

Unit n°1: Gear

1. GENERALITIES:

- ✓ Indicated total flying weight range
- ✓ The theory of flying at the top of the indicated flying range and the reality
- ✓ EN certification, flight and structure, what does it mean?

2. WING COMPONENTS

A. The cloth

- ✓ Manufacture and characteristics
- ✓ Ageing and consequences
 - Porosity
 - Stiffness
 - Breaking and tearing strength
- ✓ How long does the cloth last? typical alerts
- ✓ Conclusion
 - Ageing agents, how to limit cloth ageing

B. The lines

Generalities

- ✓ Materials and characteristics
- ✓ Where to find information about the lines of a glider (length, materials)
- ✓ Effect of a knot on the strength
- ✓ How to splice a line
- ✓ G load in flight, various manoeuvres
- ✓ Line load depending on glider's design

Line ageing control

- a) Lines losing breaking strength
 - ✓ What materials are concerned
 - ✓ How to proceed to control and “survival technique”
 - ✓ Criteria for replacement
- b) Glider getting out of trim
 - ✓ What is the trim of a glider
 - ✓ What happens, what materials are concerned
 - ✓ Typical alerts

- ✓ Measurement and correction of line set up
 - Preliminaries: read a plan, identify a line
 - The differential method
 - Make a differential table
 - Measurement technique
 - Introduction to correction techniques
 - Permitted tolerances

Conclusion

- ✓ Control frequency and life of a line set, depending on material and glider's type
- ✓ Real life examples of ageing
- ✓ Controls after an intervention prior to fly

3. RESERVE

- ✓ Models
- ✓ Certification (shock resistance, sink rate, aperture time, oscillations)
- ✓ Types of mounting, benefits and disadvantages
- ✓ Problems that may occur: extraction, aperture, neutralisation
- ✓ Maintenance
- ✓ Conclusion:
 - How to find your handle
 - Five cases in which you should pull reserve immediately
 - The three types of situation when its time to throw, and the technique to use in each of those situations

4. HARNESS

- ✓ Geometries and position
- ✓ Adjustment
- ✓ Pod harness and glider certification
- ✓ Maintenance
- ✓ How long should a harness last?
- ✓ Conclusion