Basic Glider Data Log Template: Why should I keep a log?

Keeping a data log for your flights isn't just something you should do just to add some bonus seconds to your flight times, but is an essential aspect of improving your flights and repeating them consistently when you have things working well.

The rules for Elastic Launched Glider specify 3 required parameters and also 1 additional parameter that you are able to specify. The following discussion is not intended to be all inclusive of the possibilities, but relates to the Basic Glider Data Log Template shown below. This log is shown in its entirely at the end of this document, and can also be downloaded as .xlxs The spreadsheet file can be modified to fit your particular needs.

Basic Glider Log Template*: What use is all of that data?

Glider Flight Log

Glider ID: _____ **Team:** _____

Date (m/d/yr)	Glider Mass (g)	Ceiling Height (ft)	Wing Incidence (mm)	Flap Deflection (mm)	Elastic Width (in)	Elastic Relaxed (cm)	Elastic Stretched (cm)	Pitch Angle (deg)	Bank Angle (deg)	Peak height (ft)	duration (s)	You don't know what you're doing unless you know what you've done! comments
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Glider Flight Log required parameters:

1. **Estimated/recorded peak flight height after launch (ft).** This gives you an indication of whether the chosen set of launching parameters on the left side of the log have been effective in achieving the goal of using as much of the flyable height as possible. Compare this to the second column, ceiling height, which reflects the height available in particular flying site.

2. **Approximate length of elastic, relaxed (cm).** This, along with the stretched length, can help you to decide how effective your launcher is in reaching the optimum height. Could also be measured in inches. If you do so, download the spreadsheet template and change the column label!

3. **Flight Time (s).** Labelled on the referenced log as duration, a fancy name for time.

<u>One additional parameter chosen by the team</u>. The ones shown on the referenced flight log are some of the more common ones, but are not intended to be an all-inclusive selection. One or more of the other possibilities below can be added if you download the Excel version of the template.

Glider Mass (g). The mass may change as you add or subtract ballast.

Ceiling Height (ft). Record this for each different flying site so that you can compare it to the peak height achieved by your flights.

Wing Incidence (mm). How much higher above top of fuselage is the leading edge of the wing in comparison to the trailing edge? See "Building Tips for a Flapper Glider" for a photo showing how this is measured.

Flap Deflection (mm) How much lower is the trailing edge of the flaps relative to the main portion of the wing? See "Building Tips for a Flapper Glider" for a photo showing how this is measured.

Elastic Width (in) How wide is the rubber used on the launcher?

Stretched Length (cm). Compare to unstretched length to determine how far glider is pulled back prior to launch. Used to determine relationship between stretch and maximum height achieved by the glider. Could also be measured in inches.

Bank Angle (degrees). Sometimes referred to as roll angle. Used to determine the bank angle that results in optimal transition at the top of the flight. Viewed from behind:

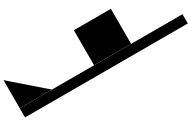
0 degrees right bank: 

30 degrees right bank: 

Bank angle, and pitch angle, below, could also be measured as a fraction (ie 0-1/8-1/4. . .7/8-1. Where 0 is horizontal, 1 is vertical.)

Pitch Angle (degrees). Horizontal launch is 0 degrees. Used along with other parameters to determine the optimal combination for launching the glider.

0 degrees: 

30 degrees: 

Circle Direction (L/R or CW/CCW). Indicate as left/right, or CW/CCW.

Finger Grip Position. Indicate as CG (fingers under glider's CG position) or Tail (fingers at very back of fuselage)

Other parameters. As stated previously, the parameters on this log sheet will easily satisfy the requirements in the SO Glider rules, but are not intended to be an all-inclusive list. But they are the basic information that will serve to raise you flying to a reasonable high level.

A printable log template is found below. Can also be downloaded as a modifiable Excel file via the link on the NFFS resource page.

Glider Flight Log

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