	40.00p	244.11	0.00	-0.018	18.69	3.23(1)
3.639	1.30f	43.78p	244.10	0.00	-0.335	18.03	2.31(1)
3.100	1.31f	48.78p	244.11	0.00	-0.778	15.26	1.06(1)
2.648	1.29f	52.98p	244.11	0.00	-1.162	11.19	0.00(1)
2.562	1.28f	53.78p	244.11	0.00	-1.236	10.23	-0.20(1)
2.023	1.22f	58.78p	244.10	0.00	-1.704	2.89	-1.47(1)
1.488	1.13f	63.78p	244.11	0.00	-2.171	-6.80	-2.73(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM	46 CFR 173.020 LIFTING CRITERION	Min/Max	Attained
(1)	Area from Equilibrium to MaxRA	> 10.00 Ft-deg	9.88 F
(2)	Area from Equilibrium to Flood	> 10.00 Ft-deg	11.19 P
(3)	Area from Equilibrium to abs 40 deg	> 10.00 Ft-deg	18.69 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.78deg

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**** Condition 6 ****
Arrival, with Icing
46 CFR 170.173(c) Intact Righting Energy Criterion

RESIDUAL RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 40.45f TCG = 0.00p VCG = 11.73
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.45f TCG = 0.00p VCG = 11.89

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Residual Arms in Trim	in Heel	Res. Flood Pt Area	Height
7.105	0.16f	0.00	236.70	0.00	-0.004	0.00	11.55(1)
7.105	0.16f	0.06p	236.70	0.00	0.000	-0.00	7.36(2)
7.046	0.18f	5.06p	236.72	0.00	0.346	0.86	10.65(1)
6.868	0.25f	10.06p	236.71	0.00	0.664	3.40	9.72(1)
6.557	0.35f	15.06p	236.71	0.00	0.920	7.38	8.78(1)
6.117	0.50f	20.06p	236.72	0.00	1.129	12.53	7.82(1)
5.706	0.64f	24.03p	236.72	0.00	1.202	17.18	7.02(1)
5.598	0.67f	25.06p	236.72	0.00	1.197	18.42	6.81(1)
5.063	0.84f	30.06p	236.72	0.00	1.048	24.11	5.73(1)
4.911	0.89f	31.44p	236.72	0.00	0.978	25.52	0.00(3)
4.511	0.99f	35.06p	236.71	0.00	0.753	28.66	4.58(1)
3.948	1.11f	40.06p	236.71	0.00	0.371	31.52	3.40(1)
3.458	1.18f	44.40p	236.72	0.00	0.000	32.34	2.34(1)
3.384	1.18f	45.06p	236.73	0.00	-0.058	32.32	2.18(1)
2.825	1.20f	50.06p	236.72	0.00	-0.513	30.91	0.94(1)
2.409	1.19f	53.79p	236.72	0.00	-0.864	28.34	0.00(1)
2.267	1.18f	55.06p	236.72	0.00	-0.985	27.17	-0.32(1)
1.715	1.12f	60.06p	236.71	0.00	-1.465	21.05	-1.58(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: No tank loads are present.

+

Note: The Residual Righting Arms shown above are in excess of the overturning arms derived from these moments (in Ft-LT):
Stbd heeling moment = 0.00

+

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM 46CFR 170.173c Righting Energy		Min/Max		Attained	
(1) GM Upright	>	0.49	Ft	3.98	P
(2) Absolute Angle at MaxRA	>	15.00	deg	24.03	P
(3) Residual Area from abs 0 deg to 40 or Flood	>	16.90	Ft-deg	31.52	P
(4) Residual Area from 30 deg to 40 or Flood	>	5.60	Ft-deg	7.41	P
(5) Residual Area from abs 0 deg to MaxRA at 15	>	13.10	Ft-deg	19.71	P
(6) Residual Area from abs 0 deg to MaxRA at 30	>	10.30	Ft-deg	15.50	P

----------Relative angles measured from 0.057 ----------

* No heeling moment

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**** Condition 6 ****
Arrival, with Icing
46 CFR 173.020 Crane Lifting Criterion (Partially Protected)

WEIGHT STATUS
Baseline draft: 7.348 @ 86.00f, 7.122 @ 6.00f

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	236.71	40.45f	0.00p	11.73
Remove Skiff	-2.68	55.00f	8.00p	14.50
Skiff pick	2.68	46.70f	19.50p	32.50
Boom Stow	-3.00	53.56f	0.00	19.67
Boom over	3.00	54.75f	8.75p	34.00
Total Weight-------->	236.71	40.38f	0.25p	12.11

Distances in FEET.

RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 40.37f TCG = 0.25p VCG = 12.11
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.37f TCG = 0.25p VCG = 12.28

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.098	0.13f	3.89p	236.72	0.00	0.000	0.00	6.54(3)
6.949	0.19f	8.89p	236.71	0.00	0.299	0.75	9.94(1)
6.670	0.28f	13.89p	236.71	0.00	0.540	2.87	8.99(1)
6.260	0.42f	18.89p	236.70	0.00	0.734	6.07	8.04(1)
5.787	0.58f	23.55p	236.72	0.00	0.829	9.74	7.12(1)
5.751	0.59f	23.89p	236.72	0.00	0.828	10.03	7.04(1)
5.223	0.76f	28.89p	236.72	0.00	0.704	13.95	5.98(1)
4.949	0.83f	31.43p	236.72	0.00	0.575	15.58	0.00(3)
4.678	0.91f	33.89p	236.72	0.00	0.419	16.80	4.85(1)
4.119	1.03f	38.89p	236.72	0.00	0.038	17.99	3.67(1)
4.068	1.04f	39.35p	236.73	0.00	0.000	18.00	3.56(1)
3.995	1.06f	40.00p	236.72	0.00	-0.055	17.98	3.40(1)
3.557	1.12f	43.89p	236.71	0.00	-0.395	17.12	2.45(1)
2.998	1.14f	48.89p	236.72	0.00	-0.854	14.01	1.22(1)
2.458	1.13f	53.74p	236.72	0.00	-1.314	8.76	0.00(1)
2.442	1.13f	53.89p	236.72	0.00	-1.328	8.56	-0.04(1)
1.889	1.08f	58.89p	236.71	0.00	-1.809	0.72	-1.30(1)
1.344	0.99f	63.89p	236.71	0.00	-2.288	-9.52	-2.56(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1)	ER Air Intake	FLOOD 32.00f	9.92	18.75
(3)	FO 2 Vent	TIGHT 36.25f	13.50	14.67

LIM 46 CFR 173.020 LIFTING CRITERION	Min/Max		Attained	
(1) Area from Equilibrium to MaxRA	>	10.00 Ft-deg	9.74	F
(2) Area from Equilibrium to Flood	>	10.00 Ft-deg	8.76	F
(3) Area from Equilibrium to abs 40 deg	>	10.00 Ft-deg	17.98	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.89deg

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**** Condition 7 ****
Max Draft
46 CFR 170.173(c) Intact Righting Energy Criterion

RESIDUAL RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 39.71f TCG = 0.00 VCG = 11.39
Free Surface Adjustment: 0.14
Adjusted CG: LCG = 39.71f TCG = 0.00 VCG = 11.53

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Residual Arms in Trim	in Heel	Res. Flood Pt Area	Height
7.840	0.00	0.00	271.73	0.00	0.000	0.00	6.83(2)
7.795	0.01f	5.00s	271.74	0.00	0.327	0.82	10.02(1)
7.652	0.03f	10.00s	271.73	0.00	0.648	3.26	9.07(1)
7.388	0.08f	15.00s	271.73	0.00	0.938	7.24	8.11(1)
7.018	0.16f	20.00s	271.73	0.00	1.138	12.46	7.12(1)
6.878	0.19f	21.90s	271.73	0.00	1.153	14.64	6.71(1)
6.652	0.23f	25.00s	271.73	0.00	1.116	18.18	6.02(1)
6.428	0.26f	28.06s	271.77	0.00	1.021	21.45	-0.00(3)
6.282	0.29f	30.00s	271.74	0.00	0.934	23.35	4.84(1)
5.889	0.33f	35.00s	271.73	0.00	0.639	27.32	3.60(1)
5.481	0.33f	40.00s	271.73	0.00	0.276	29.64	2.32(1)
5.190	0.31f	43.49s	271.73	0.00	0.000	30.13	1.42(1)
5.063	0.29f	45.00s	271.73	0.00	-0.124	30.03	1.02(1)
4.732	0.23f	48.87s	271.73	0.00	-0.450	28.93	0.00(1)
4.634	0.21f	50.00s	271.73	0.00	-0.547	28.37	-0.30(1)
4.190	0.10f	55.00s	271.73	0.00	-0.984	24.54	-1.62(1)
3.731	0.03a	60.00s	271.73	0.00	-1.429	18.51	-2.93(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: No tank loads are present.

+

Note: The Residual Righting Arms shown above are in excess of the overturning arms derived from these moments (in Ft-LT):
Stbd heeling moment = 0.00

+

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM	46CFR 170.173c Righting Energy		Min/Max		Attained	
(1)	GM Upright	>	0.49	Ft	3.76	P
(2)	Absolute Angle at MaxRA	>	15.00	deg	21.90	P
(3)	Residual Area from abs 0 deg to 40 or Flood	>	16.90	Ft-deg	29.64	P
(4)	Residual Area from 30 deg to 40 or Flood	>	5.60	Ft-deg	6.29	P
(5)	Residual Area from abs 0 deg to MaxRA at 15	>	13.10	Ft-deg	16.24	P
(6)	Residual Area from abs 0 deg to MaxRA at 30	>	10.30	Ft-deg	12.77	P

----------Relative angles measured from 0.000 ----------

* No heeling moment

09/21/26 11:57:44 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

**** Condition 7 ****
Max Draft
46 CFR 173.020 Crane Lifting Criterion (Partially Protected)

WEIGHT STATUS
Baseline draft: 7.840

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	271.73	39.71f	0.00	11.39
Remove Skiff	-2.68	55.00f	8.00p	14.50
Skiff pick	2.68	46.70f	19.50p	32.50
Boom Stow	-3.00	53.56f	0.00	19.67
Boom over	3.00	54.75f	8.75p	34.00
Total Weight-------->	271.73	39.64f	0.21p	11.72

Distances in FEET.

RIGHTING ARMS vs HEEL ANGLE
Total CG: LCG = 39.64f TCG = 0.21p VCG = 11.72
Free Surface Adjustment: 0.14
Adjusted CG: LCG = 39.64f TCG = 0.21p VCG = 11.87

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.844	0.04a	3.51p	271.73	0.00	0.000	0.00	5.99(4)
7.733	0.02a	8.51p	271.73	0.00	0.295	0.74	9.36(1)
7.510	0.02f	13.51p	271.73	0.00	0.568	2.90	8.39(1)
7.162	0.10f	18.51p	271.73	0.00	0.785	6.31	7.41(1)
6.947	0.14f	21.43p	271.70	0.00	0.822	8.67	6.81(1)
6.797	0.17f	23.51p	271.73	0.00	0.803	10.36	6.35(1)
6.472	0.22f	28.02p	271.75	0.00	0.667	13.73	0.00(3)
6.435	0.22f	28.51p	271.73	0.00	0.645	14.05	5.18(1)
6.054	0.26f	33.51p	271.73	0.00	0.363	16.63	3.96(1)
5.653	0.28f	38.51p	271.73	0.00	0.003	17.58	2.69(1)
5.650	0.28f	38.54p	271.73	0.00	0.000	17.58	2.68(1)
5.530	0.27f	40.00p	271.73	0.00	-0.114	17.50	2.30(1)
5.241	0.25f	43.51p	271.73	0.00	-0.398	16.60	1.39(1)
4.818	0.18f	48.51p	271.73	0.00	-0.822	13.57	0.08(1)
4.793	0.17f	48.79p	271.73	0.00	-0.847	13.32	0.00(1)
4.381	0.07f	53.51p	271.73	0.00	-1.259	8.37	-1.24(1)
3.929	0.05a	58.51p	271.73	0.00	-1.704	0.96	-2.56(1)
3.460	0.19a	63.51p	271.73	0.00	-2.147	-8.67	-3.87(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM 46 CFR 173.020 LIFTING CRITERION	Min/Max		Attained	
(1) Area from Equilibrium to MaxRA	>	10.00	Ft-deg	8.67 F
(2) Area from Equilibrium to Flood	>	10.00	Ft-deg	13.32 P
(3) Area from Equilibrium to abs 40 deg	>	10.00	Ft-deg	17.50 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

Appendix D

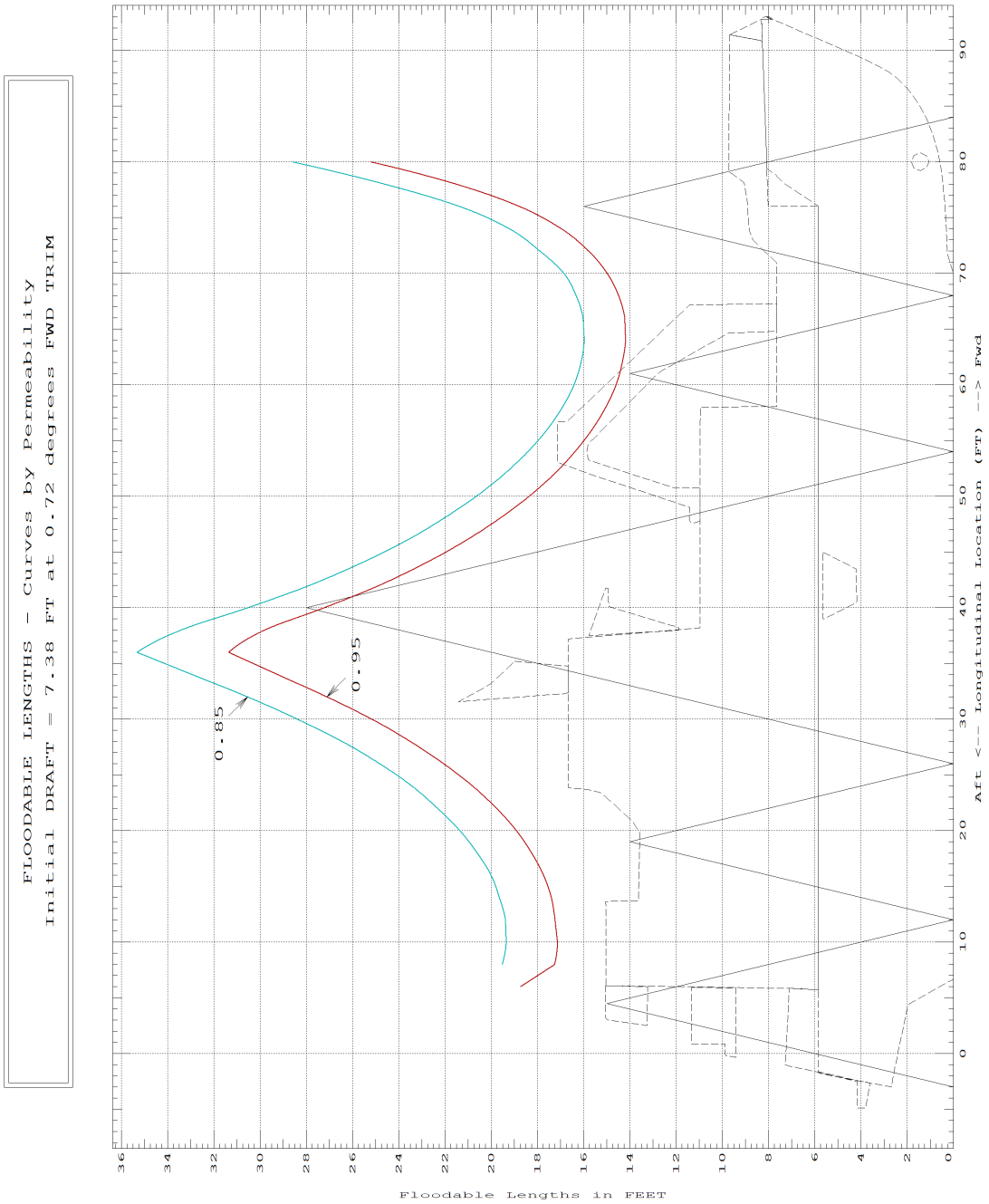
Subdivision Analysis

Damage Stability Output

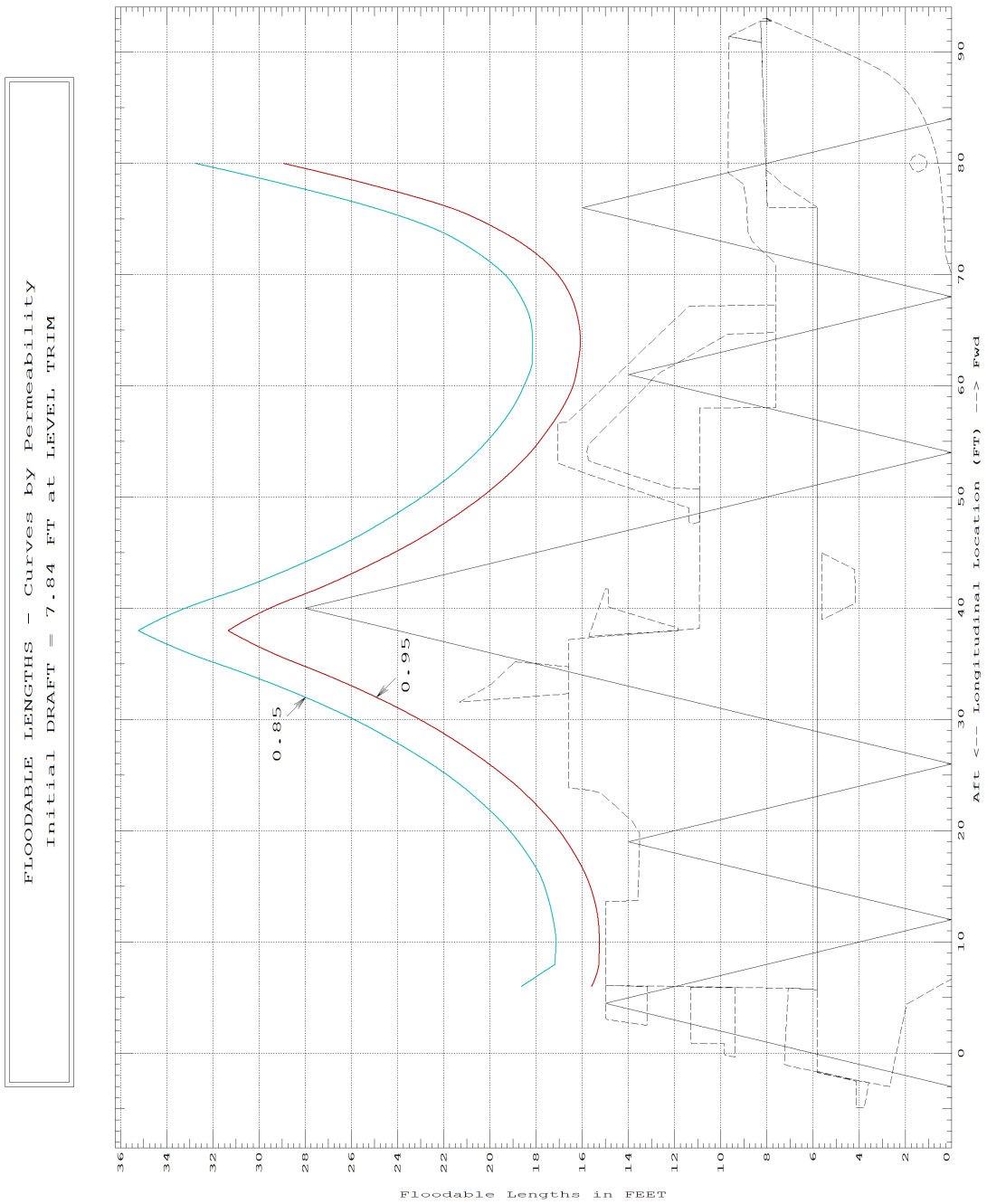
Subdivision GHS Output

```
09/16/26 16:40:15          Elliott Bay Design Group
GHS 20.00                    NEW AWT PATROL VESSEL


Geometry File: C:\EBDG\...\Geometry\24065-DAYPS.GFT
Geometry File date and time: 07/13/26 11:48:24


GEOMETRY CREATED BY SKW IN RHINO
NO SHELL OFFSET INCLUDED

Origin Definition
---------------------------------------
Longitudinal: STERN / FR0
  Transverse: Centerplane
    Vertical: Baseline

                          CRITICAL POINT STATUS
                          Baseline draft: 0.000
                         Trim: zero,  Heel: zero

      Critical Points----------------------LCP-----TCP-----VCP-----Height
   (1) ER Air Intake              FLOOD   32.00f   9.92p  18.75      18.75
   (1) ER Air Intake              FLOOD   32.00f   9.92s  18.75      18.75
   (2) FO 1 Vent                  TIGHT   67.88f  11.00p  14.67      14.67
   (2) FO 1 Vent                  TIGHT   67.88f  11.00s  14.67      14.67
   (3) FO 2 Vent                  TIGHT   36.25f  13.50p  14.67      14.67
   (3) FO 2 Vent                  TIGHT   36.25f  13.50s  14.67      14.67
   (4) FO Day Vent                TIGHT   29.33f  13.50p  14.67      14.67
   (4) FO Day Vent                TIGHT   29.33f  13.50s  14.67      14.67
    Distances in FEET.-----------------------------------------------------

                       HYDROSTATIC PROPERTIES
                    No Trim, No Heel, VCG = 11.50

   LCF    Displacement    Buoyancy-Ctr.  Weight/          Moment/
  Draft----Weight(LT)----LCB-----VCB-----Inch-----LCF---In trim----GML-----GMT
  7.840       271.73   39.71f    5.02     4.67   36.77f   27.77    98.1     3.65
 Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.
                            Trim is per 80.00Ft
 Draft is from Baseline.                        Formal Free Surface included.

      Note:  GMT includes the formal free surface moment 39.3 Ft-LT
```

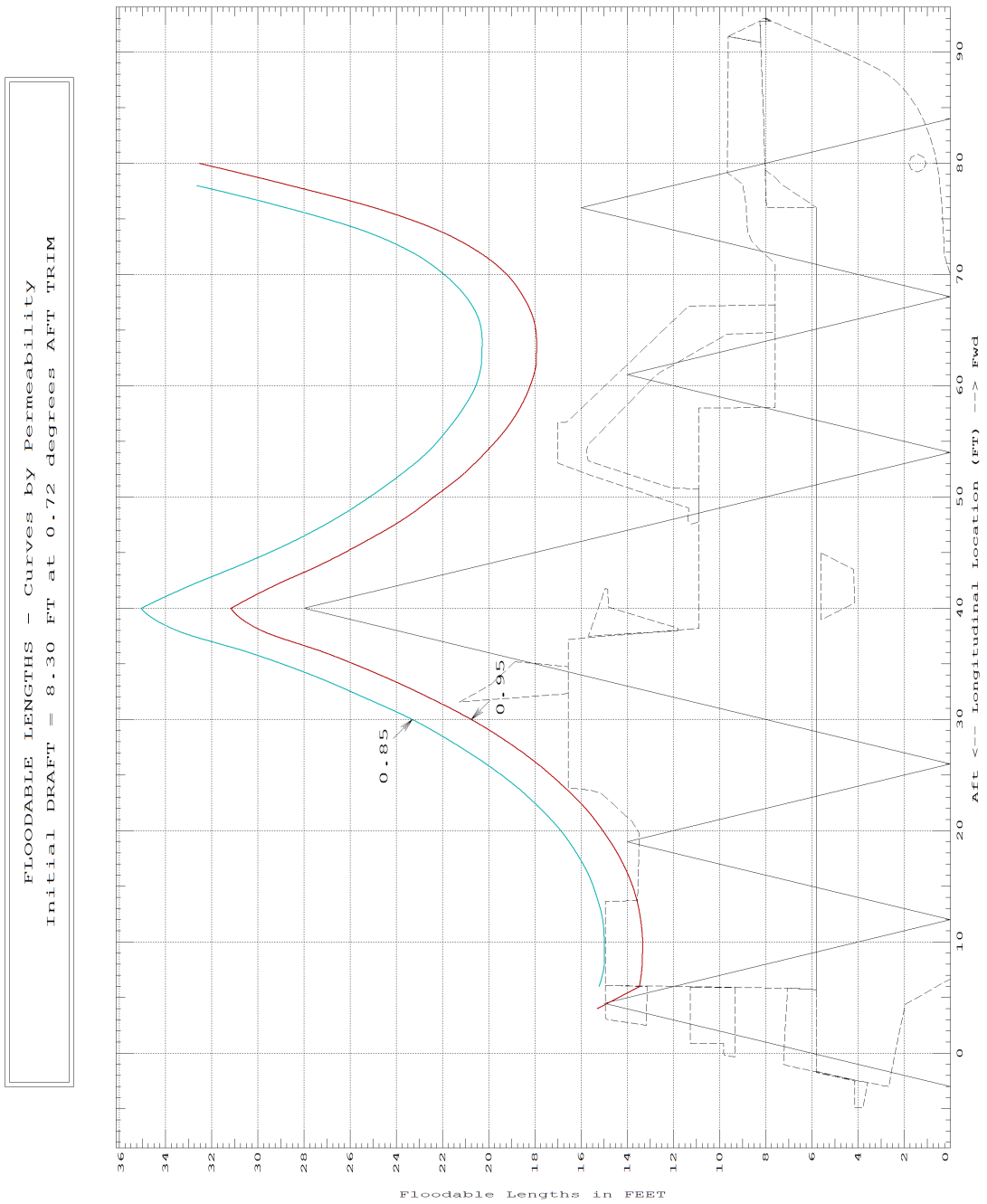
09/16/26 16:40:15 Elliott Bay Design Group
GHS 20.00 **NEW AWT PATROL VESSEL**



09/16/26 16:40:15 Elliott Bay Design Group
GHS 20.00 **NEW AWT PATROL VESSEL**



09/16/26 16:40:15 Elliott Bay Design Group
GHS 20.00 **NEW AWT PATROL VESSEL**



Damage Stability GHS Output

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09/21/26 11:57:44          Elliott Bay Design Group
 GHS 20.00                    NEW AWT PATROL VESSEL


 Geometry File: C:\EBDG\ELLIOTT BAY DESIGN GROUP LLC\...\Geometry\24065-.GFT
 Geometry File date and time: 09/21/26 09:42:46


 GEOMETRY CREATED BY EBDG:SKW FROM RHINO MODEL 9/18/2026
 NO SHELL OFFSET INCLUDED

 Origin Definition
---------------------------------------
 Longitudinal: STERN / FR0
   Transverse: Centerplane
     Vertical: Baseline

                            CRITICAL POINT STATUS
                            Baseline draft: 0.000
                           Trim: zero,  Heel: zero
                                      +
       Critical Points----------------------LCP-----TCP-----VCP-----Height
    (1) ER Air Intake              FLOOD   32.00f   9.92p  18.75      18.75
    (1) ER Air Intake              FLOOD   32.00f   9.92s  18.75      18.75
    (2) FO 1 Vent                  TIGHT   67.88f  11.00p  14.67      14.67
    (2) FO 1 Vent                  TIGHT   67.88f  11.00s  14.67      14.67
    (3) FO 2 Vent                  TIGHT   36.25f  13.50p  14.67      14.67
    (3) FO 2 Vent                  TIGHT   36.25f  13.50s  14.67      14.67
    (4) FO Day Vent                TIGHT   29.33f  13.50p  14.67      14.67
    (4) FO Day Vent                TIGHT   29.33f  13.50s  14.67      14.67
     Distances in FEET.-----------------------------------------------------
```

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GHS 20.00 NEW AWT PATROL VESSEL

PERMEABILITY SETTINGS

Name	Description	Perm.	Cubic FEET
FO_DAY.S		0.9850	157.6
FO_DAY.P		0.9850	157.6
FO1.S		0.9850	270.7
FO1.P		0.9850	270.7
FO2_FWD.S		0.9850	222.1
FO2_AFT.S		0.9850	370.4
FO2_FWD.P		0.9850	222.1
FO2_AFT.P		0.9846	360.3
FW.S		1.0000	83.5
FW.P		1.0000	83.5
SEW.C		1.0000	83.1
FOREPEAK.C		0.9500	396.5
VOID1.C		0.9500	2,210.7
TANKVOID.C		0.9500	2,256.3
ER.C		0.8500	5,001.4
WORKSHOP.C		0.9500	3,216.8
LAZARETTE.C		0.9850	2,204.9

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GHS 20.00 NEW AWT PATROL VESSEL

***** Condition 0 *****
Lightship
***** Damage Case 1: Forepeak Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 5.083 @ 86.00f, 6.503 @ 6.00f
Trim: Aft 1.42/80.00, Heel: Stbd 1.13 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM / RefHt
Total Weight-------->			170.00	39.00f	0.12s	11.61	
Total Tanks--------->			--- Included in Fixed Weight ---				39.3*
Total Weight-------->			170.00	39.00f	0.12s	11.61	
HULL		1.025	170.15	38.90f	0.28s	3.92	-6.61
FOREPEAK.C	Flooded	1.025	-0.15	84.94f	0.01s	4.37	-6.61
Total Displacement-->		1.025	170.00	38.86f	0.28s	3.92	
Righting Arms:				0.00a	0.00s		

Distances in FEET. Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

FREEBOARD STATUS
Baseline draft: 5.083 @ 86.00f, 6.503 @ 6.00f
Trim: Aft 1.42/80.00, Heel: Stbd 1.13 deg.
Least freeboard is 4.97 Ft located at 0.56f
Least extra freeboard (to margin line) is 4.72 Ft located at 0.56f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 1.42/80.00, Heel: Stbd 1.13 deg., VCG = 11.61

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
5.969	170.00	38.86f	3.92	4.31	36.07f	23.51	132.8	6.03

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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GHS 20.00 NEW AWT PATROL VESSEL

RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.00f TCG = 0.12s VCG = 11.61
Free Surface Adjustment: 0.23
Adjusted CG: LCG = 39.00f TCG = 0.12s VCG = 11.84

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
6.606	1.02a	1.13s	169.95	0.00	0.000	0.00	8.31(4)
6.493	0.95a	6.13s	170.00	0.00	0.492	1.23	11.62(1)
6.225	0.82a	11.13s	169.99	0.00	0.889	4.72	10.71(1)
5.821	0.62a	16.13s	169.97	0.00	1.204	9.99	9.78(1)
5.287	0.39a	21.13s	170.00	0.00	1.434	16.62	8.84(1)
4.878	0.22a	24.30s	169.95	0.00	1.523	21.32	Marg Imm.
4.621	0.13a	26.13s	170.02	0.00	1.560	24.14	7.91(1)
4.347	0.03a	28.01s	169.97	0.00	1.576	27.09	7.57(1)
3.889	0.12f	31.13s	169.99	0.00	1.533	31.94	6.96(1)
3.146	0.35f	36.13s	170.00	0.00	1.320	39.15	5.95(1)
2.790	0.45f	38.51s	170.00	0.00	1.171	42.11	0.00(3)
2.398	0.55f	41.13s	170.00	0.00	0.979	44.94	4.89(1)
1.652	0.73f	46.13s	169.99	0.00	0.555	48.82	3.78(1)
0.923	0.88f	51.13s	169.99	0.00	0.082	50.43	2.63(1)
0.804	0.90f	51.97s	170.00	0.00	0.000	50.47	2.43(1)
0.232	0.96f	56.13s	170.00	0.00	-0.408	49.62	1.44(1)
-0.430	1.00f	61.13s	170.00	0.00	-0.893	46.37	0.24(1)
-0.561	1.01f	62.12s	170.00	0.00	-0.990	45.44	-0.00(1)
-1.102	1.03f	66.13s	170.00	0.00	-1.391	40.67	-0.96(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1)	ER Air Intake	FLOOD 32.00f	9.92	18.75
(3)	FO 2 Vent	TIGHT 36.25f	13.50	14.67
(4)	FO Day Vent	TIGHT 29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained	
(1)	Angle from Equilibrium to RAzero	>	15.00 deg	50.84	P
(2)	Angle from Equilibrium to Flood	>	15.00 deg	60.99	P
(3)	Area from Equilibrium to Flood or RAzero	>	2.82 Ft-deg	50.47	P
(4)	Righting Arm at MaxRA	>	0.33 Ft	1.58	P
(5)	Absolute Angle at Equilibrium	<	7.00 deg	1.13	P
(6)	Angle from Equilibrium to Dk/margin Immersion	>	0.00 deg	23.17	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

09/21/26 11:57:44 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

***** Condition 0 *****
Lightship
***** Damage Case 2: Void 1 Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.800 @ 86.00f, 5.964 @ 6.00f
Trim: Fwd 0.84/80.00, Heel: Stbd 1.19 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Weight-------->		170.00	39.00f	0.12s	11.61	
Total Tanks--------->		--- Included in Fixed Weight ---				39.3*
Total Weight-------->		170.00	39.00f	0.12s	11.61	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	187.64	42.35f	0.26s	4.11	-5.90
VOID1.C	Flooded	1.025	-17.64	73.89f	0.07s	4.37	-5.90
Total Displacement-->		1.025	170.00	39.08f	0.28s	4.08	

Righting Arms: 0.00 0.00s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.800 @ 86.00f, 5.964 @ 6.00f
Trim: Fwd 0.84/80.00, Heel: Stbd 1.19 deg.
Least freeboard is 4.98 Ft located at 61.69f
Least extra freeboard (to margin line) is 4.73 Ft located at 61.69f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.84/80.00, Heel: Stbd 1.19 deg., VCG = 11.61

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
6.262	170.00	39.08f	4.08	3.92	34.56f	16.47	93.0	5.76

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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GHS 20.00 NEW AWT PATROL VESSEL

RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.00f TCG = 0.12s VCG = 11.61
Free Surface Adjustment: 0.23
Adjusted CG: LCG = 39.00f TCG = 0.12s VCG = 11.84

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
5.899	0.60f	1.19s	169.98	0.00	0.000	0.00	7.83(2)
5.774	0.68f	6.19s	170.00	0.00	0.482	1.20	11.42(1)
5.482	0.85f	11.19s	169.99	0.00	0.883	4.65	10.51(1)
5.051	1.07f	16.19s	169.99	0.00	1.211	9.92	9.59(1)
4.494	1.33f	21.19s	169.96	0.00	1.477	16.66	8.66(1)
4.443	1.35f	21.60s	169.96	0.00	1.494	17.27	Marg Imm.
3.814	1.62f	26.19s	170.00	0.00	1.625	24.47	7.73(1)
3.686	1.67f	27.04s	170.00	0.00	1.628	25.85	7.56(1)
3.029	1.99f	31.19s	170.02	0.00	1.549	32.50	6.75(1)
2.202	2.40f	36.19s	170.00	0.00	1.290	39.68	5.73(1)
2.094	2.45f	36.83s	170.01	0.00	1.247	40.50	0.00(3)
1.365	2.79f	41.19s	170.00	0.00	0.913	45.23	4.64(1)
0.543	3.15f	46.19s	170.02	0.00	0.463	48.71	3.51(1)
-0.203	3.42f	50.89s	170.00	0.00	0.000	49.81	2.42(1)
-0.249	3.43f	51.19s	170.00	0.00	-0.030	49.81	2.35(1)
-0.994	3.61f	56.19s	169.99	0.00	-0.542	48.39	1.16(1)
-1.694	3.72f	61.09s	169.97	0.00	-1.057	44.48	0.00(1)
-1.708	3.72f	61.19s	169.97	0.00	-1.068	44.37	-0.02(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1)	ER Air Intake	FLOOD 32.00f	9.92	18.75
(2)	FO 1 Vent	TIGHT 67.88f	11.00	14.67
(3)	FO 2 Vent	TIGHT 36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained
(1) Angle from Equilibrium to RAzero	>	15.00	deg	49.70 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	59.90 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	49.81 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.63 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	1.19 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	20.41 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

09/21/26 11:57:44 Elliott Bay Design Group
GHS 20.00 NEW AWT PATROL VESSEL

***** Condition 0 *****
Lightship
***** Damage Case 3: Tank Void Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.426 @ 86.00f, 6.074 @ 6.00f
Trim: Fwd 1.35/80.00, Heel: Stbd 2.29 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Weight-------->		170.00	39.00f	0.12s	11.61	
Total Tanks--------->		--- Included in Fixed Weight ---				39.3*
Total Weight-------->		170.00	39.00f	0.12s	11.61	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	204.29	42.76f	0.48s	4.32	-5.97
FO1.S	Flooded	1.025	-2.17	61.65f	8.86s	5.77	-5.97
TANKVOID.C	Flooded	1.025	-32.11	60.69f	0.21s	4.05	-5.97
Total Displacement-->		1.025	170.01	39.13f	0.42s	4.35	

Righting Arms: 0.00f 0.01s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.426 @ 86.00f, 6.074 @ 6.00f
Trim: Fwd 1.35/80.00, Heel: Stbd 2.29 deg.
Least freeboard is 4.26 Ft located at 64.73f
Least extra freeboard (to margin line) is 4.01 Ft located at 64.73f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.35/80.00, Heel: Stbd 2.29 deg., VCG = 11.61

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
6.567	170.01	39.13f	4.35	3.86	35.15f	20.53	115.9	5.37

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.00f TCG = 0.12s VCG = 11.61
Free Surface Adjustment: 0.23
Adjusted CG: LCG = 39.00f TCG = 0.12s VCG = 11.84

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
5.967	0.97f	2.29s	170.00	0.00	0.000	0.00	7.10(2)
5.799	1.11f	7.29s	170.00	0.00	0.443	1.11	10.92(1)
5.479	1.31f	12.29s	169.99	0.00	0.802	4.25	9.99(1)
5.027	1.56f	17.29s	169.98	0.00	1.084	9.00	9.05(1)
4.814	1.67f	19.28s	169.99	0.00	1.179	11.25	Marg Imm.
4.457	1.83f	22.29s	169.99	0.00	1.301	14.99	8.10(1)
3.984	2.05f	25.86s	170.00	0.00	1.360	19.76	7.41(1)
3.784	2.14f	27.29s	170.00	0.00	1.351	21.70	7.13(1)
3.062	2.44f	32.29s	170.00	0.00	1.196	28.07	6.12(1)
2.688	2.58f	34.85s	170.00	0.00	1.060	30.97	-0.00(3)
2.333	2.70f	37.29s	170.00	0.00	0.906	33.36	5.06(1)
1.622	2.89f	42.29s	169.99	0.00	0.540	37.02	3.95(1)
0.940	2.99f	47.29s	170.00	0.00	0.133	38.72	2.81(1)
0.734	3.00f	48.85s	170.00	0.00	0.000	38.82	2.45(1)
0.289	3.01f	52.29s	170.00	0.00	-0.301	38.31	1.64(1)
-0.333	2.98f	57.29s	170.00	0.00	-0.751	35.68	0.45(1)
-0.562	2.96f	59.16s	170.00	0.00	-0.924	34.11	0.00(1)
-0.939	2.92f	62.29s	170.00	0.00	-1.214	30.77	-0.75(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1)	ER Air Intake	FLOOD 32.00f	9.92	18.75
(2)	FO 1 Vent	TIGHT 67.88f	11.00	14.67
(3)	FO 2 Vent	TIGHT 36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained
(1) Angle from Equilibrium to RAzero	>	15.00	deg	46.56 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	56.87 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	38.82 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.36 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	2.29 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	16.99 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 0 *****
Lightship
***** Damage Case 4: Engine Room Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.093 @ 86.00f, 7.679 @ 6.00f
Trim: Aft 0.59/80.00, Heel: Stbd 1.06 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Weight-------->		170.00	39.00f	0.12s	11.61	
Total Tanks--------->		--- Included in Fixed Weight ---				39.3*
Total Weight-------->		170.00	39.00f	0.12s	11.61	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	250.29	39.15f	0.20s	4.80	-7.72
ER.C	Flooded	1.025	-80.29	39.58f	0.11s	4.39	-7.72
Total Displacement-->		1.025	170.00	38.95f	0.25s	5.00	

Righting Arms: 0.00 0.00s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.093 @ 86.00f, 7.679 @ 6.00f
Trim: Aft 0.59/80.00, Heel: Stbd 1.06 deg.
Least freeboard is 3.86 Ft located at 6.67f
Least extra freeboard (to margin line) is 3.61 Ft located at 6.67f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 0.59/80.00, Heel: Stbd 1.06 deg., VCG = 11.61

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.462	170.00	38.95f	5.00	3.49	35.56f	26.51	149.7	6.49

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.00f TCG = 0.12s VCG = 11.61
Free Surface Adjustment: 0.23
Adjusted CG: LCG = 39.00f TCG = 0.12s VCG = 11.84

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.721	0.42a	1.06s	169.98	0.00	0.000	0.00	6.91(4)
7.648	0.41a	6.06s	170.00	0.00	0.559	1.40	5.72(4)
7.460	0.37a	11.06s	170.00	0.00	1.077	5.51	4.54(4)
7.124	0.29a	16.06s	170.00	0.00	1.502	11.99	3.39(4)
7.037	0.27a	17.08s	170.00	0.00	1.577	13.56	Marg Imm.
6.654	0.19a	21.06s	170.00	0.00	1.807	20.32	2.28(4)
6.403	0.14a	23.60s	169.96	0.00	1.848	24.98	1.70(4)
6.161	0.09a	26.06s	170.00	0.00	1.810	29.47	1.13(4)
5.684	0.00	30.81s	170.00	0.00	1.588	37.62	0.00(4)
5.659	0.00f	31.06s	170.00	0.00	1.573	38.01	-0.06(3)
5.136	0.09f	36.06s	170.00	0.00	1.218	45.03	-1.28(3)
4.590	0.17f	41.06s	170.00	0.00	0.795	50.10	-2.50(3)
4.030	0.21f	46.06s	170.00	0.00	0.334	52.93	-3.70(3)
3.634	0.22f	49.57s	170.01	0.00	0.000	53.52	-4.53(3)
3.465	0.22f	51.06s	170.03	0.00	-0.144	53.41	-4.88(3)
2.888	0.19f	56.06s	170.00	0.00	-0.630	51.48	-6.02(3)
2.307	0.14f	61.06s	170.00	0.00	-1.120	47.11	-7.11(3)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM 46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	48.51 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	53.52 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.85 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	1.06 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	16.02 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 0 *****
Lightship
***** Damage Case 5: Engine Room Flooded, FO_DAY.S, FO2_AFT.S *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.317 @ 86.00f, 7.848 @ 6.00f
Trim: Aft 0.53/80.00, Heel: Stbd 5.99 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Weight-------->		170.00	39.00f	0.12s	11.61	
Total Tanks--------->		--- Included in Fixed Weight ---				39.3*
Total Weight-------->		170.00	39.00f	0.12s	11.61	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	261.78	39.10f	1.10s	4.98	-7.84
FO_DAY.S	Flooded	1.025	-2.69	31.50f	11.25s	6.25	-7.84
FO2_AFT.S	Flooded	1.025	-6.20	39.88f	11.20s	6.23	-7.84
ER.C	Flooded	1.025	-82.89	39.58f	0.58s	4.52	-7.84
Total Displacement-->		1.025	170.00	38.96f	0.82s	5.14	

Righting Arms: 0.00 0.02s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.317 @ 86.00f, 7.848 @ 6.00f
Trim: Aft 0.53/80.00, Heel: Stbd 5.99 deg.
Least freeboard is 2.51 Ft located at 13.17f
Least extra freeboard (to margin line) is 2.26 Ft located at 13.17f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 0.53/80.00, Heel: Stbd 5.99 deg., VCG = 11.61

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.650	170.00	38.96f	5.14	3.34	35.88f	26.56	150.0	5.24

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.00f TCG = 0.12s VCG = 11.61
Free Surface Adjustment: 0.23
Adjusted CG: LCG = 39.00f TCG = 0.12s VCG = 11.84

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.844	0.38a	5.99s	169.99	0.00	0.000	0.00	5.53(4)
7.711	0.35a	10.99s	170.00	0.00	0.445	1.11	4.29(4)
7.467	0.29a	15.59s	170.00	0.00	0.799	4.00	Marg Imm.
7.440	0.29a	15.99s	170.00	0.00	0.827	4.32	3.09(4)
7.071	0.22a	20.99s	170.00	0.00	1.068	9.12	1.90(4)
6.926	0.21a	22.93s	170.00	0.00	1.086	11.21	1.43(4)
6.692	0.18a	25.99s	170.00	0.00	1.042	14.49	0.67(4)
6.475	0.16a	28.67s	170.00	0.00	0.940	17.14	0.00(4)
6.279	0.14a	30.99s	170.00	0.00	0.820	19.19	-0.58(4)
5.835	0.10a	35.99s	170.00	0.00	0.495	22.51	-1.85(4)
5.366	0.08a	40.99s	170.00	0.00	0.113	24.06	-3.11(4)
5.232	0.08a	42.40s	170.01	0.00	0.000	24.13	-3.46(4)
4.880	0.10a	45.99s	170.00	0.00	-0.295	23.61	-4.35(4)
4.379	0.15a	50.99s	170.00	0.00	-0.714	21.09	-5.56(4)
3.862	0.22a	55.99s	170.00	0.00	-1.141	16.46	-6.74(4)
3.330	0.31a	60.99s	170.00	0.00	-1.570	9.68	-7.87(4)
2.786	0.40a	65.99s	170.00	0.00	-1.996	0.76	-8.94(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Point		LCP	TCP	VCP
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM 46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	36.41	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE	
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	24.13	P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.09	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	5.99	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	9.60	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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                          ***** Condition 0 *****
                                Lightship
   ***** Damage Case 6: Engine Room Flooded, FO2_FWD.S, FO2_AFT.S *****

                       WEIGHT and DISPLACEMENT STATUS
                  Baseline draft: 7.462 @ 86.00f, 7.794 @ 6.00f
                   Trim: Aft 0.33/80.00,  Heel: Stbd 6.51 deg.
Part------------------------------Weight(LT)----LCG-----TCG-----VCG-------FSM
  Total Weight-------->              170.00   39.00f   0.12s  11.61
  Total Tanks--------->           --- Included in Fixed Weight ---        39.3*
  Total Weight-------->              170.00   39.00f   0.12s  11.61
                         SpGr------Displ(LT)----LCB-----TCB-----VCB------RefHt
HULL                    1.025        263.21   39.34f   1.19s   5.00       -7.77
FO2_FWD.S      Flooded  1.025         -3.56   49.93f  10.94s   6.45       -7.77
FO2_AFT.S      Flooded  1.025         -6.37   39.89f  11.21s   6.31       -7.77
ER.C           Flooded  1.025        -83.28   39.61f   0.63s   4.54       -7.77
  Total Displacement--> 1.025        170.00   38.97f   0.88s   5.15
-------------------------------------------------------------------------------
               Righting Arms:                  0.00     0.03s
Distances in FEET.-----------------------------------------Moments in Ft-LT.
                                    +
    Note:  FSM values marked with an asterisk (*) are formal values which are
           not the same as the true values in the present condition.
                                    +

                                FREEBOARD STATUS
                  Baseline draft: 7.462 @ 86.00f, 7.794 @ 6.00f
                   Trim: Aft 0.33/80.00,  Heel: Stbd 6.51 deg.
                   Least freeboard is 2.41 Ft located at 13.17f
     Least extra freeboard (to margin line) is 2.16 Ft located at 13.17f

                       HYDROSTATIC PROPERTIES with FLOODING
              Trim: Aft 0.33/80.00, Heel: Stbd 6.51 deg., VCG = 11.61

   LCF    Displacement   Buoyancy-Ctr.  Weight/          Moment/
  Draft----Weight(LT)----LCB-----VCB-----Inch-----LCF---In trim----GML-----GMT
  7.671       170.00   38.97f   5.15     3.32   35.67f   26.47   149.5    5.05
 Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.
                                Trim is per 80.00Ft
 Draft is from Baseline.                        Formal Free Surface included.

      Note:  GMT includes the formal free surface moment 39.3 Ft-LT
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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.00f TCG = 0.12s VCG = 11.61
Free Surface Adjustment: 0.23
Adjusted CG: LCG = 39.00f TCG = 0.12s VCG = 11.84

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.769	0.24a	6.51s	170.00	0.00	0.000	0.00	5.40(4)
7.607	0.17a	11.51s	170.00	0.00	0.423	1.06	4.16(4)
7.360	0.09a	15.77s	170.00	0.00	0.731	3.53	Marg Imm.
7.307	0.07a	16.51s	170.00	0.00	0.779	4.09	2.96(4)
6.919	0.02f	21.51s	170.00	0.00	0.979	8.54	1.77(3)
6.822	0.04f	22.77s	170.00	0.00	0.986	9.77	1.46(3)
6.526	0.09f	26.51s	170.00	0.00	0.925	13.39	0.52(3)
6.353	0.11f	28.58s	170.00	0.00	0.844	15.23	0.00(3)
6.099	0.14f	31.51s	170.00	0.00	0.691	17.47	-0.74(3)
5.645	0.19f	36.51s	170.00	0.00	0.363	20.14	-2.00(3)
5.188	0.21f	41.33s	170.02	0.00	0.000	21.03	-3.22(3)
5.170	0.21f	41.51s	170.00	0.00	-0.014	21.03	-3.26(3)
4.680	0.19f	46.51s	170.00	0.00	-0.413	19.97	-4.50(3)
4.176	0.13f	51.51s	170.00	0.00	-0.824	16.89	-5.70(3)
3.657	0.06f	56.51s	170.00	0.00	-1.243	11.72	-6.86(3)
3.123	0.03a	61.51s	170.00	0.00	-1.663	4.46	-7.97(4)
2.578	0.14a	66.51s	170.00	0.00	-2.081	-4.91	-9.04(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM 46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	34.82	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE	
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	21.03	P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.99	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	6.51	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	9.27	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 0 *****
Lightship
***** Damage Case 7: FO-DAY.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 5.185 @ 86.00f, 6.574 @ 6.00f
Trim: Aft 1.39/80.00, Heel: Stbd 4.39 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM
Total Weight-------->			170.00	39.00f	0.12s	11.61	
Total Tanks--------->			--- Included in Fixed Weight ---				39.3*
Total Weight-------->			170.00	39.00f	0.12s	11.61	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	175.40	38.81f	1.04s	4.02	-6.66
FO_DAY.S	Flooded	1.025	-1.69	31.50f	11.11s	5.23	-6.66
FO2_AFT.S	Flooded	1.025	-3.72	39.79f	11.03s	5.15	-6.66
Total Displacement-->		1.025	170.00	38.86f	0.72s	3.98	

Righting Arms: 0.00a 0.02s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 5.185 @ 86.00f, 6.574 @ 6.00f
Trim: Aft 1.39/80.00, Heel: Stbd 4.39 deg.
Least freeboard is 4.19 Ft located at 4.42f
Least extra freeboard (to margin line) is 3.94 Ft located at 4.42f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 1.39/80.00, Heel: Stbd 4.39 deg., VCG = 11.61

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
6.048	170.00	38.86f	3.98	4.15	36.30f	23.90	135.0	4.53

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.00f TCG = 0.12s VCG = 11.61
Free Surface Adjustment: 0.23
Adjusted CG: LCG = 39.00f TCG = 0.12s VCG = 11.84

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
6.659	0.99a	4.38s	170.05	0.00	0.000	0.00	7.44(4)
6.483	0.88a	9.38s	170.05	0.00	0.351	0.88	10.89(1)
6.171	0.72a	14.38s	169.98	0.00	0.626	3.35	9.93(1)
5.732	0.51a	19.38s	169.96	0.00	0.842	7.04	8.95(1)
5.354	0.35a	22.84s	169.95	0.00	0.943	10.14	Marg Imm.
5.168	0.28a	24.38s	170.05	0.00	0.975	11.62	7.97(1)
4.839	0.16a	26.95s	169.95	0.00	1.001	14.15	7.47(1)
4.524	0.06a	29.38s	170.00	0.00	0.978	16.56	6.98(1)
3.860	0.14f	34.38s	170.00	0.00	0.809	21.10	5.94(1)
3.536	0.22f	36.75s	170.00	0.00	0.686	22.87	-0.00(3)
3.170	0.31f	39.38s	170.00	0.00	0.524	24.47	4.85(1)
2.466	0.48f	44.38s	169.99	0.00	0.152	26.20	3.73(1)
2.210	0.54f	46.21s	170.00	0.00	0.000	26.34	3.30(1)
1.769	0.62f	49.38s	170.00	0.00	-0.276	25.91	2.56(1)
1.091	0.70f	54.38s	170.00	0.00	-0.727	23.41	1.37(1)
0.453	0.72f	59.38s	170.00	0.00	-1.178	18.65	0.15(1)
0.377	0.72f	60.01s	170.00	0.00	-1.234	17.90	0.00(1)
-0.150	0.70f	64.38s	170.00	0.00	-1.614	11.66	-1.08(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1)	ER Air Intake	FLOOD 32.00f	9.92	18.75
(3)	FO 2 Vent	TIGHT 36.25f	13.50	14.67
(4)	FO Day Vent	TIGHT 29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained	
(1)	Angle from Equilibrium to RAzero	>	15.00 deg	41.83	P
(2)	Angle from Equilibrium to Flood	>	15.00 deg	55.63	P
(3)	Area from Equilibrium to Flood or RAzero	>	2.82 Ft-deg	26.34	P
(4)	Righting Arm at MaxRA	>	0.33 Ft	1.00	P
(5)	Absolute Angle at Equilibrium	<	7.00 deg	4.38	P
(6)	Angle from Equilibrium to Dk/margin Immersion	>	0.00 deg	18.45	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 0 *****
Lightship
***** Damage Case 8: FO2_FWD.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 5.261 @ 86.00f, 6.532 @ 6.00f
Trim: Aft 1.27/80.00, Heel: Stbd 4.49 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Weight-------->		170.00	39.00f	0.12s	11.61	
Total Tanks--------->		--- Included in Fixed Weight ---				39.3*
Total Weight-------->		170.00	39.00f	0.12s	11.61	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	175.60	39.01f	1.06s	4.02	-6.61
FO2_FWD.S	Flooded	1.025	-1.85	49.84f	10.68s	5.17	-6.61
FO2_AFT.S	Flooded	1.025	-3.75	39.80f	11.04s	5.17	-6.61
Total Displacement-->		1.025	170.00	38.88f	0.74s	3.98	

Righting Arms: 0.00a 0.02s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 5.261 @ 86.00f, 6.532 @ 6.00f
Trim: Aft 1.27/80.00, Heel: Stbd 4.49 deg.
Least freeboard is 4.21 Ft located at 6.10f
Least extra freeboard (to margin line) is 3.96 Ft located at 6.10f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 1.27/80.00, Heel: Stbd 4.49 deg., VCG = 11.61

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
6.053	170.00	38.88f	3.98	4.13	36.14f	23.74	134.1	4.37

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.00f TCG = 0.12s VCG = 11.61
Free Surface Adjustment: 0.23
Adjusted CG: LCG = 39.00f TCG = 0.12s VCG = 11.84

Origin Depth	Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
6.605	0.91a	4.48s	169.95	0.00	0.000	0.00	7.43(4)
6.411	0.76a	9.48s	170.05	0.00	0.332	0.83	10.87(1)
6.077	0.56a	14.48s	169.98	0.00	0.586	3.16	9.91(1)
5.619	0.32a	19.48s	170.00	0.00	0.780	6.60	8.93(1)
5.203	0.12a	23.13s	169.95	0.00	0.871	9.62	Marg Imm.
5.033	0.05a	24.48s	170.05	0.00	0.893	10.81	7.95(1)
4.753	0.07f	26.61s	169.99	0.00	0.910	12.73	7.53(1)
4.370	0.21f	29.48s	169.99	0.00	0.880	15.30	6.95(1)
3.688	0.43f	34.48s	170.00	0.00	0.706	19.33	5.91(1)
3.386	0.52f	36.65s	169.99	0.00	0.595	20.74	-0.00(3)
2.985	0.62f	39.48s	170.00	0.00	0.422	22.19	4.83(1)
2.275	0.80f	44.48s	169.99	0.00	0.054	23.42	3.70(1)
2.181	0.82f	45.15s	170.00	0.00	0.000	23.44	3.55(1)
1.574	0.94f	49.48s	169.99	0.00	-0.367	22.66	2.54(1)
0.899	1.02f	54.48s	169.99	0.00	-0.806	19.74	1.35(1)
0.264	1.04f	59.48s	170.00	0.00	-1.246	14.61	0.13(1)
0.198	1.03f	60.02s	170.00	0.00	-1.292	13.92	0.00(1)
-0.341	1.01f	64.48s	170.00	0.00	-1.675	7.30	-1.10(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1)	ER Air Intake	FLOOD 32.00f	9.92	18.75
(3)	FO 2 Vent	TIGHT 36.25f	13.50	14.67
(4)	FO Day Vent	TIGHT 29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained	
(1)	Angle from Equilibrium to RAzero	>	15.00	deg	40.67 P
(2)	Angle from Equilibrium to Flood	>	15.00	deg	55.54 P
(3)	Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	23.44 P
(4)	Righting Arm at MaxRA	>	0.33	Ft	0.91 P
(5)	Absolute Angle at Equilibrium	<	7.00	deg	4.48 P
(6)	Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	18.65 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 0 *****
Lightship
***** Damage Case 9: Workshop Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 4.327 @ 86.00f, 8.364 @ 6.00f
Trim: Aft 4.04/80.00, Heel: Stbd 1.52 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Weight-------->		170.00	39.00f	0.12s	11.61	
Total Tanks--------->		--- Included in Fixed Weight ---				39.3*
Total Weight-------->		170.00	39.00f	0.12s	11.61	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	217.63	34.39f	0.32s	4.60	-8.65
WORKSHOP.C	Flooded	1.025	-47.63	19.29f	0.34s	5.11	-8.65
Total Displacement-->		1.025	170.00	38.63f	0.32s	4.46	

Righting Arms: 0.01a 0.01s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 4.327 @ 86.00f, 8.364 @ 6.00f
Trim: Aft 4.04/80.00, Heel: Stbd 1.52 deg.
Least freeboard is 2.84 Ft located at 0.03f
Least extra freeboard (to margin line) is 2.59 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 4.04/80.00, Heel: Stbd 1.52 deg., VCG = 11.61

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
6.704	170.00	38.63f	4.46	3.61	38.89f	21.56	121.7	4.51

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.00f TCG = 0.12s VCG = 11.61
Free Surface Adjustment: 0.23
Adjusted CG: LCG = 39.00f TCG = 0.12s VCG = 11.84

Origin Depth	Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.652	2.89a	1.53s	169.96	0.00	0.000	0.00	7.11(4)
8.586	2.88a	6.53s	170.00	0.00	0.387	0.97	10.50(1)
8.401	2.83a	11.53s	170.00	0.00	0.731	3.78	9.55(1)
8.255	2.79a	14.09s	170.00	0.00	0.888	5.86	Marg Imm.
8.086	2.74a	16.53s	170.00	0.00	1.024	8.19	8.58(1)
7.703	2.67a	21.53s	170.00	0.00	1.228	13.85	7.57(1)
7.422	2.66a	25.07s	170.01	0.00	1.279	18.31	6.83(1)
7.305	2.66a	26.53s	170.00	0.00	1.270	20.17	6.51(1)
6.914	2.69a	31.23s	169.99	0.00	1.137	25.89	0.00(4)
6.888	2.69a	31.53s	169.99	0.00	1.124	26.23	5.40(1)
6.445	2.72a	36.53s	170.00	0.00	0.839	31.19	4.23(1)
5.972	2.76a	41.53s	170.00	0.00	0.463	34.49	3.02(1)
5.465	2.78a	46.53s	170.00	0.00	0.023	35.73	1.78(1)
5.440	2.78a	46.78s	170.01	0.00	0.000	35.73	1.72(1)
4.929	2.80a	51.53s	170.00	0.00	-0.458	34.66	0.53(1)
4.700	2.81a	53.61s	170.00	0.00	-0.665	33.49	0.00(1)
4.375	2.82a	56.53s	170.00	0.00	-0.959	31.12	-0.74(1)
3.803	2.84a	61.53s	170.00	0.00	-1.466	25.06	-2.00(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1)	ER Air Intake	FLOOD 32.00f	9.92	18.75
(4)	FO Day Vent	TIGHT 29.33f	13.50	14.67

LIM	46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1)	Angle from Equilibrium to RAzero	>	15.00	deg	45.25	P
(2)	Angle from Equilibrium to Flood	>	15.00	deg	52.09	P
(3)	Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	35.73	P
(4)	Righting Arm at MaxRA	>	0.33	Ft	1.28	P
(5)	Absolute Angle at Equilibrium	<	7.00	deg	1.53	P
(6)	Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	12.57	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 0 *****
Lightship
***** Damage Case 10: Steering Gear Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 4.064 @ 86.00f, 7.755 @ 6.00f
Trim: Aft 3.69/80.00, Heel: Stbd 1.47 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM
Total Weight-------->			170.00	39.00f	0.12s	11.61	
Total Tanks--------->			--- Included in Fixed Weight ---				39.3*
Total Weight-------->			170.00	39.00f	0.12s	11.61	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	191.97	34.87f	0.34s	4.29	-8.02
LAZARETTE.C	Flooded	1.025	-21.96	5.73f	0.50s	6.15	-8.02
Total Displacement-->		1.025	170.00	38.64f	0.32s	4.05	
Righting Arms:				0.01a	0.01s		

Distances in FEET. Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

FREEBOARD STATUS
Baseline draft: 4.064 @ 86.00f, 7.755 @ 6.00f
Trim: Aft 3.69/80.00, Heel: Stbd 1.47 deg.
Least freeboard is 3.48 Ft located at 0.03f
Least extra freeboard (to margin line) is 3.23 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 3.69/80.00, Heel: Stbd 1.47 deg., VCG = 11.61

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
6.154	170.00	38.64f	4.05	3.69	40.70f	14.80	83.6	4.67

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.00f TCG = 0.12s VCG = 11.61
Free Surface Adjustment: 0.23
Adjusted CG: LCG = 39.00f TCG = 0.12s VCG = 11.84

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.020	2.64a	1.47s	170.00	0.00	0.000	0.00	7.63(4)
7.966	2.65a	6.47s	170.00	0.00	0.399	1.00	11.01(1)
7.796	2.62a	11.47s	170.00	0.00	0.740	3.87	10.05(1)
7.502	2.54a	16.47s	169.99	0.00	1.030	8.32	9.07(1)
7.468	2.53a	16.94s	169.99	0.00	1.055	8.81	Marg Imm.
7.095	2.45a	21.47s	169.99	0.00	1.264	14.08	8.08(1)
6.706	2.41a	25.82s	169.98	0.00	1.341	19.77	7.19(1)
6.648	2.41a	26.47s	169.99	0.00	1.339	20.65	7.05(1)
6.210	2.45a	31.47s	170.00	0.00	1.220	27.04	5.96(1)
6.026	2.47a	33.55s	170.00	0.00	1.122	29.48	0.00(4)
5.764	2.52a	36.47s	170.00	0.00	0.947	32.52	4.81(1)
5.301	2.59a	41.47s	170.00	0.00	0.570	36.36	3.62(1)
4.818	2.67a	46.47s	170.00	0.00	0.121	38.12	2.39(1)
4.695	2.69a	47.72s	170.01	0.00	0.000	38.20	2.08(1)
4.319	2.75a	51.47s	170.00	0.00	-0.376	37.50	1.13(1)
3.860	2.82a	55.94s	170.03	0.00	-0.845	34.78	-0.00(1)
3.806	2.84a	56.47s	170.00	0.00	-0.901	34.32	-0.14(1)
3.288	2.93a	61.47s	170.01	0.00	-1.435	28.49	-1.41(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: No tank loads are present.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM 46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	46.25	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	54.47	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	38.20	P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.34	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	1.47	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	15.47	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 1 *****
Departure
***** Damage Case 1: Forepeak Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 8.382 @ 86.00f, 7.248 @ 6.00f
Trim: Fwd 1.13/80.00, Heel: Stbd 0.09 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			210.53	39.48f	0.01p	12.00	
Total Tanks--------->			51.68	47.56f	0.06s	7.77	39.3*
Total Weight-------->			262.21	41.07f	0.01s	11.17	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	263.19	41.32f	0.02s	4.94	-7.16
FOREPEAK.C	Flooded	1.025	-0.98	85.50f	0.00	6.58	-7.16
Total Displacement-->		1.025	262.21	41.16f	0.02s	4.94	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 8.382 @ 86.00f, 7.248 @ 6.00f
Trim: Fwd 1.13/80.00, Heel: Stbd 0.09 deg.
Least freeboard is 3.71 Ft located at 67.76f
Least extra freeboard (to margin line) is 3.46 Ft located at 67.76f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.13/80.00, Heel: Stbd 0.09 deg., VCG = 11.17

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.686	262.21	41.16f	4.94	4.62	36.92f	26.82	98.2	4.06

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.07f TCG = 0.01s VCG = 11.17
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.07f TCG = 0.01s VCG = 11.32

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
7.163	0.81f	0.09s	262.21	0.00	0.000	0.00	6.53(2)
7.106	0.83f	5.09s	262.21	0.00	0.354	0.88	10.22(1)
6.938	0.87f	10.09s	262.21	0.00	0.695	3.51	9.29(1)
6.644	0.95f	15.09s	262.21	0.00	0.995	7.76	8.34(1)
6.628	0.96f	15.31s	262.21	0.00	1.007	7.97	Marg Imm.
6.225	1.08f	20.09s	262.22	0.00	1.221	13.33	7.37(1)
5.937	1.18f	23.16s	262.19	0.00	1.258	17.15	6.74(1)
5.755	1.25f	25.09s	262.22	0.00	1.244	19.57	6.32(1)
5.369	1.38f	29.11s	262.21	0.00	1.135	24.39	0.00(3)
5.274	1.41f	30.09s	262.21	0.00	1.095	25.48	5.18(1)
4.783	1.55f	35.09s	262.22	0.00	0.828	30.29	3.99(1)
4.290	1.62f	40.09s	262.21	0.00	0.493	33.62	2.76(1)
3.796	1.64f	45.09s	262.21	0.00	0.118	35.16	1.50(1)
3.649	1.64f	46.57s	262.22	0.00	0.000	35.25	1.12(1)
3.292	1.63f	50.09s	262.21	0.00	-0.291	34.74	0.22(1)
3.206	1.62f	50.93s	262.21	0.00	-0.362	34.47	0.00(1)
2.769	1.61f	55.09s	262.21	0.00	-0.725	32.22	-1.07(1)
2.226	1.58f	60.09s	262.21	0.00	-1.175	27.47	-2.36(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	46.48 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	50.84 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	35.25 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.26 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.09 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	15.22 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 1 *****
Departure
***** Damage Case 2: Void 1 Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 11.446 @ 86.00f, 6.303 @ 6.00f
Trim: Fwd 5.14/80.00, Heel: Stbd 0.10 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		51.68	47.62f	0.06s	7.77	39.3*
Total Weight-------->		262.21	41.09f	0.01s	11.17	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	301.48	45.75f	0.02s	5.53	-5.91
VOID1.C	Flooded	1.025	-39.26	74.41f	0.01s	6.82	-5.91
Total Displacement-->		1.025	262.21	41.46f	0.02s	5.34	

Righting Arms: 0.00a 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 11.446 @ 86.00f, 6.303 @ 6.00f
Trim: Fwd 5.14/80.00, Heel: Stbd 0.10 deg.
Least freeboard is 1.16 Ft located at 76.00f
Least extra freeboard (to margin line) is 0.91 Ft located at 76.00f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 5.14/80.00, Heel: Stbd 0.10 deg., VCG = 11.17

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
8.212	262.21	41.46f	5.34	4.17	35.69f	19.45	71.2	4.00

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.07f TCG = 0.01s VCG = 11.17
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.07f TCG = 0.01s VCG = 11.32

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
5.906	3.68f	0.10s	262.22	0.00	0.000	0.00	4.36(2)
5.837	3.70f	5.10s	262.21	0.00	0.349	0.87	9.85(1)
5.797	3.72f	6.41s	262.23	0.00	0.441	1.39	Marg Imm.
5.631	3.79f	10.10s	262.22	0.00	0.690	3.48	8.94(1)
5.248	4.05f	15.10s	262.21	0.00	0.928	7.55	7.97(1)
4.746	4.46f	19.87s	262.21	0.00	0.997	12.21	0.00(2)
4.721	4.48f	20.10s	262.21	0.00	0.997	12.43	6.94(1)
4.128	4.95f	25.10s	262.21	0.00	0.927	17.30	5.83(1)
3.534	5.37f	30.10s	262.22	0.00	0.762	21.56	4.67(1)
2.943	5.72f	35.10s	262.21	0.00	0.522	24.80	3.46(1)
2.334	6.04f	40.10s	262.21	0.00	0.212	26.66	2.21(1)
1.959	6.23f	43.10s	262.20	0.00	0.000	26.99	1.44(1)
1.707	6.35f	45.10s	262.22	0.00	-0.149	26.84	0.92(1)
1.252	6.56f	48.64s	262.22	0.00	-0.427	25.82	0.00(1)
1.064	6.64f	50.10s	262.22	0.00	-0.544	25.12	-0.38(1)
0.414	6.91f	55.10s	262.21	0.00	-0.960	21.36	-1.69(1)
-0.236	7.14f	60.10s	262.23	0.00	-1.385	15.50	-3.00(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	43.00 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	48.55 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	26.99 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.00 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.10 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	6.31 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 1 *****
Departure
***** Damage Case 3: Tank Void Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.891 @ 86.00f, 6.900 @ 6.00f
Trim: Fwd 3.99/80.00, Heel: Port 0.87 deg.

Part			Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			210.53	39.48f	0.01p	12.00	
Total Tanks--------->			45.45	45.61f	1.23p	7.67	39.3*
Total Weight-------->			255.98	40.57f	0.22p	11.24	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	308.11	44.23f	0.14p	5.52	-6.59
FO1.S	Flooded	1.025	-4.39	62.00f	9.13s	7.17	-6.59
TANKVOID.C	Flooded	1.025	-47.74	60.69f	0.07p	5.47	-6.59
Total Displacement-->		1.025	255.98	40.85f	0.31p	5.50	

Righting Arms: 0.00 0.00p
Distances in FEET. Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

FREEBOARD STATUS
Baseline draft: 10.891 @ 86.00f, 6.900 @ 6.00f
Trim: Fwd 3.99/80.00, Heel: Port 0.87 deg.
Least freeboard is 1.47 Ft located at 76.00f
Least extra freeboard (to margin line) is 1.22 Ft located at 76.00f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 3.99/80.00, Heel: Port 0.87 deg., VCG = 11.24

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
8.366	255.98	40.85f	5.50	4.13	35.39f	25.45	95.4	3.91

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.56f TCG = 0.22p VCG = 11.24
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 40.56f TCG = 0.22p VCG = 11.39

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
6.592	2.86f	0.87p	255.98	0.00	0.000	0.00	4.51(2)
6.532	2.81f	5.87p	255.98	0.00	0.340	0.85	9.51(1)
6.454	2.80f	8.57p	255.98	0.00	0.523	2.02	Marg Imm.
6.362	2.79f	10.87p	256.02	0.00	0.674	3.39	8.60(1)
6.049	2.89f	15.87p	255.99	0.00	0.920	7.40	7.64(1)
5.623	3.11f	20.87p	255.98	0.00	0.996	12.27	6.61(1)
5.445	3.20f	22.85p	255.98	0.00	0.985	14.23	-0.00(2)
5.177	3.31f	25.87p	255.98	0.00	0.932	17.14	5.50(1)
4.753	3.42f	30.87p	255.98	0.00	0.768	21.43	4.32(1)
4.346	3.45f	35.87p	255.98	0.00	0.531	24.71	3.10(1)
3.937	3.41f	40.87p	255.98	0.00	0.229	26.64	1.84(1)
3.657	3.36f	44.22p	255.98	0.00	0.000	27.03	0.98(1)
3.518	3.32f	45.87p	255.98	0.00	-0.119	26.93	0.55(1)
3.335	3.28f	48.00p	255.98	0.00	-0.277	26.51	0.00(1)
3.084	3.21f	50.87p	255.98	0.00	-0.499	25.40	-0.75(1)
2.634	3.08f	55.87p	255.99	0.00	-0.899	21.91	-2.05(1)
2.167	2.93f	60.87p	255.99	0.00	-1.310	16.39	-3.34(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max			Attained
(1) Angle from Equilibrium to RAzero	>	15.00	deg	43.35 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	47.13 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	27.03 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.00 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.87 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	7.71 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 1 *****
Departure
***** Damage Case 4: Engine Room Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.602 @ 86.00f, 8.933 @ 6.00f
Trim: Fwd 1.67/80.00, Heel: Stbd 0.07 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		51.68	47.57f	0.06s	7.77	39.3*
Total Weight-------->		262.21	41.08f	0.01s	11.17	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	372.06	40.76f	0.01s	6.04	-8.81
ER.C	Flooded	1.025	-109.85	39.78f	0.00s	5.51	-8.81
Total Displacement-->		1.025	262.21	41.17f	0.01s	6.26	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.602 @ 86.00f, 8.933 @ 6.00f
Trim: Fwd 1.67/80.00, Heel: Stbd 0.07 deg.
Least freeboard is 1.58 Ft located at 75.97f
Least extra freeboard (to margin line) is 1.33 Ft located at 75.97f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.67/80.00, Heel: Stbd 0.07 deg., VCG = 11.17

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
9.594	262.21	41.17f	6.26	3.78	37.67f	30.58	112.0	4.77

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.07f TCG = 0.01s VCG = 11.17
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.07f TCG = 0.01s VCG = 11.32

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.805	1.20f	0.07s	262.21	0.00	0.000	0.00	4.43(2)
8.766	1.18f	5.07s	262.21	0.00	0.421	1.05	3.47(2)
8.738	1.17f	6.57s	262.25	0.00	0.549	1.78	Marg Imm.
8.640	1.16f	10.07s	262.21	0.00	0.830	4.20	2.50(2)
8.492	1.22f	15.07s	262.22	0.00	1.000	8.84	1.37(2)
8.474	1.22f	15.99s	262.22	0.00	1.003	9.76	1.13(3)
8.415	1.22f	19.93s	262.21	0.00	0.955	13.67	0.00(3)
8.414	1.22f	20.07s	262.21	0.00	0.952	13.79	-0.04(3)
8.363	1.13f	25.07s	262.21	0.00	0.788	18.21	-1.51(3)
8.317	0.97f	30.07s	262.22	0.00	0.560	21.61	-3.00(3)
8.260	0.74f	35.07s	262.23	0.00	0.289	23.75	-4.48(3)
8.179	0.49f	39.78s	262.21	0.00	0.000	24.44	-5.85(3)
8.173	0.47f	40.07s	262.21	0.00	-0.018	24.44	-5.93(3)
8.037	0.19f	45.07s	262.25	0.00	-0.359	23.51	-7.36(3)
7.848	0.09a	50.07s	262.26	0.00	-0.719	20.83	-8.74(4)
7.608	0.37a	55.07s	262.21	0.00	-1.086	16.32	-10.09(4)
7.319	0.64a	60.07s	262.21	0.00	-1.454	9.97	-11.37(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	39.72	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE	
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	24.44	P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.00	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.07	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	6.51	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 1 *****
Departure
***** Damage Case 5: Engine Room Flooded, FO_DAY.S, FO2_AFT.S *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.549 @ 86.00f, 8.877 @ 6.00f
Trim: Fwd 1.67/80.00, Heel: Port 1.26 deg.

Part			Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			210.53	39.48f	0.01p	12.00	
Total Tanks--------->			39.52	50.69f	3.41p	7.81	39.3*
Total Weight-------->			250.05	41.25f	0.54p	11.34	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	368.85	40.79f	0.18p	6.01	-8.75
FO_DAY.S	Flooded	1.025	-2.84	31.51f	11.23s	6.39	-8.75
FO2_AFT.S	Flooded	1.025	-6.85	39.95f	11.20s	6.51	-8.75
ER.C	Flooded	1.025	-109.11	39.78f	0.09p	5.48	-8.75
Total Displacement-->		1.025	250.05	41.36f	0.66p	6.22	

Righting Arms: 0.00 0.00p
Distances in FEET. Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

FREEBOARD STATUS
Baseline draft: 10.549 @ 86.00f, 8.877 @ 6.00f
Trim: Fwd 1.67/80.00, Heel: Port 1.26 deg.
Least freeboard is 1.43 Ft located at 67.76f
Least extra freeboard (to margin line) is 1.18 Ft located at 67.76f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.67/80.00, Heel: Port 1.26 deg., VCG = 11.34

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
9.538	250.05	41.36f	6.22	3.62	37.64f	30.49	117.1	3.96

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.25f TCG = 0.54p VCG = 11.34
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 41.25f TCG = 0.54p VCG = 11.50

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.748	1.20f	1.26p	250.05	0.00	0.000	0.00	4.26(2)
8.648	1.18f	6.26p	250.05	0.00	0.346	0.86	3.34(2)
8.625	1.18f	7.00p	250.05	0.00	0.397	1.14	Marg Imm.
8.457	1.17f	11.26p	250.05	0.00	0.659	3.40	2.39(2)
8.295	1.22f	15.01p	250.05	0.00	0.741	6.05	1.58(2)
8.248	1.23f	16.26p	250.05	0.00	0.735	6.97	1.27(3)
8.095	1.24f	20.92p	250.06	0.00	0.630	10.15	-0.00(3)
8.084	1.24f	21.26p	250.06	0.00	0.619	10.37	-0.10(3)
7.933	1.19f	26.26p	250.05	0.00	0.408	12.97	-1.50(3)
7.783	1.07f	31.26p	250.05	0.00	0.148	14.38	-2.92(3)
7.701	0.98f	33.87p	250.05	0.00	0.000	14.58	-3.66(3)
7.621	0.89f	36.26p	250.05	0.00	-0.142	14.41	-4.34(3)
7.433	0.68f	41.26p	250.07	0.00	-0.457	12.93	-5.74(3)
7.212	0.44f	46.26p	250.08	0.00	-0.793	9.81	-7.10(3)
6.951	0.20f	51.26p	250.09	0.00	-1.141	4.98	-8.43(3)
6.649	0.04a	56.26p	250.09	0.00	-1.493	-1.60	-9.71(4)
6.303	0.27a	61.26p	250.09	0.00	-1.843	-9.94	-10.95(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	32.61 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	14.58 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.74 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	1.26 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	5.74 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 1 *****
Departure
***** Damage Case 6: Engine Room Flooded, FO2_FWD.S, FO2_AFT.S *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.511 @ 86.00f, 8.889 @ 6.00f
Trim: Fwd 1.62/80.00, Heel: Port 1.43 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		38.04	48.95f	3.96p	7.78	39.3*
Total Weight-------->		248.57	40.93f	0.61p	11.36	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	368.42	40.74f	0.21p	6.01	-8.76
FO2_FWD.S	Flooded	1.025	-4.06	49.98f	10.95s	6.78	-8.76
FO2_AFT.S	Flooded	1.025	-6.80	39.95f	11.20s	6.48	-8.76
ER.C	Flooded	1.025	-109.00	39.77f	0.11p	5.48	-8.76
Total Displacement-->		1.025	248.57	41.03f	0.74p	6.21	

Righting Arms: 0.00 0.00p
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.511 @ 86.00f, 8.889 @ 6.00f
Trim: Fwd 1.62/80.00, Heel: Port 1.43 deg.
Least freeboard is 1.43 Ft located at 67.76f
Least extra freeboard (to margin line) is 1.18 Ft located at 67.76f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.62/80.00, Heel: Port 1.43 deg., VCG = 11.36

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
9.524	248.57	41.03f	6.21	3.59	37.29f	30.33	117.1	3.81

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.93f TCG = 0.61p VCG = 11.36
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.93f TCG = 0.61p VCG = 11.52

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.763	1.16f	1.43p	248.57	0.00	0.000	0.00	4.25(2)
8.672	1.11f	6.43p	248.56	0.00	0.333	0.83	3.35(2)
8.651	1.11f	7.18p	248.57	0.00	0.383	1.10	Marg Imm.
8.491	1.08f	11.43p	248.57	0.00	0.637	3.28	2.43(2)
8.343	1.10f	15.18p	248.57	0.00	0.711	5.83	1.58(3)
8.303	1.10f	16.43p	248.61	0.00	0.703	6.72	1.25(3)
8.167	1.08f	21.01p	248.57	0.00	0.592	9.68	0.00(3)
8.156	1.08f	21.43p	248.57	0.00	0.577	9.93	-0.12(3)
8.020	0.99f	26.43p	248.57	0.00	0.357	12.30	-1.52(3)
7.881	0.85f	31.43p	248.57	0.00	0.089	13.44	-2.94(3)
7.836	0.80f	32.99p	248.57	0.00	0.000	13.51	-3.38(3)
7.726	0.66f	36.43p	248.57	0.00	-0.206	13.16	-4.36(3)
7.543	0.44f	41.43p	248.58	0.00	-0.524	11.34	-5.76(3)
7.324	0.20f	46.43p	248.59	0.00	-0.860	7.89	-7.12(3)
7.066	0.04a	51.43p	248.60	0.00	-1.206	2.73	-8.45(4)
6.766	0.29a	56.43p	248.60	0.00	-1.555	-4.17	-9.76(4)
6.421	0.53a	61.43p	248.60	0.00	-1.902	-12.81	-10.99(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	31.55 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	13.51 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.71 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	1.43 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	5.75 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 1 *****
Departure
***** Damage Case 7: FO-DAY.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 8.147 @ 86.00f, 7.138 @ 6.00f
Trim: Fwd 1.01/80.00, Heel: Port 4.45 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			210.53	39.48f	0.01p	12.00	
Total Tanks--------->			39.52	50.68f	3.43p	7.81	39.3*
Total Weight-------->			250.05	41.25f	0.55p	11.34	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	255.03	41.26f	0.82p	4.89	-7.04
FO_DAY.S	Flooded	1.025	-1.46	31.52f	10.99s	4.99	-7.04
FO2_AFT.S	Flooded	1.025	-3.50	39.91f	10.94s	5.05	-7.04
Total Displacement-->		1.025	250.08	41.33f	1.06p	4.89	

Righting Arms: 0.00 0.01p
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 8.147 @ 86.00f, 7.138 @ 6.00f
Trim: Fwd 1.01/80.00, Heel: Port 4.45 deg.
Least freeboard is 2.94 Ft located at 58.66f
Least extra freeboard (to margin line) is 2.69 Ft located at 58.66f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.01/80.00, Heel: Port 4.45 deg., VCG = 11.34

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.533	250.08	41.33f	4.89	4.47	37.33f	27.20	104.4	3.17

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.25f TCG = 0.54p VCG = 11.34
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 41.25f TCG = 0.54p VCG = 11.50

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.040	0.72f	4.45p	250.05	0.00	0.000	0.00	5.88(2)
6.847	0.77f	9.45p	250.05	0.00	0.264	0.66	9.59(1)
6.530	0.86f	14.45p	250.05	0.00	0.490	2.56	8.67(1)
6.375	0.91f	16.39p	250.05	0.00	0.571	3.59	Marg Imm.
6.093	0.99f	19.45p	250.06	0.00	0.689	5.52	7.73(1)
5.644	1.15f	23.85p	250.05	0.00	0.760	8.73	6.85(1)
5.581	1.17f	24.45p	250.05	0.00	0.759	9.19	6.72(1)
5.060	1.36f	29.45p	250.05	0.00	0.658	12.73	5.63(1)
4.969	1.39f	30.32p	250.05	0.00	0.625	13.29	0.00(3)
4.529	1.51f	34.45p	250.05	0.00	0.424	15.49	4.47(1)
3.994	1.62f	39.45p	250.05	0.00	0.112	16.87	3.27(1)
3.820	1.65f	41.08p	250.05	0.00	0.000	16.96	2.87(1)
3.462	1.67f	44.45p	250.05	0.00	-0.243	16.55	2.04(1)
2.933	1.67f	49.45p	250.05	0.00	-0.624	14.40	0.79(1)
2.604	1.64f	52.56p	250.05	0.00	-0.871	12.08	0.00(1)
2.403	1.62f	54.45p	250.05	0.00	-1.024	10.29	-0.48(1)
1.872	1.54f	59.45p	250.05	0.00	-1.434	4.14	-1.75(1)
1.347	1.44f	64.45p	250.05	0.00	-1.847	-4.06	-3.01(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

+

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	36.63 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	48.11 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	16.96 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.76 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	4.45 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	11.94 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 1 *****
Departure
***** Damage Case 8: FO2_FWD.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 8.016 @ 86.00f, 7.170 @ 6.00f
Trim: Fwd 0.84/80.00, Heel: Port 5.31 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		38.04	48.94f	3.98p	7.78	39.3*
Total Weight-------->		248.57	40.93f	0.61p	11.36	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	253.59	41.04f	0.99p	4.88	-7.08
FO2_FWD.S	Flooded	1.025	-1.78	49.93f	10.59s	5.11	-7.08
FO2_AFT.S	Flooded	1.025	-3.24	39.90f	10.91s	4.93	-7.08
Total Displacement-->		1.025	248.57	41.00f	1.23p	4.88	

Righting Arms: 0.00 0.01p
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 8.016 @ 86.00f, 7.170 @ 6.00f
Trim: Fwd 0.84/80.00, Heel: Port 5.31 deg.
Least freeboard is 2.81 Ft located at 55.63f
Least extra freeboard (to margin line) is 2.56 Ft located at 55.63f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.84/80.00, Heel: Port 5.31 deg., VCG = 11.36

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.499	248.57	41.00f	4.88	4.45	37.08f	26.97	104.2	3.07

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.93f TCG = 0.61p VCG = 11.36
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.93f TCG = 0.61p VCG = 11.52

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
7.075	0.60f	5.31p	248.57	0.00	0.000	0.00	5.80(2)
6.879	0.63f	10.31p	248.57	0.00	0.255	0.64	9.44(1)
6.556	0.71f	15.31p	248.56	0.00	0.475	2.48	8.51(1)
6.442	0.74f	16.71p	248.56	0.00	0.533	3.18	Marg Imm.
6.109	0.83f	20.31p	248.57	0.00	0.666	5.34	7.57(1)
5.735	0.96f	24.02p	248.57	0.00	0.715	7.93	6.82(1)
5.604	1.00f	25.31p	248.57	0.00	0.709	8.84	6.55(1)
5.091	1.17f	30.31p	248.57	0.00	0.584	12.07	5.44(1)
5.081	1.17f	30.40p	248.57	0.00	0.580	12.12	0.00(3)
4.564	1.31f	35.31p	248.57	0.00	0.333	14.42	4.27(1)
4.033	1.40f	40.31p	248.56	0.00	0.010	15.30	3.06(1)
4.018	1.41f	40.46p	248.59	0.00	0.000	15.30	3.03(1)
3.503	1.44f	45.31p	248.57	0.00	-0.351	14.47	1.82(1)
2.975	1.43f	50.31p	248.57	0.00	-0.736	11.76	0.57(1)
2.739	1.41f	52.54p	248.57	0.00	-0.914	9.92	0.00(1)
2.446	1.38f	55.31p	248.57	0.00	-1.138	7.08	-0.70(1)
1.914	1.30f	60.31p	248.57	0.00	-1.547	0.37	-1.97(1)
1.387	1.20f	65.31p	248.56	0.00	-1.957	-8.39	-3.23(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

+

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	35.15 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	47.23 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	15.30 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.71 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	5.31 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	11.40 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 1 *****
Departure
***** Damage Case 9: Workshop Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.365 @ 86.00f, 9.710 @ 6.00f
Trim: Aft 2.34/80.00, Heel: Stbd 0.13 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		51.68	47.51f	0.06s	7.77	39.3*
Total Weight-------->		262.21	41.06f	0.01s	11.17	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	326.35	36.65f	0.02s	5.61	-9.88
WORKSHOP.C	Flooded	1.025	-64.14	19.27f	0.02s	5.98	-9.88
Total Displacement-->		1.025	262.21	40.90f	0.02s	5.52	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.365 @ 86.00f, 9.710 @ 6.00f
Trim: Aft 2.34/80.00, Heel: Stbd 0.13 deg.
Least freeboard is 1.91 Ft located at 0.03f
Least extra freeboard (to margin line) is 1.66 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 2.34/80.00, Heel: Stbd 0.13 deg., VCG = 11.17

LCF	Displacement	Buoyancy-Ctr.		Weight/		Moment/		
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
8.697	262.21	40.90f	5.52	3.85	40.56f	23.76	87.0	2.86

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.07f TCG = 0.01s VCG = 11.17
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.07f TCG = 0.01s VCG = 11.32

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
9.881	1.68a	0.13s	262.21	0.00	0.000	0.00	5.61(4)
9.838	1.68a	5.13s	262.21	0.00	0.252	0.63	8.88(1)
9.779	1.68a	7.92s	262.21	0.00	0.399	1.54	Marg Imm.
9.718	1.69a	10.13s	262.21	0.00	0.517	2.55	7.93(1)
9.626	1.81a	15.13s	262.21	0.00	0.711	5.64	6.89(1)
9.613	1.92a	17.72s	262.22	0.00	0.736	7.52	6.29(1)
9.610	2.04a	20.13s	262.22	0.00	0.714	9.27	5.71(1)
9.613	2.14a	22.06s	262.22	0.00	0.672	10.60	-0.00(4)
9.616	2.30a	25.13s	262.22	0.00	0.569	12.51	4.42(1)
9.613	2.56a	30.13s	262.23	0.00	0.331	14.80	3.04(1)
9.587	2.82a	35.13s	262.22	0.00	0.032	15.73	1.60(1)
9.584	2.85a	35.63s	262.21	0.00	0.000	15.74	1.46(1)
9.526	3.10a	40.13s	262.21	0.00	-0.308	15.05	0.13(1)
9.519	3.12a	40.58s	262.20	0.00	-0.340	14.91	0.00(1)
9.425	3.38a	45.13s	262.20	0.00	-0.672	12.62	-1.35(1)
9.281	3.68a	50.13s	262.18	0.00	-1.045	8.33	-2.83(1)
9.094	3.97a	55.13s	262.23	0.00	-1.422	2.16	-4.31(1)
8.846	4.25a	60.13s	262.19	0.00	-1.797	-5.89	-5.74(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM-46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	35.49 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	40.44 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	15.74 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.74 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.13 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	7.79 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 1 *****
Departure
***** Damage Case 10: Steering Gear Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.941 @ 86.00f, 9.092 @ 6.00f
Trim: Aft 2.15/80.00, Heel: Stbd 0.14 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		51.68	47.51f	0.06s	7.77	39.3*
Total Weight-------->		262.21	41.06f	0.01s	11.17	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	295.81	36.89f	0.02s	5.30	-9.25
LAZARETTE.C	Flooded	1.025	-33.60	5.58f	0.03s	6.95	-9.25
Total Displacement-->		1.025	262.22	40.90f	0.02s	5.09	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.941 @ 86.00f, 9.092 @ 6.00f
Trim: Aft 2.15/80.00, Heel: Stbd 0.14 deg.
Least freeboard is 2.54 Ft located at 0.03f
Least extra freeboard (to margin line) is 2.29 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 2.15/80.00, Heel: Stbd 0.14 deg., VCG = 11.17

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.107	262.22	40.90f	5.09	3.89	42.61f	16.03	58.7	2.79

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.07f TCG = 0.01s VCG = 11.17
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.07f TCG = 0.01s VCG = 11.32

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
9.250	1.54a	0.14s	262.22	0.00	0.000	0.00	6.17(4)
9.213	1.55a	5.14s	262.22	0.00	0.247	0.62	9.43(1)
9.108	1.57a	10.14s	262.21	0.00	0.508	2.50	8.47(1)
9.097	1.57a	10.54s	262.21	0.00	0.529	2.70	Marg Imm.
8.948	1.62a	15.14s	262.21	0.00	0.760	5.67	7.46(1)
8.874	1.79a	19.59s	262.24	0.00	0.841	9.29	6.46(1)
8.868	1.82a	20.14s	262.21	0.00	0.841	9.75	6.33(1)
8.852	2.05a	24.32s	262.24	0.00	0.767	13.16	-0.00(4)
8.850	2.10a	25.14s	262.21	0.00	0.742	13.77	5.07(1)
8.847	2.40a	30.14s	262.22	0.00	0.525	16.94	3.72(1)
8.829	2.72a	35.14s	262.21	0.00	0.224	18.84	2.30(1)
8.797	2.92a	38.30s	262.22	0.00	0.000	19.20	1.39(1)
8.769	3.03a	40.14s	262.21	0.00	-0.139	19.08	0.85(1)
8.715	3.21a	43.04s	262.21	0.00	-0.366	18.35	0.00(1)
8.667	3.34a	45.14s	262.21	0.00	-0.536	17.40	-0.62(1)
8.530	3.66a	50.14s	262.16	0.00	-0.948	13.69	-2.09(1)
8.370	4.00a	55.14s	262.23	0.00	-1.367	7.91	-3.57(1)
8.160	4.33a	60.14s	262.20	0.00	-1.782	0.03	-5.02(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM-46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	38.16 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	42.90 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	19.20 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.84 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.14 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	10.40 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 2 *****
Mid Voyage
***** Damage Case 1: Forepeak Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.654 @ 86.00f, 7.006 @ 6.00f
Trim: Fwd 0.65/80.00, Heel: Port 0.05 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		28.04	51.12f	0.01s	7.00	39.3*
Total Weight-------->		238.57	40.85f	0.00p	11.42	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	239.29	41.04f	0.01p	4.68	-6.96
FOREPEAK.C	Flooded	1.025	-0.73	85.40f	0.00	6.10	-6.96
Total Displacement-->		1.025	238.56	40.90f	0.01p	4.68	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.654 @ 86.00f, 7.006 @ 6.00f
Trim: Fwd 0.65/80.00, Heel: Port 0.05 deg.
Least freeboard is 4.32 Ft located at 61.69f
Least extra freeboard (to margin line) is 4.07 Ft located at 61.69f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.65/80.00, Heel: Port 0.05 deg., VCG = 11.42

LCF	Displacement	Buoyancy-Ctr.		Weight/		Moment/		
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.255	238.56	40.90f	4.68	4.55	36.76f	26.00	104.6	4.23

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.85f TCG = 0.00p VCG = 11.42
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.85f TCG = 0.00p VCG = 11.58

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
6.957	0.46f	0.05p	238.56	0.00	0.000	0.00	7.15(2)
6.896	0.49f	5.05p	238.57	0.00	0.367	0.92	10.63(1)
6.712	0.56f	10.05p	238.57	0.00	0.707	3.61	9.71(1)
6.398	0.66f	15.05p	238.57	0.00	0.987	7.87	8.76(1)
6.186	0.73f	17.63p	238.57	0.00	1.112	10.58	Marg Imm.
5.956	0.81f	20.05p	238.57	0.00	1.219	13.40	7.80(1)
5.496	0.97f	24.43p	238.52	0.00	1.305	18.96	6.93(1)
5.429	1.00f	25.05p	238.57	0.00	1.303	19.77	6.80(1)
4.880	1.19f	30.05p	238.57	0.00	1.176	25.97	5.72(1)
4.741	1.23f	31.29p	238.58	0.00	1.119	27.39	0.00(3)
4.315	1.36f	35.05p	238.57	0.00	0.904	31.22	4.57(1)
3.744	1.49f	40.05p	238.57	0.00	0.548	34.89	3.39(1)
3.176	1.56f	45.05p	238.57	0.00	0.145	36.64	2.17(1)
2.982	1.58f	46.77p	238.57	0.00	0.000	36.77	1.75(1)
2.612	1.59f	50.05p	238.57	0.00	-0.286	36.30	0.93(1)
2.191	1.58f	53.77p	238.59	0.00	-0.623	34.61	0.00(1)
2.045	1.58f	55.05p	238.59	0.00	-0.742	33.74	-0.32(1)
1.472	1.56f	60.05p	238.57	0.00	-1.214	28.85	-1.58(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	46.72 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	53.72 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	36.77 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.31 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.05 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	17.57 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 2 *****
Mid Voyage
***** Damage Case 2: Void 1 Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.456 @ 86.00f, 6.126 @ 6.00f
Trim: Fwd 4.33/80.00, Heel: Port 0.06 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		28.04	51.22f	0.01s	7.00	39.3*
Total Weight-------->		238.57	40.86f	0.00p	11.42	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	272.52	45.33f	0.01p	5.18	-5.79
VOID1.C	Flooded	1.025	-33.97	74.32f	0.00p	6.28	-5.79
Total Displacement-->		1.025	238.56	41.20f	0.01p	5.03	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.456 @ 86.00f, 6.126 @ 6.00f
Trim: Fwd 4.33/80.00, Heel: Port 0.06 deg.
Least freeboard is 2.06 Ft located at 76.00f
Least extra freeboard (to margin line) is 1.81 Ft located at 76.00f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 4.33/80.00, Heel: Port 0.06 deg., VCG = 11.42

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.727	238.56	41.20f	5.03	4.09	35.58f	18.20	73.3	4.06

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.85f TCG = 0.00p VCG = 11.42
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.85f TCG = 0.00p VCG = 11.58

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
5.793	3.10f	0.06p	238.57	0.00	0.000	0.00	5.18(2)
5.722	3.13f	5.06p	238.57	0.00	0.354	0.88	10.31(1)
5.509	3.23f	10.06p	238.57	0.00	0.696	3.51	9.39(1)
5.485	3.24f	10.48p	238.57	0.00	0.724	3.81	Marg Imm.
5.148	3.41f	15.06p	238.59	0.00	0.981	7.73	8.45(1)
4.615	3.77f	20.06p	238.57	0.00	1.105	13.00	7.46(1)
4.477	3.87f	21.19p	238.57	0.00	1.109	14.26	7.23(1)
4.172	4.10f	23.57p	238.57	0.00	1.091	16.89	0.00(2)
3.975	4.25f	25.06p	238.57	0.00	1.063	18.49	6.41(1)
3.298	4.73f	30.06p	238.58	0.00	0.892	23.43	5.29(1)
2.631	5.12f	35.06p	238.57	0.00	0.635	27.29	4.12(1)
1.987	5.42f	40.06p	238.60	0.00	0.311	29.68	2.92(1)
1.454	5.62f	44.22p	238.57	0.00	0.000	30.34	1.90(1)
1.347	5.66f	45.06p	238.57	0.00	-0.066	30.31	1.69(1)
0.712	5.86f	50.06p	238.59	0.00	-0.483	28.96	0.43(1)
0.495	5.92f	51.75p	238.58	0.00	-0.630	28.02	0.00(1)
0.078	6.02f	55.06p	238.58	0.00	-0.923	25.45	-0.84(1)
-0.542	6.13f	60.06p	238.58	0.00	-1.375	19.72	-2.12(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM----------46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	44.16	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	51.70	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	30.34	P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.11	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.06	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	10.43	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 2 *****
Mid Voyage
***** Damage Case 3: Tank Void Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 9.983 @ 86.00f, 6.654 @ 6.00f
Trim: Fwd 3.33/80.00, Heel: Port 1.60 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		21.81	48.06f	2.70p	6.58	39.3*
Total Weight-------->		232.34	40.29f	0.26p	11.50	
	SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL	1.025	278.92	43.93f	0.27p	5.19	-6.40
FO1.S	Flooded 1.025	-3.46	61.92f	9.01s	6.64	-6.40
TANKVOID.C	Flooded 1.025	-43.12	60.72f	0.13p	5.06	-6.40
Total Displacement-->	1.025	232.34	40.54f	0.44p	5.19	
Righting Arms:			0.00a	0.00p		

Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 9.983 @ 86.00f, 6.654 @ 6.00f
Trim: Fwd 3.33/80.00, Heel: Port 1.60 deg.
Least freeboard is 2.19 Ft located at 75.97f
Least extra freeboard (to margin line) is 1.94 Ft located at 75.97f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 3.33/80.00, Heel: Port 1.60 deg., VCG = 11.50

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.865	232.34	40.54f	5.19	4.03	35.11f	23.75	98.1	3.95

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.28f TCG = 0.26p VCG = 11.50
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.28f TCG = 0.26p VCG = 11.66

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
6.396	2.38f	1.60p	232.34	0.00	0.000	0.00	5.13(2)
6.310	2.36f	6.60p	232.34	0.00	0.345	0.86	9.84(1)
6.102	2.39f	11.60p	232.34	0.00	0.681	3.43	8.92(1)
6.087	2.39f	11.87p	232.33	0.00	0.698	3.62	Marg Imm.
5.767	2.46f	16.60p	232.34	0.00	0.952	7.55	7.98(1)
5.299	2.65f	21.60p	232.34	0.00	1.062	12.65	6.98(1)
4.794	2.89f	26.46p	232.34	0.00	1.001	17.73	0.00(2)
4.779	2.90f	26.60p	232.34	0.00	0.998	17.87	5.91(1)
4.264	3.08f	31.60p	232.34	0.00	0.813	22.44	4.77(1)
3.763	3.17f	36.60p	232.34	0.00	0.540	25.86	3.59(1)
3.272	3.18f	41.60p	232.34	0.00	0.207	27.75	2.38(1)
2.998	3.16f	44.39p	232.34	0.00	0.000	28.05	1.69(1)
2.779	3.13f	46.60p	232.34	0.00	-0.172	27.86	1.14(1)
2.329	3.06f	51.13p	232.34	0.00	-0.542	26.25	0.00(1)
2.282	3.05f	51.60p	232.34	0.00	-0.582	25.98	-0.12(1)
1.781	2.93f	56.60p	232.34	0.00	-1.013	22.01	-1.38(1)
1.277	2.78f	61.60p	232.35	0.00	-1.454	15.84	-2.64(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	42.79 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	49.53 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	28.05 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.06 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	1.60 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	10.27 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 2 *****
Mid Voyage
***** Damage Case 4: Engine Room Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 9.840 @ 86.00f, 8.558 @ 6.00f
Trim: Fwd 1.28/80.00, Heel: Port 0.05 deg.

Part			Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			210.53	39.48f	0.01p	12.00	
Total Tanks--------->			28.04	51.14f	0.01s	7.00	39.3*
Total Weight-------->			238.57	40.85f	0.00p	11.42	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	341.17	40.58f	0.01p	5.73	-8.46
ER.C	Flooded	1.025	-102.62	39.76f	0.00p	5.23	-8.46
Total Displacement-->		1.025	238.55	40.94f	0.01p	5.95	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 9.840 @ 86.00f, 8.558 @ 6.00f
Trim: Fwd 1.28/80.00, Heel: Port 0.05 deg.
Least freeboard is 2.29 Ft located at 70.79f
Least extra freeboard (to margin line) is 2.04 Ft located at 70.79f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.28/80.00, Heel: Port 0.05 deg., VCG = 11.42

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
9.057	238.55	40.94f	5.95	3.71	37.12f	29.52	118.8	4.88

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.85f TCG = 0.00p VCG = 11.42
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.85f TCG = 0.00p VCG = 11.58

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.461	0.92f	0.05p	238.55	0.00	0.000	0.00	5.11(2)
8.422	0.91f	5.05p	238.57	0.00	0.425	1.06	4.14(2)
8.318	0.89f	9.33p	238.57	0.00	0.788	3.66	Marg Imm.
8.294	0.89f	10.05p	238.57	0.00	0.849	4.25	3.18(2)
8.080	0.91f	15.05p	238.57	0.00	1.171	9.33	2.00(3)
7.974	0.94f	17.80p	238.58	0.00	1.207	12.62	1.27(3)
7.896	0.95f	20.05p	238.57	0.00	1.183	15.31	0.66(3)
7.817	0.95f	22.41p	238.59	0.00	1.122	18.03	-0.00(3)
7.729	0.93f	25.05p	238.58	0.00	1.023	20.86	-0.74(3)
7.557	0.86f	30.05p	238.57	0.00	0.773	25.38	-2.16(3)
7.368	0.73f	35.05p	238.57	0.00	0.469	28.51	-3.57(3)
7.145	0.55f	40.05p	238.58	0.00	0.121	30.01	-4.95(3)
7.065	0.49f	41.68p	238.57	0.00	0.000	30.10	-5.40(3)
6.888	0.36f	45.05p	238.58	0.00	-0.257	29.67	-6.30(3)
6.598	0.14f	50.05p	238.59	0.00	-0.653	27.41	-7.62(3)
6.273	0.08a	55.05p	238.60	0.00	-1.058	23.14	-8.89(4)
5.910	0.30a	60.05p	238.60	0.00	-1.465	16.83	-10.13(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	41.63 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	30.10 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.21 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.05 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	9.27 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 2 *****
Mid Voyage
***** Damage Case 5: Engine Room Flooded, FO_DAY.S, FO2_AFT.S *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.034 @ 86.00f, 8.732 @ 6.00f
Trim: Fwd 1.30/80.00, Heel: Stbd 4.53 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		25.23	53.02f	1.16p	7.22	39.3*
Total Weight-------->		235.76	40.93f	0.13p	11.49	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	352.18	40.52f	0.68s	5.87	-8.61
FO_DAY.S	Flooded	1.025	-3.34	31.51f	11.30s	6.87	-8.61
FO2_AFT.S	Flooded	1.025	-7.99	39.95f	11.27s	6.97	-8.61
ER.C	Flooded	1.025	-105.09	39.75f	0.35s	5.34	-8.61
Total Displacement-->		1.025	235.76	41.02f	0.31s	6.05	

Righting Arms: 0.00 0.01s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.034 @ 86.00f, 8.732 @ 6.00f
Trim: Fwd 1.30/80.00, Heel: Stbd 4.53 deg.
Least freeboard is 1.14 Ft located at 58.66f
Least extra freeboard (to margin line) is 0.89 Ft located at 58.66f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.30/80.00, Heel: Stbd 4.53 deg., VCG = 11.49

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
9.242	235.76	41.02f	6.05	3.58	37.33f	29.82	121.4	4.10

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.93f TCG = 0.13p VCG = 11.49
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.93f TCG = 0.13p VCG = 11.66

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
8.606	0.93f	4.53s	235.76	0.00	0.000	0.00	4.05(2)
8.559	0.91f	8.33s	235.76	0.00	0.276	0.52	Marg Imm.
8.532	0.91f	9.53s	235.76	0.00	0.364	0.91	3.04(2)
8.380	0.93f	14.53s	235.76	0.00	0.625	3.42	1.85(3)
8.309	0.94f	17.26s	235.78	0.00	0.655	5.19	1.10(3)
8.259	0.93f	19.53s	235.76	0.00	0.634	6.65	0.46(3)
8.225	0.92f	21.15s	235.77	0.00	0.599	7.65	-0.00(3)
8.158	0.88f	24.53s	235.76	0.00	0.488	9.49	-0.98(3)
8.060	0.76f	29.53s	235.76	0.00	0.260	11.39	-2.43(3)
7.956	0.59f	34.26s	235.79	0.00	0.000	12.02	-3.80(3)
7.948	0.58f	34.53s	235.76	0.00	-0.016	12.02	-3.88(3)
7.807	0.36f	39.53s	235.76	0.00	-0.329	11.17	-5.31(3)
7.619	0.11f	44.53s	235.78	0.00	-0.678	8.67	-6.70(3)
7.390	0.14a	49.53s	235.79	0.00	-1.042	4.38	-8.07(4)
7.119	0.40a	54.53s	235.80	0.00	-1.412	-1.76	-9.40(4)
6.802	0.65a	59.53s	235.80	0.00	-1.783	-9.75	-10.67(4)
6.439	0.89a	64.53s	235.80	0.00	-2.149	-19.58	-11.86(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	29.72 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	12.02 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.66 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	4.53 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	3.80 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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                          ***** Condition 2 *****
                                Mid Voyage
   ***** Damage Case 6: Engine Room Flooded, FO2_FWD.S, FO2_AFT.S *****

                       WEIGHT and DISPLACEMENT STATUS
                 Baseline draft: 10.088 @ 86.00f, 8.705 @ 6.00f
                   Trim: Fwd 1.38/80.00,  Heel: Stbd 4.61 deg.
Part-------------------------------Weight(LT)----LCG-----TCG-----VCG-------FSM
  Total Fixed--------->              210.53   39.48f   0.01p  12.00
  Total Tanks--------->               23.91   51.72f   1.81p   7.19      39.3*
  Total Weight-------->              234.44   40.73f   0.19p  11.51
                         SpGr------Displ(LT)----LCB-----TCB-----VCB------RefHt
HULL                    1.025        352.49   40.61f   0.69s   5.87      -8.57
FO2_FWD.S      Flooded  1.025         -4.82   49.98f  11.05s   7.28      -8.57
FO2_AFT.S      Flooded  1.025         -8.03   39.95f  11.27s   6.99      -8.57
ER.C           Flooded  1.025       -105.18   39.76f   0.36s   5.35      -8.57
  Total Displacement--> 1.025        234.46   40.82f   0.26s   6.04
--------------------------------------------------------------------------------
                Righting Arms:                  0.00     0.01s
Distances in FEET.-----------------------------------------Moments in Ft-LT.
                                      +
    Note:  FSM values marked with an asterisk (*) are formal values which are
           not the same as the true values in the present condition.
                                      +

                              FREEBOARD STATUS
                 Baseline draft: 10.088 @ 86.00f, 8.705 @ 6.00f
                   Trim: Fwd 1.38/80.00,  Heel: Stbd 4.61 deg.
                  Least freeboard is 1.09 Ft located at 61.69f
     Least extra freeboard (to margin line) is 0.84 Ft located at 61.69f

                       HYDROSTATIC PROPERTIES with FLOODING
              Trim: Fwd 1.38/80.00, Heel: Stbd 4.61 deg., VCG = 11.51

   LCF    Displacement   Buoyancy-Ctr.  Weight/          Moment/
  Draft----Weight(LT)----LCB-----VCB-----Inch-----LCF---In trim----GML-----GMT
  9.241       234.46   40.82f   6.04     3.56   37.04f   29.74   121.8    3.95
 Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.
                                Trim is per 80.00Ft
 Draft is from Baseline.                          Formal Free Surface included.

      Note:  GMT includes the formal free surface moment 39.3 Ft-LT
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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.73f TCG = 0.19p VCG = 11.51
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.73f TCG = 0.19p VCG = 11.68

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.571	0.99f	4.61s	234.44	0.00	0.000	0.00	3.99(2)
8.520	0.99f	8.17s	234.44	0.00	0.248	0.44	Marg Imm.
8.484	0.99f	9.61s	234.44	0.00	0.350	0.87	2.97(2)
8.318	1.04f	14.61s	234.44	0.00	0.605	3.30	1.81(3)
8.243	1.05f	17.30s	234.46	0.00	0.635	4.99	1.08(3)
8.187	1.06f	19.61s	234.44	0.00	0.613	6.43	0.43(3)
8.155	1.05f	21.12s	234.45	0.00	0.580	7.33	-0.00(3)
8.081	1.01f	24.61s	234.44	0.00	0.466	9.15	-1.01(3)
7.976	0.89f	29.61s	234.44	0.00	0.239	10.95	-2.46(3)
7.875	0.74f	33.99s	234.44	0.00	0.000	11.49	-3.73(3)
7.859	0.71f	34.61s	234.44	0.00	-0.036	11.48	-3.91(3)
7.711	0.49f	39.61s	234.45	0.00	-0.350	10.53	-5.33(3)
7.518	0.26f	44.61s	234.46	0.00	-0.699	7.92	-6.72(3)
7.284	0.01f	49.61s	234.47	0.00	-1.064	3.52	-8.07(3)
7.008	0.25a	54.61s	234.48	0.00	-1.436	-2.73	-9.39(4)
6.686	0.49a	59.61s	234.48	0.00	-1.808	-10.84	-10.66(4)
6.319	0.73a	64.61s	234.48	0.00	-2.175	-20.80	-11.85(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

+

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	29.38 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	11.49 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.63 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	4.61 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	3.56 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 2 *****
Mid Voyage
***** Damage Case 7: FO-DAY.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.672 @ 86.00f, 7.092 @ 6.00f
Trim: Fwd 0.58/80.00, Heel: Stbd 2.61 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			210.53	39.48f	0.01p	12.00	
Total Tanks--------->			25.23	53.01f	1.18p	7.22	39.3*
Total Weight-------->			235.76	40.93f	0.13p	11.49	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	242.84	40.87f	0.50s	4.73	-7.04
FO_DAY.S	Flooded	1.025	-2.11	31.51f	11.17s	5.67	-7.04
FO2_AFT.S	Flooded	1.025	-4.96	39.90f	11.12s	5.71	-7.04
Total Displacement-->		1.025	235.77	40.98f	0.18s	4.70	

Righting Arms: 0.00 0.00s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.672 @ 86.00f, 7.092 @ 6.00f
Trim: Fwd 0.58/80.00, Heel: Stbd 2.61 deg.
Least freeboard is 3.70 Ft located at 58.66f
Least extra freeboard (to margin line) is 3.45 Ft located at 58.66f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.58/80.00, Heel: Stbd 2.61 deg., VCG = 11.49

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.317	235.77	40.98f	4.70	4.44	37.03f	26.84	109.3	3.34

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.93f TCG = 0.13p VCG = 11.49
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.93f TCG = 0.13p VCG = 11.66

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.041	0.42f	2.61s	235.76	0.00	0.000	0.00	6.62(2)
6.956	0.46f	7.61s	235.76	0.00	0.288	0.72	10.06(1)
6.750	0.53f	12.61s	235.76	0.00	0.540	2.80	9.08(1)
6.465	0.63f	16.99s	235.76	0.00	0.724	5.58	Marg Imm.
6.417	0.64f	17.61s	235.76	0.00	0.749	6.04	8.09(1)
5.974	0.79f	22.61s	235.77	0.00	0.879	10.14	7.08(1)
5.869	0.83f	23.73s	235.76	0.00	0.883	11.13	6.84(1)
5.493	0.95f	27.61s	235.76	0.00	0.831	14.49	5.99(1)
5.232	1.03f	30.21s	235.76	0.00	0.742	16.53	0.00(3)
4.987	1.09f	32.61s	235.76	0.00	0.627	18.18	4.85(1)
4.469	1.21f	37.61s	235.76	0.00	0.319	20.58	3.65(1)
4.012	1.26f	42.00s	235.77	0.00	0.000	21.30	2.58(1)
3.948	1.27f	42.61s	235.78	0.00	-0.047	21.28	2.42(1)
3.429	1.28f	47.61s	235.76	0.00	-0.445	20.07	1.17(1)
2.948	1.24f	52.23s	235.77	0.00	-0.833	17.13	0.00(1)
2.908	1.24f	52.61s	235.77	0.00	-0.866	16.80	-0.10(1)
2.383	1.17f	57.61s	235.76	0.00	-1.300	11.39	-1.37(1)
1.856	1.08f	62.61s	235.76	0.00	-1.739	3.80	-2.64(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	39.39 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	49.61 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	21.30 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.88 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	2.61 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	14.37 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 2 *****
Mid Voyage
***** Damage Case 8: FO2_FWD.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.642 @ 86.00f, 7.086 @ 6.00f
Trim: Fwd 0.55/80.00, Heel: Stbd 2.03 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		23.91	51.70f	1.83p	7.19	39.3*
Total Weight-------->		234.44	40.73f	0.19p	11.51	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	241.90	40.86f	0.39s	4.72	-7.04
FO2_FWD.S	Flooded	1.025	-2.67	49.93f	10.81s	5.81	-7.04
FO2_AFT.S	Flooded	1.025	-4.79	39.90f	11.10s	5.63	-7.04
Total Displacement-->		1.025	234.44	40.77f	0.05s	4.69	

Righting Arms: 0.00 0.00s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.642 @ 86.00f, 7.086 @ 6.00f
Trim: Fwd 0.55/80.00, Heel: Stbd 2.03 deg.
Least freeboard is 3.85 Ft located at 58.66f
Least extra freeboard (to margin line) is 3.60 Ft located at 58.66f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.55/80.00, Heel: Stbd 2.03 deg., VCG = 11.51

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.300	234.44	40.77f	4.69	4.42	36.75f	26.71	109.4	3.23

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.73f TCG = 0.19p VCG = 11.51
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.73f TCG = 0.19p VCG = 11.68

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.040	0.40f	2.03s	234.44	0.00	0.000	0.00	6.76(2)
6.953	0.47f	7.03s	234.44	0.00	0.277	0.69	10.18(1)
6.746	0.57f	12.03s	234.44	0.00	0.520	2.70	9.20(1)
6.424	0.70f	16.87s	234.44	0.00	0.710	5.70	Marg Imm.
6.411	0.71f	17.03s	234.44	0.00	0.716	5.81	8.21(1)
5.962	0.88f	22.03s	234.44	0.00	0.851	9.75	7.20(1)
5.803	0.94f	23.67s	234.44	0.00	0.860	11.16	6.86(1)
5.472	1.06f	27.03s	234.44	0.00	0.823	14.00	6.13(1)
5.149	1.16f	30.21s	234.44	0.00	0.720	16.46	0.00(3)
4.961	1.21f	32.03s	234.44	0.00	0.635	17.69	4.99(1)
4.438	1.34f	37.03s	234.44	0.00	0.337	20.16	3.81(1)
3.947	1.41f	41.72s	234.44	0.00	0.000	20.97	2.66(1)
3.914	1.41f	42.03s	234.45	0.00	-0.024	20.97	2.58(1)
3.393	1.42f	47.03s	234.44	0.00	-0.419	19.88	1.33(1)
2.870	1.39f	52.03s	234.44	0.00	-0.837	16.75	0.07(1)
2.843	1.39f	52.30s	234.44	0.00	-0.859	16.52	0.00(1)
2.345	1.33f	57.03s	234.44	0.00	-1.270	11.49	-1.20(1)
1.817	1.24f	62.03s	234.44	0.00	-1.710	4.04	-2.48(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	39.69	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	50.27	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	20.97	P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.86	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	2.03	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	14.85	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 2 *****
Mid Voyage
***** Damage Case 9: Workshop Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.710 @ 86.00f, 9.299 @ 6.00f
Trim: Aft 2.59/80.00, Heel: Port 0.08 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			210.53	39.48f	0.01p	12.00	
Total Tanks--------->			28.04	51.04f	0.01s	7.00	39.3*
Total Weight-------->			238.57	40.84f	0.00p	11.42	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	298.09	36.38f	0.01p	5.34	-9.49
WORKSHOP.C	Flooded	1.025	-59.53	19.28f	0.01p	5.74	-9.49
Total Displacement-->		1.025	238.56	40.64f	0.01p	5.24	
Righting Arms:				0.00	0.00		

Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.710 @ 86.00f, 9.299 @ 6.00f
Trim: Aft 2.59/80.00, Heel: Port 0.08 deg.
Least freeboard is 2.31 Ft located at 0.03f
Least extra freeboard (to margin line) is 2.06 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 2.59/80.00, Heel: Port 0.08 deg., VCG = 11.42

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.191	238.56	40.64f	5.24	3.80	40.24f	23.27	93.6	2.93

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.85f TCG = 0.00p VCG = 11.42
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.85f TCG = 0.00p VCG = 11.58

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
9.489	1.85a	0.08p	238.58	0.00	0.000	0.00	6.10(4)
9.448	1.85a	5.08p	238.58	0.00	0.258	0.65	9.38(1)
9.339	1.86a	9.71p	238.57	0.00	0.505	2.41	Marg Imm.
9.327	1.86a	10.08p	238.57	0.00	0.525	2.60	8.43(1)
9.149	1.88a	15.08p	238.57	0.00	0.753	5.81	7.42(1)
9.030	2.00a	19.48p	238.60	0.00	0.826	9.33	6.45(1)
9.016	2.02a	20.08p	238.57	0.00	0.825	9.82	6.31(1)
8.929	2.18a	24.29p	238.59	0.00	0.751	13.19	-0.00(4)
8.912	2.21a	25.08p	238.59	0.00	0.727	13.77	5.09(1)
8.799	2.40a	30.08p	238.57	0.00	0.512	16.87	3.79(1)
8.659	2.60a	35.08p	238.57	0.00	0.210	18.71	2.42(1)
8.555	2.71a	38.05p	238.57	0.00	0.000	19.02	1.60(1)
8.475	2.78a	40.08p	238.57	0.00	-0.153	18.87	1.03(1)
8.313	2.92a	43.72p	238.57	0.00	-0.442	17.79	0.00(1)
8.248	2.97a	45.08p	238.57	0.00	-0.552	17.12	-0.38(1)
7.985	3.17a	50.08p	238.55	0.00	-0.964	13.33	-1.80(1)
7.689	3.38a	55.08p	238.53	0.00	-1.380	7.47	-3.21(1)
7.356	3.59a	60.08p	238.55	0.00	-1.795	-0.47	-4.60(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM-46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	37.97 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	43.64 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	19.02 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.83 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.08 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	9.63 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 2 *****
Mid Voyage
***** Damage Case 10: Steering Gear Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.370 @ 86.00f, 8.633 @ 6.00f
Trim: Aft 2.26/80.00, Heel: Port 0.08 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		28.04	51.05f	0.01s	7.00	39.3*
Total Weight-------->		238.57	40.84f	0.00p	11.42	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	267.97	36.81f	0.01p	5.02	-8.80
LAZARETTE.C	Flooded	1.025	-29.43	5.63f	0.02p	6.67	-8.80
Total Displacement-->		1.025	238.54	40.66f	0.01p	4.82	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.370 @ 86.00f, 8.633 @ 6.00f
Trim: Aft 2.26/80.00, Heel: Port 0.08 deg.
Least freeboard is 3.00 Ft located at 0.03f
Least extra freeboard (to margin line) is 2.75 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 2.26/80.00, Heel: Port 0.08 deg., VCG = 11.42

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.610	238.54	40.66f	4.82	3.86	42.19f	15.89	63.9	2.93

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.85f TCG = 0.00p VCG = 11.42
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.85f TCG = 0.00p VCG = 11.58

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
8.800	1.62a	0.08p	238.58	0.00	0.000	0.00	6.67(4)
8.767	1.63a	5.08p	238.58	0.00	0.258	0.65	9.93(1)
8.668	1.65a	10.08p	238.57	0.00	0.526	2.60	8.97(1)
8.586	1.66a	12.52p	238.56	0.00	0.653	4.04	Marg Imm.
8.469	1.66a	15.08p	238.59	0.00	0.776	5.87	7.97(1)
8.260	1.74a	20.08p	238.57	0.00	0.919	10.14	6.91(1)
8.217	1.78a	21.46p	238.57	0.00	0.926	11.42	6.59(1)
8.121	1.93a	25.08p	238.57	0.00	0.879	14.71	5.72(1)
8.086	1.99a	26.61p	238.57	0.00	0.835	16.02	-0.00(4)
8.004	2.16a	30.08p	238.57	0.00	0.689	18.66	4.44(1)
7.856	2.38a	35.08p	238.57	0.00	0.385	21.40	3.11(1)
7.667	2.60a	40.08p	238.56	0.00	0.005	22.40	1.74(1)
7.666	2.61a	40.14p	238.58	0.00	0.000	22.40	1.72(1)
7.440	2.82a	45.08p	238.56	0.00	-0.420	21.38	0.34(1)
7.380	2.87a	46.29p	238.56	0.00	-0.527	20.81	0.00(1)
7.182	3.04a	50.08p	238.56	0.00	-0.868	18.17	-1.07(1)
6.902	3.28a	55.08p	238.52	0.00	-1.323	12.70	-2.48(1)
6.603	3.54a	60.08p	238.55	0.00	-1.777	4.95	-3.88(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM--46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	40.06 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	46.21 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	22.40 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.93 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.08 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	12.44 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 3 *****
Arrival
***** Damage Case 1: Forepeak Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.444 @ 86.00f, 7.147 @ 6.00f
Trim: Aft 0.70/80.00, Heel: Port 0.06 deg.

Part			Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			210.53	39.48f	0.01p	12.00	
Total Tanks--------->			7.77	35.65f	0.03s	4.82	39.3*
Total Weight-------->			218.30	39.34f	0.00p	11.75	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	218.70	39.36f	0.01p	4.46	-7.20
FOREPEAK.C	Flooded	1.025	-0.40	85.21f	0.00	5.29	-7.20
Total Displacement-->		1.025	218.29	39.28f	0.01p	4.46	
Righting Arms:				0.00	0.00		

Distances in FEET. Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

FREEBOARD STATUS
Baseline draft: 6.444 @ 86.00f, 7.147 @ 6.00f
Trim: Aft 0.70/80.00, Heel: Port 0.06 deg.
Least freeboard is 4.61 Ft located at 0.56f
Least extra freeboard (to margin line) is 4.36 Ft located at 0.56f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 0.70/80.00, Heel: Port 0.06 deg., VCG = 11.75

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
6.882	218.29	39.28f	4.46	4.50	36.20f	25.36	111.5	4.47

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.34f TCG = 0.00p VCG = 11.75
Free Surface Adjustment: 0.18
Adjusted CG: LCG = 39.34f TCG = 0.00p VCG = 11.93

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.199	0.50a	0.06p	218.27	0.00	0.000	0.00	7.71(4)
7.140	0.48a	5.06p	218.30	0.00	0.387	0.97	10.93(1)
6.958	0.41a	10.06p	218.30	0.00	0.731	3.78	10.00(1)
6.640	0.29a	15.06p	218.29	0.00	1.003	8.14	9.05(1)
6.223	0.14a	19.73p	218.30	0.00	1.211	13.33	Marg Imm.
6.190	0.13a	20.06p	218.30	0.00	1.224	13.73	8.09(1)
5.646	0.05f	25.06p	218.29	0.00	1.342	20.19	7.11(1)
5.087	0.21f	30.06p	218.30	0.00	1.225	26.71	6.06(1)
4.743	0.29f	33.06p	218.30	0.00	1.072	30.17	0.00(3)
4.511	0.35f	35.06p	218.30	0.00	0.945	32.18	4.94(1)
3.917	0.48f	40.06p	218.30	0.00	0.563	36.01	3.78(1)
3.312	0.58f	45.06p	218.30	0.00	0.118	37.74	2.59(1)
3.160	0.60f	46.32p	218.30	0.00	0.000	37.81	2.28(1)
2.710	0.64f	50.06p	218.30	0.00	-0.358	37.14	1.37(1)
2.117	0.64f	55.06p	218.30	0.00	-0.850	34.13	0.13(1)
2.056	0.64f	55.58p	218.30	0.00	-0.902	33.67	0.00(1)
1.538	0.61f	60.06p	218.30	0.00	-1.349	28.64	-1.11(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM---46 CFR 171.080-Passenger Vessels	Min/Max			Attained
(1) Angle from Equilibrium to RAzero	>	15.00	deg	46.26 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	55.53 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	37.81 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.34 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.06 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	19.67 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 3 *****
Arrival
***** Damage Case 2: Void 1 Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 8.733 @ 86.00f, 6.455 @ 6.00f
Trim: Fwd 2.28/80.00, Heel: Port 0.06 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		7.77	35.83f	0.03s	4.82	39.3*
Total Weight-------->		218.30	39.35f	0.00p	11.75	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	244.33	43.24f	0.01p	4.78	-6.28
VOID1.C	Flooded	1.025	-26.04	74.13f	0.00p	5.40	-6.28
Total Displacement-->		1.025	218.28	39.55f	0.01p	4.71	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 8.733 @ 86.00f, 6.455 @ 6.00f
Trim: Fwd 2.28/80.00, Heel: Port 0.06 deg.
Least freeboard is 3.52 Ft located at 75.97f
Least extra freeboard (to margin line) is 3.27 Ft located at 75.97f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 2.28/80.00, Heel: Port 0.06 deg., VCG = 11.75

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.261	218.28	39.55f	4.71	4.11	34.30f	18.35	80.7	4.32

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.34f TCG = 0.00p VCG = 11.75
Free Surface Adjustment: 0.18
Adjusted CG: LCG = 39.34f TCG = 0.00p VCG = 11.93

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
6.281	1.63f	0.06p	218.28	0.00	0.000	0.00	6.44(2)
6.206	1.67f	5.06p	218.30	0.00	0.376	0.94	10.65(1)
5.989	1.79f	10.06p	218.29	0.00	0.728	3.71	9.73(1)
5.638	1.94f	15.06p	218.29	0.00	1.019	8.10	8.80(1)
5.612	1.95f	15.37p	218.28	0.00	1.035	8.42	Marg Imm.
5.155	2.16f	20.06p	218.33	0.00	1.231	13.76	7.84(1)
4.771	2.38f	23.21p	218.33	0.00	1.272	17.73	7.21(1)
4.529	2.54f	25.06p	218.33	0.00	1.258	20.06	6.83(1)
3.943	2.92f	29.29p	218.30	0.00	1.125	25.16	0.00(2)
3.834	2.99f	30.06p	218.30	0.00	1.089	26.01	5.74(1)
3.119	3.42f	35.06p	218.30	0.00	0.780	30.68	4.60(1)
2.418	3.78f	40.06p	218.30	0.00	0.390	33.64	3.42(1)
1.816	4.00f	44.59p	218.30	0.00	0.000	34.54	2.33(1)
1.755	4.01f	45.06p	218.30	0.00	-0.042	34.53	2.21(1)
1.130	4.14f	50.06p	218.30	0.00	-0.502	33.18	0.98(1)
0.657	4.18f	53.99p	218.31	0.00	-0.879	30.47	0.00(1)
0.530	4.19f	55.06p	218.31	0.00	-0.984	29.47	-0.27(1)
-0.049	4.19f	60.06p	218.31	0.00	-1.477	23.33	-1.53(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

+

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM----------46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	44.53	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	53.93	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	34.54	P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.27	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.06	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	15.31	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 3 *****
Arrival
***** Damage Case 3: Tank Void Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 9.046 @ 86.00f, 6.725 @ 6.00f
Trim: Fwd 2.32/80.00, Heel: Stbd 1.36 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		7.12	33.47f	0.74p	4.86	39.3*
Total Weight-------->		217.65	39.28f	0.03p	11.77	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	260.21	42.97f	0.25s	4.95	-6.55
FO1.S	Flooded	1.025	-3.31	61.84f	9.02s	6.54	-6.55
TANKVOID.C	Flooded	1.025	-39.26	60.72f	0.11s	4.71	-6.55
Total Displacement-->		1.025	217.63	39.48f	0.14s	4.97	

Righting Arms: 0.00 0.00s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 9.046 @ 86.00f, 6.725 @ 6.00f
Trim: Fwd 2.32/80.00, Heel: Stbd 1.36 deg.
Least freeboard is 3.03 Ft located at 75.97f
Least extra freeboard (to margin line) is 2.78 Ft located at 75.97f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 2.32/80.00, Heel: Stbd 1.36 deg., VCG = 11.77

LCF	Displacement	Buoyancy-Ctr.		Weight/		Moment/		
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.558	217.63	39.48f	4.97	4.05	34.72f	23.17	102.2	4.05

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.28f TCG = 0.03p VCG = 11.77
Free Surface Adjustment: 0.18
Adjusted CG: LCG = 39.28f TCG = 0.03p VCG = 11.95

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
6.546	1.66f	1.36s	217.62	0.00	0.000	0.00	5.88(2)
6.426	1.77f	6.36s	217.64	0.00	0.345	0.86	10.11(1)
6.178	1.93f	11.36s	217.63	0.00	0.663	3.39	9.17(1)
6.021	2.01f	13.67s	217.64	0.00	0.791	5.08	Marg Imm.
5.805	2.11f	16.36s	217.64	0.00	0.924	7.38	8.20(1)
5.317	2.35f	21.36s	217.67	0.00	1.065	12.40	7.21(1)
5.185	2.42f	22.59s	217.64	0.00	1.071	13.71	6.95(1)
4.772	2.63f	26.36s	217.65	0.00	1.021	17.69	6.14(1)
4.600	2.70f	27.92s	217.60	0.00	0.977	19.24	0.00(2)
4.224	2.85f	31.36s	217.64	0.00	0.832	22.36	5.02(1)
3.693	2.98f	36.36s	217.64	0.00	0.539	25.82	3.85(1)
3.175	3.01f	41.36s	217.64	0.00	0.179	27.65	2.65(1)
2.942	3.01f	43.63s	217.65	0.00	0.000	27.85	2.10(1)
2.661	2.98f	46.36s	217.64	0.00	-0.226	27.55	1.43(1)
2.146	2.91f	51.36s	217.64	0.00	-0.664	25.34	0.18(1)
2.070	2.90f	52.10s	217.64	0.00	-0.731	24.82	0.00(1)
1.630	2.80f	56.36s	217.64	0.00	-1.124	20.87	-1.07(1)
1.117	2.65f	61.36s	217.65	0.00	-1.592	14.09	-2.32(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM----------46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	42.27 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	50.73 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	27.85 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.07 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	1.36 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	12.31 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 3 *****
Arrival
***** Damage Case 4: Engine Room Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 8.647 @ 86.00f, 8.555 @ 6.00f
Trim: Fwd 0.09/80.00, Heel: Port 0.05 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		7.77	35.69f	0.03s	4.82	39.3*
Total Weight-------->		218.30	39.35f	0.00p	11.75	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	314.18	39.44f	0.01p	5.45	-8.55
ER.C	Flooded	1.025	-95.89	39.64f	0.00p	4.98	-8.55
Total Displacement-->		1.025	218.29	39.35f	0.01p	5.66	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 8.647 @ 86.00f, 8.555 @ 6.00f
Trim: Fwd 0.09/80.00, Heel: Port 0.05 deg.
Least freeboard is 3.14 Ft located at 52.60f
Least extra freeboard (to margin line) is 2.89 Ft located at 52.60f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.09/80.00, Heel: Port 0.05 deg., VCG = 11.75

LCF	Displacement	Buoyancy-Ctr.		Weight/		Moment/		
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
8.590	218.29	39.35f	5.66	3.63	36.38f	28.14	123.8	4.89

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.34f TCG = 0.00p VCG = 11.75
Free Surface Adjustment: 0.18
Adjusted CG: LCG = 39.34f TCG = 0.00p VCG = 11.93

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.547	0.07f	0.05p	218.29	0.00	0.000	0.00	6.03(2)
8.509	0.06f	5.05p	218.30	0.00	0.427	1.07	4.88(3)
8.377	0.05f	10.05p	218.30	0.00	0.852	4.27	3.68(3)
8.285	0.05f	12.27p	218.30	0.00	1.038	6.36	Marg Imm.
8.142	0.06f	15.05p	218.30	0.00	1.244	9.54	2.48(3)
7.968	0.05f	18.80p	218.30	0.00	1.343	14.42	1.54(3)
7.917	0.04f	20.05p	218.30	0.00	1.334	16.10	1.21(3)
7.736	0.01f	24.53p	218.31	0.00	1.203	21.78	0.00(3)
7.714	0.00	25.05p	218.30	0.00	1.180	22.40	-0.14(3)
7.490	0.05a	30.05p	218.30	0.00	0.900	27.65	-1.53(4)
7.230	0.13a	35.05p	218.30	0.00	0.541	31.29	-2.91(4)
6.938	0.24a	40.05p	218.30	0.00	0.139	33.01	-4.27(4)
6.836	0.29a	41.71p	218.31	0.00	0.000	33.12	-4.72(4)
6.620	0.39a	45.05p	218.30	0.00	-0.284	32.65	-5.61(4)
6.274	0.56a	50.05p	218.30	0.00	-0.721	30.14	-6.92(4)
5.897	0.74a	55.05p	218.30	0.00	-1.167	25.43	-8.18(4)
5.488	0.92a	60.05p	218.30	0.00	-1.614	18.47	-9.39(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

+

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max			Attained
(1) Angle from Equilibrium to RAzero	>	15.00	deg	41.66 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	33.12 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.34 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.05 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	12.22 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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GHS 20.00                    NEW AWT PATROL VESSEL

                          ***** Condition 3 *****
                                 Arrival
    ***** Damage Case 5: Engine Room Flooded, FO_DAY.S, FO2_AFT.S *****

                      WEIGHT and DISPLACEMENT STATUS
                Baseline draft: 8.861 @ 86.00f, 8.756 @ 6.00f
                 Trim: Fwd 0.10/80.00,  Heel: Stbd 5.52 deg.
Part------------------------------Weight(LT)----LCG-----TCG-----VCG-------FSM
  Total Fixed--------->              210.53   39.48f   0.01p  12.00
  Total Tanks--------->                6.49   35.37f   1.97p   5.06      39.3*
  Total Weight-------->              217.02   39.36f   0.06p  11.80
                         SpGr------Displ(LT)----LCB-----TCB-----VCB------RefHt
HULL                    1.025        326.57   39.38f   0.87s   5.62      -8.71
FO_DAY.S       Flooded  1.025         -3.25   31.50f  11.30s   6.79      -8.71
FO2_AFT.S      Flooded  1.025         -7.62   39.91f  11.26s   6.82      -8.71
ER.C           Flooded  1.025        -98.69   39.63f   0.45s   5.11      -8.71
  Total Displacement--> 1.025        217.02   39.37f   0.53s   5.79
--------------------------------------------------------------------------------
              Righting Arms:                  0.00     0.02s
Distances in FEET.-----------------------------------------Moments in Ft-LT.
                                    +
    Note:  FSM values marked with an asterisk (*) are formal values which are
           not the same as the true values in the present condition.
                                    +

                            FREEBOARD STATUS
                Baseline draft: 8.861 @ 86.00f, 8.756 @ 6.00f
                 Trim: Fwd 0.10/80.00,  Heel: Stbd 5.52 deg.
                 Least freeboard is 1.61 Ft located at 46.53f
     Least extra freeboard (to margin line) is 1.36 Ft located at 46.53f

                      HYDROSTATIC PROPERTIES with FLOODING
             Trim: Fwd 0.10/80.00, Heel: Stbd 5.52 deg., VCG = 11.80

   LCF    Displacement   Buoyancy-Ctr.  Weight/          Moment/
  Draft----Weight(LT)----LCB-----VCB-----Inch-----LCF---In trim----GML-----GMT
  8.796       217.02   39.37f   5.79     3.50   36.57f   28.43   125.8    4.06
 Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.
                                Trim is per 80.00Ft
 Draft is from Baseline.                        Formal Free Surface included.

      Note:  GMT includes the formal free surface moment 39.3 Ft-LT
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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.36f TCG = 0.07p VCG = 11.80
Free Surface Adjustment: 0.18
Adjusted CG: LCG = 39.36f TCG = 0.07p VCG = 11.98

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.708	0.07f	5.52s	217.02	0.00	0.000	0.00	4.55(3)
8.613	0.06f	10.52s	217.02	0.00	0.360	0.90	3.31(3)
8.595	0.06f	11.11s	217.02	0.00	0.403	1.12	Marg Imm.
8.446	0.04f	15.52s	217.02	0.00	0.658	3.49	2.05(3)
8.371	0.02f	18.24s	217.00	0.00	0.694	5.32	1.33(3)
8.314	0.01a	20.52s	217.02	0.00	0.669	6.88	0.70(4)
8.252	0.05a	23.01s	217.02	0.00	0.600	8.47	0.00(4)
8.187	0.10a	25.52s	217.02	0.00	0.498	9.86	-0.72(4)
8.041	0.21a	30.52s	217.02	0.00	0.228	11.72	-2.15(4)
7.920	0.31a	34.06s	217.01	0.00	0.000	12.13	-3.17(4)
7.866	0.35a	35.52s	217.02	0.00	-0.101	12.06	-3.59(4)
7.650	0.53a	40.52s	217.01	0.00	-0.470	10.65	-5.00(4)
7.404	0.74a	45.52s	217.02	0.00	-0.857	7.34	-6.38(4)
7.121	0.96a	50.52s	217.02	0.00	-1.255	2.06	-7.72(4)
6.798	1.18a	55.52s	217.02	0.00	-1.656	-5.21	-9.02(4)
6.435	1.40a	60.52s	217.02	0.00	-2.055	-14.49	-10.25(4)
6.031	1.61a	65.52s	217.03	0.00	-2.446	-25.75	-11.41(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	28.54 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	12.13 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.69 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	5.52 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	5.58 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 3 *****
Arrival
***** Damage Case 6: Engine Room Flooded, FO2_FWD.S, FO2_AFT.S *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 9.014 @ 86.00f, 8.708 @ 6.00f
Trim: Fwd 0.30/80.00, Heel: Stbd 6.25 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		6.33	33.92f	2.25p	5.07	39.3*
Total Weight-------->		216.86	39.32f	0.07p	11.80	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	328.48	39.60f	0.98s	5.65	-8.63
FO2_FWD.S	Flooded	1.025	-4.59	49.96f	11.03s	7.14	-8.63
FO2_AFT.S	Flooded	1.025	-7.86	39.92f	11.27s	6.92	-8.63
ER.C	Flooded	1.025	-99.17	39.65f	0.51s	5.13	-8.63
Total Displacement-->		1.025	216.86	39.34f	0.60s	5.81	

Righting Arms: 0.00 0.02s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 9.014 @ 86.00f, 8.708 @ 6.00f
Trim: Fwd 0.30/80.00, Heel: Stbd 6.25 deg.
Least freeboard is 1.38 Ft located at 52.60f
Least extra freeboard (to margin line) is 1.13 Ft located at 52.60f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.30/80.00, Heel: Stbd 6.25 deg., VCG = 11.80

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
8.824	216.86	39.34f	5.81	3.48	36.36f	28.41	125.8	3.92

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.32f TCG = 0.07p VCG = 11.80
Free Surface Adjustment: 0.18
Adjusted CG: LCG = 39.32f TCG = 0.07p VCG = 11.98

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
8.634	0.22f	6.25s	216.86	0.00	0.000	0.00	4.34(3)
8.524	0.23f	10.87s	216.86	0.00	0.321	0.74	Marg Imm.
8.510	0.24f	11.25s	216.86	0.00	0.347	0.87	3.09(3)
8.330	0.25f	16.25s	216.86	0.00	0.599	3.27	1.82(3)
8.274	0.23f	18.14s	216.86	0.00	0.616	4.43	1.31(3)
8.189	0.20f	21.25s	216.86	0.00	0.575	6.31	0.46(3)
8.145	0.18f	22.90s	216.88	0.00	0.526	7.22	-0.00(3)
8.050	0.13f	26.25s	216.86	0.00	0.388	8.75	-0.95(3)
7.893	0.03f	31.25s	216.86	0.00	0.112	10.03	-2.37(3)
7.831	0.02a	33.04s	216.85	0.00	0.000	10.13	-2.88(4)
7.709	0.12a	36.25s	216.86	0.00	-0.216	9.79	-3.80(4)
7.485	0.30a	41.25s	216.86	0.00	-0.582	7.82	-5.20(4)
7.229	0.51a	46.25s	216.86	0.00	-0.965	3.95	-6.58(4)
6.938	0.73a	51.25s	216.87	0.00	-1.359	-1.85	-7.91(4)
6.608	0.95a	56.25s	216.87	0.00	-1.755	-9.64	-9.19(4)
6.237	1.17a	61.25s	216.87	0.00	-2.148	-19.40	-10.42(4)
5.827	1.38a	66.25s	216.87	0.00	-2.533	-31.10	-11.57(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	26.79	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE	
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	10.13	P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.62	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	6.25	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	4.62	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 3 *****
Arrival
***** Damage Case 7: FO-DAY.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.507 @ 86.00f, 7.245 @ 6.00f
Trim: Aft 0.74/80.00, Heel: Stbd 3.44 deg.

Part			Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			210.53	39.48f	0.01p	12.00	
Total Tanks--------->			6.49	35.33f	1.98p	5.05	39.3*
Total Weight-------->			217.02	39.36f	0.07p	11.80	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	223.73	39.23f	0.71s	4.54	-7.29
FO_DAY.S	Flooded	1.025	-2.05	31.50f	11.16s	5.61	-7.29
FO2_AFT.S	Flooded	1.025	-4.66	39.84f	11.10s	5.58	-7.29
Total Displacement-->		1.025	217.02	39.29f	0.38s	4.50	

Righting Arms: 0.00 0.01s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.507 @ 86.00f, 7.245 @ 6.00f
Trim: Aft 0.74/80.00, Heel: Stbd 3.44 deg.
Least freeboard is 3.73 Ft located at 10.14f
Least extra freeboard (to margin line) is 3.48 Ft located at 10.14f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 0.74/80.00, Heel: Stbd 3.44 deg., VCG = 11.80

LCF	Displacement	Buoyancy-Ctr.		Weight/		Moment/		
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
6.965	217.02	39.29f	4.50	4.38	36.43f	26.04	115.2	3.50

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.36f TCG = 0.07p VCG = 11.80
Free Surface Adjustment: 0.18
Adjusted CG: LCG = 39.36f TCG = 0.07p VCG = 11.98

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
7.287	0.53a	3.44s	217.02	0.00	0.000	0.00	6.81(4)
7.185	0.48a	8.44s	217.02	0.00	0.291	0.73	10.17(1)
6.955	0.39a	13.44s	217.01	0.00	0.526	2.80	9.19(1)
6.594	0.25a	18.44s	217.01	0.00	0.717	5.92	8.20(1)
6.580	0.25a	18.61s	217.00	0.00	0.723	6.04	Marg Imm.
6.135	0.10a	23.44s	217.05	0.00	0.843	9.86	7.18(1)
6.060	0.08a	24.23s	217.04	0.00	0.846	10.52	7.01(1)
5.650	0.02f	28.44s	217.01	0.00	0.774	13.98	6.10(1)
5.314	0.10f	31.74s	217.02	0.00	0.640	16.33	0.00(3)
5.135	0.13f	33.44s	217.02	0.00	0.548	17.35	4.97(1)
4.597	0.23f	38.44s	217.02	0.00	0.210	19.28	3.79(1)
4.304	0.28f	41.11s	217.02	0.00	0.000	19.57	3.15(1)
4.044	0.31f	43.44s	217.02	0.00	-0.195	19.34	2.57(1)
3.486	0.35f	48.44s	217.02	0.00	-0.635	17.29	1.33(1)
2.930	0.34f	53.44s	217.02	0.00	-1.091	12.98	0.08(1)
2.895	0.34f	53.75s	217.02	0.00	-1.120	12.63	0.00(1)
2.372	0.30f	58.44s	217.02	0.00	-1.555	6.36	-1.18(1)
1.816	0.24f	63.44s	217.02	0.00	-2.020	-2.57	-2.44(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	37.67 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	50.31 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	19.57 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.85 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	3.44 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	15.17 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 3 *****
Arrival
***** Damage Case 8: FO2_FWD.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.583 @ 86.00f, 7.207 @ 6.00f
Trim: Aft 0.62/80.00, Heel: Stbd 3.64 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		6.33	33.87f	2.27p	5.07	39.3*
Total Weight-------->		216.86	39.32f	0.07p	11.80	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	224.06	39.39f	0.75s	4.54	-7.24
FO2_FWD.S	Flooded	1.025	-2.50	49.89f	10.79s	5.69	-7.24
FO2_AFT.S	Flooded	1.025	-4.72	39.85f	11.11s	5.60	-7.24
Total Displacement-->		1.025	216.84	39.26f	0.40s	4.51	

Righting Arms: 0.00 0.01s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.583 @ 86.00f, 7.207 @ 6.00f
Trim: Aft 0.62/80.00, Heel: Stbd 3.64 deg.
Least freeboard is 3.72 Ft located at 10.14f
Least extra freeboard (to margin line) is 3.47 Ft located at 10.14f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 0.62/80.00, Heel: Stbd 3.64 deg., VCG = 11.80

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
6.971	216.84	39.26f	4.51	4.36	36.25f	25.91	114.7	3.37

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.32f TCG = 0.07p VCG = 11.80
Free Surface Adjustment: 0.18
Adjusted CG: LCG = 39.32f TCG = 0.07p VCG = 11.98

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.240	0.45a	3.64s	216.86	0.00	0.000	0.00	6.77(4)
7.116	0.36a	8.64s	216.86	0.00	0.276	0.69	10.13(1)
6.863	0.23a	13.64s	216.85	0.00	0.493	2.64	9.15(1)
6.480	0.07a	18.64s	216.84	0.00	0.665	5.55	8.15(1)
6.464	0.06a	18.82s	216.84	0.00	0.671	5.67	Marg Imm.
5.999	0.12f	23.64s	216.85	0.00	0.772	9.17	7.13(1)
5.971	0.13f	23.93s	216.86	0.00	0.772	9.40	7.07(1)
5.499	0.27f	28.64s	216.85	0.00	0.692	12.91	6.05(1)
5.185	0.34f	31.65s	216.86	0.00	0.570	14.82	0.00(3)
4.973	0.39f	33.64s	216.86	0.00	0.463	15.85	4.92(1)
4.427	0.50f	38.64s	216.86	0.00	0.124	17.37	3.74(1)
4.249	0.53f	40.25s	216.87	0.00	0.000	17.47	3.36(1)
3.869	0.58f	43.64s	216.86	0.00	-0.278	17.00	2.53(1)
3.310	0.62f	48.64s	216.86	0.00	-0.711	14.55	1.29(1)
2.753	0.61f	53.64s	216.86	0.00	-1.161	9.87	0.03(1)
2.738	0.61f	53.77s	216.86	0.00	-1.173	9.72	0.00(1)
2.195	0.57f	58.64s	216.86	0.00	-1.619	2.93	-1.23(1)
1.643	0.50f	63.64s	216.86	0.00	-2.077	-6.32	-2.48(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	36.61 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	50.13 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	17.47 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.77 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	3.64 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	15.17 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 3 *****
Arrival
***** Damage Case 9: Workshop Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 5.534 @ 86.00f, 9.385 @ 6.00f
Trim: Aft 3.85/80.00, Heel: Port 0.09 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		7.77	35.48f	0.03s	4.83	39.3*
Total Weight-------->		218.30	39.34f	0.00p	11.75	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	276.57	34.85f	0.02p	5.19	-9.66
WORKSHOP.C	Flooded	1.025	-58.31	19.24f	0.02p	5.67	-9.66
Total Displacement-->		1.025	218.26	39.01f	0.02p	5.06	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 5.534 @ 86.00f, 9.385 @ 6.00f
Trim: Aft 3.85/80.00, Heel: Port 0.09 deg.
Least freeboard is 2.13 Ft located at 0.03f
Least extra freeboard (to margin line) is 1.88 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 3.85/80.00, Heel: Port 0.09 deg., VCG = 11.75

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.763	218.26	39.01f	5.06	3.73	39.68f	22.44	98.7	2.97

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.34f TCG = 0.00p VCG = 11.75
Free Surface Adjustment: 0.18
Adjusted CG: LCG = 39.34f TCG = 0.00p VCG = 11.93

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
9.663	2.76a	0.09p	218.31	0.00	0.000	0.00	6.38(4)
9.622	2.75a	5.09p	218.30	0.00	0.262	0.65	9.69(1)
9.534	2.75a	9.01p	218.29	0.00	0.474	2.10	Marg Imm.
9.499	2.75a	10.09p	218.30	0.00	0.532	2.64	8.74(1)
9.325	2.78a	15.09p	218.30	0.00	0.747	5.85	7.73(1)
9.172	2.91a	20.09p	218.30	0.00	0.836	9.86	6.64(1)
9.159	2.92a	20.54p	218.30	0.00	0.836	10.24	6.53(1)
9.046	3.10a	25.09p	218.33	0.00	0.769	13.93	5.44(1)
9.038	3.12a	25.43p	218.34	0.00	0.758	14.20	-0.00(4)
8.914	3.32a	30.09p	218.30	0.00	0.564	17.32	4.17(1)
8.747	3.53a	35.09p	218.29	0.00	0.254	19.41	2.85(1)
8.610	3.67a	38.47p	218.30	0.00	0.000	19.85	1.93(1)
8.535	3.73a	40.09p	218.30	0.00	-0.130	19.75	1.49(1)
8.269	3.91a	45.09p	218.29	0.00	-0.560	18.04	0.11(1)
8.247	3.92a	45.48p	218.29	0.00	-0.595	17.82	-0.00(1)
7.958	4.07a	50.09p	218.29	0.00	-1.015	14.12	-1.28(1)
7.606	4.23a	55.09p	218.29	0.00	-1.476	7.89	-2.66(1)
7.222	4.39a	60.09p	218.27	0.00	-1.931	-0.63	-4.02(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM 46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	38.38 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	45.39 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	19.85 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.84 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.09 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	8.92 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 3 *****
Arrival
***** Damage Case 10: Steering Gear Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 5.017 @ 86.00f, 8.931 @ 6.00f
Trim: Aft 3.91/80.00, Heel: Port 0.08 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		210.53	39.48f	0.01p	12.00	
Total Tanks--------->		7.77	35.48f	0.03s	4.83	39.3*
Total Weight-------->		218.30	39.34f	0.00p	11.75	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	250.55	34.67f	0.02p	4.93	-9.21
LAZARETTE.C	Flooded	1.025	-32.27	5.49f	0.02p	6.87	-9.21
Total Displacement-->		1.025	218.29	38.99f	0.02p	4.64	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 5.017 @ 86.00f, 8.931 @ 6.00f
Trim: Aft 3.91/80.00, Heel: Port 0.08 deg.
Least freeboard is 2.58 Ft located at 0.03f
Least extra freeboard (to margin line) is 2.33 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 3.91/80.00, Heel: Port 0.08 deg., VCG = 11.75

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.190	218.29	38.99f	4.64	3.78	41.59f	15.06	66.2	2.99

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.34f TCG = 0.00p VCG = 11.75
Free Surface Adjustment: 0.18
Adjusted CG: LCG = 39.34f TCG = 0.00p VCG = 11.93

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
9.214	2.80a	0.08p	218.32	0.00	0.000	0.00	6.85(4)
9.181	2.81a	5.08p	218.32	0.00	0.263	0.66	10.16(1)
9.077	2.82a	10.08p	218.30	0.00	0.532	2.64	9.20(1)
9.048	2.82a	10.99p	218.30	0.00	0.580	3.15	Marg Imm.
8.869	2.81a	15.08p	218.30	0.00	0.774	5.93	8.20(1)
8.643	2.87a	20.08p	218.30	0.00	0.913	10.17	7.15(1)
8.571	2.93a	22.10p	218.30	0.00	0.927	12.04	6.69(1)
8.481	3.06a	25.08p	218.30	0.00	0.896	14.77	5.98(1)
8.418	3.17a	27.42p	218.30	0.00	0.829	16.78	-0.00(4)
8.343	3.31a	30.08p	218.30	0.00	0.712	18.83	4.74(1)
8.176	3.56a	35.08p	218.27	0.00	0.400	21.66	3.44(1)
7.974	3.82a	40.08p	218.27	0.00	0.004	22.71	2.10(1)
7.975	3.82a	40.13p	218.30	0.00	0.000	22.71	2.08(1)
7.728	4.05a	45.08p	218.28	0.00	-0.446	21.62	0.73(1)
7.581	4.16a	47.73p	218.29	0.00	-0.698	20.11	-0.00(1)
7.439	4.26a	50.08p	218.29	0.00	-0.928	18.20	-0.65(1)
7.112	4.47a	55.08p	218.27	0.00	-1.425	12.33	-2.03(1)
6.755	4.67a	60.08p	218.26	0.00	-1.923	3.96	-3.40(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM 46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	40.04 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	47.65 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	22.71 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.93 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.08 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	10.91 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 4 *****
Departure, with Icing
***** Damage Case 1: Forepeak Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 8.489 @ 86.00f, 7.343 @ 6.00f
Trim: Fwd 1.15/80.00, Heel: Stbd 0.10 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		216.06	39.43f	0.01p	12.17	
Total Tanks--------->		51.68	47.56f	0.06s	7.77	39.3*
Total Weight-------->		267.74	41.00f	0.01s	11.32	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	268.76	41.26f	0.02s	5.00	-7.26
FOREPEAK.C	Flooded	1.025	-1.02	85.51f	0.00	6.66	-7.26
Total Displacement-->		1.025	267.74	41.09f	0.02s	5.00	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 8.489 @ 86.00f, 7.343 @ 6.00f
Trim: Fwd 1.15/80.00, Heel: Stbd 0.10 deg.
Least freeboard is 3.60 Ft located at 67.76f
Least extra freeboard (to margin line) is 3.35 Ft located at 67.76f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.15/80.00, Heel: Stbd 0.10 deg., VCG = 11.32

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.786	267.74	41.09f	5.00	4.64	36.91f	26.96	96.7	3.84

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.00f TCG = 0.01s VCG = 11.32
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.00f TCG = 0.01s VCG = 11.47

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.256	0.82f	0.10s	267.74	0.00	0.000	0.00	6.42(2)
7.201	0.83f	5.10s	267.74	0.00	0.335	0.84	10.13(1)
7.038	0.87f	10.10s	267.74	0.00	0.659	3.32	9.19(1)
6.767	0.94f	14.87s	267.74	0.00	0.934	7.14	Marg Imm.
6.750	0.95f	15.10s	267.74	0.00	0.946	7.35	8.24(1)
6.341	1.07f	20.10s	267.75	0.00	1.148	12.62	7.26(1)
6.133	1.14f	22.41s	267.75	0.00	1.169	15.31	6.78(1)
5.889	1.23f	25.10s	267.75	0.00	1.141	18.43	6.19(1)
5.569	1.34f	28.60s	267.77	0.00	1.036	22.27	-0.00(3)
5.431	1.38f	30.10s	267.74	0.00	0.971	23.77	5.04(1)
4.962	1.50f	35.10s	267.75	0.00	0.691	27.92	3.84(1)
4.492	1.55f	40.10s	267.74	0.00	0.347	30.54	2.59(1)
4.064	1.56f	44.63s	267.75	0.00	0.000	31.34	1.44(1)
4.019	1.56f	45.10s	267.75	0.00	-0.037	31.33	1.32(1)
3.533	1.53f	50.10s	267.74	0.00	-0.453	30.12	0.03(1)
3.522	1.53f	50.20s	267.74	0.00	-0.462	30.08	0.00(1)
3.023	1.50f	55.10s	267.74	0.00	-0.892	26.77	-1.27(1)
2.493	1.47f	60.10s	267.74	0.00	-1.346	21.18	-2.57(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	44.53 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	50.10 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	31.34 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.17 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.10 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	14.77 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 4 *****
Departure, with Icing
***** Damage Case 2: Void 1 Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 11.593 @ 86.00f, 6.392 @ 6.00f
Trim: Fwd 5.20/80.00, Heel: Stbd 0.10 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		216.06	39.43f	0.01p	12.17	
Total Tanks--------->		51.68	47.62f	0.06s	7.77	39.3*
Total Weight-------->		267.74	41.01f	0.01s	11.32	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	307.89	45.70f	0.02s	5.60	-5.99
VOID1.C	Flooded	1.025	-40.14	74.42f	0.01s	6.91	-5.99
Total Displacement-->		1.025	267.75	41.39f	0.02s	5.40	

Righting Arms: 0.00a 0.00
Distances in FEET. Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 11.593 @ 86.00f, 6.392 @ 6.00f
Trim: Fwd 5.20/80.00, Heel: Stbd 0.10 deg.
Least freeboard is 1.02 Ft located at 76.00f
Least extra freeboard (to margin line) is 0.77 Ft located at 76.00f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 5.20/80.00, Heel: Stbd 0.10 deg., VCG = 11.32

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
8.316	267.75	41.39f	5.40	4.20	35.60f	19.79	71.0	3.80

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.00f TCG = 0.01s VCG = 11.32
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.00f TCG = 0.01s VCG = 11.47

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
5.989	3.72f	0.10s	267.75	0.00	0.000	0.00	4.23(2)
5.921	3.75f	5.10s	267.74	0.00	0.332	0.83	9.75(1)
5.909	3.75f	5.50s	267.74	0.00	0.359	0.97	Marg Imm.
5.714	3.84f	10.10s	267.75	0.00	0.652	3.30	8.83(1)
5.330	4.12f	15.10s	267.74	0.00	0.861	7.13	7.85(1)
4.927	4.45f	19.04s	267.74	0.00	0.909	10.65	7.03(1)
4.905	4.47f	19.23s	267.75	0.00	0.908	10.83	-0.00(2)
4.809	4.55f	20.10s	267.74	0.00	0.905	11.61	6.81(1)
4.234	5.02f	25.10s	267.75	0.00	0.815	15.97	5.69(1)
3.658	5.42f	30.10s	267.75	0.00	0.635	19.64	4.52(1)
3.081	5.76f	35.10s	267.73	0.00	0.380	22.21	3.29(1)
2.485	6.09f	40.10s	267.70	0.00	0.058	23.33	2.03(1)
2.385	6.14f	40.92s	267.70	0.00	0.000	23.35	1.82(1)
1.866	6.41f	45.10s	267.74	0.00	-0.313	22.71	0.73(1)
1.515	6.58f	47.88s	267.75	0.00	-0.534	21.53	0.00(1)
1.229	6.72f	50.10s	267.75	0.00	-0.716	20.15	-0.58(1)
0.580	7.00f	55.10s	267.74	0.00	-1.136	15.52	-1.90(1)
-0.070	7.24f	60.10s	267.77	0.00	-1.565	8.77	-3.22(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM 46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	40.82 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	47.78 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	23.35 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.91 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.10 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	5.40 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 4 *****
Departure, with Icing
***** Damage Case 3: Tank Void Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 11.033 @ 86.00f, 6.994 @ 6.00f
Trim: Fwd 4.04/80.00, Heel: Port 0.81 deg.

Part			Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			45.45	45.61f	1.23p	7.67	39.3*
Total Weight-------->			261.51	40.50f	0.22p	11.39	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	314.65	44.17f	0.13p	5.58	-6.68
FO1.S	Flooded	1.025	-4.55	62.01f	9.15s	7.26	-6.68
TANKVOID.C	Flooded	1.025	-48.58	60.68f	0.06p	5.54	-6.68
Total Displacement-->		1.025	261.51	40.80f	0.30p	5.56	

Righting Arms: 0.00 0.00p
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 11.033 @ 86.00f, 6.994 @ 6.00f
Trim: Fwd 4.04/80.00, Heel: Port 0.81 deg.
Least freeboard is 1.34 Ft located at 76.00f
Least extra freeboard (to margin line) is 1.09 Ft located at 76.00f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 4.04/80.00, Heel: Port 0.81 deg., VCG = 11.39

LCF	Displacement	Buoyancy-Ctr.		Weight/		Moment/		
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
8.477	261.51	40.80f	5.56	4.15	35.38f	25.78	94.6	3.72

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.49f TCG = 0.22p VCG = 11.39
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 40.49f TCG = 0.22p VCG = 11.54

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
6.682	2.89f	0.81p	261.51	0.00	0.000	0.00	4.39(2)
6.626	2.84f	5.81p	261.51	0.00	0.323	0.81	9.42(1)
6.569	2.83f	7.94p	261.51	0.00	0.460	1.64	Marg Imm.
6.460	2.82f	10.81p	261.51	0.00	0.637	3.21	8.50(1)
6.151	2.93f	15.81p	261.52	0.00	0.856	6.97	7.53(1)
5.812	3.11f	19.94p	261.51	0.00	0.910	10.67	6.67(1)
5.738	3.15f	20.81p	261.51	0.00	0.907	11.45	6.49(1)
5.619	3.20f	22.19p	261.51	0.00	0.896	12.70	-0.00(2)
5.313	3.33f	25.81p	261.51	0.00	0.823	15.80	5.37(1)
4.914	3.42f	30.81p	261.51	0.00	0.644	19.51	4.18(1)
4.532	3.42f	35.81p	261.51	0.00	0.395	22.14	2.94(1)
4.145	3.37f	40.81p	261.51	0.00	0.084	23.36	1.67(1)
4.049	3.35f	42.03p	261.51	0.00	0.000	23.41	1.35(1)
3.746	3.28f	45.81p	261.51	0.00	-0.272	22.90	0.37(1)
3.629	3.25f	47.23p	261.51	0.00	-0.380	22.44	0.00(1)
3.329	3.16f	50.81p	261.51	0.00	-0.659	20.58	-0.94(1)
2.894	3.02f	55.81p	261.52	0.00	-1.064	16.28	-2.25(1)
2.441	2.86f	60.81p	261.52	0.00	-1.478	9.93	-3.55(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM--46 CFR 171.080-Passenger Vessels	Min/Max			Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	41.22	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	46.42	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	23.41	P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.91	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.81	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	7.14	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 4 *****
Departure, with Icing
***** Damage Case 4: Engine Room Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.724 @ 86.00f, 9.055 @ 6.00f
Trim: Fwd 1.67/80.00, Heel: Stbd 0.06 deg.

Part			Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			51.68	47.57f	0.06s	7.77	39.3*
Total Weight-------->			267.74	41.00f	0.01s	11.32	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	379.23	40.71f	0.01s	6.11	-8.93
ER.C	Flooded	1.025	-111.49	39.77f	0.00s	5.57	-8.93
Total Displacement-->		1.025	267.74	41.10f	0.01s	6.33	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.724 @ 86.00f, 9.055 @ 6.00f
Trim: Fwd 1.67/80.00, Heel: Stbd 0.06 deg.
Least freeboard is 1.46 Ft located at 75.97f
Least extra freeboard (to margin line) is 1.21 Ft located at 75.97f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.67/80.00, Heel: Stbd 0.06 deg., VCG = 11.32

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
9.717	267.74	41.10f	6.33	3.79	37.77f	30.71	110.1	4.54

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.00f TCG = 0.01s VCG = 11.32
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.00f TCG = 0.01s VCG = 11.47

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.927	1.20f	0.06s	267.74	0.00	0.000	0.00	4.31(2)
8.888	1.18f	5.06s	267.74	0.00	0.401	1.00	3.35(2)
8.871	1.18f	6.02s	267.78	0.00	0.479	1.43	Marg Imm.
8.764	1.17f	10.06s	267.74	0.00	0.779	3.98	2.37(2)
8.640	1.22f	15.06s	267.74	0.00	0.898	8.24	1.21(2)
8.598	1.21f	19.36s	267.76	0.00	0.839	12.03	-0.00(3)
8.594	1.20f	20.06s	267.74	0.00	0.820	12.61	-0.21(3)
8.578	1.09f	25.06s	267.74	0.00	0.640	16.32	-1.70(3)
8.567	0.90f	30.06s	267.75	0.00	0.400	18.94	-3.20(3)
8.547	0.65f	35.06s	267.76	0.00	0.119	20.25	-4.70(3)
8.532	0.53f	37.01s	267.74	0.00	0.000	20.37	-5.28(3)
8.497	0.35f	40.06s	267.76	0.00	-0.196	20.07	-6.18(3)
8.400	0.05f	45.06s	267.79	0.00	-0.539	18.25	-7.63(3)
8.237	0.25a	50.06s	267.74	0.00	-0.902	14.66	-9.04(4)
8.025	0.55a	55.06s	267.74	0.00	-1.271	9.23	-10.41(4)
7.757	0.83a	60.06s	267.74	0.00	-1.639	1.95	-11.71(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

+

Critical Points		LCP	TCP	VCP
(2)	FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3)	FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4)	FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained	
(1)	Angle from Equilibrium to RAzero	>	15.00	deg	36.95 P
(2)	Angle from Equilibrium to Flood	>	15.00	deg	LARGE
(3)	Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	20.37 P
(4)	Righting Arm at MaxRA	>	0.33	Ft	0.90 P
(5)	Absolute Angle at Equilibrium	<	7.00	deg	0.06 P
(6)	Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	5.96 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 4 *****
Departure, with Icing
***** Damage Case 5: Engine Room Flooded, FO_DAY.S, FO2_AFT.S *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.677 @ 86.00f, 9.005 @ 6.00f
Trim: Fwd 1.67/80.00, Heel: Port 1.15 deg.

Part			Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			39.52	50.69f	3.41p	7.81	39.3*
Total Weight-------->			255.58	41.17f	0.53p	11.49	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	376.39	40.73f	0.16p	6.08	-8.88
FO_DAY.S	Flooded	1.025	-2.92	31.51f	11.24s	6.47	-8.88
FO2_AFT.S	Flooded	1.025	-7.05	39.95f	11.21s	6.59	-8.88
ER.C	Flooded	1.025	-110.84	39.77f	0.08p	5.54	-8.88
Total Displacement-->		1.025	255.58	41.28f	0.64p	6.30	

Righting Arms: 0.00 0.00p
Distances in FEET. Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

FREEBOARD STATUS
Baseline draft: 10.677 @ 86.00f, 9.005 @ 6.00f
Trim: Fwd 1.67/80.00, Heel: Port 1.15 deg.
Least freeboard is 1.33 Ft located at 70.00f
Least extra freeboard (to margin line) is 1.08 Ft located at 70.00f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.67/80.00, Heel: Port 1.15 deg., VCG = 11.49

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
9.668	255.58	41.28f	6.30	3.63	37.74f	30.62	115.0	3.74

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.17f TCG = 0.53p VCG = 11.49
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.17f TCG = 0.53p VCG = 11.65

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
8.876	1.20f	1.15p	255.60	0.00	0.000	0.00	4.15(2)
8.778	1.18f	6.15p	255.58	0.00	0.327	0.82	3.23(2)
8.771	1.18f	6.41p	255.58	0.00	0.344	0.91	Marg Imm.
8.593	1.18f	11.15p	255.57	0.00	0.610	3.18	2.27(2)
8.467	1.22f	14.37p	255.57	0.00	0.660	5.26	1.57(2)
8.411	1.23f	16.15p	255.58	0.00	0.645	6.42	1.14(3)
8.300	1.23f	20.28p	255.59	0.00	0.537	8.91	-0.00(3)
8.279	1.23f	21.15p	255.58	0.00	0.505	9.36	-0.24(3)
8.163	1.15f	26.15p	255.58	0.00	0.278	11.32	-1.67(3)
8.047	1.00f	31.15p	255.59	0.00	0.007	12.05	-3.11(3)
8.045	0.99f	31.26p	255.59	0.00	0.000	12.05	-3.14(3)
7.919	0.80f	36.15p	255.59	0.00	-0.293	11.34	-4.54(3)
7.766	0.56f	41.15p	255.60	0.00	-0.617	9.08	-5.96(3)
7.576	0.31f	46.15p	255.61	0.00	-0.959	5.15	-7.34(3)
7.344	0.05f	51.15p	255.62	0.00	-1.311	-0.52	-8.68(3)
7.067	0.21a	56.15p	255.63	0.00	-1.665	-7.96	-10.00(4)
6.742	0.46a	61.15p	255.63	0.00	-2.017	-17.17	-11.25(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	30.12 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	12.05 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.66 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	1.15 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	5.26 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 4 *****
Departure, with Icing
***** Damage Case 6: Engine Room Flooded, FO2_FWD.S, FO2_AFT.S *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.645 @ 86.00f, 9.016 @ 6.00f
Trim: Fwd 1.63/80.00, Heel: Port 1.29 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		216.06	39.43f	0.01p	12.17	
Total Tanks--------->		38.04	48.95f	3.96p	7.78	39.3*
Total Weight-------->		254.10	40.86f	0.60p	11.51	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	376.03	40.69f	0.18p	6.08	-8.89
FO2_FWD.S	Flooded	1.025	-4.19	49.98f	10.96s	6.87	-8.89
FO2_AFT.S	Flooded	1.025	-7.00	39.95f	11.21s	6.57	-8.89
ER.C	Flooded	1.025	-110.75	39.77f	0.09p	5.54	-8.89
Total Displacement-->		1.025	254.10	40.96f	0.72p	6.29	

Righting Arms: 0.00 0.00p
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.645 @ 86.00f, 9.016 @ 6.00f
Trim: Fwd 1.63/80.00, Heel: Port 1.29 deg.
Least freeboard is 1.32 Ft located at 67.76f
Least extra freeboard (to margin line) is 1.07 Ft located at 67.76f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.63/80.00, Heel: Port 1.29 deg., VCG = 11.51

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
9.656	254.10	40.96f	6.29	3.60	37.40f	30.47	115.1	3.59

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.85f TCG = 0.60p VCG = 11.51
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 40.85f TCG = 0.60p VCG = 11.67

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.890	1.17f	1.29p	254.10	0.00	0.000	0.00	4.14(2)
8.802	1.12f	6.29p	254.09	0.00	0.314	0.79	3.25(2)
8.794	1.12f	6.58p	254.10	0.00	0.332	0.88	Marg Imm.
8.627	1.09f	11.29p	254.10	0.00	0.588	3.06	2.31(2)
8.518	1.10f	14.32p	254.08	0.00	0.633	4.93	1.66(3)
8.464	1.11f	16.29p	254.10	0.00	0.614	6.17	1.13(3)
8.370	1.07f	20.38p	254.11	0.00	0.500	8.49	-0.00(3)
8.351	1.06f	21.29p	254.10	0.00	0.464	8.93	-0.26(3)
8.249	0.96f	26.29p	254.10	0.00	0.229	10.66	-1.68(3)
8.166	0.82f	30.42p	254.15	0.00	-0.001	11.14	-2.87(3)
8.145	0.79f	31.29p	254.10	0.00	-0.051	11.12	-3.12(3)
8.025	0.57f	36.29p	254.11	0.00	-0.356	10.12	-4.55(3)
7.878	0.32f	41.29p	254.12	0.00	-0.682	7.53	-5.97(3)
7.692	0.06f	46.29p	254.12	0.00	-1.024	3.27	-7.35(3)
7.463	0.20a	51.29p	254.13	0.00	-1.374	-2.72	-8.72(4)
7.188	0.47a	56.29p	254.14	0.00	-1.726	-10.47	-10.04(4)
6.866	0.72a	61.29p	254.14	0.00	-2.074	-19.97	-11.29(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	29.13	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE	
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	11.14	P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.63	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	1.29	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	5.28	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 4 *****
Departure, with Icing
***** Damage Case 7: FO-DAY.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 8.253 @ 86.00f, 7.238 @ 6.00f
Trim: Fwd 1.01/80.00, Heel: Port 4.51 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		216.06	39.43f	0.01p	12.17	
Total Tanks--------->		39.52	50.68f	3.43p	7.81	39.3*
Total Weight-------->		255.58	41.17f	0.54p	11.49	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	260.72	41.18f	0.82p	4.95	-7.14
FO_DAY.S	Flooded	1.025	-1.51	31.52f	11.00s	5.04	-7.14
FO2_AFT.S	Flooded	1.025	-3.61	39.91f	10.96s	5.10	-7.14
Total Displacement-->		1.025	255.61	41.25f	1.06p	4.95	

Righting Arms: 0.00 0.01p
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 8.253 @ 86.00f, 7.238 @ 6.00f
Trim: Fwd 1.01/80.00, Heel: Port 4.51 deg.
Least freeboard is 2.82 Ft located at 58.66f
Least extra freeboard (to margin line) is 2.57 Ft located at 58.66f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.01/80.00, Heel: Port 4.51 deg., VCG = 11.49

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.635	255.61	41.25f	4.95	4.49	37.32f	27.38	102.8	2.96

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.17f TCG = 0.53p VCG = 11.49
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.17f TCG = 0.53p VCG = 11.65

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.138	0.72f	4.51p	255.58	0.00	0.000	0.00	5.76(2)
6.950	0.77f	9.51p	255.58	0.00	0.247	0.62	9.47(1)
6.638	0.85f	14.51p	255.58	0.00	0.459	2.39	8.55(1)
6.527	0.88f	15.93p	255.58	0.00	0.514	3.08	Marg Imm.
6.205	0.98f	19.51p	255.59	0.00	0.638	5.15	7.61(1)
5.862	1.10f	22.97p	255.58	0.00	0.682	7.45	6.91(1)
5.709	1.15f	24.51p	255.58	0.00	0.673	8.49	6.59(1)
5.210	1.32f	29.51p	255.58	0.00	0.547	11.54	5.48(1)
5.182	1.33f	29.79p	255.59	0.00	0.536	11.69	0.00(3)
4.701	1.46f	34.51p	255.58	0.00	0.295	13.70	4.31(1)
4.232	1.55f	39.09p	255.58	0.00	0.000	14.40	3.20(1)
4.189	1.55f	39.51p	255.59	0.00	-0.029	14.39	3.10(1)
3.679	1.58f	44.51p	255.58	0.00	-0.393	13.35	1.85(1)
3.170	1.56f	49.51p	255.58	0.00	-0.783	10.43	0.59(1)
2.935	1.54f	51.81p	255.58	0.00	-0.968	8.41	0.00(1)
2.658	1.50f	54.51p	255.58	0.00	-1.189	5.50	-0.69(1)
2.140	1.42f	59.51p	255.58	0.00	-1.605	-1.48	-1.97(1)
1.622	1.31f	64.51p	255.58	0.00	-2.022	-10.55	-3.24(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

+

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	34.58 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	47.30 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	14.40 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.68 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	4.51 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	11.42 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 4 *****
Departure, with Icing
***** Damage Case 8: FO2_FWD.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 8.125 @ 86.00f, 7.269 @ 6.00f
Trim: Fwd 0.85/80.00, Heel: Port 5.39 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		216.06	39.43f	0.01p	12.17	
Total Tanks--------->		38.04	48.94f	3.98p	7.78	39.3*
Total Weight-------->		254.10	40.85f	0.60p	11.51	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	259.29	40.97f	0.99p	4.94	-7.17
FO2_FWD.S	Flooded	1.025	-1.84	49.93f	10.61s	5.17	-7.17
FO2_AFT.S	Flooded	1.025	-3.35	39.90f	10.92s	4.98	-7.17
Total Displacement-->		1.025	254.10	40.92f	1.23p	4.94	

Righting Arms: 0.00 0.01p
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 8.125 @ 86.00f, 7.269 @ 6.00f
Trim: Fwd 0.85/80.00, Heel: Port 5.39 deg.
Least freeboard is 2.69 Ft located at 55.63f
Least extra freeboard (to margin line) is 2.44 Ft located at 55.63f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.85/80.00, Heel: Port 5.39 deg., VCG = 11.51

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.601	254.10	40.92f	4.94	4.46	37.08f	27.13	102.5	2.85

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.85f TCG = 0.60p VCG = 11.51
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 40.85f TCG = 0.60p VCG = 11.67

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
7.172	0.61f	5.39p	254.10	0.00	0.000	0.00	5.67(2)
6.979	0.63f	10.39p	254.10	0.00	0.238	0.59	9.32(1)
6.660	0.70f	15.39p	254.09	0.00	0.443	2.31	8.39(1)
6.593	0.72f	16.24p	254.09	0.00	0.475	2.70	Marg Imm.
6.219	0.82f	20.39p	254.10	0.00	0.611	4.96	7.44(1)
5.956	0.90f	23.10p	254.08	0.00	0.637	6.65	6.89(1)
5.734	0.98f	25.39p	254.10	0.00	0.618	8.09	6.40(1)
5.296	1.11f	29.86p	254.10	0.00	0.491	10.61	0.00(3)
5.242	1.13f	30.39p	254.10	0.00	0.468	10.87	5.28(1)
4.738	1.25f	35.39p	254.10	0.00	0.200	12.59	4.10(1)
4.426	1.31f	38.46p	254.10	0.00	0.000	12.90	3.35(1)
4.229	1.33f	40.39p	254.10	0.00	-0.135	12.77	2.88(1)
3.721	1.35f	45.39p	254.10	0.00	-0.505	11.19	1.63(1)
3.213	1.32f	50.39p	254.10	0.00	-0.899	7.69	0.36(1)
3.070	1.31f	51.79p	254.10	0.00	-1.012	6.35	0.00(1)
2.700	1.26f	55.39p	254.10	0.00	-1.307	2.18	-0.92(1)
2.182	1.17f	60.39p	254.10	0.00	-1.722	-5.39	-2.20(1)
1.662	1.06f	65.39p	254.09	0.00	-2.135	-15.03	-3.47(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	33.07 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	46.40 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	12.90 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.64 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	5.39 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	10.85 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 4 *****
Departure, with Icing
***** Damage Case 9: Workshop Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.448 @ 86.00f, 9.857 @ 6.00f
Trim: Aft 2.41/80.00, Heel: Stbd 0.14 deg.

Part		SpGr	Weight (LT)	LCG	TCG	VCG	FSM / RefHt
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			51.68	47.51f	0.06s	7.77	39.3*
Total Weight-------->			267.74	40.99f	0.01s	11.32	
HULL		1.025	333.29	36.58f	0.02s	5.68	-10.03
WORKSHOP.C	Flooded	1.025	-65.55	19.26f	0.02s	6.05	-10.03
Total Displacement-->		1.025	267.74	40.82f	0.02s	5.59	
Righting Arms:				0.00	0.00		

Distances in FEET. Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

FREEBOARD STATUS
Baseline draft: 7.448 @ 86.00f, 9.857 @ 6.00f
Trim: Aft 2.41/80.00, Heel: Stbd 0.14 deg.
Least freeboard is 1.76 Ft located at 0.03f
Least extra freeboard (to margin line) is 1.51 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 2.41/80.00, Heel: Stbd 0.14 deg., VCG = 11.32

LCF Draft	Displacement Weight (LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.815	267.74	40.82f	5.59	3.86	40.61f	23.77	85.2	2.65

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.00f TCG = 0.01s VCG = 11.32
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.00f TCG = 0.01s VCG = 11.47

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
10.034	1.72a	0.14s	267.79	0.00	0.000	0.00	5.48(4)
9.991	1.73a	5.14s	267.79	0.00	0.234	0.59	8.75(1)
9.948	1.73a	7.24s	267.77	0.00	0.336	1.18	Marg Imm.
9.875	1.74a	10.14s	267.74	0.00	0.477	2.36	7.80(1)
9.818	1.90a	15.14s	267.74	0.00	0.635	5.16	6.74(1)
9.821	1.98a	16.76s	267.75	0.00	0.645	6.20	6.36(1)
9.841	2.15a	20.14s	267.75	0.00	0.604	8.33	5.54(1)
9.852	2.23a	21.44s	267.75	0.00	0.570	9.10	-0.00(4)
9.882	2.44a	25.14s	267.75	0.00	0.432	10.95	4.23(1)
9.915	2.73a	30.14s	267.77	0.00	0.174	12.50	2.83(1)
9.925	2.90a	33.01s	267.74	0.00	0.000	12.75	2.00(1)
9.925	3.02a	35.14s	267.75	0.00	-0.139	12.60	1.37(1)
9.906	3.30a	39.74s	267.74	0.00	-0.459	11.24	-0.00(1)
9.903	3.33a	40.14s	267.74	0.00	-0.488	11.05	-0.12(1)
9.837	3.64a	45.14s	267.73	0.00	-0.856	7.70	-1.63(1)
9.727	3.96a	50.14s	267.71	0.00	-1.232	2.48	-3.13(1)
9.577	4.28a	55.14s	267.80	0.00	-1.612	-4.63	-4.62(1)
9.345	4.57a	60.14s	267.72	0.00	-1.985	-13.62	-6.07(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM--46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	32.87 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	39.59 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	12.75 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.64 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.14 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	7.10 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 4 *****
Departure, with Icing
***** Damage Case 10: Steering Gear Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.976 @ 86.00f, 9.281 @ 6.00f
Trim: Aft 2.31/80.00, Heel: Stbd 0.15 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		216.06	39.43f	0.01p	12.17	
Total Tanks--------->		51.68	47.51f	0.06s	7.77	39.3*
Total Weight-------->		267.74	40.99f	0.01s	11.32	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	303.11	36.70f	0.02s	5.38	-9.45
LAZARETTE.C	Flooded	1.025	-35.36	5.56f	0.03s	7.06	-9.45
Total Displacement-->		1.025	267.75	40.82f	0.02s	5.16	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.976 @ 86.00f, 9.281 @ 6.00f
Trim: Aft 2.31/80.00, Heel: Stbd 0.15 deg.
Least freeboard is 2.34 Ft located at 0.03f
Least extra freeboard (to margin line) is 2.09 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 2.31/80.00, Heel: Stbd 0.15 deg., VCG = 11.32

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.225	267.75	40.82f	5.16	3.89	42.63f	16.02	57.4	2.57

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 41.00f TCG = 0.01s VCG = 11.32
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 41.00f TCG = 0.01s VCG = 11.47

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
9.450	1.65a	0.15s	267.75	0.00	0.000	0.00	6.02(4)
9.412	1.66a	5.15s	267.75	0.00	0.227	0.57	9.29(1)
9.315	1.67a	9.74s	267.70	0.00	0.448	2.11	Marg Imm.
9.304	1.68a	10.15s	267.74	0.00	0.469	2.30	8.33(1)
9.167	1.75a	15.15s	267.74	0.00	0.694	5.21	7.31(1)
9.133	1.91a	18.70s	267.77	0.00	0.746	7.80	6.51(1)
9.131	1.99a	20.15s	267.74	0.00	0.737	8.87	6.16(1)
9.145	2.20a	23.65s	267.76	0.00	0.661	11.35	-0.00(4)
9.153	2.30a	25.15s	267.74	0.00	0.609	12.30	4.88(1)
9.191	2.64a	30.15s	267.75	0.00	0.370	14.74	3.50(1)
9.210	2.98a	35.15s	267.74	0.00	0.054	15.83	2.06(1)
9.213	3.04a	35.91s	267.75	0.00	0.000	15.85	1.84(1)
9.192	3.33a	40.15s	267.73	0.00	-0.317	15.20	0.59(1)
9.175	3.46a	42.12s	267.74	0.00	-0.474	14.42	-0.00(1)
9.131	3.67a	45.15s	267.73	0.00	-0.721	12.61	-0.90(1)
9.037	4.02a	50.15s	267.75	0.00	-1.138	7.97	-2.40(1)
8.901	4.38a	55.15s	267.74	0.00	-1.557	1.23	-3.89(1)
8.715	4.72a	60.15s	267.73	0.00	-1.973	-7.59	-5.35(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM-46 CFR 171.080-Passenger Vessels	Min/Max			Attained
(1) Angle from Equilibrium to RAzero	>	15.00	deg	35.77 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	41.97 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	15.85 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.75 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.15 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	9.59 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 5 *****
Mid Voyage, with Icing
***** Damage Case 1: Forepeak Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.764 @ 86.00f, 7.101 @ 6.00f
Trim: Fwd 0.66/80.00, Heel: Port 0.06 deg.

Part			Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			28.04	51.12f	0.01s	7.00	39.3*
Total Weight-------->			244.10	40.77f	0.00p	11.57	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	244.86	40.97f	0.01p	4.74	-7.05
FOREPEAK.C	Flooded	1.025	-0.77	85.42f	0.00	6.17	-7.05
Total Displacement-->		1.025	244.09	40.83f	0.01p	4.74	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.764 @ 86.00f, 7.101 @ 6.00f
Trim: Fwd 0.66/80.00, Heel: Port 0.06 deg.
Least freeboard is 4.22 Ft located at 61.69f
Least extra freeboard (to margin line) is 3.97 Ft located at 61.69f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.66/80.00, Heel: Port 0.06 deg., VCG = 11.57

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.356	244.09	40.83f	4.74	4.57	36.75f	26.15	102.8	3.97

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.77f TCG = 0.00p VCG = 11.57
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.77f TCG = 0.00p VCG = 11.74

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.051	0.47f	0.06p	244.09	0.00	0.000	0.00	7.05(2)
6.992	0.50f	5.06p	244.10	0.00	0.345	0.86	10.53(1)
6.814	0.56f	10.06p	244.10	0.00	0.668	3.41	9.60(1)
6.507	0.66f	15.06p	244.10	0.00	0.933	7.43	8.65(1)
6.339	0.71f	17.17p	244.10	0.00	1.031	9.51	Marg Imm.
6.072	0.79f	20.06p	244.11	0.00	1.149	12.66	7.69(1)
5.694	0.93f	23.79p	244.10	0.00	1.209	17.08	6.94(1)
5.562	0.97f	25.06p	244.10	0.00	1.202	18.61	6.68(1)
5.035	1.15f	30.06p	244.10	0.00	1.052	24.24	5.58(1)
4.961	1.18f	30.74p	244.11	0.00	1.019	24.95	0.00(3)
4.492	1.31f	35.06p	244.10	0.00	0.764	28.84	4.42(1)
3.943	1.43f	40.06p	244.10	0.00	0.396	31.78	3.23(1)
3.416	1.48f	44.88p	244.11	0.00	0.000	32.75	2.04(1)
3.397	1.48f	45.06p	244.11	0.00	-0.015	32.75	2.00(1)
2.852	1.49f	50.06p	244.10	0.00	-0.454	31.58	0.75(1)
2.526	1.48f	53.01p	244.12	0.00	-0.725	29.84	0.00(1)
2.298	1.48f	55.06p	244.12	0.00	-0.917	28.16	-0.52(1)
1.733	1.46f	60.06p	244.10	0.00	-1.394	22.39	-1.78(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	44.82	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	52.95	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	32.75	P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.21	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.06	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	17.11	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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                          ***** Condition 5 *****
                          Mid Voyage, with Icing
                    ***** Damage Case 2: Void 1 Flooded *****

                          WEIGHT and DISPLACEMENT STATUS
                    Baseline draft: 10.610 @ 86.00f, 6.214 @ 6.00f
                      Trim: Fwd 4.40/80.00,  Heel: Port 0.06 deg.
Part-------------------------------Weight(LT)----LCG-----TCG-----VCG-------FSM
  Total Fixed--------->                216.06   39.43f   0.01p  12.17
  Total Tanks--------->                 28.04   51.22f   0.01s   7.00      39.3*
  Total Weight-------->                244.10   40.78f   0.00p  11.57
                          SpGr------Displ(LT)----LCB-----TCB-----VCB------RefHt
HULL                     1.025        278.90   45.28f   0.01p   5.25      -5.88
VOID1.C        Flooded   1.025        -34.81   74.33f   0.00p   6.37      -5.88
  Total Displacement--> 1.025        244.09   41.14f   0.01p   5.09
-------------------------------------------------------------------------------
                Righting Arms:                  0.00     0.00
Distances in FEET.-----------------------------------------------Moments in Ft-LT.
                                        +
    Note:  FSM values marked with an asterisk (*) are formal values which are
           not the same as the true values in the present condition.
                                        +

                                FREEBOARD STATUS
                    Baseline draft: 10.610 @ 86.00f, 6.214 @ 6.00f
                      Trim: Fwd 4.40/80.00,  Heel: Port 0.06 deg.
                     Least freeboard is 1.91 Ft located at 76.00f
        Least extra freeboard (to margin line) is 1.66 Ft located at 76.00f

                          HYDROSTATIC PROPERTIES with FLOODING
                 Trim: Fwd 4.40/80.00, Heel: Port 0.06 deg., VCG = 11.57

   LCF    Displacement   Buoyancy-Ctr.  Weight/          Moment/
  Draft----Weight(LT)----LCB-----VCB-----Inch-----LCF---In trim----GML-----GMT
  7.834       244.09   41.14f   5.09     4.12   35.48f   18.55    72.9    3.84
 Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.
                                Trim is per 80.00Ft
 Draft is from Baseline.                          Formal Free Surface included.

      Note:  GMT includes the formal free surface moment 39.3 Ft-LT
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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.77f TCG = 0.00p VCG = 11.57
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.77f TCG = 0.00p VCG = 11.74

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
5.877	3.14f	0.06p	244.10	0.00	0.000	0.00	5.04(2)
5.806	3.18f	5.06p	244.10	0.00	0.334	0.84	10.20(1)
5.607	3.27f	9.85p	244.10	0.00	0.646	3.19	Marg Imm.
5.596	3.27f	10.06p	244.10	0.00	0.659	3.32	9.28(1)
5.235	3.46f	15.06p	244.13	0.00	0.920	7.30	8.33(1)
4.705	3.83f	20.06p	244.10	0.00	1.016	12.20	7.34(1)
4.352	4.10f	22.92p	244.10	0.00	0.995	15.09	0.00(2)
4.076	4.31f	25.06p	244.10	0.00	0.949	17.17	6.27(1)
3.418	4.78f	30.06p	244.11	0.00	0.760	21.50	5.14(1)
2.774	5.15f	35.06p	244.13	0.00	0.490	24.66	3.96(1)
2.149	5.44f	40.06p	244.14	0.00	0.155	26.30	2.75(1)
1.888	5.55f	42.14p	244.10	0.00	0.000	26.46	2.23(1)
1.522	5.68f	45.06p	244.11	0.00	-0.232	26.13	1.50(1)
0.894	5.89f	50.06p	244.12	0.00	-0.657	23.92	0.23(1)
0.779	5.92f	50.97p	244.11	0.00	-0.737	23.29	0.00(1)
0.266	6.05f	55.06p	244.11	0.00	-1.104	19.53	-1.05(1)
-0.353	6.18f	60.06p	244.11	0.00	-1.561	12.87	-2.33(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	42.08 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	50.91 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	26.46 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.02 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.06 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	9.80 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 5 *****
Mid Voyage, with Icing
***** Damage Case 3: Tank Void Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.134 @ 86.00f, 6.748 @ 6.00f
Trim: Fwd 3.38/80.00, Heel: Port 1.57 deg.

Part			Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			21.81	48.06f	2.70p	6.58	39.3*
Total Weight-------->			237.87	40.22f	0.25p	11.66	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	285.48	43.88f	0.26p	5.26	-6.49
FO1.S	Flooded	1.025	-3.61	61.94f	9.03s	6.73	-6.49
TANKVOID.C	Flooded	1.025	-44.00	60.71f	0.13p	5.14	-6.49
Total Displacement-->		1.025	237.87	40.49f	0.43p	5.26	

Righting Arms: 0.00 0.00p
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.134 @ 86.00f, 6.748 @ 6.00f
Trim: Fwd 3.38/80.00, Heel: Port 1.57 deg.
Least freeboard is 2.05 Ft located at 75.97f
Least extra freeboard (to margin line) is 1.80 Ft located at 75.97f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 3.38/80.00, Heel: Port 1.57 deg., VCG = 11.66

LCF	Displacement	Buoyancy-Ctr.		Weight/		Moment/		
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.978	237.87	40.49f	5.26	4.06	35.08f	24.09	97.2	3.73

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.21f TCG = 0.25p VCG = 11.66
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.21f TCG = 0.25p VCG = 11.82

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
6.486	2.42f	1.57p	237.87	0.00	0.000	0.00	5.00(2)
6.404	2.40f	6.57p	237.87	0.00	0.325	0.81	9.74(1)
6.218	2.41f	11.28p	237.87	0.00	0.624	3.05	Marg Imm.
6.203	2.41f	11.57p	237.87	0.00	0.642	3.23	8.82(1)
5.873	2.48f	16.57p	237.87	0.00	0.891	7.09	7.87(1)
5.462	2.66f	21.07p	237.87	0.00	0.971	11.34	6.97(1)
5.413	2.69f	21.57p	237.87	0.00	0.970	11.82	6.86(1)
4.988	2.89f	25.80p	237.87	0.00	0.904	15.83	0.00(2)
4.912	2.92f	26.57p	237.87	0.00	0.882	16.51	5.78(1)
4.422	3.08f	31.57p	237.86	0.00	0.681	20.42	4.62(1)
3.947	3.15f	36.57p	237.87	0.00	0.397	23.15	3.43(1)
3.479	3.14f	41.57p	237.87	0.00	0.054	24.31	2.20(1)
3.411	3.13f	42.30p	237.87	0.00	0.000	24.33	2.02(1)
3.008	3.08f	46.57p	237.87	0.00	-0.333	23.63	0.95(1)
2.650	3.01f	50.32p	237.87	0.00	-0.644	21.80	0.00(1)
2.530	2.98f	51.57p	237.87	0.00	-0.750	20.93	-0.32(1)
2.042	2.86f	56.57p	237.87	0.00	-1.186	16.09	-1.59(1)
1.549	2.70f	61.57p	237.88	0.00	-1.631	9.05	-2.85(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM---46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	40.73 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	48.75 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	24.33 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.97 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	1.57 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	9.71 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 5 *****
Mid Voyage, with Icing
***** Damage Case 4: Engine Room Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 9.969 @ 86.00f, 8.679 @ 6.00f
Trim: Fwd 1.29/80.00, Heel: Port 0.05 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		216.06	39.43f	0.01p	12.17	
Total Tanks--------->		28.04	51.14f	0.01s	7.00	39.3*
Total Weight-------->		244.10	40.77f	0.00p	11.57	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	348.38	40.53f	0.01p	5.80	-8.58
ER.C	Flooded	1.025	-104.30	39.75f	0.00p	5.30	-8.58
Total Displacement-->		1.025	244.08	40.86f	0.01p	6.02	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 9.969 @ 86.00f, 8.679 @ 6.00f
Trim: Fwd 1.29/80.00, Heel: Port 0.05 deg.
Least freeboard is 2.16 Ft located at 70.79f
Least extra freeboard (to margin line) is 1.91 Ft located at 70.79f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.29/80.00, Heel: Port 0.05 deg., VCG = 11.57

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
9.182	244.08	40.86f	6.02	3.72	37.22f	29.65	116.6	4.62

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.77f TCG = 0.00p VCG = 11.57
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.77f TCG = 0.00p VCG = 11.74

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.581	0.92f	0.06p	244.08	0.00	0.000	0.00	4.98(2)
8.543	0.91f	5.06p	244.10	0.00	0.403	1.01	4.02(2)
8.459	0.90f	8.77p	244.10	0.00	0.703	3.07	Marg Imm.
8.417	0.89f	10.06p	244.10	0.00	0.807	4.03	3.05(2)
8.219	0.92f	15.06p	244.10	0.00	1.079	8.78	1.86(3)
8.159	0.93f	16.90p	244.10	0.00	1.095	10.80	1.36(3)
8.068	0.93f	20.06p	244.10	0.00	1.053	14.21	0.49(3)
8.021	0.93f	21.80p	244.12	0.00	1.002	16.00	-0.00(3)
7.934	0.90f	25.06p	244.10	0.00	0.872	19.06	-0.93(3)
7.798	0.80f	30.06p	244.10	0.00	0.609	22.79	-2.37(3)
7.646	0.64f	35.06p	244.10	0.00	0.296	25.07	-3.80(3)
7.493	0.47f	39.28p	244.10	0.00	0.000	25.71	-4.98(3)
7.461	0.44f	40.06p	244.10	0.00	-0.057	25.68	-5.20(3)
7.236	0.22f	45.06p	244.12	0.00	-0.442	24.45	-6.56(3)
6.975	0.02a	50.06p	244.12	0.00	-0.842	21.24	-7.90(4)
6.674	0.26a	55.06p	244.13	0.00	-1.250	16.02	-9.21(4)
6.333	0.49a	60.06p	244.14	0.00	-1.658	8.75	-10.45(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	39.23	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE	
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	25.71	P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.10	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.06	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	8.72	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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                          ***** Condition 5 *****
                          Mid Voyage, with Icing
    ***** Damage Case 5: Engine Room Flooded, FO_DAY.S, FO2_AFT.S *****

                       WEIGHT and DISPLACEMENT STATUS
                 Baseline draft: 10.167 @ 86.00f, 8.861 @ 6.00f
                   Trim: Fwd 1.30/80.00,  Heel: Stbd 4.86 deg.
Part------------------------------Weight(LT)----LCG-----TCG-----VCG-------FSM
  Total Fixed--------->              216.06   39.43f   0.01p  12.17
  Total Tanks--------->               25.23   53.02f   1.16p   7.22      39.3*
  Total Weight-------->              241.29   40.85f   0.13p  11.65
                         SpGr------Displ(LT)----LCB-----TCB-----VCB------RefHt
HULL                    1.025        359.85   40.47f   0.71s   5.94      -8.73
FO_DAY.S       Flooded  1.025         -3.45   31.51f  11.31s   6.98      -8.73
FO2_AFT.S      Flooded  1.025         -8.26   39.95f  11.28s   7.08      -8.73
ER.C           Flooded  1.025       -106.85   39.75f   0.37s   5.41      -8.73
  Total Displacement--> 1.025        241.29   40.94f   0.35s   6.13
-------------------------------------------------------------------------------
                 Righting Arms:                  0.00     0.01s
Distances in FEET.-----------------------------------------Moments in Ft-LT.
                                    +
    Note:  FSM values marked with an asterisk (*) are formal values which are
           not the same as the true values in the present condition.
                                    +

                              FREEBOARD STATUS
                 Baseline draft: 10.167 @ 86.00f, 8.861 @ 6.00f
                   Trim: Fwd 1.30/80.00,  Heel: Stbd 4.86 deg.
                  Least freeboard is 0.93 Ft located at 58.66f
     Least extra freeboard (to margin line) is 0.68 Ft located at 58.66f

                       HYDROSTATIC PROPERTIES with FLOODING
              Trim: Fwd 1.30/80.00, Heel: Stbd 4.86 deg., VCG = 11.65

   LCF    Displacement   Buoyancy-Ctr.  Weight/          Moment/
  Draft----Weight(LT)----LCB-----VCB-----Inch-----LCF---In trim----GML-----GMT
  9.374       241.29   40.94f   6.13     3.60   37.43f   29.99   119.3    3.89
 Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.
                                Trim is per 80.00Ft
 Draft is from Baseline.                          Formal Free Surface included.

      Note:  GMT includes the formal free surface moment 39.3 Ft-LT
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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.85f TCG = 0.13p VCG = 11.65
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.85f TCG = 0.13p VCG = 11.81

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.731	0.93f	4.86s	241.29	0.00	0.000	0.00	3.85(2)
8.696	0.92f	7.78s	241.29	0.00	0.200	0.29	Marg Imm.
8.652	0.91f	9.86s	241.29	0.00	0.343	0.86	2.84(2)
8.514	0.93f	14.86s	241.29	0.00	0.539	3.13	1.61(3)
8.485	0.93f	16.29s	241.29	0.00	0.547	3.90	1.22(3)
8.426	0.92f	19.86s	241.29	0.00	0.500	5.80	0.20(3)
8.417	0.91f	20.55s	241.29	0.00	0.482	6.14	0.00(3)
8.361	0.84f	24.86s	241.29	0.00	0.326	7.93	-1.26(3)
8.297	0.69f	29.86s	241.29	0.00	0.080	8.97	-2.73(3)
8.278	0.63f	31.31s	241.29	0.00	0.000	9.03	-3.16(3)
8.220	0.48f	34.86s	241.29	0.00	-0.209	8.66	-4.20(3)
8.116	0.22f	39.86s	241.31	0.00	-0.532	6.82	-5.65(3)
7.960	0.05a	44.86s	241.32	0.00	-0.886	3.29	-7.06(4)
7.758	0.32a	49.86s	241.33	0.00	-1.255	-2.05	-8.46(4)
7.510	0.60a	54.86s	241.34	0.00	-1.629	-9.26	-9.80(4)
7.211	0.86a	59.86s	241.34	0.00	-2.000	-18.33	-11.08(4)
6.862	1.11a	64.86s	241.34	0.00	-2.364	-29.25	-12.28(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained
(1) Angle from Equilibrium to RAzero	> 15.00	deg	26.44 P
(2) Angle from Equilibrium to Flood	> 15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	> 2.82	Ft-deg	9.03 P
(4) Righting Arm at MaxRA	> 0.33	Ft	0.55 P
(5) Absolute Angle at Equilibrium	< 7.00	deg	4.86 P
(6) Angle from Equilibrium to Dk/margin Immersion	> 0.00	deg	2.91 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 5 *****
Mid Voyage, with Icing
***** Damage Case 6: Engine Room Flooded, FO2_FWD.S, FO2_AFT.S *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.226 @ 86.00f, 8.832 @ 6.00f
Trim: Fwd 1.39/80.00, Heel: Stbd 4.99 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			23.91	51.72f	1.81p	7.19	39.3*
Total Weight-------->			239.97	40.65f	0.19p	11.67	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	360.23	40.57f	0.73s	5.95	-8.69
FO2_FWD.S	Flooded	1.025	-5.00	49.98f	11.06s	7.40	-8.69
FO2_AFT.S	Flooded	1.025	-8.30	39.95f	11.28s	7.10	-8.69
ER.C	Flooded	1.025	-106.95	39.76f	0.38s	5.41	-8.69
Total Displacement-->		1.025	239.97	40.75f	0.31s	6.12	

Righting Arms: 0.00 0.01s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.226 @ 86.00f, 8.832 @ 6.00f
Trim: Fwd 1.39/80.00, Heel: Stbd 4.99 deg.
Least freeboard is 0.87 Ft located at 58.66f
Least extra freeboard (to margin line) is 0.62 Ft located at 58.66f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.39/80.00, Heel: Stbd 4.99 deg., VCG = 11.67

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
9.374	239.97	40.75f	6.12	3.57	37.14f	29.93	119.7	3.73

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.65f TCG = 0.19p VCG = 11.67
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.65f TCG = 0.19p VCG = 11.84

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.694	0.99f	5.00s	239.97	0.00	0.000	0.00	3.78(2)
8.657	0.99f	7.62s	239.97	0.00	0.173	0.23	Marg Imm.
8.600	1.00f	10.00s	240.00	0.00	0.329	0.82	2.75(2)
8.450	1.04f	15.00s	239.97	0.00	0.519	3.00	1.57(3)
8.421	1.05f	16.32s	239.97	0.00	0.526	3.69	1.20(3)
8.354	1.04f	20.00s	239.97	0.00	0.477	5.58	0.15(3)
8.346	1.04f	20.53s	239.97	0.00	0.463	5.83	0.00(3)
8.282	0.97f	25.00s	239.97	0.00	0.302	7.58	-1.30(3)
8.212	0.82f	30.00s	239.97	0.00	0.056	8.51	-2.78(3)
8.198	0.78f	31.02s	239.97	0.00	0.000	8.54	-3.08(3)
8.130	0.61f	35.00s	239.97	0.00	-0.232	8.08	-4.24(3)
8.018	0.36f	40.00s	239.99	0.00	-0.556	6.13	-5.68(3)
7.856	0.10f	45.00s	240.00	0.00	-0.911	2.48	-7.09(3)
7.648	0.18a	50.00s	240.01	0.00	-1.282	-3.00	-8.47(4)
7.394	0.44a	55.00s	240.02	0.00	-1.656	-10.34	-9.81(4)
7.090	0.71a	60.00s	240.02	0.00	-2.029	-19.56	-11.08(4)
6.737	0.95a	65.00s	240.02	0.00	-2.394	-30.62	-12.28(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained
(1) Angle from Equilibrium to RAzero	> 15.00	deg	26.03 P
(2) Angle from Equilibrium to Flood	> 15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	> 2.82	Ft-deg	8.54 P
(4) Righting Arm at MaxRA	> 0.33	Ft	0.53 P
(5) Absolute Angle at Equilibrium	< 7.00	deg	5.00 P
(6) Angle from Equilibrium to Dk/margin Immersion	> 0.00	deg	2.62 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 5 *****
Mid Voyage, with Icing
***** Damage Case 7: FO-DAY.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.784 @ 86.00f, 7.192 @ 6.00f
Trim: Fwd 0.59/80.00, Heel: Stbd 2.91 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		216.06	39.43f	0.01p	12.17	
Total Tanks--------->		25.23	53.01f	1.18p	7.22	39.3*
Total Weight-------->		241.29	40.85f	0.13p	11.65	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	248.67	40.80f	0.55s	4.80	-7.14
FO_DAY.S	Flooded	1.025	-2.19	31.51f	11.18s	5.75	-7.14
FO2_AFT.S	Flooded	1.025	-5.17	39.90f	11.13s	5.80	-7.14
Total Displacement-->		1.025	241.30	40.90f	0.23s	4.77	

Righting Arms: 0.00 0.01s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.784 @ 86.00f, 7.192 @ 6.00f
Trim: Fwd 0.59/80.00, Heel: Stbd 2.91 deg.
Least freeboard is 3.52 Ft located at 58.66f
Least extra freeboard (to margin line) is 3.27 Ft located at 58.66f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.59/80.00, Heel: Stbd 2.91 deg., VCG = 11.65

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.422	241.30	40.90f	4.77	4.45	37.03f	27.01	107.5	3.11

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.85f TCG = 0.13p VCG = 11.65
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.85f TCG = 0.13p VCG = 11.81

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.138	0.42f	2.90s	241.29	0.00	0.000	0.00	6.45(2)
7.051	0.46f	7.90s	241.29	0.00	0.268	0.67	9.90(1)
6.844	0.53f	12.90s	241.29	0.00	0.503	2.61	8.92(1)
6.614	0.60f	16.54s	241.29	0.00	0.647	4.71	Marg Imm.
6.510	0.64f	17.90s	241.29	0.00	0.697	5.62	7.93(1)
6.076	0.78f	22.90s	241.29	0.00	0.791	9.38	6.90(1)
5.614	0.92f	27.90s	241.30	0.00	0.710	13.20	5.80(1)
5.444	0.97f	29.68s	241.29	0.00	0.643	14.41	0.00(3)
5.130	1.05f	32.90s	241.29	0.00	0.480	16.23	4.63(1)
4.634	1.15f	37.90s	241.29	0.00	0.154	17.86	3.42(1)
4.425	1.17f	40.00s	241.30	0.00	0.000	18.02	2.91(1)
4.135	1.19f	42.90s	241.29	0.00	-0.225	17.70	2.18(1)
3.636	1.18f	47.90s	241.29	0.00	-0.633	15.57	0.91(1)
3.278	1.14f	51.48s	241.29	0.00	-0.937	12.77	0.00(1)
3.134	1.12f	52.90s	241.29	0.00	-1.061	11.35	-0.37(1)
2.624	1.04f	57.90s	241.29	0.00	-1.500	4.95	-1.65(1)
2.108	0.94f	62.90s	241.29	0.00	-1.944	-3.66	-2.92(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM--46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	37.09 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	48.57 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	18.02 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.79 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	2.90 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	13.64 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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                          ***** Condition 5 *****
                          Mid Voyage, with Icing
          ***** Damage Case 8: FO2_FWD.S, FO2_AFT.S Flooded *****

                       WEIGHT and DISPLACEMENT STATUS
                  Baseline draft: 7.759 @ 86.00f, 7.185 @ 6.00f
                   Trim: Fwd 0.57/80.00,  Heel: Stbd 2.33 deg.
Part-------------------------------Weight(LT)----LCG-----TCG-----VCG-------FSM
  Total Fixed--------->              216.06   39.43f   0.01p  12.17
  Total Tanks--------->               23.91   51.70f   1.83p   7.19      39.3*
  Total Weight-------->              239.97   40.65f   0.19p  11.67
                         SpGr------Displ(LT)----LCB-----TCB-----VCB------RefHt
HULL                    1.025        247.78   40.79f   0.44s   4.78      -7.14
FO2_FWD.S      Flooded  1.025         -2.80   49.93f  10.83s   5.90      -7.14
FO2_AFT.S      Flooded  1.025         -5.00   39.90f  11.12s   5.73      -7.14
  Total Displacement--> 1.025        239.97   40.70f   0.10s   4.75
-------------------------------------------------------------------------------
               Righting Arms:                  0.00    0.00s
Distances in FEET.-----------------------------------------Moments in Ft-LT.
                                    +
    Note:  FSM values marked with an asterisk (*) are formal values which are
           not the same as the true values in the present condition.
                                    +

                                FREEBOARD STATUS
                  Baseline draft: 7.759 @ 86.00f, 7.185 @ 6.00f
                   Trim: Fwd 0.57/80.00,  Heel: Stbd 2.33 deg.
                   Least freeboard is 3.67 Ft located at 58.66f
     Least extra freeboard (to margin line) is 3.42 Ft located at 58.66f

                       HYDROSTATIC PROPERTIES with FLOODING
             Trim: Fwd 0.57/80.00, Heel: Stbd 2.33 deg., VCG = 11.67

   LCF    Displacement   Buoyancy-Ctr.  Weight/          Moment/
  Draft----Weight(LT)----LCB-----VCB-----Inch-----LCF---In trim----GML-----GMT
  7.406       239.97   40.70f   4.75     4.43    36.75f   26.87   107.5    3.00
 Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.
                                Trim is per 80.00Ft
 Draft is from Baseline.                        Formal Free Surface included.

      Note:  GMT includes the formal free surface moment 39.3 Ft-LT
```

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.65f TCG = 0.19p VCG = 11.67
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.65f TCG = 0.19p VCG = 11.84

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
7.135	0.41f	2.33s	239.95	0.00	0.000	0.00	6.59(2)
7.046	0.48f	7.33s	239.97	0.00	0.257	0.64	10.02(1)
6.838	0.58f	12.33s	239.97	0.00	0.482	2.50	9.04(1)
6.571	0.68f	16.43s	239.97	0.00	0.633	4.80	Marg Imm.
6.502	0.71f	17.33s	239.97	0.00	0.663	5.38	8.05(1)
6.060	0.87f	22.33s	239.97	0.00	0.768	8.99	7.03(1)
6.010	0.89f	22.86s	239.97	0.00	0.769	9.40	6.91(1)
5.589	1.03f	27.33s	239.98	0.00	0.705	12.74	5.93(1)
5.361	1.10f	29.68s	239.97	0.00	0.621	14.29	0.00(3)
5.099	1.18f	32.33s	239.97	0.00	0.490	15.77	4.78(1)
4.599	1.28f	37.33s	239.97	0.00	0.172	17.46	3.58(1)
4.361	1.31f	39.71s	239.98	0.00	0.000	17.67	2.99(1)
4.098	1.33f	42.33s	239.97	0.00	-0.200	17.41	2.34(1)
3.597	1.32f	47.33s	239.97	0.00	-0.605	15.41	1.08(1)
3.172	1.29f	51.55s	239.97	0.00	-0.964	12.11	0.00(1)
3.093	1.28f	52.33s	239.97	0.00	-1.032	11.33	-0.20(1)
2.583	1.20f	57.33s	239.97	0.00	-1.471	5.08	-1.48(1)
2.067	1.10f	62.33s	239.97	0.00	-1.915	-3.38	-2.76(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	37.38 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	49.22 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	17.67 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.77 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	2.33 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	14.11 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 5 *****
Mid Voyage, with Icing
***** Damage Case 9: Workshop Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.796 @ 86.00f, 9.446 @ 6.00f
Trim: Aft 2.65/80.00, Heel: Port 0.08 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		216.06	39.43f	0.01p	12.17	
Total Tanks--------->		28.04	51.04f	0.01s	7.00	39.3*
Total Weight-------->		244.10	40.76f	0.00p	11.57	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	305.03	36.31f	0.01p	5.41	-9.64
WORKSHOP.C	Flooded	1.025	-60.94	19.28f	0.01p	5.81	-9.64
Total Displacement-->		1.025	244.09	40.56f	0.01p	5.31	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.796 @ 86.00f, 9.446 @ 6.00f
Trim: Aft 2.65/80.00, Heel: Port 0.08 deg.
Least freeboard is 2.16 Ft located at 0.03f
Least extra freeboard (to margin line) is 1.91 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 2.65/80.00, Heel: Port 0.08 deg., VCG = 11.57

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.311	244.09	40.56f	5.31	3.81	40.29f	23.30	91.6	2.69

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.77f TCG = 0.00p VCG = 11.57
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.77f TCG = 0.00p VCG = 11.74

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
9.640	1.90a	0.08p	244.10	0.00	0.000	0.00	5.97(4)
9.599	1.90a	5.08p	244.10	0.00	0.237	0.59	9.25(1)
9.511	1.90a	9.05p	244.10	0.00	0.432	1.92	Marg Imm.
9.478	1.90a	10.08p	244.10	0.00	0.483	2.39	8.30(1)
9.327	1.96a	15.08p	244.10	0.00	0.682	5.32	7.28(1)
9.255	2.07a	18.55p	244.10	0.00	0.728	7.78	6.51(1)
9.230	2.13a	20.08p	244.10	0.00	0.719	8.89	6.15(1)
9.181	2.28a	23.65p	244.12	0.00	0.641	11.34	-0.00(4)
9.161	2.34a	25.08p	244.10	0.00	0.591	12.22	4.91(1)
9.084	2.56a	30.08p	244.11	0.00	0.353	14.58	3.59(1)
8.981	2.78a	35.08p	244.10	0.00	0.037	15.59	2.20(1)
8.968	2.80a	35.61p	244.10	0.00	0.000	15.60	2.05(1)
8.833	2.99a	40.08p	244.10	0.00	-0.336	14.87	0.79(1)
8.733	3.11a	42.83p	244.10	0.00	-0.556	13.64	0.00(1)
8.641	3.21a	45.08p	244.10	0.00	-0.741	12.18	-0.65(1)
8.411	3.43a	50.08p	244.08	0.00	-1.157	7.44	-2.08(1)
8.145	3.66a	55.08p	244.07	0.00	-1.575	0.61	-3.51(1)
7.834	3.89a	60.08p	244.07	0.00	-1.990	-8.31	-4.91(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	35.52	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	42.74	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	15.60	P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.73	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.08	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	8.96	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 5 *****
Mid Voyage, with Icing
***** Damage Case 10: Steering Gear Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.410 @ 86.00f, 8.818 @ 6.00f
Trim: Aft 2.41/80.00, Heel: Port 0.09 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			28.04	51.05f	0.01s	7.00	39.3*
Total Weight-------->			244.10	40.76f	0.00p	11.57	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	275.17	36.61f	0.02p	5.10	-8.99
LAZARETTE.C	Flooded	1.025	-31.11	5.59f	0.02p	6.79	-8.99
Total Displacement-->		1.025	244.06	40.57f	0.01p	4.89	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.410 @ 86.00f, 8.818 @ 6.00f
Trim: Aft 2.41/80.00, Heel: Port 0.09 deg.
Least freeboard is 2.81 Ft located at 0.03f
Least extra freeboard (to margin line) is 2.56 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 2.41/80.00, Heel: Port 0.09 deg., VCG = 11.57

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.728	244.06	40.57f	4.89	3.86	42.21f	15.88	62.5	2.67

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.77f TCG = 0.00p VCG = 11.57
Free Surface Adjustment: 0.16
Adjusted CG: LCG = 40.77f TCG = 0.00p VCG = 11.74

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.996	1.72a	0.09p	244.11	0.00	0.000	0.00	6.53(4)
8.962	1.73a	5.09p	244.11	0.00	0.235	0.59	9.79(1)
8.862	1.75a	10.09p	244.10	0.00	0.481	2.38	8.83(1)
8.812	1.76a	11.71p	244.10	0.00	0.562	3.22	Marg Imm.
8.672	1.77a	15.09p	244.10	0.00	0.714	5.38	7.83(1)
8.503	1.89a	20.09p	244.10	0.00	0.821	9.25	6.75(1)
8.493	1.90a	20.47p	244.10	0.00	0.821	9.57	6.66(1)
8.401	2.11a	25.09p	244.10	0.00	0.748	13.25	5.54(1)
8.389	2.15a	25.92p	244.10	0.00	0.721	13.86	-0.00(4)
8.324	2.37a	30.09p	244.10	0.00	0.534	16.50	4.24(1)
8.218	2.63a	35.09p	244.10	0.00	0.215	18.42	2.88(1)
8.139	2.77a	37.92p	244.11	0.00	0.000	18.73	2.09(1)
8.068	2.88a	40.09p	244.10	0.00	-0.176	18.54	1.49(1)
7.874	3.12a	45.09p	244.08	0.00	-0.608	16.61	0.07(1)
7.864	3.13a	45.33p	244.08	0.00	-0.630	16.45	-0.00(1)
7.648	3.36a	50.09p	244.07	0.00	-1.061	12.44	-1.36(1)
7.400	3.63a	55.09p	244.10	0.00	-1.519	5.99	-2.78(1)
7.123	3.90a	60.09p	244.09	0.00	-1.974	-2.74	-4.19(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM-46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	37.83 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	45.25 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	18.73 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.82 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.09 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	11.62 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 6 *****
Arrival, with Icing
***** Damage Case 1: Forepeak Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.421 @ 86.00f, 7.095 @ 6.00f
Trim: Fwd 0.33/80.00, Heel: Port 0.06 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		216.06	39.43f	0.01p	12.17	
Total Tanks--------->		20.65	51.18f	0.01s	7.12	39.3*
Total Weight-------->		236.71	40.45f	0.00p	11.73	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	237.36	40.61f	0.01p	4.66	-7.07
FOREPEAK.C	Flooded	1.025	-0.66	85.37f	0.00	5.95	-7.07
Total Displacement-->		1.025	236.70	40.48f	0.01p	4.66	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.421 @ 86.00f, 7.095 @ 6.00f
Trim: Fwd 0.33/80.00, Heel: Port 0.06 deg.
Least freeboard is 4.45 Ft located at 58.66f
Least extra freeboard (to margin line) is 4.20 Ft located at 58.66f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.33/80.00, Heel: Port 0.06 deg., VCG = 11.73

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.220	236.70	40.48f	4.66	4.55	36.62f	25.89	105.0	3.98

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.45f TCG = 0.00p VCG = 11.73
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.45f TCG = 0.00p VCG = 11.89

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.071	0.23f	0.06p	236.70	0.00	0.000	0.00	7.31(2)
7.011	0.26f	5.06p	236.71	0.00	0.346	0.86	10.65(1)
6.831	0.32f	10.06p	236.71	0.00	0.664	3.40	9.72(1)
6.520	0.43f	15.06p	236.71	0.00	0.921	7.39	8.77(1)
6.272	0.51f	18.05p	236.71	0.00	1.052	10.34	Marg Imm.
6.080	0.57f	20.06p	236.71	0.00	1.131	12.54	7.81(1)
5.669	0.71f	24.01p	236.71	0.00	1.203	17.18	7.02(1)
5.559	0.75f	25.06p	236.71	0.00	1.198	18.43	6.80(1)
5.020	0.92f	30.06p	236.71	0.00	1.049	24.05	5.72(1)
4.872	0.97f	31.40p	236.71	0.00	0.981	25.41	0.00(3)
4.464	1.08f	35.06p	236.71	0.00	0.754	28.61	4.58(1)
3.898	1.21f	40.06p	236.71	0.00	0.373	31.47	3.39(1)
3.403	1.27f	44.43p	236.71	0.00	0.000	32.29	2.33(1)
3.334	1.28f	45.06p	236.72	0.00	-0.055	32.28	2.17(1)
2.773	1.30f	50.06p	236.71	0.00	-0.510	30.88	0.93(1)
2.355	1.29f	53.78p	236.73	0.00	-0.861	28.33	0.00(1)
2.211	1.28f	55.06p	236.73	0.00	-0.983	27.15	-0.32(1)
1.641	1.26f	60.06p	236.71	0.00	-1.472	21.02	-1.58(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	44.37	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	53.72	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	32.29	P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.20	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.06	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	17.99	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 6 *****
Arrival, with Icing
***** Damage Case 2: Void 1 Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.130 @ 86.00f, 6.255 @ 6.00f
Trim: Fwd 3.88/80.00, Heel: Port 0.06 deg.

Part			Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			20.65	51.29f	0.01s	7.13	39.3*
Total Weight-------->			236.71	40.46f	0.00p	11.73	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	269.15	44.83f	0.01p	5.12	-5.96
VOID1.C	Flooded	1.025	-32.45	74.28f	0.00p	6.11	-5.96
Total Displacement-->		1.025	236.70	40.79f	0.01p	4.98	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.130 @ 86.00f, 6.255 @ 6.00f
Trim: Fwd 3.88/80.00, Heel: Port 0.06 deg.
Least freeboard is 2.32 Ft located at 76.00f
Least extra freeboard (to margin line) is 2.07 Ft located at 76.00f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 3.88/80.00, Heel: Port 0.06 deg., VCG = 11.73

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.669	236.70	40.79f	4.98	4.11	35.19f	18.36	74.5	3.83

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.45f TCG = 0.00p VCG = 11.73
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.45f TCG = 0.00p VCG = 11.89

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
5.958	2.77f	0.06p	236.70	0.00	0.000	0.00	5.40(2)
5.886	2.81f	5.06p	236.71	0.00	0.334	0.83	10.33(1)
5.672	2.91f	10.06p	236.71	0.00	0.656	3.31	9.41(1)
5.591	2.95f	11.41p	236.71	0.00	0.738	4.26	Marg Imm.
5.319	3.07f	15.06p	236.72	0.00	0.927	7.30	8.47(1)
4.798	3.41f	20.06p	236.71	0.00	1.044	12.28	7.49(1)
4.701	3.47f	20.86p	236.71	0.00	1.046	13.12	7.32(1)
4.229	3.82f	24.56p	236.71	0.00	1.000	16.92	0.00(2)
4.162	3.87f	25.06p	236.71	0.00	0.987	17.42	6.43(1)
3.485	4.35f	30.06p	236.71	0.00	0.790	21.93	5.31(1)
2.814	4.75f	35.06p	236.71	0.00	0.501	25.20	4.15(1)
2.175	5.04f	40.06p	236.73	0.00	0.149	26.85	2.95(1)
1.933	5.13f	41.99p	236.71	0.00	0.000	27.00	2.48(1)
1.551	5.26f	45.06p	236.72	0.00	-0.252	26.61	1.71(1)
0.931	5.42f	50.06p	236.72	0.00	-0.690	24.28	0.46(1)
0.708	5.47f	51.86p	236.71	0.00	-0.854	22.89	0.00(1)
0.316	5.54f	55.06p	236.71	0.00	-1.150	19.68	-0.81(1)
-0.286	5.62f	60.06p	236.71	0.00	-1.622	12.76	-2.09(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM---46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	41.93 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	51.80 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	27.00 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.05 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.06 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	11.35 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 6 *****
Arrival, with Icing
***** Damage Case 3: Tank Void Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 9.714 @ 86.00f, 6.744 @ 6.00f
Trim: Fwd 2.97/80.00, Heel: Port 1.83 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		216.06	39.43f	0.01p	12.17	
Total Tanks--------->		14.42	46.56f	4.07p	6.54	39.3*
Total Weight-------->		230.48	39.88f	0.26p	11.82	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	275.85	43.52f	0.32p	5.14	-6.51
FO1.S	Flooded	1.025	-3.25	61.89f	8.98s	6.51	-6.51
TANKVOID.C	Flooded	1.025	-42.12	60.72f	0.15p	4.97	-6.51
Total Displacement-->		1.025	230.48	40.12f	0.48p	5.15	

Righting Arms: 0.00 0.00p
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 9.714 @ 86.00f, 6.744 @ 6.00f
Trim: Fwd 2.97/80.00, Heel: Port 1.83 deg.
Least freeboard is 2.38 Ft located at 75.97f
Least extra freeboard (to margin line) is 2.13 Ft located at 75.97f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 2.97/80.00, Heel: Port 1.83 deg., VCG = 11.82

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.816	230.48	40.12f	5.15	4.04	34.87f	23.62	98.4	3.71

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.87f TCG = 0.26p VCG = 11.82
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 39.87f TCG = 0.26p VCG = 11.99

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
6.514	2.13f	1.83p	230.48	0.00	0.000	0.00	5.27(2)
6.423	2.11f	6.83p	230.48	0.00	0.324	0.81	9.82(1)
6.211	2.14f	11.83p	230.48	0.00	0.635	3.21	8.90(1)
6.169	2.14f	12.57p	230.47	0.00	0.677	3.69	Marg Imm.
5.873	2.20f	16.83p	230.48	0.00	0.884	7.04	7.96(1)
5.444	2.37f	21.47p	230.48	0.00	0.975	11.39	7.04(1)
5.407	2.39f	21.83p	230.48	0.00	0.974	11.74	6.96(1)
4.889	2.63f	26.83p	230.48	0.00	0.880	16.46	5.88(1)
4.837	2.65f	27.34p	230.48	0.00	0.863	16.90	-0.00(2)
4.376	2.81f	31.83p	230.48	0.00	0.661	20.36	4.74(1)
3.877	2.89f	36.83p	230.48	0.00	0.354	22.94	3.56(1)
3.399	2.90f	41.72p	230.50	0.00	0.000	23.82	2.37(1)
3.387	2.90f	41.83p	230.48	0.00	-0.009	23.82	2.34(1)
2.896	2.85f	46.83p	230.48	0.00	-0.413	22.78	1.10(1)
2.464	2.77f	51.20p	230.48	0.00	-0.791	20.16	0.00(1)
2.401	2.76f	51.83p	230.48	0.00	-0.847	19.64	-0.16(1)
1.902	2.63f	56.83p	230.48	0.00	-1.299	14.29	-1.42(1)
1.399	2.48f	61.83p	230.49	0.00	-1.757	6.65	-2.68(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM----------46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	39.88 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	49.37 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	23.82 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.97 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	1.83 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	10.74 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 6 *****
Arrival, with Icing
***** Damage Case 4: Engine Room Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 9.627 @ 86.00f, 8.625 @ 6.00f
Trim: Fwd 1.00/80.00, Heel: Port 0.05 deg.

Part			Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			20.65	51.20f	0.01s	7.12	39.3*
Total Weight-------->			236.71	40.46f	0.00p	11.73	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	338.65	40.29f	0.01p	5.70	-8.55
ER.C	Flooded	1.025	-101.95	39.73f	0.00p	5.21	-8.55
Total Displacement-->		1.025	236.70	40.53f	0.01p	5.92	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 9.627 @ 86.00f, 8.625 @ 6.00f
Trim: Fwd 1.00/80.00, Heel: Port 0.05 deg.
Least freeboard is 2.44 Ft located at 67.76f
Least extra freeboard (to margin line) is 2.19 Ft located at 67.76f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.00/80.00, Heel: Port 0.05 deg., VCG = 11.73

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
9.013	236.70	40.53f	5.92	3.70	36.99f	29.18	118.4	4.58

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.45f TCG = 0.00p VCG = 11.73
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.45f TCG = 0.00p VCG = 11.89

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
8.550	0.72f	0.05p	236.70	0.00	0.000	0.00	5.26(2)
8.512	0.71f	5.05p	236.71	0.00	0.400	1.00	4.29(2)
8.392	0.69f	9.80p	236.71	0.00	0.778	3.79	Marg Imm.
8.384	0.69f	10.05p	236.71	0.00	0.799	4.00	3.27(3)
8.173	0.70f	15.05p	236.71	0.00	1.109	8.80	2.04(3)
8.088	0.71f	17.37p	236.71	0.00	1.138	11.42	1.43(3)
7.999	0.71f	20.05p	236.71	0.00	1.101	14.44	0.70(3)
7.921	0.70f	22.57p	236.73	0.00	1.022	17.12	-0.00(3)
7.841	0.68f	25.05p	236.71	0.00	0.915	19.52	-0.70(3)
7.676	0.60f	30.05p	236.71	0.00	0.637	23.44	-2.12(3)
7.492	0.47f	35.05p	236.71	0.00	0.305	25.82	-3.53(3)
7.314	0.33f	39.16p	236.71	0.00	0.000	26.45	-4.67(3)
7.272	0.29f	40.05p	236.71	0.00	-0.070	26.42	-4.91(3)
7.018	0.09f	45.05p	236.72	0.00	-0.471	25.08	-6.27(3)
6.732	0.13a	50.05p	236.72	0.00	-0.887	21.70	-7.60(4)
6.410	0.35a	55.05p	236.73	0.00	-1.311	16.21	-8.89(4)
6.049	0.57a	60.05p	236.74	0.00	-1.735	8.59	-10.13(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	39.10 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	26.45 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.14 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.05 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	9.74 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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                          ***** Condition 6 *****
                            Arrival, with Icing
    ***** Damage Case 5: Engine Room Flooded, FO_DAY.S, FO2_AFT.S *****

                      WEIGHT and DISPLACEMENT STATUS
                 Baseline draft: 9.844 @ 86.00f, 8.851 @ 6.00f
                  Trim: Fwd 0.99/80.00,  Heel: Stbd 5.97 deg.
Part-----------------------------Weight(LT)----LCG-----TCG-----VCG-------FSM
  Total Fixed--------->              216.06   39.43f   0.01p  12.17
  Total Tanks--------->               19.37   52.11f   0.63p   7.36      39.3*
  Total Weight-------->              235.43   40.47f   0.06p  11.77
                         SpGr------Displ(LT)----LCB-----TCB-----VCB------RefHt
HULL                    1.025        352.26   40.19f   0.89s   5.88      -8.73
FO_DAY.S       Flooded  1.025         -3.51   31.51f  11.32s   7.04      -8.73
FO2_AFT.S      Flooded  1.025         -8.37   39.94f  11.29s   7.12      -8.73
ER.C           Flooded  1.025       -104.95   39.72f   0.46s   5.35      -8.73
  Total Displacement--> 1.025        235.43   40.54f   0.55s   6.06
--------------------------------------------------------------------------------
               Righting Arms:                  0.00     0.01s
Distances in FEET.-----------------------------------------Moments in Ft-LT.
                                    +
    Note:  FSM values marked with an asterisk (*) are formal values which are
           not the same as the true values in the present condition.
                                    +

                              FREEBOARD STATUS
                 Baseline draft: 9.844 @ 86.00f, 8.851 @ 6.00f
                  Trim: Fwd 0.99/80.00,  Heel: Stbd 5.97 deg.
                 Least freeboard is 0.89 Ft located at 58.66f
     Least extra freeboard (to margin line) is 0.64 Ft located at 58.66f

                       HYDROSTATIC PROPERTIES with FLOODING
              Trim: Fwd 0.99/80.00, Heel: Stbd 5.97 deg., VCG = 11.77

   LCF    Displacement   Buoyancy-Ctr.  Weight/          Moment/
  Draft----Weight(LT)----LCB-----VCB-----Inch-----LCF---In trim----GML-----GMT
  9.239       235.43   40.54f   6.06     3.58   37.24f   29.56   120.5    3.86
 Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.
                                Trim is per 80.00Ft
 Draft is from Baseline.                          Formal Free Surface included.

      Note:  GMT includes the formal free surface moment 39.3 Ft-LT
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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.47f TCG = 0.06p VCG = 11.77
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.47f TCG = 0.06p VCG = 11.94

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
8.729	0.71f	5.97s	235.46	0.00	0.000	0.00	3.88(2)
8.686	0.69f	8.67s	235.43	0.00	0.184	0.25	Marg Imm.
8.627	0.68f	10.97s	235.43	0.00	0.340	0.85	2.77(3)
8.492	0.69f	15.97s	235.43	0.00	0.506	3.04	1.46(3)
8.479	0.69f	16.59s	235.43	0.00	0.508	3.35	1.29(3)
8.401	0.66f	20.97s	235.43	0.00	0.435	5.48	0.05(3)
8.399	0.65f	21.14s	235.43	0.00	0.430	5.56	0.00(3)
8.323	0.56f	25.97s	235.43	0.00	0.235	7.22	-1.40(3)
8.251	0.43f	30.39s	235.48	0.00	-0.001	7.76	-2.70(3)
8.239	0.41f	30.97s	235.43	0.00	-0.034	7.75	-2.87(3)
8.135	0.20f	35.97s	235.43	0.00	-0.342	6.83	-4.32(3)
7.998	0.04a	40.97s	235.44	0.00	-0.684	4.28	-5.75(4)
7.813	0.30a	45.97s	235.45	0.00	-1.053	-0.06	-7.17(4)
7.585	0.56a	50.97s	235.46	0.00	-1.432	-6.27	-8.55(4)
7.311	0.83a	55.97s	235.46	0.00	-1.812	-14.38	-9.87(4)
6.991	1.08a	60.97s	235.47	0.00	-2.189	-24.38	-11.12(4)
6.621	1.32a	65.97s	235.47	0.00	-2.556	-36.25	-12.30(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

+

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained
(1) Angle from Equilibrium to RAzero	> 15.00	deg	24.42 P
(2) Angle from Equilibrium to Flood	> 15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	> 2.82	Ft-deg	7.76 P
(4) Righting Arm at MaxRA	> 0.33	Ft	0.51 P
(5) Absolute Angle at Equilibrium	< 7.00	deg	5.97 P
(6) Angle from Equilibrium to Dk/margin Immersion	> 0.00	deg	2.69 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 6 *****
Arrival, with Icing
***** Damage Case 6: Engine Room Flooded, FO2_FWD.S, FO2_AFT.S *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 9.969 @ 86.00f, 8.792 @ 6.00f
Trim: Fwd 1.17/80.00, Heel: Stbd 6.31 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			18.35	51.86f	1.26p	7.46	39.3*
Total Weight-------->			234.41	40.40f	0.10p	11.80	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	353.20	40.39f	0.94s	5.90	-8.65
FO2_FWD.S	Flooded	1.025	-5.10	49.98f	11.07s	7.46	-8.65
FO2_AFT.S	Flooded	1.025	-8.49	39.95f	11.29s	7.17	-8.65
ER.C	Flooded	1.025	-105.20	39.74f	0.49s	5.36	-8.65
Total Displacement-->		1.025	234.41	40.49f	0.55s	6.06	

Righting Arms: 0.00 0.02s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 9.969 @ 86.00f, 8.792 @ 6.00f
Trim: Fwd 1.17/80.00, Heel: Stbd 6.31 deg.
Least freeboard is 0.75 Ft located at 58.66f
Least extra freeboard (to margin line) is 0.50 Ft located at 58.66f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 1.17/80.00, Heel: Stbd 6.31 deg., VCG = 11.80

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
9.249	234.41	40.49f	6.06	3.56	37.02f	29.56	121.1	3.71

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.40f TCG = 0.11p VCG = 11.80
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.40f TCG = 0.11p VCG = 11.97

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
8.651	0.84f	6.31s	234.41	0.00	0.000	0.00	3.73(2)
8.613	0.84f	8.39s	234.41	0.00	0.136	0.14	Marg Imm.
8.530	0.85f	11.31s	234.41	0.00	0.323	0.81	2.67(3)
8.380	0.88f	16.31s	234.41	0.00	0.469	2.87	1.35(3)
8.282	0.86f	21.09s	234.41	0.00	0.395	5.02	0.00(3)
8.279	0.86f	21.31s	234.41	0.00	0.388	5.10	-0.06(3)
8.188	0.77f	26.31s	234.41	0.00	0.184	6.59	-1.51(3)
8.124	0.68f	29.84s	234.41	0.00	0.000	6.92	-2.54(3)
8.094	0.63f	31.31s	234.41	0.00	-0.084	6.86	-2.97(3)
7.981	0.42f	36.31s	234.41	0.00	-0.392	5.69	-4.42(3)
7.832	0.18f	41.31s	234.43	0.00	-0.735	2.88	-5.84(3)
7.636	0.07a	46.31s	234.44	0.00	-1.105	-1.70	-7.23(4)
7.398	0.33a	51.31s	234.44	0.00	-1.484	-8.17	-8.60(4)
7.117	0.59a	56.31s	234.45	0.00	-1.865	-16.55	-9.91(4)
6.787	0.84a	61.31s	234.45	0.00	-2.241	-26.81	-11.16(4)
6.409	1.08a	66.31s	234.45	0.00	-2.608	-38.94	-12.33(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2)	FO 1 Vent	TIGHT	67.88f 11.00	14.67
(3)	FO 2 Vent	TIGHT	36.25f 13.50	14.67
(4)	FO Day Vent	TIGHT	29.33f 13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------		Min/Max		Attained
(1) Angle from Equilibrium to RAzero	>	15.00	deg	23.53 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	6.92 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.47 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	6.31 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	2.08 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 6 *****
Arrival, with Icing
***** Damage Case 7: FO-DAY.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.470 @ 86.00f, 7.215 @ 6.00f
Trim: Fwd 0.25/80.00, Heel: Stbd 4.16 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		216.06	39.43f	0.01p	12.17	
Total Tanks--------->		19.37	52.09f	0.64p	7.35	39.3*
Total Weight-------->		235.43	40.47f	0.06p	11.77	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	243.06	40.40f	0.80s	4.75	-7.18
FO_DAY.S	Flooded	1.025	-2.28	31.51f	11.20s	5.84	-7.18
FO2_AFT.S	Flooded	1.025	-5.34	39.89f	11.15s	5.87	-7.18
Total Displacement-->		1.025	235.44	40.49f	0.46s	4.71	

Righting Arms: 0.00 0.01s
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.470 @ 86.00f, 7.215 @ 6.00f
Trim: Fwd 0.25/80.00, Heel: Stbd 4.16 deg.
Least freeboard is 3.40 Ft located at 52.60f
Least extra freeboard (to margin line) is 3.15 Ft located at 52.60f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.25/80.00, Heel: Stbd 4.16 deg., VCG = 11.77

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.314	235.44	40.49f	4.71	4.43	36.94f	26.70	108.9	3.10

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.47f TCG = 0.06p VCG = 11.77
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.47f TCG = 0.06p VCG = 11.94

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
7.177	0.18f	4.15s	235.43	0.00	0.000	0.00	6.36(3)
7.061	0.23f	9.15s	235.43	0.00	0.261	0.65	9.74(1)
6.820	0.31f	14.15s	235.43	0.00	0.478	2.52	8.76(1)
6.606	0.38f	17.27s	235.43	0.00	0.594	4.20	Marg Imm.
6.452	0.43f	19.15s	235.43	0.00	0.658	5.38	7.76(1)
6.093	0.55f	23.19s	235.43	0.00	0.720	8.18	6.93(1)
6.005	0.57f	24.15s	235.43	0.00	0.716	8.87	6.72(1)
5.534	0.71f	29.15s	235.43	0.00	0.598	12.16	5.61(1)
5.436	0.73f	30.16s	235.43	0.00	0.555	12.74	0.00(3)
5.039	0.83f	34.15s	235.43	0.00	0.336	14.55	4.45(1)
4.550	0.91f	38.98s	235.48	0.00	0.000	15.40	3.28(1)
4.530	0.92f	39.15s	235.43	0.00	-0.013	15.40	3.23(1)
4.018	0.96f	44.15s	235.43	0.00	-0.410	14.36	1.99(1)
3.506	0.94f	49.15s	235.43	0.00	-0.833	11.26	0.72(1)
3.213	0.92f	51.99s	235.43	0.00	-1.081	8.54	0.00(1)
2.989	0.90f	54.15s	235.43	0.00	-1.272	6.00	-0.55(1)
2.468	0.82f	59.15s	235.43	0.00	-1.719	-1.47	-1.83(1)
1.942	0.72f	64.15s	235.43	0.00	-2.166	-11.18	-3.10(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	34.82 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	47.84 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	15.40 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.72 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	4.15 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	13.11 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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                          ***** Condition 6 *****
                            Arrival, with Icing
          ***** Damage Case 8: FO2_FWD.S, FO2_AFT.S Flooded *****

                       WEIGHT and DISPLACEMENT STATUS
                  Baseline draft: 7.519 @ 86.00f, 7.173 @ 6.00f
                   Trim: Fwd 0.35/80.00,  Heel: Stbd 3.85 deg.
Part-------------------------------Weight(LT)----LCG-----TCG-----VCG-------FSM
  Total Fixed--------->              216.06   39.43f   0.01p  12.17
  Total Tanks--------->               18.35   51.83f   1.27p   7.46      39.3*
  Total Weight-------->              234.41   40.40f   0.10p  11.80
                         SpGr------Displ(LT)----LCB-----TCB-----VCB------RefHt
HULL                    1.025        242.59   40.53f   0.74s   4.74      -7.13
FO2_FWD.S      Flooded  1.025         -2.93   49.93f  10.85s   6.00      -7.13
FO2_AFT.S      Flooded  1.025         -5.25   39.90f  11.14s   5.83      -7.13
  Total Displacement--> 1.025        234.41   40.43f   0.38s   4.70
--------------------------------------------------------------------------------
               Righting Arms:                  0.00     0.01s
Distances in FEET.-----------------------------------------Moments in Ft-LT.
                                    +
    Note:  FSM values marked with an asterisk (*) are formal values which are
           not the same as the true values in the present condition.
                                    +

                                FREEBOARD STATUS
                  Baseline draft: 7.519 @ 86.00f, 7.173 @ 6.00f
                   Trim: Fwd 0.35/80.00,  Heel: Stbd 3.85 deg.
                   Least freeboard is 3.46 Ft located at 52.60f
     Least extra freeboard (to margin line) is 3.21 Ft located at 52.60f

                       HYDROSTATIC PROPERTIES with FLOODING
             Trim: Fwd 0.35/80.00, Heel: Stbd 3.85 deg., VCG = 11.80

   LCF    Displacement   Buoyancy-Ctr.  Weight/          Moment/
  Draft----Weight(LT)----LCB-----VCB-----Inch-----LCF---In trim----GML-----GMT
  7.306       234.41   40.43f   4.70     4.41   36.72f   26.57   108.8    2.96
 Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.
                                Trim is per 80.00Ft
 Draft is from Baseline.                        Formal Free Surface included.

      Note:  GMT includes the formal free surface moment 39.3 Ft-LT
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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.40f TCG = 0.11p VCG = 11.80
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.40f TCG = 0.11p VCG = 11.97

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.131	0.25f	3.85s	234.41	0.00	0.000	0.00	6.44(3)
7.005	0.33f	8.85s	234.41	0.00	0.248	0.62	9.81(1)
6.755	0.44f	13.85s	234.40	0.00	0.451	2.39	8.83(1)
6.525	0.53f	17.08s	234.41	0.00	0.560	4.03	Marg Imm.
6.377	0.59f	18.85s	234.41	0.00	0.615	5.07	7.83(1)
5.989	0.74f	23.06s	234.41	0.00	0.678	7.81	6.97(1)
5.913	0.76f	23.85s	234.41	0.00	0.676	8.34	6.80(1)
5.429	0.92f	28.85s	234.41	0.00	0.568	11.45	5.70(1)
5.299	0.95f	30.15s	234.41	0.00	0.513	12.16	0.00(3)
4.924	1.05f	33.85s	234.41	0.00	0.313	13.71	4.53(1)
4.452	1.14f	38.43s	234.41	0.00	0.000	14.46	3.43(1)
4.409	1.15f	38.85s	234.42	0.00	-0.031	14.45	3.33(1)
3.893	1.19f	43.85s	234.41	0.00	-0.423	13.35	2.09(1)
3.377	1.19f	48.85s	234.41	0.00	-0.842	10.20	0.83(1)
3.040	1.16f	52.10s	234.41	0.00	-1.125	7.00	0.00(1)
2.859	1.14f	53.85s	234.41	0.00	-1.279	4.90	-0.44(1)
2.336	1.06f	58.85s	234.41	0.00	-1.725	-2.61	-1.72(1)
1.810	0.97f	63.85s	234.41	0.00	-2.172	-12.35	-2.99(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	34.58	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	48.25	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	14.46	P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.68	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	3.85	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	13.23	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 6 *****
Arrival, with Icing
***** Damage Case 9: Workshop Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.469 @ 86.00f, 9.406 @ 6.00f
Trim: Aft 2.94/80.00, Heel: Port 0.09 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			20.65	51.07f	0.01s	7.12	39.3*
Total Weight-------->			236.71	40.45f	0.00p	11.73	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	296.74	35.97f	0.01p	5.34	-9.62
WORKSHOP.C	Flooded	1.025	-60.05	19.27f	0.02p	5.77	-9.62
Total Displacement-->		1.025	236.68	40.21f	0.01p	5.23	
Righting Arms:				0.00	0.00		

Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.469 @ 86.00f, 9.406 @ 6.00f
Trim: Aft 2.94/80.00, Heel: Port 0.09 deg.
Least freeboard is 2.18 Ft located at 0.03f
Least extra freeboard (to margin line) is 1.93 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 2.94/80.00, Heel: Port 0.09 deg., VCG = 11.73

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.153	236.68	40.21f	5.23	3.79	40.13f	23.05	93.5	2.65

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.45f TCG = 0.00p VCG = 11.73
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.45f TCG = 0.00p VCG = 11.89

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
9.621	2.10a	0.09p	236.71	0.00	0.000	0.00	6.09(4)
9.580	2.10a	5.09p	236.71	0.00	0.234	0.58	9.38(1)
9.488	2.10a	9.16p	236.71	0.00	0.431	1.94	Marg Imm.
9.458	2.10a	10.09p	236.71	0.00	0.477	2.36	8.43(1)
9.296	2.15a	15.09p	236.71	0.00	0.674	5.24	7.41(1)
9.204	2.26a	18.84p	236.74	0.00	0.725	7.89	6.59(1)
9.178	2.30a	20.09p	236.71	0.00	0.720	8.80	6.30(1)
9.105	2.47a	24.20p	236.73	0.00	0.631	11.61	-0.00(4)
9.089	2.51a	25.09p	236.71	0.00	0.601	12.16	5.07(1)
8.993	2.72a	30.09p	236.71	0.00	0.364	14.57	3.77(1)
8.868	2.94a	35.09p	236.71	0.00	0.042	15.62	2.40(1)
8.852	2.96a	35.66p	236.71	0.00	0.000	15.63	2.24(1)
8.696	3.14a	40.09p	236.71	0.00	-0.343	14.89	1.00(1)
8.548	3.28a	43.62p	236.71	0.00	-0.638	13.16	0.00(1)
8.479	3.33a	45.09p	236.71	0.00	-0.763	12.14	-0.42(1)
8.219	3.53a	50.09p	236.70	0.00	-1.197	7.24	-1.83(1)
7.927	3.75a	55.09p	236.70	0.00	-1.632	0.16	-3.25(1)
7.596	3.96a	60.09p	236.71	0.00	-2.063	-9.08	-4.64(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	35.57	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	43.53	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	15.63	P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.72	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.09	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	9.08	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 6 *****
Arrival, with Icing
***** Damage Case 10: Steering Gear Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.061 @ 86.00f, 8.815 @ 6.00f
Trim: Aft 2.75/80.00, Heel: Port 0.09 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			216.06	39.43f	0.01p	12.17	
Total Tanks--------->			20.65	51.08f	0.01s	7.12	39.3*
Total Weight-------->			236.71	40.45f	0.00p	11.73	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	267.82	36.19f	0.02p	5.04	-9.02
LAZARETTE.C	Flooded	1.025	-31.11	5.57f	0.02p	6.79	-9.02
Total Displacement-->		1.025	236.71	40.21f	0.02p	4.81	

Righting Arms: 0.00 0.00
Distances in FEET. Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.061 @ 86.00f, 8.815 @ 6.00f
Trim: Aft 2.75/80.00, Heel: Port 0.09 deg.
Least freeboard is 2.78 Ft located at 0.03f
Least extra freeboard (to margin line) is 2.53 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 2.75/80.00, Heel: Port 0.09 deg., VCG = 11.73

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.574	236.71	40.21f	4.81	3.84	42.06f	15.66	63.5	2.64

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 40.45f TCG = 0.00p VCG = 11.73
Free Surface Adjustment: 0.17
Adjusted CG: LCG = 40.45f TCG = 0.00p VCG = 11.89

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
9.017	1.97a	0.09p	236.72	0.00	0.000	0.00	6.63(4)
8.983	1.98a	5.09p	236.72	0.00	0.233	0.58	9.91(1)
8.882	2.00a	10.09p	236.71	0.00	0.476	2.35	8.95(1)
8.830	2.00a	11.72p	236.70	0.00	0.555	3.19	Marg Imm.
8.685	2.01a	15.09p	236.73	0.00	0.701	5.31	7.95(1)
8.493	2.10a	20.09p	236.71	0.00	0.813	9.13	6.87(1)
8.473	2.13a	20.79p	236.71	0.00	0.814	9.70	6.71(1)
8.371	2.31a	25.09p	236.71	0.00	0.750	13.11	5.68(1)
8.346	2.37a	26.40p	236.71	0.00	0.706	14.06	-0.00(4)
8.272	2.56a	30.09p	236.71	0.00	0.537	16.35	4.40(1)
8.142	2.81a	35.09p	236.70	0.00	0.211	18.27	3.06(1)
8.056	2.95a	37.82p	236.72	0.00	0.000	18.56	2.31(1)
7.972	3.06a	40.09p	236.71	0.00	-0.189	18.35	1.68(1)
7.756	3.29a	45.09p	236.69	0.00	-0.634	16.32	0.28(1)
7.710	3.33a	46.08p	236.70	0.00	-0.726	15.64	-0.00(1)
7.502	3.51a	50.09p	236.69	0.00	-1.103	11.98	-1.13(1)
7.227	3.75a	55.09p	236.69	0.00	-1.578	5.29	-2.54(1)
6.926	4.01a	60.09p	236.70	0.00	-2.048	-3.78	-3.94(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	37.73 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	46.00 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	18.56 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.81 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.09 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	11.63 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 7 *****
Max Draft
***** Damage Case 1: Forepeak Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.928 @ 86.00f, 7.809 @ 6.00f
Trim: Fwd 0.12/80.00, Heel: zero

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		220.05	37.87f	0.01p	12.24	
Total Tanks--------->		51.68	47.55f	0.06s	7.77	39.3*
Total Weight-------->		271.73	39.71f	0.00	11.39	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	272.55	39.86f	0.00	5.03	-7.80
FOREPEAK.C	Flooded	1.025	-0.82	85.43f	0.00	6.28	-7.80
Total Displacement-->		1.025	271.73	39.72f	0.00	5.03	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.928 @ 86.00f, 7.809 @ 6.00f
Trim: Fwd 0.12/80.00, Heel: zero
Least freeboard is 3.88 Ft located at 52.60f
Least extra freeboard (to margin line) is 3.63 Ft located at 52.60f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.12/80.00, No Heel, VCG = 11.39

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.854	271.73	39.72f	5.03	4.64	36.53f	26.96	95.3	3.77

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.71f TCG = 0.00 VCG = 11.39
Free Surface Adjustment: 0.14
Adjusted CG: LCG = 39.71f TCG = 0.00 VCG = 11.53

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.799	0.09f	0.00	271.73	0.00	0.000	0.00	6.77(2)
7.754	0.09f	5.00s	271.74	0.00	0.328	0.82	10.01(1)
7.611	0.11f	10.00s	271.73	0.00	0.649	3.27	9.07(1)
7.346	0.17f	15.00s	271.73	0.00	0.940	7.25	8.10(1)
7.321	0.17f	15.37s	271.73	0.00	0.960	7.60	Marg Imm.
6.975	0.25f	20.00s	271.74	0.00	1.140	12.50	7.11(1)
6.836	0.28f	21.87s	271.73	0.00	1.155	14.65	6.71(1)
6.605	0.32f	25.00s	271.73	0.00	1.117	18.23	6.02(1)
6.381	0.36f	28.02s	271.77	0.00	1.023	21.46	-0.00(3)
6.229	0.39f	30.00s	271.74	0.00	0.935	23.40	4.83(1)
5.831	0.44f	35.00s	271.73	0.00	0.640	27.38	3.59(1)
5.420	0.45f	40.00s	271.73	0.00	0.278	29.70	2.32(1)
5.124	0.42f	43.52s	271.73	0.00	0.000	30.20	1.40(1)
5.000	0.41f	45.00s	271.73	0.00	-0.121	30.11	1.02(1)
4.667	0.35f	48.86s	271.73	0.00	-0.445	29.02	0.00(1)
4.567	0.33f	50.00s	271.73	0.00	-0.543	28.46	-0.30(1)
4.111	0.25f	55.00s	271.74	0.00	-0.984	24.64	-1.62(1)
3.627	0.17f	60.00s	271.74	0.00	-1.438	18.59	-2.94(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	43.52 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	48.86 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	30.20 P
(4) Righting Arm at MaxRA	>	0.33	Ft	1.15 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.00 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	15.37 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 7 *****
Max Draft
***** Damage Case 2: Void 1 Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.821 @ 86.00f, 6.953 @ 6.00f
Trim: Fwd 3.87/80.00, Heel: zero

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		220.05	37.87f	0.01p	12.24	
Total Tanks--------->		51.68	47.61f	0.06s	7.77	39.3*
Total Weight-------->		271.73	39.72f	0.00	11.39	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	308.26	44.07f	0.00	5.51	-6.66
VOID1.C	Flooded	1.025	-36.53	74.33f	0.00	6.54	-6.66
Total Displacement-->		1.025	271.73	40.01f	0.00	5.37	

Righting Arms: 0.00a 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.821 @ 86.00f, 6.953 @ 6.00f
Trim: Fwd 3.87/80.00, Heel: zero
Least freeboard is 1.64 Ft located at 76.00f
Least extra freeboard (to margin line) is 1.39 Ft located at 76.00f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 3.87/80.00, No Heel, VCG = 11.39

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
8.330	271.73	40.01f	5.37	4.28	34.47f	20.62	72.9	3.84

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.71f TCG = 0.00 VCG = 11.39
Free Surface Adjustment: 0.14
Adjusted CG: LCG = 39.71f TCG = 0.00 VCG = 11.53

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
6.656	2.77f	0.00	271.73	0.00	0.000	0.00	4.72(2)
6.594	2.79f	5.00s	271.73	0.00	0.335	0.84	9.64(1)
6.487	2.82f	8.31s	271.73	0.00	0.554	2.31	Marg Imm.
6.412	2.85f	10.00s	271.73	0.00	0.665	3.34	8.72(1)
6.078	3.04f	15.00s	271.77	0.00	0.912	7.30	7.75(1)
5.691	3.34f	19.08s	271.73	0.00	0.973	11.19	6.90(1)
5.595	3.42f	20.00s	271.74	0.00	0.970	12.09	6.70(1)
5.452	3.54f	21.35s	271.73	0.00	0.955	13.38	0.00(2)
5.058	3.85f	25.00s	271.74	0.00	0.865	16.71	5.56(1)
4.528	4.22f	30.00s	271.73	0.00	0.655	20.55	4.36(1)
4.027	4.49f	35.00s	271.76	0.00	0.377	23.16	3.11(1)
3.530	4.69f	40.00s	271.75	0.00	0.044	24.23	1.81(1)
3.465	4.72f	40.62s	271.69	0.00	0.000	24.25	1.65(1)
3.015	4.86f	45.00s	271.74	0.00	-0.334	23.53	0.49(1)
2.819	4.92f	46.85s	271.74	0.00	-0.483	22.77	0.00(1)
2.480	5.01f	50.00s	271.74	0.00	-0.743	20.84	-0.84(1)
1.927	5.14f	55.00s	271.74	0.00	-1.172	16.06	-2.18(1)
1.360	5.24f	60.00s	271.74	0.00	-1.609	9.11	-3.50(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM--46 CFR 171.080-Passenger Vessels	Min/Max			Attained
(1) Angle from Equilibrium to RAzero	>	15.00	deg	40.62 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	46.85 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	24.25 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.97 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.00 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	8.31 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 7 *****
Max Draft
***** Damage Case 3: Tank Void Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.437 @ 86.00f, 7.456 @ 6.00f
Trim: Fwd 2.98/80.00, Heel: Port 1.10 deg.

Part		SpGr	Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->			220.05	37.87f	0.01p	12.24	
Total Tanks--------->			45.45	45.60f	1.23p	7.67	39.3*
Total Weight-------->			265.50	39.19f	0.22p	11.46	
		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	316.53	42.86f	0.18p	5.55	-7.23
FO1.S	Flooded	1.025	-4.17	61.96f	9.11s	7.04	-7.23
TANKVOID.C	Flooded	1.025	-46.89	60.67f	0.08p	5.39	-7.23
Total Displacement-->		1.025	265.48	39.41f	0.34p	5.55	

Righting Arms: 0.00 0.00p
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.437 @ 86.00f, 7.456 @ 6.00f
Trim: Fwd 2.98/80.00, Heel: Port 1.10 deg.
Least freeboard is 1.76 Ft located at 75.97f
Least extra freeboard (to margin line) is 1.51 Ft located at 75.97f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 2.98/80.00, Heel: Port 1.10 deg., VCG = 11.46

LCF	Displacement	Buoyancy-Ctr.		Weight/		Moment/		
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
8.525	265.48	39.41f	5.55	4.17	34.70f	25.51	92.3	3.66

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.19f TCG = 0.22p VCG = 11.46
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 39.19f TCG = 0.22p VCG = 11.60

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
7.227	2.13f	1.10p	265.50	0.00	0.000	0.00	4.69(2)
7.174	2.08f	6.10p	265.50	0.00	0.317	0.79	9.24(1)
7.084	2.05f	9.42p	265.50	0.00	0.525	2.19	Marg Imm.
7.020	2.04f	11.10p	265.50	0.00	0.630	3.16	8.32(1)
6.735	2.10f	16.10p	265.50	0.00	0.865	6.92	7.35(1)
6.488	2.22f	19.42p	265.47	0.00	0.907	9.89	6.65(1)
6.361	2.28f	21.10p	265.50	0.00	0.896	11.40	6.28(1)
6.153	2.36f	23.89p	265.50	0.00	0.842	13.83	-0.00(2)
5.995	2.41f	26.10p	265.50	0.00	0.772	15.61	5.12(1)
5.655	2.46f	31.10p	265.50	0.00	0.556	18.97	3.89(1)
5.328	2.42f	36.10p	265.50	0.00	0.278	21.08	2.62(1)
5.047	2.33f	40.36p	265.49	0.00	0.000	21.69	1.51(1)
4.997	2.31f	41.10p	265.50	0.00	-0.052	21.67	1.31(1)
4.653	2.17f	46.06p	265.48	0.00	-0.417	20.52	0.00(1)
4.649	2.17f	46.10p	265.48	0.00	-0.421	20.50	-0.01(1)
4.283	2.00f	51.10p	265.51	0.00	-0.816	17.42	-1.35(1)
3.893	1.81f	56.10p	265.51	0.00	-1.226	12.32	-2.68(1)
3.481	1.61f	61.10p	265.51	0.00	-1.643	5.15	-4.00(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67

LIM---46 CFR 171.080-Passenger Vessels	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	39.26 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	44.96 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	21.69 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.91 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	1.10 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	8.32 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 7 *****
Max Draft
***** Damage Case 4: Engine Room Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.256 @ 86.00f, 9.506 @ 6.00f
Trim: Fwd 0.75/80.00, Heel: Port 0.02 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		220.05	37.87f	0.01p	12.24	
Total Tanks--------->		51.68	47.56f	0.06s	7.77	39.3*
Total Weight-------->		271.73	39.71f	0.00	11.39	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	384.14	39.73f	0.00	6.14	-9.45
ER.C	Flooded	1.025	-112.40	39.67f	0.00	5.60	-9.45
Total Displacement-->		1.025	271.74	39.76f	0.00	6.36	

Righting Arms: 0.00 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.256 @ 86.00f, 9.506 @ 6.00f
Trim: Fwd 0.75/80.00, Heel: Port 0.02 deg.
Least freeboard is 1.76 Ft located at 64.73f
Least extra freeboard (to margin line) is 1.51 Ft located at 64.73f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.75/80.00, Heel: Port 0.02 deg., VCG = 11.39

LCF	Displacement	Buoyancy-Ctr.		Weight/		Moment/		
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
9.801	271.74	39.76f	6.36	3.76	37.48f	30.10	106.3	4.34

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.71f TCG = 0.00 VCG = 11.39
Free Surface Adjustment: 0.14
Adjusted CG: LCG = 39.71f TCG = 0.00 VCG = 11.53

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
9.449	0.54f	0.02p	271.73	0.00	0.000	0.00	4.58(2)
9.411	0.53f	5.02p	271.73	0.00	0.380	0.95	3.62(2)
9.382	0.52f	6.63p	271.73	0.00	0.504	1.66	Marg Imm.
9.300	0.50f	10.02p	271.73	0.00	0.743	3.78	2.48(3)
9.263	0.48f	13.77p	271.73	0.00	0.822	6.75	1.47(3)
9.266	0.46f	15.02p	271.73	0.00	0.815	7.77	1.11(3)
9.299	0.38f	18.80p	271.74	0.00	0.739	10.70	-0.00(3)
9.315	0.34f	20.02p	271.73	0.00	0.701	11.58	-0.37(3)
9.390	0.15f	25.02p	271.73	0.00	0.491	14.61	-1.90(3)
9.468	0.11a	30.02p	271.73	0.00	0.227	16.42	-3.47(4)
9.523	0.35a	33.87p	271.72	0.00	0.000	16.87	-4.69(4)
9.537	0.43a	35.02p	271.73	0.00	-0.071	16.83	-5.05(4)
9.576	0.80a	40.02p	271.74	0.00	-0.393	15.68	-6.62(4)
9.564	1.17a	45.02p	271.76	0.00	-0.736	12.86	-8.15(4)
9.483	1.54a	50.02p	271.73	0.00	-1.095	8.29	-9.62(4)
9.337	1.89a	55.02p	271.73	0.00	-1.459	1.91	-11.02(4)
9.126	2.22a	60.02p	271.73	0.00	-1.819	-6.28	-12.35(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained
(1) Angle from Equilibrium to RAzero	> 15.00	deg	33.85 P
(2) Angle from Equilibrium to Flood	> 15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	> 2.82	Ft-deg	16.87 P
(4) Righting Arm at MaxRA	> 0.33	Ft	0.82 P
(5) Absolute Angle at Equilibrium	< 7.00	deg	0.02 P
(6) Angle from Equilibrium to Dk/margin Immersion	> 0.00	deg	6.61 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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                          ***** Condition 7 *****
                                Max Draft
    ***** Damage Case 5: Engine Room Flooded, FO_DAY.S, FO2_AFT.S *****

                       WEIGHT and DISPLACEMENT STATUS
                 Baseline draft: 10.210 @ 86.00f, 9.461 @ 6.00f
                   Trim: Fwd 0.75/80.00,  Heel: Port 1.18 deg.
Part-------------------------------Weight(LT)----LCG-----TCG-----VCG-------FSM
  Total Fixed--------->              220.05   37.87f   0.01p  12.24
  Total Tanks--------->               39.52   50.68f   3.41p   7.81      39.3*
  Total Weight-------->              259.57   39.82f   0.53p  11.56
                         SpGr------Displ(LT)----LCB-----TCB-----VCB------RefHt
HULL                    1.025        381.49   39.75f   0.16p   6.12      -9.40
FO_DAY.S       Flooded  1.025         -3.01   31.51f  11.25s   6.55      -9.40
FO2_AFT.S      Flooded  1.025         -7.13   39.93f  11.21s   6.62      -9.40
ER.C           Flooded  1.025       -111.79   39.67f   0.09p   5.58      -9.40
  Total Displacement--> 1.025        259.57   39.87f   0.64p   6.33
-------------------------------------------------------------------------------
                 Righting Arms:                  0.00    0.00p
Distances in FEET.-----------------------------------------Moments in Ft-LT.
                                    +
    Note:  FSM values marked with an asterisk (*) are formal values which are
           not the same as the true values in the present condition.
                                    +

                              FREEBOARD STATUS
                 Baseline draft: 10.210 @ 86.00f, 9.461 @ 6.00f
                   Trim: Fwd 0.75/80.00,  Heel: Port 1.18 deg.
                  Least freeboard is 1.55 Ft located at 61.69f
     Least extra freeboard (to margin line) is 1.30 Ft located at 61.69f

                       HYDROSTATIC PROPERTIES with FLOODING
              Trim: Fwd 0.75/80.00, Heel: Port 1.18 deg., VCG = 11.56

   LCF    Displacement   Buoyancy-Ctr.  Weight/          Moment/
  Draft----Weight(LT)----LCB-----VCB-----Inch-----LCF---In trim----GML-----GMT
  9.755       259.57   39.87f   6.33     3.60   37.45f   30.02   111.0    3.54
 Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.
                                Trim is per 80.00Ft
 Draft is from Baseline.                        Formal Free Surface included.

      Note:  GMT includes the formal free surface moment 39.3 Ft-LT
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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.82f TCG = 0.53p VCG = 11.56
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 39.82f TCG = 0.53p VCG = 11.71

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
9.402	0.54f	1.18p	259.58	0.00	0.000	0.00	4.40(2)
9.303	0.52f	6.18p	259.57	0.00	0.311	0.78	3.48(2)
9.278	0.51f	7.05p	259.57	0.00	0.365	1.07	Marg Imm.
9.135	0.50f	11.18p	259.57	0.00	0.583	3.04	2.32(3)
9.082	0.48f	13.46p	259.57	0.00	0.609	4.40	1.74(3)
9.046	0.45f	16.18p	259.57	0.00	0.574	6.01	1.00(3)
9.019	0.39f	19.69p	259.59	0.00	0.464	7.85	-0.00(3)
9.009	0.35f	21.18p	259.57	0.00	0.402	8.50	-0.43(3)
8.981	0.20f	26.18p	259.57	0.00	0.149	9.91	-1.90(3)
8.966	0.09f	28.77p	259.57	0.00	0.000	10.11	-2.66(3)
8.949	0.02a	31.18p	259.57	0.00	-0.145	9.93	-3.38(4)
8.902	0.28a	36.18p	259.58	0.00	-0.461	8.43	-4.89(4)
8.829	0.58a	41.18p	259.59	0.00	-0.793	5.30	-6.38(4)
8.714	0.90a	46.18p	259.61	0.00	-1.139	0.47	-7.84(4)
8.548	1.21a	51.18p	259.61	0.00	-1.491	-6.10	-9.25(4)
8.326	1.51a	56.18p	259.57	0.00	-1.841	-14.43	-10.60(4)
8.052	1.80a	61.18p	259.62	0.00	-2.186	-24.50	-11.88(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

+

Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained
(1) Angle from Equilibrium to RAzero	> 15.00	deg	27.60 P
(2) Angle from Equilibrium to Flood	> 15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	> 2.82	Ft-deg	10.11 P
(4) Righting Arm at MaxRA	> 0.33	Ft	0.61 P
(5) Absolute Angle at Equilibrium	< 7.00	deg	1.18 P
(6) Angle from Equilibrium to Dk/margin Immersion	> 0.00	deg	5.87 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 7 *****
Max Draft
***** Damage Case 6: Engine Room Flooded, FO2_FWD.S, FO2_AFT.S *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 10.172 @ 86.00f, 9.469 @ 6.00f
Trim: Fwd 0.70/80.00, Heel: Port 1.44 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		220.05	37.87f	0.01p	12.24	
Total Tanks--------->		38.04	48.94f	3.96p	7.78	39.3*
Total Weight-------->		258.08	39.50f	0.59p	11.58	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	380.88	39.70f	0.20p	6.11	-9.41
FO2_FWD.S	Flooded	1.025	-4.12	49.96f	10.96s	6.82	-9.41
FO2_AFT.S	Flooded	1.025	-7.04	39.93f	11.21s	6.58	-9.41
ER.C	Flooded	1.025	-111.63	39.67f	0.10p	5.57	-9.41
Total Displacement-->		1.025	258.08	39.55f	0.73p	6.32	

Righting Arms: 0.00 0.00p
Distances in FEET.---------- Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 10.172 @ 86.00f, 9.469 @ 6.00f
Trim: Fwd 0.70/80.00, Heel: Port 1.44 deg.
Least freeboard is 1.51 Ft located at 58.66f
Least extra freeboard (to margin line) is 1.26 Ft located at 58.66f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Fwd 0.70/80.00, Heel: Port 1.44 deg., VCG = 11.58

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
9.742	258.08	39.55f	6.32	3.58	37.10f	29.85	111.0	3.40

Distances in FEET.------- Specific Gravity = 1.025.---------- Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.50f TCG = 0.59p VCG = 11.58
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 39.50f TCG = 0.59p VCG = 11.73

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
9.413	0.50f	1.44p	258.08	0.00	0.000	0.00	4.38(2)
9.321	0.46f	6.44p	258.08	0.00	0.299	0.75	3.45(3)
9.300	0.45f	7.21p	258.08	0.00	0.346	1.00	Marg Imm.
9.166	0.40f	11.44p	258.09	0.00	0.555	2.91	2.28(3)
9.129	0.38f	13.32p	258.09	0.00	0.574	3.98	1.80(3)
9.099	0.32f	16.44p	258.09	0.00	0.530	5.70	0.95(3)
9.086	0.23f	19.80p	258.10	0.00	0.419	7.31	-0.00(3)
9.081	0.18f	21.44p	258.08	0.00	0.348	7.94	-0.47(3)
9.069	0.00a	26.44p	258.09	0.00	0.087	9.06	-1.94(4)
9.064	0.07a	27.93p	258.07	0.00	0.000	9.13	-2.39(4)
9.048	0.24a	31.44p	258.09	0.00	-0.214	8.76	-3.45(4)
9.011	0.52a	36.44p	258.10	0.00	-0.536	6.90	-4.96(4)
8.944	0.83a	41.44p	258.10	0.00	-0.869	3.39	-6.45(4)
8.832	1.15a	46.44p	258.11	0.00	-1.213	-1.81	-7.91(4)
8.666	1.47a	51.44p	258.12	0.00	-1.563	-8.75	-9.33(4)
8.446	1.77a	56.44p	258.12	0.00	-1.911	-17.44	-10.68(4)
8.169	2.06a	61.44p	258.13	0.00	-2.252	-27.85	-11.95(4)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

+

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

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Critical Points		LCP	TCP	VCP
(2) FO 1 Vent	TIGHT	67.88f	11.00	14.67
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained
(1) Angle from Equilibrium to RAzero	> 15.00	deg	26.49 P
(2) Angle from Equilibrium to Flood	> 15.00	deg	LARGE
(3) Area from Equilibrium to Flood or RAzero	> 2.82	Ft-deg	9.13 P
(4) Righting Arm at MaxRA	> 0.33	Ft	0.57 P
(5) Absolute Angle at Equilibrium	< 7.00	deg	1.44 P
(6) Angle from Equilibrium to Dk/margin Immersion	> 0.00	deg	5.77 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 7 *****
Max Draft
***** Damage Case 7: FO-DAY.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.702 @ 86.00f, 7.708 @ 6.00f
Trim: Aft 0.01/80.00, Heel: Port 4.54 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		220.05	37.87f	0.01p	12.24	
Total Tanks--------->		39.52	50.66f	3.43p	7.81	39.3*
Total Weight-------->		259.57	39.82f	0.53p	11.56	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	264.79	39.77f	0.83p	4.98	-7.68
FO_DAY.S	Flooded	1.025	-1.58	31.51f	11.02s	5.12	-7.68
FO2_AFT.S	Flooded	1.025	-3.65	39.86f	10.96s	5.12	-7.68
Total Displacement-->		1.025	259.57	39.82f	1.07p	4.98	

Righting Arms: 0.00 0.01p
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.702 @ 86.00f, 7.708 @ 6.00f
Trim: Aft 0.01/80.00, Heel: Port 4.54 deg.
Least freeboard is 2.95 Ft located at 19.24f
Least extra freeboard (to margin line) is 2.70 Ft located at 19.24f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 0.01/80.00, Heel: Port 4.54 deg., VCG = 11.56

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.706	259.57	39.82f	4.98	4.50	36.89f	27.31	101.0	2.91

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.82f TCG = 0.53p VCG = 11.56
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 39.82f TCG = 0.53p VCG = 11.71

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
7.684	0.00a	4.54p	259.57	0.00	0.000	0.00	5.87(4)
7.514	0.02f	9.54p	259.57	0.00	0.246	0.62	9.32(1)
7.223	0.09f	14.54p	259.57	0.00	0.462	2.40	8.39(1)
7.088	0.12f	16.33p	259.57	0.00	0.533	3.29	Marg Imm.
6.814	0.19f	19.54p	259.57	0.00	0.642	5.18	7.43(1)
6.569	0.25f	22.38p	259.54	0.00	0.672	7.04	6.85(1)
6.386	0.29f	24.54p	259.57	0.00	0.654	8.48	6.39(1)
5.999	0.37f	29.15p	259.58	0.00	0.526	11.24	0.00(3)
5.965	0.38f	29.54p	259.57	0.00	0.510	11.45	5.24(1)
5.524	0.46f	34.54p	259.57	0.00	0.241	13.38	4.04(1)
5.197	0.49f	38.14p	259.57	0.00	0.000	13.82	3.15(1)
5.067	0.50f	39.54p	259.57	0.00	-0.101	13.75	2.80(1)
4.603	0.50f	44.54p	259.57	0.00	-0.483	12.31	1.52(1)
4.132	0.46f	49.54p	259.57	0.00	-0.886	8.90	0.23(1)
4.047	0.45f	50.43p	259.57	0.00	-0.960	8.08	0.00(1)
3.652	0.38f	54.54p	259.57	0.00	-1.302	3.43	-1.07(1)
3.161	0.28f	59.54p	259.57	0.00	-1.724	-4.13	-2.36(1)
2.659	0.16f	64.54p	259.57	0.00	-2.145	-13.81	-3.65(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	33.60	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	45.89	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	13.82	P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.67	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	4.54	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	11.79	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 7 *****
Max Draft
***** Damage Case 8: FO2_FWD.S, FO2_AFT.S Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 7.565 @ 86.00f, 7.738 @ 6.00f
Trim: Aft 0.17/80.00, Heel: Port 5.57 deg.

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		220.05	37.87f	0.01p	12.24	
Total Tanks--------->		38.04	48.93f	3.98p	7.78	39.3*
Total Weight-------->		258.08	39.50f	0.60p	11.58	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	263.18	39.56f	1.02p	4.98	-7.71
FO2_FWD.S	Flooded	1.025	-1.75	49.90f	10.59s	5.09	-7.71
FO2_AFT.S	Flooded	1.025	-3.35	39.85f	10.92s	4.98	-7.71
Total Displacement-->		1.025	258.08	39.48f	1.25p	4.98	

Righting Arms: 0.00 0.01p
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 7.565 @ 86.00f, 7.738 @ 6.00f
Trim: Aft 0.17/80.00, Heel: Port 5.57 deg.
Least freeboard is 2.68 Ft located at 16.21f
Least extra freeboard (to margin line) is 2.43 Ft located at 16.21f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 0.17/80.00, Heel: Port 5.57 deg., VCG = 11.58

LCF	Displacement	Buoyancy-Ctr.		Weight/		Moment/		
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
7.672	258.08	39.48f	4.98	4.47	36.66f	27.03	100.5	2.81

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.50f TCG = 0.59p VCG = 11.58
Free Surface Adjustment: 0.15
Adjusted CG: LCG = 39.50f TCG = 0.59p VCG = 11.73

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
7.715	0.12a	5.57p	258.09	0.00	0.000	0.00	5.64(4)
7.538	0.12a	10.57p	258.09	0.00	0.238	0.60	9.14(1)
7.235	0.07a	15.57p	258.08	0.00	0.449	2.32	8.20(1)
7.174	0.06a	16.37p	258.08	0.00	0.480	2.70	Marg Imm.
6.825	0.02f	20.57p	258.09	0.00	0.608	5.00	7.23(1)
6.668	0.05f	22.46p	258.08	0.00	0.621	6.16	6.84(1)
6.415	0.10f	25.57p	258.09	0.00	0.588	8.04	6.16(1)
6.115	0.15f	29.22p	258.08	0.00	0.478	10.01	0.00(3)
6.001	0.17f	30.57p	258.09	0.00	0.418	10.61	5.00(1)
5.564	0.23f	35.57p	258.08	0.00	0.133	12.04	3.79(1)
5.387	0.25f	37.53p	258.09	0.00	0.000	12.17	3.30(1)
5.109	0.27f	40.57p	258.08	0.00	-0.221	11.84	2.53(1)
4.645	0.26f	45.57p	258.08	0.00	-0.609	9.79	1.25(1)
4.188	0.21f	50.41p	258.08	0.00	-1.003	5.89	0.00(1)
4.173	0.20f	50.57p	258.08	0.00	-1.016	5.73	-0.04(1)
3.691	0.12f	55.57p	258.08	0.00	-1.433	-0.38	-1.34(1)
3.197	0.02f	60.57p	258.08	0.00	-1.853	-8.60	-2.63(1)
2.692	0.10a	65.57p	258.08	0.00	-2.271	-18.91	-3.92(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

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Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

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Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(3) FO 2 Vent	TIGHT	36.25f	13.50	14.67
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels------	Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	31.96 P
(2) Angle from Equilibrium to Flood	>	15.00	deg	44.85 P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	12.17 P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.62 P
(5) Absolute Angle at Equilibrium	<	7.00	deg	5.57 P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	10.80 P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 7 *****
Max Draft
***** Damage Case 9: Workshop Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.833 @ 86.00f, 10.476 @ 6.00f
Trim: Aft 3.64/80.00, Heel: zero

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		220.05	37.87f	0.01p	12.24	
Total Tanks--------->		51.68	47.49f	0.06s	7.77	39.3*
Total Weight-------->		271.73	39.70f	0.00	11.39	

	SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL	1.025	341.57	35.31f	0.00	5.81	-10.74
WORKSHOP.C Flooded	1.025	-69.84	19.21f	0.00	6.28	-10.74
Total Displacement-->	1.025	271.73	39.44f	0.00	5.69	

Righting Arms: 0.00f 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.833 @ 86.00f, 10.476 @ 6.00f
Trim: Aft 3.64/80.00, Heel: zero
Least freeboard is 1.08 Ft located at 0.03f
Least extra freeboard (to margin line) is 0.83 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 3.64/80.00, No Heel, VCG = 11.39

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.909	271.73	39.44f	5.69	3.83	40.41f	23.39	82.6	2.54

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.71f TCG = 0.00 VCG = 11.39
Free Surface Adjustment: 0.14
Adjusted CG: LCG = 39.71f TCG = 0.00 VCG = 11.53

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
10.739	2.61a	0.00	271.78	0.00	0.000	0.00	5.25(4)
10.711	2.61a	3.96s	271.77	0.00	0.177	0.35	Marg Imm.
10.693	2.61a	5.00s	271.68	0.00	0.224	0.56	8.56(1)
10.643	2.69a	10.00s	271.73	0.00	0.422	2.18	7.58(1)
10.704	2.95a	15.00s	271.73	0.00	0.520	4.58	6.47(1)
10.719	3.00a	15.60s	271.73	0.00	0.521	4.89	6.32(1)
10.854	3.34a	20.00s	271.73	0.00	0.460	7.09	5.21(1)
10.854	3.34a	20.02s	271.73	0.00	0.459	7.10	0.00(4)
11.023	3.75a	25.00s	271.73	0.00	0.272	8.98	3.84(1)
11.178	4.16a	30.00s	271.73	0.00	0.005	9.71	2.39(1)
11.181	4.17a	30.09s	271.73	0.00	0.000	9.71	2.37(1)
11.299	4.57a	35.00s	271.72	0.00	-0.313	8.96	0.89(1)
11.350	4.80a	37.89s	271.73	0.00	-0.513	7.77	0.00(1)
11.374	4.96a	40.00s	271.73	0.00	-0.665	6.52	-0.65(1)
11.396	5.34a	45.00s	271.71	0.00	-1.036	2.28	-2.20(1)
11.365	5.72a	50.00s	271.73	0.00	-1.411	-3.84	-3.75(1)
11.265	6.07a	55.00s	271.70	0.00	-1.783	-11.82	-5.27(1)
11.103	6.41a	60.00s	271.72	0.00	-2.148	-21.66	-6.75(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	30.09	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	37.89	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	9.71	P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.52	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.00	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	3.96	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg

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***** Condition 7 *****
Max Draft
***** Damage Case 10: Steering Gear Flooded *****

WEIGHT and DISPLACEMENT STATUS
Baseline draft: 6.036 @ 86.00f, 10.225 @ 6.00f
Trim: Aft 4.19/80.00, Heel: zero

Part		Weight(LT)	LCG	TCG	VCG	FSM
Total Fixed--------->		220.05	37.87f	0.01p	12.24	
Total Tanks--------->		51.68	47.48f	0.06s	7.77	39.3*
Total Weight-------->		271.73	39.70f	0.00	11.39	

		SpGr	Displ(LT)	LCB	TCB	VCB	RefHt
HULL		1.025	315.98	34.63f	0.00	5.59	-10.52
LAZARETTE.C	Flooded	1.025	-44.24	5.44f	0.00	7.61	-10.52
Total Displacement-->		1.025	271.73	39.38f	0.00	5.26	

Righting Arms: 0.00f 0.00
Distances in FEET.----------Moments in Ft-LT.
+
Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.
+

FREEBOARD STATUS
Baseline draft: 6.036 @ 86.00f, 10.225 @ 6.00f
Trim: Aft 4.19/80.00, Heel: zero
Least freeboard is 1.28 Ft located at 0.03f
Least extra freeboard (to margin line) is 1.03 Ft located at 0.03f

HYDROSTATIC PROPERTIES with FLOODING
Trim: Aft 4.19/80.00, No Heel, VCG = 11.39

LCF	Displacement	Buoyancy-Ctr.		Weight/	Moment/			
Draft	Weight(LT)	LCB	VCB	Inch	LCF	In trim	GML	GMT
8.325	271.73	39.38f	5.26	3.86	42.29f	15.58	55.0	2.44

Distances in FEET.-------Specific Gravity = 1.025.----------Moment in Ft-LT.
Trim is per 80.00Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 39.3 Ft-LT

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RIGHTING ARMS vs HEEL ANGLE with FLOODING
Total CG: LCG = 39.71f TCG = 0.00 VCG = 11.39
Free Surface Adjustment: 0.14
Adjusted CG: LCG = 39.71f TCG = 0.00 VCG = 11.53

Origin Depth	Degrees of Trim	Heel	Displacement Weight(LT)	Righting Arms in Trim	in Heel	Flood Pt Area	Height
10.525	3.00a	0.00	271.74	0.00	0.000	0.00	5.66(4)
10.485	3.00a	4.96s	271.73	0.00	0.213	0.53	Marg Imm.
10.485	3.00a	5.00s	271.73	0.00	0.215	0.54	8.98(1)
10.378	3.01a	10.00s	271.73	0.00	0.438	2.16	8.02(1)
10.348	3.19a	15.00s	271.72	0.00	0.596	4.78	6.95(1)
10.391	3.36a	17.40s	271.76	0.00	0.616	6.24	6.38(1)
10.455	3.57a	20.00s	271.73	0.00	0.593	7.82	5.73(1)
10.510	3.72a	21.75s	271.75	0.00	0.553	8.82	-0.00(4)
10.615	4.01a	25.00s	271.73	0.00	0.440	10.43	4.39(1)
10.783	4.49a	30.00s	271.74	0.00	0.186	12.04	2.96(1)
10.876	4.77a	32.99s	271.74	0.00	0.000	12.32	2.08(1)
10.934	4.97a	35.00s	271.73	0.00	-0.136	12.19	1.47(1)
11.041	5.42a	39.80s	271.73	0.00	-0.491	10.70	0.00(1)
11.045	5.44a	40.00s	271.73	0.00	-0.507	10.60	-0.06(1)
11.100	5.89a	45.00s	271.73	0.00	-0.907	7.08	-1.61(1)
11.087	6.31a	50.00s	271.73	0.00	-1.323	1.51	-3.15(1)
11.008	6.70a	55.00s	271.73	0.00	-1.740	-6.15	-4.67(1)
10.876	7.08a	60.00s	271.74	0.00	-2.149	-15.87	-6.16(1)

Distances in FEET.------Specific Gravity = 1.025.----------Area in Ft-Deg.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 39.3 Ft-LT was applied to artificially modify the CG.

Critical Points		LCP	TCP	VCP
(1) ER Air Intake	FLOOD	32.00f	9.92	18.75
(4) FO Day Vent	TIGHT	29.33f	13.50	14.67

LIM----------46 CFR 171.080-Passenger Vessels		Min/Max		Attained	
(1) Angle from Equilibrium to RAzero	>	15.00	deg	32.99	P
(2) Angle from Equilibrium to Flood	>	15.00	deg	39.80	P
(3) Area from Equilibrium to Flood or RAzero	>	2.82	Ft-deg	12.32	P
(4) Righting Arm at MaxRA	>	0.33	Ft	0.62	P
(5) Absolute Angle at Equilibrium	<	7.00	deg	0.00	P
(6) Angle from Equilibrium to Dk/margin Immersion	>	0.00	deg	4.96	P

* Heeling moment applied with off-center weight at crane tip, heel=-3.51deg