



Kit Cat Tips on a catalogue of kit

Dive Computers

Kit List:-

Mask ✓

Fins ✓

BCD ✓

Weight Systems ✓

Exposure Suits

● Drysuits ✓

● Wetsuits

Regulators ✓

SMBs ✓

Reels ✓

Lights ✓

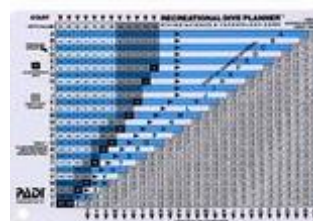
Dive Computer



raised
people

At the beginning of the year I attended an update meeting with PADI telling us about what's up and coming from them in 2008, one of which is an electronic multi-level Recreational Dive Planner (or e-RDP ML as it will be known) to give . The question was as to who was actually going to buy it? All those who would otherwise have bought the wheel of course!

How many of you remember how to use your tables (RDP), you know the blue and white stripy card that came with your Open Water crew pack; or the green and yellow ones from the nitrox course; or the Wheel? Well hopefully all of you, after all the only things you need to dive safely within recreational, no decompression diving limits are a depth gauge and a watch, and then use the tables to plan and log.



In reality, at the first opportunity most divers buy a computer. But do you really understand how your computer works? It is impractical for me to go through the specific operation of all the computers you might have but what I will do here is highlight what information its tells you and stores, why might it go "beep" etc. Hopefully is will make you curious enough to dig out the little card or book your came with to appraise yourself of the features before you next hit the water. And if you haven't yet spent the money I'll list a few considerations to help the selection.

So what is a dive computer? Basically it's an electronic device to measure your dive profile (depth, bottom time etc) and display this information dynamically so you can dive safely, avoiding decompression sickness. As the computer automatically measures depth and time it performs a continuous calculation of gases in the body. So your allowable bottom time is based on actual time spent at different depths during the dive (not the very binary either at the bottom or the surface of the RDP) and it's able to warn of excessive ascent rates and missed decompression stops.



What are the differences between computers? Well there's the look and feel, wrist mount or console, features over and above depth & time measurement and of course price. The other main differentiator is which algorithm they use and how they are implemented: there's the Haldanian algorithm, Suunto's Reduced Gradient Bubble Algorithm and a number of others used by different manufacturers and some are more or less conservative than others. A more conservative computer will give you less bottom time or time to the no-decompression limit than a more aggressive one. You have probably heard divers comparing notes at the end of the dive where they have different brands. Remember always follow the most conservative computer in your buddy teams – ascend when the first one tells you to even if your own would allow you more minutes at depth.

So what does your computer tell you? At the very least during your dive the LCD display will show you:

- Current depth.
- Maximum depth reached on this dive.
- Elapsed dive time, measured from when you left the surface.

Make sure you are familiar with your own display – you will need to assimilate the information quickly and easily.

Additionally it can show you

- No stop time, that is the time remaining at the current depth without the need for decompression stops.
- Required decompression stop depth and time / safety stop.
- Water temperature.
- Ascent rate.
- Time of day



Air integrated computers, including the spg function (either directly attached to the high pressure hose or wrist mounted with a wireless transmitter on the cylinder) will also display: -

- Air pressure
- Estimated remaining bottom time based on what's left in the cylinder and your rate of consumption

Many give audible information with warnings and alarms for events such as:

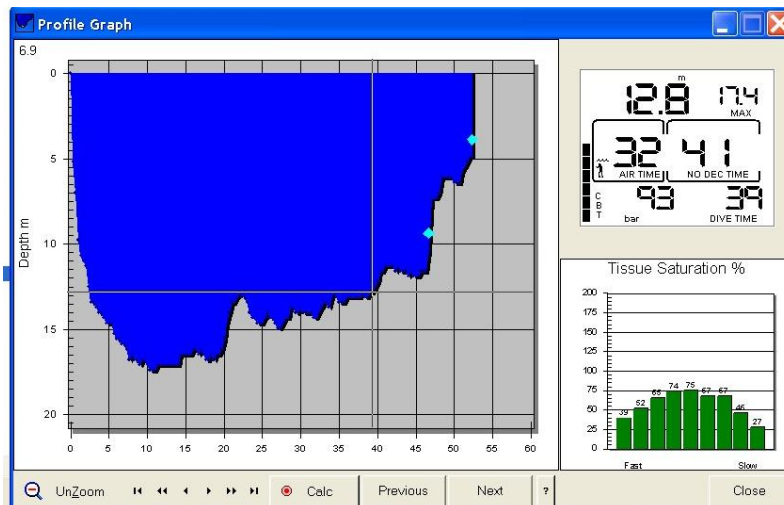
- Excessive ascent rates
- Missed decompression stops
- Maximum operating depth exceeded
- Oxygen toxicity limits exceeded

Make a note what alarms your computer has – it may be possible to change the settings.

After the dive your computer should be able to tell you more information:

- Dive Profile, so you can run through the last dive.
- Dive log, a history of all the dives your computer has been on.
- "No-fly time" so you can plan what time you need to clear the water on that special last dive of the holiday before you have to catch the plane home.

And if all of that weren't enough you can download all the information to a PC and have more fun with your dive log or analysing your profile.



This is a graphical display of one of my first dives using my Suunto Cobra.

If you look carefully you will see a couple of light blue blobs.

Apparently (according to the key) this means I pressed a button! (a feature to allow you to tie up and

event or photo to that moment in the dive) I had no recollection but suspect it was as I randomly pressed buttons in an attempt to make the backlight work. It certainly made me re-read the instructions and learn how to dive safely with my computer.

Here are a few things to think about or ask when selecting your computer:

- Is it a reliable and established model? You may want after-sales service or advice. As with all dive equipment there are many recognised brands to choose from; the most popular seem to be Suunto, Uwatec (Scubapro), Oceanic, Mares, Delta & Apex but there are more...
- Can the display be easily read and understood, with clear characters well laid out? For wrist-mounted models will the strap fit and is it comfortable?
- Is it easy to operate? Are the menus easily navigated, does it use push buttons or wet contacts. The latter can sometimes be troublesome after time due to the build up of grease and grime
- Will it handle gas mixes other than air and is it easy to adjust the percentage mix?
- Can it be used at altitude other than sea level? (There are some fantastic lakes)
- What ascent rate does it use? Most computers use significantly less than the 18m per minute the RDP recommends – 12m or ideally 10m a minute.
- Is it a decompression model and what decompression model does it use? It is wise to understand the properties of your own dive computer to ensure it fits the skill and comfort level expected. The dive shop or manufacturer should be able to tell you where it rates on the conservative / aggressive scale. For example Suunto are known to be very conservative
- Can the battery be changed easily? If you can do it yourself or have it done while you wait at the dive\shop without having to send it back to the manufacture.
- Does it have a backlight and is it sufficiently strong for the conditions you will be diving in? (Night diving is great fun)
- Are the alarms loud enough to be heard easily?
- Can it be downloaded onto a PC? (Not essential but useful.)
- Does it have "plan" mode?
- Will it be damaged if it has to be X-rayed for flying?



Diving with a computer can certainly allow you longer dive times than using the RDP but it is not a licence to throw away the rule book and forget all your training. You can take more steps to further reduce the risk of decompression sickness:

- Use dive computers with a conservative decompression model
- Use safety factors with dive computers (for example using a high altitude mode for a dive at sea level)
- Add additional deep safety stops during a deep dive
- Make a slow ascent
- Add additional shallow safety stops
- Have a long surface interval between dives
- Many computers go into a "lockout" mode for 24 hours if the diver violates the computer's safety limits, to discourage continued diving after an unsafe dive.
- Never buy a dive computer second-hand unless you know and trust the seller! Circuit boards do fail in time, the owner may have noticed some anomalous readings and chosen to dispose of it whilst he could still find some unwitting soul.

So don't forget to change your computer to Summer time for this weekend and safe diving!