Safety

What helps me to fly more safely?

What makes me an unsafe pilot?

Equipment

- Wing choice
  - My ego and self-portrayal vs. self-assessment, what do I achieve in flying? SIV?
- Wing condition
  - Precise relative trim?! Free travel of the brakes is sufficient?!
- Reserve
  - Sufficient size
    - Maximum load = 120..130% of take-off weight
  - With or without forward motion?
    - Does it descend vertically or does it only reach its sink rate with built in forward motion?
  - Compatibility test with real pulling direction
    - Does the reserve throw work with the combination of pilot, harness, and reserve?
  - Repack regularly
  - Rescue parachute training course, G-force trainer
  - Awareness
    - e.g. grab reserve handle on every flight
  - Check the split pins before each launch
- Harness, upright and stable sitting position
- Livetracking, satellite messaging
- Radio
- Footwear
- Protection from cold
- First aid kit, training & knowledge
- Tree landing -> webbing sling & carabiner
- Smartphone
  - Is it accesible in an emergency?
  - Coordinates in plain text?
  - Offline maps
  - Backup powerbank

Weather

- Theory
- Checking the weather forecast
  - big picture, foehn, etc.
- Observing the weather
- Own experience & experience of others
  - e.g. ask locals, guided flying
- Clouds, 45 degree rule...
  - e.g. thermalling such that you can see the edge of the cloud always in a 45 degree bearing

Site & Terrain

- Upwind/downwind side
- Valley winds
- Reading the terrain
  - Rotors, lee traps, jet effect, ...
- Site briefing
- Possibility for aborting the take-off
- Flight route planning
  - Avoiding turbulence, reach landing zone safely
- Plan B: possibility for emergency landing in case of sudden hight loss
- Keep track of obstacles and air traffic
- No turning against the hill!
- Adjust your flying to the terrain
  - How forgiving is the terrain?

Knowledge

- Typical causes of accicdents
- Aerodynamics and flight dynamics at incidents
- Right of way

Environment

- Be considerate in the air
- Behaviour at take-off
- Prevailing culture regarding the topic of safety
- Does anybody know what you're up to and where you are

Mental side

- Psychology
  - Risk homeostasis & passive safety
    - If we feel safer, our behaviour becomes riskier until we feel the same risk again (risk compensation). After the introduction of the anti-lock braking system, for example, the number of accidents involving ABS users did not decrease, but actually increased.
  - Self-projection
  - Group dynamics
  - Emotional needs
  - Survivor's Bias
    - The more often you get away with something risky, the more you overestimate yourself and the more you underestimate the terrain and conditions, for example. The cognitive distortion of the survivorship bias kicks in, as successful actions, flights or pilots are more visible than unsuccessful ones.
- Internal & external, positive & negative motivation
- Inner attitude: humility <-> complacency
- Willingness to learn
- Mental state
  - e.g. stress, personal problems - am I in the Here and Now?
- Routines: preflight check & self check, look inside yourself
- Self-assessment & self-reflection
- Intermediate syndrome & overconfidence
- Dealing with fear, control of emotions, "freezing"
- Conscious launch decision, launch abort line
- The positive power of negative thinking
  - What could go wrong here?
- Mental training
  - e.g. how do I react and when? Mentally go through processes and move accordingly.
- The five hazardous attitudes in aviation
  1. Anti-Authority
  2. Impulsivity
  3. Invulnerability
  4. Macho
  5. Resignation

Physical state

- Had enough sleep
- Fitness
- Hydration & dehydration
- Disposal of liquid
- Diet
- Hypoxia
  i.e. lack of oxygen or altitude sickness
- Warmth

Wing control

- **Take-off**
- **Landing**
  - Proper landing approach, straight and swing-free final approach!
- Flying technique which prevents stalls
- Autorotation, i.e. fast & accelerating rotation
- Spin/one-sided stall recognition
- Collapses
- Effective rapid descent techniques
- Awareness of the situation - orientation in 3D space
- Decoupling hands - body in extreme situations
  - Skill for hands up - let the wing fly?!
- Awareness of the height and the height loss at incidents
- Active flying
  - e.g. rule #1 - brake the dive!
- Flying on bar
- Training condition (regular flying, staying current)
- Ground handling

Risk management

- Threat and Error Management (TEM)
- The steps of risk management
  1. Awareness
  2. Identification
  3. Assessment
  4. Decision
  5. Action
  6. Monitoring
- The Traffic Lights Principle
  - e.g. several factors yellow (tired, marginal wind, new glider) -> traffic light is red!
- Keep track of the three things that will probably kill you

References

- Cloudbase Mayhem podcast
- The Paraglider podcast

Literature

- Advanced Paragliding
  - Gavin McClurg

About

- Tool: Freeplane
- Author: Timo Schleeh
- feedback@paragliding-safety.com
- As of 2023-12-28
- Licence CC BY-SA 4.0

Categorisation

- **+** A solid basis in place
- **o** On the right track, but still work to do
- **-** Need to catch up, I have to work on this