

Typesetting dive-logs using L^AT_EX 2_ε

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1 Introduction

The document class `logbook.cls`¹ is meant to help typesetting a dive logbook. Our process goes through several steps:

1. extract binary data from the dive computer and turn them into something human readable, i.e. some XML based format, we decided for the subsurface software (see <http://subsurface-divelog.org>) which a) runs on Linux, MacOSX and Windows b) supports most divecomputers c) can import dives from various formats;
2. convert the 'XML' file produced by subsurface to a LaTeX source file using the `sub2latex.pl` script:
`sub2latex.pl <myfile.xml >myfile.tex`
3. eventually edit the LaTeX source file, adding informations possibly not available in the 'XML' file and compile it using `pdflatex`.

Let's now consider the LaTeX source file. The preamble files (i.e. the first part between `\documentclass...` and `\begin{document}`) can easily be customised: just write your own preamble to a `logbook.pre` file, it will replace the standard one included in `sub2latex.pl`. Using a personal version of `logbook.pre` is the right way to change the language, the fonts used, the coding of the source file, etc.

A post-amble will be added to the `.tex` files after the `\end{document}` (i.e. for Emacs local variables) with the contents of `logbook.post` if it is found in the current directory.

Some options can be tuned in the configuration file `logbook.cfg`, for instance the colours (one by gas) used to display the dive profile and the line style (plain, dashed, dotted) for different setpoints and bailout in CCR-mode. Usually, the oldest dive is displayed first. If your dives are sorted in reverse order in the `.tex` file, you have to change the option `sorted` to `latestlast`, or to uncomment the line `\def\diveinc{1}` in the `logbook.cfg` file in order to get your dives numbered properly.

An `aliases.tex` is also provided: you can add LaTeX commands to ease typesetting of buddies or dive sites names...

Each dive-log is included in a `\begin{dive} ... \end{dive}` environment. Most of the dive data are automatically read by subsurface from the dive computer. Some fields can be filled by the end-user (if not already filled in subsurface frontend): `\DiveNr`, `\Area`, `\Spot`, `\Buddy`, `\TankVolGas`, `\PstartGas`, `\PendGas`.

- The `\DiveNr` can be set only once, for the first dive appearing in the `.tex` (which can be the latest or the oldest)². Then the counter is automatically decremented (or incremented with option `sorted`) for the following dives.

¹The file described in this section has version number v3.3b and was last revised on 2019/08/14.

²Dive numbers are normally set in subsurface and imported by `sub2latex.pl`. The recorded values are also printed at the end of `.tex` file for your information.

- The `\Area` and `\Buddy` fields can also be set once, their value remains valid for the next dives unless explicitly changed.
- The `\Spot` must be set for each dive (otherwise the the dive site remains empty).
- The `\TankVolGas` field, when left empty, defaults either to the value read in the previous dive, or to default value `\TankVolDefault` set in the `logbook.cfg`. Imagine you dive several times in a row with a double 12l. tank and one 9l. tank for decompression. You just have to enter `\TankVolGas1{24}` and `\TankVolGas2{9}` for the first dive of the row. Then, if you return to a single 15l. tank with no deco, add `\TankVolGas1{15}` to the first dive with this configuration. The same is true for `\TankVolDiluent{}` and `\TankVolOxygen` in CCR-mode.
- `\PstartGas` and `\PendGas` are required in OC-mode for each gas you want informations about your gas consumption (total volume used in litres and SAC). These pressures are read from the computer if available (computer linked to a transmitter) or have to be filled in otherwise either in `subsurface` or in the `.tex` file. In CCR-mode think about filling values for `\DiluentPStart{}`, `\DiluentPEnd{}`³ to get the total volume of diluent used, and `\OxygenPEnd{}` and `\OxygenPStart{}` to get the oxygen consumption in litre/min.

When several diluents are used during a dive, the one which will produce statistics can chosen with `\MainDiluentNR{<num>}`, the default value being 1 (first diluent used).

It is possible to add personnal tags on the profile graph: use the `\UserTag{ }{ }{ }` command, one for each tag; it takes three arguments: the first one is the time in minutes, the second one is the depth (positive) in meters, the last one is the tag's text.

If Gradient Factor values have been recorded during some dives and some values exceed 50% (customisable in `sub2latex.pl`), they are plotted as a subsidiary graph (under the profile graph). You can suppress this plot for all dives by adding `\PlotGFfalse` to the preamble or just for some dives by adding `\PlotGFfalse` between `\begin{dive}` and `\end{dive}`.

Two environments enable to print comments on your dives: the `notes` environment will always be printed, but the content of the `private` environment will only be printed when you explicitly add the `public` option to the `\documentclass` command, or uncomment `\Privatefalse` in the `logbook.cfg` file.

Another environment called `nodive` is provided to enter comments for instance, notes about a safari or informations no directly related to a precise dive. It is possible to provide a title with the optionnal argument: `\begin{nodive}[my title]`.

Known limitations: Imperial units are not supported (only 'si' and 'metric'), PDF output uses the metric system (meters, bars, litres, minutes, °C).

³This can best be done in `subsurface`.