



Debrief Tutorial

Welcome to the Debrief Tutorial. This tutorial consists of a set of self-teach tutorials (Cheat Sheets) that you will use to learn about Debrief. In working through the tutorials you'll encounter the breadth of the Debrief application, ready for using the tool for your own analysis.

www.debrief.info

Ian Mayo



Name: _____ Date: _____

Please forward feedback on this cheat-sheet to support@debrief.info

Getting started with Debrief NG

This series of cheatsheets will guide you through creating your Debrief working environment, customising it according to your preferred file locations, and loading some analysis data.

Defining your workspace

In comparison with prior versions of Debrief, Debrief NG introduces the concept of a Workspace - a central repository for your assorted analysis-related documents. Within this workspace your work is grouped into individual projects: thus you can quickly switch between concurrent analysis tasks. Debrief's provision of projects allows you to quickly drag and drop Debrief data-files and plots into the editor.

Generating a project for your data

Debrief NG stores data in a local folder called **Project**. You place analysis files and links to existing data folders on your machine/network into this folder. This tutorial will lead you through creating a new, blank project.

1. Check Navigator is open

In the top left hand corner of Debrief you should find the **Navigator** view. If it is open, close it; if it isn't there these next steps will show you how to open it:

1. click on **Window** on the menu bar
2. mouseover or click on **Show View**
3. click on **Navigator**

The **Navigator** view will then appear. A much faster (old school) alternative is to use key stroke sequences on your keyboard to perform specific actions.



2. Shortcut key combinations

If you're an old school type who, like me, prefers to use the keyboard where possible, then you can use what are called keyboard combinations. Keyboard combinations consist of a sequence of keys which perform a certain action in the program. For example, a common keyboard combination/shortcut in any program is **Ctrl+S** to quickly save your current document. Similarly, the **Navigator** can be quickly opened via a keyboard combination:

1. Press **Ctrl+3** on your keyboard, and the **Quick Access** popup dialog will show.
2. Start typing 'navigator' in the dialog box and, before you've finished typing the word, you will see **Views - Navigator - General**; click on it and the **Navigator** dialog will appear in the top left of your window.

The next time you need to do this, press **Ctrl+3** and you'll see **Previous Choices** right under the field where you type - just click on it.



(optional)

3. Other key combinations

Throughout these cheat sheets, you will see other combinations like:

•**Alt+[key]** means **press and hold** the **Alt** key and, while it is still pressed, press the other key (or keys).

•**Alt, [key]** means you press and release the **Alt** key and then press the next key(s).

Note: sometimes, both variations will work (mainly for common Windows-type tasks), but all programs have their differences.



(optional)

4. How to find out what the shortcut keys are

To find out what other shortcut keys work:

1. Press the **Alt** key and observe how the letters of each menu item is underlined.

2. By pressing any one of those underlined letters on your keyboard, the common commands in the corresponding menu will appear.

In these drop-down sub-menus, you will see pre-programmed keyboard combinations next to the more popular commands, e.g., in the **File** menu (**Alt, F** or **Alt+F**) you will see that the shortcut key to **Print** is **Ctrl+P** - this is the same in the vast majority of Windows applications. Try and remember these, as they can speed up your work in Debrief.



(optional)

5. Learn about the show view menu

If the Navigator view was already open, you may have missed an important feature in Debrief, the **Show View** menu. Views are supplemental panels that provide additional information (or control) to the conventional 2D Debrief plot, and there are a number of views available.



(optional)

6. Opening a view

To open a view:

1. Click on the **Window** menu item

2. Select **Show view** and a list of Debrief-specific views open.

3. Click on the view you require to open in it the Debrief window.

So, in the future, when you're directed to a view and you can't find it on your screen, just remember you can open any view from this menu.



(optional)

7. Closing a view

Views can be closed by clicking on the X icon on their name tab.



(optional)

8. Moving a view

Views can also be dragged around, both within Debrief to reposition them, or to a separate external window. When you close Debrief, it remembers the views that were previously open.



(optional)

9. Learn about the Quick Access panel

Alternatively, wherever you are in Debrief, you can open the quick access panel. Just **press and hold** the **Ctrl** key, and then press **3** and a yellow post-it like menu will appear. As you start typing 'Navigator' the list of available commands will reduce until your required view is open. If you prefer to use the mouse, click on **Window > Navigation > Quick Access**.

When you see '**menu > sub-menu item > item**' in this document, it means click on the first item, then on the second, and so on. I'm sure you've seen this before; it's a much tidier than writing:

1. Click on **Window**

2. Then click on **Navigation**

3. and so on...

I think you'll agree that the second method is far more cumbersome. We will still use the second approach for step-by-step procedures, however.



10. Check you need a project

If you have to create a project please move on to the next step. If the **Navigator** view is empty, then you will need to create a new project. If the window already contains a folder-icon (possibly containing sample data) then you're ready to go, and can move on to the next cheat sheet.



11. Create a general project

To create a 'general' project:

1. Right-click anywhere in the **Navigator** view, the **New** sub-menu will display
2. Select **Project...**
3. The **New Project wizard** will open
4. Click on **General > Project**
5. Click on the **Next** button; you will now **Create a new project resource**
6. Enter a name for your project (perhaps the name of the current exercise, or another meaningful name).



If you're in a workplace where users are unable to create folders in their home directory, clear the **Use default location** checkbox, and **Browse** to a folder in your personal working directories

Note: you can ignore 'Working Sets' for now

7. Click on the **Finish** button

You will see the new project in your workspace.

You've now created a project into which you can store your Debrief data

Sample Data if Debrief is on a Local Machine

Debrief NG stores it's data in a local folder called a Project. While these are frequently created afresh to store new analysis data, it's also possible to denote your existing data directories as sub-folders (via links). This tutorial leads you through generating links to your existing data folders. But, if the "Create Project" form opened at application startup, you provided a project name, and indicated that you would like sample data to be imported, then you can skip the following steps and move on to the next cheat sheet.

You should also skip this set of tasks if you can see a **Sample Data** folder in your Navigator, since you must have already created the necessary link(s).

Lastly, you should skip this set of tasks if you run Debrief from a network share. The next set of tasks (for **shared folder**) are the correct set for your situation.

1. Open Navigator if it is closed

Open **Navigator** if it is closed by using the **Ctrl+3** shortcut and then either clicking on the option in **Previous Choices** or typing 'navigator' in the search field and clicking on it when it appears.



(optional)

2. Check you have a workspace

Before you can link existing data, you need to define a project for your work: a 'project' is a parent folder which stores your links. If your **Navigator** view is empty, you must first complete the **Generating a project for your data** cheat-sheet (above).



(optional)

3. Add a new Folder

To add a new folder:

1. Right-click on your current project in the **Navigator** view, the **New** sub-menu will show.
2. Select **Folder** and the **New Folder** wizard will open.
Here though, instead of creating a fresh child folder to store our data, we're going to link to an existing folder.
3. In the **New Folder** wizard, click on the **Advanced** button and the **Advanced** options will show.
4. Select **Link to alternate location (Linked folder)**.
5. Click on the **Browse...** button and navigate to an existing data folder on your machine or network location.
6. Once complete, click on **Finish** to close the wizard and link to your existing data.

Note: if you don't have your own data, use either of the following:

- For a deployed Debrief, use the **sample_data** folder installed in your Debrief installation folder.
- If you are running a development version of Debrief, use **org.mwc.cmap.combined.feature/root_installs**.

If you followed these steps, you will have created a link to the sample data, however, if you need to load data from other data directories, repeat this process as often as is required, but use a shared working folder.



(optional)

You can now repeat this process to create links to your other Debrief data directories.

Configuring background data

In addition to plotting your recorded vehicle data, Debrief is able to show a number of datasets in backdrop form. In the past we offered the Vector Product Format (VPF) vectored dataset and the ETOPO-2 gridded bathymetry, but these have now been superseded by the shiny new 'Natural Earth.'

1. Obtaining the Natural Earth dataset

Debrief contains a low resolution 'Natural Earth' dataset, sufficient to provide coastlines and country boundaries.

However, you can make your analysis plots much more attractive by configuring higher resolution data.

Your workplace may already have a network copy of 'Natural Earth' but, if your IT security policy allows it, you will get better performance by copying the data to your hard drive.

If you don't have access to a copy, you can download it from <https://github.com/debrief/NaturalEarth> by clicking on the **Download zip** button (file size is approximately 25 MB).

Once you have downloaded the file, just unzip it in the normal way and save it to a safe location on your hard drive.



2. Configuring Debrief with Natural Earth data

The next step is to configure Debrief with the 'Natural Earth' data:

1. Click on **Window > Preferences** (or press **Alt,W,P**)
2. Click on **Maritime Analysis** and select **Natural Earth**
3. Click on the **Browse** to navigate to your unzipped 'Natural Earth' folder.
4. Click on **Ok**.



Viewing data

This series of steps will guide you through creating and populating a new Debrief plot.

Creating a new plot in Debrief

This tutorial will guide you through creating a new, blank 'plot' in Debrief.

1. Check you have a Project

'Plots' are stored in 'Projects', so before you create a plot, you must have a Project. If you don't have one, refer to **Generating a project for your data** and follow the steps there.



2. Choose location for plot file

Debrief will store the new plot in one of your existing folders. If your navigator contains links to both shared training data and personal data folders, it's best to create this plot in your personal data folder.



3. Create new plot

To create a new plot, in the **Navigator** view:

1. Right-click on the parent folder for your new plot and select **New/Debrief Plot** to open the Wizard.

2. Now either confirm the plot save location (the plot's **container**) or select a different location by clicking on the **Browse** button and selecting the parent folder of your data directories.

3. Change the filename (as required).

4. Click on **Next**.

5. Now, select or deselect whether to use the 'Natural Earth' dataset and click on **Next**.

6. Now you can choose whether or not to **add** a scale to your plot, with the following options: **colour**, **display units**, and **scale** location.

If you choose to include a scale, you must enter the display units and scale location before proceeding to the next step.

7. Next you can choose whether to **include a coastline** or not. This option is not mandatory.

8. Clicking on **Next** takes you to the last step in this process: the **Add Grid to Plot** dialog box.

Here you can select whether to **include** a grid, the grid **colour**, whether to show **Plot Labels**, and the **Delta—grid** step size. Once you have selected your options, click on the **Finish** button. The changes will be applied, and the dialog will close.



4. Finished

Your new plot (with the filename you used earlier), will then be displayed in your Debrief window. It is also located in the folder you specified in step 2 (above).

Note: the wizards make life easier, but all the steps above can be performed from the **Chart Features** menu in Debrief (**Alt,C**).



Note that we didn't have to use the wizard steps, we could have inserted chart features into our Plot by hand using the Chart Features menu.

Adding data to a plot

Debrief's **New Plot** wizard is effective at providing you with a preformatted backdrop to your analysis, but it doesn't load your data for you.

We will now load some existing tracks to assist you in getting started.

1. Check sample data

To check sample data:

1. Open **Navigator** (using your mouse, or **Ctrl+3** and typing the search term).

2. Expand the folder that contains your existing Debrief files (these will be either REP or DPF). **Note:** valid Debrief files are flagged with a Debrief icon. Refer to the **Debrief File Formats** chapter in the **Debrief User Guide** to learn more about the two file types.



2. Drag in a simple track

If you've already got a plot open, close it now by clicking on the cross in the small tab-shaped icon above it. Don't worry about saving the tutorial files. Drag a **rep** track from your **Navigator** onto the blank plot area. The **boat1.rep** file is a simple starting point. The plot and any associated views will promptly update.

When rep files are dragged in, you may be asked whether you wish to import the data in 'Over The Ground' (OTG) or 'Dead Reckoning' (DR) mode. For this tutorial, select OTG.

**3. Drag in a complex plot**

If you have multiple tracks to analyse, you can drag them onto the track plot you've just created. But, for now, close the plot you have open by clicking on the cross icon in its tab and press **Don't Save**.

Now, drag **sample.dpf** into the plot area. You'll see that this plot contains more complex graphical features.

**4. Debrief file types**

Note, you've just encountered two file types, the 'Replay' file type (.rep) and the 'Debrief' file type (.dpf).

The 2 file types differ in that while the Replay file format is a very simple, column oriented text format ideal for passing around track data and getting your raw track data into Debrief (see the **Reference** section within the user manual for more details), rep files aren't suited to storing formatting data or user preferences; this is where the Debrief file type comes in: the textual XML file structure of the dpf files allows it to store a wide range of data.

As such, a typical flow is that data enters Debrief in rep format and an analyst uses this data to create a custom plot, which is then stored in XML format as a dpf file.

**5. Done**

Your track data is now on the plot.

Note: tracks can be dragged into Debrief from other areas, such as Windows Explorer.

**Editing your data**

So, you've found your data, loaded it into Debrief, and now you want to make some changes to it. This cheat-sheet will give you some pointers.

1. Check you have data

To check that you have data:

As before, open **Navigator** if it is closed (**Ctrl+3** then click on **Previous Choices** or type 'navigator' in the search field and click on it when it appears).

Confirm you have sample data-files in navigator.

If not, refer to the **Viewing Some Data** cheat-sheet. **Note:** valid Debrief files are flagged with a Debrief icon. Refer to the **Debrief File Formats** chapter in the **Debrief User Guide** to learn more about the two file types.

**2. Open the sample plot file**

If necessary, double-click on **sample.dpf** in the **Navigator** view; the sample plot will open.



3. Fit to window

You can also experiment with zooming in and out.

Click the **Zoom Out** button once to zoom out, or you can put the plot into **Zoom In Mode** by clicking on the **Zoom In** button. Now, when you drag an area, the map will zoom in on that viewport.

Lastly, to make sure all of the data is visible, click on the **Fit-to-Window** toolbar button. You can also find further information in the **Moving around the view** section of the **Debrief User Guide**.

Note: if you hover your mouse cursor over any button, a tooltip explaining its function will appear.

**4. View the data in tree form**

In addition to viewing your data on the 2D plot, the **Outline View** displays it in tree form. Switch to the **Outline View** view to see the data. If the Outline View isn't open already, you can open it via the **Window/Show View** menu. You'll see the two tracks there, together with other layers that contain **Chart Features** (such as the **Grid** and **Scale**), and the **Misc** layer that contains graphical annotations.

**5. Ensure the properties view is open**

The **Properties** view is normally at the bottom left of Debrief. If it's there but hidden behind other views, click on its title to reveal it. If you can't find it, select **Properties** from the **Window > Show View** drop-down list (**Alt, W, V, P**).

**6. Select an item**

Now double-click on one of the corners of the green rectangle near the centre of the track plot. You'll now see its editable attributes appear on the properties window. Great. You'll see that the attributes are grouped for ease of use, and some must be expanded (those for location and time).

**7. Make a change**

To change the rectangle's label colour:

1. Click once on the green rectangle next to **LabelColor**; a button with an ellipsis will appear.

2. Click on the ellipsis to open the **color editor**.

3. Next, click on the red rectangle, and then the **OK** button.

The dialog will close, the label color property will be updated, and the plot will redraw.

**8. Undo the change**

Our new colour actually doesn't meet the NATO MilStd 12332 Sub-para 14g (2002 version) standard, so we need to undo it:

1. Click on the tab at the top of the **sample.dpf** plot window (this makes the desired plot 'active').

2. Click on the **Edit** menu

3. Select **Undo**.

The color of the label will now change back: you've undone a step.

Now that you've undone an action, if you click on the **Edit** menu again, you'll see a **Redo** option available - in case you couldn't care less about adhering to sub-para 14g.

The **undo/redo** feature is a common to most programs and can be applied to lots of functions. The shortcut keys for these are **Ctrl+Z** and **Ctrl+Y** respectively (I use the former a lot).

Bear in mind that the **Undo** button applies to the active Debrief view, so you must first select the plot to make it 'active' before pressing undo.



9. Edit a position

To select a position within a track, double-click on it and its editable attributes will appear in the properties view.

You can change the symbol or label visibility (**SymbolShowing** or **LabelShowing**), and the **Color** that position is plotted in.

Note: different elements have different properties, so you may have to scroll up and down the Properties Window to see all the available properties.



10. Edit a whole track

To edit an entire track, we use the **Outline View**, which makes selecting a plot easy.

To open the **Outline View**:

1. Click on **Window > Show View > Outline View**

2. In the **Outline View**, click once on the name of a track and all the track's properties will be editable in the **Properties View**.

The **Outline View** is also useful for selecting and editing non-geographical entities, such as a grid, scale and background data-set.



11. Rearranging your views

Rearranging views in Debrief is a simple case of dragging views upwards. So, click on the **Properties** panel and drag it upwards.

You will now be able to see the **Outline View** and **Properties** views at the same time.



12. Edit directly from the plot itself

It is possible to edit certain attributes by right-clicking on an item on the plot. A popup menu will appear showing a series of available options and commands. A drop-down menu is shown next to the current item's name, from which you can edit the respective attributes.

Note: if you click on a vehicle position, a drop-down appears for the parent track as well as the position itself.

Right-click functionality is available from anywhere in the program to offer options related to the tasks or actions at hand.



13. Remember to save

Anyone who has used computers for any length of time will have lost work at some point, so be sure to save your work regularly. You can save your work quickly by clicking on the floppy-disk icon on the main toolbar, or by pressing **Ctrl+S**.

Note: if the data you're using is in the rep file format, formatting data will not be stored; therefore, you will be prompted to save the file in Debrief's dpf plot-file format.



View the UI overview in the Help

That's the end of the guided tour. We hope it's been very helpful to you.

View the help guide

Just so you know, in addition to these cheat sheets, Debrief has an extensive user guide that you can use; but, next we're going to go over other features in the user interface.



Analysing Sensor Data

With ever-increasing data rates from multiple recording systems it is easy for an analysis plot to become swamped. Debrief NG provides tools to reduce the volume and type of data displayed. This tutorial will lead you through the management of large volumes of data.

1. Check you have data

To check that you have data:

Open **Navigator** (using your mouse, or **Ctrl+3** and typing 'navigator').

Confirm you have sample data-files in navigator. If not, refer to the **Finding the sample data** cheat-sheet

**2. Open the sample sensor tracks file**

To open the sample file, double-click on the **sen_tracks.rep** file. If the **Import** dialog appears, select 'Over The Ground' for both tracks; you will see the red and blue vessel tracks.

**3. Fit to window**

The workspace can get cluttered quickly; to make sure all of the data is visible, click on the **Fit-to-Window** toolbar button.

**4. Add the SSK track**

We will now add the sensor data. Starting from the **Navigator** view, drag the **sen_ssk_sensor.dsf** SSK sensor data file onto the plot. You can accept the default options in the import wizard.

**5. Add the FF track**

Next, drag the **sen_frig_sensor.dsf** SSK sensor data file onto the plot.

Note: the data will import, but there won't be any visible changes to the plot area.

**6. View the sensor data**

To view the sensor data, in the **Outline View**:

1. Expand the 'tree' for the 2 tracks called **Frigate** and **New_SSK**. In each of these tracks you will see named blocks of sensor data.

2. Now, we need to make each block of sensor data visible, so click on one to select it, and then click on the **Reveal Selected Items** toolbar button. As you make each set of data visible, you should see its bearing fan appear in the plot area. Overall, there are six blocks of sensor data across the two tracks.

**7. Sensor formatting options**

Sensor lines can be formatted to change their colour, their label, and the location of their label. This formatting can be applied to a single sensor line or a series of sensor lines.



(optional)

8. Format the sensor data

Next, we will simulate the formatting a series of bearing lines to represent the state of a particular sensor. From the **Outline View**:

1. Open the **NEW_SSK_BB** sensor for the **New_SSK** track (click on **New_SSK**, then on **Sensors** to show the sensor bearings).

2. Select the first five sensor bearings by left-clicking on the top sensor bearing; then, hold down the **Shift** key, click on the 5th sensor; all 5 items should be selected.

3. Switch to the **Properties** view to show the editable properties for those bearings.

4. Click on the **Color** property, select **yellow** and Click **Ok**.

You will see the sensor lines on the plot update.

**9. Conduct a plot-lock**

We will now simulate the process of dragging tracks so that their bearing fans match. In the UK this process is called a plot-lock, and in the US it's called a tie-point.

First though, we must indicate which tracks we want to view the relationship between:

1. Right-click on **Frigate** and then select **Make Primary**

2. Right-click on **New_SSK** and select **Make Secondary**

These will both appear in the Track Tote view.



10. Commence plot-lock

To commence plot lock which will enable us to use the mouse to drag the tracks, click on the **Drag Track Segment button** on the right side of the globe.



11. Start dragging

The **Stacked Dots** view should have opened and the cursor should now have changed to a brown hand.

The **Stacked Dots** view shows the bearing error for visible sensor bearing lines against the point on the target track nearest to that DTG.

When the cursor is over the end of a track, it will turn green.

1. Move the cursor over the north-west end of the blue track until the cursor turns green.

2. Hold down the mouse button and start dragging the track. You will see the track and its sensor data start to hover as you drag it, and the bearing errors in the **Stacked Dots** view will update proportionally. In plot-locking the tracks, you're trying to minimise the errors displayed on the graph. If you value some sensor data more than others, experiment with hiding the other blocks of sensor data (by making them invisible) - this will unclutter the plot and the stacked dots, making plot-locking easier.



12. Done

Well done! You've completed the steps on loading, managing, and formatting sensor data - supported by a healthy dose of plot-locking.

Having come this far, you now know the initial steps of using Debrief. Sure, you're not a master yet, but that comes with a bit of practice, so be sure to run through the steps above again.

You now know about the views, and how to use them to your advantage, so it won't take you as long next time. Now we'll move on the next cheat sheet,

Using Debrief in Analysis.



You've now mastered the initial steps of using Debrief. '

Ok, you've finished your first cheat sheet, why not try the "Using Debrief in analysis" on next. '

Signed: _____ Date: _____

Name: _____ Date: _____



Please forward feedback on this cheat-sheet to support@debrief.info

Controlling what you view

This tutorial will get you started with some of the analysis functionality in Debrief.

Filtering your view

Ever-increasing data rates from multiple recording systems means your analysis plot will quickly become swamped. This tutorial will show you how to manage the volume and type of data displayed using the Debrief NG tools.

1. Open Navigator

You will need to have the **Navigator** view open; if it isn't visible, open it now (refer to the previous cheat sheet if you're still unsure on how to do this).



2. Open a sample file

Now, double-click on the **sample.dpf** in the **Navigator** view and the sample Debrief plot will open.



3. View the entire data plot area

To ensure you can see all of the data, click on the **Fit-to-Window** button either on the main toolbar or in the **Chart Overview** panel.



4. Open the Outline View

You will need the **Outline** view for this exercise, so open it now by either clicking on **Window > Show View > Outline**, or by using the shortcut key **Alt +Shift+Q, O**.



5. Hide shape

At the top of the **Outline** view is a toolbar with functions that can be applied to plot items. In that view, you can see a list of items, including one called **Misc (5 items)**. Click on the arrow to the left of it to expand the group.

Select any item in that group and click on the empty rectangle button in the **Outline** view toolbar (next to the **+2** button). You will see the tick next to the element and the corresponding shape on the plot disappear.

Another way of doing this is to use the drop-down menu in the **Outline** view: this is accessed via the small arrow at the end of the **Outline** view toolbar (to the right of the ticked check-box).

Note: you can show/hide more than one item at a time by holding down the **Ctrl** key and clicking on multiple items.



6. Hide whole layer

Next, experiment with hiding whole layers: select one of the tracks in the **Outline** view and practice hiding and revealing it.

Note: you can expand each track to see the series of positions within. Once expanded, you can select a series of points (each of which represents a time-period) to be hidden or revealed. However, this is just one way of doing it.



7. Filtering to a time period

We will now filter the plot to a particular time period:

1. Open the **Time Controller** or make it active if it is already open. The lower section has a pair of sliders used to mark the start and end time of a variety of tasks.

2. In the drop-down menu of the **Time Controller** (the triangle on the right of the **Time Controller** toolbar), select **Filter to period**.

3. In the **time period markers** (under the slider), drag the start and stop markers to different positions. As you do this, you'll see the shaded portion adjust to the selected period: this represents a custom time period which is also visible on your plot. You can drag this shaded section to move your 'windows' forwards and backwards.

If you hold down the **Shift** key while you move elements on the time plot, they will 'snap' to the hour lines.



Hopefully you found the above steps easy to follow. Controlling what you are viewing is an essential component of working effectively with Debrief and an essential skill for both data analysis and collation of information for transfer to presentation software like Word or PowerPoint.

Assigning primary and secondary tracks

In the next part of the tutorial, we will look at primary and secondary tracks, how we set them up, move tracks through time, etc. All this is done through a Debrief view called **Track Tote**.

1. Open Navigator

If **Navigator** isn't visible, open it.



2. Open the sample plot-file

Double-click on **sample.dpf** in the **Navigator** window, and the sample plot will open.



3. Fit to window

To make sure all of the data is visible, click on the **Fit-to-Window** toolbar button.



4. View the Track Tote

In the centre section of the left hand column in Debrief is the **Track Tote**. If it isn't visible, open it by clicking on **Window > Show View > Track Tote**.

If it is open but hidden beneath other view panels, click on its tab to make it active.



5. The Track Tote explained

The **Track Tote** contains information about selected tracks in the active plot. It displays at least one column for the active track plus the **Calculation** column, up to a maximum equalling the number of plots in the active area, plus the **Units** column, which you can hide.

In our **sample.dpf** example, the left-hand track column contains the **primary track** data for 'Nelson' and the right-hand column contains the **secondary track** data for 'Collingwood'. All calculation data is taken from the corresponding track (the calculations themselves are explained in greater detail in the help manual).



6. Move track through time

Now we will use the time controller to change the time:

1. If the **Time Controller** is not visible, open it.
2. Drag the **time-slider** right and left, and you will see the calculated data fields update (you will also notice the white squares denoting the vessel positions move).



7. Removing a track from the tote

To remove a track from the tote:

1. Right-click the 'Collingwood' tote column (not the header) that is furthest to the right.
 2. Select **Remove this track**.
- The 'Collingwood' **secondary tack** will be removed, leaving the remaining 'Nelson' track.



8. Adding a track to the tote

To add a track to the tote:

1. Open the **Outline View** - note the disabled buttons '1' and '2' on the view toolbar, they will become enabled when a currently selected item is suitable for inclusion on the tote.
 2. Click once on the track you just removed from the tote and both buttons will be enabled.
 3. Make the track either primary or secondary, as you please. When you do so, it will appear in the tote again.
- Note:** Apart from tracks, any data item that has time and location attributes can be placed on the tote; circles and labels are particularly suitable.



9. Done

You have completed the tutorial on the **Track Tote** and now you know about primary, secondary and other tracks. As with all of our tutorials, you can go back and practice until you're comfortable with it.



So, you now understand Primary and Secondary tracks. You're practically an analyst!

Viewing time-related vessel tracks

Debrief offers more than just a static overview of vessel tracks, it also allows you to control the time period for data shown.

1. Open Navigator

If **Navigator** isn't visible, open it.



(optional)

2. Open the sample plot-file

Double-click on **sample.dpf** in the **Navigator** window and the sample plot will open.



3. Fit to window

Click on the **Fit-to-Window** toolbar button to make all of the data visible.



4. View the time controller

We looked at the **Time Controller** in the **Filtering your view** tutorial previously; if it isn't currently visible, open it.



5. **Confirm you are in normal Stepping mode time**

The Debrief **Time Controller** has two 'time stepping' modes:

1. **Normal mode** shows all exercise data.

2. **Snail mode** shows the current position and recent points, and is used for detailed analysis around a specific time.

Click on the left-most button to select **Normal mode**.

☐

6. **Move slowly through the data**

Above the current time indicator are a series of buttons similar to the pause/play/rewind buttons on any media player. Click on the buttons and you'll see the green **date and time** value adjust accordingly.

Also note the movement of the white rectangle along the vessel tracks.

☐

7. **Move quickly through the time period**

If you want to move quickly through the time period, drag the time-slider in either direction and see how quickly the white highlight rectangle moves along the vessel tracks, as well as the time change in the **Time Controller** view.

In addition, notice how the **Track Tote** view updates to reflect the current time (if it isn't open, open it and see).

☐

8. **Experiment with the time format options**

The **Time Controller** also has a drop-down menu at the end of the toolbar with additional sub-menus, including **DTG Format**, where you can select the current time display format; and **Time Slider Increment**, where you can adjust the time increment used for moving through the plot.

1. Change the DTG format so that you can see the full Year/Month/Day for the current DTG (Note the year... yes, Debrief has been going for some time now).

2. Change the **Time Slider Increment** to 15 minutes, so that you can move through the plot more quickly.

☐

9. **Change plotting modes**

To change plotting modes:

1. In the **Time Controller** drop-down menu, click on **Plotting Mode**

2. Select **Primary Centred/North Oriented**.

3. Click the **Snail mode** button. Now move the slider forwards and backwards and watch the plot change.

Note: The **Plotting Mode** is selected independently of the mutually exclusive **Normal** and **Snail Display Modes**.

☐

10. **Work with time periods**

Now we'll look at the time period selector in the **Time Controller**. No prizes for guessing what this does.

However, even though it is used to select a period of time, it doesn't function in quite the same way as the other controls do, where you see something happens because it's affecting 'current' operations; when you change the time period you're changing the interval that will be used for 'subsequent' operations.

For example:

1. Select a time period of **120700** to **121000**.

1. From the **Time Controller** drop-down menu, select **Export calculated data to clipboard**.

The 3 hours of calculated data from this selected period has just been copied to your system clipboard. You can now paste it into your preferred analysis software (such as Microsoft Excel).

☐

11. Control the visible time period

It is easy to control the visible time period in Debrief:

1. Select the **120600** to **120700** period in the time plot.
2. Click on the **Filter plot data to selected time period** button on the **Time Controller** toolbar (second from right).

Now, when you move the time-slider, the plot is trimmed to that 1-hour period.

Note: holding down the **Shift** key makes the slider move in larger increments (you can even jump through the exercise in 1-hour blocks by holding down the **Shift** key when dragging the selected period).

So you don't lose the sample data in this example, ensure you extend the sliders out to their full range to reveal all the training data.



12. Precise time selection

It can be difficult to select precise times using the slider, but there is another way:

1. Double-click on the start/finish time marker triangle - the value will then become editable in the **Properties** view (below the **Time Controller**).
2. Modify the time value and then click outside the property box to enter the value.

Or, if you're trying to move the time value a very small amount:

1. Press the **Ctrl** key on your keyboard
2. Double-click on the start/finish marker to display a mini time-slider.
3. Adjust it to the time you require, then click outside the box to enter this time value.



13. Time Controller editable properties

As we've already seen, the **Time Controller** drop-down menu contains a series of sub-menus. Some of these sub-menus have an **Edit properties** element which lets you control various aspects of temporal data analysis.

For example, once you've selected an item from the properties drop-down menu, its attributes will then become editable in the **Properties** view (open it if it's not visible).

Note: the item only appears on the properties window if the **Time Controller** is the 'active' view (blue highlighted name tab). If it isn't active, click on the tab to do so.



14. Bookmarking the current time

Debrief NG lets you insert a bookmark attached to a particular DTG in the current plot. This can be useful if you're analysing a particular exercise and want to record some interactions.

1. In **Normal** view mode, move the time-slider to **121011** hrs - The moment when 'Nelson' (RED) initiates a manoeuvre in reaction to having detected 'Collingwood' (BLUE).
2. Select **Add DTG as bookmark** from the **Time-Controller** drop-down menu. A dialog box will open inviting you to add a remark for that DTG.
3. Enter "First contact", then press **OK**.
4. Now, move the time slider to **121131**.
5. Select **Add DTG as bookmark** again and enter a bookmark title "Plotlock start".

These bookmarks won't be visible until you show the Bookmarks view:

6. Click on **Window > Show view > Bookmarks**
7. Now, double-click on either bookmark to move to that time.
8. Save (**Ctrl+S**) and close your plot.

Note: you can store as many bookmarks as you like and they can be used across all your analysis plots.



15. Done

If you found the above tutorial easy, then great! Not only is the Time Controller a very capable panel that provides a wide range of functionality, but it's also one of the more complex parts of Debrief. So once you've conquered it, you're really going great guns.



The **Time Controller** is a very capable panel that provides a wide range of functionality. You've now got an idea how to control it.

Analysing time-related calculated data

Debrief is capable of producing analysis products far beyond the traditional graphical track plots. All it needs is the data. The most obvious derived products are the analysis plots: graphs showing time versus either a recorded data value or a calculation based on a specific set of data values. In this tutorial, we will look at how to do just that.

1. Overview

To be able to analyse the data correctly, we first need to tell Debrief what information we want, such as:

- the time period we want plotted
- which participants to plot data for
- what type of data to plot
- which is the primary track (for relative calculations)

But, before we can do any of this, we need the data...



2. Open Navigator

If **Navigator** isn't visible, open it.



(optional)

3. Open the sample plot-file

Double-click on **sample.dpf** in the **Navigator** window to open the sample plot.



4. Fit to window

click on the **Fit-to-Window** toolbar button to make all of the data visible.



5. Open the Time Controller

As we said in step 1, one of the attributes we need to specify is the time period, and we need the **Time Controller** to do it.

If it isn't open, click on **Window > Show View > Time Controller**.



(optional)

6. Select the desired time period

Now we need to select the required time period: adjust the start and end markers to select the period **120800** to **121100**.

Note: remember that holding down the **shift** key makes the sliders snap to the hour markers.



7. Open the Outline View

Next we need to indicate what tracks we want to see information for. In the bottom left hand corner of Debrief you should find the **Outline View** window. If it isn't visible, click on **Window > Show View > Outline View**.



(optional)

8. Select the tracks of interest

In the **Outline** window:

1. Click on the 'Collingwood' track to select it.
2. Then hold down the **Ctrl** key and click on the 'Nelson' track to select it as well.



9. Open xy-plot

Now we will open the xy-plot:

1. Right-click on the selected items and, in the drop-down menu, click on **View XY Plot**.
 2. The **View time-variable plot** dialog will open; select **Range** from the available attributes.
 3. Click on **OK** and the **Select primary** dialog will open.
 4. Designate either **Track:Collingwood** or **Track:Nelson** as the primary track for this plot. For this example, select **Collingwood**.
- As Debrief calculates the data and relationships between multiple tracks, it needs to know which track is the primary subject to be able to do this.
5. The **Collingwood Range v Time plot** graph will appear on the screen.



10. Navigate around the plot

To navigate around the plot area:

- **Zoom in** - you can zoom in on the graph by dragging the mouse from top-left to bottom-right (or you can right-click and select **Zoom in >[Both axis | Domain axis | Range axis]**).
- **Zoom out** - you can zoom out by dragging the mouse from bottom-right to top-left. (or you can right-click and select **Zoom out >[Both axis | Domain axis | Range axis]**).
- Another method of zooming out is to click on the **Fit to Window** button - you've already used this before.

Note: there are other ways of using the plot area, such as using the tab key to cycle through the drag modes (the buttons to the left of the **Zoom in** button on the main toolbar), or, if you have a mouse with a wheel, you can press the **Ctrl** key and then use the **mouse wheel** to zoom in and out of the plot



11. Customise

You can also experiment with the other commands, and even configure and customise the graph to use your preferred font and titles.



12. Track Other Objects

It isn't just tracks that can be plotted, as you can also plot other objects, such as tracking the proximity of multiple vessels to a fixed point object (such as a sensor).

To do this:

1. Insert a label annotation on the plot by clicking on **Drawing > Label**. A red marker will be placed on the plot called **Blank label**.
 2. Click on the **Properties View** tab and rename the label to 'Sensor 1'.
- We will now move the sensor to a new position.
3. Press **Alt+3** on your keyboard to select the **Drag Whole Feature** option, the mouse cursor will change to a brown hand.
 4. Move the mouse over **Sensor 1** until the hand changes to **green**. Now you can move the sensor.
 5. Drag and drop it to wherever you wish on the plot, somewhere close to the 2 tracks perhaps.
 6. Now, in the **Outline view**, left-click on **Sensor 1** if it is not selected.
 7. Then **Ctrl+click** on **Collingwood** and **Nelson**.
 8. Right-click and select **View xy plot**.
 9. Select **Range** and click **OK**.
 10. Designate **Label:Sensor 1** as the primary track and click on **OK**.
- You will now see the **Sensor 1 Range v Time plot** showing how close the vessels came to the sensor and at what times.



13. Done

That concludes the tutorial for conducting analyses using Debrief. If you're going to use Debrief to generate positional data for missing tracks, why not try the **Single Sided Reconstruction** tutorial.



And that's all for using Debrief for analysis. If you're from an organisation that conducts TMA analysis based on sensor data (or you've a general yearning to learn) why not try the **Single Sided Reconstruction in Debrief** tutorial.

Signed: _____ Date: _____