



ULTIMATE ZPLANNER

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Warning

Ultimate Planner is a piece of software designed to generate decompression profiles based on theoretical calculations. These profiles are experimental in nature and should not be used without an understanding of the inherent risk of Decompression Illness (DCI). No decompression procedures of any sort can guarantee that DCI will not occur. The only way to avoid the risk of DCI is to not dive. By using this software, you agree to exempt and release the author from all liability or responsibility whatsoever for personal injury, property damage or wrongful death however caused or arising out of, directly or indirectly, including but not limited to, the negligence of the author, whether passive or active. This software is still in test and may generate incorrect outputs. Any output generated by this software should be validated by comparison with other decompression planning tools.

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Acknowledgments

Ultimate Planner is loosely based on Erik C. Baker's code. Special thanks go to Jurij Zelič for porting some of the code to Java and for developing the first portion of the multilevel algorithm. Also special thanks go to Albrecht Salm for providing some details on the adaptive models (based on his personal communication with Albert Bühlmann and Max Hahn).

License

Ultimate Planner license is commercial. Upon purchase, the license is valid for life and includes any program and / or documentation updates to come. To check for updates, visit <http://www.techdivingmag.com/ultimateplanner.html>

Requirements

Ultimate Planner is a Java-based program, which means that it will run on any computer with the free Java runtime environment (JRE) installed. Currently Java is supported on Microsoft Windows, Mac OS X, Linux and Solaris operating systems. Java Standard Edition version 1.8 (also known as Java 8) or newer is required to run Ultimate Planner. To run Ultimate Planner properly, a minimum screen resolution of 1024 x 600 is required. 1024 x 768 or better is highly recommended. Ultimate Planner will not run if the screen resolution is less than 800 x 600.

Ultimate Planner's working directory is where the configuration parameters are saved. Normally it is the same folder that contains Ultimate Planner's executable. However, some operating systems (including, but might not be limited to, some Linux flavors) alter the default settings so that the working directory points somewhere else (in that case most probably the operating system forces it to be the user's home directory). To run properly, Ultimate Planner requires that a. the user has write permission to the working directory and b. it should **not** be set to read-only.

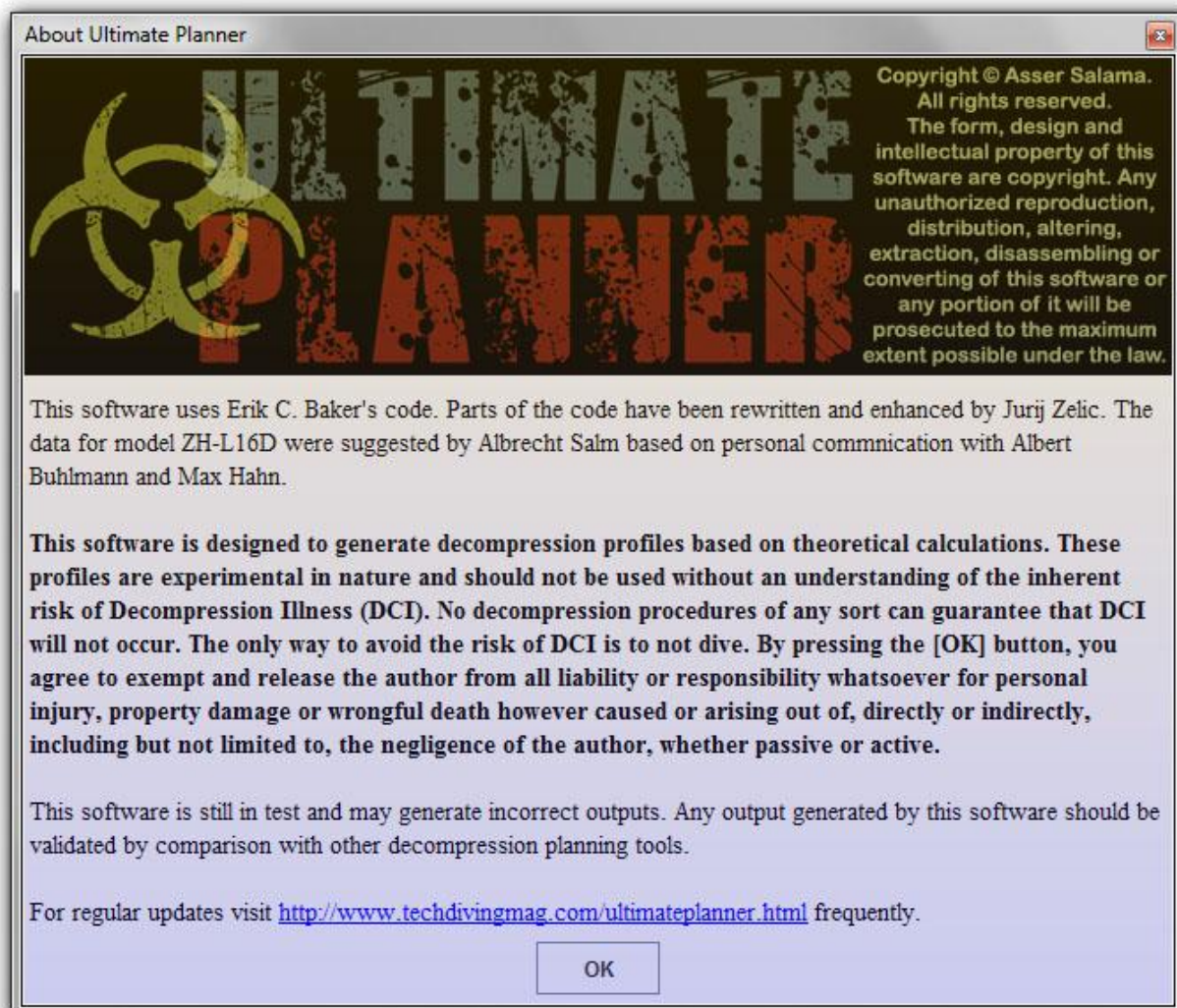
On Mac OS X, sometimes when Java is not installed the operating system suggests downloading and installing the Java Development Kit (JDK). Although that should work fine, the entire JDK is not required to make Ultimate Planner run properly. What's required is the JRE only. The JRE is way less in size than the JDK.

On Mac OS X, sometimes a message is displayed saying that Ultimate Planner can't be opened because it is from an unidentified developer. To get past this gatekeeper, right click on the executable JAR file (right click on some Mac OS X versions could be accomplished by pressing CTRL and clicking simultaneously) then select [Open] from the dropdown menu.

On high-DPI displays, Microsoft Windows 10 does not scale Java applications. Sometimes the result is small controls. To fix this issue:

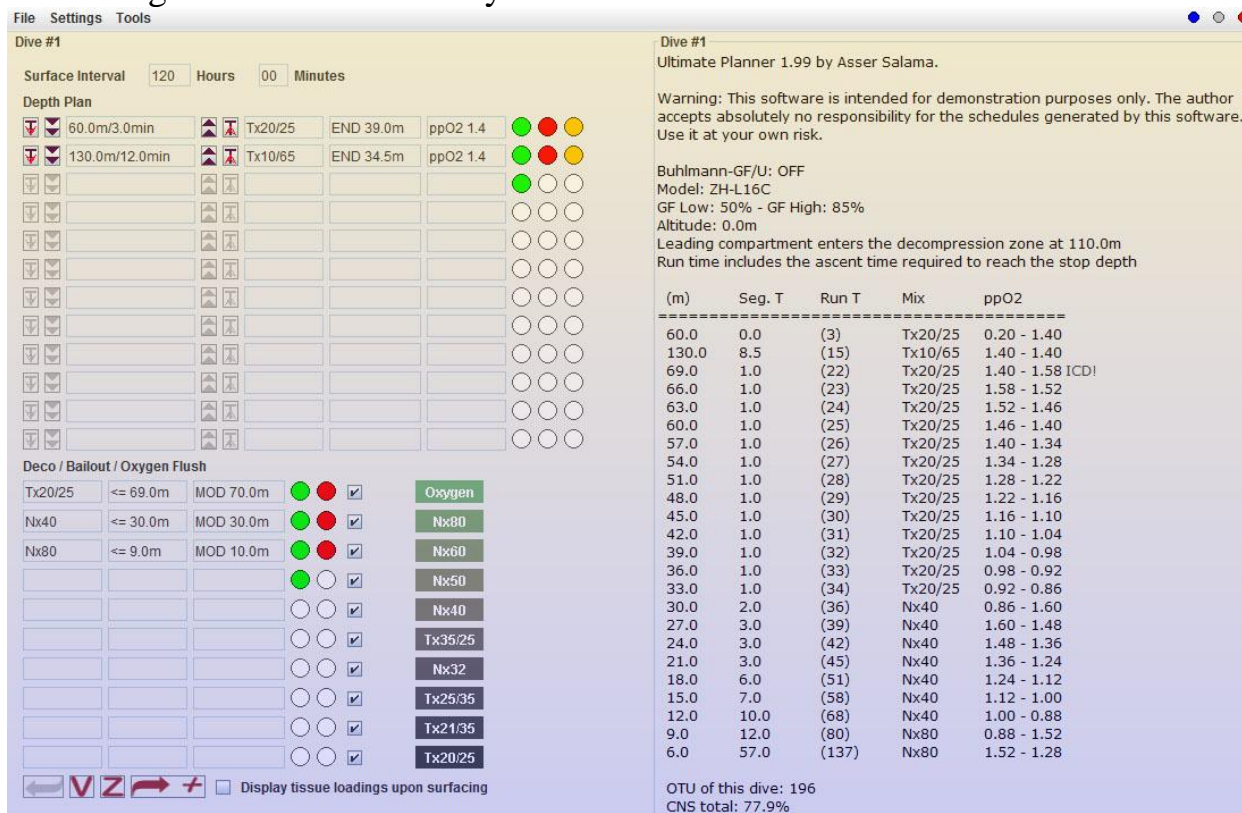
- Find the files named [java.exe] and [javaw.exe]. They are typically located in the [Program Files\Java] folder or one of its sub folders
- Right click each of them and click [Properties]
- Go to the [Compatibility] tab
- Check [Override high DPI scaling behavior]
- Choose [System] for [Scaling performed by:]

Usage



The window shown above will always be the first to display whenever you run Ultimate Planner. To continue, you have to press the [OK] button, which means that you have **thoroughly read all** the displayed text. If you do not agree with **any** portion of this text, press the red button on the uppermost right. This will close Ultimate Planner.

Starting from version 1.99, Ultimate Planner's main screen does not use a title bar. The minimize, maximize / restore and exit functions are available through the blue, gray and red buttons respectively. These buttons are located on the top right corner as shown hereunder. To move the main screen, place the mouse on the top bar between the menu and the buttons. You will notice that the cursor becomes your system's default move cursor. Press the left button and drag the screen wherever you want.



Ultimate Planner revolves around the two concepts of missions and dives. A mission is a series of up to 500 dives. The mission assumes that the diver had not dived for the previous 5 days.

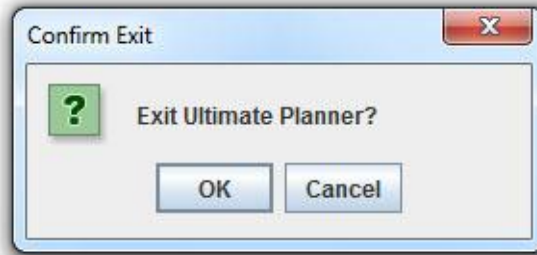
When Ultimate Planner starts, a new mission starts automatically. On the other hand, if you want to start a new mission anytime while using Ultimate Planner, select [File] then [New Mission] menu item.

If you want to open a previously saved mission, select [File] then [Open Mission...] menu item. Remember to always save your mission by selecting [File] then [Save Mission] (or [Save Mission As...] if you want to change the mission's name) menu item.

Notes

- Selecting [File] then [Close Mission] menu item will close the current mission **without** saving.

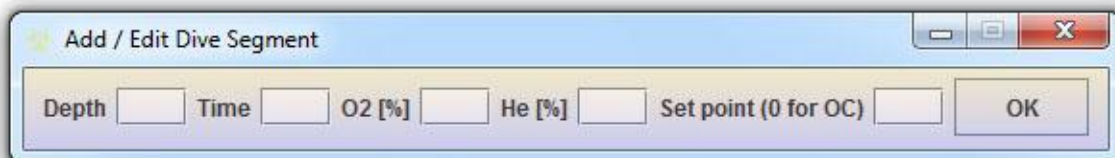
- Exiting Ultimate Planner will **not** automatically save your mission. However, the exit confirmation dialog shown hereunder will be displayed.



The next step is to enter your dive data. Entering the dive data includes entering both the [Depth Plan] and the [Deco / Bailout / Oxygen Flush] data after entering the surface interval.

Depth Plan

- To input a new dive segment or edit an existing one, press the green button. The window shown hereunder will appear. Use it to enter your dive segment data.



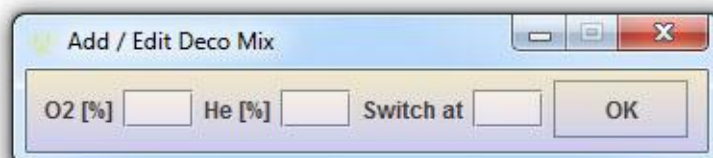
- To insert a new dive segment between two existing segments, press the orange button.
- To delete an existing dive segment, press the red button.
- To increase the depth and / or time of an existing segment, use the buttons to the right of the Depth / Time box.
- To decrease the depth and / or time of an existing segment, use the buttons to the left of the Depth / Time box.

Notes

- Descent and ascent times are parts of the dive segments. Don't add separate segments for descent or ascent.
- For Open Circuit (OC) segments, use 0 (zero) for the [Set point] field.
- For Closed Circuit Rebreather (CCR) segments, if you want to change the set point, add a 1 (one) minute segment with the depth, mix and set point of your choice, **except** for flushing with pure oxygen. This has to be entered in the [Deco / Bailout / Oxygen Flush] as will follow in the next section.

Deco / Bailout / Oxygen Flush

- To add one of the ten standard gases, press on the desired mix button.
- To add a new deco / bailout gas or edit an existing one, press the green button. The window shown hereunder will appear. Use it to enter your deco or bailout data.



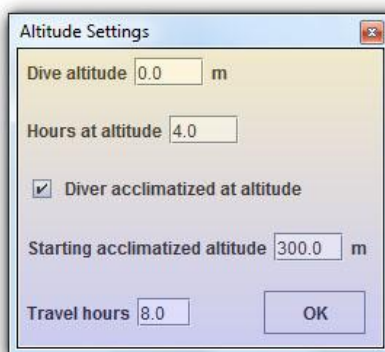
- To delete an existing deco / bailout gas, press the red button.
- To use / don't use an existing deco / bailout gas, check / uncheck the check box next to it.

Notes

- If you are planning bailout on your diluent, the diluent must be added as a bailout gas.
- **Bailout calculates gas volume from the first deco stop.** If you want to switch to OC before reaching the first stop, you have to add a 1 min OC segment to the [Depth Plan]. This 1 min will compensate for the time taken in the CCR/OC switch process, but will alter the deco schedule. If you want the deco schedule unaltered, deduct the 1 min from the first step plan.
- To flush with pure oxygen at 6m / 20ft, press the [Oxygen] button. **Do not** add pure oxygen or 1.6 set point segment to the depth plan.


Altitude

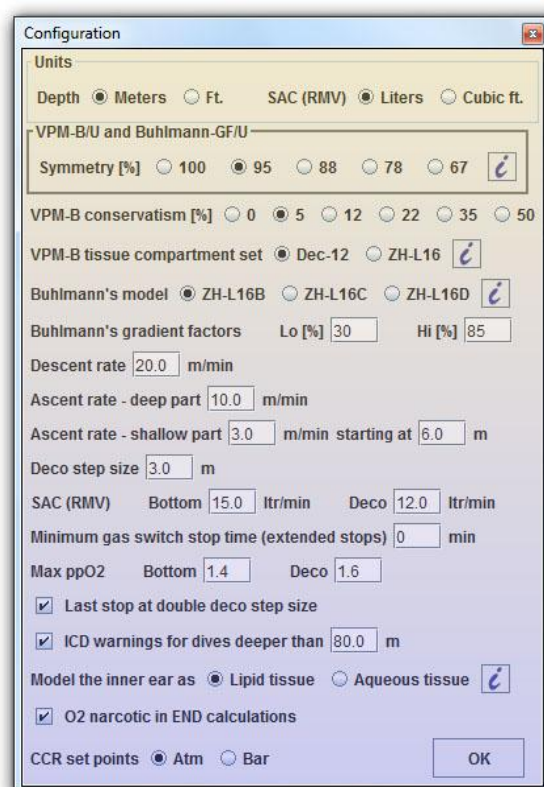
To calculate the deco schedule correctly, you first have to set the dive's altitude. To do so, select [Settings] then [Altitude...] menu item. The window shown hereunder will appear.



Configuration

To calculate the deco schedules the way you prefer, you first have to configure Ultimate Planner. To do so, select [Settings] then [Configuration...] menu item. The window shown hereunder will appear.

As you see, settings for both VPM-B and Bühlmann-GF, along with other settings such as depth and SAC (RMV) units, ascent and descent rates, gas consumption rates, isobaric counter diffusion warnings, oxygen narcosis calculation consideration, allowed partial pressures of oxygen, extended stops and set point unit could be configured from the same window for more convenience. However, there are other new, distinctive features like the symmetry, the VPM-B tissue compartment set, and the inner ear modeling (solubility coefficients) and the new ZH-L16D model. For more info about these features, press the  button.

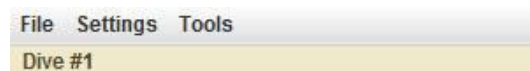


Deco Schedule Calculation

- To calculate the deco schedule using VPM-B model, press the **V** button.
- To calculate the deco schedule using Bühlmann-GF model, press the **Z** button.
- To add a dive or to go to the next dive, press the **→ +** button.
- To go to the previous dive, press the **←** button.
- To display the tissue loadings upon surfacing, check the ☐ **Display tissue loadings upon surfacing** checkbox.

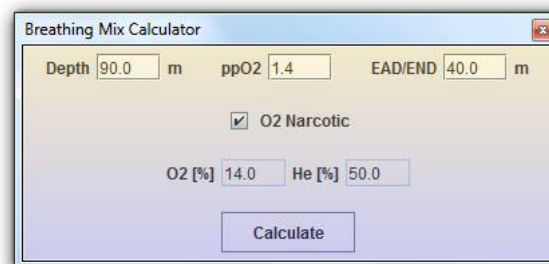
Notes

- The [Previous Dive] button is dimmed (like this: **←**) **only** when the first dive in the mission is displayed, since there are no previous dives yet. It becomes enabled automatically when there is at least one previous dive.
- The number of the dive you are currently working on is always displayed directly under the menu as shown hereunder.



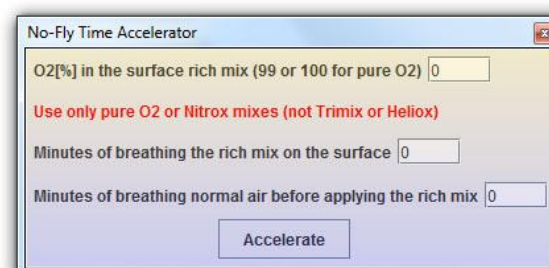
Breathing Mix Calculator

Ultimate Planner includes a tiny yet smart tool to calculate the ingredients of your breathing mix. Just enter the **maximum desired** depth, partial pressure of oxygen and Equivalent Air Depth (EAD) or Equivalent Narcotic Depth (END) and press calculate. The Breathing Mix Calculator also allows you to count for the narcotic effect of oxygen (if you believe in that). To use this calculator, select [Tools] then [Calculator...] menu item. The window shown hereunder will appear.



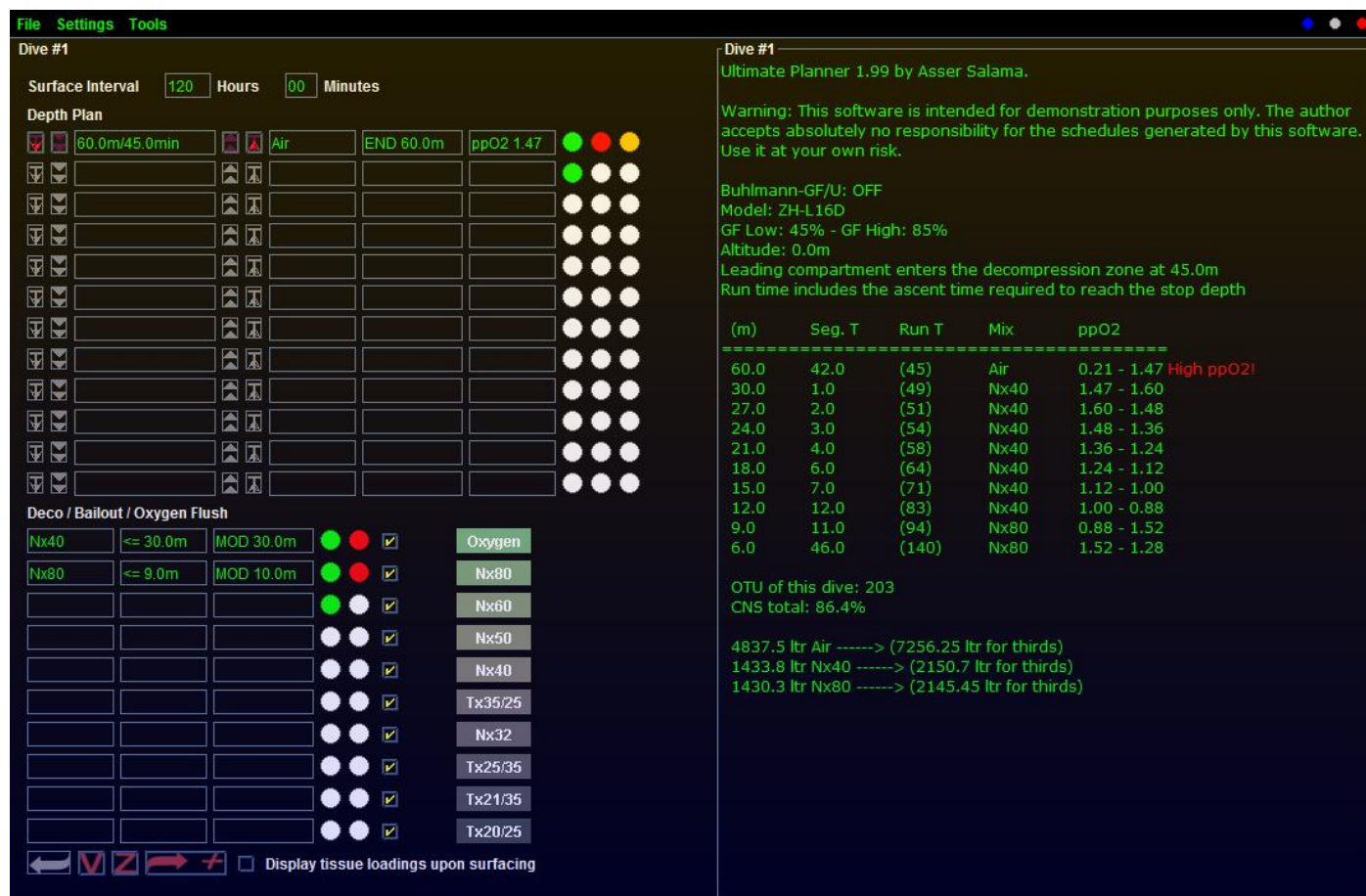
No-Fly Time Accelerator

Ultimate Planner has a new, distinctive feature, which is the ability to calculate the no-fly time acceleration when rich Nitrox mixes are breathed on the surface. The algorithm used for this task has witnessed a lot of enhancements and calibration. To use this feature, select [Tools] then [No-Fly Time Accelerator...] menu item. The window shown hereunder will appear.



Themes

Ultimate Planner comes in 4 different themes; the default one you see in the illustrations shown in this guide, the gray theme, the Egyptian blue theme and lastly the dark theme (high contrast, shown hereunder).



To change the theme, select [Settings] then choose the theme you want from the option buttons.