About SurveyorMates

The SurveyorMates has created by the inspiration of SevenSurveyor.com the Marine Surveyor Information blog. It has combined of 3 marine survey calculation programs i.e.: Draft Survey, Bunker Survey and Oil Survey in one application. It is designated for Marine Surveyor to do calculation on surveys with minimum data input, expected to overcome the survey time issues and to organize the survey back up files.

The software will bring the Surveyor to the next level with great features which the Surveyor may like it and the format was modified accordance to the Surveyor’s taste.

Hope this software could accommodate the Marine Surveyor needed to complete their survey assignment, especially in calculation that required the fast and accurate action.

Thank you for using this software. Enjoy your survey.

Sincerely,
SurveyorMates Team
Welcome Page

The First Page or Welcome Page consists of 5 buttons with button press function as follows:

3. OilCal >>> Access the Oil Calculation Page.
5. Tools 2 >>> Access the Additional Tools 2 Page.

Figure 1. Front Page
Draft Survey

The Draft Survey consists of three pages i.e.:

A. Draft Survey Data

In this page the user should be inserted

- The particulars
  Vessel particulars, such as LBP, dF Initial / Final, dM Initial / Final, dA Initial / Final, MTC on Table (Per CM or M), LCF on Table (from Mid or Aft PP), Survey Purpose (Loading or Discharging), Principal, Port/Place, Arrival Date, Cargo Description, B/L Quantity, Sea Condition Initial / Final, and Surveyor Name.

- Draft reading initial and final
  Date and Time, Draft Fwd P/S, Draft Mid P/S, Draft Aft P/S, Density of Sea Water and Keel Thickness Correction (if any).

- Deductible Data initial and final
  Ballast Water, Fresh Water, Fuel, Diesel, Lub. Oil and Others.

- Hydrostatic Table data
  This part has developed to be two ways calculation:
  1. Manual Hydrostatic Table Input
     To use it choose Manual Table. Inserting the Displacement, TPC, LCF, MTC1 & MTC2 at intended draft meter as per reading draft and Quartermean. Ignore the Red Values.

Figure 2. Draft Survey Page with Manual Hydrostatic Table input
Draft Survey (continued)

2. Automatic Hydrostatic Table Input

Inserting the data of Hydrostatic Table on each Meter for Displacement, TPC, LCF, MTC.

For one time data inserted you could do entire draft survey for this ship without inserting any hydrostatic data anymore.

This feature is the fastest way to get the draft survey but you will find a bit discrepancy as mention on the accuracy of calculation section.

To activated this feature, choosing Auto Table at Draft Survey front page and insert the requested data.

Figure 3. Draft Survey with Automatic Hydrostatic Table input

Note: Info about MTC / LCF on Table (Per CM or M) - (from Mid or Aft PP) this link: http://sevensurveyor.com/draft-survey-the-other-side/
B. Sounding Initial

The Sounding Initial is accommodate to calculate of the Ballast Water for 28 Tanks, Fresh Water for 6 Tanks, Fuel Oil for 12 Tanks, and Diesel Oil for 10 Tanks.

Data required for Ballast Water and Fresh Water Initial:
- Tank Name
- Sounding / Ullage Meter
- Water Density

Data required for Fuel Oil and Diesel Oil Initial:
- Tank Name
- Sounding / Ullage Meter
- Observed Volume as shown on tank table
- Density at 15°C
- Temperature in Celsius.

Figure 4. Sounding Initial Page
C. Sounding Final

The Sounding Final is accommodate to calculate of the Ballast Water for 28 Tanks, Fresh Water for 6 Tanks, Fuel Oil for 12 Tanks, and Diesel Oil for 10 Tanks.

Data required for Ballast Water and Fresh Water Final:
- Tank Name (in initial page only)
- Sounding / Ullage Meter
- Water Density

Data required for Fuel Oil and Diesel Oil Final:
- Tank Name (in initial page only)
- Sounding / Ullage Meter
- Observed Volume as shown on tank table
- Density at 15°C
- Temperature in Celsius.

Figure 5. Sounding Final Page
Draft Survey (continued)

This software has automatically calculated based on the common vessel’s draftmark position.

Common vessel Draftmark position means:
- $d_F$ finds after Forward Perpendiculars.
- $d_M$ finds after Midship.
- $d_A$ finds infront of Aft Perpendiculars.
- If you find like the above, just inserting all distance to perpendicular in plus (+).

In the other case:
- If $d_F$ and $d_M$ shown plus (+), inserting minus (-).
- If $d_A$ shown minus (-), inserting minus (-).

Figure 6. Draftmark Position and Distance to PP
Draft Survey (continued)

Tricks for easy using the software and save your working time

• Generally, you need to insert all the data to Hydrostatic Table. But when doing initial survey and getting tight time, you only need to insert some of hydrostatic data to complete the survey.
• See the below example: if your reading Draftmark shows:
  ** Average Draft Forward : 6.6 m, Midship : 7.4 m, Afterwards : 8.2 m.
• You could do rough determination and obtain the average draft as per show by Midship at 7.4 m.
• So, you only need to fill the Hydrostatic Table data at 6.0 m, 7.0 m, 8.0 m and 9.0 m, and then calculate it.
• Ignored the other data and now the calculation is able to run automatically.
• Ensuring to complete the remaining Hydrostatic Table data after initial survey to easily work on the final survey.

The different result with manual calculation:

• Ensuring to read the hydrostatic table carefully. Highly recommended to refer to the Hydrostatic Table, if finds any different result.
• Different Draft Correction to Perpendicular >> check all distance to perpendiculars inserted on Hydrostatic Table.
• Different at Quarter Mean (MMM) >> check the reading draft inserted.
• Different at Displacement >> check Hydrostatic Table, Displacement value that have inserted.
• Different at TPC >> check Hydrostatic Table, TPC value that have inserted.
• Different at LCF >> check Hydrostatic Table, LCF value that have inserted.
• Different at MTC >> check Hydrostatic Table, MTC value that have inserted.
• Different 1st Trim correction >> check the Trim, TPC and LCF manually.
• Different 2nd Trim correction >> check the Trim and MTC manually.

The accuracy of calculation
There is no major issues find in this software, but using Automatic Hydrostatic Table in some cases you will find the different result against manual calculation. The variances will not more than 0.01% in plus or minus from total calculated value.
BunkerCal - Bunker Calculation

The BunkerCal is designated for calculating the bunker quantity or remaining on board both fuel oil and diesel oil. The calculation is refers to ASTM table 54B. This BunkerCal is designed to calculate the Fuel Oil for 12 Tanks and Diesel Oil for 10 Tanks.

Data required for Bunker Calculation:
- Vessel’s Particulars, Date, Time, Surveyor Name, Draft Fwd and Aft.
- Tank Name
- Sounding / Ullage Meter
- Observed Volume as shown on tank table
- Density at 15°C
- Temperature in Celsius.

On/Off Hire Bunker Certificates are included. Input the particular data of Charter Parties and print the Delivery or Redelivery Certificate.

Figure 7. Bunker Calculation Page
The **OilCal** is designated for calculating the oil tanker survey to determine the quantity of cargo loading and discharging on board the vessel. The software calculation is correspondent with **API** and **Density** to input the data, and based on ASTM table 6A, 6B, 54A, and 54B. The user is allowed to works with 28 cargo tanks in the survey.

**Data required for Oil Calculation:**

- **Vessel Particulars** includes Draft Fwd and Aft, and Vessel List.
- Choose **Data Input** between **API** and **Density**, to determine which method you will use in this calculation. If you choose **API**, the **TOV** and **Free Water Vol** should be inserted >> **Barrels** and **Temp >> Fahrenheit**. Once you choose “**Density**”, the **TOV** and **Free Water Vol** should be inserted >> **Cubic Meter** and **Temp >> Celsius**.
- Choose the table **54 and 6** between A and B.
- **Survey Purpose**: Before Loading, After Loading, Before Discharging and After Discharging.
- **Bottom Sediment and Water (BS&W) Factor**.
- **Tank Name**, **Sounding / Ullage**, **Total Observed Volume** as shown on tank table, **Free Water Dip (Sounding)**, **Free Water Volume** as shown on tank table, **API at 60°F** or **Density at 15°C**, it’s depends on your **Data Input**, **Temperature in Fahrenheit or Celsius** depends on **Data Input**.

![Figure 8](image-url)

**Table 54**

<table>
<thead>
<tr>
<th>Tank No.</th>
<th>TOV</th>
<th>Sounding</th>
<th>API/Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>COT 1P</td>
<td>1.65</td>
<td>4000</td>
<td>1.25</td>
</tr>
<tr>
<td>COT 2C</td>
<td>1.75</td>
<td>4000</td>
<td>1.35</td>
</tr>
<tr>
<td>COT 3P</td>
<td>1.85</td>
<td>4000</td>
<td>1.45</td>
</tr>
</tbody>
</table>

**Table 56**

<table>
<thead>
<tr>
<th>Tank No.</th>
<th>TOV</th>
<th>Sounding</th>
<th>API/Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>COT 4C</td>
<td>1.55</td>
<td>4000</td>
<td>1.15</td>
</tr>
<tr>
<td>COT 5C</td>
<td>1.65</td>
<td>4000</td>
<td>1.25</td>
</tr>
<tr>
<td>COT 6C</td>
<td>1.75</td>
<td>4000</td>
<td>1.35</td>
</tr>
</tbody>
</table>

**Table 52**

<table>
<thead>
<tr>
<th>Tank No.</th>
<th>TOV</th>
<th>Sounding</th>
<th>API/Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>COT 7C</td>
<td>1.85</td>
<td>4000</td>
<td>1.45</td>
</tr>
<tr>
<td>COT 8C</td>
<td>1.95</td>
<td>4000</td>
<td>1.55</td>
</tr>
<tr>
<td>COT 9C</td>
<td>2.05</td>
<td>4000</td>
<td>1.65</td>
</tr>
</tbody>
</table>

**Table 53**

<table>
<thead>
<tr>
<th>Tank No.</th>
<th>TOV</th>
<th>Sounding</th>
<th>API/Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>COT 10C</td>
<td>2.15</td>
<td>4000</td>
<td>1.75</td>
</tr>
<tr>
<td>COT 11C</td>
<td>2.25</td>
<td>4000</td>
<td>1.85</td>
</tr>
<tr>
<td>COT 12C</td>
<td>2.35</td>
<td>4000</td>
<td>1.95</td>
</tr>
</tbody>
</table>

**Figure 8. Oil Calculation Page**
OilCail - Oil Calculation (continued)

Working with Density at 15°C in air:
- Observed Ullage - apply corrections - get Corrected Ullage
- Observed Interface - apply corrections - get Corrected Interface
- From Corrected Ullage, find Total Observed Volume TOV (in cubic meter)
- From Corrected Interface, find Volume of Water (in cubic meter)
- TOV - Water = Gross Observed Volume (GOV) of Cargo (in cubic meter)
- Use Density at 15C and Observed Temperature (°C) and find Volume Correction Factor (VCF) from Table 54
- Gross Standard Volume (GSV) = GOV x VCF (cubic meter)
- Weight Correction Factor (WCF) = Density at 15C in vacuum - 0.0011 (or the Density at 15C in air)
- Weight in Air (Metric Ton) = GSV x WCF (Density at 15C in air)
- Weight in Vacuum (Metric Ton) = GSV x Density at 15C in vacuum

Working with API Gravity at 60°F:
- Observed Ullage - apply corrections - get Corrected Ullage
- Observed Interface - apply corrections - get Corrected Interface
- From Corrected Ullage, find Gross Observed Volume (in US Barrels)
- From Corrected Interface, find Volume of Water (in US Barrels)
- GOV - Water = Observed Volume of Cargo (in US Barrels)
- Use API Gravity at 60F and Observed Temperature (°F) and find Volume Correction Factor (VCF) from Table 6
- Gross Standard Volume (GSV) = Observed Cargo Volume (Barrels) x VCF (in US Barrels)
- Find Weight Correction Factor (WCF) from Table 13
- Weight in Air (Metric Tons) = GSV x WCF

The term Weight in Air is that weight which a quantity of fluid appears to have when weighed in air against standard commercials weights so that each will have a mass (weight in vacuum) equal to the nominal mass associated with it.

The term Weight in Vacuum refers to the true mass of a fluid.

Vessel Experience Factor is Included.
What Is the Tools?

The Tools is an additional program that attaches to this software. The Tools will give additional features for Surveyor to do extra calculation faster and accurate.

The Tools loaded with the following extra calculations:

1. Conversion Weight, Length, Volume and Capacity is refers to the ASTM Table 1.
2. Interpolation (complex version). More information, check the video at: >>>>> THIS LINK <<<<<<
3. Density Commingle (Density Mix).

Insert your calculation data on the Black Values only, because the result will get in Red Values.

![Tools Page](image_url)

Figure 9 & 10. Tools Page
Function & Features

Here the explanation about SurveyorMates Function and Features:

1. Calculate
   
   *Calculate* Button is provided to execute any calculations on page.

2. Preview & Print
   
   When you press this button you will *preview* the intended survey form with your work result to evaluate. Then you could do *print* the job as well.

![Preview & Print Page](image1)

Figure 11. Preview & Print Page

![Preview Draft Survey result and print it.](image2)

Figure 12. Preview Draft Survey result and print it.
Figure 13 & 14. Preview Draft Survey Ballast FW, FO, DO results and print it
Function & Features (continued)

**Figure 15 & 16. Preview Bunker Survey and Oil Survey results**

### Tank Sounding

<table>
<thead>
<tr>
<th>Vessel</th>
<th>MV. MA SPARROW</th>
<th>Port</th>
<th>Bournemouth</th>
<th>Draft</th>
<th>1.49 M</th>
<th>Freeboard</th>
<th>0.85 M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>25-06-2013</td>
<td>Time</td>
<td>14:22h</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marine Fuel Oil</th>
<th>Tank</th>
<th>Sounding (ILage) (M)</th>
<th>Volume (CuM)</th>
<th>Density @15°C</th>
<th>Temp @15°C</th>
<th>V.C.F</th>
<th>G.S.V</th>
<th>Metric Ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT 10</td>
<td>1.00</td>
<td>120.00</td>
<td>10.00</td>
<td>0.8578</td>
<td>34.00</td>
<td>0.8515</td>
<td>90.872</td>
<td>44.444</td>
</tr>
<tr>
<td>DOT 20</td>
<td>1.25</td>
<td>100.00</td>
<td>10.00</td>
<td>0.8578</td>
<td>34.00</td>
<td>0.8515</td>
<td>90.872</td>
<td>44.444</td>
</tr>
<tr>
<td>DOT 30</td>
<td>1.25</td>
<td>100.00</td>
<td>10.00</td>
<td>0.8578</td>
<td>34.00</td>
<td>0.8515</td>
<td>90.872</td>
<td>44.444</td>
</tr>
<tr>
<td>DOT 40</td>
<td>1.25</td>
<td>100.00</td>
<td>10.00</td>
<td>0.8578</td>
<td>34.00</td>
<td>0.8515</td>
<td>90.872</td>
<td>44.444</td>
</tr>
<tr>
<td>DOT 50</td>
<td>1.25</td>
<td>100.00</td>
<td>10.00</td>
<td>0.8578</td>
<td>34.00</td>
<td>0.8515</td>
<td>90.872</td>
<td>44.444</td>
</tr>
<tr>
<td>DOT 60</td>
<td>1.25</td>
<td>100.00</td>
<td>10.00</td>
<td>0.8578</td>
<td>34.00</td>
<td>0.8515</td>
<td>90.872</td>
<td>44.444</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>691.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>352.460</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marine Diesel Oil</th>
<th>Tank</th>
<th>Sounding (ILage) (M)</th>
<th>Volume (CuM)</th>
<th>Density @15°C</th>
<th>Temp @15°C</th>
<th>V.C.F</th>
<th>G.S.V</th>
<th>Metric Ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT 10</td>
<td>0.40</td>
<td>60.00</td>
<td>10.00</td>
<td>0.8578</td>
<td>34.00</td>
<td>0.8515</td>
<td>35.076</td>
<td>18.000</td>
</tr>
<tr>
<td>DOT 20</td>
<td>0.40</td>
<td>60.00</td>
<td>10.00</td>
<td>0.8578</td>
<td>34.00</td>
<td>0.8515</td>
<td>35.076</td>
<td>18.000</td>
</tr>
<tr>
<td>DOT 30</td>
<td>0.40</td>
<td>60.00</td>
<td>10.00</td>
<td>0.8578</td>
<td>34.00</td>
<td>0.8515</td>
<td>35.076</td>
<td>18.000</td>
</tr>
<tr>
<td>DOT 40</td>
<td>0.40</td>
<td>60.00</td>
<td>10.00</td>
<td>0.8578</td>
<td>34.00</td>
<td>0.8515</td>
<td>35.076</td>
<td>18.000</td>
</tr>
<tr>
<td>DOT 50</td>
<td>0.40</td>
<td>60.00</td>
<td>10.00</td>
<td>0.8578</td>
<td>34.00</td>
<td>0.8515</td>
<td>35.076</td>
<td>18.000</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>230.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>90.114</td>
</tr>
</tbody>
</table>

### Ullage Report

<table>
<thead>
<tr>
<th>Vessel Name</th>
<th>MV. MA SPARROW</th>
<th>Grade / Cargo</th>
<th>Crude Oil</th>
<th>After Loading</th>
<th>Time / Date</th>
<th>14-06-2013</th>
<th>25-06-2013</th>
<th>00-06-2013</th>
<th>06-06-2013</th>
<th>07-06-2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Oil</td>
<td></td>
<td>U.S.G.</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freeboard</td>
<td>0.10</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freeboard</td>
<td>0.10</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freeboard</td>
<td>0.10</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freeboard</td>
<td>0.10</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Function & Features (continued)

3. Save This Form
   This button is function to save the data on page. It is used in intermediate save before you do Export.

4. Clean This Form
   By pressing this button you will clean the data on page. If in the first action it won’t clean the data on page, you should press it twice.

5. Export
   Export is the new feature in SurveyorMates, with this feature you could save your data on your computer to retrieve it when you need later.

You need to press Export, give name to your file, choose your file location as you wish and then press Save.

![Figure 17. Export your data to save on computer.](image-url)
Function & Features (continued)

6. Import
To support Export, the SurveyorMates provided with Import Button to recall/retrieve the data that saved previously.
It will work by pressing the Import Button, find your data location and choose the file name, then click Open.

![Import button](image)

Figure 18. Import to recall your saved data.

7. Exit
When you have finished with survey, you could press the Exit Button.

Setting Company Logo
How to change / customize the header logo? Check the video here: [https://youtu.be/uPqFeO8ei4I](https://youtu.be/uPqFeO8ei4I)
How to convert survey form to PDF

Question: I recently purchased SurveyorMates-A1+ and been exploring the software, yet I find it very hard to work with not being able to save the reports and send these via email. I am a certified surveyor can’t always have a printer available plus the majority of clients prefer to have a soft copy. Is there a way to have this option unblocked or available?

Answer: You need PDF Writer software installed on computer to convert the form to PDF such as Adobe Acrobat and NitroPDF. You also could use FREE software for the same function:

- Foxit Reader - downloadable at link: https://www.foxitsoftware.com/downloads/
- CutePDF - downloadable at link: http://www.cutepdf.com/

We have tried both, but preferred to Foxit Reader

Then do the following steps:
Open the Program >>> Press AGREE >>> DRAFT SURVEY >>> PREVIEW & PRINT >>> Tick DRAFT SURVEY >>> PREVIEW & PRINT >>> Press PRINT >>> change the PRINTER NAME to FOXIT or CUTE PDF >>> click OK >>> choose the FILE LOCATION for your file and edit the FILE NAME if you like >>> then click SAVE.

To customize the PDF; quality, colour or gray scale, size of paper etc >>> open PROPERTY and change your PDF Settings.

Attached the support pictures.
Troubleshooter

Before running the software, you need to set “Format of Region and Language”. Press “Control Panel” then “Clock, Language, and Region” then choose “Region and Language”. Under “Format” then ensure to choose “English (United States)” and click “Apply” and “OK”.

Once you work with software you might face the following:
- **Software is freezing, you can’t continue working.**
- **Software suddenly disappears but not closes properly.** When you try to re-open the by click icon it won’t start.

Solution:
Press “Ctrl+Alt+Del” to open “Windows Task Manager” then choose “Processes” and highlight “EXCEL.EXE” and click “End Process”.

Using Excel 2003 and 2002? Download and install the Compatibility Pack

To open 2016, 2013, 2010 or 2007 Office System documents in Office 2003, Office XP, or Office 2000, you must install the Office Compatibility Pack. To do this, follow these steps:
1. Go to the Microsoft Download Center to download the Office Compatibility Pack.
2. To download the Compatibility Pack (FileFormatConverters.exe), click Download.
3. When you are prompted, click Run to install the Compatibility Pack.
4. After the Compatibility Pack is installed, close any Office programs that are open.
5. Restart Office programs to open documents in the newer format.

Note: You must manually close and restart any Office programs that were open when you installed the Compatibility Pack. After those programs are restarted, the Office programs can open files that use the Open XML Format.

Question: Every now and then I am losing the program from my computer. The Anti-Virus sais illegal software and removed automatically. Can you send me a version of your software to avoid all hassle?

Answer: This is a false positive and unique solution is notifying your antivirus companies, because the problem is with antivirus, not with SurveyorMates.

‘False positive’ alert is something very boring for thousands of truthful programmer that have the misfortune of their exe file has the same string of some of the more than 45,000,000 already existent virus. Antivirus programs, moreover do not detect all viruses, detect virus where they does not exist. See links below, for example, how ‘False positive virus alert’ can be something very stupid. See also this comparative and independent site to know which antivirus are good and which are bad.

http://www.theregister.co.uk/2011/10/26/avira_auto_immune_false_positive
http://www.bit-tech.net/news/bits/2010/08/11/avira-blocks-bitdefender-beta/1
Are you dealing with **Compile Error Hidden Module**?

Try to check the below link:


**Contact Us**

As well you could check some videos about this software at the page below:

>> [SurveyorMates](#) <<

For more information and suggestion about this software please contact us by email [support@sevensurveyor.com](mailto:support@sevensurveyor.com).

Your idea is valuable to develop and improve this software; we would be pleasant to receive your email soon.

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