### Hydrostatics - Group-18-Final\_Ship\_Maxsurf\_Modeler\_Desgin (Without Compartmentation)

Stability 24.00.04.133, build: 133

Model file: C:\Users\prana\Personal Data\Data\Private Data\Academic and Personal Data\Third Year Study Material\6th Semester\MD Lab\All Files PCC\Group-18-Final\_Ship\_Maxsurf\_Modeler\_Desgin (Without Compartmentation) (Highest precision, 508 sections, Trimming off, Skin thickness not applied). Long. datum: User def.; Vert. datum: User def.. Analysis tolerance - ideal(worst case): Disp.%: 0.01000(0.100); Trim%(LCG-TCG): 0.01000(0.100); Heel%(LCG-TCG): 0.01000(0.100)

Damage Case - Intact

Fixed Trim = 0 m (+ve by stern)

Specific gravity = 1.025; (Density = 1.025 tonne/m^3)

| **Draft Amidships**  **m** | **1.254** | **2.505** | **3.661** | **4.763** | **5.826** | **6.856** | **7.857** | **8.826** | **9.758** | **10.651** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Displacement t | 5000 | 11314 | 17629 | 23943 | 30258 | 36572 | 42887 | 49201 | 55515 | 61830 |
| Heel deg | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Draft at FP m | 1.254 | 2.505 | 3.661 | 4.763 | 5.826 | 6.856 | 7.857 | 8.826 | 9.758 | 10.651 |
| Draft at AP m | 1.254 | 2.505 | 3.661 | 4.763 | 5.826 | 6.856 | 7.857 | 8.826 | 9.758 | 10.651 |
| Draft at LCF m | 1.254 | 2.505 | 3.661 | 4.763 | 5.826 | 6.856 | 7.857 | 8.826 | 9.758 | 10.651 |
| Trim (+ve by stern) m | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| WL Length m | 209.894 | 212.693 | 213.801 | 213.027 | 211.860 | 210.794 | 209.400 | 208.206 | 220.886 | 220.998 |
| Beam max extents on WL m | 39.827 | 40.000 | 40.000 | 40.000 | 40.000 | 40.000 | 40.000 | 40.000 | 40.000 | 40.000 |
| Wetted Area m^2 | 4744.764 | 5552.514 | 6165.692 | 6719.484 | 7243.761 | 7759.391 | 8280.918 | 8835.089 | 9492.995 | 10005.112 |
| Waterpl. Area m^2 | 4621.704 | 5166.569 | 5472.141 | 5700.918 | 5889.721 | 6068.254 | 6251.300 | 6462.259 | 6787.748 | 6975.622 |
| Prismatic coeff. (Cp) | 0.476 | 0.525 | 0.554 | 0.580 | 0.601 | 0.620 | 0.639 | 0.655 | 0.630 | 0.643 |
| Block coeff. (Cb) | 0.465 | 0.518 | 0.549 | 0.576 | 0.598 | 0.617 | 0.636 | 0.653 | 0.628 | 0.641 |
| Max Sect. area coeff. (Cm) | 0.978 | 0.987 | 0.991 | 0.993 | 0.994 | 0.995 | 0.996 | 0.996 | 0.997 | 0.997 |
| Waterpl. area coeff. (Cwp) | 0.553 | 0.607 | 0.640 | 0.669 | 0.695 | 0.720 | 0.746 | 0.776 | 0.768 | 0.789 |
| LCB from zero pt. (+ve fwd) m | 110.606 | 110.855 | 110.910 | 110.821 | 110.626 | 110.318 | 109.861 | 109.222 | 108.324 | 107.233 |
| LCF from zero pt. (+ve fwd) m | 110.905 | 111.097 | 110.847 | 110.265 | 109.451 | 108.130 | 106.183 | 103.411 | 99.009 | 96.746 |
| KB m | 0.684 | 1.358 | 1.978 | 2.568 | 3.137 | 3.691 | 4.231 | 4.759 | 5.275 | 5.779 |
| KG m | 10.650 | 10.650 | 10.650 | 10.650 | 10.650 | 10.650 | 10.650 | 10.650 | 10.650 | 10.650 |
| BMt m | 82.054 | 43.007 | 30.067 | 23.519 | 19.559 | 16.947 | 15.149 | 13.879 | 12.921 | 12.070 |
| BML m | 1614.247 | 904.899 | 660.535 | 533.741 | 454.350 | 402.547 | 368.100 | 348.752 | 356.855 | 344.118 |
| GMt m | 72.088 | 33.714 | 21.394 | 15.437 | 12.047 | 9.988 | 8.730 | 7.988 | 7.546 | 7.199 |
| GML m | 1604.282 | 895.606 | 651.862 | 525.659 | 446.837 | 395.588 | 361.681 | 342.861 | 351.480 | 339.247 |
| KMt m | 82.738 | 44.364 | 32.044 | 26.087 | 22.697 | 20.638 | 19.380 | 18.638 | 18.196 | 17.849 |
| KML m | 1614.932 | 906.256 | 662.512 | 536.309 | 457.487 | 406.238 | 372.331 | 353.511 | 362.130 | 349.897 |
| Immersion (TPc) tonne/cm | 47.372 | 52.957 | 56.089 | 58.434 | 60.370 | 62.200 | 64.076 | 66.238 | 69.574 | 71.500 |
| MTc tonne.m | 373.093 | 471.313 | 534.496 | 585.399 | 628.852 | 672.908 | 721.455 | 784.611 | 907.562 | 975.612 |
| RM at 1deg = GMt.Disp.sin(1) tonne.m | 6290.604 | 6657.369 | 6582.285 | 6450.471 | 6361.666 | 6375.175 | 6534.468 | 6859.003 | 7310.749 | 7767.902 |
| Max deck inclination deg | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Trim angle (+ve by stern) deg | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |





### KN calculation (Starboard)- Group-18-Final\_Ship\_Maxsurf\_Modeler\_Desgin (Without Compartmentation)

Stability 24.00.04.133, build: 133

Model file: C:\Users\prana\Personal Data\Data\Private Data\Academic and Personal Data\Third Year Study Material\6th Semester\MD Lab\All Files PCC\Group-18-Final\_Ship\_Maxsurf\_Modeler\_Desgin (Without Compartmentation) (Highest precision, 508 sections, Trimming off, Skin thickness not applied). Long. datum: User def.; Vert. datum: User def.. Analysis tolerance - ideal(worst case): Disp.%: 0.01000(0.100); Trim%(LCG-TCG): 0.01000(0.100); Heel%(LCG-TCG): 0.01000(0.100)

Damage Case - Intact

Initial Trim = 0 m (+ve by stern)

Specific gravity = 1.025; (Density = 1.025 tonne/m^3)

VCG = 0 m; TCG = 0 m



| **Displacement (intact)**  **tonne** | **Draft Amidships**  **m** | **Trim (+ve by stern)**  **m** | **LCG**  **m** | **TCG**  **m** | **Assumed VCG**  **m** | **KN**  **0.0 deg.** | **KN**  **10.0 deg. Starb.** | **KN**  **20.0 deg. Starb.** | **KN**  **30.0 deg. Starb.** | **KN**  **40.0 deg. Starb.** | **KN**  **50.0 deg. Starb.** | **KN**  **55.0 deg. Starb.** | **KN**  **60.0 deg. Starb.** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5000 | 1.254 | 0.000 | 110.606 | 0.000 | 0.000 | 0.000 | 9.859 | 12.875 | 13.864 | 13.975 | 13.552 | 13.212 | 12.830 |
| 10394 | 2.330 | 0.000 | 110.834 | 0.000 | 0.000 | 0.000 | 7.341 | 10.828 | 12.664 | 13.494 | 13.746 | 13.750 | 13.726 |
| 15788 | 3.331 | 0.000 | 110.910 | 0.000 | 0.000 | 0.000 | 5.873 | 9.587 | 11.783 | 13.136 | 13.879 | 14.127 | 14.361 |
| 21182 | 4.287 | 0.000 | 110.875 | 0.000 | 0.000 | 0.000 | 4.895 | 8.750 | 11.159 | 12.834 | 13.967 | 14.418 | 14.870 |
| 26576 | 5.210 | 0.000 | 110.752 | 0.000 | 0.000 | 0.000 | 4.272 | 8.118 | 10.709 | 12.604 | 14.032 | 14.656 | 15.317 |
| 31970 | 6.108 | 0.000 | 110.556 | 0.000 | 0.000 | 0.000 | 3.863 | 7.612 | 10.370 | 12.436 | 14.107 | 14.873 | 15.708 |
| 37364 | 6.983 | 0.000 | 110.269 | 0.000 | 0.000 | 0.000 | 3.590 | 7.199 | 10.103 | 12.319 | 14.196 | 15.097 | 16.007 |
| 42758 | 7.836 | 0.000 | 109.872 | 0.000 | 0.000 | 0.000 | 3.404 | 6.864 | 9.887 | 12.244 | 14.299 | 15.315 | 16.235 |
| 48152 | 8.667 | 0.000 | 109.343 | 0.000 | 0.000 | 0.000 | 3.278 | 6.608 | 9.712 | 12.201 | 14.417 | 15.502 | 16.405 |
| 53546 | 9.472 | 0.000 | 108.639 | 0.000 | 0.000 | 0.000 | 3.194 | 6.421 | 9.570 | 12.187 | 14.549 | 15.652 | 16.527 |
| 58940 | 10.245 | 0.000 | 107.731 | 0.000 | 0.000 | 0.000 | 3.136 | 6.291 | 9.457 | 12.195 | 14.676 | 15.768 | 16.606 |
| 64334 | 11.000 | 0.000 | 106.815 | 0.000 | 0.000 | 0.000 | 3.092 | 6.198 | 9.364 | 12.215 | 14.787 | 15.846 | 16.640 |



| **Key point** | **Type** | **Immersion angle at 5000 t**  **deg** | **Immersion angle at 10394 t**  **deg** | **Immersion angle at 15788 t**  **deg** | **Immersion angle at 21182 t**  **deg** | **Immersion angle at 26576 t**  **deg** | **Immersion angle at 31970 t**  **deg** | **Immersion angle at 37364 t**  **deg** | **Immersion angle at 42758 t**  **deg** | **Immersion angle at 48152 t**  **deg** | **Immersion angle at 53546 t**  **deg** | **Immersion angle at 58940 t**  **deg** | **Immersion angle at 64334 t**  **deg** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Margin Line |  | Not immersed in positive range | Not immersed in positive range | Not immersed in positive range | Not immersed in positive range | 59.6 | 56.9 | 54.4 | 52.1 | 50.0 | 48.2 | 46.5 | 44.8 |
| Deck Edge |  | Not immersed in positive range | Not immersed in positive range | Not immersed in positive range | Not immersed in positive range | 59.6 | 56.9 | 54.4 | 52.2 | 50.1 | 48.2 | 46.5 | 44.9 |

### KN calculation (Port)- Group-18-Final\_Ship\_Maxsurf\_Modeler\_Desgin (Without Compartmentation)

Stability 24.00.04.133, build: 133

Model file: C:\Users\prana\Personal Data\Data\Private Data\Academic and Personal Data\Third Year Study Material\6th Semester\MD Lab\All Files PCC\Group-18-Final\_Ship\_Maxsurf\_Modeler\_Desgin (Without Compartmentation) (Highest precision, 508 sections, Trimming off, Skin thickness not applied). Long. datum: User def.; Vert. datum: User def.. Analysis tolerance - ideal(worst case): Disp.%: 0.01000(0.100); Trim%(LCG-TCG): 0.01000(0.100); Heel%(LCG-TCG): 0.01000(0.100)

Damage Case - Intact

Initial Trim = 0 m (+ve by stern)

Specific gravity = 1.025; (Density = 1.025 tonne/m^3)

VCG = 0 m; TCG = 0 m



| **Displacement (intact)**  **tonne** | **Draft Amidships**  **m** | **Trim (+ve by stern)**  **m** | **LCG**  **m** | **TCG**  **m** | **Assumed VCG**  **m** | **KN**  **0.0 deg.** | **KN**  **10.0 deg. Port.** | **KN**  **20.0 deg. Port.** | **KN**  **30.0 deg. Port.** | **KN**  **40.0 deg. Port.** | **KN**  **50.0 deg. Port.** | **KN**  **55.0 deg. Port.** | **KN**  **60.0 deg. Port.** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5000 | 1.254 | 0.000 | 110.606 | 0.000 | 0.000 | 0.000 | 9.859 | 12.875 | 13.864 | 13.975 | 13.552 | 13.212 | 12.830 |
| 10394 | 2.330 | 0.000 | 110.834 | 0.000 | 0.000 | 0.000 | 7.341 | 10.828 | 12.664 | 13.494 | 13.746 | 13.750 | 13.726 |
| 15788 | 3.331 | 0.000 | 110.910 | 0.000 | 0.000 | 0.000 | 5.873 | 9.587 | 11.783 | 13.136 | 13.879 | 14.127 | 14.361 |
| 21182 | 4.287 | 0.000 | 110.875 | 0.000 | 0.000 | 0.000 | 4.895 | 8.750 | 11.159 | 12.834 | 13.967 | 14.418 | 14.870 |
| 26576 | 5.210 | 0.000 | 110.752 | 0.000 | 0.000 | 0.000 | 4.272 | 8.118 | 10.709 | 12.604 | 14.032 | 14.656 | 15.317 |
| 31970 | 6.108 | 0.000 | 110.556 | 0.000 | 0.000 | 0.000 | 3.863 | 7.612 | 10.370 | 12.436 | 14.107 | 14.873 | 15.708 |
| 37364 | 6.983 | 0.000 | 110.269 | 0.000 | 0.000 | 0.000 | 3.590 | 7.199 | 10.103 | 12.319 | 14.196 | 15.097 | 16.007 |
| 42758 | 7.836 | 0.000 | 109.872 | 0.000 | 0.000 | 0.000 | 3.404 | 6.864 | 9.887 | 12.244 | 14.299 | 15.315 | 16.235 |
| 48152 | 8.667 | 0.000 | 109.343 | 0.000 | 0.000 | 0.000 | 3.278 | 6.608 | 9.712 | 12.201 | 14.417 | 15.502 | 16.405 |
| 53546 | 9.472 | 0.000 | 108.639 | 0.000 | 0.000 | 0.000 | 3.194 | 6.421 | 9.570 | 12.187 | 14.549 | 15.652 | 16.527 |
| 58940 | 10.245 | 0.000 | 107.731 | 0.000 | 0.000 | 0.000 | 3.136 | 6.291 | 9.457 | 12.195 | 14.676 | 15.768 | 16.606 |
| 64334 | 11.000 | 0.000 | 106.815 | 0.000 | 0.000 | 0.000 | 3.092 | 6.198 | 9.364 | 12.215 | 14.787 | 15.846 | 16.640 |



| **Key point** | **Type** | **Immersion angle at 5000 t**  **deg** | **Immersion angle at 10394 t**  **deg** | **Immersion angle at 15788 t**  **deg** | **Immersion angle at 21182 t**  **deg** | **Immersion angle at 26576 t**  **deg** | **Immersion angle at 31970 t**  **deg** | **Immersion angle at 37364 t**  **deg** | **Immersion angle at 42758 t**  **deg** | **Immersion angle at 48152 t**  **deg** | **Immersion angle at 53546 t**  **deg** | **Immersion angle at 58940 t**  **deg** | **Immersion angle at 64334 t**  **deg** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Margin Line |  | Not immersed in positive range | Not immersed in positive range | Not immersed in positive range | Not immersed in positive range | 59.6 | 56.9 | 54.4 | 52.1 | 50.0 | 48.2 | 46.5 | 44.8 |
| Deck Edge |  | Not immersed in positive range | Not immersed in positive range | Not immersed in positive range | Not immersed in positive range | 59.6 | 56.9 | 54.4 | 52.2 | 50.1 | 48.2 | 46.5 | 44.9 |