XS Palm Dive Planner

Introduction

This is a dive decompression planning tool for the Palm OS. It uses the M11F6 algorithm as designed by Dr RW "Bill" Hamilton for the Swedish Navy. Apart from its military application, it has been used successfully by commercial dive companies as well as many technical divers. It is a Haldanian model but differs from others by generating deeper early decompression stops when using trimix.

The program works by taking all the dive profile information and writing a decompression schedule to a memo file called "PalmPlanner". The program accepts all mixtures of helium, nitrogen and oxygen, up to three decompression gases for automatic dive planning (or unlimited if planning by hand), multilevel diving, repetitive diving and altitude diving.

Getting Started

Install the program as normal along with PocketC.prc and Mathlib.prc files if these are not already installed on the PDA (they are often used by other programs so may already be on it). Start the program up and enter the altitude of the dive ('0' for sea level by default). Next you can enter a filename for the decompression profile or by default it will output the information to "PalmPlanner" memo file.

Planning a Dive

XS works by entering the dive in stages using the start and end depth of each stage, the length of the stage in minutes and the gas used (air by default). For example to do a 30m dive for 25minutes you would enter:

Start Depth 0, End Depth 30, Time 1 (the descent stage)
Start Depth 30, End Depth 30, 25 (the 25min bottom time at 30m)

To enter the numbers, click on the appropriate box and enter the information. To change the gas, click the the button "Change" at the bottom of the screen and enter the O2 and He percentages. When all the information is correct, click the button "Add" in the top right of the screen. Do this for every stage of the dive. In this way, a multi-level dive can be built up or simply a square profile dive.

In the "Deco" box, the ascent ceiling is displayed. This is the maximum depth to which the diver can safely ascend. The first deco stop will be the next deepest 3m multiple closest to this depth.

To calculate the decompression profile using the last gas used for the dive, just click the "Deco" button.

To calculate the decompression profile using different decompression gases first decide on which gases to use. Up to three can be preset. Click on the "Gases" button and enter the mix used and the depth at which the gas switch will be made. By default the "Use deco gases" switch is checked. To go back to using bottom gas for deco, uncheck the box. Once the gas data is entered, click "Deco".

If the "Use deco gases" box is unchecked then you will need to enter the gas mixes by hand at each deco stop.

At the end of the dive XS will ask if you want to do a repetitive dive. If you say no then XS will end and the decompression plan will be written to "PalmPlanner" memo (or whatever was specified).

Repetitive Diving

Enter the surface interval between dives and the altitude of the new dive. Enter the dive profile and plan it as before. All dives will be written to the same memo file.

Altitude Diving

When XS starts it will ask for the altitude of the dive site. This assumes that you have spent at least 24hrs at that altitude and will have acclimatised to it. If this is not the case then you must adjust XS. To do this, when it asks for the altitude, enter the altitude and continue to the dive planning screen. Acclimatisation of the model to the correct altitude is the equivalent of doing a dive at zero metres for the appropriate length of time. For example, if you had only spent three hours at 500m altitude after arriving there then enter "500" for the altitude, go to the dive profile screen, leave the start and end depths at "0", set the bottom time to 240min (i.e. four hours in minutes), ensure the bottom gas is set to air, click "Add" and then "Deco". Ignore whatever information it generates, a feature of the M11F6 model is that it always tends to include a nominal stop even on no deco dives. After this, say yes to a repetitive dive, enter the site altitude and continue as before.

Last Stop Depth

XS allows you to do the final deco stop at either 3 or 6m. Select this by checking the "3m stop" button in the Deco box. If this is unchecked then the last stop will be 6m.

Reading the Decompression Profile

Once XS has finished, go to the Memo Pad program and open the file titled 'PalmPlanner' (or the filename if you specified a different one at the start). All the dives planned in that session of XS will be listed.

Each time you start XS using the default settings, the 'PalmPlanner' file is overwritten with the most recent data. Always ensure you are reading the right figures!!!

WARNING

XS is not tested, approved, certified, warrantied, guaranteed or even recommended for use for actual dives. Use it and its data at your own peril, we accept no responsibility for anything that might (and probably will) go wrong or happen. If you or anyone else gets hurt, dies or has any other form of bad day then it is your fault. All responsibility rests with you. This program is just a demonstration of the random numbers that can be generated that approximate what happens in the body, not a representation of real events.