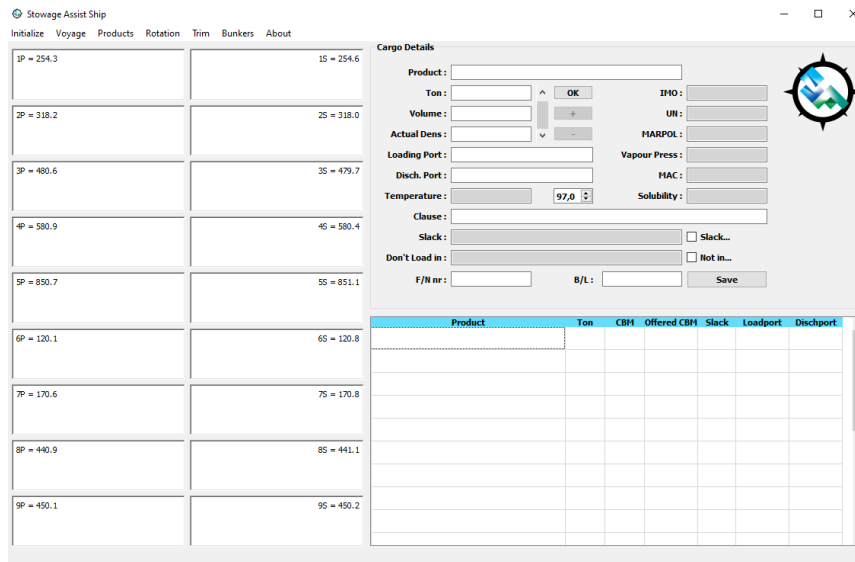


Running the program 'Stowage Assist'

Start the application by clicking the icon **Stowage Assist** on your desktop or by double clicking the **Stowage Assist.exe** in the directory. The application will open with the following screen (see **figure 1**):



This dialog is the main window of the program.

Figure 1

In this dialog window you will find the following widgets:

- All cargo tanks inserted in the 'Combinations' are stated as clickable items on the left side, carrying their Name and 100% Volume.
- On the right side of the dialog window, there is a Table which will contain the values of Ton, Volume, Available Volume and Slack Volume of the product what will be stowed.
- On the right side from the top to the Table there are fields which show the gathered information regarding the product that is to be stowed. This information is collected on a child window, titled **Products**, of this dialog window.
- On the top side of the dialog window there is a menu bar. From here, all child windows can be opened.

From here you can start to stow products.

Products

By clicking on the menu bar action button, a 'Products sub menu will open as shown in **figure 2**.

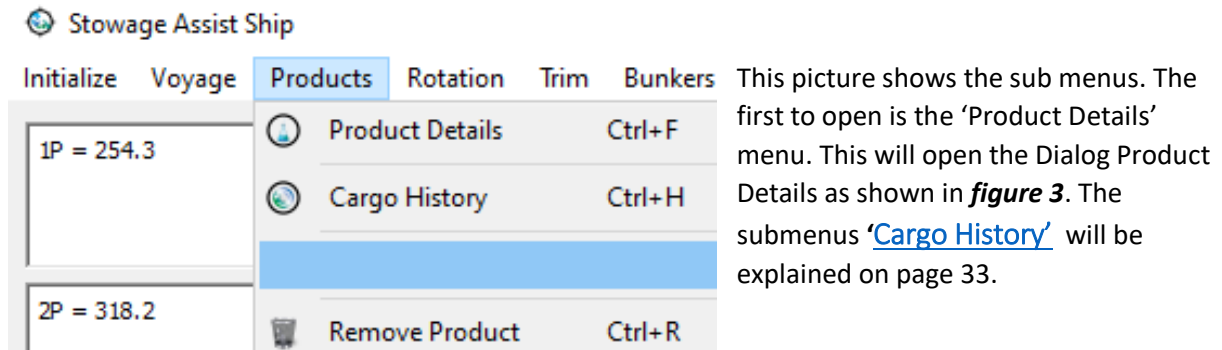
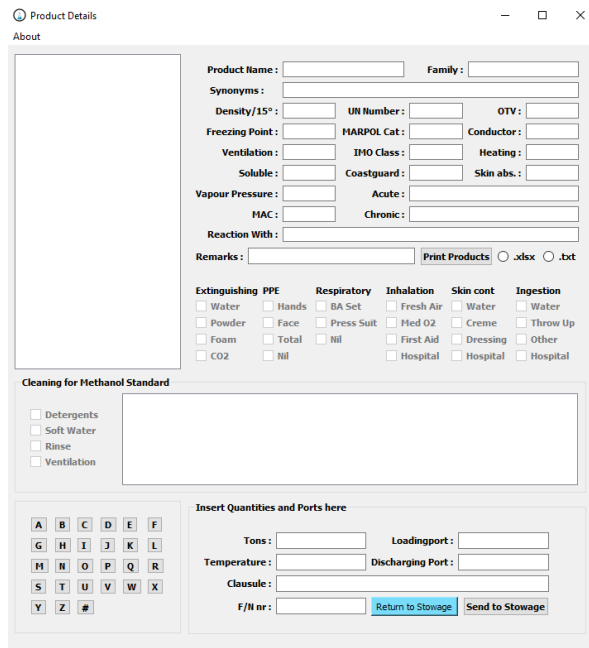


Figure 2



On the top left side, there is a dialog window with a list widget that will normally be empty. On the upper right side, there are read only fields for the physical and natural values of a product.

On the right centre there are print statements. The tick boxes can be used to read only safety-related data has been retrieved from the data sheet of the corresponding product.

On the lower right side, there are a group of input fields, titled 'Insert Quantities and Ports here'. This will be explained further on the next page.

Back on the lower left side, there are alphabetical tool buttons. Use these tool buttons to search the cargo database for products.

Figure 3

The first step is to see if a product exists in the database. Use the # tool button to run thorough the complete database or use the first letter of the product name and the corresponding alphabetic tool button. If the product does not exists inform you operations department to create this product.

Note

- The Stowage Assist Office has full control of the cargoes database on board.

Now that there is a physical copy of the 'Product', one can use the 'Insert Quantities and Ports here' to create the data known for the upcoming voyage. Insert the loaded **Tons** to be carried according to the Voyage Instruction for that product, together with the **Clause, Fixture Note, Load Port, Discharging Port** and **Temperature**.

Note

- Examples for the clauses can be:
 - Heating;
 - N2;
 - Wall wash;
 - Etcetera.
- For temperature, use degrees °C.

When all data has been inserted for the upcoming Voyage concerning that product, send this data to the Main Dialog Window by choosing 'Send to Stowage'.

Note

- This must be repeated for all products to be carried for that upcoming voyage.

Note

- If a product already exists in the database, simply press the alphabetical tool button on the left, and look for the first letter of the product. The database will now be searched for all products in the database starting with this letter. All found results will be shown in the list widget on the upper left. By clicking the correct name, the rest of the physical data will be shown to the right side again.
- Every carried product must have their data inserted into 'Insert Quantities and Ports here'.

Use 'Return to Stowage' to leave this dialog window and to return to the Main Dialog Window as shown in figure 1.

Using the 'Print button' on the right side, centre and the Print sub menu, will print all existing cargoes in Excel or in Notepad (ASCII table), depending on whether the radio button '.xlsx' or '.txt' is ticked. This Excel file can be stored on the working partition of your Local or Network system.

An Excel example is shown in **figure 4**.

Name	Density	UN	Hazpol	Freezing	Soluble	Vapour	MAC
ACH	0.9972	1544	Y	-20	100%	1mb/20	
Acetic Acid	1.0500	2788	Y	16.6	100%	16 mb/20	10 ppm
Acetic Anhydride	1.0890	1715	Y	-73	100%	5mb/20	5 ppm
Acetone	0.7900	1090	Z	-73	100%		
Achisor 3/sp	0.8200						
Acrylonitrile	0.8115	1093	Y	-82	7.3%	130 mb/20	4 ppm
Adiponitrile	0.9685	2205	Z		4.5%	1003 mb/2	2 ppm
Alcohols C12-15	0.8360		Y				
Alkane 60	0.8654		Z				
Alkyl Benzene	0.8720	1268	Z				
Alpha Methyl Styrene	0.9155	2309	Y	-23	Nil	3 mb/20	55 ppm
Alpha Olfines	0.7150						
Alpha Olfines C18	0.7888		X				
Alphanol 79	0.8408						
Ammonium Polyphosphate	1.4100						
Amyl Alcohol	0.8203	1105	Z	16.6	13.5%	3 mb/20	
Aniline Oil	1.0246	1547	Y	-6	3.4%	0.4 mb/20	5 ppm
Anti Freeze D824	1.1298	1142			100%		
Anti Freeze D979	1.1268	1142			100%		
Aromasol 12	0.8586	1993	Y				
Aromasol H	0.8804		Annex I				
Aromasol N	0.8807						
Aromasol Stillbottom	0.8881						
Aromatic Naphtha	0.8313		Y				
Aromatic Oil	0.9479		Y				
BBP S160	1.1254						
BBP S213	1.0512						
BDGE	0.9471		Z				
BTX mix	0.8480						
Ballast Water	1.025						
Base Fluid	1.0438						
Base Oil	0.8705		Annex I				
Base Oil Star 5	0.8500		Annex I				
Bayol 82	0.8503						
Benzene	0.8802	1114	Y	5.5	0.18%	100 mb/20	10 ppm
Benzene Concentrate	0.8300	1114	Y	6	0.18%	100 mb/20	10 ppm
Benzene Heart Cut	0.8732	1114	Y	5.5	0.18%	100 mb/20	10 ppm
Benzine	0.8500		Annex I				
Bioverno Diesel	0.8000	1202	Y				
Bioverno Naphta	0.7200		Y				
Bisol K	0.8256						
Butadiene	0.6270	1010	Y	-85			
Butane Diol	1.0175	2346	Y	-114	100%	0.3 mb/20	50 ppm
Butane Iso	0.8050	1212	3.3	-42	>10%		50 ppm
Butanol n	0.8125	1120	Z	-89	8%	7 mb/20	50 ppm

Figure 4

In the example, two products have been loaded into the Ship, knowing Acetic Acid and Benzene, see **figure 5**.

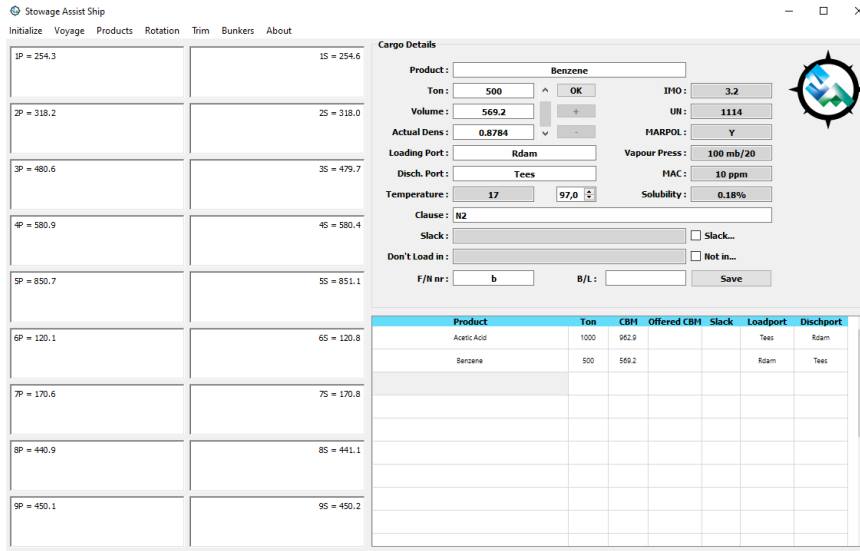
Figure 5

Back at the main Dialog they will be shown as per **figure 6**.

When a wrong product is sent to stowage, you can remove this product by using the submenu 'Remove Product' in the 'Products'-menu of the main window (see **figure 8**).

Manual Stowing

The first step is to give full Focus on the Table. Click on the first and second row of the Table. The



products will appear without colour. Above the table, the physical data and voyage data will now also appear. By clicking the Name of the carried product in the Table, you select the product whose data will be shown on the top right side.

The next step is to start stowing the products. For example, if Acetic Acid is selected and we start

clicking on the Cargo Tanks,

Figure 6

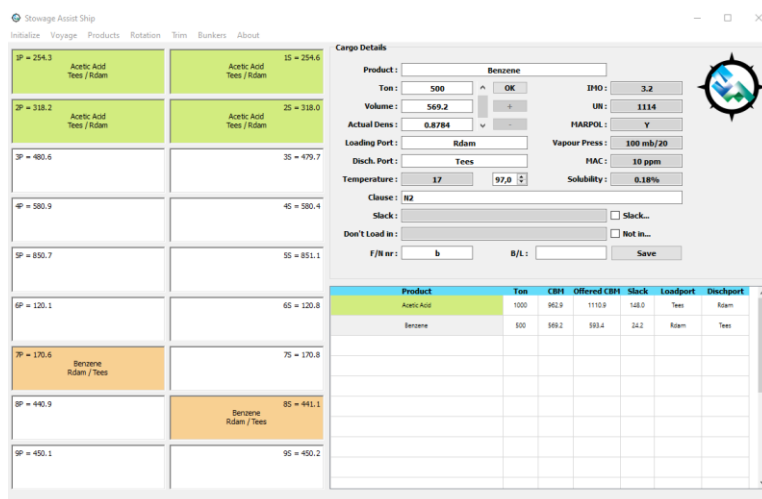
on the left side. Let us assume 1P. The Table row of Acetic acid will now show the total Tons to be carried, the Total Volume to be carried, the Available Volume (given by 1P) and the Slack Volume (if applicable, else this will be 0). The Acetic Acid will also be assigned its own colour, to help make a visual difference between multiple products.

Continue selecting tanks by clicking them for Acetic Acid until a slack volume is reached. Then the Available Volume, from the grouped loaded tanks, is bigger than the Total Volume needed.

To deselect a cargo tank for that product, click on this particular cargo tank again and all values involved in the Table will be adjusted.

Note

- In the centre of this Main Dialog Window is one numerical spin box. At this moment it is stated 98. This stands for maximum filling of the Cargo Tanks. When brought into focus by tab order or mouse click, the filling percentage in the desired filling can be adjusted. All stowage fillings will be calculated against this value.



As per example, the Acetic Acid has been loaded into 1P/S and 2P/S and the Benzene into 7P/S/8S, **figure 7**.

The Benzene can be stowed when it is selected in the Table.

The Table has now for both products Slack Volume so that they fit into the selected tanks for loading.

Figure 7

Inside each selected cargo tank, the name of the carried product and the load / discharge port name will be shown. This allows you to go even further.

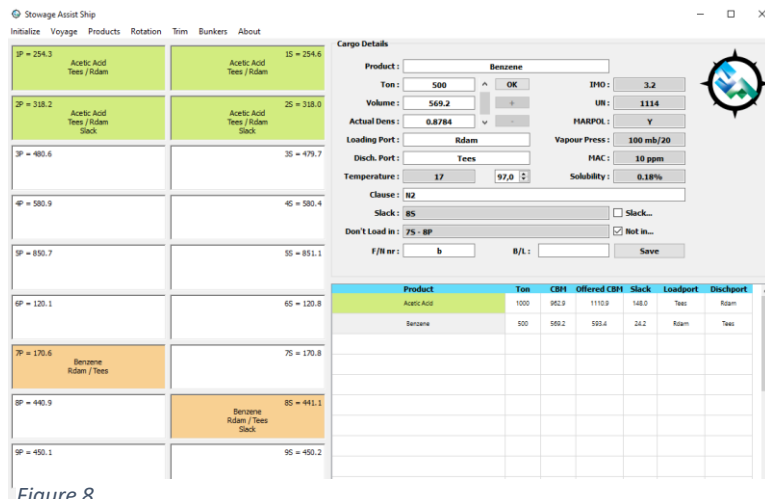


Figure 8

will be shown. This allows you to go even further.

On the right side of the dialog window, you will find a check box called 'Slack'. When, per example, Acetic Acid is selected in the table, tick this box. You can now decide which tank for Acetic Acid will be slack. This selected tank will have the 'Slack' printed also on the bottom of this tank and its name will be printed into the slack line. This is shown in **figure 27**.

Beneath the 'Slack' checkbox there is a 'Don't' checkbox. When, per example, the Acetic is not allowed to be carried in the 3P/S cargo Tanks, tick this box. You now can click on these cargo tanks and their name will be printed in the 'Don't load in line'. This means when you start stowing again and both 'Slack' and 'Don't' checkboxes are unticked, you can click on the 3P/S, only they won't be selected for Acetic Acid. See **figure 8**.

Note

- During stowing, selecting cargo tanks manual. Both 'Slack' and 'Don't' check boxes must be unticked

Basically, this is manual stowing with the Stowage Assist. In theory you can now stow as many cargoes as there are in numbers of cargo tanks.

Semi-Automatic Stowing

Thanks to the program 'Combinations', instructions can be given so that the program selects the cargo tanks semi-automatically. On the right side there are tree buttons stating 'OK', '+' and '-'. When a product is selected in the Table, press 'OK'. The tree buttons will now change to a bright blue colour and the clickable cargo tanks to the left will become disabled (see **figure 9**). This means that the program is connected to the 'Combinations' database.

By starting with the '+' search, the program will look into the database and search for the first group or single tank, which has the minimum 'Slack' space possible. When this is a not desirable group or single tank, press 'Search' again until a desirable selected group or single tank is found.

Use '-' to go backwards to the smallest combination or single tank. The value stated in the filling percentage, has been calculated. The Table will also be updated after every time '+' or '-' is used. When the desired result is reached, press 'OK' again and the tree buttons will deselect and return to their original colours. The cargo tanks on the left will be enabled again.

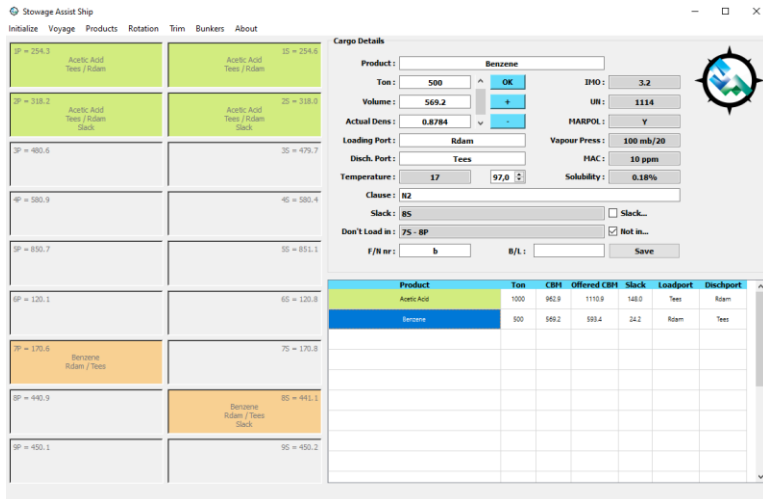


Figure 9

Note

- Stowing in the semi-automatic mode can be done as long as there are unselected cargo tanks and the 'Volume Needed' is smaller than the 'Volume Available'.

When a wrong product is loaded into the Main Dialog Window, this can simple be overcome by the submenu 'Remove Product', shown in **figure 22**. Select the product you wish to delete in the Table and then press the submenu 'Remove Product. Confirm 'Yes' in the pop-up window, to delete this product from the Table. Press 'No' to keep the product.

All white fields on the right side of the Main Dialog Window can be changed by the user. After pressing the 'Save' button, they will become implemented for that product, which has been selected in the table. When the 'Actual Density' and the 'Ton' fields are changed, the product needs to be restowed, as written above.

History

If the stowage was completed and the voyage has been performed according to the stowage logs, you can add this voyage to the 'History'. This is also the place to retrieve the last cargoes for each cargo tank on board.

By doing so select the menu 'Products' on the submenu 'Cargo History' (**figure 2**.). The following Dialog sequence will be shown as per **figure 10**.

When the program reaches the end of the search possibilities '+' or '-', the connection will be closed, and the tree buttons will also deselect and the cargo tanks to the left will be enabled again. This will be clarified with a beep sound.

Voyage	-	-	-	-	-	-	-	001
SlopP	-	-	-	-	-	-	-	Acetic Acid
1S	-	-	-	-	-	-	-	Acetic Acid
2P	-	-	-	-	-	-	-	Acetic Acid
2S	-	-	-	-	-	-	-	Acetic Acid
3P	-	-	-	-	-	-	-	-
3S	-	-	-	-	-	-	-	-
4P	-	-	-	-	-	-	-	-
4S	-	-	-	-	-	-	-	-
5P	-	-	-	-	-	-	-	-
5S	-	-	-	-	-	-	-	-
6P	-	-	-	-	-	-	-	-
6S	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	Benzene
7S	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-
8S	-	-	-	-	-	-	-	Benzene
9P	-	-	-	-	-	-	-	-
9S	-	-	-	-	-	-	-	-

Buttons: Add Voyage, Print History, Delete Voyage, Return to Stowage

Figure 10

This Dialog Window will show the last cargoes carried. There are four push buttons with their stated actions: 'Add Cargo', 'Print Cargo', 'Delete Cargo' and 'Return to Stowage'.

Use 'Return to Stowage' to return to the Main Dialog Window without any further actions.

Use 'Add Cargo' to add the selected voyage in the Main Dialog Window to the History Database. All voyages will move one column to the left and the

last voyage is seen in the column the furthest to the right. Confirm 'Yes' in the Message Window, to run this action. Use 'No' to return to this Dialog Window.

Use 'Delete Cargo' to delete the last entry from the History database. All voyages will move one column to the right in the table. Confirm 'Yes' in the Message Window, to run this action. Use 'No' to return to this Dialog Window.

Use 'Print History' to create an Excel sheet, which shows an overview of the last voyages and last cargoes carried as per **figure 11**. This Excel file can be stored on the working partition of your Local or Network system.

Last Cargoes Alladin II Voyage: 001

Voyage	Last Voyage	2nd	3rd	4th	5th	6th	7th
SlopP	Acetic Acid	-	-	-	-	-	-
1S	Acetic Acid	-	-	-	-	-	-
2P	Acetic Acid	-	-	-	-	-	-
2S	Acetic Acid	-	-	-	-	-	-
3P	-	-	-	-	-	-	-
3S	-	-	-	-	-	-	-
4P	-	-	-	-	-	-	-
4S	-	-	-	-	-	-	-
5P	-	-	-	-	-	-	-
5S	-	-	-	-	-	-	-
6P	-	-	-	-	-	-	-
6S	-	-	-	-	-	-	-
7P	Benzene	-	-	-	-	-	-
7S	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-
8S	Benzene	-	-	-	-	-	-
9P	-	-	-	-	-	-	-
9S	-	-	-	-	-	-	-

Method off cleaning : Date: 19-06-2019

Figure 11

This print can go back to 50 voyages.

Trim and draft

Use the menu bar action button 'Trim' and its submenu action button 'Draft Calculations' to open the 'Dialog Trim Calculation', as shown in **figure 12**.

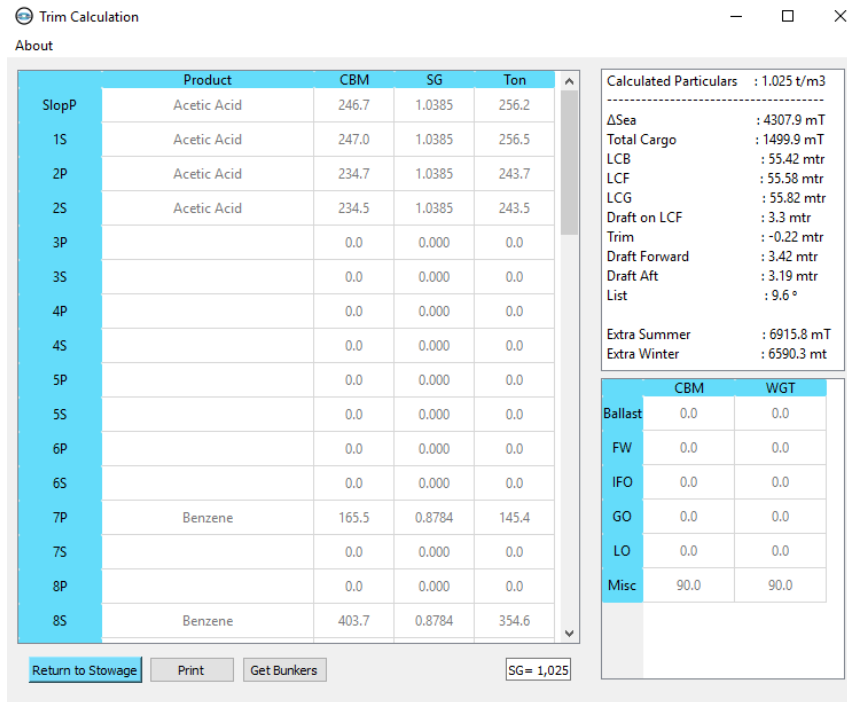


Figure 12

This Dialog Window will show the volumes, sg and tonnage of each tank listed on board, in the left table.

In the list widget, on the upper right, there will be a summary of the calculated values for 'Trim' and 'Draft' of the weight at that loading condition.

In the lower right table, there is a summary of all volumes and weight on board without cargo.

There are three buttons in this dialog: 'Return to Stowage', 'Print' and 'Get Bunkers'.

Use 'Return to Stowage' to go back to the Main Dialog Window without any further actions.

Use 'Get Bunkers' to load the last entry of the values of volumes and weights on board (besides the ballast and the cargo tanks) from the Bunkers database. Confirm 'Yes' in the Message Window, to run this action. Use 'No' to return to this Dialog Window.

As seen in the table, the selected cargo tanks are forwarded to this Dialog. The listed calculated values are from the data of the Ship without 'Bunkers'. The same goes for the values listed in the summary table. By pressing 'Get Bunkers', an updated calculated draft and list will be made and the summary table will be updated.

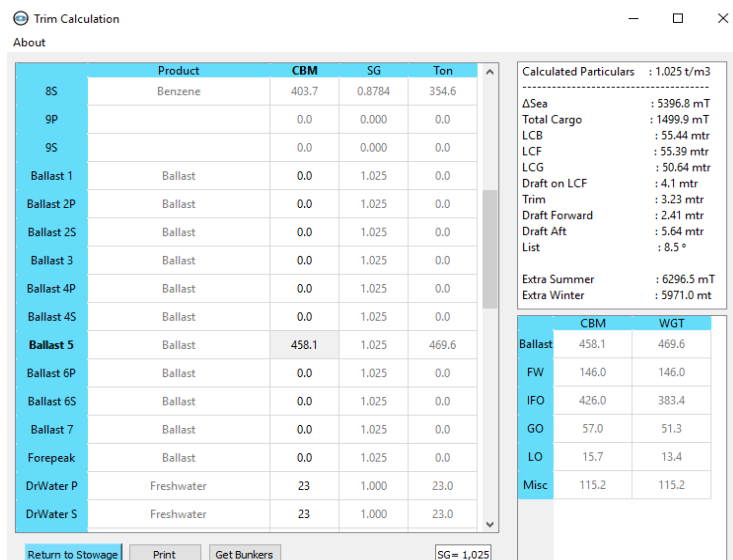


Figure 13


Furthermore, the state of the ballast and the state of the 'Bunkers' can be manipulated in the left table as shown in **figure 13**. The Volumes in the column CBM of these tanks are enabled. All the rest are disabled. Double-click these volumes to set them to maximum Volume. Single-click to empty them again.

NB: the numerical keys can be used here. When a value has been manipulated, use arrow up (↑) or arrow down (↓) to adjust.

Use 'Print' to create an Excel sheet with a summary of the Volumes, sg and Ton of all tanks on board, (see **figure 14.**)

Tankname	Product Name	Vol	SG	Ton
SlopP	Acetic Acid	246.7	1.0385	256.2
1S	Acetic Acid	247.0	1.0385	256.5
2P	Acetic Acid	234.7	1.0385	243.7
2S	Acetic Acid	234.5	1.0385	243.5
3P		0.0	0.000	0.0
3S		0.0	0.000	0.0
4P		0.0	0.000	0.0
4S		0.0	0.000	0.0
5P		0.0	0.000	0.0
5S		0.0	0.000	0.0
6P		0.0	0.000	0.0
6S		0.0	0.000	0.0
7P	Benzene	145.5	0.8784	145.4
7S		0.0	0.000	0.0
8P		0.0	0.000	0.0
8S	Benzene	403.7	0.8784	354.6
9P		0.0	0.000	0.0
9S		0.0	0.000	0.0
Ballast 1	Ballast	0.0	1.025	0.0
Ballast 2P	Ballast	0.0	1.025	0.0
Ballast 2S	Ballast	0.0	1.025	0.0
Ballast 3	Ballast	0.0	1.025	0.0
Ballast 4P	Ballast	0.0	1.025	0.0
Ballast 4S	Ballast	0.0	1.025	0.0
Ballast 5	Ballast	458.1	1.025	469.6
Ballast 6P	Ballast	0.0	1.025	0.0
Ballast 6S	Ballast	0.0	1.025	0.0
Ballast 7	Ballast	0.0	1.025	0.0
Forepeak	Ballast	0.0	1.025	0.0
DrWater P	Freshwater	23	1.000	23.0
DrWater S	Freshwater	23	1.000	23.0
Bu PF	IFO	90	0.900	81.0
Bu SV	IFO	54	0.900	48.6
Bu PA	IFO	101	0.900	90.9
Bu SA	IFO	147	0.900	132.3
DayT 1	IFO	0	0.900	0.0
DayT 2	IFO	9	0.900	8.1
Setling T	IFO	25	0.900	22.5
GO P	Gasoil	24	0.900	21.6
GO S	Gasoil	24	0.900	21.6
DayT A	Gasoil	4	0.900	3.6
DayT F	Gasoil	5	0.900	4.5
Dirty Water	Misc	4	1.000	4.0
Coolwater	Misc	0.5	1.000	0.5
Leak Oil	Misc	0.5	1.000	0.5
Sludge	Misc	7.8	1.000	7.8
Lub Oil Sump	Lub oils	6.4	0.850	5.4
Dirty Oil	Misc	3.4	1.000	3.4
Therm Oil St	Misc	4	1.000	4.0
Therm Oil Dr	Misc	3.2	1.000	3.2
Lub Oil Aux	Lub oils	0.2	0.850	0.2
Lub Oil Dr	Lub oils	0.2	0.850	0.2
Hydr Oil CPP	Misc	0.2	1.000	0.2
Lub Oil Main	Lub oils	8.9	0.850	7.6
After Peak	Freshwater	100	1.000	100.0

Figure 14



Alfa din II
Voyage : 001
Date: 19-06-19

Calculated at:	1.025
ΔSea	5396.8
Total Cargo	1499.9
LCB	55.44
LCF	55.39
LCG	50.64
Draft on LCF	4.1
Trim	3.23
Draft Forward	2.41
Draft Aft	5.64
List	8.5
Extra Summer	6296.5
Extra Winter	5971.0

Product	Ton
Ballast	469.6
FW	146.0
IFO	383.4
GO	51.3
LO	13.4
Misc	115.2

Warning:

➤ This application cannot be used for checking the stability criteria. It only calculates the drafts, trim of that loading condition. The list is calculated against a fixed GM of 1.0 meter.

File New, Load, Save

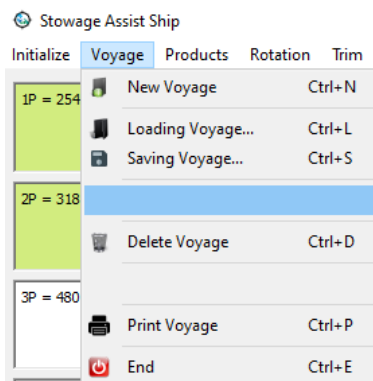


Figure 34

Use 'Voyage' to open another submenu. See **figure 34** for the details of this submenu.

This submenu contains 'New Voyage', 'Loading Voyage', 'Saving Voyage', 'Delete Voyage', 'Print Voyage' and 'End'.

Use 'New Voyage' to clear all the content on the Main Dialog Window. From there, create new data or products.

Use 'Load Voyage' to reload stored voyages into the Main Dialog Window. The stored voyages will be stored in the directory '`../HRN/Stowage Assist/Data/*/'` with extension .stw.

Use 'Save Voyage' to save voyages in the directory '`../HRN/Stowage Assist/Data/*/'` with extension .stw.

Use 'Delete Voyage' to delete voyages saved in the directory '`../HRN/Stowage Assist/Data/*/'` with the extension .stw.

- * = The name of the ship where it is installed and saved. This folder is for office use.

For all the actions above: Confirm 'Yes' in the Message Window, to run this action. Use 'No' to return to this Dialog Window.

Rotation

In the menu bar, use 'Rotation' to open a submenu action button 'Ports of Call'. By pressing this button, the following dialog will show, see **figure 35**.

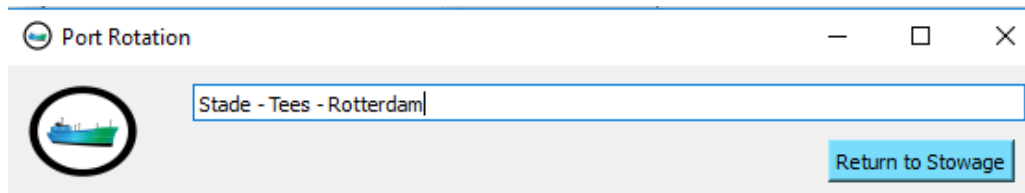


Figure 35

In this dialog window you can fill in the port rotation for that voyage.

Save the inserted ports by pressing 'OK' button. The dialog window will close.

